

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Final report

Report by

RAMBOLL

Competition

EUROPEAN COMMISSION

Directorate-General for Competition

E-mail: comp-publications@ec.europa.eu

European Commission

B-1049 Brussels

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Final report

***Europe Direct is a service to help you find answers
to your questions about the European Union.***

Freephone number (*):

00 800 6 7 8 9 10 11

(*)The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

LEGAL NOTICE

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Les informations et opinions exprimées dans ce rapport sont celles de l'auteur(s) et ne reflètent pas nécessairement l'opinion officielle de la Commission. La Commission ne garantit pas l'exactitude des informations comprises dans ce rapport. La Commission, ainsi que toute personne agissant pour le compte de celle-ci, ne saurait en aucun cas être tenue responsable de l'utilisation des informations contenues dans ce rapport.

More information on the European Union is available on the Internet (<http://www.europa.eu>).

Luxembourg: Publications Office of the European Union, 2017

Catalogue number: KD-01-17-397-EN-N

ISBN 978-92-79-68107-3

doi: 10.2763/1790

© European Union, 2017

Reproduction is authorised provided the source is acknowledged.



Authors:

Tsvetelina Blagoeva

Adriana Iliescu

Karin Attstrom

Giorgio Monti

Xavier le Den

William Bonfils

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
SYNTHESE	3
ABSTRACT	6
RESUME.....	7
1. INTRODUCTION	8
2. METHODOLOGICAL APPROACH.....	9
3. MAPPING AND ANALYSIS OF THE INDICATORS USED BY DG COMPETITION.....	11
3.1. <i>Impact Assessment Proposal for an Anti-trust Damages Directive</i>	14
3.2. <i>Impact Assessment Vertical Agreements</i>	18
3.3. <i>Impact Assessment Horizontal Agreements</i>	22
3.4. <i>Impact Assessment State Aid SGEI</i>	26
3.5. <i>Impact Assessment Broadband state aid</i>	28
3.6. <i>Impact Assessment R&D&I State Aid</i>	34
3.7. <i>Impact Assessment Regional State Aid Guidelines</i>	39
3.8. <i>Impact Assessment State aid for risk finance</i>	42
3.9. <i>Impact Assessment State aid energy and environment</i>	46
3.10. <i>Impact Assessment State aid for greenhouse gas emissions</i>	51
3.11. <i>Impact Assessment Merger control</i>	54
3.12. <i>Cross-cutting indicators</i>	57
4. MAPPING AND ANALYSIS OF OTHER INDICATORS SYSTEMS FOR COMPETITION POLICY.....	59
4.1. <i>Indicator system of international organisations</i>	59
4.1.1. World Bank.....	59
4.1.2. OECD.....	63
4.2. <i>Indicator systems of other Commission services</i>	69
4.3. <i>Indicator systems of National Competition Authorities</i>	72
4.3.1. Australia: Competition and Consumer Commission	74
4.3.2. Canada: Competition Bureau of Canada	77
4.3.3. Sweden: Competition Authority.....	80
4.3.4. United Kingdom: Competition and Market Authority of UK	83
4.3.5. Germany: German Competition Authority [Bundeskartellamt]	92
4.3.6. Netherlands: Autoriteit Consument & Markt	94
4.3.7. France: Autorité de la Concurrence.....	97
5. DATA GAPS AND DATA SOURCES	101
5.1. <i>Data gaps and data sources per Impact Assessments</i>	101
5.2. <i>Databases and datasets</i>	110
5.3. <i>Data collection methods</i>	113
5.4. <i>Data analysis models</i>	115
6. RECOMMENDATIONS FOR FURTHER RESEARCH AND/OR PRACTICAL ADVICE FOR NEXT STEPS THAT DG COMPETITION COULD TAKE.....	116
Bibliography	120
Annex 1 – Methodological note on Task 1	
Annex 2 – Reviews of IAs under Task 1	
Annex 3 – Reviews of indicators by other Commission DGs	

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

LIST OF ACRONYMS

ACM	Autoriteit Consument & Markt	IA	Impact Assessment
Adlc	Autorité de la concurrence	IEA	International Energy Agency
BTI	Bertelsmann Stiftung's Transformation Index	JUST	Justice
CBC	Competition Bureau of Canada	LT	Lithuania
CJEU	Court of Justice of the European Union	LV	Latvia
CMA	Competition and Market Authority	MS	Member States
CONNECT	Communications Networks, Content and Technology (CONNECT)	NCA	National Competition Authority
CZ	Czech Republic	OECD	Organisation for Economic Cooperation and Development
DG	Directorate-General	OFT	Office of Fair Trading
EC	European Commission	PL	Poland
ECFIN	Economic and Financial Affairs	REGIO	Regional and Urban Policy
EE	Greece	RO	Romania
EEA	European Economic Area	RTD	Research and Innovation
EIF	European Investment Fund	SA	State Aid
ENER	Energy	SCI	Supplier concentration index
ENV	Environment	SCM	Standard Cost Model
ESI	Economic Sentiment Indicator	SGEI	Services of general economic interest
EU	European Union	SI	Slovenia
EUR	Euro (€)	SK	Slovakia
FR	France	SMEs	Small and Medium Enterprises
FTE	Full-time equivalent	TBD	To be determined
GDP	Growth Domestic Product	TED	Tender Europa Database
GROW	Internal Market, Industry, Entrepreneurship and SMEs	TRADE	Trade
GTAP	The Global Trade Analysis Project	UK	United Kingdom
HR	Hungary	WB	World Bank

EXECUTIVE SUMMARY

The European Commission, DG Competition, commissioned a study to support the process of “Improving the Monitoring Indicators System to support DG Competition's Future Policy Assessments (ex-post evaluations and impact assessments)” in the areas of antitrust enforcement, state aid and merger control.

The main objective of the study was to map, categorise and systematise result and impact indicators that are potentially relevant for a set of policy interventions of DG Competition. Additionally, the aim of the study was to analyse the monitoring indicators used by National Competition Authorities and international organisations, as well as other Directorate-Generals, and to present DG Competition with additional indicators that could be utilised for future policy assessments. The study also aimed at proposing additional data collection activities that can address the data needs of future evaluations or impact assessments in relation to the identified indicators. Finally, the study provided recommendations for further research and/or practical advice for the next steps that DG Competition could take. *It should be duly noted that the mapping of indicators does not necessarily imply that DG Competition intends to initiate any new policy proposal or to conduct a revision in any of the areas or for any of the instruments falling under the scope of the study, unless such steps are formally announced.*

The mapping of indicators used by DG Competition covered 11 Impact Assessments of policy instruments related to the policy areas of antitrust, state aid and mergers. More than 500 result and impact indicators were identified in total and each indicator was assessed against the RACER criteria (relevant, accepted, credible, easy to monitor and robust). Furthermore, over 170 additional indicators were proposed as potential supplements to the indicators already included in DG Competition's work.

The review of indicators used by other organisations also resulted in a large number of potential additional indicators that could be considered by DG Competition. As far as *international organisations* are concerned, the analysis focused on sources from the World Bank and the OECD. The World Bank's work in the area of competition policy is closely linked to the organisation's development policy objectives, thus the review identified a number of indicators of the effect of competition policy interventions on poverty and economic inequality. Such indicators could be considered for the assessment of DG Competition's policy interventions which contribute to objectives such as improving regional development and cohesion.

The review of the OECD monitoring indicators' system led to the identification of a number of indicators relevant for assessing the macroeconomic impacts of competition policy. Given the close relation between the European Commission and the OECD, the list of identified indicators utilised by the OECD relates closely to the indicators already used by DG Competition, but the methods for assessments identified could be a source of inspiration for DG Competition in designing the methodology for ex-post evaluations of the results and impacts of competition policy instruments.

The review of the indicator systems used by *other Directorate-Generals of the European Commission* covered close to 50 Impact Assessments of policy measures by 9 Directorate-Generals. The identified indicators could be useful for DG Competition in the preparation of comprehensive assessments of the economic effects of competition

policy on different industries and markets or the economy as a whole, the distributive effects for consumers, or the impact on the environment.

The analysis of the indicator systems of National Competition Authorities (NCAs) covered the competition authorities of the United Kingdom, Sweden, Netherlands, Canada, Australia, Germany and France. The review of the indicators used by NCAs identified innovative approaches to measuring stakeholder responses to policy measures – e.g. the level of legal certainty, awareness of the rules and compliance activities – that could be considered by DG Competition for the assessment of EU competition policy measures.

The study also included the development of proposals for additional data collection activities that could be considered by DG Competition for addressing the data needs identified in its current indicators system, with a view to reinforce the evidence base for policy assessment, in particular data for indicators related to:

- administrative burden for authorities;
- compliance costs for undertakings;
- perception of stakeholders of the degree of clarity, certainty, stability of the rules;
- degree of awareness of the rules and their implementation;
- quantification of the impact of competition policy on overarching objectives, such as environmental performance, innovation performance, employment dynamics etc.

In order to facilitate the planning of additional data collection activities in the context of any future evaluations of specific policy instruments, the study provided an overview of the identified data gaps and proposed data sources which are presented for each of DG Competition's Impact Assessment reviewed. For some of the Impact Assessments, the proposed data sources include existing databases that were identified as relevant over the course of research, while for others the focus is mainly on primary data collection activities (interviews and surveys). The proposed primary data collection activities have been selected to fit the anticipated data needs of potential mid-term or ex-post evaluations of the implementation of a set of policy measures or in the context of impact assessments of potential policy revisions.

The study concluded with several recommendations for further research and practical advice concerning the next steps that DG Competition could take in improving its monitoring indicators system to support future policy assessments. First, it is recommended that DG Competition improve the consistency of the defined general and specific objectives for the policy measures to be subjected to evaluations and assessments. It is also recommended that DG Competition consider the possibilities of setting up a centralised database for indicators and make better use of existing databases and secondary data from international organisations and other Directorate-Generals of the European Commission. Finally, it is recommended that DG Competition reinforce the primary data collection activities by planning for stakeholder surveys and interviews for future ex-post evaluations and impact assessment and consider the potential for using more diverse methodological tools that could facilitate the assessment of the impacts of competition policy.

SYNTHESE

La Direction Générale de la Concurrence (DG Concurrence) de la Commission européenne a commandité une étude visant à soutenir le processus « d'amélioration du système d'indicateurs de suivi de la DG Concurrence pour les évaluations futures des politiques menées (évaluations ex post et analyses d'impact) » dans les domaines de l'antitrust, des aides d'Etats et du contrôle des concentrations.

L'objectif principal de l'étude consiste à identifier, catégoriser et systématiser les indicateurs de résultats et indicateurs d'impact, potentiellement pertinents pour un ensemble d'interventions de la DG Concurrence. Parallèlement, l'objectif de cette étude est d'analyser les différents indicateurs utilisés par les autorités nationales de la concurrence et des autres Directions Générale de la Commission, afin de fournir à la DG Concurrence un panel d'indicateurs supplémentaires qui pourront être utilisés dans les évaluations futures des politiques. Cette étude a également pour objectif de proposer des méthodes additionnelles de collecte de données pouvant répondre aux besoins de données dans le cadre des évaluations et études d'impact futures menées et d'offrir un certain nombre de recommandations à la DG Concurrence. Il est important de noter que l'identification de nouveaux indicateurs ne sous-entend aucunement l'intention de la DG Concurrence d'initier toute nouvelle politique ou de procéder à la révision des instruments existants relevant du champ de l'étude, à moins que cela ne fasse l'objet d'une annonce officielle par la DG Concurrence.

L'identification des indicateurs utilisés par la DG Concurrence s'est faite dans le cadre de l'analyse de 11 études d'impacts relatives à différents instruments politiques utilisés dans les domaines de l'antitrust, des aides d'Etats et du contrôle des concentrations. Plus de 500 indicateurs d'impact et de résultat ont été identifiés. Chacun d'entre eux a fait l'objet d'une analyse RACER¹ (pertinence, acceptabilité, crédibilité, facilité de suivi et robustesse). De plus, environ 170 indicateurs additionnels ont été proposés en compléments des indicateurs déjà utilisés par la DG Concurrence.

L'examen des indicateurs utilisés par d'autres organisations internationales a également abouti à l'identification d'un grand nombre d'indicateurs supplémentaires potentiels qui pourraient être examinés par la DG Concurrence. L'analyse a notamment porté sur l'activité de la Banque mondiale et de l'OCDE. Le travail de la Banque mondiale dans le domaine de la politique de la concurrence est étroitement lié aux objectifs de la politique de développement, de sorte qu'il a été possible d'identifier un certain nombre d'indicateurs directement liés à l'impact des différentes interventions de la politique de concurrence sur la pauvreté et les inégalités économiques. De tels indicateurs pourraient être considérés pour apprécier l'intervention de la DG Concurrence en matière de développement régional et de cohésion territoriale.

Parallèlement, l'examen du système d'indicateurs de suivi de l'OCDE a conduit à l'identification d'un certain nombre d'indicateurs pertinents pour évaluer les effets macroéconomiques de la politique de la concurrence. Compte tenu de la relation étroite entre la Commission européenne et l'OCDE, la liste des indicateurs identifiés

¹ The RACER criteria: relevant, accepted, credible, easy to monitor and robust.

utilisés par l'OCDE est étroitement liée aux indicateurs déjà utilisés par la DG Concurrence, mais les méthodes d'évaluation identifiées pourraient inspirer la DG Concurrence dans la conception de sa méthodologie d'évaluation ex-post des instruments de la politique de la concurrence.

L'examen des indicateurs utilisés par les autres Directions Générales de la Commission européenne a couvert près de 50 études d'impact des diverses mesures politiques prises par 9 directions générales. Les indicateurs identifiés pourraient être utiles pour la DG Concurrence dans la préparation d'évaluations plus complètes pour appréhender les effets économiques de la politique de concurrence sur les différentes industries et marchés, ainsi que sur l'économie dans son ensemble, les avantages distributifs pour les consommateurs ou encore l'impact sur l'environnement.

Concernant l'analyse des indicateurs utilisés par les différentes autorités nationales de la concurrence, elle s'est portée sur les autorités du Royaume-Uni, de la Suède, du Pays-Bas, du Canada, de l'Australie, de l'Allemagne et de la France. L'examen des indicateurs utilisés par les autorités nationales a permis de dégager des approches novatrices pour mesurer la réaction des parties prenantes aux mesures prises – par exemple eu égard au niveau de sécurité juridique, à la connaissance des normes en vigueur ou les activités de conformité – qui pourraient être utilisés par la DG Concurrence pour l'évaluation des mesures de la politique de concurrence de l'UE.

L'objectif de cette étude comprend également la proposition d'activités supplémentaires de collecte de données qui pourraient être mises en œuvre par la DG Concurrence pour répondre aux besoins identifiés dans son système d'indicateurs, en vue de renforcer les bases factuelles de l'évaluation des politiques, notamment des données liées aux indicateurs relatifs :

- à la charge administrative pour les autorités nationales;
- aux coûts de mise en conformité pour les entreprises;
- à la perception par les parties prenantes du degré de clarté, de certitude, de stabilité des normes en vigueur;
- au degré de connaissance des normes en vigueur et à leur mise en œuvre;
- à la quantification de l'impact de la politique de la concurrence sur des objectifs primordiaux tels que la performance environnementale, la performance en matière d'innovation, la dynamique de l'emploi, etc.

Afin de faciliter la planification des activités de collecte de données supplémentaires pour les évaluations futures, l'étude donne un aperçu des lacunes identifiées et propose de nouvelles sources de données. Elles sont présentées systématiquement pour chaque étude d'impact de la DG Concurrence examinée. Pour certaines études d'impact, les sources proposées incluent des bases de données existantes qui ont été identifiées comme pertinentes au cours de la recherche, tandis que pour d'autres, l'accent est principalement mis sur les activités de collecte de données primaires (entretiens et enquêtes). Les activités de collecte de données primaires proposées ont été sélectionnées pour répondre aux besoins de données anticipés des évaluations potentielles à mi-parcours ou ex-post de la mise en œuvre d'un ensemble de mesures ou dans le cadre d'évaluations d'impact des révisions possibles des politiques.

L'étude se conclut par plusieurs recommandations pratiques concernant les prochaines étapes pour la DG Concurrence afin d'améliorer son système d'indicateurs de suivi

pour ses évaluations futures. D'une part, il est recommandé à la DG Concurrence d'améliorer la cohérence entre les objectifs généraux et spécifiques des mesures politiques devant faire l'objet d'une évaluation. D'autre part, il est recommandé à la DG Concurrence de mettre en place une base de données centralisée pour les indicateurs identifiés et d'utiliser plus efficacement les bases de données déjà existantes, ainsi que les données mises à disposition par les différentes organisations internationales. Enfin, il est recommandé à la DG Concurrence de renforcer ses activités de collecte de données primaires en planifiant des enquêtes et entretiens avec les acteurs clefs des secteurs concernés, dans le cadre des évaluations ex-post et études d'impact futures; tout en considérant également la possibilité d'avoir recours à des outils méthodologiques plus diversifiés qui pourraient faciliter l'analyse des effets de la politiques de concurrence.

ABSTRACT

The study to support the process of "Improving the Monitoring Indicators System to support DG Competition's Future Policy Assessments" mapped, categorised and systematised *result* and *impact* indicators used by DG Competition in 11 Impact Assessments of policy instruments concerning the policy areas of antitrust, state aid and mergers. The study identified over 500 result and impact indicators which were assessed against the RACER criteria (relevant, accepted, credible, easy to monitor and robust). 170 additional indicators were proposed to reinforce the monitoring indicators system' of DG Competition.

The study also identified indicators measuring various economic, social and environmental effects of competition policy utilised by 9 other Directorate-Generals, 7 National Competition Authorities and 2 international organisations.

The study identified data gaps in the evidence base for indicators used by DG Competition and a number of data collection activities were proposed.

The findings of the study were supported by recommendations and advice on future action to reinforce the indicators' system and evidence base for policy assessments. The recommendations included inter alia: a more systematic approach towards the definition of objectives for policy instruments, setting up a centralised indicators database, better use of existent data sources and complemented with the use of systematic data collection and methodological tools.

RESUME

L'étude visant à soutenir le processus « d'amélioration du système d'indicateurs de suivi de la DG Concurrence pour soutenir les évaluations futures des politiques menées » identifie, catégorise et systématise les indicateurs de résultats et d'impact utilisés par la DG Concurrence dans le cadre de 11 études d'impact d'instruments de politique dans les domaines de l'antitrust, des aides d'Etats et du contrôle des concentrations. L'étude a permis d'identifier plus de 500 indicateurs qui ont fait l'objet d'une analyse RACER² (pertinence, acceptabilité, crédibilité, facilité de suivi et robustesse). 170 indicateurs additionnels ont été proposés afin d'améliorer le système d'indicateurs de suivis de la DG Concurrence.

L'étude a permis d'identifier des indicateurs pertinents pour la mesure des effets économiques, sociaux et environnementaux de la politique de concurrence, utilisés par 9 autres Directions Générales de la Commission européenne, 7 autorités nationales de la concurrence et 2 organisations internationales.

L'étude identifie également les lacunes existantes dans la base factuelle d'indicateurs utilisés actuellement par la DG Concurrence et propose des activités de collecte de données innovantes.

Les résultats de l'étude sont complétés par des recommandations et conseils afin de renforcer le système d'indicateurs à utiliser pour les évaluations futures des politiques menées. Les recommandations incluent notamment : une approche plus systématique dans la définition des objectifs des différents instruments de politique ; la mise en place d'une base de données centralisée d'indicateurs ; une meilleure utilisation des bases de données existantes et, enfin, l'utilisation systématique de la collecte de données et d'outils méthodologiques.

² RACER criteria: relevant, accepted, credible, easy to monitor and robust.

1. INTRODUCTION

The European Commission, DG Competition commissioned a study to support the process of “Improving the Monitoring Indicators System to support DG Competition's Future Policy Assessments (ex-post evaluations and impact assessments)” in the areas of antitrust enforcement, state aid and merger control.

This report presents the results of the research process.

The objective of the study was to map, categorise and systematise **result** and **impact** indicators that are potentially relevant for a set of policy interventions of DG Competition.³ Additionally, the aim of the study was to analyse the monitoring indicators used by national competition authorities and international organisations, as well as other Directorate-Generals, and to present DG Competition with additional indicators that could be utilised for future policy assessments.

The following sections provide more information on the methodology employed for this study. Several aspects of the research process should be taken into account when considering the approach and results of the study, as outlined in the following paragraphs.

As a starting point for this study, intervention logic models were developed for the set of interventions of DG Competition in focus. It should be noted that the models were developed on the basis of previous DG Competition *impact assessments*, as opposed to the *actual legal texts*.⁴ Furthermore, the intervention logics rely on the policy objectives as defined in the studied impact assessments. These objectives were also used to identify any gaps where insufficient indicators were mentioned to follow up progress in achieving one or more of the objectives.

For the purpose of future forward looking impact assessments which may include new objectives, DG Competition may make an indicator selection, as appropriate. Any new indicators selected would necessarily have to be aligned with the indicators defined in DG Competition's Strategic Plan 2016-2020 and Annual Management Plan.

It should be noted that the study has mapped and extracted indicators and provided their source, but it could not provide detailed information about their *context*. However, when using indicators for actual policy making or policy analysis, the context and the indicators' strengths and limitations need to be fully taken into account. This step was beyond the scope of this study, but it is natural that DG Competition would undertake it when conducting future evaluations or impact assessments.

The total number of indicators mapped and classified during the course of this study amounted to several hundreds. This certainly does not suggest that future evaluations

³ Output indicators related to DG Competition's case work were not in the scope of this assignment. Output figures are available on DG COMP's website.

⁴ For most of State aid guidelines and Block Exemption Regulations, the difference between the intervention logic initially set out in the IA report and the one actually underpinning the finally adopted legal text might be small. But for dossiers which have undergone the ordinary legislative procedure or similar procedures (like the Antitrust Damages Directive), the differences may be significant. But even for State aid guidelines and Block Exemption Regulations, the IA reports may have only provided a partial intervention logic regarding the changes introduced, not a full one about the entire Guideline or BER.

and impact assessments should use such a high number of indicators (rather the opposite, as is further recommended in section 0 of this report). However, the lists of indicators could serve as a useful starting point for further reflection for DG Competition.

Furthermore, it has to be understood that DG Competition does not commit to use any particular indicators from the lists of proposed indicators, when conducting future evaluations or impact assessments.

As regards the nature of the identified indicators, the study concentrated on indicators useful to assess the *intended* results and impacts of DG Competition's policies. It does not explicitly provide indicators that could be used for monitoring the *unintended* impacts. Furthermore, the study focused on individual indicators, normally not entailing statements about the existence of *causal effects* (a topic which would have to be studied in depth in an evaluation or an impact assessment). However, such indicators were also identified, especially in the review of the work done by international organisations and they have been presented where relevant.

2. METHODOLOGICAL APPROACH

The study encompassed three main tasks in relation to mapping indicators systems of the DG Competition but also other organisations.

Task 1 consists of mapping of the indicators utilised in 11 Impact Assessments⁵ conducted by DG Competition in connection to policy instruments in the policy areas of antitrust, state aid and mergers. The review of the Impact Assessment reports involved the reconstructions of the intervention logics of the policy instruments and the structured identification of qualitative and quantitative indicators used. Each indicator was classified as an impact or result indicator and linked to the general objectives/impacts and specific objectives/results of the intervention logic for the policy instruments. In addition, the indicators were assessed against the RACER criteria (relevant, accepted, credible, easy to monitor and robust) as defined by the European Commission's Better Regulation Guidelines.⁶ The approach for the RACER assessment is systematic in the sense that each indicator was evaluated against each of the RACER sub-criteria using a colour scale to indicate the degree to which it fulfils their requirements. However, it should be noted that this assessment involves a certain degree of subjectivity, as complete information about the indicators was not always available in the reviewed documents.

The approach towards Task 1 is further described in the Annex 1.

⁵ See Table 2.

⁶ See Better Regulation Guidelines: http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf

Table 1: RACER assessment - sub-criteria

Sub-criterion	Definition	Fully fulfilled	Partially fulfilled	Not fulfilled
Relevant	The indicator is a clear measure of the policy objective and is closely connected to the policy objective.			
Accepted	The indicator is generally accepted and utilised by relevant stakeholders and it is clearly defined. The role of the indicator must be clearly defined.			
Credible	The indicator provides unambiguous information to policy-makers and the general public (non-experts).			
Easy to monitor	The data required to measure the indicator is readily available (not excessive, expensive or onerous).			
Robust	The indicator is based on sound theory and robust against manipulation, avoids double counting and/or omissions and relies on reasonable assumptions.			

Task 2 covered the mapping of indicator systems used by other Directorate Generals (DGs) of the European Commission, several National Competition Authorities (NCAs) and other international organisations. The review focused mainly on impact assessments, studies and online databases from these entities with the goal of identifying additional indicators that could be used in measuring the results and impacts of DG Competition's policy instruments.

Task 3 involved the identification of data gaps and the provision of advice on how DG Competition could gather crucial missing data itself in the future in a cost-effective way, with the aim of improving the information basis for future impact assessments and evaluations.

The results of the research conducted are presented in the following sections of the report.

Section 3 presents the results of the mapping and analysis of indicators used by DG Competition in 11 Impact Assessments.

Section 4 presents the results of the mapping and analysis of indicators used by other institutions and organisations, including other European Commission Directorate-Generals, international organisations and National Competition Authorities.

Section 5 presents the results of the analysis of data gaps and alternative data sources that can be used by DG Competition in order to consolidate the evidence base for performing policy analysis.

Section 6 finally concludes upon the results of the analysis and provides recommendations for future research and practical advice for next steps.

3. MAPPING AND ANALYSIS OF THE INDICATORS USED BY DG COMPETITION

The following sections present the results of Task 1 of the assignment which covered 11 Impact Assessments conducted by DG Competition in connection to policy instruments related to the policy areas of antitrust, state aid and mergers. These are listed in Table 2.

Table 2: Overview of Impact Assessments

Policy area	Impact Assessment
Anti-trust	Directive regarding Damages actions for breach of the EU Antitrust Rules (pilot)
Anti-trust	Rules regarding Horizontal cooperation agreements, research and development agreements and certain categories of specialisation agreements
Anti-trust	Rules regarding Vertical agreements and concerted practices
State aid	Reform of the EU rules applicable to state aid in the form of public service compensation (pilot)
State aid	EU guidelines for the application of state aid rules in relation to rapid deployment of broadband networks
State Aid	Communication: Guidelines on State aid to promote risk finance investments
State Aid	Guidelines on State Aid for Environmental Protection and Energy 2014-20
State Aid	Guidelines on certain state aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012
State Aid	Guidelines on regional state aid for 2014 to 2020
State aid	Communication from the Commission framework for state aid for research and development and innovation
Merger control	White Paper - Towards more effective EU merger control

The Impact Assessments and the corresponding areas selected for the purpose of this study were proposed by DG Competition with consideration to several criteria of relevance. This selection does not necessarily imply that DG Competition intends to initiate a policy initiative or to conduct a revision in any of the areas or for any of the instruments falling under the scope of the study, unless such steps are formally announced.

The objectives of this task were:

- § To identify the result and impact indicators used in these assessments in connection to the general and specific objectives of the policy measures that were assessed.
- § To propose additional indicators to those used:

- At least one additional indicator (or proxy) that would be suitable for measuring progress in the achievement of each of the general and specific objectives of the assessed policy measures.
- At least two quantitative indicators able to capture/measure the qualitative concepts used in each of the 11 Impact Assessments.

Methodology

The review of each Impact Assessment report involved several steps:

- i. the reconstruction of the *intervention logic* of the policy instrument, in particular its general and specific objectives,
- ii. the structured identification of qualitative and quantitative *indicators* mentioned in the IA report,
- iii. the classification of each indicator found as an *impact* or a *result* indicator,
- iv. the identification of links between the *impact* indicators and the general objectives (and between the *result* indicators and the specific objectives) of the policy instrument, and
- v. the assessment whether there are *any gaps*, and *proposals* for indicators that could fill the gaps.

For further methodological explanations, please see Annex 1.

Results of the analysis

Steps (i) to (iv) above resulted in long lists of indicators for each of the 11 IAs listed in Table 2. In total, more than 500 result and impact indicators were identified. The full lists are presented in Annex 2.

Where gaps were identified in step (v) mentioned above, the study envisaged the identification of additional relevant indicators:

- Table 3 to Table 13 present an overview of all additional indicators proposed in. In total, more than 170 additional indicators were proposed as potential supplements to the indicators already included in DG Competition's work. The proposed indicators have been selected so as to address aspects of the general and specific objectives that had not been fully considered in the impact assessments, but which could be relevant in the future for DG Competition for performing a more complete assessment of the results and impacts of the implementation of the policy measures.
- Table 14_presents a number of cross-cutting indicators (i.e. indicators relevant for more than one competition policy area) that emerged in the process of data collection. This table can give a quick overview of ideas relevant for any future evaluation or IA of DG Competition, regardless of the precise topic.

In a further step, the feasibility of obtaining data for each of the proposed additional indicators was considered, and the final selection for the report focuses on indicators that can be assessed on the basis of existing datasets or via planned ad-hoc surveys or interviews in connection to evaluations and impact assessments.

Outlook on the next thirty pages of the report:

The remaining part of chapter 3 (Table 3 to Table 13) presents the lists of ***additional indicators proposed to fill identified gaps***.

Each table is ordered according to the general or specific objectives of each policy instrument to which the gaps are related – mentioned in the first column.

Each table should be read in the conjunction with the relevant table listed in Annex 2 about the ***indicators found*** in each of the 11 IA reports.

3.1. Impact Assessment Proposal for an Anti-trust Damages Directive

In 2013, the European Commission conducted an *Impact Assessment to assess the impact of the Directive on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union.*

The general objectives of the legal instrument stated in the impact assessment are: (a) *maintain effective enforcement of competition rules by regulating key aspects between public and private enforcement*; (b) *ensure an effective exercise of the EU right to compensation.*

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *protection of effective public enforcement*; (b) *full compensation*; (c) *greater awareness of the rules and deterrence, increased enforcement and improved compliance, to the benefit of Europe's competitiveness*; (d) *access to justice*; (e) *appropriate and efficient use of the judicial system*; (f) *a more level playing field and increased legal certainty for businesses operating throughout Europe*; (g) *providing benefits for SMEs*; (h) *stimulating economic growth and innovation.*

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 3 IA Proposal for an Anti-trust Damages Directive: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Maintain effective interaction between public and private enforcement	Degree of effective interaction between public and private enforcement	Qualitative Impact Indicator	Assessment of interaction between public and private enforcement: how well does public and private enforcement complement each other?	Scale	Survey with national authorities	Ad-hoc	The legal provisions have the aim of ensuring effective interaction between public and private enforcement. A possible indicator is suggested to measure the extent to which this objective is achieved,
Ensure effective exercise of right to compensation	Effectiveness of the rule of law in ensuring effective exercise of right to compensation	Qualitative Impact Indicator	Assessment by stakeholders of the extent to which the legal provisions allow for an effective exercise of the right to compensation	Scale	Survey with stakeholders	Ad-hoc	The legal provisions have the aim of ensuring effective exercise of the right to compensation. A possible indicator is suggested to measure the extent to which this objective is achieved,

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Protection of effective public enforcement	Degree of legal certainty of the interaction between public / private enforcement	Quantitative Result Indicator	Benchmark / Index of certainty ⁷ of rules [Proxies for the index can include: predictability, stability over time]	Scale	See for example p. 46ff. ⁸	Divergent rules on public enforcement	Legal uncertainty in connection to de jure and de facto practices on disclosability of leniency-related documents is considered to be one of the main factors that affect effective public enforcement. The measurement of legal certainty of rules can be done in two manners: (a) measurement of perception – measuring subjective opinions of individuals to qualify the level of legal certainty, (b) factual measurements – indicators constructed on the basis of objective, directly observable facts. Based on this, an index for measuring legal certainty could be built.
Protection of effective public enforcement	[Trends in] the number of appeal cases on issues interpreting the Directive in connection to Art. 6(6)	Quantitative Result Indicator	[Trends in] the number of cases on appeal on issues interpreting the Directive in connection to leniency documents	Number	National Courts of Appeal CJEU	The Directive provides for the protection of leniency documents	According to Article 6(6) of the Directive, the Member States are obliged to ensure that national courts do not order a party or third party to disclose any evidence on leniency statements and/or settlement submissions. An indicator that is not mentioned in the IA but is important in relation to this is the extent to which appeal cases exist in relation to the interpretation of these provisions.
Greater awareness to rules, increased enforcement	Degree of willingness of injured parties to claim compensation	Quantitative Result Indicator	Number of cases where injured parties claim compensation	Number	DG COMP statistics / Survey	Low-Moderate willingness due to legal uncertainty	Strengthening enforcement and improving compliance of competition law can be enhanced by ensuring an effective private enforcement. Private enforcement is dependent on the willingness of injured parties to claim compensation for damages suffered as a result of infringements of competition law. Thus, the degree of willingness of injured parties to claim compensation can be measured through proxies (such as the type of harm for which compensation has been awarded, the type of victims reached, the type of actions brought).
Greater awareness to rules, increased enforcement	Degree of willingness of injured parties to claim compensation	Qualitative Result Indicator	Extent to which major plaintiffs are willing to seek compensation	Qualitative Assessment	Interviews / Survey ⁹	Low-Moderate willingness due to legal uncertainty	Indicator measuring the extent to which parties are willing to claim compensation for damage.
Greater awareness to rules, increased enforcement	[Trends in] number of class action funders	Quantitative Result Indicator	[Trends in] number of cases for damages with third party funding	Number	Interviews / Surveys	Not available	Third party funding is an alternative method of litigation funding where a commercial funder with no connection to the proceedings will pay some or all of the costs of the case in return for a share of any sum of money awarded in damages if you win your case. This indicator could be relevant to

⁷ Legal certainty represents the qualitative value of a legal system resulting from demands in terms of the quality of standards and the quality of the interpretation judges give them.

⁸ Civil Law Initiative (2015), Index of Legal Certainty: http://www.fondation-droitcontinental.org/en/wp-content/uploads/2015/06/NS_Rapport-complet-5-juin-2015_EN.pdf.

⁹ For example, identify the major plaintiff law firms or consumer organisations that take cases and interview them on their willingness to seek compensation.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
							measure the degree of awareness to the rules.
Stimulating economic growth and innovation	Annual welfare benefits from deterring the exercise of market power through antitrust laws	Quantitative Result Indicator	Total annual welfare benefits arising from enforcing anti-trust rules [as % of GDP]	%	e.g. calculated based on estimates of case studies	Not available	The annual welfare benefits from deterring the exercise of market power through anti-trust laws can be measured as a percentage of the GDP, according to literature on the topic. Thus, this can be a potential indicator to measure the impact of the initiative.
Level playing field	Degree of consistent interpretation of the rules by the national courts	Qualitative Result Indicator	Benchmark the extent to which a uniform interpretation of the rules exists in the national courts of all Member States	Scale	National courts	Not available	Consistent interpretation of the rules by NCAs is important in order to ensure the same treatment of parties involved in litigations related to anti-trust damages. The indicator can be used to measure equal treatment of plaintiffs in cases involving cross-border litigations.
Full compensation	Extent to which enforcement leads to over-deterrence	Qualitative Result Indicator	Businesses' experience of over-deterrence: how often does the competition regime deter anti-competitive behaviour that would not have lessened competition? (always-never)	Scale	Survey with businesses	Not available	As further explained in the IA, "full compensation" represents an objective of the proposed Directive. Cases of under-compensation can be established by looking at who the eligible plaintiffs are and who received actual compensation for damages. This could allow testing under-compensation. For example, if a cartel harms direct and indirect buyers but only direct buyers sue and receive damages, this would be clear case of under-compensation. Cases of over-deterrence and/or over-compensation can be assessed by performing a survey with businesses.
Access to justice	Degree of access to justice	Quantitative Impact Indicator	Index of costs and quality of access to justice	Number	EU Justice Scoreboard	Not available	Guaranteeing efficient access to justice entails ensuring that the costs related to proceedings do not deter victims from claiming damages and a high quality of the procedures. Proxies can include: costs of the procedure (monetary costs, opportunity costs), quality of the procedure (procedural justice), quality of the outcome (distributive justice, restorative justice, transparency).
Access to justice	Degree of access to justice	Qualitative Impact Indicator	Assessment by relevant stakeholders of the degree of access to justice granted by the Damages Directive	Qualitative Assessment	Interviews / Surveys [consumers, businesses, SMEs]	Not available	Ibid. supra.
Appropriate and efficient use of the judicial system	Degree of use of consensual dispute resolution mechanisms	Quantitative Result Indicator	Number of cases out-of-court-settlements	Number	Stakeholders consultation	Not available	An appropriate and efficient use of the judicial system also entails an effective possibility to engage in consensual dispute resolution which is considered to reduce the costs.
Benefits to SMEs	Trend in estimated costs	Quantitative	Trends in the estimated	EUR	Stakeholder	Not available	The IA specifies that the proposal for the Directive

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
and [consumers]	of litigation for SMEs	Result Indicator	costs of litigation for SMEs resulting from infringements per year		consultation [SMEs, law firms]		aims at enhancing the stance of SMEs in claiming damages. The costs of litigation can be an obstacle for SMEs in claiming damages.
Benefits to SMEs and [consumers]	Trend in estimated costs of litigation for consumers	Quantitative Result Indicator	Trends in the estimated costs of litigation for consumers	EUR	Stakeholder consultation [SMEs, law firms]	Not available	The indicator would measure the impact of the Directive on consumers claiming damages.
Benefits to SMEs and [consumers]	Trends in the number of follow-on actions from SMEs	Quantitative Result Indicator	Trends in the number of claims for damaged from SMEs	Nº	Stakeholder consultation [National courts, SMEs]	Not available	Trends in the number of follow-on actions from SMEs [a direct measure of the effectiveness of the Directive in enhancing the stance of SMEs to claim damages] would indicate the impact of the Directive on SMEs.

3.2. Impact Assessment Vertical Agreements

In 2010, the European Commission conducted *an Impact assessment concerning the review of the Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to categories of vertical and concerted practices and the Guidelines on Vertical Restraints*. The review was initiated in 2008 and was warranted given the expiry of the Regulation on 31st of May 2010. The review included an assessment of the functioning of the rules and the identification of areas for improvement in light of market developments.

The general objectives of the legal instrument stated in the impact assessment are: *(a) ensure undistorted and effective competition in European supply and distribution that benefits consumers; (b) ensure competitive markets that foster innovation.*

The specific objective of the legal instrument mentioned in the in the impact assessment are: *(a) enable EC, NCA, national courts to take effective enforcement against vertical restraints, (b) deter powerful buyers from concluding agreements including anti-competitive vertical restraints; (c) exclusive distribution: strike balance to allow EU consumers to fully take advantage of the internet to overcome geographic barriers and to allow manufacturers to prevent free riding between distributors; (d) selective distribution: strike balance between the need to impose conditions on distributors (brick and mortar shop) and consumers interested of benefitting from new forms of online distribution.*

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 4 IA Vertical Agreements: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Ensure effective and undistorted competition in supply and distribution that benefits the consumers	Market performance index	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes	Number	DG JUST, Consumer Markets Scoreboard	See scoreboard	The MPI contains market performance information per sector for services and goods. In the case of vertical agreements, the indicator can be used to perform an analysis of market development.
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of commitment decisions concerning vertical agreements	Quantitative Result Indicator	Trends in the number of commitment decisions taken by the EC concerning vertical agreements	Number	EC	Not available	The EC can take two types of decisions when pursuing a case. "Commitment decisions" (Article 9 decisions) can be taken and they allow companies to offer commitments to address competition issues. In such cases, the Commission does not impose remedies as it is based on the commitments offered voluntarily by

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
							undertakings concerns.
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of prohibition decisions involving vertical agreements	Quantitative Result Indicator	Trends in the number of prohibition decisions involving vertical agreements	Number	EC	Not available	In addition to commitment decisions, the EC can take prohibition decisions, whereby the Commission imposes suitable remedies to bring the infringement to an end – i.e. impose or not a fine. The number of prohibition decisions can be an indicator of the enforcement rate.
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of infringement decisions taken by national authorities	Quantitative Result Indicator	Trends in the number of infringement decisions taken by national competition authorities [measuring the deterrence effect]	Number	NCA's [Survey/ Interview]	Not available	The indicator would provide information concerning the deterrence effect of the rules.
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of investigations by NCA's on vertical agreements in online markets	Quantitative Result Indicator	Trends in the number of investigations that NCA's undertake in connection to vertical agreements in online markets	Number	NCA's [Survey/ Interview]	Not available	The indicator would provide information concerning the deterrence effect of the rules in particular in connection to investigations in markets where goods/services are traded online.
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the amount of human resources of NCA's dealing with vertical agreements per MS	Quantitative Result Indicator	Trends in the number of FTEs per NCA dealing with harmful vertical agreements per MS	FTE	NCA's [Survey/ Interview]	Not available	The impact assessment also investigates the impact that the policy will have on public administration in terms of administrative burden and workload. Some quantitative and more concrete estimates of the administrative burden are the two additional indicators proposed.
Effective enforcement against vertical restraints	Trends in the amount of financial resources of NCA's dealing with vertical agreements	Quantitative Result Indicator	Trends in the total expenditure of NCA's for dealing with vertical agreements	EUR	NCA's [Survey/ Interview]	Not available	The impact assessment also investigates the impact that the policy will have on public administration in terms of administrative burden and workload. Some quantitative and more concrete estimates of the administrative burden are the two additional indicators proposed.
Development of effective online distribution and advantages to consumers	Rate of "digitization" of certain types of goods**	Quantitative Impact Indicator	Measured, for example through, by comparing the trend in sales of electronic goods versus traditional goods	EUR / %	Industry statistics	Not available	The IA specifies that one of the impacts of the proposals could have would be 'dematerialisation' of certain goods and that this is a benefit (para.169). A sector specific approach to measuring this phenomenon could be taken, for example by measuring the sales of electronic goods versus traditional goods.
Development of effective online distribution and advantages to consumers	Share of enterprises with e-sales	Quantitative Impact Indicator	Percentage of enterprises with e-sale	%	Eurostat [Statista]	Aggregate indicator – see Eurostat	The indicator would measure the effect of the rules on e-sales.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Development of effective online distribution and advantages to consumers	Amount of turnover from e-sales	Quantitative Impact Indicator	Amount of turnover from e-sales as a percentage of total turnover	%	Eurostat [Statista]	Aggregate indicator – See Eurostat	The indicator would measure the effect of the rules on e-sales.
Development of effective online [cross-border] distribution and advantages to consumers	Domestic and cross-border internet purchases	Quantitative Impact Indicator	Survey question: <i>In the past 12 months, have you purchased any goods or services via the Internet (website, email etc.) in (OUR COUNTRY) or elsewhere in any of the following way from local sellers / providers, from sellers/ providers in other EU countries?</i>	%	Eurobarometer	See Eurobarometer	The indicator would measure the extent to which domestic and cross-border internet purchases are affected by competition on the market.
Development of effective online distribution and advantages to consumers	Levels of confidence in domestic online purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from retailers / providers in your country?</i>	% of respondents	Eurobarometer	See Eurobarometer	The indicator would measure the extent to which consumers have confidence in utilising online purchases.
Development of effective online [cross-border] distribution and advantages to consumers	Levels of confidence in cross-border EU purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from another EU country?</i>	% of respondents	Eurobarometer	See Eurobarometer	The indicator would measure the extent to which consumers have confidence in utilising online purchases.
Development of effective online distribution and advantages to consumers	Trends in the number of "brick-and-mortar" shops that also have electronic sales	Quantitative Result Indicator	Trends in the number of stores that have a "brick-and-mortar" shop and also have electronic sales	Number	Industry statistics Assessment by industry representatives	Not available	An implicit objective of the implementation of the rules can be considered the further expansion of new forms of distribution [67]. The indicators proposed can help measure the expansion of new forms of distribution which can be correlated with the rules.
Development of effective online distribution and advantages to consumers	Trend in the number of outlets that have only online distribution	Quantitative Result Indicator	Trends in the number of outlets that have only online distributions	Number	Industry statistics Assessment by industry representatives	Not available	An implicit objective of the implementation of the rules can be considered the further expansion of new forms of distribution [67]. The indicators proposed can help measure the expansion of new forms of distribution which can be correlated with the rules.
Effective distribution models and advantages to consumers	Variety of distribution methods that are used on the market [per sector]	Qualitative Results Indicator	Number of distribution models used on the market per sector	Qualitative Assessment	Interviews, Market Analysis	Not available	The degree of experimentation with distribution models and the variety in the ways goods are distributed could be an indicator of how competitive a market is.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Development of effective online distribution and advantages to consumers	Trends in the number of price comparison websites	Quantitative Result Indicator	Trends in the number of price comparison websites	Number	Industry statistics Assessment by industry representatives	Not available	Growth of price comparison websites (meta-search engines) can show that there is competition in the market for on line distribution.
Development of effective online distribution and advantages to consumers	Number of distributors developing own websites compared to the number of distributors using existent online retailers	Quantitative Result Indicator	Comparison between the number of distributors developing their own websites with the number of distributors using existent online retailers	Number	Stakeholder survey	Not available	The number of distributors that develop their own websites as opposed to using existing on line retailers (e.g. Amazon) can indicate whether there is high concentration of sales through a small number of online retail channels which would imposed competition issues.

3.3. Impact Assessment Horizontal Agreements

In 2010, the European Commission conducted an *impact assessment of the Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal cooperation agreements, the Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to certain categories of research and development agreements and the Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to certain categories of specialisation agreements*.

The general objectives of the legal instrument stated in the impact assessment are: (a) *ensuring effective competition for the benefit of European businesses and consumers*; (b) *further competitiveness and innovation*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *simplify administrative supervision by providing a framework for the EC, NCAs and national courts for the assessment of horizontal cooperation agreements*; (c) *increase legal certainty concerning standardisation agreements and provide guidance on (competition law related) problems created by the increased use of IPR in standards*; (d) *increase legal certainty and provide guidance on the assessment of information exchange under EU competition rules*; (increase legal certainty and provide guidance on specialisation BER ensuring their contribution to market efficiency).

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 5 *IA Horizontal Agreements*: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Ensure effective competition to the benefit of consumers	Market performance index	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes	Number	DG JUST, Consumer Markets Scoreboard	See Scoreboard	The MPI contains market performance information per sector for services and goods. In the case of horizontal agreements, the indicator can be used to perform an analysis of market development.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Further competitiveness and innovation [Licencing trends]	License and patent revenues from non-EU firms as percentage of GDP ¹⁰	Quantitative Impact Indicator	Income earned by allowing non-EU firms to use copyrighted or patented material	%	Innovation Union Scoreboard	Data available for 2000 (1) and 2009 at aggregate level	License and patent revenues capture disembodied technology exports. License and patent revenues are a measure of the commercialisation of countries' Intellectual Property by measuring the income earned by allowing foreign firms to use copyrighted or patented material.
Further competitiveness and innovation [Development of licencing agreements/ Licencing trends]	Weight of patents	Quantitative Impact Indicator	Average citation frequency of patents	Number	Electronic databases	Not available	The weight of patents is an indicator of innovation performance. The overarching objective of the guidelines for horizontal cooperation agreements, research and development agreements and specialisation agreements is to further competitiveness and innovation. The indicator could serve to measure the progress towards this goal.
Further competitiveness and innovation [Patents and R&D agreements]	Number of patents resulting from R&D horizontal agreements	Quantitative Impact Indicator	Number of patents resulting from R&D horizontal agreements	Number	Stakeholder consultation [interviews]	Not available	The number of patents is an indicator of innovation performance. Determining the total number of patents that result from R&D horizontal agreements per Member State could support the measurement of the impact of horizontal agreements on innovation performance.
Simplify administrative supervision / create framework	Estimated amount of financial resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	EUR	Stakeholder consultation [Interviews NCAs and EC]	Not available	The impreciseness or lack of certainty of the rules on conclusion of horizontal agreements can give rise to the need of NCAs or the Commission to provide clarifications to stakeholders, in particular to support the self-assessment of compliance of agreements with the competition rules. This can imply an additional administrative burden for the NCAs and the EC which can be measured through the proposed indicator.
Simplify administrative supervision / create framework	Estimated amount of human resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	FTE	Stakeholder consultation [Interviews NCAs, EC]	Not available	The impreciseness or lack of certainty of the rules on conclusion of horizontal agreements can give rise to the need of NCAs or the Commission to provide clarifications to stakeholders, in particular to support the self-assessment of compliance of agreements with the competition rules. This can imply an additional administrative burden for the NCAs and the EC which can be measured through

¹⁰ License and patent revenues capture disembodied technology exports. License and patent revenues are a measure of the commercialisation of countries' Intellectual Property by measuring the income earned by allowing foreign firms to use copyrighted or patented material.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
							the proposed indicator.
Simplify administrative supervision / create framework	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	EUR	Stakeholder consultation [Interviews businesses]	Not available	The guidelines have the aim of decreasing the administrative burden associated with ensuring compliance with the rules on conclusion of horizontal agreements. As such, an indicator measuring the estimated costs of ensuring compliance for undertakings is relevant to measure performance against this objective.
Simplify administrative supervision / create framework	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	FTEs	Stakeholder consultation [Interviews businesses]	Not available	The guidelines have the aim of decreasing the administrative burden associated with ensuring compliance with the rules on conclusion of horizontal agreements. As such, an indicator measuring the estimated costs of ensuring compliance for undertakings is relevant to measure performance against this objective.
Increased legal certainty/ Guidance on standardisation	Degree of clarity of rules on standard development	Qualitative Result Indicator	Benchmarking/Index of the extent to which the rules are clear, easy to implement by standard setting organisations and other parties	Scale	Stakeholder consultation [Survey national authorities, businesses, consumers]	Not available	The amendments to the legislation have the aim of clarifying the rules on the conclusion of standard agreements. The indicator is a measure of the effectiveness of achieving this objective.
Increased legal certainty/ Guidance on standardisation	Impact on standard-setting organisations	Qualitative Result Indicator	Qualitative assessment of the effect of the rules on the work of standard-setting organisations	Qualitative assessment	Stakeholder consultation [Interviews standard-setting organisations]	Not available	The modification of the rules can have an impact on the work of standard-setting organisations. By performing a qualitative assessment of this indicator, the evaluators would be able to measure whether such an effect is present or not and measure it.
Increased legal certainty/ Guidance on standardisation	Degree of willingness of stakeholders to disclose IPR	Qualitative Result Indicator	Comparison of stakeholder perception of the extent to which IPR holders are willing to unilaterally disclose IPR before and after the clarification of the rules	[Scale]	Stakeholder consultation [Interviews IPR holders]	Not available	The IA explores the clarification of ex-ante disclosure of intellectual property rights [see Standardisation sections in IA]. The effectiveness of the clarification of the rules can be measured through the degree of willingness of stakeholders to make use of such ex-ante disclosure of IPR.
Increase legal certainty / Information exchanges	Likelihood of businesses to respect rules on information exchanges	Qualitative Result Indicator	Assessment by businesses of the probability of respecting the guiding principles on information exchanges	[Scale]	Stakeholder consultation [Survey]	Not available	The IA explores the clarification of the rules concerning information exchanges. The effectiveness of the clarification process can be measured through consultation with the

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
							stakeholders to benchmark whether clear rules have been achieved.
Increase legal certainty / Information exchanges	Degree of legal clarity of rules concerning information exchanges	Qualitative Result Indicator	Comparison of the stakeholder perception of the extent to which rules on information exchanges between undertakings are clear before and after the clarification of the rules	[Scale]	Stakeholder consultation [Survey national authorities, businesses, consumers]	Not available	The IA explores the clarification of the rules concerning information exchanges. The effectiveness of the clarification process can be measured through consultation with the stakeholders to benchmark whether businesses are likely to respect the rules.
Increase legal certainty / Specialisation BER	Degree of legal clarity of guidance on specialisation BER	Qualitative Result Indicator	Assessment by stakeholders of the degree of legal clarity of guidance on specialisation BER	[Scale]	Stakeholder consultation [Survey national authorities, businesses, consumers]	Not available	The indicator measures the extent to which the revised specialisation BER provides legal clarity by ensuring that the guidelines cover most but also only scenarios where it can be assumed with reasonable certainty that the anticipated efficiencies generated by the covered agreements outweigh any negative effects.

3.4. Impact Assessment State Aid SGEI

In 2011, the European Commission conducted an Impact Assessment to assess the impact of reforming the EU rules applicable to State aid in the form of public service compensation.

The general objective of the legal instrument stated in the impact assessment was to *boost the contribution that SGEIs can make to the wider EU economy*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: *(a) clarify the concepts for the application of state aid rules to SGEI, including the scope of those rules and the condition for the approval of SGEI aid by the Commission, (b) diversified and proportionate approach to the different types of SGEIs*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 6 *State Aid SGEI*: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Boost the contribution that SGEIs can make to the wider EU economy	Average direct contribution of SGEI providers receiving state aid to the EU GDP	Quantitative impact indicator	Value added in SGEI sectors backed by state aid compared to EU GDP for a given time period	%, EUR	Eurostat, OECD, National statistics, COM data from notifications	Not available	The indicator aims at measuring specifically the contribution of SGEI sectors where state aid is known to be granted, as the existing indicators only look at the overall contribution by SGEI sectors.
Boost the contribution that SGEIs can make to the wider EU economy	[Share of] investments carried out by SGEI providers receiving state aid	Quantitative impact indicator	Investments carried out by SGEI providers receiving state aid for a given time period compared to total investments in the EU	%	Eurostat, OECD, National statistics, COM data from notifications	Not available	The indicator aims at measuring specifically the investments carried out by SGEI providers receiving state aid, as the existing indicators only look at the overall investments in SGEI sector.
Boost the contribution that SGEIs can make to the wider EU economy	Amount/share of cross-border provision of SGEIs	Quantitative impact indicator	Number/Volume/Share of contracts (above procurement thresholds) in the area of SGEI awarded to providers established outside of the MS of the contracting authorities	Number of contracts Volume of contract	TED data	Not available	Improved competition in the SGEI market measures in terms of increased cross-border provision of SGEI services can be expected to have positive effects the wider EU economy/internal market.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Boost the contribution that SGEIs can make to the wider EU economy	Number of new SGEI providers that emerge as a result of the simplification of the rules for state aid	Quantitative impact indicator	Number of new companies providing SGEI in a MS/per MS/across the EU (in a particular sector) within a given period of time	Number of companies	Not specified	Not available	The emergence of new SGEI providers is a positive sign of increased competition in the sectors concerned and positive effects for the economy.
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of clarifying state aid law requirements	Quantitative result indicator	Costs spent by SGEI providers and authorities on clarifying state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with SGEI providers and authorities	Not available	This indicator aims to generate more robust estimates of the costs of clarifying state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of implementing state aid law requirements	Quantitative result indicator	Costs of SGEI providers and authorities in connection to implementing state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with SGEI providers and authorities	Not available	This indicator aims to generate more robust estimates of the costs of implementing state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Clarify key concepts relevant for the application of State aid rules to SGEI	Financial resources spent on clarifying state aid law	Quantitative result indicator	Financial resources spent by granting authorities on clarifying state aid law requirements for a given period of time per MS/in the EU	EUR per unit of time	Interviews with authorities	Not available	This indicator aims to generate more robust estimates of the financial costs of clarifying state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Diversified and proportionate approach to the different types of SGEIs	Number of cases where overcompensation test and competition test are applied (cases of most serious competition distortions)	Quantitative result indicator	Number of cases where overcompensation test and competition test are applied for a given period of time	%	Commission database	Not available	The IA does not feature any indicators for measuring the implementation of the requirements of overcompensation test and competition test and the proposed indicator aims to address that.
Diversified and proportionate approach to the different types of SGEIs	Number/share of cases of inclusion of efficiency incentives in the compensation scheme	Quantitative result indicator	Number of cases where efficiency incentives are included in the compensation scheme for a given period of time	%	-	Not available	The IA does not feature any indicators for measuring the implementation of the requirement to include efficiency incentives and the proposed indicator aims to address that.

3.5. Impact Assessment Broadband state aid

In 2012, the European Commission conducted an *Impact Assessment to assess the impact of a change in the EU Guidelines for the application of state aid rules in relation to rapid deployment of broadband networks*.

The general objective of the legal instrument stated in the impact assessment was to *increase economic growth and consumer welfare by wide and rapid deployment of broadband networks in a market competitive landscape*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: *(a) correct the market failure of the lack of suitable broadband infrastructure by stimulating infrastructure deployment, (b) ensure and open and competitive market, (c) minimise administrative burden on national authorities, commercial operators and the EC*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 7: *Broadband state aid*: Overview of proposed potential indicators¹¹

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Increase economic growth and consumer welfare	Multiplier effect of the broadband aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Not available	Relevant to measure the effect that aid has on furthering economic growth and competitiveness.

¹¹ In addition to the list of indicators from above, additional indicators relating to the following aspects could also be considered in the development of an impact assessment or evaluation, such as: market information: target areas, target consumers, operators, available services, coverage, penetration, prices; information on projects: timeframe and milestones, entry into operation, allocated aid amounts, cost covered by the aid, aid intensity, services required (minimum speed, services provided to consumers), step change, technological neutrality; detailed mapping and coverage analysis; competitive section process; use of existing infrastructure; wholesale access and price benchmarking, claw-back mechanism, design of the monitoring mechanisms, horizontal separation, vertical separation, any alternative measure implemented in the targeted areas, regulatory conditions.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Increase economic growth and consumer welfare	Direct employment created by broadband rollout per year per MS/ region	Quantitative Impact Indicator	Number [% of the total] of direct jobs [<i>involved directly in the deployment of networks - telecom technicians, construction workers, civil engineers etc.</i>] generated by the rollout of broadband per MS/ region compared against the baseline [prior to the adoption of SA rules] Number of jobs created indirectly (through spill over to other sectors) by broadband rollout	Number or %	EU or MSs statistics	DG CNECT, IA costs deployment high-speed networks, p. 61	Broadband deployment can have a direct impact on employment by giving momentum to the creation of jobs directly connected to the deployment of networks. Measuring the effect that broadband deployment has on job creation and correlating that to the presence or absence of aid in the sector can provide an indication of the effect of SA given for broadband deployment on employment.
Increase economic growth and consumer welfare	Indirect employment created by broadband rollout per year per MS/region	Quantitative Impact Indicator	Number [% of the total] of jobs generated in industries supplying inputs to network deployment sectors [e.g. electrical equipment workers] per MS/region compared against the baseline [prior to the adoption of SA rules]	Number or %	EU or MSs statistics	DG CNECT, IA costs deployment high-speed networks, p. 61	Broadband deployment can have an indirect impact on employment by giving momentum to the creation of jobs indirectly connected to the deployment of networks. Measuring the effect that broadband deployment has on the creation of indirect jobs and correlating that to the presence or absence of aid in the sector can provide an indication of the effect of SA given for broadband deployment on employment.
Increase economic growth and consumer welfare	Households with access to the Internet at home	Quantitative Impact Indicator	Number of households with access to internet	Number	Eurostat, Table isoc_bde15b_h: Broadband and connectivity - households	See link	The indicator measures the quality of broadband provision and the impact broadband roll-out has on consumer welfare (general objective).
Increase economic growth and consumer welfare	Affordability of standalone Fixed Internet Access (minimum price offer)	Quantitative Impact Indicator	Affordability is defined as 12x the monthly price divided by the "real adjusted gross disposable income of households per capita" of the previous year. ¹²	EUR	Digital Agenda indicators - Broadband Internet Access Cost (BIAC) annual studies ¹³	See link ¹⁴	The indicator measures the quality of broadband provision and the impact broadband roll-out has on consumer welfare (general objective).

¹² Disposable income data come from Eurostat table tec00113. Monthly price of standalone Fixed Broadband Internet Access offers, include value added tax, exclude the additional cost of telephony or cable line (if any), and refers to the minimum price in the group of similar subscriptions offered by internet service providers.

¹³ European Commission, Digital Agenda Indicators: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹⁴ European Commission, Digital Single Market: <https://ec.europa.eu/digital-single-market/en/connectivity>

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Increase economic growth and consumer welfare	Actual download speed of fixed broadband subscriptions	Quantitative Impact Indicator	Average Download Speed during peak periods (ACTSPEED), measured with a specially configured hardware device (SamKnows Whitebox), which runs a series of purpose-built tests to measure various aspect of Internet performance. ¹⁵	Mbit/s	Digital Agenda indicators - Study on "Quality of Broadband Services in the EU" SMART 2010/0036 ¹⁶	See link ¹⁷	The indicator measures the quality of broadband provision and the impact broadband roll-out has on consumer welfare (general objective).
Correct market failure /Stimulate infrastructure deployment	Trends in standard fixed broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks	%	Digital Agenda indicators - Point Topic Study on broadband coverage ¹⁸	See link	The indicator measures the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.
Correct market failure /Stimulate infrastructure deployment	Trends in Rural standard fixed broadband coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks. Rural areas are defined as those with less than 100 people per km2	%	Digital Agenda indicators - Point Topic Study on broadband coverage ¹⁹	See link	The indicator measures the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.
Correct market failure /Stimulate infrastructure deployment	NGA broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by NGA. Next Generation Access includes the following technologies: FTTH, FTTB, Cable Docsis 3.0, VDSL and other superfast broadband (at least 30	%	Digital Agenda indicators - Point Topic Study on broadband coverage ²⁰	See link	The indicator measures the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.

¹⁵ The measured speed refers to a sample of subscriptions using a similar technology offered by internet service providers. Offers are not weighted with market shares, so the measured speed cannot be interpreted as the average experienced by consumers.

¹⁶ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

¹⁷ European Commission, Digital Single Market: <https://ec.europa.eu/digital-single-market/en/connectivity>.

¹⁸ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

¹⁹ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

²⁰ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			Mbps download)				
Correct market failure /Stimulate infrastructure deployment	Rate of roll out of NGA per year	Quantitative Impact Indicator	Trends in NGA coverage in the EU per year	%	BEREC Statistics	See BEREC Report ²¹	The indicator measures the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.
Correct market failure /Stimulate infrastructure deployment	Rate of rural NGA coverage	Quantitative Impact Indicator	Trends in NGA coverage for rural areas in the EU per year	%	BEREC Statistics	See BEREC Report	The indicator measures the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.
Ensure open and competitive market	Trends in total investment in networks by the electronic communications sector	Quantitative Result Indicator	Total investment includes both tangible and intangible investment in telecommunication networks (without license fees) by all telecom operators	Number	Digital Agenda indicators - Communications Committee survey ²²	See link ²³	The indicator measures the amount of investments made by private entities in telecommunications networks. This can serve to analyse whether there is a crowding out effect as a result of state aid provided to support networks deployment.
Ensure open and competitive market	Crowding out effect of SA	Quantitative Impact Indicator	Amount of investments in broadband infrastructure that would have taken place absent the SA	% or Number	Stakeholder assessment [e.g. interviews or survey]	Not available	The indicator measures the amount of private investments that would have taken place absent the SA for network deployment. The data for the indicator would be collected through interviews or surveys with key stakeholders and would allow DG Competition to measure the crowding out effect that has been avoided by performing careful scrutiny before approving broadband state aid.
Ensure open and competitive market	Herfindahl index on broadband competition	Quantitative Result Indicator	Herfindahl index calculated for seven different connection technologies: xDSL, full or shared LLU, Cable, FTTH, FTTB, Other NGA, Other. Their respective market shares are expressed in percentage of all fixed broadband subscriptions. ²⁴	Number	Digital Agenda indicators - Communications Committee survey ²⁵	See link ²⁶	The indicator would measure the amount of competition on the broadband market. The indicator would support the measurement of whether distortions of competition appear as a result of state aid granted for broadband deployment.

²¹ BEREC (2016); Challenges and drivers of NGA rollout and infrastructure competition; retrieved from: http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/6488-berec-report-challenges-and-drivers-of-nga-rollout-and-infrastructure-competition.

²² European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

²³ European Commission, Digital Single Market: <https://ec.europa.eu/digital-single-market/en/connectivity>.

²⁴ A small index indicates a competitive industry with no dominant technological platform. The index values raises with concentration over one or few platforms.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Ensure open and competitive market	Amount / Share of network infrastructure investments cross-border	Quantitative Result Indicator	Number / Volume /Share of contracts awarded to providers outside the established MS by contracting authorities	Number or volume (EUR)	TED	Not available	The openness of the market which is one of the specific objectives of the guidelines can be measured by looking at the share of network infrastructure investments cross-border. This was not identified as an indicator in the IA.
Ensure open and competitive market	Degree of transparency of SA procedures for SA beneficiaries	Qualitative Result Indicator	Extent to which stakeholders assess that information related to SA procedures and decisions is easily accessible and clear	Scale	Stakeholder consultation [Survey SA beneficiaries]	Not available	The indicator proposed is a direct measure of the objective of increasing transparency in the market with the aim of avoiding undue competition distortion. The indicator would be measured qualitatively by relying on the assessment of SA beneficiaries and their perception of the SA procedures.
Ensure open and competitive market	Degree of transparency of SA procedures at the level of national authorities	Qualitative Result Indicator	Degree of transparency of SA procedures at the level of national authorities - in line with new transparency requirements (scheme, beneficiary, amounts, implementation progress etc.)	Scale	Stakeholder consultation [Survey national authorities]	Not available	The indicator is a measure of the objective of increasing transparency in the market with the aim of avoiding undue distortions of competition. The indicator would be measured based on the assessment of relevant national authorities of the SA process.
Ensure open and competitive market	Degree of clarity of rules on wholesale access pricing	Qualitative Result Indicator	Degree of clarity of rules on wholesale access pricing	Scale	Stakeholder consultation [Survey NRAs]	Not available	As regards access pricing, the objective of the Guidelines provision is to ensure that access seekers face the same opportunity costs of the wholesale services as the state aid beneficiary. Wholesale access pricing may pose serious challenges to public authorities as benchmarking wholesale prices is a complex regulatory task even for experienced NRAs.
Minimise administrative burden	[Change in] financial resources used by the national state aid offices and authorities granting state aid for broadband networks**	Quantitative Result Indicator	Estimated financial resources used by national state aid offices and authorities granting state aid for broadband networks	EUR	Stakeholder consultation [Interviews national SA authorities]	Not available	According to the public consultation, the assessment of the authorities is that the complexity of state aid can be at times overwhelming and lead to a high administrative burden. The revision of the rules has as aim of reducing the administrative burden on the authorities by clarifying the rules. The indicators proposed are aimed at supporting the quantification of the administrative burden
Minimise	[Change in] resources	Quantitative	Estimated human resources used	FTE	Stakeholder	Not available	Ibid. supra.

²⁵ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

²⁶ European Commission, Digital Single Market: <https://ec.europa.eu/digital-single-market/en/connectivity>

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
administrative burden	used by the national state aid offices and authorities granting state aid for broadband networks**	Result Indicator	by national state aid offices and authorities granting state aid for broadband networks		consultation [Interviews national SA authorities]		
Minimise administrative burden	Degree of involvement of NRAs in access pricing and in solving conflicts regarding access	Qualitative result indicator	Assessment of the extent of involvement of NRAs in relation to access pricing conflicts regarding access	Qualitative assessment	Stakeholder consultation [Interviews NRAs]	Not available	The clarification of the position of the NRAs deriving from the EU Guidelines does not automatically translate in a clearer role and position of the NRAs. This is due to the fact that as a soft law instrument the Guidelines cannot constitute a source of obligation for the Member States. Thus, the indicator would measure the extent to which the Guidelines are followed up at national level.

3.6. Impact Assessment R&D&I State Aid

In 2014, the European Commission conducted an *Impact Assessment to assess the impact of a change in the EU Framework for state aid for research and development and innovation*.

The general objectives of the legal instrument stated in the impact assessment were: (a) *ensure an effective contribution of the R&D&I state aid rules to the EU 2020 strategy*; (b) *prevent undue distortion of competition and trade in the internal market*; (c) *avoid unnecessary administrative burden*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *increase legal clarity of rules on SA by providing comprehensive explanations on the presence of SA in R&D&I*; (b) *streamline and increase the predictability of the common assessment principles*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 8: *R&D&I State Aid*: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Effective contribution of SA to EU2020 / Foster growth	Multiplier effect of the aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Not available	Relevant to measure the effect that SA has on fostering growth and investments.
Effective contribution of SA to EU2020 / Foster growth	Positive externalities arising from SA investments in R&D&I	Qualitative Impact Indicator	Extent to which SA investments in R&D&I have positive effects per sectors [e.g. on public health, education]	Qualitative assessment	Stakeholder assessment [Survey/ Interviews]	Not available	The potential of R&D&I to bring about social improvements in individual aid cases is mentioned in the IA [p. 37]. As a result, a systematic analysis of the positive externalities arising from SA investments in R&D&I in specific sectors can support the development of future impact assessments and policy evaluations and a better understanding of their impact.
Effective contribution of SA to EU2020 / Foster growth	[Increase in/Trends in] innovation performance per year per MS/EU	Quantitative Impact Indicator	[Trends in/Increase in] Innovation performance by country/ EU per year	Index	Innovation Union Scoreboard	See Innovation Union Scoreboard	Investments in R&D&I can have positive externalities on innovation performance. These can be measured amongst others through the innovation performance index.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Effective contribution of SA to EU2020 / Foster growth	[Increase in] eco-innovation as a result of state aid per MS / EU per year	Quantitative Impact Indicator	[Increase in] eco-innovation performance per MS per year correlated with the amount of SA granted to R&D&I for eco-innovation per MS per year	Number	Eco-innovation Index [Innovation Union Scoreboard], SA statistics/Stakeholder assessment	Not available	The indicator would contribute to measuring the impact that state aid has on eco-innovation performance.
Effective contribution of SA to EU2020 / Foster growth	Innovative firms operating in international markets	Quantitative Impact Indicator	Innovative firms operating in international markets as a percentage of all innovative firms	%	OECD Innovation Indicators	See OECD Innovation Indicators	The indicator would measure performance in innovation of EU firms in international markets.
Effective contribution of SA to EU2020 / Foster growth	Externally developed goods innovation	Quantitative Impact Indicator	Externally developed goods innovation as a percentage of product innovation firms innovating in goods [total, SMEs, large, manufacturing, R&D, no R&D]	%	OECD Innovation Indicators	See OECD Innovation Indicators	The indicator would support the measurement of the contribution of SA to the development of innovative goods.
Effective contribution of SA to EU2020 / Foster growth	Externally developed services innovation	Quantitative Impact Indicator	Externally developed services innovation as a percentage of product innovation firms innovating in goods [total, SMEs, large, manufacturing, R&D, no R&D]	%	OECD Innovation Indicators	See OECD Innovation Indicators	The indicator would support the measurement of the contribution of SA to the development of innovative services.
Effective contribution of SA to EU2020 / Foster growth	[Additional] amount of /[Share of] cross-border investments in R&D created via state aid	Quantitative Impact Indicator	[Additional] Number/ Volume/Share of contracts (above procurement thresholds) in the area of R&D awarded to providers established outside of the MS of the contracting authorities as a result of SA	Number / %	TED	Not available	The indicator would support the measurement of the contribution of SA to cross-border investments in R&D.
Effective contribution of SA to EU2020 / Foster growth	Comparison of amount of state aid provided to "far from the market" versus state aid provided to "close-to-the-market" research	Quantitative Impact Indicator	Proxy indicator showing how much State Aid goes to "basic research" versus "close-to-market research"	Number	Stakeholder consultation [e.g. Survey/ Interviews]	Not available	The indicator would support the measurement of the contribution of SA to research that is close to the market and that is far from the market.
Effective contribution of SA to EU2020 / Foster growth	Increased research and innovation quality as a result of SA per sector	Qualitative Impact Indicator	Qualitative indicator assessing the contribution of SA to enhanced quality of research and innovation	Qualitative assessment	Stakeholder consultation [e.g. Survey/ Interviews]	Not available	The Impact Assessment indicates that the investments in SA can lead to an enhancement of research and innovation quality.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			per sector				
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities	Quantitative Impact Indicator	Firms cooperating on innovation activities, as a percentage of product and/or process innovative firms, including abandoned and ongoing innovative activities [total, SMEs, large, manufacturing, services, R&D, no R&D]	%	OECD Innovation Indicators	See OECD Innovation Indicators	The indicator would support the measurement of the effect that SA has on incentivizing firms to cooperate on innovation activities.
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities with higher education or government institutions	Quantitative Impact Indicator	Firms cooperating on innovation activities with higher education or government institutions, as a percentage of product and/or process innovative firms, including abandoned and ongoing innovative activities [total, SMEs, large, manufacturing, services, R&D, no R&D]	%	OECD Innovation Indicators	See OECD Innovation Indicators	The indicator would support the measurement of the effect that SA has on incentivizing firms to cooperate with higher education and government institutions on research and innovation activities.
Prevent undue distortions of competition and trade	Public-private co-publications per million population	Quantitative Impact Indicator	Number of public-private co-publications per million population	Number	Innovation Union Scoreboard	Data available only for 2003 and 2008 and aggregated at EU level	The indicator would constitute a proxy of the extent to which SA incentivizes private-public cooperation in R&D&I.
Prevent undue distortions of competition and trade	Incentive effect	Qualitative Impact Indicator	Extent to which SA has an impact on the behaviour of undertaking(s) on the market in such a way that it makes them engage in additional activity, which they would not carry out without the aid or would carry out in a restricted or different manner or location	Qualitative assessment	Stakeholder assessment [e.g. or interviews surveys]	Not available	The indicator would measure from a qualitative perspective the effect that SA has on incentivizing firms to engage in additional research and innovation activities, which they would not have carried out without the aid or would have carried out in a restricted or different manner.
Prevent undue distortions of competition and trade	Amount of aid granted in the EU for R&D&I compared to the amount of aid granted outside the	Qualitative Impact Indicator	Aid intensity for R&D&I in the EU compared to aid intensity for R&D&I outside	Number or %	OECD	Not available	The indicator would measure from a qualitative perspective the effect that SA has on incentivizing firms to engage in additional research and innovation activities, which they

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
trade	EU		the EU ²⁷				would not have carried out without the aid or would have carried out in a restricted or different manner.
Avoid administrative burden	Administrative/Regulatory burden for public administrations	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting) and for enforcement of the rules	EUR	Stakeholder consultation [Interviews with national authorities]	Not available	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on public authorities.
Avoid administrative burden	Administrative/Regulatory burden for public administrations	Quantitative Impact Indicator	Human resources necessary for implementing obligations related to SA (i.e. notification, information, monitoring, reporting) and for enforcement of the rules	FTE	Stakeholder consultation [Interviews with national authorities]	Not available	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on public authorities.
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting)	EUR	Stakeholder consultation [Interviews with national authorities]	Not available	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on undertakings.
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	Human resources necessary for implementing obligations related to SA (i.e. notification, information, monitoring, reporting)	FTE	Stakeholder consultation [Interviews with national authorities]	Not available	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on undertakings.
Increase legal clarity of the rules/Streamline and increase predictability of rules	Degree of legal certainty of SA rules	Qualitative Result Indicator	Extent to which the rules on SA are assessed by stakeholders as being clear, precise and relevant and	Scale	Stakeholder assessment [e.g. interviews or surveys]	Moderate to Low	The indicator would measure the effect that the implementation of the new guidelines would have on enhancing legal certainty for relevant stakeholders.

²⁷ Matching of aid intensities to the ones provided to competitors outside the EU, in order to allow MSs to match aid that competitors located outside receive for similar activities [p. 23].

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Increase legal clarity of the rules/Streamline and increase predictability of rules	Degree of transparency of SA procedures	Qualitative Result Indicator	Extent to which stakeholders assess the procedures for granting SA as open and transparent	Scale	Stakeholder assessment [e.g. interviews or surveys]	Not available	The indicator would measure the effect that the implementation of the new guidelines would have on enhancing the transparency of the SA procedures.
Increase legal clarity of the rules/Streamline and increase predictability of rules	Number of complaints by competitors received by the EC	Quantitative Result Indicator	Number of complaints from competitors received by the EC per year	Number	EC	Not Available	The indicator would measure the effect that the implementation of the new guidelines would have on reducing the number of complaints by competitors received by the EC.

3.7. Impact Assessment Regional State Aid Guidelines

In 2011, the European Commission conducted an *Impact Assessment to assess the impact of reforming the EU Guidelines for Regional Aid*.

The general objectives of the legal instrument stated in the impact assessment were: (a) *ensure that aid granted furthers economic development of certain areas and does not create distortions of trade and competition that would be contrary to the common interest*; (b) *provide a framework for the Commission to assess the compatibility of notified aid measures in a manner which is commensurate to their potential effects on the internal market*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *increase the effectiveness and efficiency of regional aid*; (b) *achieve administrative simplification as regards regional aid*; (c) *increase the consistency between regional aid policy and other policy areas*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 9: Regional Aid Guidelines: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
General objective: Ensure that aid is granted to further the economic development of certain areas does not create distortions of trade and competition that would be contrary to the common interest	Multiplier effect of the regional aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Not available	The multiplier effect of regional aid is an indicator that can be used to easily communicate the positive economic impact of regional aid in term of investments
	Net impact of the investments made with regional aid contributions	Quantitative impact indicator	Comparison of the positive and negative impacts of regional aid contribution	-	-	Not available	The net impact would present the balance between the positive and negative impacts of regional aid
Specific objective: Increase the effectiveness and efficiency of regional aid	Change in the productivity of regional aid beneficiaries	Quantitative impact indicator	Change in the production volume of aid beneficiaries for a given period of time per MS or for the EU	%	Ex-post primary data collection	Not available	Change in the productivity of regional aid beneficiaries is an indicator of the sustainability of jobs in the sector/region benefitting from regional aid
Specific objective: Increase the effectiveness and efficiency of regional aid	Indirect jobs created or maintained	Quantitative impact indicator	Number of new jobs created in a 50 km radius of the site of the beneficiary for a given period of time per MS or	FTEs	Ex-post primary data collection	Not available	Indicator of the indirect impact (spill-over) on employment in regions benefitting from regional aid

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			for the EU				
Specific objective: Increase the effectiveness and efficiency of regional aid	Additional turnover spent at local suppliers by aid beneficiaries	Quantitative impact indicator	Estimate of sectoral input-output data in a region benefitting from regional aid for a given period of time per MS or for the EU	EUR	Ex-post primary data collection	Not available	Indicator of the indirect impact (spill-over) for local suppliers to aid beneficiaries
Specific objective: Increase the effectiveness and efficiency of regional aid	Volume of spill-over effect on suppliers	Quantitative impact indicator	Volume of investments from suppliers of aid beneficiaries which are located within a 50 km radius of the site of the beneficiary for a given period of time per MS	EUR	Ex-post primary data collection	Not available	Indicator of the indirect impact (spill-over) for local suppliers to aid beneficiaries
Specific objective: Increase the effectiveness and efficiency of regional aid	Share of 'expatriates' in the total number of jobs created	Quantitative impact indicator	Share of 'expatriates' in the total number of jobs created by aid beneficiaries for a given period of time per MS	EUR	Ex-post primary data collection	Not available	Indicator of the contribution of regional aid to the socio-economic development of the beneficiary region
Specific objective: Achieve administrative simplification as regards regional aid	Estimated costs of clarifying state aid rules in relation to regional aid	Quantitative result indicator	Human resources (measure in person days) spent by economic operators and authorities on clarifying state aid rules for a given period of time per MS/in the EU	Person days per year	Interviews with economic operators and authorities	Not available	This indicator can be used to measure the effect of the RAG on the administrative burden associated with clarifying compliance with the state aid rules.
Specific objective: Achieve administrative simplification as regards regional aid	Financial resources spent on clarifying state aid rules in relation to regional aid	Quantitative result indicator	Financial resources spent by granting authorities on clarifying state aid rules requirements for a given period of time per MS/in the EU	EUR per year	Interviews with authorities	Not available	This indicator can be used to measure the effect of the RAG on the administrative burden associated with clarifying compliance with the state aid rules.
Specific objective: Achieve administrative simplification as regards regional aid	Legal clarity of the rules regarding regional state aid	Qualitative result indicator	Extent to which the rules about state aid are considered to be clear	Scale	Interviews with authorities	Not available	This indicator would help measure the attainment of the objective of achieving administrative simplification by collection information from stakeholders
Specific objective: Increase the consistency between regional aid policy and other	Amount (hours) of training per (new) employee of aid beneficiaries	Quantitative result indicator	Amount (hours) of training per (new) employee of aid beneficiaries for a given period of time per MS/in	hours	Ex-post primary data collection	Not available	Indicator of the expected increase in the quality of training in a region/sector as a result of aid grants

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
policy areas			the EU				
Specific objective: Increase the consistency between regional aid policy and other policy areas	Level of training expenditure on new employees of aid beneficiaries	Quantitative result indicator	Level of training expenditure on new employees of aid beneficiaries for a given period of time per MS/in the EU	EUR	Ex-post primary data collection	Not available	Indicator of the expected increase in the quality of training in a region/sector as a result of aid grants
Specific objective: Increase the consistency between regional aid policy and other policy areas	Number / Share of aid beneficiaries who move up the value chain in a given industry	Quantitative result indicator	Number / Share of aid beneficiaries who move up the value chain in a given industry for a given period of time per MS/in the EU	Number; %	Ex-post primary data collection	Not available	Indicator of the expected increase of the quality of jobs in a region/sector as a result of aid grants
Specific objective: Increase the consistency between regional aid policy and other policy areas	Number / Share of new employees with higher education	Quantitative result indicator	Number / Share of new employees with higher education for a given period of time per MS/in the EU	Number; %	Ex-post primary data collection	Not available	Indicator of the expected increase of the quality of jobs in a region/sector as a result of aid grants
Specific objective: Increase the consistency between regional aid policy and other policy areas	Number / Share of beneficiaries connected to a regional or inter-regional industrial cluster	Quantitative result indicator	Share of beneficiaries connected to a regional or inter-regional industrial cluster out of total aided projects for a given time period per MS/in the EU	Number; %	Ex-post primary data collection	Not available	Indicator of the impacts of regional aid on R&D activities
Specific objective: Increase the consistency between regional aid policy and other policy areas	Number / Share of aided projects that include important R&D components	Quantitative result indicator	Share of aided projects that include important R&D components out of total aided projects for a given time period per MS/in the EU	Number; %	-	Not available	Indicator of the impacts of regional aid on R&D activities
Specific objective: Increase the consistency between regional aid policy and other policy areas	Number / Share of aided projects that include cooperation with local higher education institutions	Quantitative result indicator	Share of aided projects that include cooperation with local higher education institutions out of total aided projects for a given time period per MS/in the EU	Number of projects	-	Not available	Indicator of the impacts of regional aid on R&D activities

3.8. Impact Assessment State aid for risk finance

In 2011, the European Commission conducted an *Impact Assessment Accompanying the document Communication from the Commission Guidelines on State aid to promote risk finance investment*.

The general objective of the legal instrument stated in the impact assessment was to *make SMEs more competitive in a global marketplace without distorting competition in the internal market*;

The specific objective of the legal instrument mentioned in the in the impact assessment are: *(a) fully addressing the market failure in SMEs access to finance; (b) enabling efficient functioning of the EU venture capital markets; (c) better regulation / simplification of the rules and improved legal certainty*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 10: *State aid for risk finance: Overview of proposed potential indicators*

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Make European SMEs more competitive in a global marketplace without distorting competition in the internal market	Multiplier effect of the aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Not available	The multiplier effect of the aid granted is an indicator that can be used to easily communicate the positive impact of aid in term of generating increased investment from the private sector into ventures that would otherwise be considered too risky.
Fully addressing the market failure in SMES' access to finance	Number of beneficiaries who are midcap SMEs	Quantitative result indicator	Number of beneficiaries of state aid via VC measures that are midcap SMEs for a given period of time per MS or for the EU	Number	-	Not available	Measure of the effect of the revision of the guidelines on the number of beneficiaries that receive funding when in mid-cap stage
Fully addressing the market failure in SMES' access to finance	Number of beneficiaries who are early-stage start-ups	Quantitative result indicator	Number of beneficiaries of state aid via VC measures that early-stage start-ups for a given period of time per MS or for the EU	Number	-	Not available	Measure of the effect of the revision of the guidelines on the number of beneficiaries that receive funding when in early stage
Fully addressing the market failure in SMES' access to finance	Average volume of investment per company	Quantitative result indicator	Average volume of investment from VC backed by state aid measure per company	EUR	-	Not available	Measure of the effect of the revision of the guidelines on the average size of investments and thereby, companies' access to funding

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			for a given period of time per MS or for the EU				
Fully addressing the market failure in SMES' access to finance	Volume of investment in EU companies compared to non-EU companies	Quantitative result indicator	Volume of investment in EU start-up companies compared to non-EU start-up companies for a given period of time per MS or for the EU	%	-	Not available	Comparative measure of companies' access to funding
Fully addressing the market failure in SMES' access to finance	Scale of investment in VC as a proportion of total Private Equity ("PE") investment	Quantitative result indicator	Scale of investment in VC as a proportion of total Private Equity ("PE") investment for a given period of time per MS or for the EU	%	Invest Europe 2015 Yearbook	9% (2013)	Measure of companies' access to VC funding
Fully addressing the market failure in SMES' access to finance	Number of exits in European VCs per sector, per MS, in the EU	Quantitative result indicator	Number of exits in European VCs per sector, per MS, in the EU for a given period of time per sector, MS or for the EU	Number	EIF	1003 (2013)	Measure of the efficiency of EU VC markets
Fully addressing the market failure in SMES' access to finance	(Average) Value of exits in European VC per sector, per MS, in the EU	Quantitative result indicator	(Average) Value of exits in European VC for a given period of time per sector, MS or for the EU	Number	EIF	EUR 1,864,600 (2013)	Measure of the efficiency of EU VC markets
Enabling efficient functioning of the EU venture capital markets	Aggregate number of VC funds per MS/in the EU	Quantitative result indicator	Aggregate number of VC funds for a given period of time per MS/in the EU	Number	EVCA/PEREP Analytics	287 (2007-2012)	Measure of the efficiency of EU VC markets
Enabling efficient functioning of the EU venture capital markets	Number/share of early-stage VC funds per MS/in the EU	Quantitative result indicator	Number/share of early-stage VC funds per MS/in the EU	Number, %	EVCA/PEREP Analytics	Not available	Measure of the efficiency of EU VC markets with respect to the financing needs of early-stage VCs
Enabling efficient functioning of the EU venture capital markets	Number/share of Later stage venture VC funds per MS/in the EU	Quantitative result indicator	Number/share of Later stage venture VC funds per MS/in the EU	Number, %	EVCA/PEREP Analytics	Not available	Measure of the efficiency of EU VC markets with respect to the financing needs of late-stage VCs
Enabling efficient functioning of the EU venture capital markets	Number/share of Balanced VC funds per MS/in the EU	Quantitative result indicator	Number/share of Balanced VC funds per MS/in the EU	Number, %	EVCA/PEREP Analytics	Not available	Measure of the efficiency of EU VC markets with respect to the financing needs of balanced VCs

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Enabling efficient functioning of the EU venture capital markets	Venture Funds raised by type of investor	Quantitative result indicator	Number/volume of venture Funds raised by type of investor (e.g. Academic institutions, Banks, Capital markets, Corporate investors, Endowments and foundations, etc.)	Number/EUR	Invest Europe 2015 Yearbook	Not available	Measure of the sustainability of the EU VC market
Enabling efficient functioning of the EU venture capital markets	Change in 5 year rolling average returns in the VC asset class	Quantitative result indicator	5 year rolling average returns in the VC asset class per MS/in the EU	%	THOMSONONE	Not available	Measure of the attractiveness and sustainability of the EU VC markets
Enabling efficient functioning of the EU venture capital markets	IRR in European VC over time (in %)	Quantitative result indicator	3-year, 5-year, 10-year IRR in European VC per MS/in the EU	%	Thomson Reuters data	Not available	Measure of the attractiveness and sustainability of the EU VC markets
Enabling efficient functioning of the EU venture capital markets	Performance of VC funds compared to Standard & Poor index	Quantitative result indicator	Performance of VC funds compared to Standard & Poor index	%	-	Not available	Measure of the attractiveness and sustainability of the EU VC markets
Enabling efficient functioning of the EU venture capital markets	Number/Share of Business angels' investments of the investment market	Quantitative result indicator	Number/Share of Business angels' investments of the investment market for a given period of time per MS, in the EU	EUR, %	EBAN	5.5 billion EUR in the EU (2014)	Measure of the efficiency of EU VC markets
Enabling efficient functioning of the EU venture capital markets	Number/Share of venture capital industry's investments of the investment market	Quantitative result indicator	Number/Share of venture capital industry's investments of the investment market for a given period of time per MS, in the EU	EUR, %	EBAN	2 billion EUR in the EU (2014)	Measure of the efficiency of EU VC markets
Enabling efficient functioning of the EU venture capital markets	Number/share of VC investors with multi-country investment flows	Quantitative result indicator	Number/share of VC investors with multi-country investment flows for a given period of time per MS, in the EU	Number, %, EUR	-	Not available	Measure of cross-border activity in the EU VC markets
Better regulation – simplification of the rules and improved legal certainty	Estimated costs for Member States to justify the intended design for their risk finance measures	Quantitative result indicator <i>(from a qualitative</i>	Human resources (measured in person days) spent by MS and authorities on clarifying state aid rules for a	Person days per year	Interviews with economic operators and authorities	Not available	Human resources (measure in person days) spent by economic operators and authorities on clarifying state aid rules for a given period of time per MS/in the EU

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
	in detailed assessments	<i>concept</i>)	given period of time per MS/in the EU				
Better regulation – simplification of the rules and improved legal certainty	Financial resources spent by MS on clarifying aid rules in relation to risk finance measures	Quantitative result indicator	Financial resources spent by MS on clarifying state aid rules requirements for a given period of time per MS/in the EU	EUR per year	Interviews with authorities	Not available	Financial resources spent by granting authorities on clarifying state aid rules requirements for a given period of time per MS/in the EU
Better regulation – simplification of the rules and improved legal certainty	Level of awareness of the rules on risk finance state aid among stakeholders	Qualitative result indicator	Share of surveyed stakeholders who are aware of (recognise) the revised rules on risk finance state aid	Number/share	Survey/interview with stakeholders (VC funds, authorities, others)	Not available	Measure of awareness of the rules (currently lacking in the IA)

3.9. Impact Assessment State aid energy and environment

The European Commission conducted an *Impact Assessment on the review of the Environmental Aid Guidelines and the environmental section of the General Block Exemption Regulation*.

The general objectives of the legal instrument stated in the impact assessment were (a) *contribute to achieving the Union's environmental and energy policy objectives*; (b) *ensure an effective and efficient state aid control*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *assist the achievement of the 2020 RES targets while minimising the distortive effects of support schemes*; (b) *minimise distortions to competition and trade resulting from the financing of support schemes to RES while limiting negative impacts on the competitiveness of EU firms*; (c) *contribute to ensuring the required generation adequacy level of the Union's energy system while minimising competition distortions*; (d) *focus on measures with the largest potential to cause competition distortions*; (e) *streamline, clarify and align the rules with the common assessment principles agreed for all SA rules*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 11: *State Aid Energy and Environment: Overview of proposed potential indicators*

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Contribute to achieving EU's environmental and energy policy objectives	Energy efficiency [per sector]*	Quantitative Impact Indicator	Intensity presented as a ratio between energy consumption (measured in energy units) and activity data (measured in physical units)	Value	IEA Indicators ²⁸ Energy Union indicators ²⁹	See IEA database See Energy Union factsheets	The aim of the revision of the rules is to assist the achievement of the 2020 renewable energy targets.
Effective and efficient state aid control to the benefit of consumers	Fuel poverty meter	Quantitative Impact Indicator	Measure to assess income and living conditions. Based on average of three proxies: arrears on utility	%	Energy Union indicators ³⁰	See Energy Union Indicators	Fuel poverty can be an unintended consequence of market distortions which can arise due to inefficient state aid control.

²⁸ IEA, Indicators Database: <http://www.iea.org/eeindicatorsmanual/>.

²⁹ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

³⁰ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			bills, inability to keep home adequately warm, dwellings with leakage and damp walls				
Achieved 2020 targets and minimised distortive effects	Expenditure in R&D in eco-innovation	Quantitative Result Indicator	Government environmental and energy R&D appropriations and outlays [% of GDP]	EUR/% of GDP	Eurostat	See Eurostat	The revision of the rules also aims at supporting innovation in eco-technologies.
Achieved 2020 targets and minimised distortive effects	R&D personnel in eco-innovation	Quantitative Result Indicator	Total R&D personnel and researchers (% of total employment) in eco-innovation industry	Number	Eurostat	See Eurostat	Ibid. supra.
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of material input per unit output (% of total firms)	Quantitative Result Indicator	Amount of firms having implemented innovation activities aiming at a reduction of material input per unit output (% of total firms)	%	Eurostat	See Eurostat	The indicator is relevant for measuring market performance towards environmental targets.
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of energy input per unit output (% of total firms)	Quantitative Result Indicator	Amount of firms having implemented innovation activities aiming at a reduction of energy input per unit output (% of total firms)	%	Eurostat	See Eurostat	The indicator is relevant for measuring market performance towards environmental targets.
Achieved 2020 targets and minimised distortive effects	Number of undertakings participating in competitive bidding processes	Quantitative Result Indicator	Number of undertakings participating in tendering processes per Member State / across the EU due to EEAG requirements	Number	Stakeholder consultation	Not available	Competitive bidding processes are non-discriminatory bidding processes that provide for the participation of a sufficient number of undertakings and where the aid is granted. The indicator has the aim of monitoring participation of undertakings in such processes.
Achieved 2020 targets and minimised distortive effects	Degree of transparency of competitive bidding processes	Qualitative Result Indicator	Extent to which stakeholders assess competitive bidding processes as being transparent	Scale	Stakeholder consultation	Not available	The review has the aim of ensuring that transparent competitive bidding processes are developed. The indicator has the aim of measuring the extent to which such processes are in place.
Achieved 2020 targets and minimised distortive effects	Estimated costs for undertakings arising from the requirement to participate in competitive bidding	Quantitative Result Indicator	Amount of financial and human resources necessary for undertakings to tender as a result of the	EUR / FTEs	Stakeholder consultation [Interviews]	Not available	Undertakings are likely to incur some costs as a consequence of competitive bidding processes. The indicator has the aim of measuring the extent of such costs.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			requirements of the SA rules				
Achieved 2020 targets and minimised distortive effects	Estimated costs for administrative authorities arising from the requirement to participate in competitive bidding	Quantitative Result Indicator	Amount of financial and human resources necessary for administrative authorities to implement the requirements of the SA guidelines	EUR / FTEs	Stakeholder consultation [Interviews]	Not available	Public authorities are likely to incur some costs as a consequence of competitive bidding processes. The indicator has the aim of measuring the extent of such costs.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Herfindahl Index for power generation	Quantitative Result Indicator	Market concentration index for power generation	Value	Energy Union indicators ³¹ European Commission based on ESTAT, CEER and Platts Power Vision	See Energy Union factsheets	The indicator is a measure of market concentration on the electricity market.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Herfindahl Index for gas	Quantitative Result Indicator	Market concentration index for power gas supply	Value	Energy Union indicators ³² European Commission based on ESTAT, CEER and Platts Power Vision	See Energy Union factsheets	The indicator is a measure of market concentration on the gas.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Intra-EU trade as a % of GDP in energy	Quantitative Result Indicator	Absolute amount of intra-EU trade as a % of GDP in energy	%	[Eurostat]	Not available	The rules have the aim of ensuring that intra-EU trade in energy is undistorted. The indicator measures the effects of the rules.
Minimised distortions of	Actual incidence of	Quantitative	Share / Number of firms	% or Number	European Restructuring	European Restructuring	The IA indicates that as a result of electricity price increases and decreased competitiveness, certain

³¹ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

³² European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
competition and trade while limiting negative impact on competitiveness of EU firms	firms relocating due to competitiveness issues on the European market	Result Indicator	that <i>have re-located</i> their activities outside of the EU due to competitiveness issues [e.g. electricity price increases as a result of RES]		Monitor [followed up with interviews with decision makers of relocated companies] ³³	Monitor	industrial sectors may relocate production outside. The indicator is designed to monitor the actual incidence of this phenomenon.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Prospective incidence of firms relocating due to competitiveness issues on the European market	Quantitative Result Indicator	Share / Number of firms that <i>intend to re-locate</i> their activities outside of the EU due to competitiveness issues [e.g. electricity price increases as a result of RES]	% or Number	Stakeholder survey	Not available	The IA indicates that as a result of electricity price increases and decreased competitiveness, certain industrial sectors may relocate production outside. The indicator is designed to monitor the prospective incidence of this phenomenon.
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	Degree of interconnection of electricity market	%	Energy Union indicators ³⁴ ENTSO-E scenario outlook and adequacy forecast 2014	See Energy Union factsheets	The review aims to avoid reducing incentives to invest in interconnection capacity.
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	Degree of interconnection of gas market	%	Energy Union indicators ³⁵ ENTSO-E scenario outlook and adequacy forecast 2014	See Energy Union factsheets	The review aims to avoid reducing incentives to invest in interconnection capacity.
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Estimated costs of implementing state aid law [EAG] requirements	Quantitative Results Indicator	Costs of energy providers and authorities in connection to implementing state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with providers and authorities	Not available	The review has the aim of reducing the administrative burden on undertakings and providers. The indicator monitors the extent to which the objective is achieved.
Focus on	Degree of	Qualitative	Extent to which SA rules	Scale	Interviews with	Not available	The IA makes reference to the need to ensure

³³ Eurofound, European Restructuring Monitor: <http://www.eurofound.europa.eu/observatories/european-monitoring-centre-on-change-emcc/european-restructuring-monitor>.

³⁴ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

³⁵ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
measures with high potential to distort competition/ Align and streamline SA rules	coordination with other policies	Result Indicator	are coordinated with other policies		providers and authorities		coordination with other policies. The indicator has the aim of benchmarking the extent to which such coordination is achieved.
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Degree of legal certainty and transparency of the rules	Qualitative Result Indicator	Extent to which the rules are certain and the application is transparent of the rules	Scale	Interviews with providers and authorities	Not available	The review has the aim of increasing the legal certainty and transparency of the rules in what concerns state aid for environmental and energy purposes. The indicator has the aim of measuring the extent to which legal certainty and transparency are achieved.

3.10. Impact Assessment State aid for greenhouse gas emissions

The *Impact Assessment* analysed the review of Guidelines on certain State Aid measures in the context of Greenhouse Gas Emission Allowance Trading Scheme.

The general objective of the legal instrument stated in the impact assessment was to *support the achievement of the EU environmental targets*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *minimise/prevent the risk of carbon leakage*; (b) *maintain the efficiency of the ETS*; (c) *minimise distortions of competition on the internal market*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 12: *State Aid for Greenhouse Gas Emissions: Overview of proposed potential indicators*

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Supported the achievement of the EU environmental targets	Energy efficiency [per sector]	Quantitative Impact Indicator	Intensity presented as a ratio between energy consumption (measured in energy units) and activity data (measured in physical units)	Value	IEA Indicators ³⁶ Energy Union indicators ³⁷	See IEA indicators See Energy Union factsheets	The indicator would be relevant to measure progress towards the achievement of the EU energy and environmental targets.
Supported the achievement of the EU environmental targets	Reduction in CO2 as a result of SA intervention	Quantitative Impact Indicator	Trends in the amount of greenhouse gas emissions of undertakings where a SA intervention has occurred [in a selected number of cases]	%	Ex-post primary data collection	Not available	The indicator would help track the effects of SA on reducing CO2 emissions by collecting data before and after a SA intervention occurred in a specific number of cases where undertakings falling in the scope of the Guidelines received SA.
Prevented carbon leakage/ Maintained the efficiency of the ETS	Abatement cost	Quantitative Result Indicator	Calculated as the annual additional operating cost (including depreciation) less potential cost savings (for example, for reduced energy consumption) divided by the amount of emissions avoided. Possible costs for implementing a system to realize the	EUR/tonne	McKinsey	See McKinsey reports	Indicator relevant to assess the competitiveness of the market and potential impacts of legislation on the competitiveness of electricity generators.

³⁶ IEA, Indicators Database: <http://www.iea.org/eeindicatorsmanual/>.

³⁷ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
			abatement approaches are not included.				
Maintained the efficiency of the ETS	Estimated costs for electricity generators arising from retrofitting and upgrading infrastructure and implementing clean technologies	Quantitative Result Indicator	Estimated costs for electricity generators arising from retrofitting and upgrading infrastructure and implementing clean technologies	EUR	Stakeholder consultation [Interviews with electricity generators]	Not available	Indicator relevant to measure the production and investment leakage.
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Share of/Number of cases of relocation of activities to countries without comparable CO2 constraints	Number	European Restructuring Monitor [followed up with interviews with decision makers of relocated companies] ³⁸	Not available	Indicator relevant to measure the production leakage.
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Trends in the share of the industry [per sector] out of total employment [Changes in employment over time can be an proxy for relocation of firms]	Number/%	Employment Statistics [Eurostat] complemented with follow up interviews to investigate the reasons for relocation in specific sectors	See Eurostat [full baseline not available]	Indicator relevant to measure the possible production and investment leakage.
Maintained the efficiency of the ETS	Prospective incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Share / Number of firms that <i>intend to re-locate</i> their activities to countries without comparable CO2 constraints	% or Number	Stakeholder survey	Not available	Indicator relevant to measure the production leakage.
Maintained the efficiency of the ETS	Number of plant closures as a consequence of CO2 costs	Quantitative Result Indicator	Number of plant closures as a consequence of CO2 costs [as a result of investment leakage]	Number	European Restructuring Monitor [Closure] Stakeholder consultation / [follow up interviews or survey]	Not available	Indicator relevant to assess the competitiveness of EU industry.

³⁸ Eurofound, European Restructuring Monitor: <http://www.eurofound.europa.eu/observatories/european-monitoring-centre-on-change-emcc/european-restructuring-monitor>.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Competitiveness of EU industry [per sector]	Quantitative Result Indicator	Comparison of electricity prices within the EU with prices outside the EU [per sector]	Number	IEA Statistics – Energy Prices and Taxes [Online data service/ Quarterly]	See IEA	Indicator relevant to assess the competitiveness of EU industry.
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Competitiveness of EU industry [per sector per Member States]	Quantitative Result Indicator	Relative share of electricity prices out the total production costs [per sector per Member State – for sectors where the ETS guideline has an effect -] –	%	Stakeholder consultation [interviews with major companies electricity consumers per sector per Member State/sample]	Not available	Indicator relevant to assess potential investment leakage.
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Investments in energy technology RD&D	Quantitative Result Indicator	Gross domestic expenditure on RD&D energy technology	Number	IEA [for IEA countries]	See IEA	Indicator relevant to measure asymmetries on the market and distortion of competition.
Minimised distortions on the internal market	Number of Member States granting support and Member States not granting support per sector	Quantitative Result Indicator	Number of Member States granting support and Member States not granting support per sector [This can be compared to the degree of substitutability of materials and products manufactured by different sectors receiving / not receiving support]	Number	Stakeholder consultation / survey	Not available	Indicator measuring the transparency of state aid scheme processes.
Minimised distortions on the internal market	Number of cases where the full text of all final aid schemes is published and communicated on the Internet	Quantitative Result Indicator	Number of cases where the full text of all final aid schemes is published and communicated on the Internet [According to the Guidelines the EC is supposed to be informed of internet sites where concerned authorities publish the full text of all final state aid schemes – This has the aim of increasing transparency]	Number	European Commission, Member States	Not available	

3.11. Impact Assessment Merger control

In 2014, the European Commission conducted an *Impact Assessment to assess the impact of reforming the EU rules on effective merger control*.

The general objectives of the legal instrument stated in the impact assessment were to: (a) *ensure effective merger control to foster market competition*; (b) *ensure effective merger control to foster consumer welfare*.

The specific objective of the legal instrument mentioned in the in the impact assessment are: (a) *ensure action is taken against anti/competitive acquisitions*; (b) *ensure a smooth interaction of EU and national merger control regimes*; (c) *reduce administrative burden for EC, NCAs and companies*; (d) *ensure an effective referral system and simplified procedures for referral*.

The full list of indicators for each of these objectives is included in the Annex. The additional indicators identified are presented in the table below.

Table 13: Merger control: Overview of proposed potential indicators

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Ensure effective merger control to increase consumer welfare	Total welfare effects of merger control intervention	Quantitative Impact Indicator	Consumer welfare gains compared to producer welfare losses	EUR	National Competition Authorities	Not available	The IA indicates that the one of the objectives for the initiative is to prevent consumer harm that might arise due to mergers. The indicator measures the effects of merger control on consumer welfare.
Effective action in minority shareholdings transactions	Degree of protection of minority investors ³⁹	Qualitative Result Indicator	Index of protecting minority investors ⁴⁰	Number	World Bank	See World Bank database	World Bank Doing Business has designed an index that measures the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse. The most recent data collected was completed in June 2015.

³⁹ World Bank, Doing Business Index: <http://www.doingbusiness.org/methodology/protecting-minority-investors>.

⁴⁰ Index measures the protection of shareholders against directors' misuse of corporate assets for personal gain by distinguishing 3 dimensions of regulation that address conflicts of interest: transparency of related-party transactions (captured by the extent of disclosure index), shareholders' ability to sue and hold directors liable for self-dealing (extent of director liability index) and access to evidence and allocation of legal expenses in shareholder litigation (ease of shareholder suits index).

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Smooth interaction EU and national regime	Degree of coherence of national and EU regimes	Qualitative Result Indicator	Benchmark the extent of convergence between national and EU regimes (i.e. existence of uniform rules)	[Scale]	Stakeholder assessment [NCAs]	Not available	The IA indicates that one of the specific objectives is to ensure a smooth interaction between the EU and national regime. By benchmarking the degree of coherence between the two regimes one can measure the effectiveness with which the objective is achieved.
Reduce administrative burden	[Change in] estimated financial costs for national competition authorities from enforcing the rules**	Quantitative Result Indicator	[Change in] the estimated costs for national competition authorities for enforcing the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [NCAs]	Not available	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Reduce administrative burden	[Change in] estimated human resources involved in the enforcement of rules**	Quantitative Result Indicator	[Change in] the estimated costs for national competition authorities for enforcing the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews NCAs]	Not available	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Reduce administrative burden	[Change in] estimated financial costs for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	[Change in] estimated financial costs for businesses for ensuring compliance with the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews Businesses]	Not available	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Reduce administrative burden	[Change in] estimated human resources for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	[Change in] estimated human resources for businesses for ensuring compliance with the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews Businesses]	Not available	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Effective and simplified referral system	Degree of willingness of parties to use the post-notification referral system**	Quantitative Result Indicator	Number of cases of use of post-notification referral system	Scale	Stakeholder assessment [Survey businesses]	Not available	The IA indicates that the initiative is aimed at increasing the effectiveness of the post-notification referral system. An indicator measuring the effectiveness of an amended procedure would be the actual use of the post-notification referral system by stakeholders.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Policy objective for which an indicator gap was identified	Name of the proposed indicator	Type of indicator	Technical definition	Unit of measurement	Source of data	Baseline	Relevance
Effective and simplified referral system	Awareness of relevant stakeholders to the European Commissions' powers in the field of merger control	Qualitative Result Indicator	Assessment of stakeholders of the EC's powers in the field of merger control	Qualitative assessment	Stakeholder assessment [Survey businesses]	Not available	The IA indicates that the initiative is aimed at clarifying the task delineation between NCAs and the EC. The indicator would measure whether the action is successful.
Effective and simplified referral system	Awareness of relevant stakeholders to the NCAs powers in the field of merger control	Qualitative Result Indicator	Assessment of stakeholders of the NCAs powers in the field of merger control	Qualitative assessment	Stakeholder assessment [Survey businesses]	Not available	The IA indicates that the initiative is aimed at clarifying the task delineation between NCAs and the EC. The indicator would measure whether the action is successful.
Effective and simplified referral system	Degree of complexity of referral procedures **	Qualitative Result Indicator	Assessment of the extent to which procedures are clear and easily accessible for businesses	Qualitative Assessment	Stakeholder assessment [Survey businesses]	Not available	The IA indicates that the initiative is aimed at simplifying the referral system. As such, a qualitative indicator measuring the extent to which the procedure is simplified would be appropriate.
Effective and simplified referral system	Degree of legal certainty of rules**	Qualitative Result Indicator	Assessment of the extent to which rules are clear and precise and easy to interpret by NCAs, EC and businesses	Qualitative Assessment	Stakeholder assessment [Survey businesses]	Not available	The IA indicates that the initiative is aimed at increasing the legal certainty for businesses. The indicator would be a measure of the extent to which this result was attained.

3.12. Cross-cutting indicators

Table 14 presents a number of cross-cutting indicators (i.e. indicators relevant for more than one competition policy area) that emerged in the process of data collection. This table can give a quick overview of ideas relevant for any future evaluation or IA of DG Competition, regardless of the precise topic.

Table 14: Cross-cutting indicators proposed based on the analysis

Relevant for [policy area]	Objective	Indicator name	Type of indicator	Technical definition	Unit	Possible source of data	R	A	C	E	R
§ Anti-trust § State Aid § Mergers	Increase legal certainty / legal clarity	Degree of legal certainty of rules	Quantitative / Qualitative Impact / Result Indicator	Benchmark / Index the extent to which the rules offer legal certainty [proxies can include: accessibility, predictability, stability over time]	Scale / Number	Survey of stakeholders to assess accessibility, predictability, stability of the legal basis over time					
§ Anti-trust [Agreements] § State aid [in R&D]	Further competitiveness and innovation	Digital agenda (Innovation) indicators	Quantitative Impact Indicator	See list of 100 indicators on innovation on the Digital Agenda Indicators	% / [N°]	Digital Agenda Indicators database					
§ Anti-trust § State aid § Mergers	Prevent harm to competition and consumers	Consumer savings resulting from corrective measures	Quantitative Impact Indicator	Estimated consumer savings related to price increases on the markets where there was a competition intervention	EUR	Aggregate estimates from EC (MP and AAR, etc.)					
§ Anti-trust § State aid § Mergers	Prevent harm to competition and consumers	Consumer costs resulting from anti-competitive behaviour	Quantitative Impact Indicator	Estimated consumer costs on consumers due to anti-competitive behaviour on the market	EUR	Aggregate estimates from EC (MP and AAR, etc.)					
§ Anti-trust § State aid § Mergers	Reduce administrative burden	Regulatory costs for national administrations and enforcement authorities and compliance costs for businesses	Quantitative Result / Impact Indicator	Estimated financial costs and human resources of the application and enforcement of competition rules by national administrations and enforcement authorities Estimated financial costs and human resources necessary for ensuring compliance with competition rules for businesses	EUR FTE	Estimates to be obtained from interviews with a sample of stakeholders					
§ Anti-trust	Deterred anti-competitive agreements	Degree of market concentration	Quantitative Result Indicator	Concentration ratio = combined market share of the top "n" firms in the industry (CR _n)	No / %	Statista / databases industry data					
§ Anti-trust § Mergers	Deterred anti-competitive agreements	Herfindhal Index	Quantitative Result Indicator	Measure of the size of firms in relation to the industry and an indicator of the amount of competition among them	Number	e.g. Energy Union Indicators, Digital Agenda Indicators					
§ Anti-trust § State Aid	Prevent harm to competition and	[Amount of] harm to consumers	Qualitative Impact	Total estimates of direct harm to consumers arising from anti-competitive	EUR	Aggregate estimates of harm to consumers by					

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Relevant for [policy area]	Objective	Indicator name	Type of indicator	Technical definition	Unit	Possible source of data	R	A	C	E	R
§ Mergers	consumers		Indicator	behaviour		anti-competitive behaviour [NCAs, EC, Eurostat]					
§ State Aid	Correct market failure / Stimulate economic growth	[Amount of] investments made by providers [of different services] that receive state aid [in a specific market/ sector]	Qualitative Result Indicator	Investments carried out by providers of services that receive state aid for a given time period compared to total level of investments in the EU [in a specific market sector]	EUR / % of GDP	National Statistics databases					
§ State Aid	Increase market competitiveness	Multiplier effect of the aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection					

4. MAPPING AND ANALYSIS OF OTHER INDICATORS SYSTEMS FOR COMPETITION POLICY

The following sections present the results of the analysis under **Task 2** conducted in relation to systems of monitoring indicators of other international organisations, of other Directorate-Generals of the European Commission and of National Competition Authorities within the EU Member States and beyond the EU borders. The objective of this task was to identify indicators that could complement the ones used already by DG Competition.

4.1. Indicator system of international organisations

The indicators systems for competition policy of international organisations were analysed in order to identify additional indicators to those used by the DG Competition already (**Task 2A**). The organisations selected for this analysis are the World Bank (WB) and Organisation for Economic Cooperation and Development (OECD) and the results of the review are presented in the following sections. A total of 27 indicators were identified as potentially relevant for DG Competition's areas of work.

4.1.1. World Bank

The review of the World Bank's work on indicators for competition policy was based on the analysis of recent documents (reports, research papers) focusing on those which on the basis of a snap-shot assessment (for example, on the basis of the search for key terms related to competition policy) appeared to be of most relevance for the task at hand. The publications selected are presented in the following table. A complete bibliography is available at the end of the report.

Table 15: Overview reviewed publications from World Bank

Year of Publication	Title of publication	Type of publication
2012	How Bank Competition Affects Firms' Access to Finance	Research Paper
2012	Competition-Policy Encouraging Thriving Markets for Development	Research Paper
2015	Competition and Poverty	Research Paper
2016	South Africa Economic Update - Promoting Faster Growth and Poverty Alleviation Through Competition	Report
2016	Breaking Down Barriers: Unlocking Africa's Potential through Vigorous Competition Policy	Report

A number of indicators were identified and can be used to supplement DG Competition's current indicator framework, specifically in relation to the links between competition policy and development policy objectives such as reduction of poverty or increase of social and economic equality. For example, some of the indicators could be applied in connection to DG Competition policy interventions with objectives to improve regional development and cohesion.

In addition to this, the indicators used by the World Bank could be used by DG Competition to assess the potential impact of competition policy on inequality in the EU

– inequality is a significant policy issue and there are studies showing that this is on the increase in the EU.⁴¹

The following table provides the full list indicators identified from the reviewed documents.

⁴¹ European Commission, Horizon 2020: <https://ec.europa.eu/programmes/horizon2020/en/news/what-do-about-rising-inequality>

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 16: World Bank indicators

Indicator name	Technical definition	Policy	Justification of relevance	Source	Baseline	Original source of data
Intensity of local competition	Index indicator calculated on the basis of expert assessment of 10 questions ⁴² on a scale from 1 to 7	All	Provides an indication of the extent to which domestic competition is distorted.	WB (2016) Breaking down barriers	Baseline for 2015-2016 available for 140 countries, including all EU MS	World Economic Forum (2015)
Extent to which rules prevent the development of economic monopolies and cartels	Expert judgment of the extent to which safeguards exist to prevent the development of economic monopolies and cartels, and the extent to which they are enforced Measured on a scale of 1 to 10 ⁴³	All	Indicator for the effectiveness of competition policies.	WB (2016) Breaking down barriers	Baseline for 2016 for 10 MS (CZ, HR, EE, HU, LT, LV, PL, RO, SK, SI)	Bertelsmann Stiftung's Transformation Index (BTI)
Extent to which the fundamentals of market-based competition have developed	Expert assessment of the level to which the fundamentals of market-based competition have developed. ⁴⁴ Measured on a scale of 1 to 10 ⁴⁵	All	Indicator for the effectiveness of competition policies.	WB (2016) Breaking down barriers	Baseline for 2016 for 10 MS (CZ, HR, EE, HU, LT, LV, PL, RO, SK, SI)	Bertelsmann Stiftung's Transformation Index (BTI)
Operational business risks related to weak competition policies by component	Index of operational business risks that are generated by weak competition policies measured on the basis of four factors (lack of freedom to set prices, unfair competitive practices, vested interests, and discriminatory treatment of foreign firms) measured on a scale from 1 to 16	All	Indicator for the effectiveness of competition policies - weak policies prevent firms from competing freely on a level playing field.	WB (2016) Breaking down barriers	Not available	The Economist Intelligence Unit, May 2015.
Reduction in poverty caused by	Point reduction in the overall national poverty rate calculated on the basis of the effect of cartel break	Antitrust	Indicator for the impact of antitrust policy on poverty	2016 South Africa	Not available	Cartel decisions, Socio-economic

⁴² The indicators included are: Extent of market dominance - In your country, how do you characterize corporate activity? [1 = dominated by a few business groups; 7 = spread among many firms]; Effectiveness of anti-monopoly policy - In your country, how effective are anti-monopoly policies at ensuring fair competition? [1 = not effective at all; 7 = extremely effective]; Competition in professional services; Competition in public services; Cost required to start a business (cost is recorded as a percentage of the economy's income per capita, it includes all official fees and fees for legal or professional services if such services are required by law); Time required to start a business; Bankruptcy proceedings costs - (the average cost of bankruptcy proceedings recorded as a percentage of the estate's value); Strength of insolvency framework index; Total tax rate - (this variable is a combination of profit tax (% of profits), labour tax and contribution (% of profits), and other taxes (% of profits)); Distortive effect of taxes and subsidies - In your country, to what extent do government subsidies distort competition? [1 = distort competition to a great extent; 7 = do not distort competition at all].

⁴³ 10 denotes the best conditions for market-based competition and the existence of comprehensive competition laws that are strictly enforced.

⁴⁴ Including the low importance of administered pricing, currency convertibility, no significant entry and exit barriers in product and factor markets, freedom to launch and withdraw investments, and no discrimination based on ownership (state/private, foreign/local) and size.

⁴⁵ Where 10 denotes a situation where market competition is consistently defined and implemented both macro-economically and micro-economically. There are state-guaranteed rules for market competition with equal opportunities for all market participants. The informal sector is very small.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy	Justification of relevance	Source	Baseline	Original source of data
cartel break-ups	ups on the consumption basket of the population's poorest 10% ⁴⁶			economic update -		statistics
Number of individuals lifted out of poverty as a result of competition policy intervention	Number of individuals employed in a sector with anti-competitive characteristics who live under the poverty line and whose economic situation after the introduction of competition in the sector increases their income to above-poverty levels ⁴⁷	Antitrust State Aid	The indicator is relevant to measure the impact of competition law interventions on alleviating poverty.	2016 South Africa economic update	Not available	Anti-trust interventions, Socio-economic statistics
GINI Index	GINI index (coefficient) is expressed as a measure of statistical dispersion intended to represent the income distribution of a nation's residents and is the most commonly used measure of inequality	State aid [All policies]	The indicator can be used as a market concentration criterion.	WB Poverty and Equity Data ⁴⁸	See WB database on Global Poverty Indicators	See WB database on Global Poverty Indicators
Distributional impact of competition enforcement actions	Comparison of the income effect (gains) from the competition enforcement action for the bottom 40% of the population (in terms of income) to the top 40%	Antitrust State Aid	Indicator for the impact of antitrust policy on relative poverty.	2016 South Africa economic update -	Not available	Anti-trust interventions, Socio-economic statistics
Lerner index	Measure of bank pricing behaviour - difference between banks' prices and marginal costs relative to prices. Mathematically it can be expressed as $L = (P - MC)/P$, where P is the market price set by the firm and MC is the firm's marginal cost. The index ranges from a high of 1 to a low of 0, with higher numbers implying greater market power. For a perfectly competitive firm (where $P=MC$), $L=0$; such a firm has no market power	Anti-trust in financial sector	High values of the Lerner index, indicate low competition in the banking sector which diminishes firms' access to finance.	WB Policy research paper N6163 How Bank Competition Affects Firms' Access to Finance	Not available	Not specified
Ease of doing business	Doing Business provides objective measures of business regulations and their enforcement across 189 economies. Each economy is ranked according to 10 sets of indicators. These are combined into an overall "ease of doing business" ranking	All	Relevant in assessing the regulatory environment of businesses and the effect of it on the effectiveness of competition policy.	WB Doing Business database ⁴⁹	The index has been available since 2004	WB Doing Business database

⁴⁶ An example of application provided in the WB report: In the case of four cartels in maize, wheat, poultry, and pharmaceuticals in South Africa — products which make up 15.6 % of the consumption basket of the population's poorest 10 % — conservative estimates indicate that around 200,000 people stood to be lifted above the overall poverty line by tackling cartel over - charges. This is equivalent to a 0.4 percentage point reduction in the overall national poverty rate.

⁴⁷ The effect can have both a positive and a negative effect on poverty. An example of positive effect is the elimination of Madagascar's monopsony/monopoly vanilla marketing board, and its replacement with imperfectly competitive domestic vanilla traders, had a large positive effect on the purchase price paid to vanilla farmers, lifting about 20,000 individuals out of poverty. An example of negative effect is the effective ban on rice imports in Indonesia—introduced in part to raise the incomes of poor farmers—benefited only the richest farmers and raised the incidence of poverty by just under 1 % of the population due to high household expenditure on rice.

⁴⁸ World Bank, Poverty Data: <http://povertydata.worldbank.org/poverty/home/>.

⁴⁹ World Bank, Doing Business database: <http://data.worldbank.org/data-catalog/doing-business-database>.

4.1.2. OECD

The review of the OECD's work on indicators for competition policy was based on the analysis of recent documents (reports, research papers) focusing on those which on the basis of a snap-shot assessment appeared to be of most relevance for the task at hand (for example, on the basis of the search for key terms related to competition policy). The publications selected are presented in the following table. A complete bibliography is available at the end of the report.

Table 17: Overview reviewed publications from OECD

Year of Publication	Title of publication	Type of publication
2016	Reference guide on ex-post evaluation of competition agencies' enforcement decisions	Report
2016	Market power & wealth distribution – presentation of OECD study by John Davies and Sean Ennis	Presentation
2015	Competition Assessment Toolkit	Report
2014	Guide for assessing the impact of competition authorities' activities	Report
2014	Factsheet on how competition policy affects macro-economic outcomes	Report
2013	New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries	Report
2013	Evaluation of competition enforcement and advocacy activities: the results of an OECD survey	Report

The reviewed sources identified a number of indicators that can be used to supplement DG Competition's current indicator framework, specifically in assessing the macroeconomic impacts of competition policy. Given the close relation between the European Commission and the OECD, the list of identified indicators utilised by the OECD relate closely to indicators already used by the European Commission, but the methods for assessments identified could be a source for inspiration for the Commission in designing the methodology for ex-post evaluations of the results and impact of competition policy instruments.

The following table provides the full list indicators identified from the reviewed documents.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Table 18: OECD indicators

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Original source of data
Effect of competition on productivity growth	Indicator computed on the basis of economic models using different measures of competition (in product markets) and of productivity ⁵⁰	All	Higher competition is statistically significantly associated with faster productivity growth.	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Not specified
Effect of competition in upstream sectors on competition in downstream sectors	Indicator computed on the basis of economic models assessing the effect of firms' productivity and competition in the service sector and productivity and employment in downstream sectors	All	Relevant for measuring the effects of competition in infrastructure construction and provision, and in utilities. E.g. Barone and Cingano (2008), ⁵¹ estimate that removing the regulation of price and tariffs among professions, industries making intense use of their services (as Chemicals and Pharmaceuticals) would grow by 0.5% more relatively to less intensive users (as Fabricated Metal Products. There is a statistically significant relation between firms' productivity and competition in the service sector: as competition increases, so does the average productivity of manufacturing. ⁵²	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Barone and Cingano (2008)
Degree of allocative efficiency	Indicator of productivity growth in relation to between-firm effects (i.e. displacement of less efficient firms by more efficient rivals) and within-firm effects (i.e. individual firms becoming more efficient). Can be measured via the distribution of Total Factor Productivity between different manufacturing plants	All	More competitive markets dynamically allocate resources to the most productive and innovative firms. Better firms enter and succeed while the worst firms fail and exit. The finding that productivity growth is largely driven by reallocation from less to more productive firms is discussed at length in Arnold et al (2011), ⁵³ in the context of the effect of anti-competitive regulation, and also in the report of the OECD's project Supporting Investment in Knowledge Capital, Growth and Innovation (OECD, 2013). ⁵⁴	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Arnold et al (2011)
Effect of competition on	Indicator estimated via economic models assessing the relation between measures	All	Studies by Aghion et al. found that moderately competitive markets are likely to be the most	OECD 2014 Factsheet on how	Not	Aghion, P., Bloom, N.,

⁵⁰ e.g. Nickell, S. (1996), Competition and Corporate Performance. Journal of Political Economy 104(4), 724-746: <http://www.jstor.org/stable/10.2307/2138883>.

⁵¹ Barone, G., & Cingano, F. (2008), Service Regulation and Growth: Evidence from OECD Countries. Bank of Italy Temi di Discussione (Working Paper) No. 675: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1160183&download=yes.

⁵² Forlani, E. (2010), Competition in the Service Sector and the Performances of Manufacturing Firms: Does Liberalization Matter? CESifo Working Paper No. 2942. http://www.cesifo-group.de/ifoHome/publications/working-papers/CESifoWP/CESifoWPdetails?wp_num=2942.

⁵³ Arnold, J. M., Nicoletti, G., & Scarpetta, S. (2011), Regulation, Resource Reallocation and Productivity Growth. European Investment Bank Papers, 16(1), 90-115. [HYPERLINK "http://www.eib.org/attachments/efs/eibpapers/eibpapers_2011_v16_n01_en.pdf"](http://www.eib.org/attachments/efs/eibpapers/eibpapers_2011_v16_n01_en.pdf)

⁵⁴ http://www.eib.org/attachments/efs/eibpapers/eibpapers_2011_v16_n01_en.pdf#page=92

⁵⁴ OECD (2013b), Supporting Investment in Knowledge Capital, Growth and Innovation, OECD Publishing <http://dx.doi.org/10.1787/9789264193307-en>.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Original source of data
innovation	of competition (e.g. count of competitors, profit margins in a market) and measures of innovation (e.g. citation-weighted patents). ⁵⁵		innovative, while monopoly or very competitive markets innovate less. ⁵⁶	competition policy affects macro-economic outcomes	specified	Blundell, R., Griffith, R., & Howitt, P. (2005)
Effect of competition law enforcement on competition	Indicator of relation between strength of competition law enforcement and strength of competition (measured by number of players in the relevant industry)	All	Dutz and Vagliasindi (2000) and Vagliasindi et al (2006) ⁵⁷ using data on a number of transition economies shows that better implementation of competition law leads to greater competition (measured by number of players in the relevant industry).	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Dutz and Vagliasindi (2000) and Vagliasindi et al (2006)
Deterrence effect of cartel law	Indicator assessing the relation between the strength of the cartel enforcement regime and cartel overcharge.	Anti-trust	Connor and Bolotova (2006, pp. 1133-1134), ⁵⁸ in a literature survey and meta-analysis of several hundred cartels across a large number of jurisdictions in the European Union, North America and Asia, find that the stronger the competition regime, the lower the cartel overcharge.	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Connor and Bolotova (2006)
Effect of competition law on economic growth	Indicator estimated through economic model taking into account different factors for economic growth (such as FDI and productivity).	All	In analysis of 179 countries from 1971 to 2012 Gutmann and Voigt (2014) ⁵⁹ find the introduction of a competition law improves the dynamic efficiency of an economy, as the annual growth rate increases between 2% and 3% as a consequence. See also Petersen (2013). ⁶⁰	OECD 2014 Factsheet on how competition policy affects macro-economic outcomes	Not specified	Gutmann and Voigt (2014)
Effect of competition law on well-being	Indicator on the relation between competition law and well-being, as measured by e.g. OECD's Better Life Index ⁶¹	All	Stucke (2013) ⁶² argues that competition policy can and should lead to an economy and society that is more effective at promoting well-being and happiness. * There are no empirical studies on this yet.	OECD 2014 Factsheet on how competition policy affects macro-	Not specified	Stucke (2013)

⁵⁵Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005), Competition and Innovation: an Inverted-U Relationship. The Quarterly Journal of Economics, 120(2), 701-728. <http://web.stanford.edu/~nbloom/PevertedU.pdf>.

⁵⁶Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005), Competition and Innovation: an Inverted-U Relationship. The Quarterly Journal of Economics, 120(2), 701-728. <http://web.stanford.edu/~nbloom/PevertedU.pdf>.

⁵⁷Vagliasindi, M., Güney, I., & Taubman, C. (2006), Fixed and mobile competition in transition economies. Telecommunications Policy, 30(7), 349-367. <http://www.sciencedirect.com/science/article/pii/S0308596106000462>.

⁵⁸Connor, J. M., & Bolotova, Y. (2006). Cartel overcharges: survey and meta-analysis, International Journal of Industrial Organization, 24(6), 1109-1137. <http://www.sciencedirect.com/science/article/pii/S0167718706000439>.

⁵⁹Gutmann, J., & Voigt, S. (2014). Lending a Hand to the Invisible Hand? Assessing the Effects of Newly Enacted Competition Laws, Assessing the Effects of Newly Enacted Competition Laws (February 8, 2014). <http://ssrn.com/abstract=2392780>.

⁶⁰Petersen, N. (2013), Antitrust Law and the Promotion of Democracy and Economic Growth, Journal of competition law & economics, 9(3), 593-636.

⁶¹OECD, Better Life Index: www.oecdbetterlifeindex.org.

⁶²Stucke, M. E. (2013), Should Competition Policy Promote Happiness? Fordham L. Rev., 81, 2575. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2203533.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Original source of data
				economic outcomes		
Ability of a country's competition regime to achieve more competition while allowing efficiency gains	Indicator assessed on the basis of OECD competition law and policy (CLP) indicators (see next)	All	Measure of the effectiveness of competition regimes.	OECD (2013) ⁶³ New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries	Not specified	Not specified
Scope of action of competition policy	Indicator measuring the legal powers to investigate and impose sanctions on antitrust infringements and to investigate, remedy, or block mergers. Assessed on a 0-6 scale on the basis of answers provided by competition authorities to a questionnaire on competition law and policy	All	Measure of the effectiveness of competition regimes.	OECD (2013) New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries	0.24 for the OECD in 2013	Not specified
[Strength of] policy on anticompetitive behaviours	Indicator of the approaches toward the assessment of horizontal and vertical agreements, exclusionary conducts and mergers as well as effective action taken against anticompetitive behaviours. Assessed on a 0-6 scale on the basis of answers provided by competition authorities to a questionnaire on competition law and policies	All	Measure of the effectiveness of competition regimes.	OECD (2013) New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries	0.18 for the OECD in 2013	Not specified
[Degree of] probity of investigation	Indicator of independence and accountability of the institutions enforcing the competition law as well as their procedural fairness. Assessed on a 0-6 scale on the basis of answers provided by competition authorities to a questionnaire on competition law and policies	All	Measure of the effectiveness of competition regimes.	OECD (2013) New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries	0.36 for the OECD in 2013	Not specified
[Level of] competition advocacy	Indicator of activities promoting competition by other means than standard enforcement of the competition law, such as the review of regulation that might have	All	Measure of the effectiveness of competition regimes.	OECD (2013) New Indicators of Competition Law and Policy in 2013	0.89 for the OECD in 2013	Not specified

⁶³ Alemani, E. et al. (2013), "New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries", OECD Economics Department Working Papers, No. 1104, OECD Publishing: <http://dx.doi.org/10.1787/5k3ttg4r657h-en>.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Original source of data
	an impact on competition. Assessed on a 0-6 scale on the basis of answers provided by competition authorities to a questionnaire on competition law and policies			for OECD and non-OECD Countries		
Change in stock price of a company/companies as a result of competition policy intervention	Indicator assessing the change in a firm's stock price (which should always represent the discounted value of the firm's flow of profits) as a reflection of competition policy intervention (e.g. investigation), due to its effect on the expectations of the firm's profits	Merger control	Financial information can be used to determine which firms have benefited from a competition authority's intervention and hence what has been the impact on consumers, usually through event studies. By assessing the stock market's reactions (i.e. the changes in the share prices of the affected firms and their competitors) to the announcement of a CA's investigation into a merger or to the publication of a decision on a competition infringement (i.e. the event), it is possible to derive a view on the effect of this event on the relevant market(s). This approach can only be employed if the affected firms and their main competitors are listed on the stock market.	OECD (2012) Evaluation of competition enforcement and advocacy activities: the results of an OECD survey	Not specified	"Ex-post review of merger control decisions", a study prepared for the European Commission by Lear (December 2006)
Effect of competition on quality for consumers	Indicator estimated on the basis of before and after comparison of market conditions, which considers both the quantitative values of some variables, obtained from various sources including survey, and users' and providers' views on how the market had changed	all	Measure to address the impact of competition policy on quality for consumers.	OECD (2012) Evaluation of competition enforcement and advocacy activities: the results of an OECD survey	Not specified	Not specified
Impact of a competition intervention on entry	Assessment of the changes in the entry regulation in a given market based on the review the patterns of market entry and exit witnessed before and after the intervention, ⁶⁴ compared to a control region	All	Measure to address the impact of competition policy on competition in the market and the subsequent effects on quality for consumers (e.g. availability, product variety).	OECD (2012) Evaluation of competition enforcement	Not specified	Not specified

⁶⁴ Analysis of OFT intervention in UK pharmacies market (the OECD report does not provide a specific reference to the source). The analysis reviewed the patterns of market entry and exit witnessed in the retail pharmacies market in England before and after the regulation was changed, against those that happened over the same time period in Wales where the reforms were not implemented. It was found that the regulatory changes led to a net increase (around 9%) in the number of pharmacies. Then, the impact of entry on consumer welfare was analysed by employing a bottom-up calculation that quantifies the value to consumers of their prescriptions demand being spread across a wider pharmacy base. The impact on travel times and on waiting times was considered using data from a consumer survey and estimates of consumers' value of time and obtain a figure of £24.7m-£32.8m per year. This result was supplemented with a 'holistic' measure based on a survey that elicited directly from the consumers a monetary measure of the benefit of the reforms. This holistic measure estimated the benefits between £21m and £68m per year.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Original source of data
Impact of market power on wealth distribution	Indicator estimated on the basis of economic model assessing the relationship between market power and wealth distribution	All	Measure of the impact of competition on inequality. OECD has produced a paper illustrating overall impact of market power, showing that the disproportionate impact of market power on the poor and the wealthy segments of the population.	Market Power & Wealth Distribution – presentation of OECD study by J. Davies & S. Ennis	Not specified	Not specified

4.2. Indicator systems of other Commission services

Under **Task 2B** of this assignment the focus was on identifying indicators relevant for the assessment of competition policy based on the indicators used by other Directorates-General for the European Commission. The relevant Impact Assessments of the DGs were selected on the basis of a snap shot assessment – for example, on the basis of the search for key terms related to competition policy.

An overview of the DGs that the study looked into is presented in the table below.

Table 19: Overview Directorate-Generals

DG	Relevance for:
Communications Networks, Content and Technology (CONNECT)	Liberalisation of telecommunications market; State aid (broadband rules)
Economic and Financial Affairs (ECFIN)	State aid (risk finance investments)
Energy (ENER)	Liberalisation of energy market; State aid (energy)
Environment (ENV)	State aid (environmental protection, GHG emission allowance trading scheme)
Internal Market, Industry, Entrepreneurship and SMEs (GROW)	State aid
Regional and Urban Policy (REGIO)	State aid
Research and Innovation (RTD)	States aid (research and development)
Trade (TRADE)	State aid
Justice (JUST)	Anti-trust, State Aid

In total, 47 different Impact Assessments from 9 Directorate-Generals were reviewed.

The objective of this mapping was to select at least 16 indicators that would improve the indicators already used by DG Competition. The review identified close to a 100 additional indicators in total and Annex 3 presents them in detail. The 16 most relevant ones have been selected and presented in the following table.

In general, it can be said that most of the identified additional indicators could be used by DG Competition in order to prepare more comprehensive assessments of the economic effects of competition policy on different industries or markets or the economy as a whole, the social effects for consumers, or the impact on the environment.

Table 20: Overview of selected 16 additional indicators from other DGs

Indicator name	Policy area	Technical definition	Source
Consumer surplus increase (million € per year) in relation to broadband	State aid [broadband]	Based on empirical data: average broadband speed increase, projected willingness to pay for additional speed, projected decrease in average subscription prices ⁶⁵	DG Connect, IA on broadband investment environment, 2013, p. 55

⁶⁵ In the event of a decrease in access prices, from the producers' side, the operators would provide the actual broadband lines at a lower price, thereby leading to revenue losses (the so called producer surplus loss) but also

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Policy area	Technical definition	Source
Average GDP increase generated by the Internet economy	State aid [broadband]	GDP growth rate (%) generated by the Internet economy. The deployment of broadband can lead to an increase in the Internet economy and of the GDP. [See estimates provided by McKinsey Global Institute, 2011 ⁶⁶]	DG Connect, IA on broadband investment environment, 2013, p. 7
Market Performance Indicator (MPI)	All policies	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes.	DG JUST Consumer Markets Scoreboard [Time-series since 2008]
Consumer Conditions Index	All policies	The Consumer Conditions Scoreboard monitors national conditions for consumers in 3 dimensions (knowledge and trust, compliance and enforcement, complaints and dispute resolution) and examines progress in the integration of the EU retail market based on the level of business-to-consumer cross-border transactions and the development of e-commerce. ⁶⁷	DG JUST Consumer Markets Scoreboard [Time-series since 2008]
Economic Sentiment Indicator (ESI)	All policies	The economic sentiment indicator is the weighted average (of the industrial confidence indicator (40%), the services confidence indicator (30%), the consumer confidence indicator (20%), the construction confidence indicator (5%) and the retail trade confidence indicator (5%)). Data is seasonally adjusted. ⁶⁸	DG ECFIN Key indicators database ⁶⁹
Degree of energy prices convergence in the EU	State Aid	Convergence of wholesale electricity and gas prices both for industry and household in the EU internal energy market. Relevance for measuring the impact of competition policy on energy prices in the EU	DG ENER Strategic Plan 2016-2020
Digital Economy and Society Index	State aid	Aggregate score in Digital Economy and Society Index (DESI) EU-28; DESI is a composite index that summarizes relevant indicators for EU digital performance.	DG RTD Strategic Plan 2016-2020
Share of co-publications with international partners	State aid	Proportion of EU co-publications with at least one International Partner Country to the total of EU publications. Relevant for assessing the impact in fostering R&D and correlate it with the contribution of SA.	DG RTD Strategic plan based on Science Matrix/Scopus database
SMEs innovating in-	All policies	Sum of SMEs with in-house innovation	DG GROW/ European

expand their customer base as new customers would now subscribe to a broadband network thereby leading to revenue gains (the so called produce surplus gain).

⁶⁶ See McKinsey Global Institute (2011) Koutroumpis (2009), Thompson and Garbacz (2009), The Allen Consulting Group (2003)

⁶⁷ The findings of this Scoreboard are based on the fifth wave of a large scale survey on consumers' concrete experiences and perceptions regarding the functioning of key goods and services markets in the 28 Member States of the European Union, Iceland and Norway, carried out in 2015. The surveys provide statistically reliable and comparable results for the relevant national markets which are assessed in terms of key "components" that contribute to their performance.

⁶⁸ The ESI is derived from surveys gathering the assessments of economic operators of the current economic situation and their expectations about future developments. Since the economic developments are affected by the presence or absence of competition on the market, the indicator can be relevant to look at in connection to competition law interventions and may be a relevant proxy to measure macro-impacts of competition policy.

⁶⁹ European Commission, DG ECFIN Indicators Database: http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Policy area	Technical definition	Source
house (% of SMEs)		activities. Innovative firms are defined as those firms which have introduced new products or process either 1) in-house or 2) in combination with other firms. Relevant indicator for competition policy's effect on innovation in the EU.	Innovation Scoreboard 2016
Sales of new-to-market and new-to-firm innovations as % of turnover	All policies	Sum of total turnover of new or significantly improved products, either new-to-the-firm or new-to-the market, for all enterprises. The indicator thus captures both the creation of state of-the-art technologies (new to market products) and the diffusion of these technologies (new to firm products).	DG GROW European Innovation Scoreboard 2016
Level of internationalisation of SMEs	All policies	Determined according to the export participation in EU manufacturing (goods excluding services) by firm size based on trade statistics	DG GROW European Competitiveness Report 2014
Level of cost of capital and investment cost	All policies	Cost of capital depends on the mode of financing used – it refers to the cost of equity if the business is financed solely through equity or to the cost of debt if it is financed solely through debt. Cost of capital and investment costs are relevant indicators in assessing the usefulness of providing state aid, for example for risk finance.	DG ECFIN SEC(2011) 1237 final, p.25
Number of enterprises trading cross-border		Quantitative analysis according to the variation in the average number of EU countries that companies export to and variation in share of consumers shopping cross-border	DG JUST SEC (2011) 1166 final.
Country-specific supplier concentration index (SCI)	Anti-trust/State aid	Sum of squares of the quotient of net positive imports of gas from an extra EEA country to an importing MS (numerator) and the gross inland consumption of gas in the importing MS (denominator).	DG ENER SWD(2016) 25 final
Private match investment	State aid	Private investment matching public support in innovation or R&D projects. Can be used to calculate multiplier effect of state aid interventions aiming to generate private investment	DG REGIO Cohesion policy database
Herfindahl index [Herfindahl index on broadband competition Herfindahl index on power generation Herfindahl index on gas market]	State Aid	Measure of the size of firms in relation to the industry and an indicator of the amount of competition among them.	Energy Union Indicators factsheets Digital Agenda Indicators database

4.3. Indicator systems of National Competition Authorities

In **Task 2C** of this assignment, the objective is to identify additional indicators based on the indicators systems used by National Competition Authorities (NCAs). The analysis covered the competition authorities of the United Kingdom, Sweden, Netherlands, Canada, Australia, Germany and France.

Table 21: Overview Competition Authorities in the Member States

Country	Competition Authority
United Kingdom	Competition and Markets Authority
Sweden	Konkurrensverket
Netherlands	Autoriteit Consument & Markt
France	Autorité de la Concurrence
Germany	Bundeskartellamt
Canada	Competition Bureau
Australia	Australian Competition and Consumer Commission

A number of different sources were reviewed for each of these cases – e.g. annual reports, special publications and working papers, as well as databases. For the purpose of transparency, the main publications reviewed have been listed, although they did not always result in the inclusion of specific indicator in the report. It should also be noted that the focus of the review was on identifying indicators *additional* to those used by DG Competition and of potential relevance for the assessment of EU competition policy measures. Therefore, not all indicators that were identified were included in the report and the selection of indicators should not be considered as reflective of the overall scope or strength of the monitoring indicators systems used by the NCAs.

The objective of Task 2C was to produce a list of at least 10 additional indicators that can complement the indicators already used by DG Competition. The conducted review identified more than 90 relevant indicators in total (see Table 24 to Table 36), but a selection of the 10 most relevant ones can be found in the following table.

Table 22: Overview of selected 10 additional indicators

Indicator name	Technical definition / Data source	Source
Multifactor productivity growth	Measure of output produced per unit of combined inputs of labour and capital	Australia
Changes in the distribution of employment across sectors, types of business and localities	Employment rate trends across sectors, types of business and localities	Australia
Changes in the level of wellbeing	Measures by using "happiness" as a proxy	Australia

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition / Data source	Source
Degree of access to high quality human services	Higher quality of human services such as health, education, community services.	Australia
Weight of patents as indicator of degree of innovation	Average citation frequency of patents	Canada
Effect of liberalisation of the book market on level of culture and access to information	Measuring the effects of competition on societal aspects. In this case, measured through the access to books, supply of titles, prices and the quality of the buying experience.	Sweden
Number of businesses who had been in contact with others in their industry (who weren't their suppliers) in relation to a transaction and discussed prices	Indicator of opportunity for anti-competitive behaviours	United Kingdom
Impact of competition cases on firm behaviour	Number of companies that report they have changed their behaviour as a result of investigation in another company's dealings/ due to the risk of investigation. This is an additional indicator to the measures of deterrence used by the Commission.	United Kingdom
Extent to which merger enforcement leads to over-deterrence	Businesses' experience of over-deterrence: "How often does the competition regime deter mergers that would not have lessened competition?" (always-never)	United Kingdom
Compliance measures used by businesses	Number of businesses reporting carrying out certain measures (Carry out competition risk assessments, Employ a dedicated Competition compliance Officer, Take external advice on competition law matters, Have a formal competition law code of conduct or compliance programme, Hold training for employees on competition issues, Other)	United Kingdom
Businesses' ability to recognise competition rules	Businesses knowledge of competition law assessed through a survey where businesses were read a series of 10 True/False statements regarding Competition Law rules	United Kingdom

The following sections offer a more detailed overview of the identified additional indicators of each of the NCAs of the selected countries.

4.3.1. Australia: Competition and Consumer Commission

The following section presents the results of the mapping of monitoring indicators utilised by the Competition and Market Authority of Australia. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 23: List of reviewed sources by the Australian Competition and Consumer Commission

Year	Name of the publication
2014-2015	Annual Report of the Australian Competition and Consumer Commission [ACCC]
2015	Review of the Australian Competition and Consumer Commission Annual Report [ACCC]
2014	The comparator website industry in Australia [ACCC]
2016	NBN Wholesale Market Indicator Report [ACCC]
2014	Competition Review Report [Australian Government]
2005	Review of National Competition Policy Reforms [Australian Government – Productivity Commission]

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Table 24: Identified indicators used by the Australian Competition and Consumer Commission and Australian Government

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Value ranking of products	Ranking of products on factors beyond price, such as rating, benefits, individual needs, star ratings	Anti-trust	In Australia, there is evidence that comparator websites can positively impact competition in the markets for products that they compare and/or sell by effectively reducing barriers to entry and making it easier for new entrants to enter the market. Challenger brands (usually SMEs) increasingly rely on comparator websites as a cheaper and wide-ranging marketing channel to promote their products. Comparator websites also have consumer benefits as they reduce search costs, potentially making the process of researching and choosing products easier.	ACCC, Comparator website industry in Australia, p. 18	See report	Comparator websites
Online Retail Sales Index	Growth in online retail spending	Anti-trust	The indicator is relevant for measuring if the competition rules are conducive to increased online sales and the use of new forms of distribution.	Competition Policy Review, 2015, p. 162	Online retail sales were estimated to represent around 6.8 % of spending at brick and mortar retailers, up from 4.9 % in 2011	National Australia Bank
Multifactor productivity growth	Measure of output produced per unit of combined inputs of labour and capital	Anti-trust Mergers	Quality of competition policy is positively linked to productivity. It is a measure of the efficiency with which both labour and capital inputs are used in production. Productivity growth is lower in service sectors, such as aged care and health, which are expected to expand, while sectors with higher productivity growth, such as financial services, are expected to decline as a share of the economy.	Competition Policy Review, 2015, p. 18 Review of National Competition Reforms, 2005, p. 42	See report p. 42.	Not specified
Gross average household income growth	Gross average household income growth	All	While causality is difficult to establish, it is considered that national competition policy has contributed to the rise in average household incomes. Indirect measure of productivity growth.	Review of National Competition Reforms, 2005, p. 27	See report, p. 27	Not specified
Average annual change in real household prices	Changes in CPI index	State Aid	Changes in prices can reflect net effect of national competition policy reforms but they can also be linked to a range of other factors – e.g. technological advances, changes in patterns of demand etc. According to the Australian Chamber of Commerce it is difficult to determine the impact on prices of national	Review of National Competition Reforms, 2005, p. 57	See report p. 57ff.	PC estimates based on ABS (Consumer Price Index, Cat. no. 6401.0). ⁷⁰

⁷⁰ Household prices: Electricity, gas, post and urban transport - ABS (Consumer Price Index, Cat. no. 6401.0); Water and sewerage – PC estimates based on ABS (Consumer Price Index, Cat. no. 6401.0) and PC 2002h; Telecommunications – ACCC 2004b and prior years; 'Household and business' and 'business' prices: Electricity – ESAA 2004 and prior years; Gas – ABS (Producer Price Index, Cat. no. 6427.0); Telecommunications - ACCC 2004b and prior years; Rail freight – PC 2002h; Passenger rail - PC 1999a; Ports - PC 2002h; Road freight – BTRE 2001.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
			competition policy reforms alone. Measuring the effect on prices is difficult because it must be separated from other market factors that can affect economic and social conditions.			
Changes in service quality	Measured through the reliability of supply, level of choice and innovation delivery,	All	Competition encourages producers to compete for customers by offering better service quality (for example, improved reliability and timeliness of service) and expansion of the product range.	Review of National Competition Reforms, 2005, p. 65	See report, p. 65ff	Examples collected through consultation
Changes in the distribution of employment across sectors, types of business and localities	Employment rate trends across sectors, types of business and localities	All	Competition reforms are assessed to have a sizeable impact on employment increase. The immediate impact of competition policy reforms often involves the reallocation of labour to more productive uses. Thus, in the short to medium run impacts on economy-wide employment levels are likely to be small but changes in the distribution of employment across sectors, types of business and localities might occur.	Review of National Competition Reforms, 2005, p. 94	See report, p. 94ff.	Not specified [National statistics]
Changes in the level of wellbeing	"Happiness" levels	All	Competition policy is often related with an increase in the level of wellbeing of people. Some researchers have attempted to measure wellbeing changes over time by using "happiness" as a proxy for wellbeing.	Review of National Competition Reforms, 2005, p. 163	Not specified	Survey
GDP per hour worked index	Index calculated in 'purchasing power parity' terms	All	Competition can affect labour productivity. A simple measure of labour productivity is the GDP per hour worked.	Review of National Competition Reforms, 2005, p. 166	See report, Figure 7.1	Not specified
Degree of access to high quality human services	Extent to which access to high quality human services (e.g. health, education, community services etc.) is available	All	The report indicates that increased competition can lead to a higher quality of human services – e.g. health, education, community services.	Competition Policy Review, 2015, p.	Not specified	Not specified
Trade intensity	Ratio of exports plus imports to GDP	All	It is assessed that economic policy reforms (including national policy reforms) are principle drivers of the surge in productivity.	Review of National Competition Reforms, 2005, p. 43	Australia's trade intensity (the ratio of exports plus imports to GDP) rose from 27 % in the mid-1980s to 44 % in 2003.	Not specified
Amount of greenhouse gas emissions	Not specified [to be further investigated]	State aid	According to the Report, national competition policy reforms can have unanticipated effect of the environment. For example, it is considered that higher greenhouse gas emissions are related to competition reforms which lead to increases in demand for electricity.	Review of National Competition Reforms, 2005, p. 42, 123	See report, p. 123	Survey / Consultation

4.3.2. Canada: Competition Bureau of Canada

The following section presents the results of the mapping of indicators utilised by the Competition Bureau of Canada in the policy area of competition. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 25: List of reviewed sources by the Competition Bureau of Canada

Year	Name of the publication
2014	Annual Report of the Commissioner of Competition for the year ending [CBC]
2012	The Abuse of Dominance Provisions [Enforcement Guidelines] [CBC]
2014	Price Maintenance [Section 76 of the Competition Act] [CBC]
2007	Innovation and Dynamic Efficiencies in Merger Review [CBC]
2011	Merger Enforcement Guidelines [CBC]
2007	Sharpening Canada's competitive edge [Government of Canada]
2008	Compete to Win [Government of Canada]

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Table 26: Identified indicators used by the Competition Bureau of Canada and the Government of Canada

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Switching costs	[Amount of] changes in quantities purchased in response to relative price increase	Anti-trust policy; State aid policy	Transaction costs that buyers would have to incur to, among other things, retool, repackaging, adapt their marketing, breach a supply contract or learn new procedures, may be sufficient to suggest that switching is an unlikely response to a small but significant and non-transitory price increase. Test to examine the dimensions of buyer switching from suppliers in open location to suppliers in another, in response to a small but significant and non-transitory increase in price, beginning with the area in which the allegedly abusive firm operates.	CBC [The Abuse of Dominance Provisions, p.4]	Not specified	Not specified
Total bid-rigging fines imposed	Total amount of bid-rigging fines imposed	Anti-trust policy	Measures the extent to which the phenomenon constitutes an issue in competition policy.	CBC [Annual Report, p.29]	2013-2014: \$49.2M	Not specified
Administrative burden of enforcement	Estimated costs of merger review [The direct costs of merger review include the salaries of the staff whose work related to merger review; the major non-salary direct costs include expenditures associated with hiring economic and industry experts, lawyers assigned to merger review from CBLS and external legal support. The indirect costs associated with merger review include overhead expenditure, such as informatics and administration]	Merger policy State Aid Anti-trust	The relevance of the indicator arises from the fact that it is a measure of the administrative burden incurred due to the provisions in force. In the context of state aid, the indicator can be used to assess the burden on national authorities to prepare a State aid file and to implement the aid measure correctly.	CBC [Merger Review Report, 2012, p. 9]	2010-2011: \$14.4 M	CBC Statistics
Weight of patents	Average citation frequency of patents	Anti-trust/ State-aid	Relevant to quantify the level of innovation. It should be noted that counting patents leads to an imperfect indication of innovation. Weighting patents by the number of citations subsequently received from later patents has been used with some degree of success in assessing the level of innovation. ⁷¹	CBC [Innovation and Dynamic Efficiencies in Merger Review, 2007, p. 15]	Not specified	Survey
Degree of market transparency	Extent to which there is market transparency [measured through survey to market actors]	Anti-trust	The CBC monitors the degree of market transparency. It is assumed that when information	CBC [Merger Enforcement	Not specified	Not specified

⁷¹ See e.g., Dietmar Harhoff, Francis Narin, F.M. Scherer, and Katrin Vopel (1998), Citation Frequency and the Value of Patented Inventions, Review of Economics and Statistics, Vol. 1; Bronwyn H. Hall, Adam Jaffe, and Manuel Trajtenberg (2005), Market Value and Patent Citations RAND Journal of Economics, Vol. 36.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
		Mergers State Aid	about prices is readily available to market participants it is easier for rivals to monitor each other's behaviour which makes coordination more likely.	Guidelines, p. 26]		
Degree of product differentiation among firms	Extent to which product differentiation exists amongst firms providing similar services [survey of the market]	Anti-trust Mergers State Aid	Relevant indicator for the likelihood of coordination on the market. Complex products and differences in product offerings make it more difficult for firms to reach profitable terms of coordination.	CBC [Merger Enforcement Guidelines, p. 25]	Not specified	Not specified
Cost symmetries among firms	Extent to which prices are similar for products	Anti-trust Mergers	Relevant proxy for the presence of coordination among firms on the market.	CBC [Merger Enforcement Guidelines, p. 25]	Not specified	Not specified
Inward and Outward Merger and Acquisition Activity	Inward and Outward Merger and Acquisition Activity in billion CAD	Merger	A negative value for inward M&A activity could indicate net repatriation of assets of foreign-owned companies operating in Canada. Inward M&A is defined within Canada's Balance of International Payments system as the difference between the sales of existing assets in Canada and the acquisitions of direct investment assets from non-residents.	Sharpening Canada's competitive edge, p. 38	See report, p. 38	National statistics (1993-2006)

4.3.3. Sweden: Competition Authority

The following section presents the results of the mapping of indicators utilised by the Swedish Competition Authority in the policy area of competition. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 27: List of reviewed sources by the Swedish Competition Authority

Year	Name of the publication
2015	Annual Report
2015	Enforcing Margin Squeeze Ex post across converging telecommunications markets ⁷²
2013	A vision for competition. Competition policy toward 2020
2007	External report on competition indicators and other relevant methods (Summary report)

⁷² http://www.konkurrensverket.se/globalassets/publikationer/workingpaper/working_paper_2015-2.pdf

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 28: Identified indicators used by Swedish Competition Authority

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Case management confidence percentage	Assessment of stakeholders of case confidence in case management by by the competition authority	All policies	Relevant for measuring the stakeholder's assessment of case management confidence in the Competition Authority and knowledge of legislation. The relevance of the indicator is connected both generally to competition policy as a whole but can be linked also specifically to competition policy legal instruments.	Annual Report, 2015, p. 62	In a weighted average of the various stakeholder groups, the majority, 67%, responded that they have a high or very high level of confidence in the Swedish Competition Authority, which is an increase of 1%. The confidence percentage is highest amongst authorities and lowest amongst small businesses.	National Survey of Stakeholders
Attitude towards competition law	Stakeholders' opinion regarding NCA practices and activities	All policies	Relevant for measuring the perception of stakeholders towards the practices and activities of the NCA and their attitude towards competition law.	Annual Report, 2015, p. 60	58% have a positive attitude to the Competition Act. The trade organisations were the most positive, whilst smaller businesses are the most negative. The target groups were considerably more critical of procurement legislation.	National Survey of Stakeholders
Attitude towards competition	Stakeholders' opinion on the role of competition on the markets and its importance for their business activities	All policies	Relevant for measuring the perception of stakeholders towards competition on the markets and its importance for business activities.	Annual Report, 2015, p. 60	97 % believe that competition is a good thing. 95% believe that there are operators that consciously violate competition laws.	National Survey of Stakeholders
Awareness of stakeholders of the competences of competition authorities	Stakeholder's awareness of supervisory activities of the competition authority	All policies	Relevant for measuring the level of awareness of stakeholders of the competences and supervisory activities of competition authorities.	Annual Report, 2015, p. 60	73 % are aware of the NCA's competences	National Survey of Stakeholders
Awareness of stakeholders of competition law	Stakeholder's awareness of competition law	All policies	Relevant for measuring the perception of stakeholders towards competition legislation.	Annual Report, 2015, p. 60	37% are aware of the Act on System of Choice and, compared with last year,	National Survey of Stakeholders
Trends in [Changes in] market concentration	Measure of the number of firms and their respective shares of the total production (alternatively, total capacity or total reserves) in a market	All policies	Relevant for measuring the impact of competition interventions on market concentration.	A vision for competition. Competition policy toward 2020, p. 80	See report ⁷³	Reenen (1999)
Trends in [change in] the	Measure of the total output produced in an industry by a given number of	Merger	Relevant for measuring the effect of competition law interventions on market	External report on competition	Not specified	Not specified

⁷³ 1) The more competitive an industry is, the greater the number of innovations; 2) Increased product market competition in the industry tends to stimulate innovative activity; 3) Within industries, high market share firms commercialize more innovations; 4) High market share firms benefit most from innovations through an increase in stock valuation.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
concentration ratio	firms in the industry.	control	concentration.	indicators and other relevant methods; summary report		
Impact on level of culture and access to information	Degree of impact of market competition on the level of culture and access to information	All policies	Relevant for measuring the impact that competition policy has on the level of access to culture and information.	A vision for competition. Competition policy toward 2020, p. 82	See report, p. 82. High impact of the liberalisation of the book market on access to culture and books.	See report, p. 82
Lerner index	Relative price cost margin, i.e. (price – marginal cost)/price	Merger control /Antitrust	Relevant for measuring the effect of competition law interventions. Competition discourages laggard firms from innovating, but encourages neck-and-neck firms to innovate. Together with the effect of competition on the equilibrium industry structure, these generate an inverted-U. A high Lerner index value is taken to reflect a low intensity of product market competition.	A vision for competition. Competition policy toward 2020	Not specified	Aghion et al. (2005), p. 720
Herfindahl–Hirschman Index (HHI)	Sum of the squares of the percentage market shares held by a number of firms	Antitrust/ Merger control	Relevant for measuring the effect of competition law interventions on market concentration.	External report on competition indicators and other relevant methods; summary report	Not specified	Not specified
Share of turnover by novelty of product	Share of turnover from new-to-market products	All policies	Relevant for measuring product quality that is correlated with increased competition on the markets. The share of turnover from new-to-market product innovations can be used as an indicator of the impact of innovation at the firm level.	2007 Report on competition indicators and other relevant methods ⁷⁴	Not specified	Not specified
Consumer complaints	Number of consumer complaints	All policies	Relevant for measuring product quality that is correlated with increased competition on the markets.	2007 Report on competition indicators and other relevant methods	Not specified	Not specified
Market share stability	Trends in market shares of firms over [x] number of years	All policies	Relevant for measuring the stability of the market that can be affected by increased or decreased competition.	2007 Report on competition indicators and other relevant methods	Not specified	Not specified

⁷⁴ See: https://www.regjeringen.no/globalassets/upload/FAD/Vedlegg/Konkurransopolitikk/RD_competition_indicators.pdf

4.3.4. United Kingdom: Competition and Market Authority of UK

The following section presents the results of the mapping of indicators utilised by the Competition and Market Authority (CMA) of UK in the policy area of competition. Where relevant, publications by CMA's predecessor - the Office of Fair Trading (OFT) were reviewed. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 29: List of reviewed sources by the UK Competition and Market Authority

Year	Name of the publication
2016	Competition and Market Authority Annual report and accounts 2015/2016
2016	CMA impact assessment 2015/16
2015	Productivity and competition. A summary of the evidence (CMA report)
2015	UK businesses' understanding of Competition Law (CMA report)
2011	The impact of competition interventions on compliance and deterrence (OFT report)

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 30: Identified indicators used by the UK Competition and Market Authority

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Average (annual) direct financial benefit to consumers	Savings generated by competition enforcement, consumer protection enforcement, merger control, market studies and market investigations. Assessed against a three-year rolling average	All	Measure of the benefits of competition policy enforcement.	CMA (UK) Annual report CMA impact assessment 2015/16, p.4	2013 to 2016: £686.8m per annum Annual average consumer savings of £73.6 million	Not specified
Ratio of direct benefits to cost	Ratio of direct benefits to cost	Antitrust	Measure of the efficiency of competition policy enforcement.	CMA (UK) Annual report CMA impact assessment 2015/16, p. 4	2013 to 2016: 10.6:1	Not specified
Rate of firm entry and exit	Rate of firm entry and exit from markets	Antitrust/ Merger control	Low rates of entry and exit might indicate a relatively low degree of competition.	CMA(UK) Productivity and competition report, p.34	Not specified	Petit (2012)
Measures of firm-level profitability	Product market competition is measured using industry concentration, import penetration, market share, and returns to the owner of the company in excess of costs including the cost of capital ('rents')	All	High profitability might be an indicator of a lack of competition.	CMA(UK) Productivity and competition report, p.11	Not specified	Nickell (1996)
Dispersal of labour productivity between firms in a market	Productivity indicator measured based on a proxy of dispersal of labour productivity between firms in a market	Antitrust	A high rate of dispersal might indicate a lack of competition (since relatively low productivity firms are able to stay in the market).	CMA(UK) Productivity and competition report, p.34	Not specified	Not specified
Trends in online commerce	Trends in online commerce [Differences in the extent to which online commerce potentially a significant driver of productivity improvement – has grown in various sectors]	Antitrust	This indicator may provide pointers to markets where further research is justified to establish the reasons for the observed patterns in the data.	CMA(UK) Productivity and competition report, p.34	Not specified	Not specified
Indicator of opportunity for anti-competitive behaviours: Businesses that have had some form of contact with other businesses in their sector in the last 12 months (on a weekly basis)	[Number of/Share of] businesses that have had some form of contact with other businesses in their sector in the last 12 months (on a weekly basis)	Antitrust	While this is not an indicator of non-compliant behaviour in itself, it illustrates the potential for companies to engage in anticompetitive practices with others in their industry.	CMA (2015) UK businesses' understanding of Competition Law, p.4	The majority of businesses (83 %) had had some form of contact with other businesses in their sector in the last 12 months, over two-fifths (44 %) on a weekly basis. (2014-2015)	Not specified

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Indicator of opportunity for anti-competitive behaviours: Businesses who had been in contact with others in their industry (who weren't their suppliers) in relation to a transaction	[Number of/Share of] businesses who had been in contact with others in their industry (who weren't their suppliers) in relation to a transaction	Antitrust	Relevant for targeting inspections at certain sectors/firms where the likelihood of collusion is particularly high.	CMA (2015) UK businesses' understanding of Competition Law, p.5	44 % of businesses who had been in contact with others in their industry (who weren't their suppliers) were in contact in relation to a transaction and approaching	Business survey
Indicator of opportunity for anti-competitive behaviours: Businesses who had been in contact with others in their industry (who weren't their suppliers) in relation to a transaction and discussed prices	[Number of/Share of] businesses who had been in contact with others in their industry (who weren't their suppliers) in relation to a transaction and discussed prices	Antitrust	Relevant for the assessment of opportunity for potential anti-competitive behaviour. While it cannot be assumed that these particular businesses are discussing prices in a fashion that is not compliant with UK Competition Law, it does suggest that the opportunity for anti-competitive behaviours around transactions and prices is present. It should also be borne in mind that this is possibly the lower limit of what is occurring as some businesses might not freely admit to anti-competitive activities.	CMA (2015) UK businesses' understanding of Competition Law, p.4	One in 10 (9 %) openly reported that they had discussed prices. This rose to 22 % for the construction sector.	Businesses survey
Indicator of opportunity for anti-competitive behaviours: Businesses monitoring the prices of competitors	[Number of/Share of] businesses monitoring the prices of competitors	Antitrust	Relevant for the identification and qualification of anti-competitive behaviours.	CMA (2015) UK businesses' understanding of Competition Law, p.24	Monitoring the prices competitors set was fairly commonplace: nearly three-quarters (73 %) tended to do so; over a third monitored prices on at least a monthly basis (36 %). Large businesses (54 %) and those in the Agriculture (56 %) and Wholesale, Retail and Transportation sectors (52 %) were most likely to monitor prices on at least a monthly basis.	Businesses survey
Businesses that discussed their company's compliance with Competition Law legal requirements	[Number of/Share of] business that discussed their company's compliance with Competition Law legal requirements	Antitrust	Indicator of awareness of rules.	CMA (2015) UK businesses' understanding of Competition Law, p.25	One in five (19 %)	Businesses survey
Business that held training sessions on complying with Competition Law	[Number of/Share of] businesses that held training sessions on complying with Competition Law	Antitrust	Indicator of awareness of rules and probability of taking preventive actions against possible infringements.	CMA (2015) UK businesses' understanding of Competition Law	6%	Businesses survey

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Businesses reported that they were well-acquainted with Competition Law	[Number of/Share of] businesses reported that they knew were well-acquainted with Competition Law	All policies	Indicator of awareness of rules.	CMA (2015) UK businesses' understanding of Competition Law	Less than a quarter of businesses reported that they knew Competition Law well (23 %) and only three % said they knew it very well). Conversely, this means that 77 % businesses do not know Competition Law very well (Not very well/not at all well/never heard of it).	Businesses survey
Businesses' ability to recognise competition rules	Stakeholder's knowledge of competition law: businesses were read a series of 10 True/False statements regarding UK Competition Law rules	All policies	Indicator of awareness of rules.	CMA (2015) UK businesses' understanding of Competition Law	Businesses' understanding of specific anti-competitive behaviours was poor in relation to Resale Price Maintenance (only 29 % understood that it is illegal), Market-sharing (only 40 % knew that it is illegal), Price-fixing (only 55 % knew that it was illegal) and Abuse of a dominant position (only 48 % businesses knew that dominant businesses have special responsibilities not to allow their conduct to impair competition).	Businesses survey
Businesses' knowledge of penalties for non-compliance with Competition Law	[Share of/Number of] businesses that are well-aware of penalties for non-compliance with Competition Law Stakeholder's knowledge of penalties for non-compliance with Competition Law	All policies	Indicator of awareness to rules.	CMA (2015) UK businesses' understanding of Competition Law	66% of all businesses responded 'Don't know'. Just over a quarter of businesses reported that they had at least a 'fair awareness' of the penalties for non-compliance with Competition Law (27 % and 50 % among large businesses). Only five % reported a 'good' level of awareness and one % a 'very good' level.	Businesses survey
Businesses' awareness of Leniency programmes and how they can lead to immunity	Percentage of businesses that are aware of leniency and how it can lead to immunity	Antitrust	Indicator of awareness of rules and deterrence effect.	CMA (2015) UK businesses' understanding of Competition Law	Only 15% of businesses knew about leniency and how it can lead to immunity	Businesses survey
Businesses' awareness that reporting a cartel could result in a reward	Businesses' awareness that reporting a cartel could result in a reward	Antitrust	Indicator of awareness of rules and deterrence effect.	CMA (2015) UK businesses' understanding of Competition Law	Only 16% knew that reporting a cartel could result in a reward	Businesses survey
Perception of non-compliant behaviour among competitors	Assessment by undertakings of presence of non-compliant behaviour among competitors	Antitrust	Indicator of likely compliance [of other companies] with the rules.	CMA (2015) UK businesses' understanding of Competition Law	3 in 10 businesses (30 %) thought that the activities of other businesses in their industry put them in at least medium risk of breaching Competition Law. This figure rose to 44 % among those who claimed to be familiar with Competition Law.	Businesses survey

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Businesses perception that their own company had been disadvantaged by the non-compliant activities of competitors	Businesses perception that their own company had been disadvantaged by the non-compliant activities of competitors	Antitrust	Indicator of likelihood of non-compliance of other companies with the rules.	CMA (2015) UK businesses' understanding of Competition Law	A similar proportion of businesses (27 %) also felt their own company had been disadvantaged by the non-compliant activities of competitors.	Businesses survey
Number of businesses that seek information on Competition Law	Number of businesses that seek information on Competition Law	Antitrust	Indicator of compliance with the rules.	CMA (2015) UK businesses' understanding of Competition Law	Only one in 10 businesses reported seeking information on Competition Law (10 %)	Businesses survey
Deterrence ratio	<p>Number of cases deterred for every OFT investigation estimated on the basis of a ratio calculated as follows:</p> $\text{Ratio} = \left(\frac{\text{per cent of companies in sample who have changed behaviour}}{\text{X total number of businesses in UK business population}} \right) \times \text{X average number of times behaviour has been changed by each firm}$ <p>/ number of closed and current OFT interventions 2003-2011</p>	Antitrust	Relevant indicator for assessment of deterrent effect of sanctions and enforcement.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.7	<p>The deterrence ratios indicate that for every cartel investigation, 28 cartel cases are deterred. In the case of other commercial agreements and abuse of dominance for every OFT investigation, 40 and 12 cases are deterred respectively.</p> <p>For every cartel investigation undertaken by the OFT since 2003, there were 28 changes in behaviour by the whole population of large UK firms due to the risk of such an investigation (that is, the deterrence ratio is 28:1)</p> <p>For each OFT investigation involving a potentially anti-competitive agreement since 2003, there were 40 changes in behaviour by the whole population of large UK firms due to the risk of such an investigation (that is, the deterrence ratio is 40:1)</p> <p>For every OFT abuse of dominance investigation since 2003, there were 12 changes in behaviour by the whole population of large UK firms due to the risk of such an investigation (that is, the deterrence ratio is 12:1)</p> <p>No baseline for mergers</p>	The figures refer to deterrence ratios for 'large' firms (200+employees) only.
Businesses with compliance measures on competition rules in place	[Number of/Share of] businesses with compliance measures for competition rules in place	Antitrust	Indicator of compliance with the rules.	OFT (2011) The impact of competition interventions on compliance and deterrence	58 % of small companies surveyed and 37 % of large companies have no compliance measures in place.	Business survey
Impact of competing compliance priorities for companies (with respect to	Assessment by stakeholders of the impact of firm's competing compliance	Antitrust	Indicator of compliance with the rules.	OFT (2011) The impact of competition interventions on	Not specified	Business survey

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
other legal obligations) on the risk of non-compliance with competition law	priorities on the risk of non-compliance with competition law			compliance and deterrence		
Impact of perceived negative impact of risk of non-compliance with competition law on profits	Stakeholder's opinion on the connection between compliance with competition law and the profits – e.g. compliance might be compromised by highly entrepreneurial managers who might feel that their reputation would not be damaged by an investigation into anticompetitive behaviour	All policies	Indicator of compliance with the rules.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.47	Not specified	Business survey. Based on 308 responses for small companies and 501 responses for large companies.
Impact of rogue employees on the risk of non-compliance with competition law	Stakeholder's opinion on the impact of rogue employees [employees not complying with company guidelines on competition law] on the risk of non-compliance with competition law	All policies	Relevant for assessment of public enforcement of competition laws.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.47	Not specified	Business survey. Based on 308 responses for small companies and 501 responses for large companies.
Impact of impractical legal advice on the risk of non-compliance with competition law	Stakeholder's opinion regarding compliance and competition law	All policies	Indicator of awareness of compliance with the rules.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.47	Not specified	Business survey. Based on 308 responses for small companies and 501 responses for large companies.
Impact of lack of management commitment to compliance on the risk of non-compliance with competition law	Stakeholder's opinion regarding compliance and competition law	All policies	Indicator of awareness of compliance with the rules.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.47	Not specified	Business survey. Based on 308 responses for small companies and 501 responses for large companies.
Awareness of cartel investigations	Level of awareness by the stakeholders of the on-going investigations at European and national level	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Awareness of cartel investigations in business sectors affected by specific cartel investigations compared to other business sectors	Level of awareness by the stakeholders of the tendency of a specific sector to be subject to investigation at European or national	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	The survey results do not suggest that businesses in sectors that have been affected by a cartel investigation since 2003 are more aware of specific cartel investigations than businesses in other sectors.	Business survey

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Awareness of cases involving anti-competitive agreements	Level of awareness by the stakeholders of the cases related to anti-competitive agreements at European and national level.	Mergers control	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.63	Not specified	Business survey
Awareness of cases involving anti-competitive agreements compared to awareness of cartel cases, awareness of abuse of dominance cases and awareness of merger investigations	Stakeholder's opinion regarding compliance and competition law	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.65	Not specified	Business survey
Awareness of abuse of dominance cases	Awareness of abuse of dominance cases in business sectors affected by specific investigations compared to other business sectors	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.66	Not specified	Business survey
Awareness of merger investigations	Level of awareness by the stakeholders of the on-going merger investigations	Merger control	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Impact of the risk of reputational damage for the company in competition deterrence	Consequences on hard-to-assess intangible assets (e.g. brand equity, intellectual capital, goodwill, etc.) of companies in competition deterrence	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Impact of the risk of criminal sanctions for individuals in deterrence of anti-competitive behaviour	Extent to which the risk of criminal sanctions for individuals has a reported effect on deterring anti-competitive behaviour	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Impact of the risk of private damage actions in anti-competitive behaviour deterrence	Extent to which the risk of private damage actions has an effect on deterring anti-competitive behaviour	Antitrust	Indicator of awareness of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Degree of deterrence effect	Assessment by competition lawyers of the frequency with which they experience deterrence arising from the risk of OFT investigations on a scale from 'always' to	Antitrust	Indicator of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence	The vast majority (89 %) said that their clients frequently, sometimes or occasionally modified their initiatives or behaviour significantly due to the risk of an OFT abuse of dominance	Business survey

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
	'never'				<p>investigation.</p> <p>The majority (56 %) also said that their clients frequently significantly modified agreements or proposed agreements as a result of the risk of an OFT investigation into anti-competitive agreements other than cartels.</p> <p>More than one-in-10 (11 %) claimed that clients always significantly modified agreements or proposed agreements with other firms primarily because of the risk of an OFT cartel investigation, and a further 41 % said that this frequently occurs.</p>	
Extent to which merger enforcement leads to over-deterrence	Businesses' experience of over-deterrence: how often does the competition regime deter mergers that would not have lessened competition? (always-never)	Mergers control	Behaviour was modified due to the cost and complexity, rather than for competition reasons, i.e. mergers that would not have lessened competition are deterred.	OFT (2011) The impact of competition interventions on compliance and deterrence	Not specified	Business survey
Mergers that should have been investigated but were not	[Number] of mergers that should have been investigated but were not, from the managers' perspective	Mergers control	Indicator of the overall public enforcement of competition law.	OFT (2011) The impact of competition interventions on compliance and deterrence, p.71	Among the mergers reported by large firms in our business survey that went ahead, 10 (42 %) were not investigated by the OFT. Respondents believed that three of these should have been investigated and might have given rise to competition concerns. This suggests that for every 14 mergers investigated by the OFT, three mergers that should have been investigated are missed. However, according to the respondents, most of the mergers that went ahead without investigation would not have given rise to competition concerns. Respondents to the legal survey all agreed that some cases that would have given rise to competition concerns were not investigated by the competition authorities. However, 21 out of 27 legal professionals (78 %) said that this situation only occurs occasionally.	Business and legal survey
Perception of the effectiveness of the competition legal	Assessment by stakeholders of effectiveness of the	All policies	Indicator of the overall public enforcement of competition law.	OFT (2011) The impact of competition	Not specified	Not specified

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
regime	competition legal regime			interventions on compliance and deterrence		

4.3.5. Germany: German Competition Authority [Bundeskartellamt]

The following section presents the results of the mapping of indicators utilised by the German Competition Authority in the policy area of competition. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 31: List of reviewed sources by the German Competition Authority

Year	Name of the publication
2016	Bundeskartellamt Annual report 2015
2016	Bundeskartellamt - Competition Law and Data (Report by Autorite de la Concurrence and Bundeskartellamt)
2016	Bundeskartellamt - Monitoring report on the regulation of distribution networks (Report by Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen and Bundeskartellamt)
2016	Bundeskartellamt - Market Power of Platforms and Networks (Working paper)
2016	Bundeskartellamt - Bericht über die großstädtische Trinkwasserversorgung in Deutschland
2016	Monopolkommission - Wettbewerb 2016 - Einundzwanzigstes Hauptgutachten der Monopolkommission gemäß § 44 Abs. 1 Satz 1 GWB
2015	Monopolkommission - Competition policy: The challenge of digital markets - Special Report No 68
2014	Monopolkommission - Eine Wettbewerbsordnung für die Finanzmärkte Zwanzigstes Hauptgutachten der Monopolkommission gemäß § 44 Abs. 1 Satz 1 GWB – 2012/2013
2014	Bundeskartellamt - Bericht des Bundeskartellamtes über seine Tätigkeit in den Jahren 2013/2014 sowie über die Lage und Entwicklung auf seinem Aufgabengebiet (XXth Biennial Report (2012/2013))

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 32 Identified indicators used by the Bundeskartellamt and Monopolkommission

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Estimated direct consumer benefit from the prosecution of hardcore cartels by the Bundeskartellamt	(in million euros per year)	Antitrust	Relevant for assessing the overall impact of the enforcement of competition policies.	Bundeskartellamt Annual report 2015, p.20	Average consumer benefit per year (2009-2014): 460 Million. ⁷⁵	Not specified
Measures to increase the effectiveness of cartel prosecution	Not specified	Antitrust	Relevant for the GO of maintaining an effective enforcement of competition rules.	Bundeskartellamt Annual report 2015, p. 20	Not specified	Not specified
Aggregate concentration of undertakings	Comparison of the total domestic value added of the 100 largest companies with the value added of all companies in Germany for the current year and the past years reviewed.	Antitrust Mergers	Aggregate concentration measures the significance of large companies for the German economy. This is a relevant indicator for measuring cross-sectoral concentration of undertakings.	Monopolkommission Wettbewerb 2016	Baseline is available for Germany	Monopolkommission dataset
Number of ties via serial non-executive directors among biggest companies	Number of top 100 largest companies in Germany that have shareholdings in at least one other company in this group	Antitrust Mergers	As well as a high proportion of overall economic value added, cross-shareholdings and personnel links between companies can point to a concentration of economic power. This is a relevant indicator for measuring cross-sectoral concentration and interlocking of undertakings.	Monopolkommission Wettbewerb 2016	Baseline is available for Germany	Monopolkommission dataset
Number of cross-shareholdings among biggest companies	Number of ties via serial nonexecutive directors in the top 100 largest companies in Germany	Antitrust Mergers	As well as a high proportion of overall economic value added, cross-shareholdings and personnel links between companies can point to a concentration of economic power. This is a relevant indicator for measuring cross-sectoral concentration and interlocking of undertakings.	Monopolkommission Wettbewerb 2016	Baseline is available for Germany	Monopolkommission dataset
European interlocking of undertakings via minority shareholdings	Interlocking is measured on the basis of company data for EU-28 + Switzerland and Norway and assess via an econometric model and compared with Lerner index estimations for each country	Antitrust Mergers	The indirect links of competitors through minority shareholdings have the potential to dampen the incentives to engage in competitive behaviour.	Monopolkommission Wettbewerb 2016	Baseline is available for a number of input and output variables for the model for 2011 ⁷⁶ and 2015	Monopolkommission dataset

⁷⁵ The estimated direct consumer benefit for the entire period 2009–2014 is around 2.75 billion euros.

⁷⁶ The portrayal of capital interlocks via minority holdings for 2011 shows that 17 % of the companies were interlocked via corresponding shareholdings (Germany: 12.1 %). 5.3 % of companies are tied in the interlocks network as shareholders [Anteilseigner] and 12.9 % as shareholdings [Beteiligungsunternehmen]. "Gas, steam and air conditioning supply and environmental services", "manufacture of wood, paper and printed goods and manufacture of petroleum", as well as "construction and infrastructure" show the largest shares of interlocks via shareholdings. A comparison of personnel and capital interlocks shows that 66 out of 708 personnel ties through management members are accompanied by a parallel shareholding (total of 508 minority holdings).

4.3.6. Netherlands: Autoriteit Consument & Markt

The following section presents the results of the mapping of indicators utilised by the Netherlands Authority for Consumers and Markets (Autoriteit Consument & Markt, ACM) in the policy area of competition. While extracting indicators, due consideration has been paid to their relevance for the European context.

Table 33: List of reviewed sources by the Netherlands Authority for Consumers and Markets

Year	Name of the publication
2016	ACM Jaarverslag 2015
2015	The Impact of Competition Policy on Productivity: an Empirical Approach (Presentation)
2014	2014 ACM Annual Report
2014	Outcome ACM - Berekeningsmethode van de outcome van ACM en resultaten voor 2013

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 34 Identified indicators used by the Netherland Autoriteit Consument & Markt

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Outcome of ACM's competition oversight	Outcomes regarding the cases of the ACM - outcome for consumers; outcome of ACM's competition oversight	Antitrust/ Merger control	The calculation methods ⁷⁷ for the outcomes of ACM's work could be of interest in the context of assessing the outcomes of EU competition policy	ACM Jaarverslag 2015 2014 ACM Annual Report	The outcome of ACM's work for consumers is EUR 1.2 billion in 2014 The outcome of ACM's competition oversight is over EUR 260 million for 2014.	Not specified
Impact of competition oversight on labour productivity and growth	Impact of cartels on total factor productivity growth (TFP) assessed for total economy and for manufacturing and non-manufacturing Impact of competition authorities (based on indicator for competition policy based on the Global Competition Review (GCR)) on labour productivity growth Impact of competition authorities outcome on economic performance in longer term	All policies	Relevant for the GO of increasing the economic growth and effective functioning of the internal market.	The Impact of Competition Policy on Productivity: an Empirical Approach	According to research by Petit, Kemp and Van Sinderen cited in the source, the presence of cartels had between 2 and 3 percent negative impact on TFP growth in the period 1982-1998 According to research by Van der Wiel (2010), ⁷⁸ an average score on the GCR indicator gives a more or less neutral effect on labour productivity. In long-term impact on growth is between 0.12 and 0.16 %. Positive impact on employment is between 0.16 and 0.18 %.	Not specified
Anticipation effect	Indicator assessing the effect of competition policy enforcement on potential anti-competitive	Antitrust / Merger control	Relevant for a better enforcement of competition	The Impact of Competition Policy on Productivity: an	For every 100 merger notifications, 13 merger plans are cancelled	Not specified

⁷⁷ The calculation methods are available on ACM's website: <https://www.acm.nl/nl/publicaties/publicatie/12714/Outcome-ACM-2013/>

⁷⁸ Brouwer, Erik and van der Wiel, Henry, Competition and Innovation: Pushing Productivity Up or Down? (May 18, 2010). CentER Discussion Paper No. 2010-52 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1615508

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
	behaviour through the number of mergers cancelled in relation to the number of merger notifications and the number of cartels prevented for every prosecuted cartel.		rules.	Empirical Approach	For every prosecuted cartel, 5 cartels are being prevented.	

4.3.7. France: *Autorité de la Concurrence*

The following section presents the results of the mapping of indicators utilised by the *Autorité de la Concurrence* in the policy area of competition. While extracting indicators, due consideration has been paid to their relevance for the European context

Table 35: Sources

Year	Name of the publication
2015	Annual Report
2015	Activity Report
2013	Guidelines on merger control
2005	Report Nasse – switching costs

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 36: Identified indicators used by Autorité de la concurrence

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
[Degree of] diversity of products	Range of products of the same type on a specific market	Antitrust/ Mergers Policies	Relevance for the characterisation of a monopolistic position on the relevant market and/or the nature of the effects of the merger.	Adlc [Id_mergers_2013, p. 105]	Not specified	Not specified
Price sensitivity	The degree to which the price of a product affects consumers' purchasing behaviours. In economics, price sensitivity is commonly measured using the price elasticity of demand	Antitrust policy	Relevance for the characterisation of the infraction but not really for assessing the enforcement of competition laws.	Adlc [Id_mergers_2013]	Not specified	Not specified
[Change in] the welfare of the consumer	The degree of good fortune, health, happiness, prosperity of consumers	Antitrust policy / Merger control	Relevance for assessing the positive effect of the competition policy and avoid personal/structural detriment for the consumer due to market/regulation failure.	Adlc [Id_mergers_2013, p. 6]	Not specified	Not specified
Access to judicial procedures	Opportunity for individual and public authorities to challenge and/or sanction anticompetitive behaviours (based on a binary scale)	Antitrust/ Mergers policy	Relevance for assessing the overall functioning of the public/private enforcement of competition regulations.	Adlc [Activity report 2015]	Not specified	Not specified
Efficiency of judicial procedures	Number of cases, complaints and length of procedures	Antitrust/ Mergers policy	Relevance for assessing the overall functioning of the public/private enforcement of competition regulations.	Adlc [Activity report 2015]	Not specified	Not specified

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Switching costs	[Amount of] changes in quantities purchased in response to relative price increase. Methodology : 1) degree of maturity of the market 2) differentiation of purchase prices if the consumer is new on the market or not 3) identify the rate of attrition (churn rate) ⁷⁹	Antitrust	Transaction costs that buyers would have to incur to, among other things, retool, repackaging, adapt their marketing, breach a supply contract or learn new procedures, may be sufficient to suggest that switching is an unlikely response to a small but significant and non-transitory price increase.	http://www.autoritedelaconurrence.fr/doc/rapportnasse_coutsdesortie.pdf (p.10)	Not specified	Not specified
Amount of fines	Economic sanctions due to anticompetitive behaviour on a specific market	Antitrust	Relevance for measuring the efficiency of the public enforcement.	Adlc [Activity report 2015, p. 21]	Not specified	Not specified
[Change in] the efficiency of recovering procedures	Trends in the efficiency (length, administrative burdens, etc.) of recovery of fines related to competition infringements	Antitrust	Relevance for measuring the dissuasive effect of the enforcement of the rules.	Adlc [Activity report 2015, p. 31]	Not specified	Not specified
Number of challengeable decisions challenged	Opportunity for a party to challenge the decision of a public authority in front of a jurisdiction (the indicator is measured on a binary scale)	Antitrust/ Mergers control	Relevance for measuring the work done by the authority in terms of respect of procedural rules and/or characterisation of the infraction. Qualitative assessment of judicial decision (confirmation or rejection of Authority decision).	Adlc [Activity report 2015, p22, p.29]	Not specified	Not specified
Number of demands for leniency	Amount of demands for leniency received by competition authorities	Antitrust	Relevance for assessing the dissuasive effect of public/private enforcement for company infringements.	Adlc [Activity report 2015, p23]	Not specified	Source ⁸⁰

⁷⁹ The methodology mentioned comes from the summary of the report on "switching costs" by Philippe Nasse: http://www.autoritedelaconurrence.fr/doc/rapportnasse_coutsdesortie.pdf page 10). Further explanation can be found on the relevance of this methodology to the measurement of switching cost.

⁸⁰ http://www.autoritedelaconurrence.fr/doc/etude_clemence_avril2014.pdf

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Indicator name	Technical definition	Policy area	Justification of relevance	Source	Baseline	Source of data
Evolution of the number of decision of "non-contestation des griefs"	<p>Trends in the number of decisions of "non-contestation des griefs".</p> <p>The procedure of "non-contestation des griefs" consists in giving the opportunity to a company prosecuted to accept the alleged grievance and, eventually, take commitments. This procedure contributes to make the public enforcement of competition law faster and more predictable.</p>	Antitrust	Relevance for assessing the dissuasive effect of public/private enforcement for company infringements. Measures the good functioning and relevance of the new procedures rules and economic gains of this alternative public enforcement.	Adlc [Activity report 2015, p23]	Not specified	Not specified

5. DATA GAPS AND DATA SOURCES

The objective of **Task 3** of this assignment was to address the data gaps identified in the process of mapping and adding indicators for each of the 11 IAs covered in Task 1.

Section 5.1 presents the results of the review of data gaps of the 11 Impact Assessments and identifies possible data collection activities to complement the evidence base and fill in the data gaps.

Section 5.2 presents further existing databases and datasets that could also possibly be useful for DG Competition in general in the performance of policy assessments.

Section 5.3 presents suggestions on possible collection methods to develop the information base of DG Competition.

Section 5.4 presents suggested data analysis models that could be used by DG Competition when deemed appropriate in the performance of policy assessments.

5.1. *Data gaps and data sources per Impact Assessments*

The following section presents an overview of data gaps identified in the 11 Impact Assessments reviewed and proposes data sources that can be used to address them.

The review of the 11 IAs led to the identification of a number of indicators where data gaps exist or for which the evidence base can be reinforced by conducting additional data collection activities, in particular:

- Data for indicators related to administrative burden for authorities;
- Data for indicators related to compliance costs for undertakings;
- Data for indicators related to the perception of stakeholders of the degree of clarity, certainty, stability of the rules;
- Data for indicators related to the degree of awareness of the rules and their implementation;
- Data for indicators related to the quantification of the impact of competition policy on overarching objectives, such as environmental performance, innovation performance, employment dynamics etc.

In order to facilitate the planning of additional data collection activities in the context of any future evaluations of specific policy instrument, the detailed overview of the identified data gaps and proposed data sources is presented for each Impact Assessment reviewed in the following tables. For some of the Impact Assessments, the proposed data sources include existing databases that were identified as relevant over the course of research, while for others the focus is mainly on primary data collection measures (interviews and surveys).

The proposed primary data collection measures have been selected to fit the anticipated data needs of potential mid-term or ex-post evaluations of the implementation of the set of policy measures or in the context of impact assessments of potential policy revisions. Such evaluations and impact assessments are part of the regular policy making cycle of

the European Commission and the data collection activities for them can be planned in advance. It should be noted that the proposed primary data collection activities are generally conceived as planned, one-off activities ("ad-hoc") to be carried out shortly in advance of or during the process of performing the evaluation or impact assessment, rather than regular rounds of data collection on e.g. quarterly or annual basis. This is done with a view of ensuring that the proposed measures are feasible to execute⁸¹ and so as to ensure that they gather up-to-date and as relevant as possible information for the analytical aspects of the policy-development process. However, it is likely that during the actual evaluations or impact assessments further data needs would arise in connection to the policy makers' need gather more information about different phenomena or in connection to recent policy developments. As such, any data collection planned on the basis of the proposals made in the following tables would likely need to be supplemented by further data collection activities.

The following tables present each additional data collection activity proposed in connection to the data gaps it addresses for the policy instrument in question, and offer information about the potential data sources and an overall assessment of the anticipated costs of conducting the data collection. It should be noted that the costs assessment of the proposed primary data collection activities has been presented in relative terms, on the scale of low to high. It is not considered useful or feasible to attempt to provide more concrete estimates in monetary terms in the context of this study, as more information would be needed on their precise scope and approach - e.g. the number of countries or industries that need to be covered with a survey or an interview programme, the languages in which a survey needs to be offered, etc. All of these factors can only be determined in the context of a concrete evaluation or impact assessment exercise and need to be planned in the context of the overall data collection programme for the specific exercise. Further information about the advantages and disadvantages of the proposed data collection methods are presented in Section 5.3.

Table 37: Additional data collection activities for measuring the results and impacts of the Directive for damages actions for breach of the EU Antitrust Rules

Data collection activity	Data gaps addressed	Data source	Assessed costs
Interviews with National Competition Authorities and national courts	Indicators measuring transposition and implementation costs of the rules at national level Indicators related to the legal clarity and certainty of rules at national level Indicators related to the rate of success of damages actions, the Number of damages actions taken divided between (1) stand-alone actions (2) follow-on actions	NCAs and national courts	The costs are expected to be moderate but would depend on the scope of the sample of interviewees – number of countries covered (whether EU28 or sample), number of interviewees and the interviewing method (in person or on the phone).

⁸¹ The execution of multi-round primary data collection activities (such as annual surveys or periodic interviews with stakeholders) is much costlier than one-off data collection exercises.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Data collection activity	Data gaps addressed	Data source	Assessed costs
Interviews with other key stakeholders	Indicators related to implementation costs of the rules for key stakeholders	Businesses and business associations, consumers, SMEs, law firms	The costs are expected to be moderate or high but depend on the number of interviews performed (EU28 or sample), the language requirement (whether they are performed in English or in another EU language), the method of interviewing (in person or over the phone) and the number of Member States.
Survey of stakeholders	Indicators related to the degree of willingness of key stakeholders to make use of the provisions of the Directive Indicators related to the degree of awareness to the rules for stakeholders (e.g. investments by potential defendants on compliance measures)	Businesses and business associations, consumers, SMEs, law firms	The costs are expected to be low if the survey is carried out as an online survey.

Table 38: Additional data collection activities for measuring the results and impacts of the EU guidelines for the application of state aid rules in relation to rapid deployment of broadband networks

Data collection activity	Data gaps addressed	Data source	Assessed costs
Indicators databases / Statistical analysis	Indicators concerning coverage and availability [fixed broadband and mobile penetration, NGA coverage/availability, rates of roll out of infrastructure] Indicators concerning download speed, pricing, affordability and quality of services Indicators related to the amount of investments made by the private sector Indicators related to the creation of employment in sector related to networks deployment	Digital Agenda indicators ⁸² Global Internet Society – Internet Maps ⁸³ Eurostat [Employment statistics]	The costs are expected to be low as the data is publically available. The costs would be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Interviews with MSs national authorities	Indicators related to the administrative burden for authorities granting aid Indicators related to the degree of legal clarity, certainty of the rules and transparency of SA procedures Indicators related to the degree of clarity of the rules and the involvement of NRAs in access pricing and solving conflicts regarding access	National state aid granting authorities National Regulatory Authorities (NRAs)	The costs are expected to be moderate but would depend on the scope of the sample of interviewees (EU28 or sample), number of interviewees and the method of conducting interviews (in person or on the phone) and language requirements.

⁸² European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

⁸³ Internet Society Maps: <http://www.internetsociety.org/map/global-internet-report/?gclid=CNyfvleGgdACFSHjcgod7csDEw#global-internet-penetration>.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Data collection activity	Data gaps addressed	Data source	Assessed costs
Interviews with network providers	Indicators related to the effect of SA on behaviour of private sector providers (estimates of effect on crowding out investments etc.) Indicators related to the degree of clarity of the rules and SA procedures	Network providers (recipients and non-recipients of SA)	The costs are expected to be moderate to high but would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone) and language requirements.
Survey of consumers	Indicators related to quality of services	Broadband consumers	The costs are expected to be low if the survey is carried out as an online survey.

Table 39: Additional data collection activities for measuring the results and impacts of the R&D&I Framework

Data collection activity	Data gaps addressed	Data source	Assessed costs
Indicators databases / Statistical analysis	Indicators related to trends in innovation performance	OECD Innovation Indicators ⁸⁴ Eco-innovation Scoreboard ⁸⁵ Digital Agenda indicators ⁸⁶	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Interviews with stakeholders for the R&D&I package	Indicators related to administrative burden and financial costs of the implementation of the rules	Granting authorities, recipients	The costs are expected to be moderate but would depend on the scope of the sample of interviewees (EU28 or sample), number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of stakeholders	Indicators related to the measurement of legal certainty, clarity, transparency, visibility and the implementation of the rules applicable to R&D&I state aid.	Granting authorities, recipient company, legal experts	The costs are expected to be low if the survey is carried out as an online survey.
Analysis of TED data	Indicators related to the measurement of the value of public procurement for R&D&I	TED database	The costs are expected to be medium to low and mainly related to the processing of the data.

⁸⁴ OECD, Innovation statistics: <http://www.oecd.org/innovation/inno/inno-stats.htm#indicators>.

⁸⁵ European Union, Eco-innovation: http://www.eco-innovation.eu/index.php?option=com_content&view=article&id=2&Itemid=34.

⁸⁶ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage.

Table 40: Additional data collection activities for measuring the results and impacts of the SGEI package

Data collection activity	Data gaps addressed	Data source	Assessed costs
Interviews with stakeholders for the SGEI package	Indicators related to the measurement of administrative burden and financial costs of the clarity and implementation of the rules	Granting authorities, recipient company, legal experts	The costs are expected to be moderate to high would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of stakeholders	Indicators related to the measurement of legal clarity, transparency, visibility, clarity and legitimacy of the rules, correct application of the rules Indicators related to the stakeholder assessment of the extent to which diversified and proportionate approach to the different types of SGEIs has been achieved	Granting authorities, recipient company, legal experts	The costs are expected to be low if the survey is carried out as an online survey.
Analysis of TED data	Amount/share of cross-border provision of SGEIs	TED database	The costs are expected to be medium to low, as long as the administrators of the TED database assist with the extraction of a relevant dataset.
Research of industry statistics / consultation of industry stakeholders	Entry and exit rate from markets for provision of SGEIs	Industry stakeholders	Low to medium – this exercise would not require a lot of resources even when carried out across the EU-28, but it might also not result in a sufficiently robust dataset.

Table 41: Additional data collection activities for measuring the results and impacts of the White paper of Merger Control

Data collection activity	Data gaps addressed	Data source	Assessed costs
Databases / statistics	Indicators related to restructuring of companies, including business expansion, internal restructuring, mergers and acquisitions	Eurofound European Restructuring Monitor	The database is publically available. The costs incurred are expected to be related to processing of the data and are estimated to be low.
Interviews with key stakeholders	Indicators related to the administrative burden imposed on enforcement authorities and undertakings Indicators related to the degree of effectiveness and clarity of the referral system, reduced risk of multiple reviews	NCAs, companies, consumers	The costs are expected to be moderate to high but will depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of stakeholders	Indicators related to the smooth interaction of EU and national merger control regimes [degree of coherence, legal clarity, certainty]	NCAs, companies	The costs are expected to be low if the survey is carried out as an online survey.

Table 42: Additional data collection activities for measuring the results and impacts of the State Aid for energy and the environment

Data collection activity	Data gaps addressed	Data source	Assessed costs
Databases /statistics	Indicators related to energy efficiency, energy prices	IEA database EEA database Energy Union Indicators ⁸⁷	The costs are related to access to databases of the IEA in some cases. Some datasets are available publically.
Interviews with key stakeholders	Indicators related to administrative burden, time required for assessment of notifications Indicators related to the legal certainty and clarity of the rules	NCAs, undertakings benefitting from SA directly and indirectly	The costs are expected to be moderate to high but would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of stakeholders	Indicators related to the incidence of firms relocating due to competitiveness issues related to (EU) energy policy	Undertakings	The costs are expected to be low if the survey is carried out as an online survey.

Table 43: Additional data collection activities for measuring the results and impacts of the state aid measures in the context of greenhouse gas emissions allowance trading scheme

Data collection activity	Data gaps addressed	Data source	Assessed costs
Databases/Statistics	Indicators related to greenhouse gas emissions performance, energy efficiency, electricity generation, CO2 pricing	World Bank, State and Trends in carbon pricing, 2016 EEA indicators systems ⁸⁸ Energy Union Indicators ⁸⁹	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Interviews with key stakeholders	Administrative burden for MSs and aid beneficiaries	MSs national authorities, undertakings that are SA beneficiaries	The costs are expected to be moderate to high but would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of key stakeholders	Indicators related to a shift in investments, relocation of EU firms or likelihood of relocation as a consequence of ETS costs and restrictions	Businesses, business organisations	The costs are expected to be low if the survey is carried out as an online survey.

⁸⁷ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

⁸⁸ EEA, Indicators Database: http://www.eea.europa.eu/data-and-maps/indicators#c5=&c0=10&b_start=0.

⁸⁹ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Table 44: Additional data collection activities for measuring the results and impacts of the guidelines on horizontal cooperation agreements, research and development agreements and specialisation agreements

Data collection activity	Data gaps addressed	Data source	Assessed costs
Desk research – databases / statistics	Indicators related to impacts of implementing the rules on competition in connection to horizontal agreements (e.g. impact on employment)	Eurostat (Employment statistics)	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Desk research – databases / statistics	Indicators related to market performance	DG JUST, Consumer Markets Scoreboard	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Desk research – databases / statistics	Indicators related to market innovation	Digital Agenda Indicators	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Interviews with stakeholders	Indicators concerning estimation of the costs of compliance for companies with the rules Indicators concerning the information exchanges of businesses on the market	Businesses, business organisations	The costs are expected to be moderate to high but would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey with key stakeholders	Indicators concerning legal certainty of the rules, legal clarity	National authorities, Businesses, business organisations	The costs are expected to be low if the survey is carried out as an online survey.

Table 45: Additional data collection activities for measuring the results and impacts of the guidelines on vertical agreements and concerted practices

Data collection activity	Data gaps addressed	Data source	Assessed costs
Desk research - databases	Indicators related to market performance	DG JUST, Consumer Markets Scoreboard	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Desk research – databases / statistics	Indicators related to sales on the internet (e-commerce)	Statista [statistics and market data about e-commerce]	The costs are expected to be moderate to high depending on the type of access required to the database.
Desk research – databases / statistics	Indicators related to market innovation	Digital Agenda Indicators	The costs are expected to be low as the data is publically available. The costs will be related to the analysis and utilisation of indicators in the context of specific evaluations or IAs.
Interviews with stakeholders	Indicators concerning estimation of the costs of compliance for companies to implement the rules	Businesses, business organisations	The costs are expected to be moderate to high but would depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Data collection activity	Data gaps addressed	Data source	Assessed costs
Survey with key stakeholders	Indicators concerning legal certainty of the rules, legal clarity	National authorities, Businesses, business organisations	The costs are expected to be low if the survey is carried out as an online survey.

Table 46: Additional data collection activities for measuring the results and impacts of the Regional Aid Guidelines

Data collection activity	Data gaps addressed	Data source	Assessed costs
Survey of stakeholders	<i>Indicators assessing stakeholder's views on the contribution of the RAG to the general and specific objectives of the instrument</i>	Policy makers, industry representatives, NGOs, etc.	The costs are expected to be low if the survey is carried out as an online survey.
Desk research – statistics	[Change in] relative attractiveness of the least developed category of 'a' areas in a globalised economic context	European Commission and Joint Research Centre — Regional Competitiveness Index 2013	Not available – JRC to be consulted on the costs of past assessment
Desk research – DG REGIO statistics	Indicators such as degree of diversification of the regional economy and amount of aid allocated towards investment aimed at helping to implement the objectives of the Europe 2020 Strategy in the assisted areas; number of beneficiaries cooperating with HE institutions, beneficiaries engaged in R&D.	DG Region cohesion policy database	Low
Interviews with stakeholders – authorities providing state aid	Indicators related to the measurement of administrative burden in relation to applications for state aid and costs of monitoring correct implementation as well as indicators of the improved legal clarity and simplicity of state aid rules	Authorities providing state aid	The costs will be medium to high, depending on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Desk research – Competitiveness statistics and analysis	[Degree of] competitiveness of European industry on the world markets	DG GROW European Competitiveness Report 2014 ⁹⁰	Low
Ex-post data collection via interviews and desk research on results of aid on beneficiaries	Change in the productivity of regional aid beneficiaries Indirect jobs created or maintained Additional demand & turnover in the region benefitting from	Beneficiaries of state aid measures	The costs will be medium to high as such a data collection activity is likely to require the contracting of an external data collector.

⁹⁰ European Commission, Competitiveness 2014 Report, Helping Firms Grow: http://ec.europa.eu/growth/industry/competitiveness/reports/eu-competitiveness-report_en.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Data collection activity	Data gaps addressed	Data source	Assessed costs
	<p>regional aid</p> <p>Volume of spill-over effect on suppliers</p> <p>Level of training expenditure on new employees of aid beneficiaries</p> <p>Number of new employees with higher education</p> <p>Share of 'expatriates' in the total number of jobs created</p> <p>Number of aid beneficiaries who move up the value chain in a given industry</p> <p>Number of beneficiaries connected to a regional or inter-regional industrial cluster</p>		

Table 47: Additional data collection activities for measuring the results and impacts of the Guidelines on State Aid for risk finance

Data collection activity	Data gaps addressed	Data source	Assessed costs
Interviews with national state aid offices and regional aid funds managing authorities	<p>Consistency of guidelines with market practices</p> <p>Extent to which the rules provide for more legal certainty</p> <p>Capacity of the state to prevent, detect and correct state aid infringements</p> <p>Admin burden - Costs incurred by national public authorities in order to meet notification or reporting requirements as well as costs to adapt to new rules (e.g. training costs, compliance costs)</p>	National state aid offices and regional aid funds managing authorities	The costs are expected to be moderate to high and will depend on the scope of the sample of interviewees – number of countries covered, number of interviewees and the method of conducting interviews (in person or on the phone).
Survey of investors	<p>Extent to which the Guidelines prevent crowding out of private investors and adverse location effects, help VC investors to plan their investments on a pan European basis and on a long-term basis and provide for more legal certainty</p> <p>Consistency of guidelines with market practices</p> <p>Impact on VC funds' capitalization</p> <p>Number of transnational operations carried out by VC investors</p> <p>Number of VC investors with multi-country investment flows</p>	Investors (Investment funds, business angels, financial institutions)	The costs are expected to be low if the survey is carried out as an online survey.

5.2. Databases and datasets

The conducted research led to the identification of a number of databases and datasets of relevance to the DG Competition that can provide time series data for analysis of the impacts of different competition policy interventions. The databases and datasets are presented in the tables below.

The official datasets in Table 48 are public and, as such, no costs are associated with access to the data.

Table 48: Overview of data official public datasets

Organisation	Database/Dataset name	Indicators covered
European Commission	Eco-innovation Scoreboard ⁹¹	16 indicators grouped into five thematic areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency and socio-economic outcomes.
	Digital Economy and Society Index ⁹²	Composite index that summarises some 30 relevant indicators on Europe's digital performance and tracks the evolution of EU Member States, across five main dimensions: Connectivity, Human Capital, Use of Internet, Integration of Digital Technology, Digital Public Services.
	Digital Agenda Indicators ⁹³	Datasets for more than 100 indicators divided into thematic groups (Telecom sector, Broadband, Mobile, Internet usage, Internet services, eGovernment, eCommerce, eBusiness, ICT Skills, Research and Development). The indicators include inter alia data on revenues, broadband coverage and speed, Herfindahl index on broadband competition.
	DG ECFIN Key Indicators For The Euro Area ⁹⁴	This set of tables and graphs presents the most relevant economic statistics concerning the euro area and can be used in macroeconomic assessments, also related to competition policy.
	European Structural and Investment Funds Database ⁹⁵	Giving access to data on financing and expected achievements under the ESI Funds 2014-2020. Financing data relates to 533 programmes at July 2016. The achievement data relates to November 2015, to be updated with implementation details late 2016.
	Energy Union Indicators ⁹⁶	The European Commission published factsheets containing relevant energy indicators. The national factsheets present data per Member State and include indicators, e.g. value added of energy sector, employment in energy sector (%), interconnection capacity, fuel poverty, Herfindahl index for power generation and gas, etc.
Eurofound	Eurofound European Restructuring Monitor	The database contains information on large-scale restructuring events reported in the principal national media in EU Member States. Data available since 2002. The database includes

⁹¹ European Commission, Eco-Innovation: http://www.eco-innovation.eu/index.php?option=com_content&view=article&id=2&Itemid=34.

⁹² European Commission, Digital Agenda Indicators: <http://digital-agenda-data.eu/datasets/desi/visualizations>.

⁹³ European Commission, Digital Agenda Scoreboard: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

⁹⁴ European Commission, DG ECFIN Indicators database: http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf.

⁹⁵ European Commission, DG REGIO Cohesion Indicators: <http://cohesiondata.ec.europa.eu>.

⁹⁶ European Commission, Energy Union Factsheets: https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Organisation	Database/Dataset name	Indicators covered
		information on different types of restructuring of companies, including relocation, off-shoring/delocalisation, bankruptcy/closure, business expansion, internal restructuring, mergers and acquisitions, outsourcing. The data is organised by sector and includes information on the planned job creation and planned job reduction.
EEA	EEA indicators database ⁹⁷	Datasets related to greenhouse gas trends, environment, resource efficiency and waste, green economy, energy.
World Bank	World Bank Indicators ⁹⁸	Datasets with indicators concerning environmental performance, economy and growth, energy, financial sector, trade
OECD	Innovation Indicators ⁹⁹	Datasets with micro-data of business innovation
	Business and Finance Scoreboard ¹⁰⁰	Indicators and data related to corporate performance, banking, capital markets, pensions and investments
	Indicators of Product Market Regulation ¹⁰¹	Indicators concerning product market regulation

The industry datasets presented in Table 49 are owned by different private entities and access to the data implies a cost. The costs associated with gaining access to the datasets listed below are presented in the last column.

Table 49: Overview of industry datasets

Name	Description	Indicators covered	Cost
Passport - Euromonitor International	Global market intelligence publisher providing market research reports, statistics and online information systems on industries, countries and consumers.	Wide range of indicators regarding economics, industry and consumers topics.	EI does not publish its subscription cost. It is possible to buy reports and studies "a la carte".
CEPII	CEPII provides data, statistics and analyses on the world economy, trade and international investments, production and specialisation indicators.	Relevant macro-economic indicators.	Not specified on the data provider's website
Statista¹⁰²	Statista offers datasets and statistical data for various industries including e-commerce, agriculture, internet etc. The database includes datasets from consumer surveys, industry studies and market data.	Market data and statistics about e-commerce, consumer goods, technology and telecommunications	Basic account – Free Premium Account – \$588 per year
Amadeus [Bureau van Dyck]¹⁰³	Database of comparable financial and business information on Europe's largest 500,000 public and private companies by	Indicators on company performance, financial ratios, ownership data	Not specified on the data provider's website

⁹⁷ EEA, Indicators Database: http://www.eea.europa.eu/data-and-maps/indicators#c5=&c0=10&b_start=0.

⁹⁸ World Bank, Indicator Database: <http://data.worldbank.org/indicator>.

⁹⁹ OECD, Innovation Indicators: <http://www.oecd.org/innovation/inno/inno-stats.htm#indicators>.

¹⁰⁰ OECD, Business and Finance Scoreboard: <http://www.oecd.org/competition/oecd-business-and-finance-scoreboard.htm>.

¹⁰¹ OECD, Market Regulation Indicators: <http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm#indicators>.

¹⁰² Statista: <https://www.statista.com/>.

Improving Monitoring Indicators System to Support
DG Competition's Future Policy Assessments

Name	Description	Indicators covered	Cost
	total assets. 43 countries are covered.		
Orbis [Bureau van Dyck]¹⁰⁴	Orbis is a database containing corporate information on companies, financial strength indicators, company ownership structures with adjusted percentage thresholds for beneficial ownership.	Indicators where companies are operating, corporate financial indicators, financial strength metrics	Not specified on the data provider's website
Zephyr [Bureau van Dyck]¹⁰⁵	ZEPHYR is a comprehensive database containing information on M&A, IPO, private equity and venture capital deals. Links to the detailed financial information on the companies involved in the deals are provided. Zephyr has currently information on close to 1.5 million deals and rumours (April 2016).	Indicators on company financial information, Information and indicator on mergers and acquisitions deals	Annual subscription period – subscription fees are not specified on the data provider's website
EU-EFIGE/Bruegel-Unicredit dataset¹⁰⁶	EFIGE (European Firms in a Global Economy: internal policies for external competitiveness) was a project coordinated by academic institutions for the creation of a firm-level database of manufacturing firms in a set of EU countries. The data consists of a representative sample (at the country level for the manufacturing industry) of almost 15,000 surveyed firms (above 10 employees) in seven European economies (Germany, France, Italy, Spain, United Kingdom, Austria, and Hungary). Survey data was integrated with balance sheet information from the Amadeus database, held by Bureau van Dijk, for the years 2001-2009.	Indicators on firms' international activities (exports, outsourcing, FDI, import), R&D and innovation, labour organisation, financing and organisational activities, pricing behaviour.	Not specified on the data provider's website
IHS – Global Insight¹⁰⁷	The database contains macroeconomic updated data series for more than 200 countries from National Statistical Agencies, Central Banks, International Agencies (such as the IMF, OECD, United Nations, etc.).	Provides comparable economic indicators to perform quick and easy cross country comparative analysis Over 100,000 supporting financial indicators - (e.g. equity indices and fixed income instruments to commodity prices and exchange rates, labour market indicators, wholesale and retail trade). Relies on a number of sources	Not specified on the data provider's website

¹⁰³ Amadeus: <https://amadeus.bvdinfo.com/version-20161214/home.serv?product=amadeusneo>.

¹⁰⁴ Orbis: <http://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis>.

¹⁰⁵ Zephyr: <http://www.bvdinfo.com/en-gb/our-products/economic-and-m-a/m-a-data/zephyr>.

¹⁰⁶ Bruegel EFIGE, Datasets: <http://bruegel.org/publications/datasets/efige/>.

¹⁰⁷ IHS Global Economic Data: <https://www.ihs.com/products/global-economic-data.html>

Name	Description	Indicators covered	Cost
		including a number of surveys. ¹⁰⁸	
The Atlas ¹⁰⁹	The Atlas online provides access to bilateral trade data for roughly 200 countries spanning 50 years and across 1000 different products, using the Standardized International Trade Code at the four-digit level. It relies on international trade data.	Examples of indicators used: Complexity Outlook Index; Economic Complexity; Economic Complexity Indicator (ECI); Product Complexity Index	Not specified on the data provider's website

5.3. Data collection methods

As presented above, where data gaps exist, the main methodological tools suggested for collecting data for specific indicators are interviews and surveys.

Interviews: The analysis of data gaps and data needs indicates that interviews could be a cost-effective and feasible method of data collection for a set of cross-cutting indicators. In particular, indicators related to the *administrative burden of implementation for national authorities and compliance costs for businesses and SMEs* can be collected through interviews. Interviews can be performed in connection to ex-post policy evaluations and can be addressed to e.g. NCAs, national state aid offices, regulatory authorities or government administrations, as well as to private sector stakeholders (industry organisations, businesses, investors) and consumer representatives. Interviews can be carried out in person or on the phone and are generally based on a pre-defined set of interview questions. The main benefit of interviews is that they can be used for collecting detailed qualitative and quantitative information and provide flexibility for the data collection process – the interviewer can react to the information provided with additional questions, ask for examples or adjust the questions depending on the specifics of the interviewee.

With regard to expected *costs* for conducting interviews, the main input for this data collection activity are the person days spent by the data collectors in carrying out the interviews. A common rule-of-thumb is that for data collectors experienced in working on evaluations and impact assessments, an hour long interview covering a 15-20 different questions (in English) requires on average three additional hours for arranging the interview, preparing a tailored interview guide and preparing the interview minutes. So, a hypothetical example of an interview programme targeting e.g. one representative of each of the EU-28 NCAs would require about 14 person days to be budgeted for data collection, with several more days to be budgeted for the development of the interview guide.

¹⁰⁸ For example: European Commission Business and Consumer Survey (EC), Czech Statistical Institute Business Survey (CZSO), Institute for Economic Research Surveys (IFO), Purchasing Managers Index Surveys (Markit), State Secretariat for Economic Affairs Consumer Survey (SECO), National Institute of Economics Business and Consumer Surveys (NIER), Institute for Studies and Economic Analyses Business Survey (ISAE), National Statistics Institution Manufacturing Survey (INE), National Institute for Statistics and Economic Studies Business and Consumer Surveys (INSEE), Confederation of British Industries Industrial Trends Survey (CBI), National Bank of Belgium Consumer and Business Surveys (BNB)

¹⁰⁹ The Atlas of Economic Complexity: <http://atlas.cid.harvard.edu/>

Surveys: Looking across the 11 reviewed Impact Assessments, a number of cross-cutting indicators could be collected through on-line or phone surveys, asking stakeholders to provide their views on indicators related to the *degree of legal certainty, legal clarity, transparency of processes, predictability of legislation, stability of rules, awareness to competition rules and usage of the rules by stakeholders*. Inspiration about the design of such online surveys can be taken from the experience of NCAs, several of which have previously used surveys to assess e.g. rule awareness and deterrence effects.

In order to collect data on cross-cutting indicators, targeted periodical and/or one-off surveys can be performed online or via telephone. Targeted tailored surveys could be conducted with national authorities (e.g. NCAs, national state aid offices, relevant regulators, ministries etc.), companies, SMEs, business associations, legal professionals, and consumers.

Surveys of national authorities and legal professionals could be performed in-house by DG Competition services. However, when it comes to collection information from representatives of companies, SMEs and business associations affected by competition policy, it is advisable that the surveys be outsourced to professional survey companies that specialise in accessing such stakeholder groups. In deciding on the method of carrying out a survey, the trade-off between cost and quality should be considered. For example, while computer-assisted telephone interviewing (CATI) surveys (where the interviewer follows a script provided by a software application during the phone interview) allow for more accurate data collection, it is a very time-consuming and costly method. On-line surveys, in-contrast, have relative low costs of implementation but result in data with lower reliability.

The design of the survey is important for ensuring that relevant data is collected. There are two main types of surveys based on their design: cross-sectional and longitudinal.¹¹⁰ A cross-sectional survey design collects data about a population of interest at a specific point in time. Cross-sectional surveys can be perceived as 'snapshots' of the population of interest. The disadvantage of cross-sectional surveys is that they do not allow the researcher to measure change in the population studied and identify trends. On the other hand, longitudinal survey design, such as panel surveys, allow for repeated observations on a set of variables for the same sample unit over time. In a panel survey, repeated observations are derived by following a sample of persons (a panel) over time and collecting data on them. The main advantage of such survey design is that it allows the evaluators to measure trends and change in the population studied on a set of variables. However, designing such surveys and performing them on a periodical basis may lead to increased costs of data collection.

Overall, the lower costs of ad-hoc cross-sectional surveys carried out online could make them a cost-efficient method for collection of data from the key stakeholder categories mentioned above for the purpose of filling in identified data gaps.

Eurobarometer (special survey): DG Competition has already conducted a second Eurobarometer (2014) concerning the perceived quality of DG Competition actions and

¹¹⁰ SAGE Encyclopedia of Survey Research Methods, SAGE Knowledge Publications

the EU citizens' perception about competition policy. The Eurobarometer included several stakeholder categories (companies, lawyers, economic consultancies, business and consumer associations, MSs ministries, NCAs) and focused on perceptions concerning the soundness of legal and economic analysis, transparency and procedural fairness, economic effectiveness, communication and promotion of competition culture.

The implementation of a Eurobarometer survey is a large scale, data intensive and expensive exercise, and it is important to ensure that the data to be collected in its context is very relevant. Indicators related to *transparency of the processes, observance of procedural rules, clarity and legal certainty of the rules (at a more general level, in connection to competition policy in general)*, could be addressed in a Eurobarometer survey.

5.4. Data analysis models

The performance of policy evaluations and impact assessments and the use of indicators are dependent on the use of adequate and relevant data analysis models. In addition to the methodologies available to analyse qualitative data collected via interviews and surveys, a number of different quantitative models could be used in order to assess the micro-economic and macro-economic effects and impacts of competition policy interventions. The table below presents an overview of relevant data analysis models that could be utilised more systematically by DG Competition in performing quantitative analyses. These models have been selected on the basis of inter alia their successful application by other Directorates-General of the European Commission or research centres (in the case of the MAGE model).

Table 50: Overview of relevant data analysis models

Name	Description
RHOMOLO	RHOMOLO is the spatial computable general equilibrium model of the European Commission focusing on EU regions. It has been developed and maintained by the regional economic modelling team at the Directorate-General Joint Research Centre (DG JRC) in cooperation with Directorate-General for Regional and Urban Policy (DG REGIO). It is used for policy impact assessment and provides sector-, region- and time-specific simulations to support to EU policy making on investments and reforms covering a wide array of policies.
The Global Trade Analysis Project (GTAP)	GTAP is a static general equilibrium model analysing changes in production, trade and consumption as a consequence of changes in such exogenous variables as costs. The model includes all countries in the EU27 and 57 products among which 24 are manufactured goods. GTAP is able to calculate the impact of a new policy on GDP, trade, intra-EU trade, consumer prices and expenditure and consumer welfare. The model identifies prices at different levels of the supply chain from the production costs to the customer prices i.e. producer prices, market prices, export prices, import prices, consumer prices. The model is utilised by the European Commission, DG Justice.
QUEST	QUEST is the global macroeconomic model DG ECFIN uses for macroeconomic policy analysis and research. It is a structural macro-model in the New-Keynesian tradition with rigorous microeconomic foundations derived from utility and profit optimisation and including frictions in goods, labour and financial markets.

MAGE	MaGE is a macro-econometric model of the world economy made for projecting the global shifts of the current century. Based on a three-factor production function of labour, capital and energy, plus two forms of technological change, it proposes long-run growth scenarios for 167 countries at the 2050 horizon, among which the main scenario is available as the EconMap database. The model is utilised by Centre de recherche français dans le domaine de l'économie internationale (CEPII).
Standard Cost Model (SCM)	The Standard Cost Model (SCM) is one of the most commonly used methodologies for estimating the administrative costs of regulation. The principles involve identifying first the administrative activities to be performed by stakeholders in order to respond to the regulatory obligations. Then, the administrative burden is measured as a "price" (or average cost) that the businesses or affected stakeholder require to comply with a given regulatory requirement, multiplied by the "quantity" to reflect the total number of agents and activities to be performed per year. The "price", or average cost per action, is typically calculated multiplying an estimated average-time requirement to fulfil each activity by a tariff, or cost of performing the activity (and adding any other types of costs such as outsourcing, equipment or supplies' costs, etc.). The "quantity" is calculated as the frequency of required actions multiplied by the number of entities or agents concerned.

6. RECOMMENDATIONS FOR FURTHER RESEARCH AND/OR PRACTICAL ADVICE FOR NEXT STEPS THAT DG COMPETITION COULD TAKE

The following section of the report presents a number of recommendations for further research and practical advice concerning the next steps that DG Competition could take in improving its monitoring indicators system to support future policy assessments.

The proposed recommendations address the main aspects of DG Competition's current practices where room for improvement was identified.

Recommendation 1: Clear and consistent definition of policy objectives

The research conducted indicates that the 11 impact assessments prepared by DG Competition in the different competition policy areas differed in their approach to defining the general and specific objectives of the policy interventions, as some of them were prepared prior to the introduction of the Better Regulation Guidelines. The inconsistencies identified during this assignment presented a challenge for the systematic categorisation of result and impact indicators and the identification of consistent cross-cutting indicators by the contractor.

We recommend that for each policy assessment, DG Competition ensures the clear definition of general and specific objectives, based on the definitions provided by the Better Regulation Guidelines adopted in May 2015. These objectives should also be aligned with DG Competition's Strategic Plan and in Management Plan(s).

It is further recommended that DG Competition uses the upcoming ex-post evaluations of the policy instruments to streamline the formulation of their objectives, including through the use of intervention logic models,¹¹¹ so as to ensure the consistent identification and assessment of results and impacts indicators.

¹¹¹ More information about intervention logic models can also be obtained from the Better Regulation toolbox.
http://ec.europa.eu/smart-regulation/guidelines/tool_41_en.htm

Recommendation 2: Setting up a centralised database of indicators

The research conducted on the use of cross-cutting indicators suggests that there is scope for improving the (horizontal) consistency of indicators used to measure the achievement of general objectives of competition policy, which, in theory, should be very similar across instruments.

This (and attempts to further enhance vertical consistency among indicators for a single Guideline, BER, etc.) could be facilitated by the introduction of a centralised database of indicators, covering a set of output indicators as well as result and impact indicators. The set of indicators can be selected so as to reflect the main indicators that can be used to assess the achievements of competition policy measures, starting with indicators which are already readily available, such as output indicators or result and impact indicators covered in existing regular data collection activities.

We recommend that DG Competition set up a centralised database of output, result and impact indicators with links to relevant data sources, starting with the data sources identified in this study that can be utilised by all staff performing policy assessments.

The entire database or parts of it could be subject to open access in line with other similar initiatives of the European Commission, with the objective of increasing the visibility of the outputs and results achieved by EU policy. Such indicator databases have already been set up by the European Commission in connection to e.g. the EU Digital Agenda¹¹² and EU Regional policy.¹¹³

Recommendation 3: Better use of existing datasets and secondary data

The research conducted led to the identification of a number of indicators collected by other public entities (other European Commission Directorate-Generals, National Competition Authorities, the OECD and the World Bank) which could be useful for the performance of evaluations and impact assessments by DG Competition. More optimal use of existing databases and datasets can be conducive to better policy assessment results while reducing the costs related to data collection.

We recommend that DG Competition take measures to ensure better use of existing secondary data on the basis of the data sources identified in this study. More active involvement with existing or planned data collection exercises of other DGs (e.g. under the umbrella of SecGen networks), partner institutions and organisations could also contribute to the improvement of the existing monitoring system.

¹¹² See: European Commission, Digital Agenda Scoreboard Indicators: http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators.

¹¹³ See: European Commission, DG REGIO INFOREGIO Database: http://ec.europa.eu/regional_policy/en/.

Recommendation 4: Reinforcing data collection exercises

Compared to the data that would be necessary to perform high quality evaluations of the policy measures introduced by DG Competition, the study identified a number of gaps. These gaps concern both qualitative and quantitative data and cannot be addressed through readily available data sources.

We recommend that DG Competition consider the additional primary data collection activities identified as relevant for filling the data gaps proposed in Section 5. The additional data collection activities should address in a balanced manner both the data gaps for indicators measuring the actual impact of interventions and the perceived impact, effectiveness, relevance, efficiency and added value of the interventions.

The primary data collection activities could be conducted by in-house staff where feasible, or outsourced to professional survey companies.

Recommendation 5: Diversifying methodological tools for data analysis

The research conducted led to the identification of a number of additional methodological tools including models that can be utilised by DG Competition to perform data analysis, in particular of quantitative data, in order to assess the impact of competition policy.

We recommend that additional methods and models of data analysis, in particular quantitative data, are utilised by DG Competition. The proposed methods and models are included in the present report in sections 5.3 and 5.4.

Bibliography

- ACCC (2014), The comparator website industry in Australia - An Australian Competition and Consumer Commission report November 2014; Retrieved from:
https://www.accc.gov.au/system/files/926_Comparator%20website%20industry%20in%20Australia%20report_FA.pdf
- ACCC (2015), Competition Policy Review Final Report March 2015; Retrieved from:
http://competitionpolicyreview.gov.au/files/2015/03/Competition-policy-review-report_online.pdf
- ACM (2013), Outcome ACM Berekeningsmethode van de outcome van ACM en resultaten voor 2013; Retrieved from:
<https://www.cpb.nl/sites/default/files/publicaties/download/cpb-notitie-12mrt2015-plausibiliteitstoets-outcome-berekening-acm-over-2014.pdf>
- ACM (2013), The Impact of Competition Policy on Productivity: an Empirical Approach; Retrieved from:
http://ec.europa.eu/competition/information/macroeconomy/vansinderen_en.pdf
- Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005), Competition and Innovation: an Inverted-U Relationship. The Quarterly Journal of Economics
- Alemani, E. et al. (2013), New Indicators of Competition Law and Policy in 2013 for OECD and non-OECD Countries, OECD Economics Department Working Papers, No. 1104, OECD Publishing.
- Australian Government (2005), Review of National Competition Policy Reforms Productivity Commission Inquiry Report No. 33, 28 February 2005; Retrieved from:
<http://ncp.ncc.gov.au/docs/PC%20report%202005.pdf>
- Autorite de la concurrence and German Authority for Competition (2016), Competition Law and data; Retrieved from:
<http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf>
- BEREC (2016), Challenges and drivers of NGA rollout and infrastructure competition; Retrieved from:
http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/6488-berec-report-challenges-and-drivers-of-nga-rollout-and-infrastructure-competition
- Bundeskartellamt (2016), Bericht über die großstädtische Trinkwasserversorgung in Deutschland; Retrieved from:
https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Wasserbericht-2016.pdf;jsessionid=0C2B788592CEC028A38527D5B4B746EA.1_cid362?__blob=publicationFile&v=3
- Bundeskartellamt (2015), The Bundeskartellamt Annual Report 2015; Retrieved from:
http://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Jahresbericht/Jahresbericht_2015.pdf?__blob=publicationFile&v=7
- Bundeskartellamt (2016), Working Paper Market Power of Platforms and Networks; Retrieved from:
https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Zusammenfassung.pdf?__blob=publicationFile&v=4
- Cambridge Econometrics (2015), Mapping evolutions in Public Services in Europe: Towards increased knowledge of industrial relations; Retrieved from: <http://pr.euractiv.com/files/pr/13press10-annex.pdf>
- CBC (2007), Ex Post Merger Review: An Evaluation of Three Competition Bureau Merger Assessments; Retrieved from:
<http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/02447.html>
- CBC (2012), Merger Review Performance Report April 2012.
- CBC (2014), Annual report of the commissioner of competition for the year ending march 31; Retrieved from:
<http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03978.html>
- CBC (2014), Highlights from the Competition Bureau's Workshop on Emerging Competition Issues; Retrieved from:
<http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04030.html>
- CBC (2014), Price Maintenance (Section 76 of the Competition Act) - Enforcement Guidelines; Retrieved from:
<http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03787.html>

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

- CEEP (2010), Public Services in the European Union & in the 27 Members States; Retrieved from:
<http://www.epsu.org/sites/default/files/article/files/MappinReportDefEN.pdf>
- CEPS-LUIS (2007), Making antitrust damages actions more effective in the EU: welfare impact and potential scenarios; Retrieved from:
http://ec.europa.eu/competition/antitrust/actionsdamages/files_white_paper/Impact_study.pdf
- CISCO (2015), Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update; Retrieved from:
<http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html>
- Civil Law Initiative (2015), Index of Legal Certainty; Retrieved from:
http://www.fondation-droitcontinental.org/en/wp-content/uploads/2015/06/NS_Rapport-complet-5-juin-2015_EN.pdf
- CMA (2013), Competition and Markets Authority Annual Plan 2016/17 Presented to Parliament pursuant to paragraph 13(2) of Schedule 4 to the Enterprise and Regulatory Reform Act; Retrieved from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508136/AP2016-17-final_PRINT.pdf
- CMA (2014), Reporting on Better Regulation Simplifying and minimising the burdens of regulatory functions – a summary of Better Regulation compliance measures carried out by the Competition and Markets Authority in 2014-15; Retrieved from:
<https://www.oecd.org/daf/competition/2014-competition-factsheet-iv-en.pdf>
- CMA (2015), CMA impact assessment 2015/16 14 July 2016; Retrieved from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/537539/cma-impact-assessment-2015-16.pdf
- CMA (2015), Productivity and competition A summary of the evidence 9 July 2015; Retrieved from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443448/Productivity_and_competition_report.pdf
- CMA (2015), UK businesses' understanding of Competition Law Prepared for CMA By IFF Research 26 March 2015; Retrieved from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/429876/UK_businesses_understanding_of_competition_law_report.pdf
- CMA (2016), Competition and Markets Authority Annual Report and Accounts 2015-16; Retrieved from:
<https://www.gov.uk/government/publications/cma-annual-report-and-accounts-2015-to-2016>
- Deutscher Bundestag (2014), Bericht des Bundeskartellamtes über seine Tätigkeit in den Jahren 2013/2014 sowie über die Lage und Entwicklung auf seinem Aufgabengebiet und Stellungnahme der Bundesregierung; Retrieved from:
<http://dipbt.bundestag.de/dip21/btd/18/052/1805210.pdf>
- Ecofys (2013), Support to the Commission for the determination of the list of sectors and subsectors deemed to be exposed to a significant risk of carbon leakage for the years 2015-2019 (EU Emission Trading System); Retrieved from:
http://ec.europa.eu/clima/policies/ets/allowances/leakage/docs/carbon_leakage_list_en.pdf
- European Commission (2016), European Innovation Scoreboard; Retrieved from:
http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en
- Europe Economics (2008), Etat des lieux et perspectives des programmes de conformité Une étude réalisée pour le Conseil de la concurrence; Retrieved from:
http://www.autoritedelaconcurrence.fr/doc/etudecompliance_oct08.pdf
- European University Institute (2015), NCA's Institutional Design and Enforcement Strategies; Retrieved from:
<http://www.eui.eu/Projects/ENTRANCE/Documents/entrance2016/finalprogramme.pdf>
- Forlani, E (2010), Competition in the Service Sector and the Performances of Manufacturing Firms: Does Liberalization Matter?
- GESY (2009), Discussion Paper No. 284 - Measuring the deterrence properties of competition policy: the Competition Policy Indexes; Retrieved from:
<http://sfbtr15.de/uploads/media/284.pdf>
- Gouv UK (2014), Competition and Markets Authority - Performance Management Framework January 2014; Retrieved from:

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274146/bis-14-559-competition-and-markets-authority-performance-management-framework.pdf
- House of Representatives Standing Committee on Economics (2016), Review of the Australian Competition and Consumer Commission Annual Report 2015 (First Report); Retrieved from:
https://www.accc.gov.au/system/files/979_Annual%20Report_2014-15_web_FA_1.pdf
- Konkurrensverket (2013), A Vision for Competition Policy towards 2020; Retrieved from:
<http://en.kfst.dk/~media/KFST/Publikationer/Engelsk/2013/A%20Vision%20for%20Competition%20%20Competition%20Policy%20towards%202020%2005032013.pdf>
- Konkurrensverket (2015), Enforcing Margin Squeeze Ex Post Across Converging Telecommunications Markets; Retrieved from:
http://www.konkurrensverket.se/globalassets/publikationer/workingpaper/working_paper_2015-2.pdf
- Konkurrensverket (2015), Honesty pays, How to detect and prevent bid-rigging cartels; Retrieved from:
<http://www.konkurrensverket.se/en/publications-and-decisions/honesty-pays---how-to-detect-and-prevent-bid-rigging-cartels>
- Konkurrensverket (2015), Public Procurement Thresholds and Data in Sweden; Retrieved from:
http://www.konkurrensverket.se/globalassets/publikationer/uppdrafsforskning/forsk_rap_2015_3.pdf
- Konkurrensverket (2015), Swedish competition authority 2015 annual Report; Retrieved from:
<http://www.konkurrensverket.se/globalassets/english/publications-and-decisions/annual-report-2014.pdf>.
- Konkurrensverket (2016), Competition in the Waste Management Sector – Preparing For A Circular Economy; Retrieved from:
<http://www.kkv.fi/globalassets/kkv-suomi/julkaisut/pm-yhteisraportit/nordic-report-2016-waste-management-sector.pdf>
- Laboratorio di economia, antitrust, regolamentazione (2006), Ex-post review of merger control decisions - A study for the European Commission; Retrieved from:
http://ec.europa.eu/competition/mergers/studies_reports/lear.pdf
- Monopolkommission (2016), Wettbewerb 2016 - Einundzwanzigstes Hauptgutachten der Monopolkommission gemäß § 44 Abs. 1 Satz 1 GWB; Retrieved from:
http://www.monopolkommission.de/images/HG21/HGXXI_Gesamt.pdf
- Monopolkommission (2014), Eine Wettbewerbsordnung für die Finanzmärkte Zwanzigstes Hauptgutachten der Monopolkommission gemäß § 44 Abs. 1 Satz 1 GWB – 2012/2013; Retrieved from:
<http://www.monopolkommission.de/index.php/en/reports/biennial-reports/biennial-report-xx>
- Monopolkommission (2015), Competition policy: The challenge of digital markets - Special Report No 68; Retrieved from:
<http://www.monopolkommission.de/index.php/en/reports/special-reports/284-special-report-68>
- OECD (2012), Working Party No. 2 on Competition and Regulation Evaluation of competition enforcement And Advocacy Activities: the results of an OECD Survey; Retrieved from:
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2\(2012\)7/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2(2012)7/FINAL&docLanguage=En)
- OECD (2013), OECD Economics Department Working Papers No. 1104 New Indicators of Competition Law and Policy in 2013 for OECD and non- OECD Countries; Retrieved from:
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP\(2013\)96&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2013)96&docLanguage=En)
- OECD (2013), Supporting Investment in Knowledge Capital, Growth and Innovation; Retrieved from:
http://www.oecd-ilibrary.org/industry-and-services/supporting-investment-in-knowledge-capital-growth-and-innovation_9789264193307-en
- OECD (2014), Factsheet on how competition policy affects macro-economic outcomes; Retrieved from:
<https://www.oecd.org/daf/competition/2014-competition-factsheet-iv-en.pdf>
- OECD (2016), Competition assessment toolkit - 1/2/3 vol.; Retrieved from:
<https://www.oecd.org/competition/assessment-toolkit.html>
- OECD (2016), Competition assessment toolkit - 1/2/3 vol.; Retrieved from:
<https://www.oecd.org/competition/assessment-toolkit.htm>.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

- OFT (2011), The impact of competition interventions on compliance and deterrence Final Report; Retrieved from:
http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.oft.gov.uk/shared_oftr/reports/Evaluating-OFTs-work/oft1391.pdf
- OFT (2014), Cost pass-through: theory, measurement, and potential policy implications A Report prepared for the Office of Fair Trading; Retrieved from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf
- Oxford Research (2015), Assessing the Potential for EU Investment in Venture Capital and Other Risk Capital Fund of Funds; Retrieved from:
<https://ec.europa.eu/programmes/horizon2020/en/news/assessing-potential-eu-investment-venture-capital-and-other-risk-capital-fund-funds>
- Stucke, M. E, (2013), Should Competition Policy Promote Happiness?; Fordham L. Rev., 81, 2575
- Rambøll and Matrix (2012), Ex-Post evaluation of the Regional Aid Guidelines 2007-2013; Retrieved from:
http://ec.europa.eu/competition/consultations/2013_regional_aid_guidelines/study_rae_evaluation_en.pdf
- WIK-Consult (2011), Study on the Implementation of the existing Broadband Guidelines COMP/2011/006; Retrieved from:
http://ec.europa.eu/competition/consultations/2011_broadband_guidelines/final_report_en.pdf
- World Bank (2012), How Bank Competition Affects Firms' Access to Finance; Retrieved from:
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2\(2012\)7/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2(2012)7/FINAL&docLanguage=En)
- World Bank (2013), The Role of the State in Promoting Bank Competition - Global Financial Report; Retrieved from:
<http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1346865457422/Chapter-3.pdf>
- World Bank (2015), Cross-Border Mergers and Acquisitions in Services - The Role of Policy and Industrial Structure; Retrieved from:
<http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6905>.
- World Bank (2015), How Competition Affects the Distribution of Welfare; Retrieved from:
<http://documents.worldbank.org/curated/en/662481468180536669/pdf/104736-REPF-Competition-and-Poverty.pdf>.
- World Bank (2015), Why Domestic Market Competition Matters?; Retrieved from:
<https://openknowledge.worldbank.org/bitstream/handle/10986/23658/Export0competi00Competition0Matters.pdf?sequence=1&isAllowed=y>.
- World Bank (2016), Breaking down barriers - Unlocking Africa's Potential through Vigorous Competition Policy; Retrieved from:
<http://documents.worldbank.org/curated/en/243171467232051787/pdf/106717-REVISED-PUBLIC-WBG-ACF-Report-Printers-Version-21092016.pdf>.
- World Bank (2016), South Africa Economic Update Promoting Faster Growth and Poverty Alleviation; Retrieved from:
<http://documents.worldbank.org/curated/en/917591468185330593/pdf/103057-WP-P148373-Box394849B-PUBLIC-SAEU8-for-web-0129e.pdf>.
- World Bank (2016), Transforming Markets through competition New developments and recent trends in Competition Advocacy; Retrieved from:
<http://documents.worldbank.org/curated/en/640191467990945906/pdf/104806-REPF-Transforming-Markets-Through-Competition.pdf>.
- World Economic Forum (2016), The Global Competitiveness Report 2015–2016; Retrieved from:
<http://reports.weforum.org/global-competitiveness-report-2015-2016/>

Annex 1 – Methodological note on Task 1

The sections below present the methodological approach adopted in mapping the indicators from the Impact Assessments, their assessment based on the RACER criteria and the approach adopted towards proposing additional indicators. In addition to this, some overarching challenges to the methodological approach are presented below.

Mapping of indicators

The general **approach** towards the mapping of indicators explicitly and implicitly ("hinted at") mentioned in the Impact Assessments was systematic and entailed several steps:

1. **Familiarisation:** the Impact Assessment and the related legal instrument(s) were thoroughly reviewed in view of gaining a thorough understanding of their overarching scope and objectives.
2. **Mapping of indicators:** identified indicators were mapped out and included in the reporting table. A categorisation of the indicators "per type" took place at this stage. Additionally, a categorisation "per specific objective" was done in line with the defined intervention logic which guided the clustering of indicators under specific objectives.
3. **Verification and validation:** the mapped out indicators are verified in order to ensure that no omissions have been made and to ensure that no overlaps occur.

A further delineation of the approach and definition of the key concepts utilised in the mapping is presented in the table below. This served as basis for creating a common understanding of the mapping process.

Approach	
Policy objective	The intervention logic supported the identification of the intended results and impacts for each specific and general objective. The results and impacts are the basis for identifying relevant indicators that can be used to measure their attainment.
Type	<p>Each identified indicator was categorised based on the definitions below according to whether it is <i>result indicator or impact indicator</i> (A) and <i>quantitative indicator or qualitative indicator / concept</i> (B).</p> <p>An <i>indicator</i>, as defined by the Better Regulation Guidelines, represents a quantitative or qualitative measure of the progress made towards a policy objective. Indicators must be based on reliable and comparable data collected through sound monitoring systems.</p> <p>A <i>concept</i> is a construct of a policy phenomenon that is not directly observable or measurable.</p> <p>A. <i>Result or Impact Indicator</i>¹¹⁴: The intervention logic drafted supports the categorisation of the indicators as result or impact. Output indicators are precluded from the scope of the mapping, as per requirement in the Terms of Reference, but have been mentioned in the overview tables for the pilots, where relevant. Additionally, guiding definitions supported the categorisation:</p> <ul style="list-style-type: none"> ▪ <i>Output indicators</i> [out of scope]: indicators that relate to the results of implementation of an intervention, i.e. deliverables of the intervention that need to be generated in order to achieve the objective(s). ▪ <i>Result indicators</i>: indicators that capture immediate effects of the intervention and can be directly linked to the application of an

¹¹⁴ Better Regulation Guidelines: http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

	<p>intervention.</p> <ul style="list-style-type: none"> • <i>Impact Indicators</i>: indicators relating to intended outcomes of the intervention in terms of the impact on the wider society/economy, beyond those directly affected by the intervention. They are aimed at measuring the "raison d'être" of the policy. <p>B. <i>Qualitative or Quantitative Indicator</i>: The indicators are categorised also based on whether they are qualitative indicators, qualitative concepts or quantitative indicators.</p> <ul style="list-style-type: none"> • Quantitative Indicator: indicator that can be measured in numerical estimates. [e.g. of quantitative indicator: number of cases processed by national Courts]. • Qualitative Indicator: indicator measuring judgements and perceptions on a policy phenomenon [e.g. of qualitative indicator: degree of awareness of injured parties to their rights] • Qualitative Concept: a concept that from the outset cannot be measured on a scale or quantitatively [e.g. of qualitative concept: impact on corrective justice].
Technical definition	<p>Where available, the technical definition of the indicators was included in the table together with the indicator. In cases where the technical definition was not available or could not be easily identified, this was clearly specified in the mapping table as "Not specified".</p> <p>In general, the Impact Assessments do not provide a clear technical definition of indicators. In cases where the technical definition can be inferred based on the knowledge of the evaluator, the definition was included in the table and marked in <i>Italics</i>.</p>
Unit of measurement	<p>A unit of measurement is a standard for measuring the magnitude of a quantity [e.g. number, %, EUR, etc.]</p> <p>Where available in the Impact Assessment, the information was included in the tables together with the indicator. In cases where the information was not available or could not be easily identified, this was clearly specified in the mapping table. In cases where the information could be inferred based on the knowledge of the evaluator, the information was included and marked in <i>Italics</i>.</p>
Frequency of measurement	<p>The frequency of measurement is to be interpreted as the rate at which the data is being <i>updated</i>.</p> <p>As above [see unit of measurement], the same procedure was followed for retrieving the information on frequency of measurement for an indicator.</p>
Timeliness	<p>The timeliness of the data is to be understood as the moment/period when the data <i>becomes available</i>.</p> <p>As above [see unit of measurement], the same procedure was followed for retrieving the information on timeliness for an indicator.</p>
Source of data	<p>The source of the data was included in the table together with the indicator, where available. In cases where the sources of the data cannot be traced back from the Impact Assessment, this was indicated as such. When the information could be inferred based on the knowledge of the evaluator, the information was included and marked in <i>Italics</i>.</p>
Indicator coverage	<p>The coverage of the indicator is stated where available and applicable. The indicator coverage can be either EU28 or only a number of Member States.</p>
Baseline	<p>The baseline, i.e. status quo for the indicator, was presented where available in the Impact Assessment. Where the baseline can be inferred on the basis of the knowledge of the evaluator, this was presented in <i>Italics</i>.</p>

Some **challenges and solutions** identified in relation to the mapping of indicators are presented below.

Challenges	Proposed solution
The information available in the Impact Assessments is not always sufficient in order to provide a complete mapping of each indicator. For example, as indicated above, the technical definition, unit of measurement and other necessary aspects are not always clearly specified in the Impact Assessment.	<p>In cases where the necessary information was not available, this was marked as "Not specified" in the table.</p> <p>In cases where the information could be inferred based on the general knowledge of the topic of the evaluator, the technical definition, unit of measurement and other necessary aspects were presented in the table and marked in <i>Italics</i>.</p>

RACER Assessment

According to the Better Regulation Guidelines, all proposed indicators must be (to the extent possible) RACER indicators. The indicators mapped in the Impact Assessments are assessed against the RACER criteria. The **approach** towards the RACER assessment is systematic in the sense that each indicator is evaluated against each of the RACER sub-criteria. A further delineation of the understanding of each of the RACER criteria is presented in the table below.

A colour scale indicating the degree to which the indicator fulfils a specific criterion was utilised in performing the systematic assessment. It should be duly noted that the colour coding implies a certain degree of subjectivism but a clear methodological approach has been delineated, as presented below, in order to reduce the risk of diverging assessments of similar indicators.

Table 51: RACER assessment - sub-criteria¹¹⁵

Sub-criterion	Definition	Fully fulfilled	Partially fulfilled	Not fulfilled
Relevant	The indicator is a clear measure of the policy objective and is closely connected to the policy objective.			
Accepted	The indicator is generally accepted and utilised by relevant stakeholders and it is clearly defined. The role of the indicator must be clearly defined.			
Credible	The indicator provides unambiguous information to policy-makers and the general public (non-experts).			
Easy	The data required to measure the indicator is readily available (not excessive, expensive or onerous).			
Robust	The indicator is based on sound theory and robust against manipulation, avoids double counting and/or omissions and relies on reasonable assumptions.			

For each one of the indicators, the RACER assessment was presented in the form of a grid, as indicated in the example below.

¹¹⁵ Better Regulation Guidelines: http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

Table 52: RACER Assessment grid - example

	Relevant	Accepted	Credible	Easy	Robust	RACER
[Indicator 1]						
[Indicator 2]						

In order for an indicator to be assessed as RACER, *all sub-criteria need to be fully fulfilled*.

Two concrete examples of the manner in which the RACER assessment was performed are presented below.

Table 53: Example of RACER assessment - Qualitative indicator

Indicator: RACER:	Degree of convergence of rules on damages
Relevant	The indicator fully fulfils the sub-criterion of "relevance" as it is an obvious way of assessing whether the objective of "ensuring a level playing field in terms of competition rules in the Member States" is fulfilled.
Accepted	The indicator fully fulfils the sub-criterion of "accepted" as it is utilised in other comparative legal analysis studies conducted by key stakeholders in the field of competition.
Credible	The indicator fully fulfils the sub-criterion of "credible" as it conveys an unambiguous measure on the extent to which similar rules on competition law are applicable in different Member States.
Easy	The indicator partially fulfils the sub-criterion of "easy". If the indicator is measured by comparing the national legal provisions then the sources of information (i.e. national legislation) should be publically available as Member States are required to report on the transposition. However, such indicator requires a significant effort to translate and compare national regulations. It is possible, but can be costly.
Robust	The indicator partially fulfils the sub-criterion. It is not clear from the impact assessment how "degree of convergence" is defined and actually measured but it is understood that such a methodology can be developed.

Table 54: Example of RACER assessment - Quantitative indicator

Indicator: RACER:	Optimal deterrence
Relevant	The indicator fully fulfils the sub-criterion of "relevance" as it directly connected to the overarching objective of ensuring the proper functioning of the market by mitigating the negative effects of infringements caused by uncompetitive behaviour.
Accepted	The indicator fully fulfils the sub-criterion of "accepted" as it is referred to in other studies in the field.
Credible	The indicator fully fulfils the sub-criterion of "credible" as it provides policy-makers and non-experts with a clear indication of the impact that the policy instrument is expected to have.
Easy	The indicator does not fulfil the sub-criterion of "easy" as data on deterrence is difficult to collect in a systematic manner. ¹¹⁶
Robust	The indicator partially fulfils the sub-criterion as methodology towards quantifying "optimal deterrence" is available. However, based on the information in the Impact Assessment it is unclear whether the methodology is robust against manipulation and whether it can be used easily in policy studies.

¹¹⁶ To achieve optimal deterrence the damages from an antitrust violation should be equal to the violation's —net harm to others, divided by the probability of detection (Source: Impact Study "Making antitrust damages actions more effective in the EU: welfare impact and potential scenarios").

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

The main **challenges and solutions** in relation to the RACER assessment are presented in the table below.

Challenges	Solutions
The technical definition and the availability of data are not always clearly specified in the Impact Assessments which imposes challenges to the RACER assessment.	The RACER assessment was performed based on the information available in the Impact Assessments and based on the general knowledge of the topic of the evaluator. Where it was unclear whether an indicator fulfils the RACER criteria, this was marked in yellow.
The assessment of the indicators against the "credible" and "accepted" criteria requires knowledge as to whether the indicator is used and accepted by policy-makers and by the general public (non-experts), which is generally not clear from the Impact Assessments reviewed.	Assessment against these RACER sub-criteria was performed on the basis of information available in the Impact Assessments as explained above. The assessment of the "credible" and "accepted" sub-criteria was informed by the dialogue / interviews with the Commission staff and the knowledge of the competition law expert.
The assessment of the indicators against the "easy" and "robust" criteria relies on the analysis of available data and solutions for measurement, which are not always available in the Impact Assessment.	The assessment of the indicators against the "easy" and "robust" criteria was performed in light of the information presented in the Impact Assessments and on the basis of the general knowledge of the evaluator concerning the availability of data sources (e.g. Eurostat, Eurobarometer etc.) and of methodological approaches for measuring specific indicators.

Additional indicators

The proposed additional indicators rely on the identification of gaps and needs in the measurement of specific objectives. The additional indicators proposed rely on:

- § Qualitative concepts found in the Impact Assessment which were further operationalised and transformed into quantitative indicators, where possible.
- § Quantitative and/or qualitative indicators identified on the basis of desk research: Desk research was carried out in order to identify additional quantitative and/or qualitative indicators including solutions for measurement and potential sources of data.
- § Quantitative and/or qualitative indicators identified/fine-tuned based on expert input: Expert understanding in competition policy informed the process of proposal of additional indicators. Experts were either own experts or DG Competition staff, whose feedback was collected.

The approach towards presenting the additional indicators is in line with that adopted for the mapping of indicators available in the Impact Assessment. The reporting of new indicators was done in the format of the table utilised for the mapping of indicators, and where possible, the RACER assessment was performed. The proposed additional indicators were discussed with the European Commission staff.

Improving Monitoring Indicators System to Support DG Competition's Future Policy Assessments

The main **challenges and solutions** in relation to the identification of additional indicators are presented below.

Challenges	Proposed solution
The definition of additional indicators is informed by the analysis of data needs and solutions which falls primarily under the scope of Task 3.	<p>The proposed additional indicators rely on the identified needs and gaps in the measurement of specific objectives. To the extent possible, research was conducted in order to further define the indicators.</p> <p>The proposed indicators were further defined as a result of dialogue / interviews with Commission staff and after data needs and solutions were mapped out (i.e. Task 3).</p>

Annex 2 – Reviews of IAs under Task 1

IMPACT ASSESSMENT REPORT

DAMAGES FOR BREACH OF THE EU ANTITRUST RULES

1. INTRODUCTION

In 2013, the European Commission conducted an Impact Assessment to assess the impact of a change in the legal regime for damages actions for breach of the EU Anti-trust rules.

The following sections include the results of the pilot work on mapping the monitoring indicators utilised in the Impact Assessment on Damages for breach of the EU anti-trust rules. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

The intervention logic has been drafted based on the Impact Assessment conducted. As stated in the Impact Assessment the proposal for an Anti-trust Damages Directive has had a dual aim. Firstly, the initiative was aimed at solving legal uncertainty arising from the interface between public and private enforcement of the EU competition rules. The need to regulate the public/private enforcement interface was necessary in particular with regard to leniency programmes and undue disclosure of leniency related documents for the purpose of anti-trust damages actions.

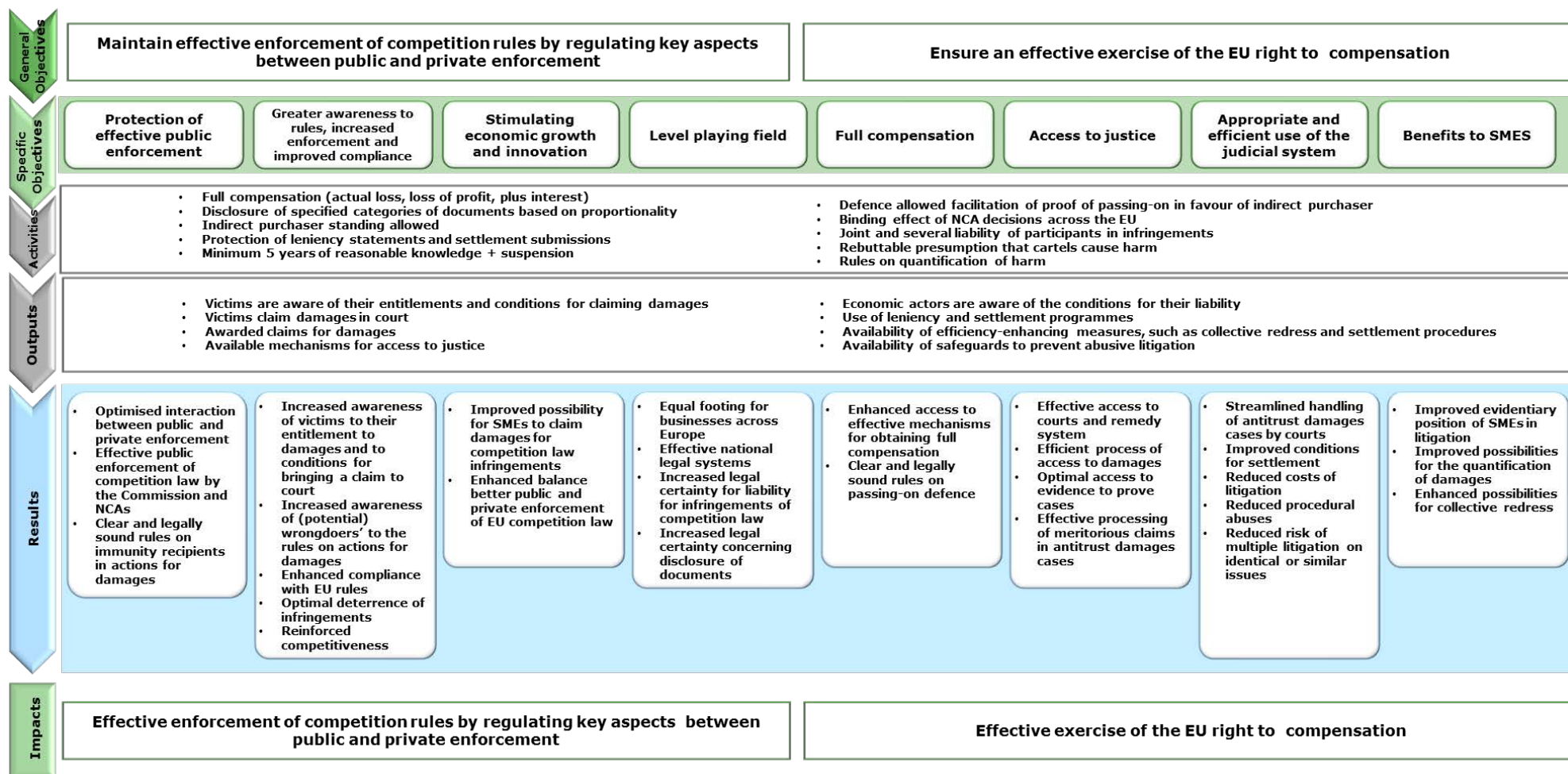
Secondly, the proposal for an Anti-trust Damages Directive was also aimed at mitigating the difficulties for victims of competition law infringements to obtain compensation.

These two issues have been translated into general objectives for the legislative initiative, which were further operationalised in 8 specific objectives, as presented in the intervention logic below.

Since the publication of the Impact Assessment for a proposal for the Anti-trust Damages Directive, the EU adopted the Anti-trust Damages Directive¹ on the 5.12.2014 which entered into force with the transposition deadline set for the MSs for the 27.12.2016.

¹ Directive 2014/104/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union, L 349/1, 5.12.2014

Figure 1: Intervention logic for a proposal for a Directive on Antitrust Damages Actions



Source: Ramboll, Based on Impact Assessment Report SWD (2013)203

The Objective, Specific Objectives, Activities, Outputs, Results and Impacts presented in the figure above are defined in line with the approach presented in the Impact Assessment Report.

3. MAPPING OF INDICATORS

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic font*.

Table 1: Indicators Impact Assessment for the proposal for an Antitrust Damages Directive

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
All specific objectives	<i>Transposition/ Implementation rate</i>	Quantitative Result Indicator	Not specified [No. of MS having fully implemented the legal instrument]	N ^o or %	<i>Legal acts of Member States</i>	<i>Once</i>	<i>27/12/2016</i>	EU28	<i>On-going implementation³</i>					
	Transposition costs	Quantitative Result Indicator	Costs incurred by Member States in adapting national law to the proposed measures	EUR [Scale (high-low)] ⁴	-	-	-	EU28	-					
Protection of effective public enforcement	[<i>Degree of</i>] optimisation of interaction between public and private enforcement	Quantitative Result Indicator	No. of damages claims brought following a decision of the Commission or a National competition authority finding an infringement of competition law	N ^o	<i>Member States judgements</i>	<i>Ad hoc</i>	-	EU28	-					
	[<i>Degree of</i>] legal clarity/certainty of rules on inter partes disclosure of documents	Qualitative Result Concept	Not specified	-	-	<i>Ad hoc</i>	-	EU28	Diverging rules on disclosability of documents in the MSs					
	[<i>Degree of</i>] legal clarity/certainty of rules on limitation periods	Qualitative Result Concept	Not specified	-	-	<i>Ad hoc</i>	-	EU28	Diverging rules on limitation periods in the MSs					
	[<i>Degree of</i>] legal clarity/certainty of rules on passing-on defence	Qualitative Result Concept	Not specified	-	-	<i>Ad hoc</i>	-	EU28	Diverging rules on passing-on defence in the MSs					
	[<i>Degree of</i>] legal clarity/certainty of liability rules for immunity recipients in actions for damages	Qualitative Result Concept	Not specified	-	-	<i>Ad hoc</i>	-	EU28	-					

² i.e. when does the data become available?

³ http://ec.europa.eu/competition/antitrust/actionsdamages/directive_en.html

⁴ The costs in the Impact Assessment were assessed on a scale: high, low, no costs, medium, very low.

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Number of leniency applications that result in an infringement decision	Quantitative Result Indicator	Number of leniency applications resulting in an infringement decision out of the total number of leniency applications [<i>per year</i>]	N° or %	<i>NCA Statistics DG COMP Statistics</i>	<i>Annual</i>	In real time	EU28	21 out of 24 decisions (88%) based on leniency applications (2008-2011)					
	[Amount of] fines imposed as a result of leniency applications	Quantitative Result Indicator	Total amount of fines imposed as a result of leniency applications [<i>per year</i>]	EUR	<i>Member State judgements sent to the EC⁵</i>	<i>Annual</i>	In real time	EU28	83% out of EUR total amount of fines for cartel infringements (7.3 billion) (2008-2011)					
	[Degree of] willingness of cartel participants to cooperate	Quantitative Impact Indicator	[Number of] cases as a result of voluntary statements produced by undertakings acknowledging participation in infringement	N°	<i>DG COMP Statistics</i>	<i>Annual</i>	-	EU28	-					
	Optimal deterrence	Quantitative Impact Indicator	[i.e. neither over nor under-deterrence occurs] Equal to "net harm to others" divided by the probability of detection"	N°	<i>Legal service statistics as reported to the Global Competition Review⁶</i>	<i>Annual</i>	-	EU28	-					
	Number of cases as a result of settlement submissions	Quantitative Result Indicator	Number of cases as a result of settlement submissions /Total number of cases	N° / %	<i>MS judgements sent to the EC</i>	-	In real time	EU28	-					
	<i>Success rate in competition cases before national courts</i>	Quantitative Impact Indicator	<i>[Number/Percentage of cases where claims on actions for damages were successful of the total number of claims /Total number of cases]</i>	N° / %	<i>Legal Service statistics as reported Global Competition Review</i>	<i>Annual</i>		EU28	90% (antitrust and mergers) 79% (state aid) (2012) ⁷					
	Amount of cartel fines	Quantitative Result indicator	Total amount of cartel fines [<i>per year</i>]	EUR	<i>DG COMP Statistics</i>	<i>Annual</i>	-	EU28	Average annual fine: EUR 1.832 billion / year 2012: EUR 1.875 billion					
	Detection rate	[Quantitative Output Indicator]	Not specified	N° / %	-	-	-	EU28	10-20% ⁸					
Full com	<i>Impact on corrective justice</i>	Qualitative Impact Concept	The extent to which private plaintiffs are granted <i>restitutio in integrum</i> (plaintiffs are neither over- nor under-	-	<i>Dialogue with stakeholders</i>	-	-	EU28	-					

⁵ Legal obligation under Article 15(2) of Regulation 1/2003, under which they should transmit to the Commission any judgment applying Articles 101 and 102 TFEU

⁶ DG Competition, Management Plan 2015

⁷ DG Competition, Management Plan 2015

⁸ Detection rate for hard-core cartels

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			compensated)											
	[Amount of] foregone compensation	Quantitative Result Indicator	Not specified	EUR	MS judgements sent to the EC	-	-	EU28	EUR 5.7 billion to EUR 23.3 billion per year					
	[Amount of] costs on consumers and other victims of infringements	Quantitative Result Indicator	Estimated annual costs to consumers for cartels Proportion of GDP	EUR % of DGP	-	-	-	EU28	EUR 25 bn to EUR 69 bn; 0.20% of EU GDP (2011) ⁹					
	[Extent to which] infringement procedures lead to full compensation of victims	Quantitative Impact Indicator	Not specified [No. of cases in which compensation of actual loss and/or loss of profit + interest was granted]	N°	-	-	-	EU28	-					
	[No of cases] resulting in full compensation [per year]	Quantitative Result Indicator	No. of cases in which compensation of actual loss and/or loss of profit + interest was granted per year	N°	-	Annual	-	EU28	-					
	Percentage of harm compensated to victims	Quantitative Result Indicator	Percentage of the total annual cost to consumers and other victims that is compensated <i>Proportion of GDP</i>	%	MS judgements sent to the EC	-	-	EU28	-					
	[Extent to which] infringement procedures lead to cases where victims are not compensated	Quantitative Impact Indicator	Number of cases where victims are not compensated	N°	-	-	-	EU28	-					
	Number/Percentage of damage awards that include pre-judgement interest	Quantitative Result Indicator	Number/Percentage of damage awards that include pre-judgement interest in order to compensate for the real value of the harm suffered	N° / %	MS judgements sent to the EC	-	-	EU28	-					
	[Extent to which] claimants are able to prove liability and provide a quantification of the full actual harm	Qualitative Result Concept	Not specified	-	-	-	-	EU28	-					
Increased	Direct costs on consumers and other victims of infringements of antitrust law	Quantitative Result Indicator	Not specified	Million EUR % of DGP	-	-	-	EU28	EUR 25 bn to EUR 69 bn; 0.20% of EU GDP (2011) ¹⁰					
	[Degree of] willingness of injured parties to claim compensation	Qualitative Result Indicator	Not specified	-	[Relevant national case-law of courts, Survey]	-	-	EU28	-					

⁹ This does not include the harm caused by other abusive practices and infringements of Article 101 TFEU other than hardcore cartels.

¹⁰ This does not include the harm caused by other abusive practices and infringements of Article 101 TFEU other than hardcore cartels.

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	[Degree of] intensity of enforcement	Quantitative Impact Concept	Number of cases for which infringers are held responsible per type of infringement	Nº	DG COMP Statistics	-	-	EU28	-					
	[Degree of] clarity of conditions for right to damages and for liability of companies	Qualitative Result Concept	Not specified	-	-	-	-	EU28	Divergent rules in MS					
	[Degree of] legal certainty on burden of proof for passing-on of overcharges	Qualitative Result Concept	Not specified	-	-	-	-	EU28	Divergent rules in MS					
	[Degree of] awareness of victims of their entitlement to damages of the conditions for bringing a claim to court	Qualitative Result Concept	Not specified	-	-	-	-	EU28	Divergent rules in MS					
	[Amount of] overcharge in cartel cases	Quantitative Result Indicator	Positive difference between the price actually paid and the price that would have prevailed in the absence of infringement	EUR / %	Cartel statistics / Academic research	-	-	EU28	Average overcharge: 20 % - 23% ¹¹					
	Optimal deterrence rate	Quantitative Impact Indicator	Extent to which the policy option leads to optimal deterrence (i.e. not over-deterrence or under-deterrence)	[Scale 0-3]	-	-	-	EU28	-					
	Deterrence rate	[Quantitative Output Indicator]	Not specified	%	Legal service statistics as reported to the Global Competition Review ¹²	-	-	EU28	-					
Access to justice	[Degree of] access of claimants to evidence to prove claim	Qualitative Result Indicator	Not specified	-	-	-	-	EU28	-					
	[Number of cases] where multiple proceedings are initiated	Quantitative Result Indicator	Number of cases where multiple proceedings are initiated	Nº	-	-	-	EU28	-					

¹¹ Estimates carried out by Boyer and Kotchoni in reaction to potential errors and biases in the model, came to a corrected mean overcharge in all cartel cases of 17,5% with a median of 14%

¹² DG Competition, Management Plan 2015

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	[Number of cases] with contradictory outcomes	Quantitative Result Indicator	Number of cases that result in contradictory outcomes	Nº	-	-	-	EU28	-					
	[Trends in] number of cases detected	Quantitative Result Indicator	Number of cases detected over time	-	[DG COMP Survey] ¹³	-	-	EU28	-					
	[Trends in the] timeliness of decisions	Quantitative Result Indicator	Not specified	-	[DG COMP Survey] ¹⁴	-	-	-	-					
	Availability of effective collective redress mechanisms	Qualitative Result Indicator	Existence of rules enabling collective redress for claimants	-	-	-	-	EU28	Differences in the availability of collective redress mechanisms					
	Number of judicial staff trained per year to make sure competition rules are applied in line with EU law	Quantitative Result Indicator	Number of judicial staff trained per year	Nº	[DG COMP Survey] ¹⁵	-	-	EU28	-					
	[Degree of] use of collective redress mechanisms	Quantitative Result Indicator	Not specified [Number of cases of individual claims vs. number of cases of collective actions concerning the same infringement]	Nº	-	-	-	EU28	-					
	Number of cases of court error	Quantitative [Output] Indicator	Number of cases in which courts issue a mistaken decision	Nº	-	-	-	EU28	-					
Benefits to SMEs	Error costs	Quantitative [Output] Indicator	Costs related to the situations where the courts issue a mistaken decision	Scale [EUR]	-	-	-	EU28	-					
	Impact on planned business transactions	Qualitative Impact Concept	Not specified	-	-	-	-	EU28	-					
	[Degree of] improvement of the evidentiary position of SMEs in litigation	Qualitative Result Concept	Not specified	-	-	-	-	EU28	-					
Stimulus	Change in the level of productivity	Quantitative Impact Concept	Not specified	-	[DG COMP Survey] ¹⁶	-	-	EU28	-					

¹³ DG Competition, Management Plan 2015

¹⁴ DG Competition, Management Plan 2015

¹⁵ DG Competition, Management Plan 2015

¹⁶ DG Competition, Management Plan 2015

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Change in the functioning of single market	Quantitative Impact Concept	Not specified	-	-	-	-	EU28	-					
	Change in the functioning of markets	Quantitative Impact Concept	Not specified	-	[DG COMP Survey] ¹⁷	-	-	EU28	-					
	Change in employment	Quantitative Impact Concept	Not specified	-	[DG COMP Survey] ¹⁸	-	-	EU28	-					
	Change in economic growth	Quantitative Result Indicator	Not specified	[% of GDP]	[DG COMP Survey] ¹⁹	-	-	EU28	-					
	Change in prices	Quantitative Result Indicator	Not specified	[CPI]	-	-	-	EU28	-					
	Change in the level of innovation	Quantitative Result Indicator	Not specified	-	-	-	-	EU28	-					
-	Litigation costs	Quantitative Output Indicator	Total litigation costs per average case (Settlement costs + Enforcement costs)	Scale [EUR]	-	-	-	EU28	-					
	Net administrative costs	Quantitative Output Indicator	Costs incurred by legal obligation to provide information on the action or production Costs related to storage of information Disclosure costs	Scale [EUR]	-	-	-	EU28	-					
	Implementation costs	Quantitative Output Indicator	Costs incurred by businesses, consumers and national public authorities to adapt to new rules (e.g. training costs, compliance costs, etc.)	Scale [EUR]	-	-	-	EU28	-					

¹⁷ DG Competition, Management Plan 2015

¹⁸ DG Competition, Management Plan 2015

¹⁹ DG Competition, Management Plan 2015

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives set out by the proposal for a Directive for Damages Actions for breach of the EU anti-trust rules. For each *specific objective* one additional indicator is proposed. The indicators draw on the issues that the legal instruments is intended to address and on the gaps/overlays identified in the Impact Assessment.

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Maintain effective interaction between public and private enforcement	Degree of effective interaction between public and private enforcement	Qualitative Impact Indicator	Assessment of interaction between public and private enforcement: how well does public and private enforcement complement each other?	Scale	Survey with national authorities	Ad-hoc	Ad-hoc	EU 28 or sample	Not available					
Ensure effective exercise of right to compensation	Effectiveness of the rule of law in ensuring effective exercise of right to compensation	Qualitative Impact Indicator	Assessment by stakeholders of the extent to which the legal provisions allow for an effective exercise of the right to compensation	Scale	Survey with stakeholders	Ad-hoc	Ad-hoc	EU 28 or sample	Not available					
Protection of effective public enforcement	Degree of legal certainty of the interaction between public / private enforcement	Quantitative Result Indicator	Benchmark / Index of certainty ²⁰ of rules [Proxies for the index can include: predictability, stability over time]	Scale	See for example p. 46ff. ²¹	Ad-hoc	Ad-hoc	EU28 or sample	Divergent rules on public enforcement					
	[Trends in] the number of appeal cases on issues interpreting the Directive in connection to Art. 6(6)	Quantitative Result Indicator	[Trends in] the number of cases on appeal on issues interpreting the Directive in connection to leniency documents	Number	National Courts of Appeal CJEU	Annual	Ad-hoc	EU28 or sample	The Directive provides for the protection of leniency documents					
Greater awareness to rules,	Degree of willingness of injured parties to	Quantitative Result Indicator	Number of cases where injured parties claim compensation	Number	DG COMP statistics / Survey	Ad-hoc	Ad-hoc	EU28	Low-Moderate willingness					

²⁰ Legal certainty represents the qualitative value of a legal system resulting from demands in terms of the quality of standards and the quality of the interpretation judges give them.

²¹ http://www.fondation-droitcontinental.org/en/wp-content/uploads/2015/06/NS_Rapport-complet-5-juin-2015_EN.pdf

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
increased enforcement	claim compensation	Qualitative Result Indicator	Extent to which major plaintiffs are willing to seek compensation	Qualitative Assessment	Interviews / Survey ²²	Ad-hoc	Ad-hoc	EU28 or sample	due to legal uncertainty					
	[Trends in] number of class action funders	Quantitative Result Indicator	[Trends in] number of cases for damages with third party funding	Number	Interviews / Surveys	Annual	Ad-hoc	EU28 or sample	Not available					
Stimulating economic growth and innovation	Annual welfare benefits from deterring the exercise of market power through antitrust laws	Qualitative Result Indicator	Total annual welfare benefits arising from enforcing anti-trust rules [as % of GDP]	%	e.g. calculated based on estimates of case studies	Ad-hoc or in connection to policy assessments	Ad-hoc	EU28 or sample	Not available					
Level playing field	Degree of consistent interpretation of the rules by the national courts	Qualitative Result Indicator	Benchmark the extent to which a uniform interpretation of the rules exists in the national courts of all Member States	Scale	National courts	Once	Ad-hoc	EU28 or sample	Not available					
Full compensation	Extent to which merger enforcement leads to over-deterrence	Qualitative Result Indicator	Businesses' experience of over-deterrence: how often does the competition regime deter mergers that would not have lessened competition? (always-never)	Scale	Survey with businesses	Ad-hoc or in connection to studies	Ad-hoc	EU28 or sample of cases	The risk of under-compensation or over-compensation exists due to legal uncertainty					
Access to justice	Degree of access to justice	Quantitative Impact Indicator	Index of costs and quality of access to justice	Number	EU Justice Scoreboard	Annual	Ad-hoc	EU28	Not available					
Access to justice	Degree of access to justice	Qualitative Impact Indicator	Assessment by relevant stakeholders of the degree of access to justice granted by the Damages Directive	Qualitative Assessment	Interviews / Surveys [consumers, businesses, SMEs]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Appropriate and efficient use of the judicial system	Degree of use of consensual dispute resolution mechanisms	Quantitative Result Indicator	Number of cases out-of-court-settlements	Number	Stakeholders consultation	Annual	Ad-hoc	EU28	Not available					
Benefits to SMEs and	Trend in estimated costs of litigation for	Quantitative Result	Trends in the estimated costs of litigation for	EUR	Stakeholder consultation	Annual	Ad-hoc	EU28	Not available					

²² For example, identify the major plaintiff law firms or consumer organisations that take cases and interview them on their willingness to seek compensation.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
[consumers]	SMEs	Indicator	SMEs resulting from infringements per year		[SMEs, law firms]									
	Trend in estimated costs of litigation for consumers	Quantitative Result Indicator	Trends in the estimated costs of litigation for consumers	EUR	Stakeholder consultation [SMEs, law firms]		Ad-hoc	EU28	Not available					
	Trends in the number of follow-on actions from SMEs	Quantitative Result Indicator	Trends in the number of claims for damaged from SMEs	Nº	Stakeholder consultation [National courts, SMEs]	Annual	Ad-hoc	EU28	Not available					

Justification for the additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Maintain effective interaction between public and private enforcement	Degree of effective interaction between public and private enforcement	Qualitative Impact Indicator	The legal provisions have the aim of ensuring effective interaction between public and private enforcement. A possible indicator is suggested to measure the extent to which this objective is achieved,
Ensure effective exercise of right to compensation	Effectiveness of the rule of law in ensuring effective exercise of right to compensation	Qualitative Impact Indicator	The legal provisions have the aim of ensuring effective exercise of the right to compensation. A possible indicator is suggested to measure the extent to which this objective is achieved,
Protection of effective public enforcement	Degree of legal certainty of rules on public enforcement	Quantitative Result Indicator	Legal uncertainty in connection to de jure and de facto practices on disclosability of leniency-related documents is considered to be one of the main factors that affect effective public enforcement. The measurement of legal certainty of rules can be done in two manners: (a) measurement of perception – measuring subjective opinions of individuals to qualify the level of legal certainty, (b) factual measurements – indicators constructed on the basis of objective, directly observable facts. Based on this, an index for measuring legal certainty could be built.
	Number of appeal cases on issues interpreting the Directive in connection to Art. 6(6)	Quantitative Result Indicator	According to Article 6(6) of the Directive, the Member States are obliged to ensure that national courts do not order a party or third party to disclose any evidence on leniency statements and/or settlement submissions. An indicator that is not mentioned in the IA but is important in relation to this is the extent to which appeal cases exist in relation to the interpretation of these provisions.
Greater awareness to rules, increased enforcement	Degree of willingness of injured parties to claim compensation	Quantitative Result Indicator	Strengthening enforcement and improving compliance of competition law can be enhanced by ensuring an effective private enforcement. Private enforcement is dependent on the willingness of injured parties to claim compensation for damages suffered as a result of infringements of competition law. Thus, the degree of willingness of injured parties to claim compensation can be measured through proxies (such as the type of harm for which compensation has been awarded, the type of victims reached, the type of actions brought).
	Number of class action funders	Quantitative Result Indicator	Third party funding is an alternative method of litigation funding where a commercial funder with no connection to the proceedings will pay some or all of the costs of the case in return for a share of any sum of money awarded in damages if you win your case. This indicator could be relevant to measure the degree of awareness to the rules.
Stimulating	Annual welfare benefits from	Qualitative Result	The annual welfare benefits from deterring the exercise of market power through anti-trust laws can be measured as a percentage of

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
economic growth and innovation	detering the exercise of market power through antitrust laws	Indicator	the GDP, according to literature on the topic. Thus, this can be a potential indicator to measure the impact of the initiative.
Level playing field	Degree of consistent interpretation of the rules by NCAs	Qualitative Result Indicator	Consistent interpretation of the rules by NCAs is important in order to ensure the same treatment of parties involved in litigations related to anti-trust damages. The indicator can be used to measure equal treatment of plaintiffs in cases involving cross-border litigations.
Full compensation	Extent to which merger enforcement leads to over-deterrence	Qualitative Result Indicator	As further explained in the IA, "full compensation" represents an objective of the proposed Directive. Cases of under-compensation can be established by looking at who the eligible plaintiffs are and who received actual compensation for damages. This could allow to test under-compensation. For example, if a cartel harms direct and indirect buyers but only direct buyers sue and receive damages, this would be clear case of under-compensation. Cases of over-deterrence and/or over-compensation can be assessed by performing a survey with businesses.
Access to justice	Degree of access to justice	Quantitative Impact Indicator	Guaranteeing efficient access to justice entails ensuring that the costs related to proceedings do not deter victims from claiming damages and a high quality of the procedures. Proxies can include: costs of the procedure (monetary costs, opportunity costs), quality of the procedure (procedural justice), quality of the outcome (distributive justice, restorative justice, transparency).
Appropriate and efficient use of the judicial system	Degree of use of consensual dispute resolution mechanisms	Quantitative Result Indicator	An appropriate and efficient use of the judicial system also entails an effective possibility to engage in consensual dispute resolution which is considered to reduce the costs.
Benefits to SMEs [and consumers]	Estimated costs of litigation for SMEs	Quantitative Result Indicator	The IA specifies that the proposal for the Directive aims at enhancing the stance of SMEs in claiming damages. The costs of litigation can be an obstacle for SMEs in claiming damages.
	Trend in estimated costs of litigation for consumers	Quantitative Result Indicator	The indicator would measure the impact of the Directive on consumers claiming damages.
	Trends in the number of follow-on actions from SMEs	Quantitative Result Indicator	Trends in the number of follow-on actions from SMEs [a direct measure of the effectiveness of the Directive in enhancing the stance of SMEs to claim damages] would indicate the impact of the Directive on SMEs.

IMPACT ASSESSMENT REPORT ON HORIZONTAL COOPERATION AGREEMENTS, RESEARCH AND DEVELOPMENT AGREEMENTS AND SPECIALISATION AGREEMENTS

1. INTRODUCTION

In 2010, the European Commission conducted an impact assessment of the *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal cooperation agreements*, the *Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to certain categories of research and development agreements* and the *Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to certain categories of specialisation agreements*.

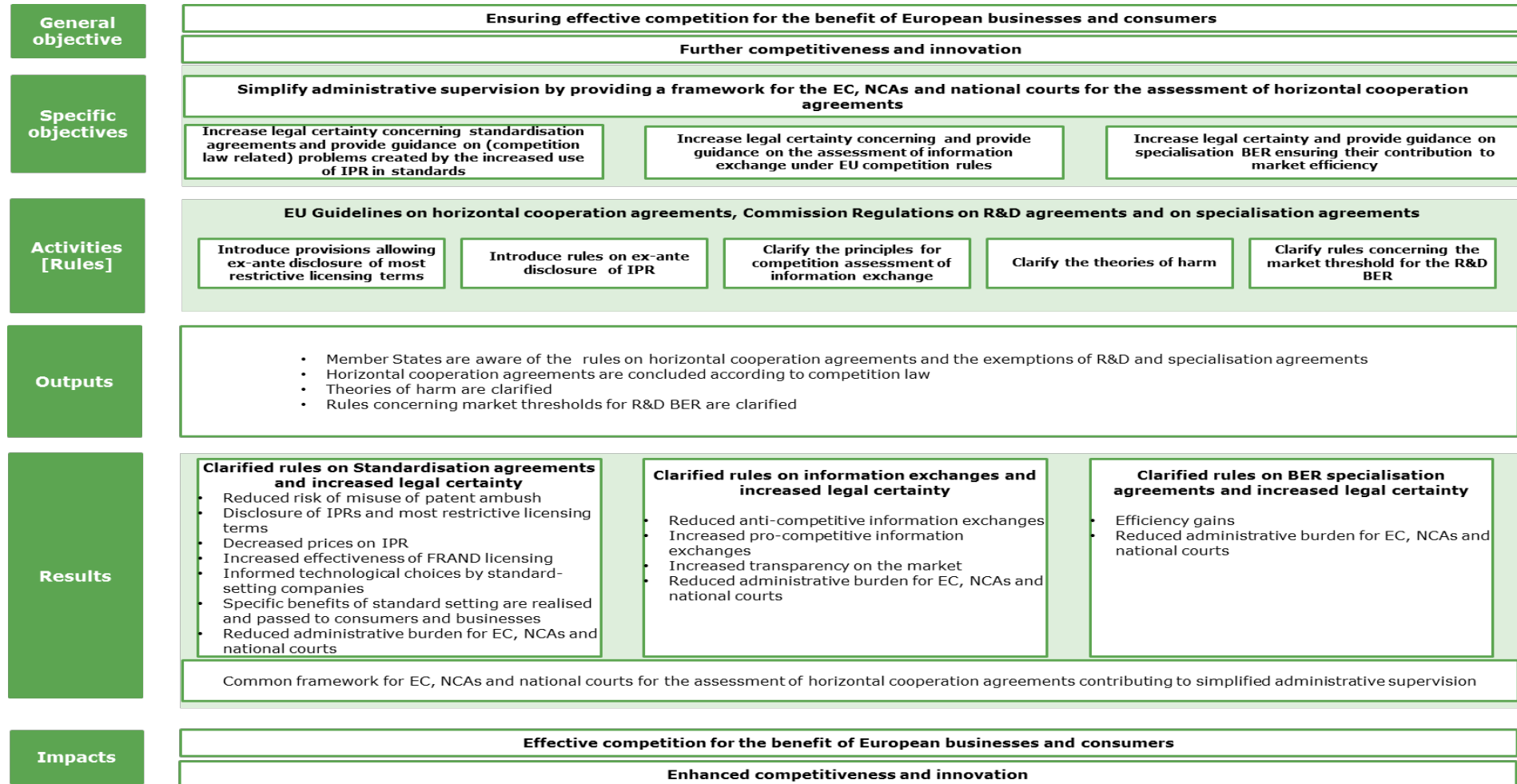
The impact assessment was aimed at informing decision-making and the adoption of the clarified rules for horizontal cooperation agreements, R&D agreements and certain categories of specialisation agreements.

2. INTERVENTION LOGIC

The intervention logic has been drafted based on the Impact Assessment conducted. As stated in the Impact Assessment the clarified rules on horizontal cooperation agreements, on R&D agreements and on specialisation agreements have the aim of tackling several issues which are presented in the table below.

Problem definition	Standardisation <ul style="list-style-type: none">➔ Risk of anti-competitive outcome limiting competition between types of technologies;➔ Risk of misuse of patent IPR by companies holding intellectual property rights essential for the implementation of the standard ("patent ambush"). Information exchange <ul style="list-style-type: none">➔ Anti-competitive information exchanges facilitating collusion which can lead to reduced output and higher prices for consumers; Specialisation Block Exemption Regulation <ul style="list-style-type: none">➔ Output reductions or input foreclosure.
---------------------------	---

Figure 1: Intervention logic (Impact Assessment on Guidelines on horizontal cooperation agreements, Regulation on R&D agreements, and Regulation on categories of specialisation agreements)



Source: Ramboll, Based on Impact Assessment Report SWD (2010)1541 final

3. MAPPING OF INDICATORS

A mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in Italic font.

It should be duly noted that some of the indicators presented in the following table may not be relevant for future IAs or need to be refined and might not be possible to collect by DG Competition.

Table 1: Indicators Impact Assessment

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Ensure effective competition	Market share	Quantitative Impact Indicator	Percentage of the market controlled by a particular company	%	Not specified	-	-	EU28 or national	Not available					
Further competitiveness and innovation	Proportion of innovating firms involved in any type of cooperation	Quantitative Impact Indicator	Percentage of [Number of] innovating firms that take part in any type of cooperation out of the total number of innovation firms	% / [N°]	Community Innovation Survey	Ad-hoc [Time-series]	-	EU MSs+ non-EU states	Average (EU +): 34,08% (2004-2006)					
Further competitiveness and innovation	Proportion of innovating firms involved in horizontal cooperation	Quantitative Impact Indicator	Number of innovation firms participating in horizontal cooperation out of the total number of innovation firms	% / [N°]	Community Innovation Survey	Ad-hoc [Time-series]	-	EU MSs+ non-EU states	Average (EU +): 13,42% (2004-2006)					
Further competitiveness and innovation	Proportion of innovating firms involved in cooperation with clients	Quantitative Impact Indicator	Number of innovation firms involved in cooperation with clients out of the total number of innovation firms	% / [N°]	Community Innovation Survey	Ad-hoc [Time-series]	-	EU MSs+ non-EU states	Average (EU +): 21,71% (2004-2006)					
Further competitiveness and innovation	Proportion of innovating firms involved in cooperation with suppliers	Quantitative Impact Indicator	Number of innovation firms involved in cooperation with suppliers out of the total number of innovation firms	% / [N°]	Community Innovation Survey	Ad-hoc [Time-series]	-	EU MSs+ non-EU states	Average (EU +): 26,60% (2004-2006)					
Further competitiveness and innovation	Proportion of innovating firms involved in cooperation with universities and higher	Quantitative Impact Indicator	Number of innovation firms involved in cooperation education institutes and universities out of the total	% / [N°]	Community Innovation Survey	Ad-hoc [Time-series]	-	EU MSs+ non-EU states	Average (EU +): 12,14% (2004-2006)					

¹ i.e. when does the data become available?

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	education institutes		number of innovation firms											
Further competitiveness and innovation	Number of R&D companies	Quantitative Impact Indicator	Number of R&D companies	Nº	Community Innovation Survey	Annual [Time-series]	-	EU28	-					
Further competitiveness and innovation	Lead-time for an innovation product to reach the consumer	Quantitative Impact Indicator	Amount of time between the production of an innovative product and it reaching the market for consumers [11]	[Nº]	-	-	-	EU28	Not available					
Simplify administrative supervision / create framework	<i>Number of horizontal agreements cases notified to the EC</i> [Note: This indicator is no longer valid since as of 1 May 2004 the notification system does not exist anymore]	Qualitative Result Indicator	Number of cases notified to the Commission concerning horizontal agreements [3]	Nº	DG COMP Statistics	Annual [Time-series]	-	EU28	For R&D and specialisation: 37 cases [January 1995 – December 1999]					
Simplify administrative supervision / create framework	<i>Share of cases of horizontal agreements notified to the EC</i> [Note: same as above]	Quantitative Result Indicator	Percentage of cases notified to the Commission concerning horizontal agreements of the total number of cases notified [3]	%	DG COMP Statistics	Annual [Time-series]	-	EU28	Not available					
Simplify administrative supervision / create framework	Number of competition agreements that require assessment by legal advisers for compliance	Qualitative Result Indicator	Number of competition agreements that require assessment by legal advisers for compliance [4]	Nº	Community Innovation Survey	Annual [Time-series]	-	EU28	Substantial					
Simplify administrative burden / create framework	Costs of compliance for companies who participate in standard setting and have IPR	Quantitative Result Indicator	Number of participating companies X costs (incurred from patent search for example) [76]	EUR	-	-	-	EU28	-					
Simplify administrative burden / create framework	Cost of defining the relevant market when assessing the second market share threshold	Quantitative Result Indicator	Costs incurred by companies to define their market share when assessing the second market share threshold for Specialisation BER [38]	EUR	-	-	-	EU	-					
Simplify administrative burden / create framework	Reduction in transaction costs for undertakings	Quantitative Result Indicator	Not available [39]	EUR / year	-	Annual [Time-series]	-	-	-					
Simplify administrative burden / create framework	[Search] Costs for consumers	Quantitative Result Indicator	Not available [29]	EUR	-	Annual [Time-series]	-	EU28	-					

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Increased legal certainty /All	[Degree of] legal certainty of the rules	Qualitative Result Indicator	Extent to which the rules ensure legal certainty [58]	-	-	Ad-hoc	-	EU	-					
Increased legal certainty/ Guidance on standardisation	<i>Number of cases where licensing commitments have been agreed between IPR holders and standard-setting organisations</i>	Qualitative Result Indicator	Number of cases where licensing commitments have been agreed between IPR holders and standard-setting organisations [70, 45]	Nº	-	Annual	-	EU	-					
Increased legal certainty/ Guidance on standardisation	<i>Share of licensing commitments entered into by IPR holders and standard-setting organisations</i>	Quantitative Result Indicator	Number of licensing commitments entered into by standard setting organisations and IPR holders out of the total number of standardisation agreements [70]	%	-	Annual / Ad-hoc	-	EU	Not available					
Increased legal certainty/ Guidance on standardisation	[Number of] ex-ante declarations of most restrictive licensing terms	Quantitative Result Indicator	Number of ex-ante declarations of most restrictive licensing terms [46]	Nº	-	Annual	-	EU	-					
Increased legal certainty/ Guidance on standardisation	Rate of development of standards	Quantitative Result Indicator	Not available [Number of standards development against baseline X] [41]	%	-	Annual [Time-series]	-	EU	-					
Increased legal certainty / All	Number of cooperation agreements entered between competitors	Qualitative Output Indicator	Number of cooperation agreements entered between competitors	Nº	Community Innovation Survey	Ad-hoc [Time-series]	-	EU28	-					
Increased legal certainty	Number of standardisation agreements on interoperability standard	Qualitative Output Indicator	Number of standardisation agreements on interoperability standard	Nº	Community Innovation Survey	Annual [Time-series]	-	EU28	-					
Increased legal certainty	Number of joint production and specialisation agreements	Qualitative Output Indicator	Number of joint production and specialisation agreements	Nº	Community Innovation Survey	Annual [Time-series]	-	EU28	-					
Increased legal certainty	Number of commercialisation agreements	Qualitative Output Indicator	Number of commercialisation agreements	Nº	-	-	-	EU28	-					

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Increased legal certainty	Number of reciprocal specialisation agreements ²	Qualitative Output Indicator	Number of reciprocal specialisation agreements	N°	-	-	-	EU28	-					
Increased legal certainty/ Standardisation	Royalty rate	Qualitative Output Indicator	Percentage of gross or net revenues derived from the use of an asset or fixed price/unit sold of an item	%	-	-	-	-	-					
Increased legal certainty/ Standardisation	Number of patents	Quantitative Output Indicator	Number of patents [per year]	N°	European Patent Office Statistics	Annual [Time-series]	-	EU	27,522 (2000) 62,777 (2006) 51,969 (2009)					
Increased legal certainty/ Standardisation	Number of standards	Quantitative Output Indicator	Number of standards [per year]	N°	-	Annual [Time-series]	-		ICT: 70,000 (1980-2004) ³					
Increased legal certainty/ Standardisation	Number of specifications	Quantitative Output Indicator	Number of specifications per standard	N°	-	Annual [Time-series]	-	EU	ICT: 3,000/year ⁴					
Increased legal certainty/ Standardisation	Number of organisations developing standards	Quantitative Output Indicator	Number of organisations developing standards	N°	[Community Innovation Survey]	Annual [Time-series]	-	EU	ICT: 674 (world-wide)					
Increased legal certainty/ Guidance on standardisation	<i>Number of detected cases of "patent ambush"</i>	Quantitative Result Indicator	Number of cases of patent ambush [53]	N°	[Community Innovation Survey]	Annual [Time-series]	-	EU						
Increased legal certainty/ Information exchange	[Number of] cases of information exchange	Quantitative Output Indicator	Number of cases concerning disclosure of information [50]	N°	-	-	-	EU	-					
Increased legal certainty/ Information exchange	<i>[Degree of]</i> information exchanges on the market	Quantitative Result Indicator	Number of information exchanges between standard-setting organisations [50]	N°	[Stakeholder Questionnaire]	-	-	EU	Low					
Increased legal certainty/ Information exchange	Number of [Degree of] pro-competitive information exchanges	Quantitative Result Indicator	Number of pro-competitive information exchanges [50]	N°	NCAs	-	-	EU	-					
Increased legal certainty/ Information exchange	Number of [Degree of] anti-competitive information exchanges	Quantitative Result Indicator	Number of anti-competitive information exchanges [50]	N°	NCAs	-	-	EU	-					
Increased legal certainty/ Information exchange	<i>[Degree of]</i> output	Qualitative	Not available	-	-	-	-	-	-					

² Agreements by virtue of which two or more parties on a reciprocal basis agree to cease from producing certain products and to purchase them from other parties

³ Future ICT Standardization Policy, Impact Assessment of Policy Options ENTR /2008/041, Report by Economisti Associati 27 February 2010

⁴ Future ICT Standardization Policy, Impact Assessment of Policy Options ENTR /2008/041, Report by Economisti Associati 27 February 2010

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Specialisation BER	reductions	Result indicator												
Increased legal certainty/ Specialisation BER	[<i>Degree of</i>] input foreclosure ⁵	Qualitative Result indicator	Not available	-	-	-	-	-	-					
Increased legal certainty/ Guidance on specialisation BER	[<i>Degree of</i>] legal certainty with regard to the ultimate legality of specialisation agreements	Qualitative Result Indicator	Not specified	-	European Competition Network	-	-	-	-					

⁵ Input foreclosure may occur in various forms. The merged entity may decide not to deal with its actual or potential competitors in the vertically related market. Alternatively, the merged firm may decide to restrict supplies and/or to raise the price it charges when supplying competitors and/or to otherwise make the conditions of supply less favourable than they would have been absent the merger. Further, the merged entity may opt for a specific choice of technology within the new firm which is not compatible with the technologies chosen by rival firms.²⁶ Foreclosure may also take more subtle forms, such as the degradation of the quality of input supplied.

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives. For each *specific objective* one additional indicator is proposed. The indicators draw on the issues that the legal instruments is intended to address and on the gaps/overlays identified in the Impact Assessment.

Note: Indicators marked with ** are based on qualitative concepts identified in the impact assessment

Table 2: Overview of proposed potential indicators

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Ensure effective competition to the benefit of consumers	Market performance Indicator (MPI)	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes.	Number	DG JUST, Consumer Markets Scoreboard	Annual	Yearly	EU28	See scoreboard					
Further competitiveness and innovation [Licencing trends]	License and patent revenues from non-EU firms as percentage of GDP ⁶	Quantitative Impact Indicator	Income earned by allowing non-EU firms to use copyrighted or patented material.	%	Innovation Union Scoreboard	Annual	Annual	EU or sample	Data available for 2000 (1) and 2009 at aggregate level					
Further competitiveness and innovation [Development of licencing agreements/ Licencing trends]	Weight of patents	Quantitative Impact Indicator	Average citation frequency of patents	Number	Electronic databases	Ad-hoc	Ad-hoc	EU or sample	Not available					

⁶ License and patent revenues capture disembodied technology exports. License and patent revenues are a measure of the commercialisation of countries' Intellectual Property by measuring the income earned by allowing foreign firms to use copyrighted or patented material.

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Further competitiveness and innovation [Patents and R&D agreements]	Number of patents resulting from R&D horizontal agreements	Quantitative Impact Indicator	Number of patents resulting from R&D horizontal agreements	Number	Stakeholder consultation [interviews]	Ad-hoc	Ad-hoc	EU or sample of agreements	Not available					
Simplify administrative supervision / create framework	Estimated amount of financial resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	EUR	Stakeholder consultation [Interviews NCAs and EC]	Annual / Ad-hoc	Ad-hoc	EU MSs or sample	Not available					
Simplify administrative supervision / create framework	Estimated amount of human resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	FTE	Stakeholder consultation [Interviews NCAs, EC]	Annual / Ad-hoc	Ad-hoc	EU MSs or sample	Not available					
Simplify administrative supervision / create framework	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	EUR	Stakeholder consultation [Interviews businesses]	Annual / Ad-hoc	Ad-hoc	EU or sample	Not available					
Simplify administrative supervision / create framework	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	FTEs	Stakeholder consultation [Interviews businesses]	Annual / Ad-hoc	Ad-hoc	EU or sample	Not available					
Increased legal certainty/ Guidance on	Degree of clarity of rules on standard	Qualitative Result Indicator	Benchmarking/Index of the extent to which the	Scale	Stakeholder consultation	Annual / Ad-hoc	Ad-hoc	EU or sample	Not available					

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
standardisation	development		rules are clear, easy to implement by standard setting organisations and other parties		[Survey national authorities, businesses, consumers]									
Increased legal certainty/ Guidance on standardisation	Impact on standard-setting organisations	Qualitative Result Indicator	Qualitative assessment of the effect of the rules on the work of standard-setting organisations	Qualitative assessment	Stakeholder consultation [Interviews standard-setting organisations]	Ad-hoc	Ad-hoc	EU or sample	Not available					
Increased legal certainty/ Guidance on standardisation	Degree of willingness of stakeholders to disclose IPR	Qualitative Result Indicator	Comparison of stakeholder perception of the extent to which IPR holders are willing to unilaterally disclose IPR before and after the clarification of the rules	[Scale]	Stakeholder consultation [Interviews IPR holders]	Annual / Ad-hoc	-	EU or sample	Not available					
Increase legal certainty / Information exchanges	Degree of legal clarity of rules concerning information exchanges	Qualitative Result Indicator	Comparison of the stakeholder perception of the extent to which rules on information exchanges between undertakings are clear before and after the clarification of the rules	[Scale]	Stakeholder consultation [Survey national authorities, businesses, consumers]	Annual / Ad-hoc	Ad-hoc	EU or sample	Not available					
Increase legal certainty / Information exchanges	Likelihood of businesses to respect rules on information exchanges	Qualitative Result Indicator	Assessment by businesses of the probability of respecting the guiding principles on information exchanges	[Scale]	Stakeholder consultation [Survey]	Annual / Ad-hoc	Annual / Ad-hoc	EU or sample	Not available					
Increase legal certainty / Specialisation BER	Degree of legal clarity of guidance on specialisation BER	Qualitative Result Indicator	Assessment by stakeholders of the degree of legal clarity of guidance on specialisation BER	[Scale]	Stakeholder consultation [Survey national authorities, businesses, consumers]	Annual / Ad-hoc	Ad-hoc	EU or sample	Not available					

Justification for relevance

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Justification for relevance
Ensure effective competition to the benefit of consumers	Market performance Indicator (MPI)	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes.	The MPI contains market performance information per sector for services and goods. In the case of horizontal agreements, the indicator can be used to perform an analysis of market development.
Further competitiveness and innovation [Licencing trends]	License and patent revenues from non-EU firms as percentage of GDP ⁷	Quantitative Impact Indicator	Income earned by allowing non-EU firms to use copyrighted or patented material.	License and patent revenues capture disembodied technology exports. License and patent revenues are a measure of the commercialisation of countries' Intellectual Property by measuring the income earned by allowing foreign firms to use copyrighted or patented material.
Further competitiveness and innovation [Development of licencing agreements/ Licencing trends]	Weight of patents	Quantitative Impact Indicator	Average citation frequency of patents	The weight of patents is an indicator of innovation performance. The overarching objective of the guidelines for horizontal cooperation agreements, research and development agreements and specialisation agreements is to further competitiveness and innovation. The indicator could serve to measure the progress towards this goal.
Further competitiveness and innovation [Patents and R&D agreements]	Number of patents resulting from R&D horizontal agreements	Quantitative Impact Indicator	Number of patents resulting from R&D horizontal agreements	The number of patents is an indicator of innovation performance. Determining the total number of patents that result from R&D horizontal agreements per Member State could support the measurement of the impact of horizontal agreements on innovation performance.
Simplify administrative supervision / create framework	Estimated amount of financial resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	The impreciseness or lack of certainty of the rules on conclusion of horizontal agreements can give rise to the need of NCAs or the Commission to provide clarifications to stakeholders, in particular to support the self-assessment of compliance of agreements with the competition rules. This can imply an additional administrative burden for the NCAs and the EC which can be measured through the proposed indicator.
Simplify administrative supervision / create framework	Estimated amount of human resources used by authorities for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by NCAs and the EC for clarifying the rules on conclusion of horizontal agreements [per type of agreement, per Member State or sample]	The impreciseness or lack of certainty of the rules on conclusion of horizontal agreements can give rise to the need of NCAs or the Commission to provide clarifications to stakeholders, in particular to support the self-assessment of compliance of agreements with the competition rules. This can imply an additional administrative burden for the NCAs and the EC which can be measured through the proposed indicator.

⁷ License and patent revenues capture disembodied technology exports. License and patent revenues are a measure of the commercialisation of countries' Intellectual Property by measuring the income earned by allowing foreign firms to use copyrighted or patented material.

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Justification for relevance
Simplify administrative supervision / create framework	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of financial resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	The guidelines have the aim of decreasing the administrative burden associated with ensuring compliance with the rules on conclusion of horizontal agreements. As such, an indicator measuring the estimated costs of ensuring compliance for undertakings is relevant to measure performance against this objective.
Simplify administrative supervision / create framework	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	Quantitative Result Indicator	Estimated amount of human resources used by undertakings for ensuring compliance with the rules on the conclusion of horizontal agreements [per type of agreement per Member State or sample]	The guidelines have the aim of decreasing the administrative burden associated with ensuring compliance with the rules on conclusion of horizontal agreements. As such, an indicator measuring the estimated costs of ensuring compliance for undertakings is relevant to measure performance against this objective.
Increased legal certainty/ Guidance on standardisation	Degree of clarity of rules on standard development	Qualitative Result Indicator	Benchmarking/Index of the extent to which the rules are clear, easy to implement by standard setting organisations and other parties	The amendments to the legislation have the aim of clarifying the rules on the conclusion of standard agreements. The indicator is a measure of the effectiveness of achieving this objective.
Increased legal certainty/ Guidance on standardisation	Impact on standard-setting organisations	Qualitative Result Indicator	Qualitative assessment of the effect of the rules on the work of standard-setting organisations	The modification of the rules can have an impact on the work of standard-setting organisations. By performing a qualitative assessment of this indicator, the evaluators would be able to measure whether such an effect is present or not and measure it.
Increased legal certainty/ Guidance on standardisation	Degree of willingness of stakeholders to disclose IPR	Qualitative Result Indicator	Comparison of stakeholder perception of the extent to which IPR holders are willing to unilaterally disclose IPR before and after the clarification of the rules	The IA explores the clarification of ex-ante disclosure of intellectual property rights [see Standardisation sections in IA]. The effectiveness of the clarification of the rules can be measured through the degree of willingness of stakeholders to make use of such ex-ante disclosure of IPR.
Increase legal certainty / Information exchanges	Degree of legal clarity of rules concerning information exchanges	Qualitative Result Indicator	Comparison of the stakeholder perception of the extent to which rules on information exchanges between undertakings are clear before and after the clarification of the rules	The IA explores the clarification of the rules concerning information exchanges. The effectiveness of the clarification process can be measured through consultation with the stakeholders to benchmark whether clear rules have been achieved.
Increase legal certainty / Information exchanges	Likelihood of businesses to respect rules on information exchanges	Qualitative Result Indicator	Assessment by businesses of the probability of respecting the guiding principles on information exchanges	The IA explores the clarification of the rules concerning information exchanges. The effectiveness of the clarification process can be measured through consultation with the stakeholders to benchmark whether businesses are likely to respect the rules.
Increase legal certainty / Specialisation BER	Degree of legal clarity of guidance on specialisation BER	Qualitative Result Indicator	Assessment by stakeholders of the degree of legal clarity of guidance on specialisation BER	The indicator measures the extent to which the revised specialisation BER provides legal clarity by ensuring that the guidelines cover most but also only scenarios where it can be assumed with reasonable certainty that the anticipated efficiencies generated by the covered agreements outweigh any negative effects.

IMPACT ASSESSMENT REPORT ON AGREEMENTS AND CONCERTED PRACTICES AND VERTICAL RESTRAINTS

1. INTRODUCTION

In 2010, the European Commission conducted an impact assessment concerning the review of the *Commission Regulation on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to categories of vertical and concerted practices* and the *Guidelines on Vertical Restraints*. The review was initiated in 2008 and was warranted given the expiry of the Regulation on 31st of May 2010. The review included an assessment of the functioning of the rules and the identification of areas for improvement in light of market developments.

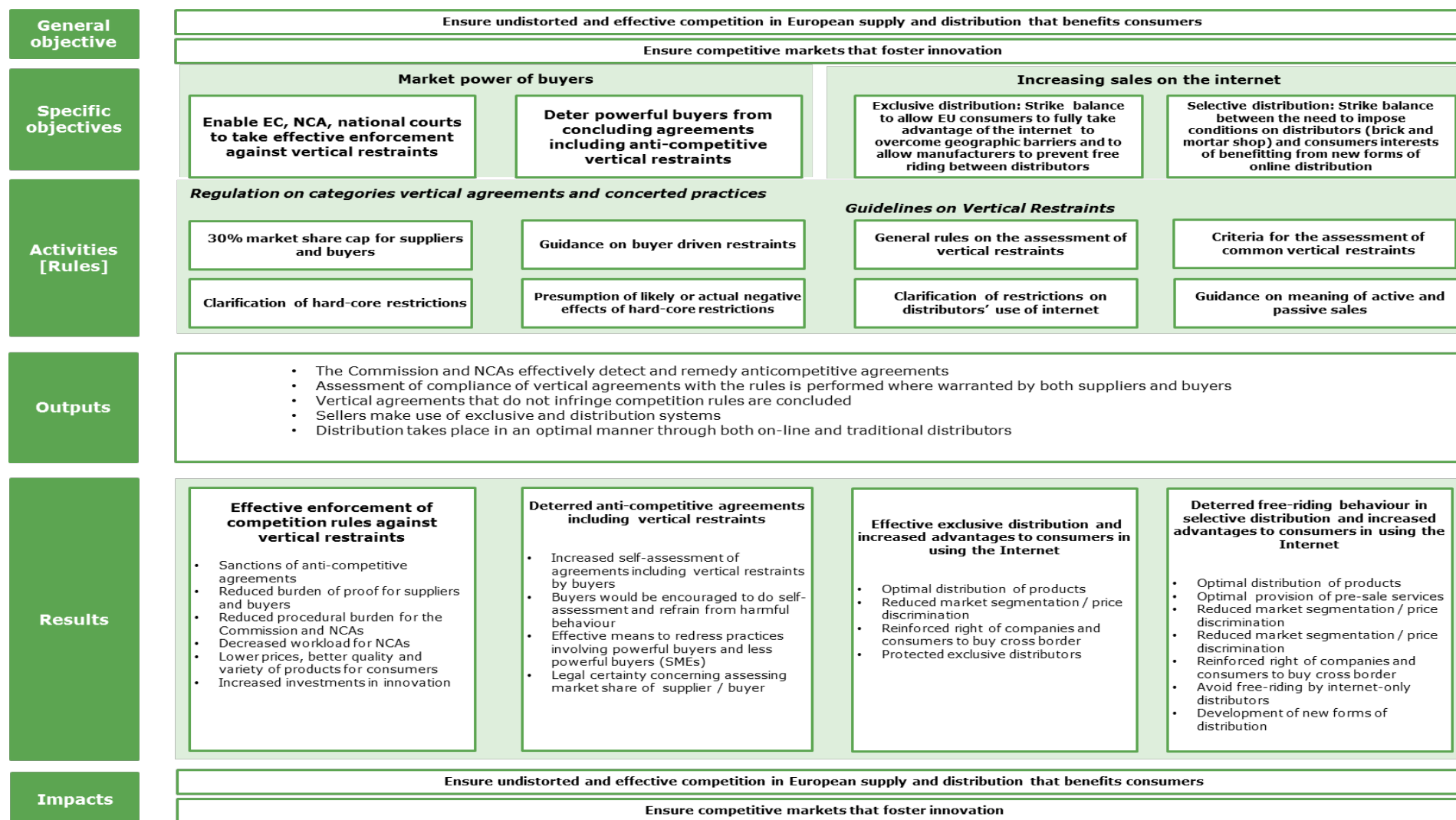
2. INTERVENTION LOGIC

The intervention logic has been drafted based on the Impact Assessment conducted by the European Commission. As stated in the Impact Assessment, the review of the rules had the aim of tackling several problems which are presented in the table below.

Problem definition	<ul style="list-style-type: none">➔ Expiry of the Block Exemption Regulation and the need for a regulatory update that reflects recent dynamics: effects of the market power of buyers and increase use of internet as a sales vehicle;➔ The market power of buyers can have negative effects, such as foreclosure of other buyers and softening of competition. The risk is that powerful buyers, comforted by the fact that it is only the supplier's market share that determines whether the agreement is block exempted or not, are not deterred from including anticompetitive restraints in their vertical agreements. Block exemption need to be reflective of market power of buyers.➔ Sellers making use of exclusive and selective distribution systems may seek to reduce the ability of consumers to buy goods online. The block exemption needs to identify the right balance between prohibiting anticompetitive restrictions on on-line sales and those restrictions that yield economic benefits.
---------------------------	--

The Impact Assessment addressed in particular the issue of market power of buyers and the increase in sales over the internet, that were translated in several specific objectives as presented in the intervention logic below.

Figure 1: Intervention logic of proposal for a regulation on categories of vertical agreements and concerted practices and the draft guidelines on vertical restraints



3. SOURCE: RAMBOLL, BASED ON IMPACT ASSESSMENT REPORT SEC (2012) **MAPPING OF INDICATORS**

A mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic* font.

It should be duly noted that the some of the indicators listed below may not be useful for future IAs and/or need to be further refined which might make them not possible to collect.

Table 1: Indicators Impact Assessment

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
All general objectives	<i>[Degree of]</i> impact on employment	Qualitative impact indicator	Extent to which clarifications to the legal basis have an impact on employment	Scale Positive/ Neutral/ Negative	Impact Assessment	-	-	EU	Not available					
All general objectives	<i>[Degree of]</i> impact on environment	Qualitative impact indicator	Extent to which clarifications to the legal basis have an impact on environment	Scale Positive/ Neutral/ Negative	Impact Assessment	-	-	EU	Not available					
All general objectives	<i>[Degree of]</i> impact on consumers	Qualitative impact indicator	Extent to which clarifications to the legal basis have an impact on consumers	Scale Positive/ Neutral/ Negative	Impact Assessment	-	-	EU	Not available					
Effective enforcement / Deter anti-competitive agreements	<i>Number of [Share of cases]</i> agreements including vertical restraints	Quantitative Result Indicator	Number of cases / Proportion of agreements including vertical restraint	N° / %	Member States	Annual	-	EU28	UK: 42 out of which 30 cases distorted supplier competition, 18 distorted retailer competition; 27 cases found to be against the public interest					
Effective enforcement / Deter anti-	<i>[Number of]</i> category agreements ²	Quantitative Result Indicator	Number of cases of category agreements	N°	-	Annual	-	EU28/ National	-					

¹ i.e. when does the data become available?

² Category management agreements are agreements by which, within a distribution agreement, the distributor entrusts the supplier (the "category captain") with the marketing of a category of products including in general not only the supplier's products, but also the products of its competitors

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
competitive agreements														
Effective enforcement against vertical restraints	Number of notifications concerning vertical agreements <i>[Note: This source of data is no longer in existence since as of 1st of May 20004 the notification system has been removed]</i>	Quantitative Result Indicator	Number of notifications concerning vertical agreements	Nº	COM system of notifications	Annual	-	EU	30,000					
Effective enforcement against vertical restraints	<i>[Number of]</i> complaints lodged with the Commission on vertical agreements	Quantitative Result Indicator	Number of complaints lodged with the Commission on vertical agreements [106]	Nº	-	Annual	-	EU28/ National	Very low – complaints are unlikely to occur as there might be a fear of retaliation [106]					
Effective enforcement against vertical restraints	Number of cases concerning vertical restraints at EU level	Quantitative Result Indicator	Number of cases concerning vertical restraints dealt with by the Commission [per year]	Nº	DG COMP Statistics	Annual	-	EU28	Decreased number of cases					
Effective enforcement against vertical restraints	Number of decisions concerning vertical restraints	Quantitative Result Indicator	Number of decisions on vertical restraints taken by the Commission [per year]	Nº	DG COMP Statistics	Annual	-	EU28	12 (2004-2009)					
Effective enforcement against vertical restraints	<i>[Number of]</i> complaints concerning vertical restrained lodged at national level	Quantitative Result Indicator	Number of complaints concerning vertical restrained lodged with NCAs [per year]	Nº	NCA Statistics	Annual	-	National						
Effective enforcement against vertical restraints	Number of cases concerning vertical restraint at national level	Quantitative Result Indicator	Number of cases concerning vertical restraint at national level	Nº	NCA Statistics	Annual	-	National	FR: 30 (2004-2009)					
Effective enforcement against vertical restraints	<i>[Number of]</i> private actions for damages in connection to illegal vertical agreements	Quantitative Result Indicator	Number of cases before national courts	Nº	DG COMP/ NCA Statistics	Annual	-	National	Not available					
Effective enforcement against vertical restraints	<i>[Number of cases]</i> of withdrawal of benefit of BER	Quantitative Result Indicator	Number of cases of withdrawal of benefit	Nº	DG COMP / NCA Statistics	Annual	-	EU28/ National	Low extent					
Effective	<i>[Amount of]</i> fines	Quantitative	Total value of fined imposed	EUR	DG COMP /	Annual	-	EU28/	Not Available					

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
enforcement against vertical restraints	imposed due to infringement of hard-core restrictions rules	Result Indicator	in cases of infringements		NCA Statistics			National						
Effective enforcement against vertical restraints	[Amount of] fines imposed due to infringement of rules for agreements with vertical restraints	Quantitative Result Indicator	Total value of fines imposed in cases of infringements	EUR	DG COMP / NCA Statistics	Annual	-	EU28/ National	Not Available					
Effective enforcement against vertical restraints	[Amount of] Administrative Resources	Quantitative Result Indicator	Not specified	-	-	-	-	EU	Not Available					
Effective enforcement / Deter anti-competitive agreements	[Degree of] consumer harm	Quantitative Result Indicator	Not available [Quantification of harm produced by anti-competitive agreements to consumers]	EUR	-	Annual	-	National / EU28	Not available [High in cases of anti-competitive behaviour]					
Deter agreements with anti-competitive vertical restraints	[Degree of] legal certainty of rules on vertical restraints	Qualitative Result Indicator	Extent to which the rules are clear and can be applied by companies	-	[Stakeholder Survey]	Annual / Ad-hoc	-	EU28/ National	Not available					
Deter agreements with anti-competitive vertical restraints	Costs of compliance for companies to assess compliance with rules	Quantitative Result Indicator	Total costs incurred by companies when assessing compliance of agreements with competition rules	EUR	[Stakeholder Survey]	Annual	-	EU28/ National	Not available					
Deter agreements with anti-competitive vertical restraints	Costs of legal analysis for defining market share	Quantitative result indicator	Total costs incurred for defining the market share	EUR	[Stakeholder Survey]	Annual	-	EU28/ National	Not available					

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Deter agreements with anti-competitive vertical restraints	Amount of upfront access fees ³	Quantitative Result Indicator	Total amount of fixed fees paid by suppliers to distributors to get access to distribution networks	EUR	-	Annual	-	EU28/ National	Not available					
Deter agreements with anti-competitive vertical restraints	[<i>Degree of</i>] market concentration	Quantitative Result Indicator	Share [Number of] largest enterprises	Nº	-	Annual / Ad-hoc	-	EU28/ National	High in some sector ⁴ , lower in other sectors					
Deter agreements with anti-competitive vertical restraints	[<i>Increase in</i>] Market share of retailers	Quantitative Output Indicator	Proportion of market share per retailer	%	Euromonitor International	Annual	-	EU28/ National	18 of 20 MS: market shares of the top 1,3,4 grocery retailers increased in 2004-2007 ⁵					
Deter agreements with anti-competitive vertical restraints	[<i>Degree of</i>] intra-brand and inter-brand competition	Qualitative Result Indicator	Extent to which intra-brand and inter-brand competition exists	-	-	-	-	-	Not available					
Effective exclusive and selective distribution and advantages to consumers	Share of e-commerce	Quantitative Result Indicator	Number of / Proportion of online purchasers [per year]	Nº / %	e-Commerce Report	Annual [Time-series]	-	EU	22% (2004), 34% (2008)					
Effective exclusive and selective distribution and	Share of e-commerce per Member State	Quantitative Result Indicator	Number of / Proportion of online purchasers [per year] per Member State	Nº / %	EC E-commerce Report	Annual [Time-series]	-	EU	FR: 66% of internet users made a purchase online (2007); DE: 58,3%; Nordic countries: 91%					

³ Upfront access payments are fixed fees that suppliers pay to distributors in the framework of a vertical relationship at the beginning of a relevant period, in order to get access to their distribution network and remunerate services provided to the suppliers by the retailers. This category includes various practices such as slotting allowances the so called pay-to-stay fees payments to have access to a distributor's promotion campaigns etc.

⁴ Most concentrated sectors: tobacco and manufacture of coke, refined petroleum products, nuclear fuels, office machinery, computers, electricity, steam, water, transport

⁵ In Finland, top three retailers had a combined market share of 70% in 2004, which increased to 77% in 2007; From 1993 to 1999 the five/firm concentration in grocery goods retailing rose from 41% to 49% in EU 15 (Planet Retail); In 7 MSs, the market share of the largest grocery retailer exceeds or is slightly below 30%

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
advantages to consumers									(2008)					
Effective exclusive and selective distribution and advantages to consumers	Share of online purchasers per market sector	Quantitative result indicator	Number of / Proportion of online purchasers [per year] per market sector	Nº / %	EC E-commerce Report				Travel and accommodation (42%); clothes, sports goods (41%); books, magazines, e-learning (35%); tickets for events (33%), film/music (29%)					
Effective exclusive and selective distribution and advantages to consumers	Value of online sales per product category	Quantitative result indicator	Total value of online sales per category of product	EUR	EC E-commerce Report	Annual	-	EU	Media products (13.2 bn EUR), clothing and footwear (7.3), consumer electronics (6.8)					
Effective exclusive and selective distribution and advantages to consumers	[Share of] cross-border e-commerce	Quantitative result indicator	Number of / Proportion of cross-border sales [per year]	Nº / %	EC E-commerce Report	Annual	-	EU	-					
Effective exclusive and selective distribution and advantages to consumers	Number of retailers using e-commerce	Quantitative Output Indicator	Number of retailers using e-commerce	Nº	EC E-commerce Report	Annual [Time-series]	-	EU	51% (EU27, 2008)					
Effective exclusive and selective distribution and advantages to consumers	Degree of use of direct retail sales	Quantitative result indicator	Share of retailers using direct retail sales	%	EC E-commerce Report	Annual [Time-series]	-	EU	79% (EU27, 2008)					
Effective exclusive and selective distribution and advantages to consumers	Retail sales rate	Quantitative result indicator	Share of retail sales	%	e-Commerce Report	Annual [Time-series]	-	EU	Internet retailing: grow by 45% (2002-2003), 25% (annual, following years)					
Effective exclusive distribution and advantages to consumers	Click rate [9]	Quantitative Result indicator	Share of "clicks" for targeted email messages	Nº / %	Estimates academic literature	-	-	EU	10-20%					
Effective	Share of expenditure	Quantitative	Proportion of expenditure		Interactive				10% (2010)					

General Objective Specific Objective/ Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
exclusive distribution and advantages to consumers	for online advertisement [9]	Result Indicator	for online advertising out of the total expenditure for advertising		Advertising Bureau Europe									
Deter free-riding in selective distribution and consumer advantages	Savings for buyers [143]	Quantitative result indicator	Not available	EUR	Estimates academic literature	-	-	EU	Buyers in the UK, DE, FR can obtain savings of around 17% for a range of new products by purchasing them online rather than off-line					
Deter free-riding in selective distribution and consumer advantages	Prices in online distribution [p. 35]	Quantitative output indicator	Not available	EUR	-	-	-	EU	Not available					
Deter free-riding in selective distribution and consumer advantages	Prices in offline distribution [p. 35]	Quantitative output indicator	Not available	EUR	-	-	-	EU	Not available					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives are presented. For each *specific objective* one additional indicator is proposed. The indicators draw on the issues that the legal instruments are intended to address and on the gaps/overlays identified in the Impact Assessment.

Note: Indicators marked with ** are based on qualitative concepts identified in the impact assessment

Table 2: Overview of proposed potential indicators

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Ensure effective and undistorted competition in supply and distribution that benefits the consumers	Market performance index	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes	Number	DG JUST, Consumer Markets Scoreboard	Annual	Yearly	EU28	See Scoreboard					
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of commitment decisions concerning vertical agreements	Quantitative Result Indicator	Trends in the number of commitment decisions taken by the EC concerning vertical agreements	Number	EC	Annual [Time-series]	Annual / Ad-hoc	EU	Not available					
Effective enforcement against vertical restraints / Deter powerful buyers	Trends in the number of prohibition decisions involving vertical agreements	Quantitative Result Indicator	Trends in the number of prohibition decisions involving vertical agreements	Number	EC	Annual [Time-series]	Annual / Ad-hoc	EU	Not available					

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Effective enforcement against vertical restraints/ Deter powerful buyers	Trends in the number of infringement decisions taken by national authorities	Quantitative Result Indicator	Trends in the number of infringement decisions taken by national competition authorities [measuring the deterrence effect]	Number	NCAs [Survey/ Interview]	Annual / Ad-hoc	Annual / Ad-hoc	EU or sample	Not available					
Effective enforcement against vertical restraints/ Deter powerful buyers	Trends in the number of investigations by NCAs on vertical agreements in online markets	Quantitative Result Indicator	Trends in the number of investigations that NCAs undertake in connection to vertical agreements in online markets	Number	NCAs [Survey/ Interview]	Annual / Ad-hoc	Annual / Ad-hoc	EU or sample	Not available					
Effective enforcement against vertical restraints/ Deter powerful buyers	Trends in the amount of human resources of NCAs dealing with vertical agreements per MS	Quantitative Result Indicator	Trends in the number of FTEs per NCA dealing with harmful vertical agreements per MS	FTE	NCAs [Survey/ Interview]	Annual [Time-series]	Ad-hoc	EU or sample	Not available					
Effective enforcement against vertical restraints/ Deter powerful buyers	Trends in the amount of financial resources of NCAs dealing with vertical agreements	Quantitative Result Indicator	Trends in the total expenditure of NCAs for dealing with vertical agreements	EUR	NCAs [Survey/ Interview]	Annual [Time-series]	Ad-hoc	EU or sample	Not available					
Development of effective online distribution and advantages to consumers	Rate of "digitization" of certain types of goods**	Quantitative Impact Indicator	Measured, for example through, by comparing the trend in sales of electronic goods versus traditional goods	EUR / %	Industry statistics	Ad-hoc	Ad-hoc	EU or sample	Not available					
Development of effective online distribution and advantages to consumers	Share of enterprises with e-sales	Quantitative Impact Indicator	Percentage of enterprises with e-sale	%	Eurostat [Statista]	Annual	Annual	EU	Aggregate indicator – see Eurostat					
Development of effective online distribution and advantages to consumers	Amount of turnover from e-sales	Quantitative Impact Indicator	Amount of turnover from e-sales as a percentage of total turnover	%	Eurostat [Statista]	Annual	Annual	EU	Aggregate indicator – See Eurostat					

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Development of effective online [cross-border] distribution and advantages to consumers	Domestic and cross-border internet purchases	Quantitative Impact Indicator	Survey question: <i>In the past 12 months, have you purchased any goods or services via the Internet (website, email etc.) in (OUR COUNTRY) or elsewhere in any of the following way from local sellers / providers, from sellers/providers in other EU countries?</i>	%	Eurobarometer	Ad-hoc	2013	EU or sample	See Eurobarometer					
Development of effective online [cross-border] distribution and advantages to consumers	Levels of confidence in domestic online purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from retailers / providers in your country?</i>	% of respondents	Eurobarometer	Ad-hoc	2013	EU27	See Eurobarometer					
Development of effective online [cross-border] distribution and advantages to consumers	Levels of confidence in cross-border EU purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from another EU country?</i>	% of respondents	Eurobarometer	Ad-hoc	2013	EU27	See Eurobarometer					
Development of effective online distribution and advantages to consumers	Trends in the number of "brick-and-mortar" shops that also have electronic sales	Quantitative Result Indicator	Trends in the number of stores that have a "brick-and-mortar" shop and also have electronic sales	Number	Industry statistics Assessment by industry representatives	Ad-hoc	Ad-hoc	EU or sample	Not available					
Development of effective online distribution and advantages to consumers	Trend in the number of outlets that have only online distribution	Quantitative Result Indicator	Trends in the number of outlets that have only online distributions	Number	Industry statistics Assessment by industry representatives	Ad-hoc	Ad-hoc	EU or sample	Not available					
Effective distribution models and advantages to consumers	Variety of distribution methods that are used on the market [per sector]	Qualitative Results Indicator	Number of distribution models used on the market per sector	Qualitative Assessment	Interviews, Market Analysis	Ad-hoc	Ad-hoc	EU or sample	Not available					

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Development of effective online distribution and advantages to consumers	Trends in the number of price comparison websites	Quantitative Result Indicator	Trends in the number of price comparison websites	Number	Industry statistics Assessment by industry representatives	Ad-hoc	Ad-hoc	EU or sample	Not available					
Development of effective online distribution and advantages to consumers	Number of distributors developing own websites compared to the number of distributors using existent online retailers	Quantitative Result Indicator	Comparison between the number of distributors developing their own websites with the number of distributors using existent online retailers	Number	Stakeholder survey	Ad-hoc	Ad-hoc	EU or sample	Not available					

Justification for proposing additional indicators

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of Indicator	Technical definition	Justification of relevance
Ensure effective and undistorted competition in supply and distribution that benefits the consumers	Market performance index	Quantitative Impact Indicator	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes	The MPI contains market performance information per sector for services and goods. In the case of vertical agreements, the indicator can be used to perform an analysis of market development.
Effective enforcement against vertical restraints	Trends in the number of commitment decisions concerning vertical agreements	Quantitative Result Indicator	Trends in the number of commitment decisions taken by the EC concerning vertical agreements	The EC can take two types of decisions when pursuing a case. "Commitment decisions" (Article 9 decisions) can be taken and they allow companies to offer commitments to address competition issues. In such cases, the Commission does not impose remedies as it is based on the commitments offered voluntarily by undertakings concerns.
Effective enforcement against vertical restraints	Trends in the number of prohibition decisions involving vertical agreements	Quantitative Result Indicator	Trends in the number of prohibition decisions involving vertical agreements	In addition to commitment decisions, the EC can take prohibition decisions, whereby the Commission imposes suitable remedies to bring the infringement to an end – i.e. impose or not a fine. The number of prohibition decisions can be an indicator of the enforcement rate.
Effective enforcement against vertical restraints	Trends in the number of infringement decisions taken by national authorities	Quantitative Result Indicator	Trends in the number of infringement decisions taken by national competition authorities	The indicator would provide information concerning the deterrence effect of the rules.
Effective enforcement against vertical restraints	Trends in the number of investigations by NCAs on vertical agreements in online markets	Quantitative Result Indicator	Trends in the number of investigations that NCAs undertake in connection to vertical agreements in online markets	The indicator would provide information concerning the deterrence effect of the rules in particular in connection to investigations in markets where goods/services are traded online.
Effective enforcement against vertical restraints	Trends in the amount of human resources of NCAs dealing with vertical agreements per MS	Quantitative Result Indicator	Trends in the number of FTEs per NCA dealing with harmful vertical agreements per MS	The impact assessment also investigates the impact that the policy will have on public administration in terms of administrative burden and workload. Some quantitative and more concrete estimates of the administrative burden are the two additional indicators proposed.
Effective enforcement against vertical restraints	Trends in the amount of financial resources of NCAs dealing with vertical agreements	Quantitative Result Indicator	Trends in the total expenditure of NCAs for dealing with vertical agreements	The impact assessment also investigates the impact that the policy will have on public administration in terms of administrative burden and workload. Some quantitative and more concrete estimates of the administrative burden are the two additional indicators proposed.
Development of effective online distribution and advantages to consumers	Rate of "digitization" of certain types of goods**	Quantitative Impact Indicator	Measured, for example through, by comparing the trend in sales of electronic goods versus traditional goods	The IA specifies that one of the impacts of the proposals could have would be 'dematerialisation' of certain goods and that this is a benefit (para.169). A sector specific approach to measuring this phenomenon could be taken, for example by measuring the sales of electronic goods versus traditional goods.

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Justification of relevance
Development of effective online distribution and advantages to consumers	Share of enterprises with e-sales	Quantitative Impact Indicator	Percentage of enterprises with e-sale	The indicator would measure the effect of the rules on e-sales.
Development of effective online distribution and advantages to consumers	Amount of turnover from e-sales	Quantitative Impact Indicator	Amount of turnover from e-sales as a percentage of total turnover	The indicator would measure the effect of the rules on e-sales.
Development of effective online [cross-border] distribution and advantages to consumers	Domestic and cross-border internet purchases	Quantitative Impact Indicator	Survey question: <i>In the past 12 months, have you purchased any goods or services via the Internet (website, email etc.) in (OUR COUNTRY) or elsewhere in any of the following way from local sellers / providers, from sellers/providers in other EU countries?</i>	The indicator would measure the extent to which domestic and cross-border internet purchases are affected by competition on the market.
Development of effective online [cross-border] distribution and advantages to consumers	Levels of confidence in domestic online purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from retailers / providers in your country?</i>	The indicator would measure the extent to which consumers have confidence in utilising online purchases.
Development of effective online [cross-border] distribution and advantages to consumers	Levels of confidence in cross-border EU purchases	Quantitative Impact Indicator	Survey question: <i>Do you feel confident purchasing goods or services via the Internet from another EU country?</i>	The indicator would measure the extent to which consumers have confidence in utilising online purchases.
Development of effective online distribution and advantages to consumers	Trends in the number of "brick-and-mortar" shops that also have electronic sales	Quantitative Result Indicator	Trends in the number of stores that have a "brick-and-mortar" shop and also have electronic sales	An implicit objective of the implementation of the rules can be considered the further expansion of new forms of distribution [67]. The indicators proposed can help measure the expansion of new forms of distribution which can be correlated with the rules.
Development of effective online distribution and advantages to consumers	Trend in the number of outlets that have only online distribution	Quantitative Result Indicator	Trends in the number of outlets that have only online distributions	An implicit objective of the implementation of the rules can be considered the further expansion of new forms of distribution [67]. The indicators proposed can help measure the expansion of new forms of distribution which can be correlated with the rules.
Effective distribution models and advantages to consumers	Variety of distribution methods that are used on the market [per sector]	Qualitative Results Indicator	Number of distribution models used on the market per sector	The degree of experimentation with distribution models and the variety in the ways goods are distributed could be an indicator of how competitive a market is.
Development of	Trends in the number of price	Quantitative	Trends in the number of price comparison	Growth of price comparison websites (meta-search engines) can show that there is

General Objective Specific Objective/ Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Justification of relevance
effective online distribution and advantages to consumers	comparison websites	Result Indicator	websites	competition in the market for on line distribution.
Development of effective online distribution and advantages to consumers	Number of distributors developing own websites compared to the number of distributors using existent online retailers	Quantitative Result Indicator	Comparison between the number of distributors developing their own websites with the number of distributors using existent online retailers	The number of distributors that develop their own websites as opposed to using existing on line retailers (e.g. Amazon) can indicate whether there is high concentration of sales through a small number of online retail channels which would imposed competition issues.

REVIEW OF IMPACT ASSESSMENT REFORM OF THE EU RULES APPLICABLE TO STATE AID IN THE FORM OF PUBLIC SERVICE COMPENSATION

1. INTRODUCTION

In 2011, the European Commission conducted an Impact Assessment to assess the impact of reforming the EU rules applicable to State aid in the form of public service compensation.

The following sections include the results of the pilot work on mapping the monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

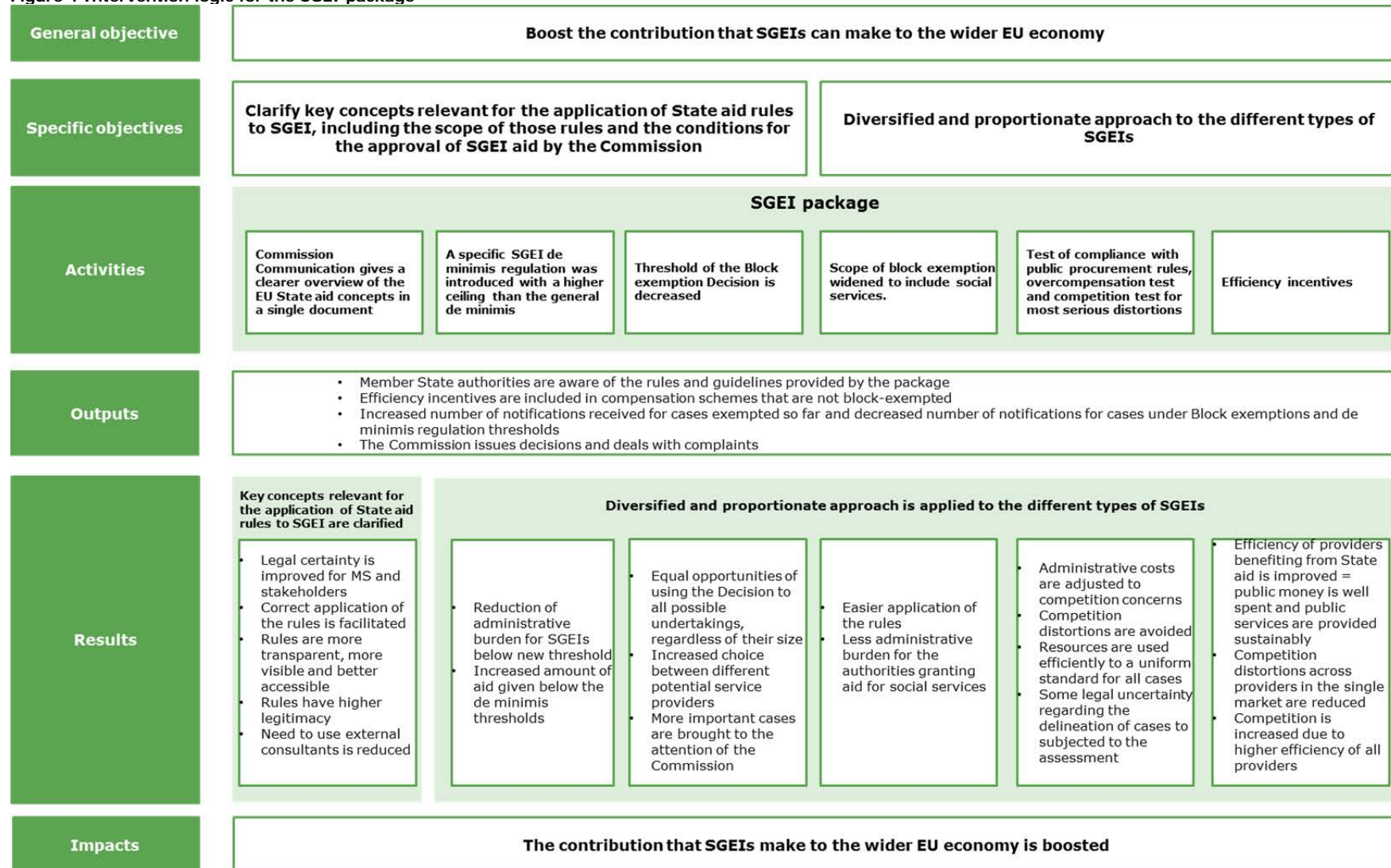
2. INTERVENTION LOGIC

The intervention logic has been drafted based on the objectives specified in the Impact Assessment and the options that were adopted in the SGEI package.

Table 1 Overview of problems and objectives for the intervention

Problem definition	<ul style="list-style-type: none">➔ Incorrect / insufficient application of the rules on state aid;➔ Administrative burden too heavy for small SGEIs and for social services;➔ Distortions of competition on the market as a result of granting state aid;➔ Inefficient delivery of SGEI.
---------------------------	--

Figure 1 Intervention logic for the SGEI package



3. MAPPING OF INDICATORS FROM IMPACT ASSESSMENT

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "hinted at" are written in *Italic font*.

Table 2 Indicators identified in the mapping of the impact assessment

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Boost the contribution that SGEIs can make to the wider EU economy	Average direct contribution of SGEI providers to the EU GDP	Quantitative impact indicator	Expenditures by SGEI sectors compared to EU GDP for a given time period	%, EUR	Eurostat, OECD, National statistics	-	Annual	EU	15% (2010) ¹					
Boost the contribution that SGEIs can make to the wider EU economy	[Amount of] investments carried out by SGEI providers	Quantitative impact indicator	EUR value of investments carried out by SGEI providers for a given time period	EUR	Eurostat, OECD, National statistics	-	Annual	EU	EUR 150bn (infrastructure networks and research) ²					
Boost the contribution that SGEIs can make to the wider EU economy	[Share of] investments carried out by SGEI providers	Quantitative impact indicator	Investments carried out by SGEI providers for a given time period compared to total investments in the EU	%	Eurostat, OECD, National statistics	-	Annual	EU	6,4% of total EU investment ³					
Boost the contribution that SGEIs can	<i>[Amount of, share of] Investments per region or MS</i>	Quantitative impact indicator	Investments carried out by SGEI providers for a given time period	EUR, %	Eurostat, OECD, Nation	-	Annual	EU	-					

¹ Bauby, P. and Simille (Popa), M.M. (2010), Public Services in the European Union & in the 27 Member States. Statistics, Organisation and Regulations

² Bauby, P. and Simille (Popa), M.M. (2010), Public Services in the European Union & in the 27 Member States. Statistics, Organisation and Regulations

³ Bauby, P. and Simille (Popa), M.M. (2010), Public Services in the European Union & in the 27 Member States. Statistics, Organisation and Regulations

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
make to the wider EU economy			on a regional or MS level		al statistics									
Boost the contribution that SGEIs can make to the wider EU economy	Number of people employed in SGEI	Quantitative impact indicator	Number of people employed by providers of SGEIs for a given time period in each MS and the EU in total	FTE	Eurostat, OECD, National statistics	-	Annual	EU	64 million (2010) ⁴					
Boost the contribution that SGEIs can make to the wider EU economy	Share of the workforce employed in SGEI	Quantitative impact indicator	Number of people employed by providers of SGEIs for a given time period in each MS/the EU compared to total number of persons employed in each MS/the EU	FTE	Eurostat, OECD, National statistics	-	Annual	EU	30.1% (2010) ⁵					
Boost the contribution that SGEIs can make to the wider EU economy	[Share of] Persons employed by SGEIs sectors	Quantitative impact indicator	Number of people employed by providers of SGEIs for a given time period in a given SGEI sector compared to total employment in SGEI	%	Eurostat, OECD, National statistics	Eurostat, OECD, National statistics	Eurostat, OECD, National statistics	EU	Baseline is available in the IA Annex					
Boost the contribution that SGEIs can make to the wider EU economy	Number of enterprises providing SGEIs	Quantitative impact indicator	Number of enterprises providing SGEIs in each MS/the EU	Number of enterprises	Eurostat, OECD, National statistics	Eurostat, OECD, National statistics	Eurostat, OECD, National statistics	EU	Baseline is available in the IA Annex					

⁴ Bauby, P. and Simille (Popa), M.M. (2010), Public Services in the European Union & in the 27 Member States. Statistics, Organisation and Regulations

⁵ Bauby, P. and Simille (Popa), M.M. (2010), Public Services in the European Union & in the 27 Member States. Statistics, Organisation and Regulations

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Data on trade and productivity	Quantitative impact indicator	Not specified	-	Eurostat data	-	-	EU	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	<i>[Degree to which there is] legal certainty for Member States and stakeholders</i>	Qualitative results concept	Not specified	-	-	-	-	EU	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	<i>[Degree to which] Rules are applied correctly</i>	Qualitative results concept	Not specified	-	-	-	-	EU	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	<i>[Degree to which] Rules are more transparent, more visible and better accessible</i>	Qualitative results concept	Not specified	-	-	-	-	EU	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	<i>[Degree to which] Rules have higher legitimacy</i>	Qualitative results concept	Not specified	-	-	-	-	EU	-					
Clarify key concepts relevant	Administrative burden associated with the clarification of State aid law	Qualitative result indicator	Share of stakeholders who assess the level of administrative	Scale (1-5, low-high)	-	-	-	EU	Almost all municipalities that replied to the State aid					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
for the application of State aid rules to SGEI	requirements		burden associated with the implementation of State aid law requirements for a given period of time to be high or low out of total stakeholders consulted						questions consider the administrative burden associated with the clarification of State aid law requirements as very high or rather high (92%)					
Clarify key concepts relevant for the application of State aid rules to SGEI	Administrative burden associated with the implementation of the State aid rules	Qualitative result indicator	Share of stakeholders who assess the level of administrative burden associated with the implementation of State aid law requirements for a given period of time to be high or low out of total stakeholders consulted	Scale (1-5, low-high)	-	-	-	EU	90% of municipalities consider the administrative burden associated with the implementation of the State aid rules to be very high or rather high					
Clarify key concepts relevant for the application of State aid rules to SGEI	Financial costs to clarify State aid questions	Qualitative result indicator	Share of stakeholders who assess the financial costs of clarifying State aid law requirements for a given period of time to be high or low out of total stakeholders consulted	Scale (1-5, low-high)	-	-	-	EU	[Public consultation] the financial costs to clarify State aid questions are considered by 77% as very high or rather high.					
Clarify key concepts relevant for the application of State	Degree of acceptance of the State aid framework and its objectives	Qualitative indicator	Not specified	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
aid rules to SGEI														
Diversified and proportionate approach to the different types of SGEIs	Total amount of [state] aid [provided to SGEI]	Quantitative result indicator	EUR value of state aid provided per MS/in the EU	EUR per unit of time	Information provided to the Commission in the notification document	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	[Amount of] aid distributed over different sectors	Quantitative result indicator	EUR value of state aid provided per MS/in the EU per sector	EUR per unit of time	Information provided to the COM in the notification document	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Amount of state aid] money [provided] under the de minimis rule [per MS]</i>	Quantitative result indicator	EUR value of state aid provided under the de minimis rule in each MS	EUR	Not available	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>Amount of state aid granted to social SGEIs exempted from notification</i>	Quantitative result indicator	EUR value of state aid provided to social SGEIs	EUR	Not available	-	-	EU	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Diversified and proportionate approach to the different types of SGEIs	<i>Change in amount of state aid granted to social SGEIs exempted from notification</i>	Quantitative result indicator	EUR value of state aid provided to social SGEIs in year X compared to baseline year	EUR	Not available	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	Degree of legal uncertainty [regarding the delineation] of the cases in which the in-depth economic assessment is not possible	Qualitative result indicator	Share of stakeholders who consider the degree of legal uncertainty to be high or low or a set scale of measurement	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	Degree of compliance with public procurement rules	Qualitative result indicator	Not specified	Scale (low-high)	-	-	-	EU	37,3% of the respondents to an online consultation declared that they were aware of concessions awarded without any publication or transparency					
Diversified and proportionate approach to the different types of SGEIs	<i>[Change in the degree of] choice between different potential service providers</i>	Qualitative result indicator	Assessment by stakeholders of the degree of choice between different potential service providers in year X compared to baseline	-	-	-	-	EU	-					
Diversified and proportionate approach to the	<i>[Degree to which] more important cases are brought to the attention of the Commission</i>	Qualitative result indicator	Assessment of the Commission services of the degree to which more important cases are brought	-	-	-	-	EU	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
different types of SGEIs			to its attention in year X compared to baseline											
Diversified and proportionate approach to the different types of SGEIs	<i>[Change in] the administrative burden for the authorities granting aid for social services</i>	Qualitative result indicator	Assessment by authorities granting aid for social services of their administrative burden in year X compared to baseline	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] administrative costs are adjusted to competition concerns</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which administrative costs correspond to competition concerns	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] competition distortions are avoided</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which competition distortions are avoided in a given time period	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] resources are used efficiently to a uniform standard for all cases</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which competition distortions are avoided in a given time period	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] efficiency of providers benefiting from State aid is</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which competition	-	-	-	-	EU	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
approach to the different types of SGEIs	<i>improved</i>		distortions are avoided in a given time period											
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] competition distortions across providers in the single market are reduced</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which competition distortions are avoided in a given time period	-	-	-	-	EU	-					
Diversified and proportionate approach to the different types of SGEIs	<i>[Degree to which] competition is increased due to higher efficiency of all providers</i>	Qualitative result indicator	Assessment by stakeholders of the degree to which competition distortions are avoided in a given time period	-	-	-	-	EU	-					
Output indicators	Number of Commission decisions appealed before the European Courts	Quantitative output indicator	Number of Commission decisions regarding the application of State Aid rules to SGEIs for a given period of time	-	Commission database	-	-	EU	-					
	<i>[number of] cases of social SGEIs exempted from notification</i>	Qualitative output indicator	Number of social SGEIs exempted from notification for a given period of time	Number per unit of time	Commission database	-	-	EU	-					
	<i>[number of, share of] state aid cases for large commercial SGEIs</i>	Quantitative output indicator	Number of state aid cases for large commercial SGEIs for a given period of time Share of state aid cases for large commercial SGEIs	Number per unit of time %	Commission database	-	-	EU	Approximately 3% of all cases (2010)					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			for a given period of time out of total cases											
	Number of decisions annulled by the Courts	Quantitative output indicator	Number of decisions regarding the application of State Aid rules to SGEIs annulled by the Commission for a given period of time	-	Commission database	-	-	EU	-					
	Number of complaints submitted to the Commission	Quantitative output indicator	Number of complaints submitted to the European Commission regarding the application of State Aid rules to SGEIs for a given period of time	-	Commission database	-	-	EU	-					
	Number of notifications received	Quantitative output indicator	Number of notifications received by the Commission in a given period of time	Number per unit of time	Commission database	-	-	EU	-					
	Content and duration of the public service obligations	Qualitative output concept	Not specified	-	Information provided to the COM in the notification document	-	-	EU	-					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives set out by the IA Reform of the EU rules applicable to State aid in the form of public service compensation are proposed. The indicators draw on the issues that the legal instruments are intended to address and on the gaps/overlays identified in the Impact Assessment. Indicators marked with ** are based on qualitative concepts identified in the impact assessment.

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Boost the contribution that SGEIs can make to the wider EU economy	Average direct contribution of SGEI providers receiving state aid to the EU GDP	Quantitative impact indicator	Value added in SGEI sectors backed by state aid compared to EU GDP for a given time period	%, EUR	Eurostat, OECD, National statistics, COM data from notifications	-	Annual	EU	-					
Boost the contribution that SGEIs can make to the wider EU economy	[Share of] investments carried out by SGEI providers receiving state aid	Quantitative impact indicator	Investments carried out by SGEI providers receiving state aid for a given time period compared to total investments in the EU	%	Eurostat, OECD, National statistics, COM data from notifications	-	Annual	EU						
Boost the contribution that SGEIs can make to the wider EU economy	Amount/share of cross-border provision of SGEIs	Quantitative impact indicator	Number/Volume/Share of contracts (above procurement thresholds) in the area of SGEI awarded to providers established outside of the MS of the contracting authorities	Number of contracts Volume of contract	TED data	-	-	EU	-					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Boost the contribution that SGEIs can make to the wider EU economy	Number of new SGEI providers that emerge as a result of the simplification of the rules for state aid	Quantitative impact indicator	Number of new companies providing SGEI in a MS/per MS/across the EU (in a particular sector) within a given period of time	Number of companies				⁶	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of clarifying state aid law requirements	Quantitative result indicator	Costs spent by SGEI providers and authorities on clarifying state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with SGEI providers and authorities	Ad-hoc		EU-27 or sample	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of implementing state aid law requirements	Quantitative result indicator	Costs of SGEI providers and authorities in connection to implementing state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with SGEI providers and authorities	Ad-hoc		EU-27 or sample	-					
Clarify key concepts relevant for the application of State aid rules to SGEI	Financial resources spent on clarifying state aid law	Quantitative result indicator	Financial resources spent by granting authorities on clarifying state aid law requirements for a given period of time per MS/in the EU	EUR per unit of time	Interviews with authorities	Ad-hoc		EU-27 or sample	-					
Diversified and proportionate approach to the	Number of cases where overcompensation test and competition test are applied (cases of most	Quantitative result indicator	Number of cases where overcompensation test and competition test are applied for a given	%	Commission database			EU	-					

⁶ In Task 3, it will be discussed what feasible data collection methods are available and that would determine the scope of the indicator – it could be limited to selected sectors of the economy in selected countries.

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
different types of SGEIs	serious competition distortions)**		period of time											
Diversified and proportionate approach to the different types of SGEIs	Number/share of cases of inclusion of efficiency incentives in the compensation scheme**	Quantitative result indicator	Number of cases where efficiency incentives are included in the compensation scheme for a given period of time	%	-	-	-	EU	-					

Justifications for proposing additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Boost the contribution that SGEIs can make to the wider EU economy	Average direct contribution of SGEI providers receiving state aid to the EU GDP	Quantitative impact indicator	The indicator aims at measuring specifically the contribution of SGEI sectors where state aid is known to be granted, as the existing indicators only look at the overall contribution by SGEI sectors.
Boost the contribution that SGEIs can make to the wider EU economy	[Share of] investments carried out by SGEI providers receiving state aid	Quantitative impact indicator	The indicator aims at measuring specifically the investments carried out by SGEI providers receiving state aid, as the existing indicators only look at the overall investments in SGEI sector.
Boost the contribution that SGEIs can make to the wider EU economy	Amount/share of cross-border provision of SGEIs	Quantitative impact indicator	Improved competition in the SGEI market measures in terms of increased cross-border provision of SGEI services can be expected to have positive effects the wider EU economy/internal market.
Boost the contribution that SGEIs can make to the wider EU economy	Number of new SGEI providers that emerge as a result of the simplification of the rules for state aid	Quantitative impact indicator	The emergence of new SGEI providers is a positive sign of increased competition in the sectors concerned and positive effects for the economy.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of clarifying state aid law requirements	Quantitative result indicator	This indicator aims to generate more robust estimates of the costs of clarifying state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Clarify key concepts relevant for the application of State aid rules to SGEI	Estimated costs of implementing state aid law requirements	Quantitative result indicator	This indicator aims to generate more robust estimates of the costs of implementing state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Clarify key concepts relevant for the application of State aid rules to SGEI	Financial resources spent on clarifying state aid law	Quantitative result indicator	This indicator aims to generate more robust estimates of the financial costs of clarifying state aid law requirements compared to the qualitative survey-based indicators used in the IA.
Diversified and proportionate approach to the different types of SGEIs	Number of cases where overcompensation test and competition test are applied (cases of most serious competition distortions) **	Quantitative result indicator	The IA does not feature any indicators for measuring the implementation of the requirements of overcompensation test and competition test and the proposed indicator aims to address that.
Diversified and proportionate approach to the different types of SGEIs	Number/share of cases of inclusion of efficiency incentives in the compensation scheme**	Quantitative result indicator	The IA does not feature any indicators for measuring the implementation of the requirement to include efficiency incentives and the proposed indicator aims to address that.

REVIEW OF IMPACT ASSESSMENT REFORM OF THE EU Guidelines for Regional Aid

1. INTRODUCTION

In 2011, the European Commission conducted an Impact Assessment to assess the impact of reforming the EU Guidelines for Regional Aid.

The following sections include the results of the pilot work on mapping the monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

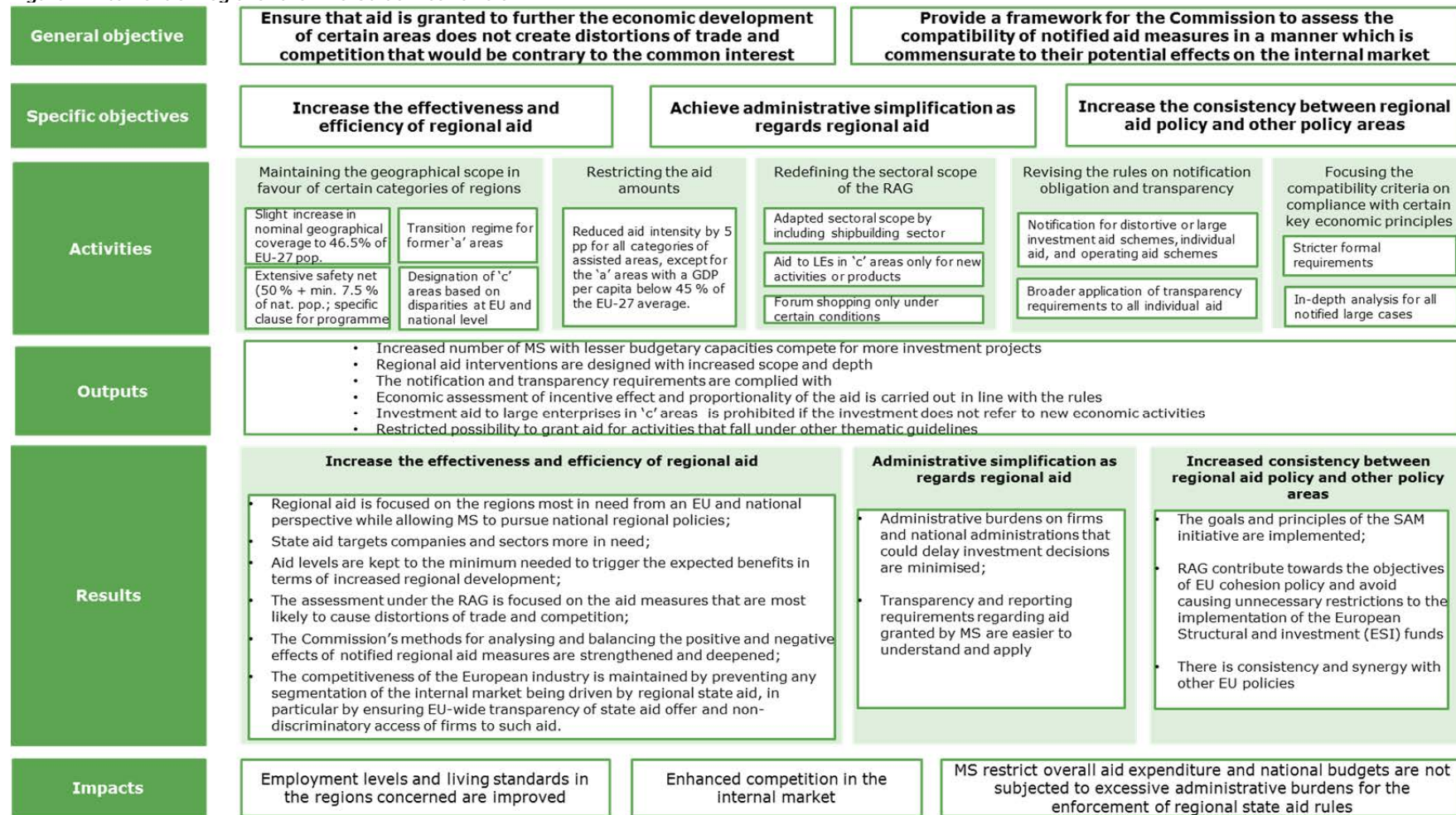
2. INTERVENTION LOGIC

The intervention logic has been drafted based on the objectives specified in the Impact Assessment and the options that were adopted for the revision of the RAG.

Table 1 Overview of problems for the intervention

Problem definition	<p>The effectiveness of regional state aid as a policy tool for supporting regional economic development :</p> <ul style="list-style-type: none">➔ In the absence of aid, certain firms would anyway decide to invest in the assisted areas. Adequate control of the incentive effect is thus essential to ensure regional aid is targeted at leveraging additional private investment in the assisted areas.➔ An ineffective verification of the incentive effect causes a significant risk of deadweight loss which distorts competition and weakens the valued-added of regional aid as an economic development tool. <p>The efficiency of regional state aid rules in ensuring control of competition effects:</p> <ul style="list-style-type: none">➔ The wide discrepancies in the volume of aid and policy approach for the implementation of regional aid rules reinforce the strong variability in the effectiveness of enforcement practice, which could threaten the integrity of the internal market (with regions seeking to 'outbid' each other through aid).➔ The Commission's control of the negative effects of regional state aid does not adequately target measures or situations where restrictions to competition are more likely to occur because aid is not a determining factor for the location of investment in the assisted areas or because it exceeds the minimum necessary to attract investments in the area concerned.
---------------------------	---

Figure 1 Intervention logic for the RAG Guidelines revision



3. MAPPING OF INDICATORS FROM IMPACT ASSESSMENT

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "hinted at" are written in *Italic font*.

Table 2 Indicators identified in the mapping of the impact assessment

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
General objective: Ensure that aid granted to further the economic development of certain areas does not create distortions of trade and competition that would be contrary to the common interest	Regional aid granted as share of national GDP per MS (in value)	Quantitative impact indicator	% regional aid granted as share of national GDP per MS (in value)	%	DG COMP state aid scoreboard Eurostat	-	Annual	EU-28	-					
	Regional aid expenditure as share of EU GDP	Quantitative impact indicator	% regional aid expenditure as share of EU GDP	%	DG COMP state aid scoreboard Eurostat	-	Annual	EU-28	-					
	Aggregate number of jobs created through regional aid measures	Quantitative result indicator	Number of additional employees hired by aid beneficiaries in each MS and the EU in total	FTEs	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	Aggregate number of jobs maintained through regional aid measures	Quantitative result indicator	Number of employees of aid beneficiaries in each MS and the EU in total	FTEs	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	Change in gross value added (GVA)	Quantitative result indicator	Change in gross value added (GVA) by regions/sectors benefitting from regional state aid for a given period of time per MS and for the EU	%	Eurostat, DG COMP state aid scoreboard	-	Annual / Periodic	EU-28	-					
General objective: provide a framework for the Commission	<i>Extent to which the framework applied by the Commission in assessing the compatibility of</i>	Qualitative concept	Not specified	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
to assess the compatibility of notified aid measures in a manner which is commensurate to their potential effects on the internal market	<i>notified aid measures is commensurate to their potential effects on the internal market</i>													
Specific objective: Increase the effectiveness and efficiency of regional aid (Focus of regional aid)	Regional aid granted in 'a' and 'c' areas	Quantitative result indicator	% of regional aid granted in 'a' and 'c' areas out of total regional aid	%	DG COMP state aid scoreboard	-	Annual	EU-28	-					
	Degree of autonomy for MS to designate non-predefined 'c' areas	Qualitative result indicator	Not specified	-	-	-	-	-	-		-	-	-	-
	[Change in] relative attractiveness of the least developed category of 'a' areas	Qualitative result indicator	Not specified	EUR	-	-	Annual / Periodic	EU-28	-					
	[Change in regional] disparities in the EU	Quantitative result indicator	Annual change in GDP per capita or unemployment rate per MS	EUR per capita; %	Eurostat	-	Annual / Periodic	EU-28	-					
Specific objective: Increase the effectiveness and efficiency of regional aid (State aid targets)	Regional aid granted per NACE group or class	Quantitative result indicator	% of regional aid granted per NACE group or class out of total regional aid	%	DG COMP state aid scoreboard	-	Annual	EU-28	-					
	SME focus - Regional aid granted for SMEs	Quantitative result indicator	% of regional aid granted for SMEs (in value) out of total regional aid	%	DG COMP state aid scoreboard	-	Annual	EU-28	-					
	Regional aid	Quantitative result indicator	% of regional aid	%	DG COMP state	-	Annual	EU-28	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
companies and sectors more in need)	granted for operations co-financed by ESI funds (in value)	ve result indicator	granted for operations co-financed by ESI funds (in value) out of total regional aid		aid scoreboard									
Specific objective: Increase the effectiveness and efficiency of regional aid (Aid levels)	Regional state aid expenditure as % of total horizontal aid	Quantitative result indicator	Regional state aid expenditure as % of total horizontal aid for a given period of time per MS and for the EU	%	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	Planned and paid amounts of aid per new employee	Quantitative result indicator	Amount of aid per new employee	EUR	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	[Level of] aid intensity	Quantitative result indicator	Level of actual aid intensity compared to maximum aid intensity per MS/in the EU for a given period of time	%	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	[Change in] macroeconomic cost of regional aid	Quantitative result indicator	Aggregate indicator of the budgetary costs and welfare losses due to potential restrictions to competition resulting from regional aid	EUR	-	-	Annual / Periodic	EU-28	-					
	[Change in] budgetary costs of regional aid	Quantitative result indicator	Amount of government expenditure on regional aid per MS	EUR	DG COMP state aid scoreboard	-	Annual / Periodic	EU-28	-					
	[Change in] welfare losses due to potential restrictions to competition related to regional	Quantitative result indicator	Not specified	EUR	-	-	Annual / Periodic	EU-28	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	aid													
Specific objective: Increase the effectiveness and efficiency of regional aid (Assessment)	[Extent to which] the assessment under the RAG is focused on the aid measures that are most likely to cause distortions of trade and competition.	Qualitative concept	Not specified	-	-	-	-	-	-					
	[Extent to which] the Commission's methods for analysing and balancing the positive and negative effects of notified regional aid measures are strengthened and deepened	Qualitative concept	Not specified											
Specific objective: Increase the effectiveness and efficiency of regional aid (access to aid)	[Amount of] deadweight loss linked to aid without incentive effect	Quantitative result indicator	Not specified	EUR	-	-	Annual / Periodic	EU-28	-					
	Degree of diversification of the regional economy	Qualitative result indicator	Not specified	Scale	Not specified	-	Annual / Periodic	EU-28	-					
Specific objective: Achieve administrative simplification as regards regional aid	% of block-exempted aid v notified aid (aid amount)	Quantitative impact indicator	Avoidance of excessive administrative burden	%	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	Administrative burden	Qualitative result indicator	Not specified	-	-	-	Annual / Periodic	EU-28	-					
	[Extent to which]	Qualitative	Not specified	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Transparency and reporting requirements regarding aid granted by MS are easier to understand and apply	Concept												
Increase the consistency between regional aid policy and other policy areas	[Degree of] divergence in designation criteria for assisted areas compared to EU Cohesion policy	Qualitative result indicator	Degree of divergence in designation criteria for assisted areas compared to EU Cohesion policy	Scale – limited-moderate-strong	-	-	-	-	-					
	[Degree of] competitiveness of European industry on the world markets	Qualitative result indicator	Not specified	-	-	-	Annual / Periodic	EU-28	-					
	[Change in the] capacity for MS to implement SF operational programmes	Qualitative result indicator	Change in the number of operations that are co-financed under the SF and involve regional state aid for a given time period per MS	Number of operations	DG COMP case Registry	-	Annual / Periodic	EU-28	-					
	[Change in the] amount of aid allocated towards investment aimed at helping to implement the objectives of the Europe 2020 Strategy in the assisted areas	Qualitative impact indicator	[Change in the] amount of aid allocated towards investment aimed at helping to implement the objectives of the Europe 2020 Strategy in the assisted areas	EUR	-	-	Annual / Periodic	EU-28	-					
	Impact of reductions in aid intensity ceilings on economic activity	Quantitative impact indicator	Not specified	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Change in greenhouse gas and pollutant emissions	Quantitative impact indicator	Change in greenhouse gas and pollutant emissions connected to aid for high-efficient equipment for co-generation and energy-efficient district heating	Levels of CO2 emissions per kWh of electricity produced		-	Annual / Periodic	EU-28						
Output indicators	Percentage of EU-27 population covered by regional aid	Output indicator	-	-	-	-	-	-	-					
	No of NUTS 2 regions covered by regional aid	Output indicator	-	-	-	-	-	-	-					
	No of MS with corresponding areas covered by regional aid	Output indicator	-	-	-	-	-	-	-					
	#MS that would lose coverage due to change in the rules	Output indicator	-	-	-	-	-	-	-					
	# MS that would lose coverage only due to demographic change	Output indicator	-	-	-	-	-	-	-					
	#MS that would gain coverage due to change in the rules	Output indicator	-	-	-	-	-	-	-					
	# MS with Neutral impact	Output indicator	-	-	-	-	-	-	-					
	amount of aid per company	Output indicator	-	-	-	-	-	-	-					
	# schemes notified per sector	Output indicator	-	-	-	-	-	-	-					
	Share of sectoral schemes out of all approved investment aid	Output indicator	-	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	schemes													
	Share of sectoral scheme of total approved budget	Output indicator	-	-	-	-	-	-	-					
	# schemes notified per MS	Output indicator	-	-	-	-	-	-	-					
	# Multisectoral schemes per MS	Output indicator	-	-	-	-	-	-	-					
	Annual expenditure under multisectoral schemes	Output indicator	-	-	-	-	-	-	-					
	#operational aid schemes per MS	Output indicator	-	-	-	-	-	-	-					
	Annual Expenditure for operating aid	Output indicator	-	-	-	-	-	-	-					
	# individual aid schemes per MS	Output indicator	-	-	-	-	-	-	-					
	# individual aid schemes below threshold per MS	Output indicator	-	-	-	-	-	-	-					
	# ad hoc aid schemes per MS	Output indicator	-	-	-	-	-	-	-					
	Average Aid amount per beneficiary in ad hoc aid scheme	Output indicator	-	-	-	-	-	-	-					
	# MS impacted by transparency requirement	Output indicator	-	-	-	-	-	-	-					
	Total No of LIPs	Output indicator	-	-	-	-	-	-	-					
	LIPs with eligible costs above EUR 100 m below the notification threshold	Output indicator	-	-	-	-	-	-	-					
	LIPs with eligible costs above EUR 100 m above the notification	Output indicator	-	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	threshold													
	Total amount of LIPs per sector (EUR m)	Output indicator	-	-	-	-	-	-	-					
	LIPs Transparency cases (total amount, EUR m) / MS concerned (No of cases)	Output indicator	-	-	-	-	-	-	-					
	Notified LIPs (total amount, EUR m) / MS concerned (No of cases)	Output indicator	-	-	-	-	-	-	-					
	Number of cases raising significant competition concerns	Quantitative output indicator	Number of cases raising significant competition concerns for a given period of time per MS	Number of cases	DG COMP case registry; DG COMP state aid scoreboard; MS transparency obligations	-	Annual / Periodic	EU-28	-					
	Overall volume of regional aid measures to be processed	Quantitative output indicator	Number of cases processes for a given time period per MS	Number of cases	DG COMP case Registry	-	Annual / Periodic	EU-28	-					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives set out by the IA Reform of the EU rules applicable to State aid in the form of public service compensation are proposed. The indicators draw on the issues that the legal instruments are intended to address and on the gaps/overlays identified in the Impact Assessment. Indicators marked with ** are based on qualitative concepts identified in the impact assessment.

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
General objective: Ensure that aid is granted to	Multiplier effect of the regional aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given	%	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
further the economic development of certain areas does not create distortions of trade and competition that would be contrary to the common interest			period of time per MS or for the EU											
Specific objective: Increase the effectiveness and efficiency of regional aid	Change in the productivity of regional aid beneficiaries	Quantitative impact indicator	Change in the production volume of aid beneficiaries for a given period of time per MS or for the EU	%	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					
	Indirect jobs created or maintained	Quantitative impact indicator	Number of new jobs created in a 50 km radius of the site of the beneficiary for a given period of time per MS or for the EU	FTEs	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					
	Additional turnover spent at local suppliers by aid beneficiaries	Quantitative impact indicator	Estimate of sectoral input-output data in a region benefitting from regional aid for a given period of time per MS or for the EU	EUR	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					
	Volume of spill-over effect on suppliers	Quantitative impact indicator	Volume of investments from suppliers of aid beneficiaries which are located within a 50 km radius of the site of the beneficiary for a	EUR	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			given period of time per MS											
	Share of 'expatriates' in the total number of jobs created	Quantitative impact indicator	Share of 'expatriates' in the total number of jobs created by aid beneficiaries for a given period of time per MS	EUR	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					
Specific objective: Achieve administrative simplification as regards regional aid	Estimated costs of clarifying state aid rules in relation to regional aid	Quantitative result indicator	Human resources (measure in person days) spent by economic operators and authorities on clarifying state aid rules for a given period of time per MS/in the EU	Person days per year	Interviews with economic operators and authorities	Ad-hoc	-	EU-28 or sample	-					
	Financial resources spent on clarifying state aid rules in relation to regional aid	Quantitative result indicator	Financial resources spent by granting authorities on clarifying state aid rules requirements for a given period of time per MS/in the EU	EUR per year	Interviews with authorities	Ad-hoc	-	EU-28 or sample	-					
	Legal clarity of the rules regarding regional state aid	Qualitative result indicator	Extent to which the rules about state aid are considered to be clear	Scale	Interviews with authorities	Ad-hoc	-	EU-28 or sample						
Specific objective: Increase the consistency between regional aid policy and other policy areas	Amount (hours) of training per (new) employee of aid beneficiaries	Quantitative result indicator	Amount (hours) of training per (new) employee of aid beneficiaries for a given period of time per MS/in the EU	hours	Ex-post primary data collection	Ad-hoc	-	EU-28	-					
	Level of training expenditure on new employees of aid beneficiaries	Quantitative result indicator	Level of training expenditure on new employees of aid beneficiaries for a given period of time per MS/in the EU	EUR	Ex-post primary data collection	Ad-hoc	-	EU-28	-					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Number / Share of aid beneficiaries who move up the value chain in a given industry	Quantitative result indicator	Number / Share of aid beneficiaries who move up the value chain in a given industry for a given period of time per MS/in the EU	Number; %	Ex-post primary data collection	Ad-hoc	-	EU-28	-					
	Number / Share of new employees with higher education	Quantitative result indicator	Number / Share of new employees with higher education for a given period of time per MS/in the EU	Number; %	Ex-post primary data collection	Ad-hoc	-	EU-28	-					
	Number / Share of beneficiaries connected to a regional or inter-regional industrial cluster	Quantitative result indicator	Share of beneficiaries connected to a regional or inter-regional industrial cluster out of total aided projects for a given time period per MS/in the EU	Number; %	Ex-post primary data collection	Ad-hoc	-	EU-28	-					
	Number / Share of aided projects that include important R&D components	Quantitative result indicator	Share of aided projects that include important R&D components out of total aided projects for a given time period per MS/in the EU	Number; %	-	-	-	EU-28	-					
	Number / Share of aided projects that include cooperation with local higher education institutions	Quantitative result indicator	Share of aided projects that include cooperation with local higher education institutions out of total aided projects for a given time period per MS/in the EU	Number of projects	-	-	-	EU-28	-					

Justifications for proposing additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
General objective: Ensure that aid is granted to further the economic development of certain areas does not create distortions of trade and competition that would be contrary to the common interest	Multiplier effect of the regional aid granted	Quantitative impact indicator	The multiplier effect of regional aid is an indicator that can be used to easily communicate the positive economic impact of regional aid in term of investments
Specific objective: Increase the effectiveness and efficiency of regional aid	Change in the productivity of regional aid beneficiaries	Quantitative result indicator	Change in the productivity of regional aid beneficiaries is an indicator of the sustainability of jobs in the sector/region benefitting from regional aid
	Indirect jobs created or maintained	Quantitative result indicator	Indicator of the indirect impact (spill-over) on employment in regions benefitting from regional aid
	Additional turnover spent at local suppliers by aid beneficiaries	Quantitative result indicator	Indicator of the indirect impact (spill-over) for local suppliers to aid beneficiaries
	Volume of spill-over effect on suppliers	Quantitative result indicator	Indicator of the indirect impact (spill-over) for local suppliers to aid beneficiaries
	Share of 'expatriates' in the total number of jobs created	Quantitative result indicator	Indicator of the contribution of regional aid to the socio-economic development of the beneficiary region
Specific objective: Achieve administrative simplification as regards regional aid	Estimated costs of clarifying state aid rules in relation to regional aid	Quantitative result indicator	This indicator can be used to measure the effect of the RAG on the administrative burden associated with clarifying compliance with the state aid rules.
	Financial resources spent on clarifying state aid rules in relation to regional aid	Quantitative result indicator	This indicator can be used to measure the effect of the RAG on the administrative burden associated with clarifying compliance with the state aid rules.
Specific objective: Increase the consistency between regional aid policy and other policy areas	Amount (hours) of training per (new) employee of aid beneficiaries	Quantitative result indicator	Indicator of the expected increase in the quality of training in a region/sector as a result of aid grants

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
	Level of training expenditure on new employees of aid beneficiaries	Quantitative result indicator	Indicator of the expected increase in the quality of training in a region/sector as a result of aid grants
	Number / Share of aid beneficiaries who move up the value chain in a given industry	Quantitative result indicator	Indicator of the expected increase of the quality of jobs in a region/sector as a result of aid grants
	Number / Share of new employees with higher education	Quantitative result indicator	Indicator of the expected increase of the quality of jobs in a region/sector as a result of aid grants
	Number / Share of beneficiaries connected to a regional or inter-regional industrial cluster	Quantitative result indicator	Indicator of the impacts of regional aid on R&D activities
	Number / Share of aided projects that include important R&D components	Quantitative result indicator	Indicator of the impacts of regional aid on R&D activities
	Number / Share of aided projects that include cooperation with local higher education institutions	Quantitative result indicator	Indicator of the impacts of regional aid on R&D activities

IMPACT ASSESSMENT REPORT

EU GUIDELINES FOR THE APPLICATION OF STATE AID RULES IN RELATION TO RAPID DEPLOYMENT OF BROADBAND NETWORKS

1. INTRODUCTION

In 2012, the European Commission conducted an Impact Assessment to assess the impact of a change in the EU Guidelines for the application of state aid rules in relation to rapid deployment of broadband networks.

It should be duly noted that, at this stage, no revision of the Broadband Guidelines is envisaged by the European Commission. The mapping of indicators has the purpose of complementing and reinforcing the indicators system that the European Commission utilises in performing impact assessments and evaluations of legislation.

The following sections include the results the mapping of monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

The intervention logic has been drafted based on the Impact Assessment conducted and the Communication from the Commission on EU Guidelines for the application of state aid rules in relation to the rapid deployment of broadband networks.

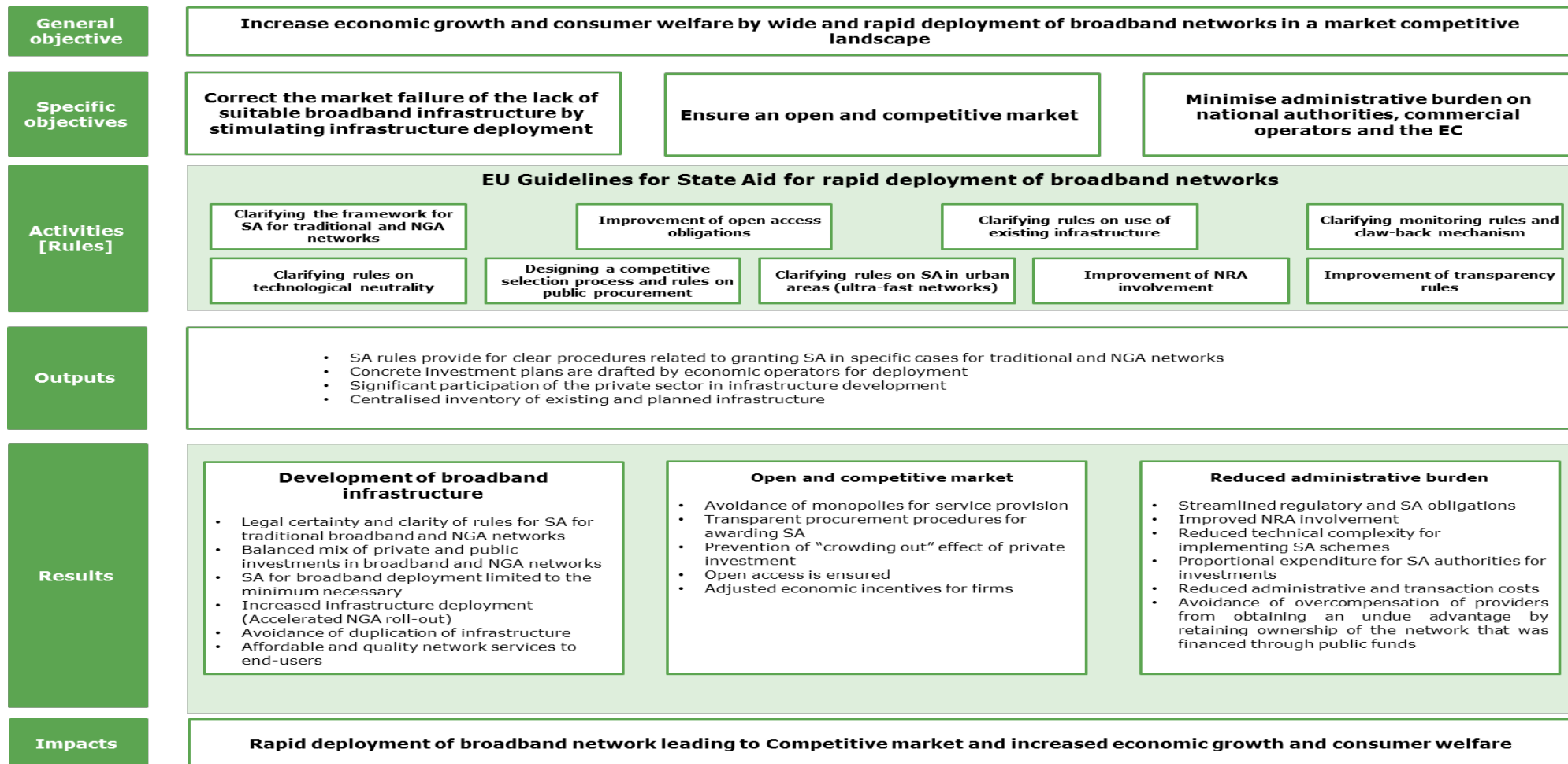
The table below presents the main needs in connection to the EU Guidelines for the application of state aid rules for the rapid deployment of broadband infrastructure, the general objectives and the specific objectives of the initiative. These are further operationalized in the intervention logic presented in the figure below.

The Guidelines explain the application of the EU principles in the assessment of aid measures for the rapid rollout of basic broadband and high speed NGAs.

The IA indicates the rules embedded in the framework generally offer legal certainty for stakeholders and were assessed positively by the Commission and other stakeholders. However, the public consultation identified a set of possibilities for "fine-tuning" of the legal text.

Problem definition [Needs]	<ul style="list-style-type: none">➔ Difficulties for public authorities to direct state aid where it is needed due to difficulties in obtaining sound projections from private investors;➔ Challenges in ensuring competition through an effective tendering process. In particular, the IA indicates that problems were reported during the public consultation phase by the bidders and not by the purchasers concerning the tendering procedures;➔ Sub-optimal selection of a bidder for state aid, i.e. the purchasing authorities are uncertain about the relevant criteria which could be used in the selection procedure in addition to the amount of aid;➔ Issues with access pricing;➔ Relatively low involvement of the NRAs in the broadband sector;➔ Need for improved efficiency of administrative action through the use of framework contracts;➔ Need for a better use of existing infrastructures;➔ Clearer provisions for claw-back mechanism to avoid over-compensation.
---------------------------------------	---

Figure 1: Intervention logic for EU Guidelines for the application of State Aid rules in relation to the rapid deployment of broadband networks



Source: Ramboll, Based on Impact Assessment Report SWD (2012)448

3. MAPPING OF INDICATORS

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in Italic font.

Table 1: Indicators Impact Assessment

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Economic growth, consumer welfare	<i>[Degree of]</i> quality of services	Qualitative impact indicator	Not specified [Assessment by stakeholders of the services provided, proxies: availability of broadband network services, different technologies]	--	[Stakeholder assessment, e.g. questionnaire]	Ad-hoc	--	EU28	--					
Correct market failure /Stimulate infrastructure deployment	Aid amount received per beneficiary	Quantitative output indicator	Total amount of aid received per beneficiary	EUR	European Commission	Annual	--	EU28	--					
Correct market failure /Stimulate infrastructure deployment	Volume of private investment in broadband infrastructure	Quantitative result indicator	EUR value of investments carried out by SGEI providers for a given time period	EUR	Eurostat, OECD, National statistics	Annual	--	EU28	--					
Correct market failure /Stimulate infrastructure deployment	<i>[Share of]</i> private investments in broadband infrastructure	Qualitative result indicator	Investments carried out by SGEI providers for a given time period compared to total investments in the EU	%	Eurostat, OECD, National statistics	Annual	--	EU	--					
Correct market failure /Stimulate infrastructure deployment	Volume of SA for broadband for all EU MSs	Quantitative output indicator	Amount of SA for broadband for all MSs [per year]	EUR	[Digital Agenda Scoreboard, National DBs]	Annual [Time-Series]	--	EU28	EUR 605 million (2006-2011)					
Correct market failure /Stimulate infrastructure	Aid intensity	Quantitative result indicator	Not specified	EUR	European Commission	Annual	--	EU28	--					

¹ i.e. when does the data become available?

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
deployment														
Correct market failure /Stimulate infrastructure deployment	Volume of SA for broadband per MS	Quantitative output indicator	Amount of SA for broadband per MSs [per year]	EUR per MS	[Digital Agenda Scoreboard, National DBs]	Annual [Time-Series]	--	EU28	Ranges from below EUR 500 mln to over EUR 3,000 mln					
Correct market failure /Stimulate infrastructure deployment	Volume of [<i>Share of</i>] SA spent for broadband networks	Quantitative output indicator	Amount of actually spent SA for broadband of the total amount of SA granted	EUR / %	Digital Agenda Scoreboard	Annual [Time-Series]	--	EU28	EUR 1.826 – 1.868 billion (2010 and 2011)					
Correct market failure /Stimulate infrastructure deployment	Number of state aid decisions approved by the Commission in the broadband sector	Quantitative output indicator	Amount of decisions approved by the Commission for a period of time [per year]	Number	European Commission Decisions	Annual [Time-Series]	--	EU28	110 decisions					
Correct market failure /Stimulate infrastructure deployment	Number of formal investigation procedures into SA notified measures	Quantitative output indicator	Amount of formal investigation procedures opened for a period of time [per year]	Number	European Commission Decisions	Annual [Time-Series]	--	EU28	3 investigation procedures					
Correct market failure /Stimulate infrastructure deployment	Number of SA decisions by aid instrument	Quantitative output indicator	Amount of SA decisions per aid instrument [forms of direct grant, forms of soft loan etc.]	Number	European Commission Decisions	Annual [Time-Series]	--	EU28	[64 forms of direct grant, 4 forms of soft loan, 9 no state aid, 4 not stated, 3 other (2003-2011)] ²					
Correct market failure /Stimulate infrastructure deployment	Number of SA decisions per case type	Quantitative output indicator	Number of decisions per type of case [individual application, ad hoc case, scheme]	Number	European Commission Decisions	Annual [Time-Series]	--	EU28	65 scheme; 12 individual application, 10 ad-hoc case					
Open and competitive market	Number of platforms and platform operators which participate in public tender for state-funded NGA network	Qualitative result indicator	Number of bidders in public tenders for SA	Number	TED National procurement databases	Annual	--	EU	--					
Open and competitive market	[<i>Degree of</i>] transparency of SA procedures	Qualitative result indicator	Not specified [Proxies: Centralised database on infrastructure deployment and on state aid tender procedures; presence of ex-post reporting;	--	[Stakeholder assessment, e.g. questionnaire]	--	--	EU	--					

² Wik Consult (2011), Study on the implementation of the existing Broadband Guidelines (COMP/2011/006)

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ss ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Open and competitive market	Number of bidders participating in tenders	Qualitative result indicator	Number of bidders participating in tenders	Number	TED National procurement databases	Annual	--	EU	--					
Open and competitive market	Number of access requests received	Qualitative result indicator	Number of access requests received by network providers	Number	--	--	--	--	--					
Open and competitive market	Number of access requests granted	Qualitative result indicator	Number of access requests granted by network providers	Number	--	--	--	--	--					
Avoid administrative burden	[Degree of legal clarity of] rules for access to publicly financed infrastructure	Qualitative result indicator	Not specified	--	--	--	--	EU	--					
Avoid administrative burden	[Clarity of] the rules for public tendering	Qualitative result indicator	Not specified [The extent to which the rules for public procurement on SA are clear]	--	--	Ad-hoc	--	EU	--					
Avoid administrative burden	[Degree of] involvement of NRAs in implementation	Qualitative result indicator	Not specified [The extent to which the NRAs are involved in the supervision and monitoring of implementation]	--	--	Ad-hoc	--	EU	--					
Avoid administrative burden	Administrative costs	Quantitative result indicator	Costs related to processing SA requests and ensuring the proper application of SA	EUR	NRAs	Annual	--	EU28	--					
Avoid administrative burden	Number of complaints from commercial operators	Quantitative output indicator	Amount of complaints issued by commercial operators in relation to SA for broadband networks	Number	European Commission NRAs	Annual	--	EU28	--					
Avoid administrative burden	Number of Type I errors	Quantitative output indicator	Rejecting broadband projects which are beneficial	Number	European Commission Statistics	Annual	--	EU28	--					
Avoid administrative burden	Number of Type II errors	Quantitative output indicator	Approving broadband projects which significantly distort competition	Number	European Commission Statistics	Annual	--	EU28	--					
Avoid administrative burden	Number of litigations in relation to complaints	Quantitative output indicator	Amount of cases of litigation as a result of complaints regarding SA for broadband networks	Number	European Commission	Annual	--	EU28	--					
Avoid administrative burden	Transaction costs for network operations	Quantitative result indicator	Amount of costs arising from tendering	EUR	--	Annual	--	EU28	--					
Avoid administrative burden	Duration period of authorisation procedures	Quantitative result indicator	Time period between receiving state aid clearance and triggering investments	Years	[Stakeholder assessment, e.g. questionnaire]	Annual [Time-Series]	--	EU28	Average: 3-5 years					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives are presented below. For each *specific objective* one additional indicator should be proposed. The indicators draw on the issues that the legal instruments is intended to address and on the gaps/overlays identified in the Impact Assessment.

Note: Indicators marked with ** are based on qualitative concepts identified in the impact assessment

It should be duly noted that Digital Agenda Indicators contains over 100 indicators concerning the performance of the digital market. Broadly speaking, the majority of indicators listed there are of relevance for the measuring impacts related to state aid in broadband. The following link leads to the database of indicators:

[http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators]

In addition to the list of indicators from below, additional indicators relating to the following aspects could also be considered in the development of an impact assessment or evaluation: market information: target areas, target consumers, operators, available services, coverage, penetration, prices; information on projects: timeframe and milestones, entry into operation, allocated aid amounts, cost covered by the aid, aid intensity, services required (minimum speed, services provided to consumers), step change, technological neutrality; detailed mapping and coverage analysis; competitive section process; use of existing infrastructure; wholesale access and price benchmarking, claw-back mechanism, design of the monitoring mechanisms, horizontal separation, vertical separation, any alternative measure implemented in the targeted areas, regulatory conditions.

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Increase economic growth and consumer welfare	Multiplier effect of the broadband aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	Not available					
Increase economic growth and consumer welfare	Direct employment created by broadband rollout per year per MS/region	Quantitative Impact Indicator	Number [% of the total] of direct jobs [<i>involved directly in the deployment of networks - telecom technicians, construction workers, civil engineers etc.</i>] generated by the rollout of broadband per MS/region compared against the baseline [prior to the adoption of SA rules]	Number or %	EU or MSs statistics	Ad-hoc	Ad-hoc	EU28 or sample	DG CNECT, IA costs deployment high-speed networks, p. 61					
Increase economic growth and consumer welfare	Indirect employment created by broadband rollout per year per MS/region	Quantitative Impact Indicator	Number [% of the total] of jobs generated in industries supplying inputs to network deployment sectors [e.g. electrical equipment workers] per MS/region compared against the baseline [prior to the adoption of SA rules]	Number or %	EU or MSs statistics	Ad-hoc	Ad-hoc	EU28 or sample	DG CNECT, IA costs deployment high-speed networks, p. 61					
Increase economic growth and consumer welfare	Households with access to the Internet at home	Quantitative Impact Indicator	Number of households with access to internet	Number	Eurostat, Table isoc_bde15b_h: Broadband and connectivity -	Annual	Annual	EU28	See link					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Increase economic growth and consumer welfare	Affordability of standalone Fixed Internet Access (minimum price offer)	Quantitative Impact Indicator	Affordability is defined as 12x the monthly price divided by the "real adjusted gross disposable income of households per capita" of the previous year. ³	EUR	households Digital Agenda indicators - Broadband Internet Access Cost (BIAC) annual studies ⁴	Annual [Time-series]	2013 - 2015	EU28	See link ⁵					
Increase economic growth and consumer welfare	Actual download speed of fixed broadband subscriptions	Quantitative Impact Indicator	Average Download Speed during peak periods (ACTSPEED), measured with a specially configured hardware device (SamKnows Whitebox), which runs a series of purpose-built tests to measure various aspect of Internet performance. ⁶	Mbit/s	Digital Agenda indicators - Study on "Quality of Broadband Services in the EU" SMART 2010/0036 ⁷	Annual [Time-series]	2012 - 2014	EU28	See link ⁸					
Correct market failure /Stimulate infrastructure deployment	Trends in standard fixed broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks	%	Digital Agenda indicators - Point Topic Study on broadband coverage ⁹	Annual	2011-2015	EU28	See link					
Correct market failure /Stimulate	Trends in Rural standard fixed broadband coverage	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of	%	Digital Agenda indicators - Point Topic	Annual	2011 - 2015	EU28	See link					

³ Disposable income data come from Eurostat table tec00113. Monthly price of standalone Fixed Broadband Internet Access offers, include value added tax, exclude the additional cost of telephony or cable line (if any), and refers to the minimum price in the group of similar subscriptions offered by internet service providers.

⁴ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

⁵ <https://ec.europa.eu/digital-single-market/en/connectivity>

⁶ The measured speed refers to a sample of subscriptions using a similar technology offered by internet service providers. Offers are not weighed with market shares, so the measured speed cannot be interpreted as the average experienced by consumers.

⁷ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

⁸ <https://ec.europa.eu/digital-single-market/en/connectivity>

⁹ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
infrastructure deployment	(as a % of households)		Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks. Rural areas are defined as those with less than 100 people per km2		Study on broadband coverage ¹⁰									
Correct market failure /Stimulate infrastructure deployment	4G mobile broadband (LTE) coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas covered by advanced fourth generation mobile broadband (LTE protocol)	%	Digital Agenda indicators - Point Topic Study on broadband coverage ¹¹	Annual	2011 - 2015	EU28	See link					
Correct market failure /Stimulate infrastructure deployment	Advanced 3G mobile broadband (HSPA) coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas covered by advanced third generation mobile broadband (HSPA protocol)	%	Digital Agenda indicators - Point Topic Study on broadband coverage ¹²	Annual	2011 - 2015	EU28	See link					
Correct market failure /Stimulate infrastructure deployment	NGA broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by NGA. Next Generation Access includes the following technologies: FTTH, FTTB, Cable Docsis 3.0,	%	Digital Agenda indicators - Point Topic Study on broadband coverage ¹³	Annual	2011 - 2015	EU28	See link					

¹⁰ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹¹ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹² http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹³ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
			VDSL and other superfast broadband (at least 30 Mbps download)											
Correct market failure /Stimulate infrastructure deployment	Rate of roll out of NGA per year	Quantitative Impact Indicator	Trends in NGA coverage in the EU per year	%	BEREC Statistics	Annual [Time-series]	--	EU28	See BEREC Report ¹⁴					
Correct market failure /Stimulate infrastructure deployment	Rate of rural NGA coverage	Quantitative Impact Indicator	Trends in NGA coverage for rural areas in the EU per year	%	BEREC Statistics	Annual [Time-series]	--	EU28	See BEREC Report					
Ensure open and competitive market	Trends in total investment in networks by the electronic communications sector	Quantitative Result Indicator	Total investment includes both tangible and intangible investment in telecommunication networks (without license fees) by all telecom operators	Number	Digital Agenda indicators - Communications Committee survey ¹⁵	Annual [Time-series]	2009 - 2014	EU28	See link ¹⁶					
Ensure open and competitive market	Crowding out effect of SA	Quantitative Impact Indicator	Amount of investments in broadband infrastructure that would have taken place absent the SA	% or Number	Stakeholder assessment [e.g. interviews or survey]	Ad-hoc	-	EU28 or sample	Not available					
Ensure open and competitive market	Herfindahl index on broadband competition	Quantitative Result Indicator	Herfindahl index calculated for seven different connection technologies: xDSL, full or shared LLU, Cable, FTTH, FTTB, Other NGA, Other. Their respective market shares are expressed in percentage	Number	Digital Agenda indicators - Communications Committee survey ¹⁸	Annual [Time-series]	2013 - 2014	EU28	See link ¹⁹					

¹⁴ BEREC, Challenges and drivers of NGA rollout and infrastructure competition, 2nd of June 2016

¹⁵ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹⁶ <https://ec.europa.eu/digital-single-market/en/connectivity>

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
			of all fixed broadband subscriptions. ¹⁷											
Ensure open and competitive market	Amount / Share of network infrastructure investments cross-border	Quantitative Result Indicator	Number / Volume /Share of contracts awarded to providers outside the established MS by contracting authorities	Number or volume (EUR)	TED	Annual [Time-series]	Annual	EU28	Not available					
Ensure open and competitive market	Degree of transparency of SA procedures for SA beneficiaries	Qualitative Result Indicator	Extent to which stakeholders assess that information related to SA procedures and decisions is easily accessible and clear	Scale	Stakeholder consultation [Survey SA beneficiaries]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Ensure open and competitive market	Degree of transparency of SA procedures at the level of national authorities	Qualitative Result Indicator	Degree of transparency of SA procedures at the level of national authorities - in line with new transparency requirements (scheme, beneficiary, amounts, implementation progress etc.)	Scale	Stakeholder consultation [Survey national authorities]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Ensure open and competitive market	Degree of clarity of regulatory conditions related to broadband SA	Qualitative Result Indicator	Degree of clarity of regulatory conditions related to broadband SA	Scale	Stakeholder consultation [Survey with SA beneficiaries]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Ensure open and competitive market	Degree of clarity of rules on wholesale access pricing	Qualitative Result Indicator	Degree of clarity of rules on wholesale access pricing	Scale	Stakeholder consultation [Survey NRAs]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Minimise administrative burden	[Change in] financial resources used by the national state aid offices and	Quantitative Result Indicator	Estimated financial resources used by national state aid offices and authorities granting	EUR	Stakeholder consultation [Interviews national SA	Ad-hoc	Ad-hoc	EU28 or sample	Not available					

¹⁸ http://digital-agenda-data.eu/datasets/digital_agenda_scoreboard_key_indicators/indicators#broadband-take-up-and-coverage

¹⁹ <https://ec.europa.eu/digital-single-market/en/connectivity>

¹⁷ A small index indicates a competitive industry with no dominant technological platform. The index values raises with concentration over one or few platforms.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
	authorities granting state aid for broadband networks**		state aid for broadband networks		authorities]									
Minimise administrative burden	[Change in] resources used by the national state aid offices and authorities granting state aid for broadband networks**	Quantitative Result Indicator	Estimated human resources used by national state aid offices and authorities granting state aid for broadband networks	FTE	Stakeholder consultation [Interviews national SA authorities]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					
Minimise administrative burden	Degree of involvement of NRAs in access pricing and in solving conflicts regarding access	Qualitative result indicator	Assessment of the extent of involvement of NRAs in relation to access pricing conflicts regarding access	Qualitative assessment	Stakeholder consultation [Interviews NRAs]	Ad-hoc	Ad-hoc	EU28 or sample	Not available					

Justification for proposing additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Motivation
Increase economic growth and consumer welfare	Multiplier effect of the broadband aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	Relevant to measure the effect that aid has on furthering economic growth and competitiveness.
Increase economic growth and consumer welfare	Direct employment created by broadband rollout per year per MS/ region	Quantitative Impact Indicator	Number [% of the total] of direct jobs [<i>involved directly in the deployment of networks - telecom technicians, construction workers, civil engineers etc.</i>] generated by the rollout of broadband per MS/ region compared against the baseline [prior to the adoption of SA rules]	Broadband deployment can have a direct impact on employment by giving momentum to the creation of jobs directly connected to the deployment of networks. Measuring the effect that broadband deployment has on job creation and correlating that to the presence or absence of aid in the sector can provide an indication of the effect of SA given for broadband deployment on employment.
Increase economic growth and consumer welfare	Indirect employment created by broadband rollout per year per MS/region	Quantitative Impact Indicator	Number [% of the total] of jobs generated in industries supplying inputs to network deployment sectors [e.g. electrical equipment workers] per MS/region compared against the baseline [prior to the adoption of SA rules]	Broadband deployment can have an indirect impact on employment by giving momentum to the creation of jobs indirectly connected to the deployment of networks. Measuring the effect that broadband deployment has on the creation of indirect jobs and correlating that to the presence or absence of aid in the sector can provide an indication of the effect of SA given for broadband deployment on

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Motivation
				employment.
Increase economic growth and consumer welfare	Households with access to the Internet at home	Quantitative Impact Indicator	Number of households with access to internet	The indicators measure the quality of broadband provision and the impact broadband roll-out has on consumer welfare (general objective).
Increase economic growth and consumer welfare	Affordability of standalone Fixed Internet Access (minimum price offer)	Quantitative Impact Indicator	Affordability is defined as 12x the monthly price divided by the "real adjusted gross disposable income of households per capita" of the previous year. ²⁰	
Increase economic growth and consumer welfare	Actual download speed of fixed broadband subscriptions	Quantitative Impact Indicator	Average Download Speed during peak periods (ACTSPEED), measured with a specially configured hardware device (SamKnows Whitebox), which runs a series of purpose-built tests to measure various aspect of Internet performance. ²¹	
Correct market failure /Stimulate infrastructure deployment	Trends in standard fixed broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks	The indicators measure the specific objective of bringing infrastructure to underserved areas [p. 23] by accelerating the roll out of broadband networks and NGAs.
Correct market failure /Stimulate infrastructure deployment	Trends in Rural standard fixed broadband coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by xDSL, cable (basic and NGA), FTTP or WiMax networks. Rural areas are defined as those with less than 100 people per km2	
Correct market failure /Stimulate infrastructure deployment	4G mobile broadband (LTE) coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas covered by advanced fourth generation mobile broadband (LTE protocol)	
Correct market failure /Stimulate infrastructure deployment	Advanced 3G mobile broadband (HSPA) coverage (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas covered by advanced third generation mobile broadband (HSPA protocol)	
Correct market failure /Stimulate infrastructure deployment	NGA broadband coverage/availability (as a % of households)	Quantitative Impact Indicator	Coverage is a supply indicator defined as the percentage of Households living in areas served by NGA. Next Generation Access includes the following technologies: FTTH, FTTB, Cable Docsis 3.0, VDSL and other superfast broadband (at least 30 Mbps	

²⁰ Disposable income data come from Eurostat table tec00113. Monthly price of standalone Fixed Broadband Internet Access offers, include value added tax, exclude the additional cost of telephony or cable line (if any), and refers to the minimum price in the group of similar subscriptions offered by internet service providers.

²¹ The measured speed refers to a sample of subscriptions using a similar technology offered by internet service providers. Offers are not weighted with market shares, so the measured speed cannot be interpreted as the average experienced by consumers.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Motivation
			download)	
Correct market failure /Stimulate infrastructure deployment	Rate of roll out of NGA per year	Quantitative Impact Indicator	Trends in NGA coverage in the EU per year	
Correct market failure /Stimulate infrastructure deployment	Rate of rural NGA coverage	Quantitative Impact Indicator	Trends in NGA coverage for rural areas in the EU per year	
Ensure open and competitive market	Trends in total investment in networks by the electronic communications sector	Quantitative Result Indicator	Total investment includes both tangible and intangible investment in telecommunication networks (without license fees) by all telecom operators	The indicator measures the amount of investments made by private entities in telecommunications networks. This can serve to analyse whether there is a crowding out effect as a result of state aid provided to support networks deployment.
Ensure open and competitive market	Crowding out effect of SA	Quantitative Impact Indicator	Amount of investments in broadband infrastructure that would have taken place absent the SA	The indicator measures the amount of private investments that would have taken place absent the SA for network deployment. The data for the indicator would be collected through interviews or surveys with key stakeholders and would allow DG Competition to measure the crowding out effect that has been avoided by performing careful scrutiny before approving broadband state aid.
Ensure open and competitive market	Herfindahl index on broadband competition	Quantitative Result Indicator	Herfindahl index calculated for seven different connection technologies: xDSL, full or shared LLU, Cable, FTTH, FTTB, Other NGA, Other. Their respective market shares are expressed in percentage of all fixed broadband subscriptions. ²²	The indicator would measure the amount of competition on the broadband market. The indicator would support the measurement of whether distortions of competition appear as a result of state aid granted for broadband deployment.
Ensure open and competitive market	Amount / Share of network infrastructure investments cross-border	Quantitative Result Indicator	Number / Volume /Share of contracts awarded to providers outside the established MS by contracting authorities	The openness of the market which is one of the specific objectives of the guidelines can be measured by looking at the share of network infrastructure investments cross-border. This was not identified as an indicator in the IA.
Ensure open and competitive market	Degree of transparency of SA procedures for SA beneficiaries	Qualitative Result Indicator	Extent to which stakeholders assess that information related to SA procedures and decisions is easily accessible and clear	The indicator proposed is a direct measure of the objective of increasing transparency in the market with the aim of avoiding undue competition distortion. The indicator would be measured qualitatively by relying on the assessment of SA beneficiaries and their perception of the SA procedures.
Ensure open and competitive market	Degree of transparency of SA procedures at the level of national authorities	Qualitative Result Indicator	Degree of transparency of SA procedures at the level of national authorities - in line with new transparency requirements (scheme, beneficiary, amounts, implementation progress etc.)	The indicator is a measure of the objective of increasing transparency in the market with the aim of avoiding undue distortions of competition. The indicator would be measured based on the assessment of relevant national authorities of the SA process.
Ensure open and competitive market	Degree of clarity of wholesale access pricing	Qualitative Result Indicator	Degree of clarity of wholesale access pricing	As regards access pricing, the objective of the Guidelines provision is to ensure that access seekers face the same opportunity costs of the wholesale services as the state aid beneficiary. Wholesale access pricing may pose serious challenges to public

²² A small index indicates a competitive industry with no dominant technological platform. The index values raises with concentration over one or few platforms.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Motivation
				authorities as benchmarking wholesale prices is a complex regulatory task even for experienced NRAs.
Minimise administrative burden	[Change in] financial resources used by the national state aid offices and authorities granting state aid for broadband networks**	Quantitative Result Indicator	Estimated financial resources used by national state aid offices and authorities granting state aid for broadband networks	According to the public consultation, the assessment of the authorities is that the complexity of state aid can be at times overwhelming and lead to a high administrative burden. The revision of the rules has as aim of reducing the administrative burden on the authorities by clarifying the rules. The indicators proposed are aimed at supporting the quantification of the administrative burden.
Minimise administrative burden	[Change in] resources used by the national state aid offices and authorities granting state aid for broadband networks**	Quantitative Result Indicator	Estimated human resources used by national state aid offices and authorities granting state aid for broadband networks	
Minimise administrative burden	Degree of involvement of NRAs in access pricing and in solving conflicts regarding access	Qualitative result indicator	Assessment of the extent of involvement of NRAs in relation to access pricing conflicts regarding access	
				The clarification of the position of the NRAs deriving from the EU Guidelines does not automatically translate in a clearer role and position of the NRAs. This is due to the fact that as a soft law instrument the Guidelines cannot constitute a source of obligation for the Member States. Thus, the indicator would measure the extent to which the Guidelines are followed up at national level.

REVIEW OF IMPACT ASSESSMENT ACCOMPANYING THE DOCUMENT COMMUNICATION FROM THE COMMISSION GUIDELINES ON STATE AID TO PROMOTE RISK FINANCE INVESTMENT SWD (2014) 6

1. INTRODUCTION

In 2011, the European Commission conducted an Impact Assessment Accompanying the document Communication from the Commission Guidelines on State aid to promote risk finance investment.

The following sections include the results of the pilot work on mapping the monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

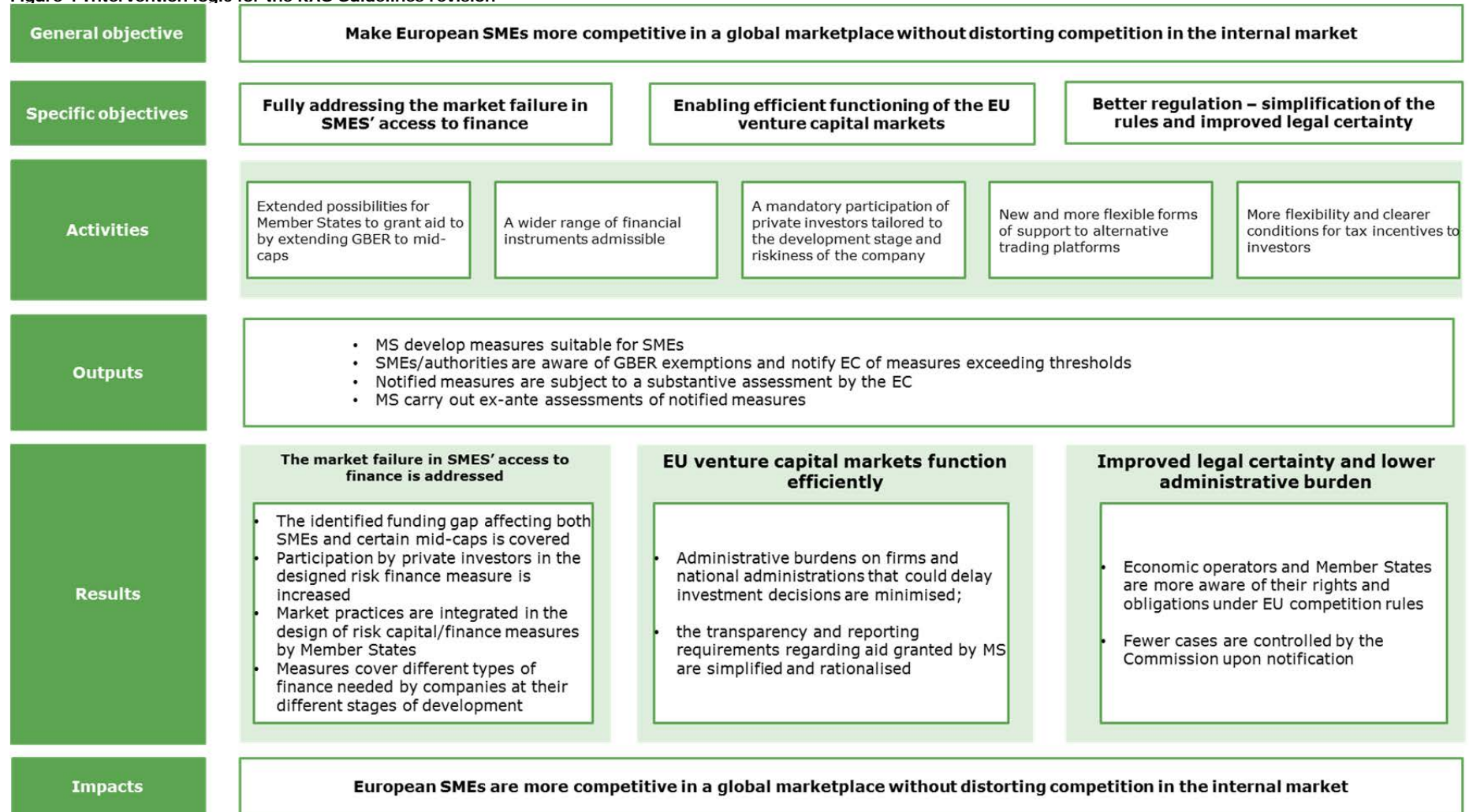
2. INTERVENTION LOGIC

The intervention logic has been drafted based on the objectives specified in the Impact Assessment and the options that were adopted for the revision of the rules on state aid to promote risk finance investment.

Table 1 Overview of problems and objectives for the intervention

Problem definition	<ul style="list-style-type: none">➔ Market failure for SMEs access to finance: there is an SME financing gap in that SME financing needs for investment or working capital are not sufficiently met due to asymmetric information issue➔ Structural weaknesses of the European venture capital market:<ul style="list-style-type: none">○ inefficiencies in the informal EU venture capital market and lack of critical mass and efficiently sized funds in the formal venture capital market;○ fragmentation of the European VC market and regulatory constraints;○ The European VC market is unattractive compared to other forms of assets➔ Public interventions to bridge the funding gap may distort competition, but there are issues with the current regime aiming to prevent that:<ul style="list-style-type: none">○ <i>Risks of undue restrictiveness and over-deterrence</i> due to the focus of the GBER/guidelines eligibility criteria only on SMEs in early-growth development stage and the requirements for their financing forms, aid instruments and funding structures, as well as lack of clarity on the actual rules;○ <i>Risk of undue permissiveness and under-deterrence</i>○ <i>Unnecessary administrative and compliance costs</i>
---------------------------	--

Figure 1 Intervention logic for the RAG Guidelines revision



3. MAPPING OF INDICATORS FROM IMPACT ASSESSMENT

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "hinted at" are written in *Italic font*.

Table 2 Indicators identified in the mapping of the impact assessment

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Make European SMEs more competitive in a global marketplace without distorting competition in the internal market	Impact of guidelines on state aid delivered via risk finance measures on competition in the internal market	Qualitative impact indicator	Extent to which the guidelines prevent crowding out of private investors and adverse location effects altering the incentives of firms to establish their activities within the various regions of the EU while fostering growth in EU real economy and extent to which they provide the right balance between adequate control on the notified measure by the Commission and limited distortions of competition within the internal market	<i>Scale</i>	-	-	-	-	-					
	Sectorial impacts in function of industry's capital requirements	Qualitative impact indicator	Extent to which the rules cater in particular for SMEs operating in capital-intensive sectors such as biotechnologies, pharma, green energy, clean technologies, etc.	<i>Scale</i>	-	-	-	-	-					
Fully addressed	Consistency of guidelines with	Qualitative result	Extent to which new regulation integrates market practices in the	<i>Scale</i>	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Addressing the market failure in SMEs' access to finance	market practices	indicator	design of risk capital/finance measures by Member States and extent to which they cover different types of finance needed by companies at their different stages of development while at the same time providing for the necessary safeguards in order to avoid distortions of competition in the internal market											
	<i>Leverage of private investment into SMEs</i>	Qualitative result indicator	extent to which the rules encourage the participation by private investors in the designed risk finance measure by ensuring a maximum leverage with minimum aid while targeting the right market failure	Scale	-	-	-	-	-					
	<i>Impact on employment and SMEs' growth</i>	Qualitative result indicator	Extent to which extent that, as a result of the measure's investments, more SMEs will have access to finance without entailing undue distortions of competition in the internal market by covering the identified funding gap affecting both SMEs and certain mid-caps while excluding, at the same time, investments not affected by this funding gap	Scale	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Number of new jobs created by companies backed by venture capital	Quantitative result indicator	Number of new jobs created by companies backed by venture capital in a given period of time per MS/in the EU	FTEs	-	-	-	EU-28	companies backed by venture capital between 1997 and 2004 created about 630.000 new jobs in the EU in the period from 2000 to 2004					
	Change in aggregate income in the target region	Quantitative result indicator	Change in income in region where a state aid measure has been active in a given period of time	EUR, %	-	-	-	EU-28	-					
	<i>Coverage of eligible undertakings that will receive more finance from private investors</i>	Qualitative result indicator	Not specified	-	-	-	-	-	-					
Enabling efficient functioning of the EU venture capital markets	Impact on VC funds' capitalization	Qualitative result indicator	Not specified	-	-	-	-	-	-					
	Average size of a European venture capital fund	Quantitative result indicator	Average size of a European venture capital fund in EUR in a given period of time	EUR	Industry statistics ¹	-	-	EU-28	-					
	[Relative] size of European venture capital funds compared to US capital funds	Quantitative result indicator	Average size of a European venture capital fund compared to average US capital fund in a given period of time	EUR, USD	Industry statistics			EU; US	-					
	[Change] in the average size of the VC funds, in	Quantitative result indicator	Change in the relative size of EU to non-EU VC funds in a given period of time	%	Industry statistics	-	-	global	-					

¹ For recent estimates see <https://ec.europa.eu/programmes/horizon2020/en/news/assessing-potential-eu-investment-venture-capital-and-other-risk-capital-fund-funds>

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	comparison to the EU and non-EU VC industry average													
	[Change in] the funds raised by the VC industry, compared to the GDP of the Member State concerned and to the aggregate EU GDP	Quantitative result indicator	Change in the funds raised by the VC industry, compared to the GDP of the Member State concerned and to the aggregate EU GDP for a given period of time	%	Industry statistics, Eurostat, OECD	-	-	-	-					
	[Change] in the number of transnational operations	Quantitative result indicator	Change in the number of transnational operations carried out by VC investors in a given time period per MS/in the EU	%	-	-	-	-	-					
	Extent to which rules help VC investors to plan their investments on a pan European basis and on a long-term basis	Qualitative result indicator	Not specified	-	-	-	-	-	-					
Better regulation – simplification of the rules and improved legal certainty	Legal certainty	Qualitative result indicator	Extent to which the rules will provide for more legal certainty to Member States and stakeholders by covering a large number of applicable situations and provide clear assessment criteria and clear definitions making economic operators and Member States more	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
y			aware of their rights and obligations under EU competition rules											
	Degree of awareness of the EU State aid rules	Qualitative concept	Not specified	-	-	-	-	-	-					
	<i>[Extent to which] procedures are simplified</i>	Qualitative concept	Not specified	-	-	-	-	-	-					
	<i>[Degree of] compliance with state aid rules</i>	Qualitative concept	Not specified	-	-	-	-	-	-					
	Administrative burden	Quantitative result indicator	Costs incurred by companies and national public authorities in order to meet notification or reporting requirements as well as costs to adapt to new rules (e.g training costs, compliance costs)	EUR	-	-	-	-	-					
	Duration of standard assessment of cases	Quantitative result indicator	Average duration of standard assessment of cases for a given period of time	months	DG Competition database	-	-	-	The standard assessment of the cases falling under the current Guidelines took 7 months on average					
	<i>Efforts from Member States to justify the intended design for their risk finance measures in detailed</i>	Qualitative concept	Not specified	months	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	<i>assessments</i>													
Output indicators	Number/shares of decisions taken under the standard assessment procedure	Quantitative output indicator	-	-	-	-	-	-	Under old rules, 66% of the decisions were taken under the standard assessment Procedure (2006-2013)					
	Number/shares of decisions taken under the detailed assessment	Quantitative output indicator	-	-	-	-	-	-	34% (2006-2013)					
	Ratio between the block-exempted measures and measures individually assessed under the Guidelines	Quantitative output indicator	-	-	-	-	-	-	The ratio between the block-exempted measures and measures individually assessed under the Guidelines has been approximately of 1/3 to 2/3 under the current regime (2006-2013)					
	Number/share of decisions, taken in relation to the EU-15 Member States	Quantitative output indicator	-	-	-	-	-	-	-					
	Number/share of decisions, taken in relation to the EU-27 Member States	Quantitative output indicator	-	-	-	-	-	-	-					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Number/share of measures regarding investments of a public fund into SMEs with private co-investors	Quantitative output indicator	-	-	-	-	-	-	53% (2006-2013)					
	Number/share of decisions on measures for joint public-private funds' investments into SMEs	Quantitative output indicator	-	-	-	-	-	-	32% (2006-2013)					
	Number/share of decisions on measures for application of fiscal incentives	Quantitative output indicator	-	-	-	-	-	-	19% (2006-2013)					
	Number/share of decisions on measures for providing guarantees	Quantitative output indicator	-	-	-	-	-	-	13% (2006-2013)					
	Number/share of decisions on measures for scouting costs	Quantitative output indicator	-	-	-	-	-	-	4 decisions (2006-2013)					
	Number/share of decisions on measures for alternative trading platforms	Quantitative output indicator	-	-	-	-	-	-	1 decision (2006-2013)					
	Number/share of decisions where the Commission found that no aid	Quantitative output indicator	-	-	-	-	-	-	8 (2006-2013)					

Policy objective / Result	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	was present													
	Number/share of negative decisions	Quantitative output indicator	-	-	-	-	-	-	1 (2006-2013)					
	Number/share of conditional decisions	Quantitative output indicator	-	-	-	-	-	-	1 (2006-2013)					
	Number/share of regional schemes of all schemes assessed	Quantitative output indicator	-	-	-	-	-	-	regional schemes represent 51% of all schemes assessed (2006-2013)					
	Number/share of sectoral schemes of all schemes assessed	Quantitative output indicator	-	-	-	-	-	-	14% (2006-2013)					
	Average number of decisions per year	Quantitative output indicator	-	-	-	-	-	-	14 – 15 (2006-2013)					
	Number of basic decisions	Quantitative output indicator	-	-	-	-	-	-	60 (2006-2013)					
	Number of amendment decisions	Quantitative output indicator	-	-	-	-	-	-	39 (2006-2013)					
	Number of decisions taken per MS	Quantitative output indicator	-	-	-	-	-	-						

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives set out by the IA Reform of the EU rules applicable to State aid in the form of public service compensation are proposed. The indicators draw on the issues that the legal instruments are intended to address and on the gaps/overlays identified in the Impact Assessment. Indicators marked with ** are based on qualitative concepts identified in the impact assessment.

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
General objective: Make European SMEs more competitive in a global marketplace without distorting competition in the internal market	Multiplier effect of the aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	-					
Fully addressing the market failure in SMES' access to finance	Number of beneficiaries who are midcap SMEs	Quantitative result indicator	Number of beneficiaries of state aid via VC measures that are midcap SMEs for a given period of time per MS or for the EU	number	-	Ad-hoc	-	EU-28						
	Number of beneficiaries who are early-stage start-ups	Quantitative result indicator	Number of beneficiaries of state aid via VC measures that early-stage start-ups for a given period of time per MS or for the EU	number	-	Ad-hoc	-	EU-28						

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Average volume of investment per company	Quantitative result indicator	Average volume of investment from VC backed by state aid measure per company for a given period of time per MS or for the EU	EUR	-	Ad-hoc	-	EU-28						
	Volume of investment in EU companies compared to non-EU companies	Quantitative result indicator	Volume of investment in EU companies compared to non-EU companies for a given period of time per MS or for the EU	%	-	Ad-hoc	-	EU-28						
	Scale of investment in VC as a proportion of total Private Equity ("PE") investment	Quantitative result indicator	Scale of investment in VC as a proportion of total Private Equity ("PE") investment for a given period of time per MS or for the EU	%	Invest Europe 2015 Yearbook	Ad-hoc	-	EU-28	9% (2013)					
	Number of exits in European VCs per sector, per MS, in the EU	Quantitative result indicator	Number of exits in European VCs per sector, per MS, in the EU for a given period of time per sector, MS or for the EU	Number	EIF	Ad-hoc	-	EU-28	1003 (2013)					
	(Average) Value of exits in European VC per sector, per MS, in the EU	Quantitative result indicator	(Average) Value of exits in European VC for a given period of time per sector, MS or for the EU	Number	EIF	Ad-hoc	-	EU-28	EUR 1,864,600 (2013)					
Enabling efficient	Aggregate number of VC funds per	Quantitative result	Aggregate number of VC funds for a	Number	EVCA/P EREP	Ad-hoc		EU-28	287 (2007-2012)					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
functioning of the EU venture capital markets	MS/in the EU	indicator	given period of time per MS/in the EU		Analytics									
	Number/share of early-stage VC funds per MS/in the EU	Quantitative result indicator	Number/share of early-stage VC funds per MS/in the EU	Number, %	EVCA/P EREP Analytics	Ad-hoc	-	EU-28	-					
	Number/share of Later stage venture VC funds per MS/in the EU	Quantitative result indicator	Number/share of Later stage venture VC funds per MS/in the EU	Number, %	EVCA/P EREP Analytics	Ad-hoc	-	EU-28	-					
	Number/share of Balanced VC funds per MS/in the EU	Quantitative result indicator	Number/share of Balanced VC funds per MS/in the EU	Number, %	EVCA/P EREP Analytics	Ad-hoc	-	EU-28	-					
	Venture Funds raised by type of investor	Quantitative result indicator	Number/volume of venture Funds raised by type of investor (e.g. Academic institutions, Banks, Capital markets, Corporate investors, Endowments and foundations, etc.)	Number/EUR	Invest Europe 2015 Yearbook	Ad-hoc	-	EU-28	-					
	Change in 5 year rolling average returns in the VC asset class	Quantitative result indicator	5 year rolling average returns in the VC asset class per MS/in the EU	%	THOMSON ONE	Ad-hoc	-	EU-28	-					
	IRR in European VC over time (in %)	Quantitative result indicator	3-year, 5-year, 10-year IRR in European VC per MS/in the EU	%	Thomson Reuters data	Ad-hoc	-	EU-28	-					
	Performance of VC funds compared to Standard & Poor index	Quantitative result indicator	Performance of VC funds compared to Standard & Poor index	%	-	Ad-hoc	-	-	-					
	Number/Share of	Quantitative	Number/Share of	EUR, %	EBAN	Ad-hoc	-	U 28	5.5 billion EUR					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	Business angels' investments of the investment market	ve result indicator	Business angels' investments of the investment market for a given period of time per MS, in the EU						in the EU (2014)					
	Number/Share of venture capital industry's investments of the investment market	Quantitative result indicator	Number/Share of venture capital industry's investments of the investment market for a given period of time per MS, in the EU	EUR, %	EBAN	Ad-hoc	-	U 28	2 billion EUR in the EU (2014)					
	Number/share of VC investors with multi-country investment flows	Quantitative result indicator	Number/share of VC investors with multi-country investment flows for a given period of time per MS, in the EU	Number, %, EUR	-	Ad-hoc	-	EU 28	-					
Better regulation – simplification of the rules and improved legal certainty	Estimated costs for Member States to justify the intended design for their risk finance measures in detailed assessments	Quantitative result indicator <i>(from a qualitative concept)</i>	Human resources (measured in person days) spent by MS and authorities on clarifying state aid rules for a given period of time per MS/in the EU	Person days per year	Interviews with economic operators and authorities	Ad-hoc	-	EU-28 or sample	-					
	Financial resources spent by MS on clarifying aid rules in relation to risk finance measures	Quantitative result indicator	Financial resources spent by MS on clarifying state aid rules requirements for a given period of time per MS/in the EU	EUR per year	Interviews with authorities	Ad-hoc	-	EU-28 or sample	-					
	Level of awareness of the rules on risk finance state aid	Qualitative result indicator	Share of surveyed stakeholders who are aware of	Number/share	Survey /interview with	Ad-hoc	-	EU-28 or sample	-					

Policy objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	among stakeholders		(recognise) the revised rules on risk finance state aid		stakeholders (VC funds, authorities, others)									

Justifications for proposing additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Increase the effectiveness and efficiency of regional aid	Multiplier effect of the aid granted	Quantitative impact indicator	The multiplier effect of the aid granted is an indicator that can be used to easily communicate the positive impact of aid in term of generating increased investment from the private sector into ventures that would otherwise be considered too risky.
	Net impact of the investments made with aid contributions	Quantitative impact indicator	The net impact will present the balance between the positive and negative impacts of the granted aid
Fully addressing the market failure in SMES' access to finance	Number of beneficiaries who are midcap SMEs	Quantitative result indicator	Measure of the effect of the revision of the guidelines on the number of beneficiaries that receive funding when in mid-cap stage
	Number of beneficiaries who are early-stage start-ups	Quantitative result indicator	Measure of the effect of the revision of the guidelines on the number of beneficiaries that receive funding when in early stage
	Average volume of investment per company	Quantitative result indicator	Measure of the effect of the revision of the guidelines on the average size of investments and thereby, companies' access to funding
	Volume of investment in EU companies compared to non-EU companies	Quantitative result indicator	Comparative measure of companies' access to funding
	Scale of investment in VC as a proportion of total Private Equity ("PE") investment	Quantitative result indicator	Measure of companies' access to VC funding
Enabling efficient functioning of the EU	Aggregate number of VC funds per MS/in the EU	Quantitative result indicator	Measure of the efficiency of EU VC markets
	Number/share of early-stage VC	Quantitative result	Measure of the efficiency of EU VC markets with respect to the financing needs of

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
venture capital markets	funds per MS/in the EU	indicator	early-stage VCs
	Number/share of Later stage venture VC funds per MS/in the EU	Quantitative result indicator	Measure of the efficiency of EU VC markets with respect to the financing needs of late-stage VCs
	Number/share of Balanced VC funds per MS/in the EU	Quantitative result indicator	Measure of the efficiency of EU VC markets with respect to the financing needs of balanced VCs
	Venture funds raised by type of investor	Quantitative result indicator	Measure of the sustainability of the EU VC market
	Change in 5 year rolling average returns in the VC asset class	Quantitative result indicator	Measure of the attractiveness and sustainability of the EU VC markets
	IRR in European VC over time (in %)	Quantitative result indicator	Measure of the attractiveness and sustainability of the EU VC markets
	Performance of VC funds compared to Standard & Poor index	Quantitative result indicator	Measure of the attractiveness and sustainability of the EU VC markets
	Number/Share of Business angels' investments of the investment market	Quantitative result indicator	Measure of the efficiency of EU VC markets
	Number/Share of venture capital industry's investments of the investment market	Quantitative result indicator	Measure of the efficiency of EU VC markets
	Number/share of VC investors with multi-country investment flows	Quantitative result indicator	Measure of cross-border activity in the EU VC markets
	Number of exits in European VCs per sector, per MS, in the EU	Quantitative result indicator	Measure of the efficiency of EU VC markets
	(Average) Value of exits in European VC per sector, per MS, in the EU	Quantitative result indicator	Measure of the efficiency of EU VC markets
Better regulation – simplification of the rules	Estimated costs of clarifying state aid rules in relation to regional aid	Quantitative result indicator	Human resources (measure in person days) spent by economic operators and authorities on clarifying state aid rules for a given period of time per MS/in the EU

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
and improved legal certainty	Financial resources spent on clarifying state aid rules in relation to regional aid	Quantitative result indicator	Financial resources spent by granting authorities on clarifying state aid rules requirements for a given period of time per MS/in the EU
	Level of awareness of the rules on risk finance state aid among stakeholders	Qualitative result indicator	Measure of awareness of the rules (currently lacking in the IA)

IMPACT ASSESSMENT REPORT ON STATE AID FOR ENVIRONMENTAL PROTECTION AND ENERGY FOR 2014-2020

1. INTRODUCTION

The Impact Assessment analysed the review of the Environmental Aid Guidelines, as well as the environmental section of the General Block Exemption Regulation.

The following sections include the results of the work on mapping the monitoring indicators utilised in the Impact Assessment on state aid for environmental protection and energy for 2014-2020. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

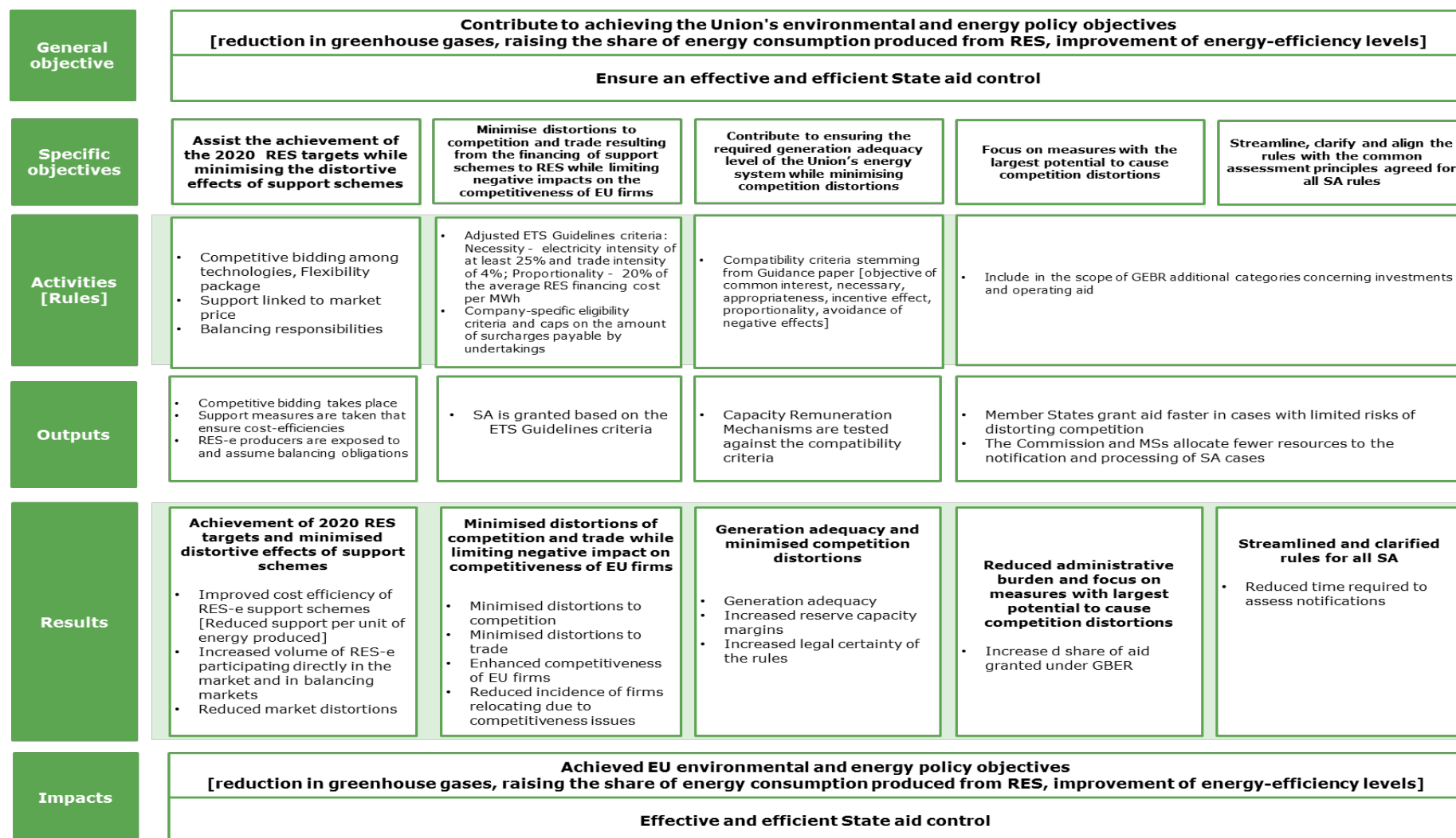
The intervention logic has been drafted based on the Impact Assessment of the Guidelines on state aid for environmental protection and energy 2014-2020.

The IA identifies a number of problems that the Guidelines are aimed at clarifying and solving. An overview of the problems identified in the Impact Assessment [needs] is presented below.

Problem definition	<ul style="list-style-type: none">➔ The existing State aid rules for support schemes to electricity from renewable energy sources (RES-e) do not prevent cost-inefficiencies and undue market distortions;➔ Financing the support to electricity from renewable energy sources may lead to higher retail energy prices may increase pressure on Member States to exempt certain undertakings from the costs of financing renewable energy;➔ Unnecessary ex-ante scrutiny of certain measures with little impact on competition and diverging criteria across state aid rules.
---------------------------	---

In connection to the "problems" [needs] presented above, a number of general and specific objectives are identified in the Impact Assessment. They are presented in the intervention logic below.

Figure 1: Intervention logic



3. MAPPING OF INDICATORS

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic font*.

Table 1: Indicators Impact Assessment

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Contribute to achieving EU's environmental and energy policy objectives	Amount of greenhouse gas emissions	Quantitative Impact Indicator	[Decrease in] the amount of greenhouse gas emissions	%	European Commission, Statistical Pocket Book	Annual [Time-series]	Not specified	EU27	17% reduction of GHG in 2011 compared to 1990 [target: 20% reduction]					
Contribute to achieving EU's environmental and energy policy objectives	Amount of RES-e [technologies] in the gross electricity generation	Quantitative Impact Indicator	Share of RES-e in the gross electricity generation [p. 16]	TWh / %	European Commission, Statistics pocket book	Not specified	Annual	EU28	Grew by 5.1% points from 2008 to 2011 reaching 21.8%					
Contribute to achieving EU's environmental and energy policy objectives	Amount of RES-e [technologies] in the gross energy consumption	Quantitative Impact Indicator	Share of RES-e in the gross energy consumption	TWh / %	Not specified	Not specified	Not specified	EU27	12.7% in 2011 compared to 8.5% in 2005					
Ensure and effective and efficient state aid control	Amount of SA granted for environmental measures	Quantitative Impact Indicator	Total amount of SA granted for environmental measures as a % of GDP (block exempted + non-block exempted)	% of GDP	EU Scoreboard	Annual [Time-series]	Not specified	EU27	Not specified [Available in Scoreboard]					
All objectives / Results	Amount of SA granted for environmental measures	Quantitative Result Indicator	Absolute amount in EUR of SA granted for environmental measures (block exempted + non-block exempted) [p.13 + Annex 4]	EUR	EU Scoreboard	Annual [Time-series]	Not specified	EU27	EUR 71 billion (2008-2012)					
All objectives / Results	Amount of SA granted for non-block exempted environmental measures	Quantitative Result Indicator	Absolute amount in EUR of SA for non-block exempted environmental measures [p.13 + Annex 4]	EUR	EU Scoreboard	Annual [Time-series]	Not specified	EU27	EUR 57 billion (2008-2012)					
All objectives / Results	Number of non-block exempted environmental measures	Quantitative Result Indicator	Total number of non-block exempted environmental measures [Annex 4]	Number	EU Scoreboard	Annual [Time-series]	Not specified	EU27	539 measures (2008-2012)					

¹ i.e. when does the data become available?

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
All objectives / Results	Amount of SA granted for block-exempted environmental measures	Quantitative Result Indicator	Absolute amount in EUR of SA for block exempted environmental measures [p.13 + Annex 4]	EUR	EU Scoreboard	Annual [Time-series]	Not specified	EU27	EUR 14 billion (2008-2012)					
All objectives / Results	Number of block-exempted environmental measures	Quantitative Result Indicator	Total number of block-exempted environmental measures [Annex 4]	Number	EU Scoreboard	Annual [Time-series]	Not specified	EU27	339 measures (2008-2012)					
All objectives / Results	Amount of SA granted for environmental measures per MS	Quantitative Result Indicator	Absolute amount in EUR of SA granted for environmental measures per MS [p. 13]	EUR	EU Scoreboard	Annual [Time-series]	Not specified	EU27	See IA, p. 110					
All objectives / Results	Number of environmental aid measures per type of aid (block-exempted and non-block exempted)	Quantitative Result Indicator	Number of environmental aid measures per type of aid (block-exempted and non-block exempted)	Number	EU Scoreboard	Annual [Time-series]	Not specified	EU27	754 schemes 102 ad-hoc aid 22 individual aid (2008-2012)					
All objectives / Results	<i>Amount of aid granted for environmental measures by aid instruments</i>	Quantitative Result Indicator	<i>Absolute amount in EUR granted for environmental measures by aid instruments</i>	EUR	EU Scoreboard	Annual [Time-series]	Not specified	EU27	Not specified					
All objectives / Results	Amount of investment aid granted under EAG	Quantitative Result Indicator	Total amount of investment aid granted under EAG [p.112]	EUR	[DG COMP]	Not specified	Not specified	EU27	See IA, p. 112					
All objectives / Results	Amount of operating aid granted under EAG	Quantitative Result Indicator	Total amount of operating aid granted under EAG [p.112]	EUR	[DG COMP]	Not specified	Not specified	EU27	See IA, p. 112					
All objectives / Results	Amount of SA granted under EAG per category	Quantitative Result Indicator	Total amount of SA granted under EAG per category (decontamination aid, CHP, standards, multi-disciplinary, RES+CHP, RES biofuels, RES other) [p. 113]	EUR	[DG COMP]	Not specified	Not specified	EU27	See IA, p. 113					
All objectives / Results	Number of SA measures approved under EAG per category	Quantitative Result Indicator	Total number of measures approved under the EAG per category [p. 113]	EUR	[DG COMP]	Not specified	Not specified	EU27	See IA, p. 113 [01/01/ 2008 and 15/06/2013]					
All objectives / Results	Amount of SA granted per Member State and per type of aid	Quantitative Result Indicator	Total amount of SA per Member State and per type of aid [p.112]	EUR	[DG COMP]	Not specified	Not specified	EU27	See IA, p. 112					
All objectives / Results	Number of measures falling outside the scope of EAG	Quantitative Result Indicator	Total number of measures falling outside the scope of EAG	Number	[DG COMP]	Not specified	Not specified	EU27	34 measures					
All objectives / Results	Aid intensity	Quantitative Result Indicator	Gross amount of aid expressed as a percentage of eligible costs [figures before deduction of tax or other charge] per	%	[DG COMP]	Not specified	Not specified	EU27	Not specified					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			beneficiary											
All objectives / Results	Amount of SA granted to support biofuels	Quantitative Result Indicator	Total amount of SA granted for biofuels	EUR	[DG COMP]	Not specified	Not specified	EU27	EUR 9.1 billion					
All objectives / Results	Number of schemes to support biofuels	Quantitative Result Indicator	Number of SA schemes to support the increased use of biofuels	Number	[DG COMP]	Not specified	Not specified	EU27	21 schemes (18 tax rebate and 3 direct grant schemes) (2008-2012)					
All objectives / Results	Number of decisions under Article 107(3) (c) TFEU	Quantitative Result Indicator	Number of decisions under Article 107(3) (c) TFEU	Number	[DG COMP]	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Total RES-e support in EU	Quantitative Result Indicator	Total amount of RES-electricity support expenditure	Million EUR	CEER, June 2013	Annual [Time-series]	Not specified	EU27	See report, p. 17					
Achieved 2020 targets and minimised distortive effects	RES-e support in EU per unit of final energy consumed	Quantitative Result Indicator	RES-electricity support per unit of final energy consumed	EUR / MWh	CEER, June 2013	Annual [Time-series]	Not specified	EU27	See report, p. 17					
Achieved 2020 targets and minimised distortive effects	RES support levels by technology in Europe [Average, Maximum, Minimum]	Quantitative Result Indicator	Support level per technology type (hydro, wind, biomass, biogas and waste, photo-voltaic, geo-thermal) [p.18]	EUR/MWh	CEER, June 2013	Annual [Time-series]	Not specified	EU27	See report, p. 18					
Achieved 2020 targets and minimised distortive effects	RES-e cost developments in EU for different technologies	Quantitative Result Indicator	RES-e cost developments in EU for different technologies [p. 18]	EUR EUR/MWh	JRC-SETIS analysis, 2012	Not specified	Not specified	EU27	See IA, p. 18					
Achieved 2020 targets and minimised distortive effects	Wholesale prices	Quantitative Result Indicator	Price of [electricity, energy] sold by wholesaler [p. 21]	EUR	Not specified	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Retail prices	Quantitative Result Indicator	Price of [electricity, energy] sold by retailer [p. 21]	EUR	Not specified	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Electricity supply	Quantitative Result Indicator	Aggregate quantity or amount of electricity supplied [p. 21]	MWh	Not specified [Eurostat]	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Electricity demand	Quantitative Result Indicator	Aggregate quantity of electricity estimated to be bought at a particular price [p. 21]	MWh	Not specified [Eurostat]	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Price elasticity of demand	Quantitative Result Indicator	Responsiveness, or elasticity, of the quantity demanded of energy to a change in its price [p. 79]		Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020	Costs of imbalances in	Quantitative	Costs created by	EUR	Not specified	Annual	Not	EU27	Not specified					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
targets and minimised distortive effects	the system / managing load variability [including costs to end consumers]	Result Indicator	imbalances in load variability [p. 21, 22]			[Time-series]	specified							
Achieved 2020 targets and minimised distortive effects	Balancing costs	Quantitative Result Indicator	Costs resulting from balancing responsibilities ² [p. 22]	EUR / MWh	IEA, 2006-2008	Not specified	Not specified	EU	See IA, p. 22					
Achieved 2020 targets and minimised distortive effects	Number of MSs requiring full balancing responsibilities	Quantitative Result Indicator	Number of MSs requiring full balancing responsibilities [p.22]	Number	Member States	Annual [Time-series]	Not specified	EU27	8 MSs					
Achieved 2020 targets and minimised distortive effects	RES-e production costs [may include depreciation costs]	Quantitative Result Indicator	<i>Costs related to production of RES-electricity</i> [p.33]	EUR / MWh	Not specified	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	RES-e market price	Quantitative Result Indicator	[p.33]	EUR	Not specified [Eurostat]	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Transaction costs	Quantitative Result Indicator	[p.33]	EUR	Not specified	Annual [Time-series]	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	RES project costs	Quantitative Result Indicator	Costs associated with RES-e projects for RES-e producers [p. 40]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Cost/revenue ratio	Quantitative Result Indicator	Cost/revenue ratio [resulting from market exposure to encourage technology development] [p. 41]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	<i>Degree of</i> market integration of RES-e producers	Qualitative Result Indicator	Extent to which RES-e producers are integrated on the market [p. 40]	--	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	<i>Degree of</i> investment risk for RES-e producers	Quantitative Result Indicator	Extent to which investment risk / investor certainty for RES-e producers is present [p. 40]	--	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Investment costs for RES-e producers	Quantitative Result Indicator	Costs associated with investments in RES-e by producers [p. 41]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Rate of return	Quantitative Result Indicator	<i>Annual income from an investment expressed as a proportion of the original</i>	%	Not specified	Not specified	Not specified	EU27	Not specified					

² Balancing responsibilities means responsibilities for deviation between generation, consumption and market deals (in all timeframes – market deals include sales and purchases on organised markets or between BRPs) of a BRP within a given imbalance settlement period.

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			<i>investment</i> [p.40, 21]											
Achieved 2020 targets and minimised distortive effects	Cost of capital	Quantitative Result Indicator	<i>Cost of a company's funds (both debt and equity): the required rate of return on a portfolio company's existing securities</i> [p. 40]	--	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	<i>Rate of deployment of immature RES-e technologies</i>	Quantitative Result Indicator	Rate of deployment of immature RES-e technologies [p. 42]	%	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects	Administrative burden for undertakings [RES-e producers]	Qualitative Result Indicator	Amount of administrative burden on undertakings that are RES-e producers	--	Not specified	Not specified	Not specified	EU27	EU27					
Achieved 2020 targets and minimised distortive effects	Administrative burden for national administrations	Qualitative Result Indicator	Amount of administrative burden on undertakings that are RES-e producers		Not specified	Not specified	Not specified	EU27	EU27					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Average real energy prices	Quantitative Result Indicator	Prices of energy adjusted for general price level changes over time, i.e., inflation or deflation [p. 23]	EUR	DG ECFIN, Energy Economic Developments in Europe	Annual [Time-series]	--	EU27	See IA, p. 23					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Trade intensity	Quantitative Result Indicator	<i>Ratio of two export shares: the share of the destination of interest in the exports of the region under study and the share of the destination of interest in the exports of the world as a whole</i> [p. 36]	%	[Eurostat?]	Annual [Time-series]	--	EU27	Not specified					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Electricity-intensity	Quantitative Result Indicator	<i>Ratio between the energy (electricity) consumption and the value added expressed in constant Euros</i> [p. 36]	EUR	[EEA Statistics]	Annual [Time-series]	--	EU27	Not specified					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Average electricity taxes and levies	Quantitative Result Indicator	Average taxes and levies for electricity per MSs [p. 23]	EUR	Not specified	Not specified	Not specified	EU27	See IA, p. 23					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Supplier costs for financing RES	Quantitative Result Indicator	Costs for suppliers for financing RES-e [p. 23]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	End user costs for financing RES	Quantitative Result Indicator	Costs for end users in financing RES-e [p. 23]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Achieved 2020 targets and minimised distortive effects/ Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Costs of greenhouse gas emissions due to EU ETS (indirect emission costs)	Quantitative Result Indicator	Costs resulting from greenhouse gas emissions	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	[Degree of market] competitiveness	Quantitative Impact Indicator	Extent to which competitiveness is affected by SA granted [p. 47]	-	Not specified	Not specified	Not specified	Not specified	Not specified					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Eligible sectors' share of industrial Gross Value Added	Quantitative Result Indicator	Exempt sectors' share of industrial GVA (average)	%	EC calculations based on EUROSTAT	Ad-hoc	--	Selected MSs	See IA, p. 48-50 (average 2009-2011)					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Reserve capacity margins	Quantitative Result Indicator	Share of available capacity over and above the capacity needed to meet normal peak demand levels [p. 25]	%	Cowi et al.	Ad-hoc	14 EU MSs have a reserve margin below 15% in 2020	Selected MSs	See IA, p. 25					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Investments in electricity generation	Quantitative Result Indicator	Amount of investments in electricity generation [p. 25]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Investments in energy infrastructure	Quantitative Result Indicator	Amount of investments in energy infrastructure [p. 25]	EUR	Not specified	Not specified	Not specified	EU27	Not specified					
Ensured required generation adequacy level of the Union's energy system while minimising competition	Annual cost of capacity remuneration	Quantitative Result Indicator	Total cost of capacity remuneration in million EUR	EUR	Cowi et al.	Ad-hoc	Not specified	EU27	See IA, p. 27					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
distortions														
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Annual cost of capacity remuneration per gross electricity generation	Quantitative Result Indicator	Annual cost of capacity remuneration per gross electricity generation	EUR/MWh	Cowi et al.	Ad-hoc	Not specified	EU27	See IA, p. 27					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Annual cost of capacity remuneration per committed capacity per year	Quantitative Result Indicator	Annual cost of capacity remuneration per committed capacity per year	EUR/MW /year	Cowi et al.	Ad-hoc	Not specified	EU27	See IA, p. 27					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Committed capacity MW	Quantitative Result Indicator	Not specified	MW	Cowi et al.	Ad-hoc	Not specified	EU27	See IA, p. 27					
Ensured required generation adequacy level of the Union's energy system while minimising competition distortions	Share of investments per technology out of total investments	Quantitative Result Indicator	Share of investments per technology (excluding investment under construction) [Share of base load, combined cycle gas turbine plants, peak units and CHP, dispatchable RES]	%	Cowi et al., 2013	Until 2020 2021-2030	--	EU	See IA, p. 52					
Reduced administrative burden	Assessment time periods [Time required for compatibility assessment between notification and Decision by the EC]	Quantitative Result Indicator	Amount of time required for performing a compatibility assessment by the European Commission before granting aid [P. 28]	Days/ Months	DG COMP	Not Specified	Not Specified	EU27	Not Specified					
Reduced administrative burden	Resources and time spent on assessing small cases	Quantitative Result Indicator	Amount of time and resources spent for assessing small cases [p. 29]	Days/Months FTEs/ EUR	Not Specified	Not Specified	Not Specified	EU27	Not Specified					
Reduced administrative burden	Number of rounds or request for additional information from the EC	Quantitative Result Indicator	Number of rounds of requests for information in cases where the notification submitted by the MSs is incomplete, unclear or the issues are too complex [p. 28]	Number	DG COMP	Not Specified	Not Specified	EU27	Not Specified					
Align and streamline SA rules	<i>Burden of information on the MSs</i>	Qualitative Result Indicator	Burden of information on MSs arising [p. 28]	--	MSs	Not Specified	Not Specified	EU27	Not Specified					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Align and streamline SA rules	<i>Degree of impact of the length of the procedure on investors' confidence and on delays in the start of the project</i>	Quantitative result Indicator	Extent to which the length of procedures leads to decreased investors' confidence and has an impact on the start of projects [p. 28]	--	Not Specified	Not Specified	Not Specified	EU27	Not Specified					
Align and streamline SA rules	Number of non-GBER environmental and energy measures adopted	Quantitative Result Indicator	Number of measures that would fall under the GEBR, could probably fall under the new GEBR, would not fall under the new GBER [p. 57]	Number	Not Specified	Not Specified	Not Specified	EU27	See IA, p. 57					
All objectives/Results	Share of/Number of jobs in the RES sector	Qualitative Result Indicator	Number of jobs in the RES sector [p. 45]	Number / %	Eurostat	Annual [Time-series]	Yearly	EU27	3 million jobs in 2020 [estimated]					
All objectives/Results	<i>Degree of/ Rate of innovation</i>	Qualitative Result Indicator	Extent to which the innovation takes in RES-e [p. 44]	--	Not specified	Not specified	Not specified	EU27	Not specified					

4. PROPOSED ADDITIONAL INDICATORS

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Contribute to achieving EU's environmental and energy policy objectives	Energy efficiency [per sector]*	Quantitative Impact Indicator	Intensity presented as a ratio between energy consumption (measured in energy units) and activity data (measured in physical units)	Value	IEA Indicators ³ Energy Union indicators ⁴	Periodical	Periodical	EU28	See IEA database See Energy Union factsheets					
Effective and efficient state aid control to the benefit of consumers	Fuel poverty meter	Quantitative Impact Indicator	Measure to assess income and living conditions. Based on average of three proxies: arrears on utility bills, inability to keep home adequately warm, dwellings with leakage and damp walls	%	Energy Union indicators ⁵	Periodical	Periodical	EU28	See Energy Union Indicators					
Achieved 2020 targets and minimised distortive effects	Expenditure in R&D in eco-innovation	Quantitative Result Indicator	Government environmental and energy R&D appropriations and outlays [% of GDP]	EUR/% of GDP	Eurostat	Annual [Time-series]	Annual	EU28	See Eurostat					
Achieved 2020 targets and minimised distortive effects	R&D personnel in eco-innovation	Quantitative Result Indicator	Total R&D personnel and researchers (% of total employment) in eco-innovation industry	Number	Eurostat	Annual [Time-series]	Annual	EU28	See Eurostat					
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of material input per unit output (% of total firms)	Quantitative Result Indicator	Amount of firms having implemented innovation activities aiming at a reduction of material input per unit output (% of total firms)	%	Eurostat	Periodic	Periodic	EU28	See Eurostat					

³ <http://www.iea.org/eeindicatorsmanual/>

⁴ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

⁵ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of energy input per unit output (% of total firms)	Quantitative Result Indicator	Amount of firms having implemented innovation activities aiming at a reduction of energy input per unit output (% of total firms)	%	Eurostat	Periodic	Periodic	EU28	See Eurostat					
Achieved 2020 targets and minimised distortive effects	Number of undertakings participating in competitive bidding processes	Quantitative Result Indicator	Number of undertakings participating in tendering processes per Member State / across the EU due to EEAG requirements	Number	Stakeholder consultation / Primary data collection	Annual [Time-series]	Annual	EU28	Not available					
Achieved 2020 targets and minimised distortive effects	Degree of transparency of competitive bidding processes	Qualitative Result Indicator	Extent to which stakeholders assess competitive bidding processes as being transparent	Scale	Stakeholder consultation	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					
Achieved 2020 targets and minimised distortive effects	Estimated costs for undertakings arising from the requirement to participate in competitive bidding	Quantitative Result Indicator	Amount of financial and human resources necessary for undertakings to tender as a result of the requirements of the SA rules	EUR / FTEs	Stakeholder consultation [Interviews]	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					
Achieved 2020 targets and minimised distortive effects	Estimated costs for administrative authorities arising from the requirement to participate in competitive bidding	Quantitative Result Indicator	Amount of financial and human resources necessary for administrative authorities to implement the requirements of the SA guidelines	EUR / FTEs	Stakeholder consultation [Interviews]	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					
Minimised distortions of competition and trade while limiting negative impact on competitiveness	Herfindahl Index for power generation	Quantitative Result Indicator	Market concentration index for power generation	Value	Energy Union indicators ⁶ European Commission based on ESTAT, CEER and	Periodical	Periodical	EU28	See Energy Union factsheets					

⁶ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
ess of EU firms					Platts Power Vision									
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Herfindahl Index for gas	Quantitative Result Indicator	Market concentration index for power gas supply	Value	Energy Union indicators ⁷ European Commission based on ESTAT, CEER and Platts Power Vision	Periodical	Periodical	EU28	See Energy Union factsheets					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Intra-EU trade as a % of GDP in energy	Quantitative Result Indicator	Absolute amount of intra-EU trade as a % of GDP in energy	%	[Eurostat]	Periodical	Periodical	EU28	See Eurostat					
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Actual incidence of firms relocating due to competitiveness issues on the European market	Quantitative Result Indicator	Share / Number of firms that <i>have re-located</i> their activities outside of the EU due to competitiveness issues [e.g. electricity price increases as a result of RES]	% or Number	European Restructuring Monitor [followed up with interviews with decision makers of relocated companies] ⁸	Annual [Time-series]	Annual [Time-series]	EU28	See European Restructuring Monitor					
Minimised distortions of competition and trade	Prospective incidence of firms relocating due to competitiveness issues on the European market	Quantitative Result Indicator	Share / Number of firms that <i>intend to re-locate</i> their activities outside of the EU due to competitiveness issues	% or Number	Stakeholder survey	Annual [Time-series]	Annual [Time-series]	EU28	See European Restructuring Monitor					

⁷ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

⁸ http://www.eurofound.europa.eu/observatories/emcc/erm/factsheets?ef_search=&shs_term_node_tid_depth=All&field_ef_announcement_date_value%5Bmin%5D%5Bdate%5D=&field_ef_announcement_date_value%5Bmax%5D%5Bdate%5D=&field_ef_type_of_restructuring_tid=1102&=Apply

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
while limiting negative impact on competitiveness of EU firms			[e.g. electricity price increases as a result of RES]											
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	Degree of interconnection of electricity market	%	Energy Union indicators ⁹ ENTSO-E scenario outlook and adequacy forecast 2014	Periodical	Periodical	EU28	See Energy Union factsheets					
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	Degree of interconnection of gas market	%	Energy Union indicators ¹⁰ ENTSO-E scenario outlook and adequacy forecast 2014	Periodical	Periodical	EU28	See Energy Union factsheets					
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Estimated costs of implementing state aid law [EAG] requirements	Quantitative Results Indicator	Costs of energy providers and authorities in connection to implementing state aid law requirements for a given period of time per MS/in the EU	EUR per year	Interviews with providers and authorities	Ad-hoc/ Annual	Ad-hoc/ Annual	EU28	Not available					
Focus on measures with high potential to distort competition/ Align and	Degree of coordination with other policies	Qualitative Result Indicator	Extent to which SA rules are coordinated with other policies	Scale	Interviews with providers and authorities	Ad-hoc/ Annual	Ad-hoc/ Annual	EU28	Not available					

⁹ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

¹⁰ https://ec.europa.eu/priorities/publications/national-factsheets-state-energy-union_en

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
streamline SA rules														
Focus on measures with high potential to distort competition/Align and streamline SA rules	Degree of legal certainty and transparency of the rules	Qualitative Result Indicator	Extent to which the rules are certain and the application is transparent of the rules	Scale	Interviews with providers and authorities	Ad-hoc/Annual	Ad-hoc/Annual	EU28	Not available					

Justification for the additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Contribute to achieving EU's environmental and energy policy objectives	Energy efficiency [per sector]*	Quantitative Impact Indicator	The aim of the revision of the rules is to assist the achievement of the 2020 renewable energy targets.
Effective and efficient state aid control to the benefit of consumers	Fuel poverty meter	Quantitative Impact Indicator	Fuel poverty can be an unintended consequence of market distortions which can arise due to inefficient state aid control.
Achieved 2020 targets and minimised distortive effects	Expenditure in R&D in eco-innovation	Quantitative Result Indicator	The revision of the rules also aims at supporting innovation in eco-technologies.
Achieved 2020 targets and minimised distortive effects	R&D personnel in eco-innovation	Quantitative Result Indicator	Ibid. supra.
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of material input per unit output (% of total firms)	Quantitative Result Indicator	The indicator is relevant for measuring market performance towards environmental targets.
Achieved 2020 targets and minimised distortive effects	Firms having implemented innovation activities aiming at a reduction of energy input per unit output (% of total firms)	Quantitative Result Indicator	The indicator is relevant for measuring market performance towards environmental targets.
Achieved 2020 targets and minimised distortive effects	Number of undertakings participating in competitive bidding processes	Quantitative Result Indicator	Competitive bidding processes are non-discriminatory bidding processes that provide for the participation of a sufficient number of undertakings and where the aid is granted. The indicator has the aim of monitoring participation of undertakings in such processes.
Achieved 2020 targets and minimised distortive effects	Degree of transparency of competitive bidding processes	Qualitative Result Indicator	The review has the aim of ensuring that transparent competitive bidding processes are developed. The indicator has the aim of measuring the extent to which such processes are in place.
Achieved 2020 targets and minimised distortive effects	Estimated costs for undertakings arising from	Quantitative Result Indicator	Undertakings are likely to incur some costs as a consequence of competitive bidding processes. The indicator has the aim of measuring the extent of such costs.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
	the requirement to participate in competitive bidding		
Achieved 2020 targets and minimised distortive effects	Estimated costs for administrative authorities arising from the requirement to participate in competitive bidding	Quantitative Result Indicator	Public authorities are likely to incur some costs as a consequence of competitive bidding processes. The indicator has the aim of measuring the extent of such costs.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Herfindahl Index for power generation	Quantitative Result Indicator	The indicator is a measure of market concentration on the electricity market.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Herfindahl Index for gas	Quantitative Result Indicator	The indicator is a measure of market concentration on the gas.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Intra-EU trade as a % of GDP in energy	Quantitative Result Indicator	The rules have the aim of ensuring that intra-EU trade in energy is undistorted. The indicator measures the effects of the rules.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Actual incidence of firms relocating due to competitiveness issues on the European market	Quantitative Result Indicator	The IA indicates that as a result of electricity price increases and decreased competitiveness, certain industrial sectors may relocate production outside. The indicator is designed to monitor the actual incidence of this phenomenon.
Minimised distortions of competition and trade while limiting negative impact on competitiveness of EU firms	Prospective incidence of firms relocating due to competitiveness issues on the European market	Quantitative Result Indicator	The IA indicates that as a result of electricity price increases and decreased competitiveness, certain industrial sectors may relocate production outside. The indicator is designed to monitor the prospective incidence of this phenomenon.
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	The review aims to avoid reducing incentives to invest in interconnection capacity.
Contribute to ensuring generation adequacy	Electricity interconnection capacity	Quantitative Result Indicator	The review aims to avoid reducing incentives to invest in interconnection capacity.
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Estimated costs of implementing state aid law [EAG] requirements	Quantitative Results Indicator	The review has the aim of reducing the administrative burden on undertakings and providers. The indicator monitors the extent to which the objective is achieved.
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Degree of coordination with other policies	Qualitative Result Indicator	The IA makes reference to the need to ensure coordination with other policies. The indicator has the aim of benchmarking the extent to which such coordination is achieved.
Focus on measures with high potential to distort competition/ Align and streamline SA rules	Degree of legal certainty and transparency of the rules	Qualitative Result Indicator	The review has the aim of increasing the legal certainty and transparency of the rules in what concerns state aid for environmental and energy purposes. The indicator has the aim of measuring the extent to which legal certainty and transparency are achieved.

IMPACT ASSESSMENT REPORT ON STATE AID MEASURES IN THE CONTEXT OF GREENHOUSE GAS EMISSION ALLOWANCE TRADING SCHEME

1. INTRODUCTION

The Impact Assessment analysed the review of Guidelines on certain State Aid measures in the context of Greenhouse Gas Emission Allowance Trading Scheme.

The following sections include the results of the work on mapping the monitoring indicators utilised in the Impact Assessment on Guidelines on certain State Aid measures in the context of Greenhouse Gas Emission Allowance Trading Scheme. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

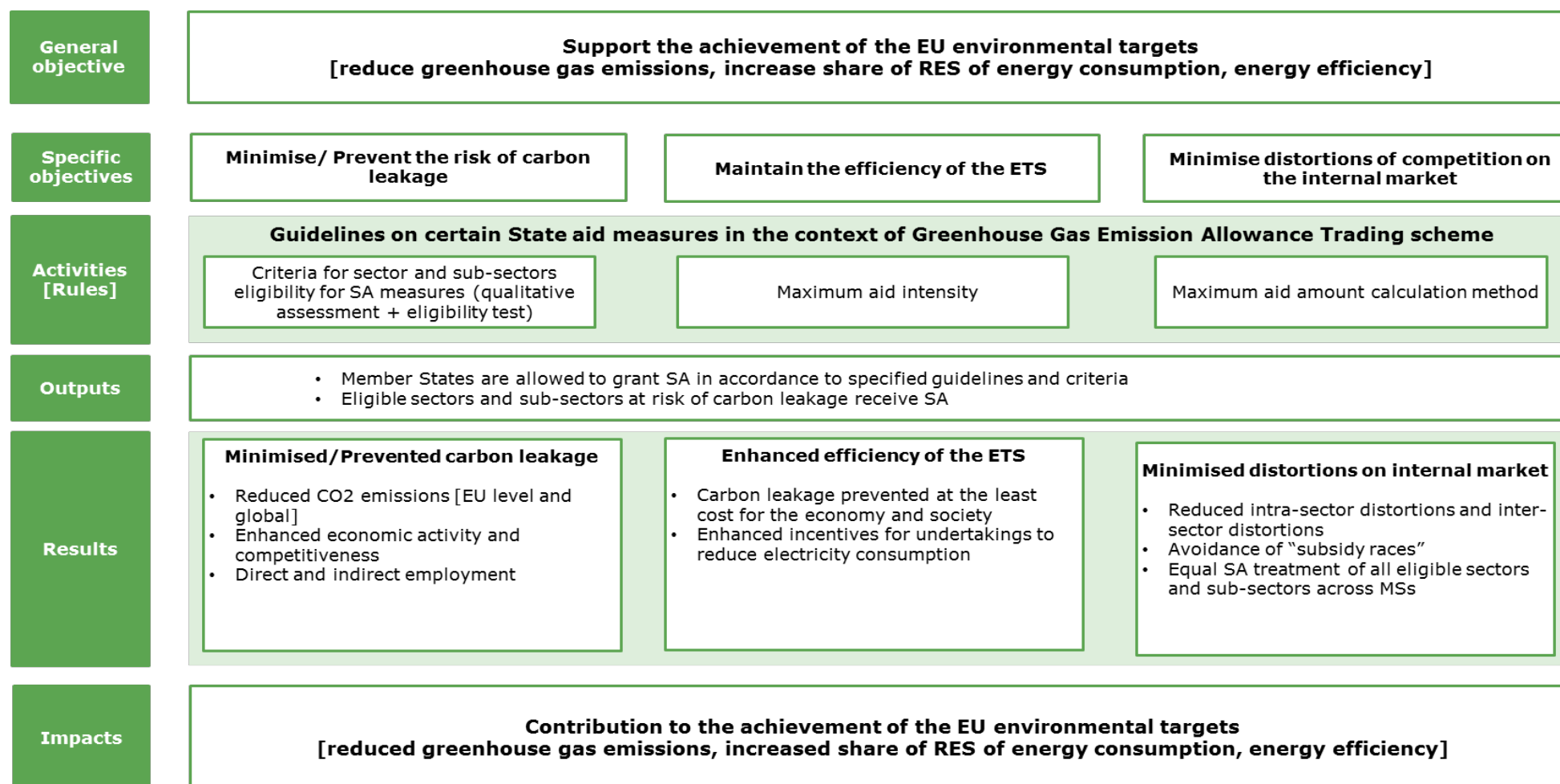
The intervention logic has been drafted based on the Impact Assessment Guidelines on certain State Aid measures in the context of Greenhouse Gas Emission Allowance Trading Scheme.

The IA identifies a number of problems that the Guidelines are aimed at clarifying and solving. An overview of the problems identified in the Impact Assessment [needs] is presented below.

Problem definition	<ul style="list-style-type: none">→ Carbon leakage due to indirect CO₂ costs and related uncertainties. Carbon leakage is the prospect of an increase in global greenhouse gas emissions when companies shift production outside the Union because they cannot pass on the cost increases induced by the EU ETS to their customers without significant loss of market share.→ 'Production leakage' , i.e. loss of market share to non-EU competitors due to 'asymmetric' costs impacting EU firms→ 'Investment leakage', i.e. investments in the EU deemed to be less profitable compared to non-CO₂ constrained jurisdictions (in extreme forms – plant closure and relocation of activities to countries without comparable CO₂ constraints)
---------------------------	---

In connection to the "problems" [needs] presented above, a number of general and specific objectives are identified in the Impact Assessment. They are presented in the intervention logic below.

Figure 1: Intervention logic



Note: The Impact Assessment states that the general objective of the initiative is to "Adopt, under the State aid provisions of the TFEU (Article 107(3)), Guidelines for the assessment of State aid for indirect CO2 costs arising in the context of ETS 3". However, the manner in which the general objective is defined is not aligned with the definition of a general objective of the Better Regulation.

3. MAPPING OF INDICATORS

As part of this piloting exercise, a mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic font*.

Table 1: Indicators Impact Assessment

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Contribution to achievement of EU environmental targets	Total amount of greenhouse gas emissions	Quantitative Impact Indicator	[Reduction in] the amount of greenhouse gas emissions [per year] [p. 21]	Tonnes	Eurostat	Annual [Time-series]	Yearly	EU28	See Eurostat					
Contribution to achievement of EU environmental targets	Amount of greenhouse gas emissions per sector	Quantitative Impact Indicator	[Reduction in] the amount of greenhouse gas emissions per sector [per year] [p. 268]	Tonnes	European Commission	Periodic	Periodic	EU28	See IA, p. 268					
Contribution to achievement of EU environmental targets	Amount of greenhouse gas emissions of ETS sectors	Quantitative Impact Indicator	[Reduction in] the amount of greenhouse gas emissions of ETS sectors [per year]	Tonnes	European Commission	Periodic	Periodic	EU28	See IA, Annex, p. 39					
Contribution to achievement of EU environmental targets	Amount of greenhouse gas emissions of non-ETS sectors	Quantitative Impact Indicator	[Reduction in] the amount of greenhouse gas emissions of non-ETS sectors [per year] [Annex]	Tonnes	European Commission	Periodic	Periodic	EU28	See IA, Annex, p. 39					
Contribution to achievement of EU environmental targets	Indirect CO2 emissions	Quantitative Impact Indicator	Greenhouse gas emissions associated with the purchase of electricity, heating, cooling or steam [p. 269]	Tonne	Not specified	Annual [Time-series]	Yearly	EU28	[Energy statistics, IEA]					
Contribution to achievement of EU environmental targets	Direct CO2 emissions	Quantitative Impact Indicator	Greenhouse gas emissions associated with the direct consumption of energy sources [p. 269]	Tonne	Not specified	Annual [Time-series]	Yearly	EU28	[Energy statistics, IEA]					
Contribution to achievement of EU environmental targets	CO2 factor [CO2 intensity]	Quantitative Impact Indicator	Amount of CO2 in tonnes used to produce one MWh of electricity [p. 19]	Tonne	[Eurostat]	Annual	Not specified	EU28	From 0 to CO2-free electricity production to more than 1 tonne of CO2 (per MWh) in case of lignite					
Contribution to achievement of EU environmental targets	Share of RES from the overall energy	Quantitative Impact	Share of RES as a percentage of the total	%	Eurostat	Annual [Time-	Yearly	EU28	See Eurostat					

¹ i.e. when does the data become available?

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
	consumption	Indicator	energy consumption [p. 21]			series]								
Contribution to achievement of EU environmental targets	Energy efficiency	Quantitative Impact Indicator	Not specified [p. 21]	-	Energy statistics, IEA	Not specified	Not specified	EU28	Energy statistics, IEA					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Indirect CO2 costs	Quantitative Result Indicator	Costs relating to CO2 emissions due to the EU ETS passed on in electricity prices [p. 17]	EUR	Not specified	Not specified	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Direct CO2 costs	Quantitative Result Indicator	Costs relating to CO2 emissions due to own use of mainly gas and coal [p. 10]	EUR	Not specified	Not specified	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Average CO2 price	Quantitative Result Indicator	Average price for CO2 emissions [p. 17]	EUR	Not specified	Not specified	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	CO2 floor price	Quantitative Result indicator	CO2 price above which compensation is given [p. 97]	EUR	Not specified	Not specified	Not specified	Not specified	Not specified					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Direct CO2 costs as share of sector gross value added	Quantitative Result Indicator	Direct costs as a percentage of the sector's/subsector's gross value added [p. 17]	%	Specialised literature	Ad-hoc	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Direct CO2 costs as share of GDP	Quantitative Result Indicator	Direct costs as a percentage of the GDP [p. 17]	%	Specialised literature	Ad-hoc	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Indirect CO2 costs as share of sector gross value added	Quantitative Result Indicator	Indirect costs as a percentage of the sector's/subsector's gross value added [p. 17]	%	Specialised literature	Ad-hoc	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Indirect CO2 costs as share of GDP	Quantitative Result Indicator	Indirect costs as a percentage of the GDP [p. 17]	%	Specialised literature	Ad-hoc	Not specified	EU28	See IA, p. 12					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Aggregated cost impact (direct and indirect CO2 costs)	Quantitative Impact Indicator	Aggregate direct and indirect CO2 costs as % of GDP [measuring the impact that CO2 costs would have on the GDP]	% of GDP	Eurostat, EC calculations	Ad-hoc	Not specified	EU28	0.58% of EU GDP					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Pass on rates	Quantitative Result Indicator	Pass on costs of CO2 in electricity prices by the electricity producers of the sectors concerned [p. 16]	EUR	Academic literature see p. 16	Ad-hoc	Not specified	EU28	See IA, p. 16					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Total GDP impact resulting from indirect CO2 costs	Quantitative Result Indicator	Impact on GDP resulting from indirect CO2 costs	%	EC calculations	Ad-hoc	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Maintained the	Trends in electricity production in EU	Quantitative Result	Trends in electricity production in EU [p. 239]	TWh	IEA	Annual	Yearly	EU 27	See IA, p. 239					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
efficiency of the ETS		Indicator												
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Gross power generation mix by source	Quantitative Result Indicator	Gross power generation mix by source in TWh [p. 240]	TWh	DG ENER	Periodic	Periodic	EU	See IA, p. 240					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Fuel structure of electricity generation	Quantitative Result indicator	Share of electricity generation per fuel type [p. 240]	% / Production TWh	Droge, 2009	Not specified	Not specified	Not specified	See IA, p. 240					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Share of low carbon technologies in power generation	Quantitative Result indicator	Share of power generated from low carbon technologies [p. 240]	% of electricity generation	European Commission, PRIMES	Periodic	Periodic	Not specified	See IA, p. 241					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Share of fossil and non-fossil powered electricity production in the EU	Quantitative Result Indicator	Amount of fossil and non/fossil powered electricity production in the EU [p. 37]	%	IFIEC (2008)	Not specified	Not specified	EU28	See IA, p. 37					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	Electricity prices per regions	Quantitative Result Indicator	Prices of electricity per region	EUR	European Commission	Not specified	Not specified	EU28	See IA, p. 38					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	EU ETS and carbon leakage [Potential shift in production]	Quantitative Result Indicator	"Has your company considered moving production outside the EU ETS area because of carbon costs?" [Annex]	% of respondents	Stakeholder consultation, Point Carbon 2011	Once	Once	Not specified	Point Carbon 2011					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	EU ETS and carbon leakage [Shift in production]	Quantitative Result Indicator	"Has your company moved production outside?" [Annex]	% of respondents	Stakeholder consultation, Point Carbon 2011	Once	Once	Not specified	Point Carbon 2011					
Prevented the risk of carbon leakage / Maintained the efficiency of the ETS	International states with mandatory cap-and-trade at national level	Quantitative Result Indicator	"Which of the countries below will have mandatory cap-and-trade at the national level in 2016?" [p. 20]	%	Point Carbon 2011	Once	Once	Not specified	Point Carbon 2011					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	<i>Shifts of production</i>	Quantitative Result Indicator	<i>Shift of production as a result of ETS costs</i> [p. 8]	-	Not specified	Not specified	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	<i>Shifts of investments</i>	Quantitative Result Indicator	<i>Shift of investments as a result of ETS costs</i> [p. 8]	-	Not specified	Not specified	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	<i>Relocation of EU firms to TC</i>	Quantitative Result Indicator	<i>Relocation of EU firms to TCs without CO2 restrictions</i> [p. 8]	-	Not specified	Not specified	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Minimised distortions	Trade intensity	Quantitative Result Indicator	Ratio between the total value of exports to third countries plus the value of imports	%	Eurostat	Annual	Yearly	EU28	Not specified					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
on the internal market			from third countries and the total market size for the Union (annual domestic turnover of Union companies plus total imports from third countries) as per Eurostat statistics [p. 24]											
Prevented the risk of carbon leakage / Minimised distortions on the internal market	Trade flows	Quantitative Result Indicator	Trade flows as percentage of domestic production in EU	%	Barron et al, 2008	Annual	Once	EU25	See IA, p. 242					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	Volumes of electricity traded in the EU's main markets	Quantitative Result Indicator	Volumes of electricity traded in the EU	TWh	DG ENER	Not specified	Not specified	Not specified	Not specified					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	Trade with extra-EU partners [iron, steel, cement]	Quantitative Result Indicator	Amount of exports and imports with extra-EU partners	%	Not specified	Ad-hoc	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	Armington elasticities	Quantitative Result Indicator	Price elasticity of demand in the context of trade between EU and non-EU countries covering the sectors and sub-sectors potentially concerned by carbon leakage ² [p.15, 30]	-	Not specified	Ad-hoc	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage / Minimised distortions on the internal market	Price elasticity of exports and import [in Western Europe]	Quantitative Result Indicator	Not specified	Value	CBP/RIVM	Not specified	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage	Impact of the package on employment in EU 27 in percentage difference base	Quantitative Result Indicator	Impact of the package on employment in EU 27 in percentage difference base	%	European Commission	Ad-hoc	Once	EU28	See IA, p. 272					
Prevented the risk of carbon leakage	Impact of the package on wages in EU 27 in percentage difference base	Quantitative Result Indicator	Impact of the package on wages in EU 27 in percentage difference base	%	European Commission	Ad-hoc	Once	EU28	See IA, p. 272					
Prevented the risk of carbon leakage	Net employment effect	Quantitative Result Indicator	Loss of employment / new ["green"] jobs [per sector]	%	Not specified	Annual	Yearly	EU28	Not specified					
Prevented the risk of carbon leakage	Annual employment growth per sector	Quantitative Result	Annual increase in employment per relevant	%	Eurostat	Annual	Yearly	EU28	Eco-innovation: Between 1999					

² International demand elasticity measuring the degree of substitution between domestic and imported goods

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
		Indicator	sector as a percentage						and 2008 averaged around 179.000 jobs per year , 7% growth					
Prevented the risk of carbon leakage	Share of sector employment of the total EU employment	Quantitative Result Indicator	Percentage of employment per sector out of total EU employment	%	Eurostat	Annual	Yearly	EU28	Not specified					
Prevented the risk of carbon leakage	Degree of labour market flexibility	Qualitative Result Indicator	Not specified	-	Not specified	Not specified	Not specified	EU28	Not specified					
Prevented the risk of carbon leakage	Direct employment	Quantitative Result Indicator	Number of jobs generated by a sector	Number	Eurostat	Annual	Yearly	EU28	Not specified					
Prevented the risk of carbon leakage	Indirect employment	Quantitative Result Indicator	Number of jobs generated in a sector by activity in a another sector	Number	Not specified	Annual	Yearly	EU28	Not specified					
Maintained the efficiency of the ETS	Absolute value of electricity consumed by EU industry	Quantitative Result Indicator	Total estimated value of electricity consumed by EU industry [p. 10]	EUR	Eurostat	Annual	Yearly	EU28	EUR 100 BN a year					
Maintained the efficiency of the ETS	Number of free EUAs per installation	Quantitative Impact Indicator	Number of free EUAs per installation [p. 10]	Number	Not specified	Not specified	Not specified	EU28	Not specified					
Maintained the efficiency of the ETS	EUAs prices	Quantitative Impact Indicator	Prices for EU allowances to emit CO2	EUR/tCO2	Point Carbon	Periodic	Periodic	Not specified	Point Carbon					
Maintained the efficiency of the ETS	Electricity consumption by sectors	Quantitative Result Indicator	Final electricity consumption by sector [p. 14]	TWh	Eurostat [at a high level of aggregation]	Annual	Yearly	EU28	See Eurostat					
Maintained the efficiency of the ETS	Electricity consumption by sub-sectors	Quantitative Result Indicator	Final electricity consumption by sub-sector [p. 14]	TWh	Not available	Not available	Not available	EU28	Not available					
Maintained the efficiency of the ETS	Electricity generated by industrial installations (auto-generation)	Quantitative Result Indicator	Amount of electricity generated by industrial installations [p. 14]	TWh	Not available	Not available	Not available	EU28	Not available					
Maintained the efficiency of the ETS	Electricity purchased from the electricity grid	Quantitative Result Indicator	Amount of electricity purchased from the electricity grid [p. 15]	TWh	Not available	Not available	Not available	EU28	Not available					
Maintained the efficiency of the ETS	CO2 per electricity output	Quantitative Result Indicator	Amount of tonnes of CO2 generated per MWh	Tonnes CO2 / MWh	DG COMP	Annual	Yearly	EU27	See IA, p. 270					
Maintained the efficiency of the ETS	CO2 per electricity output (comparison with EU average)	Quantitative Result Indicator	Average national CO2 generated compared with the EU average	%	DG COMP	Annual	Yearly	EU27	See IA, p. 270					
Maintained the efficiency of the ETS	[Energy] supply	Quantitative Result	Amount of [energy] available for purchase at any specified	MW	Eurostat	Annual	Yearly	EU28	See Eurostat					

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Maintained the efficiency of the ETS	[Energy] demand	Quantitative Result Indicator	price Amount of [energy] available for purchase at any specified price	MW	Eurostat	Annual	Yearly	EU28	See Eurostat					
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Extent to which comparable CO2 constraints are imposed on non-EU firms	Qualitative Result Indicator	Presence of CO2 constraints imposed on non-EU firms [p. 18]	-	Not specified	Not specified	Not specified	EU28	Not specified					
Minimised distortions on the internal market	Exchangeability of fuel and electricity	Qualitative Result Indicator	Benchmark of exchangeability of fuel and electricity	Benchmark value	2011 Benchmarking Decision	Once	Once	Not applicable	See IA, Annex 9					
Minimised distortions on the internal market	Degree of substitutability between insulated and non-insulated sectors	Qualitative Result Indicator	Extent to which sectors that are not eligible for aid are substitutable with sectors that are eligible	-	Not specified	Not specified	Not specified	Not applicable	Not specified					
Minimised distortions on the internal market	[Degree of uncertainty] concerning the use of provisions by the Member States	Qualitative Result Indicator	Extent to which Member States will use the provisions on state aid	-	Not specified	Not specified	Not specified	Not applicable	Not specified					
Minimised distortions on the internal market	Opportunity costs	Quantitative Result Indicator	Amount of opportunity costs incurred by installations receiving free EUAs as compensation for CO2 costs	-	Not specified	Not specified	Not specified	Not applicable	Not specified					
All objectives / results	Amount of low-carbon investments	Quantitative Result Indicator	Amount of low-carbon investments	Number	Not specified	Annual	Yearly	EU28	Not specified					
All specific objectives/results	Administrative burden for MSs and aid beneficiaries	Qualitative Result Indicator	Amount of administrative burden for MSs and aid beneficiaries arising from the implementation of the SA rules	-	Not specified	Not specified	Not specified	EU28	Not specified					
All specific objectives/results	Aid intensity	Quantitative Output Indicator	Amount of aid expressed as a percentage of the eligible costs [p. 8]	%	DG COMP / MSs	Not specified	Not specified	EU28	Not specified					
All specific objectives/results	Aid amount per sector	Quantitative Output Indicator	Amount of aid granted per sector [p. 69]	EUR	DG COMP / MSs	Not specified	Not specified	EU28	Not specified					
All specific objectives/results	Aid amount per eligible installation	Quantitative Result Indicator	Amount of aid granted per eligible installation [p.9]	EUR	Not specified	Not specified	Not specified	EU28	Not specified					
All specific objectives/results	Operating aid	Quantitative Output Indicator	Amount of operating aid granted ³	EUR	Not specified	Not specified	Not specified	EU28	Not specified					
All specific	Investment aid	Quantitative	Amount of investment aid	EUR	Not specified	Not	Not	EU28	Not specified					

³ Relieves undertakings of day-to-day costs that they would normally bear without requiring a counterpart such as an investment that would not have been undertaken without the aid

Objective / Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timelines ¹	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
objectives/results		Output Indicator	granted			specified	specified							
All specific objectives/results	Gross value added [per sector]	Quantitative Output Indicator	Sectors sales minus intermediate consumption [p. 24]	%	Eurostat	Annual	Yearly	Not specified	See Eurostat					
All specific objectives/results	Share of value added in total economy per sector	Quantitative Output Indicator	Share of value added in total economy per sector	%	Eurostat	Annual	Yearly	EU28	See Eurostat					
All specific objectives/results	Share of value added in the non-financial business economy (%)	Quantitative Output Indicator	Not specified	%	Eurostat	Annual	Yearly	Not specified	See IA, p. 254					
All specific objectives/results	Most specialised Member States by activity	Quantitative Output Indicator	As percentage of national value added in the non-financial business economy	%	Eurostat	Not specified	Periodic	Not specified	See IA, p. 264					
All specific objectives/results	Most specialised activities	Quantitative Output Indicator	As percentage of national value added in the non-financial business economy	%	Eurostat	Not specified	Periodic	Not specified	See IA, p. 265					
All specific objectives/results	Most specialised region by activity	Quantitative Output Indicator	As percentage of total non-financial business economy employment of the region and the median and average share of the region	%	Eurostat Regional Yearbook	Not specified	Periodic	Not specified	See IA, p. 265					
All specific objectives/results	Most specialised regions in different activities	Quantitative Output Indicator	As percentage of non-financial business economy employment	%	Eurostat	Not specified	Periodic	Not specified	See IA, p. 267					
All specific objectives/results	Average yearly total investments	Quantitative Output Indicator	Average yearly total investments	EUR	European Commission	Annual	Periodic	Not specified	See IA, p. 268					
All specific objectives/results	Average yearly fuel expenses	Quantitative Output Indicator	Average yearly fuel expenses	EUR	European Commission	Annual	Periodic	Not specified	See IA, p. 268					
All specific objectives/results	Distribution of EU countries by GDP shares of manufacturing and market services	Quantitative Output Indicator	Distribution of EU countries by GDP shares of manufacturing and market services						See IA, p. 63					
All specific objectives/results	Value-added of selected sectors on a standalone basis	Quantitative Output Indicator	Value-added of selected sectors on a standalone basis	%	Eurostat	Annual	Yearly	EU28	See IA, p. 61					
All specific objectives/results	Value added of the value chains	Quantitative Output Indicator	Value added of the value chains	%	Eurostat	Annual	Yearly	EU28	See IA, p. 61					
All specific objectives/results	Value added of energy-intensive industries in EU	Quantitative Output Indicator	Value added of energy-intensive industries in EU	%	Eurostat	Annual	Yearly	EU28	See IA, p. 62					

4. PROPOSED ADDITIONAL INDICATORS

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Supported the achievement of the EU environmental targets	Energy efficiency [per sector]	Quantitative Impact Indicator	Intensity presented as a ratio between energy consumption (measured in energy units) and activity data (measured in physical units)	Value	IEA Indicators ⁴	Annual	Annual	EU28	See IEA indicators					
Supported the achievement of the EU environmental targets	Reduction in CO2 as a result of SA intervention	Quantitative Impact Indicator	Trends in the amount of greenhouse gas emissions of undertakings where a SA intervention has occurred [in a selected number of cases]	%	Ex-post primary data collection	Ad-hoc	Ad-hoc	Sample of cases	Not available					
Prevented carbon leakage/ Maintained the efficiency of the ETS	Abatement cost	Quantitative Result Indicator	Calculated as the annual additional operating cost (including depreciation) less potential cost savings (for example, for reduced energy consumption) divided by the amount of emissions avoided. Possible costs for implementing a system to realize the abatement approaches are not included.	EUR/tonne	McKinsey	Ad-hoc	Ad-hoc	EU28	See McKinsey reports					
Maintained the efficiency of the ETS	Estimated costs for electricity generators arising from retrofitting and upgrading infrastructure and implementing clean	Quantitative Result Indicator	Estimated costs for electricity generators arising from retrofitting and upgrading infrastructure and implementing clean technologies	EUR	Stakeholder consultation [interviews with electricity generators]	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					

⁴ <http://www.iea.org/eeindicatorsmanual/>

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
	technologies													
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Share of/Number of cases of relocation of activities to countries without comparable CO2 constraints	Number	European Restructuring Monitor [followed up with interviews with decision makers of relocated companies] ⁵	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Trends in the share of the industry [per sector] out of total employment [Changes in employment over time can be an proxy for relocation of firms]	Number/%	Employment Statistics [Eurostat] complemented with follow up interviews to investigate the reasons for relocation in specific sectors	Annual / Ad-hoc	Annual / Ad-hoc	EU28	See Eurostat [full baseline not available]					
Maintained the efficiency of the ETS	Prospective incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Share / Number of firms that <i>intend to re-locate</i> their activities to countries without comparable CO2 constraints	% or Number	Stakeholder survey	Annual / Ad-hoc	Annual / Ad-hoc	EU28	Not available					
Maintained the efficiency of the ETS	Number of plant closures as a consequence of CO2 costs	Quantitative Result Indicator	Number of plant closures as a consequence of CO2 costs [as a result of investment leakage]	Number	European Restructuring Monitor [Closure] Stakeholder consultation / [follow up interviews or survey]	Annual	Annual	EU28	Not available					
Maintained the efficiency of the ETS /	Competitiveness of EU industry [per sector]	Quantitative Result Indicator	Comparison of electricity prices within the EU with prices outside the EU	Number	IEA Statistics – Energy	Annual	Annual	EU28 or sample	See IEA					

⁵http://www.eurofound.europa.eu/observatories/emcc/erm/factsheets?ef_search=&shs_term_node_tid_depth=All&field_ef_announcement_date_value%5Bmin%5D%5Bdate%5D=&field_ef_announcement_date_value%5Bmax%5D%5Bdate%5D=&field_ef_type_of_restructuring_tid=1102&=Apply

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Minimised distortions on the internal market			[per sector]		Prices and Taxes [Online data service/ Quarterly]									
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Competitiveness of EU industry [per sector per Member States]	Quantitative Result Indicator	Relative share of electricity prices out the total production costs [per sector per Member State – for sectors where the ETS guideline has an effect -] –	%	Stakeholder consultation [interviews with major companies electricity consumers per sector per Member State/sample]	Annual	Annual	EU28 or sample	Not available					
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Investments in energy technology RD&D	Quantitative Result Indicator	Gross domestic expenditure on RD&D energy technology	Number	IEA [for IEA countries]	Annual	Annual	EU28 or sample	See IEA					
Minimised distortions on the internal market	Number of Member States granting support and Member States not granting support per sector	Quantitative Result Indicator	Number of Member States granting support and Member States not granting support per sector [This can be compared to the degree of substitutability of materials and products manufactured by different sectors receiving / not receiving support]	Number	Stakeholder consultation / survey	Annual	Annual	EU28	Not available					
Minimised distortions on the internal market	Number of cases where the full text of all final aid schemes is published and communicated on the Internet	Quantitative Result Indicator	Number of cases where the full text of all final aid schemes is published and communicated on the Internet [According to the Guidelines the EC is supposed to be informed of internet sites where concerned authorities publish the full text of all final state aid schemes – This has	Number	European Commission, Member States	Annual	Annual	EU28	Not available					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
			the aim of increasing transparency]											

Justification for the additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Supported the achievement of the EU environmental targets	Energy efficiency [per sector]	Quantitative Impact Indicator	The indicator would be relevant to measure progress towards the achievement of the EU energy and environmental targets.
Supported the achievement of the EU environmental targets	Reduction in CO2 as a result of SA intervention	Quantitative Impact Indicator	The indicator would help track the effects of SA on reducing CO2 emissions by collecting data before and after a SA intervention occurred in a specific number of cases where undertakings falling in the scope of the Guidelines received SA.
Prevented carbon leakage/ Maintained the efficiency of the ETS	Abatement cost	Quantitative Result Indicator	The abatement cost for wind power, for example, should be understood as the additional cost of producing electricity with this zero-emission technology instead of the cheaper fossil fuel-based power production. Useful to measure the competitiveness of zero-emission technology and to measure the extent to which costs impacting undertakings are asymmetric.
Maintained the efficiency of the ETS	Estimated costs for electricity generators arising from retrofitting and upgrading infrastructure and implementing clean technologies	Quantitative Result Indicator	Indicator relevant to assess the competitiveness of the market and potential impacts of legislation on the competitiveness of electricity generators.
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Indicator relevant to measure the production and investment leakage.
Maintained the efficiency of the ETS	Actual incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Indicator relevant to measure the production leakage.
Maintained the efficiency of the ETS	Prospective incidence of firms relocating to countries without comparable CO2 constraints	Quantitative Result Indicator	Indicator relevant to measure the possible production and investment leakage.
Maintained the efficiency of the ETS	Number of plant closures as a consequence of CO2 costs	Quantitative Result Indicator	Indicator relevant to measure the production leakage.
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Competitiveness of EU industry [per sector]	Quantitative Result Indicator	Indicator relevant to assess the competitiveness of EU industry.
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Competitiveness of EU industry [per sector per Member States]	Quantitative Result Indicator	Indicator relevant to assess the competitiveness of EU industry.
Maintained the efficiency of the ETS / Minimised distortions on the internal market	Investments in energy technology RD&D	Quantitative Result Indicator	Indicator relevant to assess potential investment leakage.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Minimised distortions on the internal market	Number of Member States granting support and Member States not granting support per sector	Quantitative Result Indicator	Indicator relevant to measure asymmetries on the market and distortion of competition.
Minimised distortions on the internal market	Number of cases where the full text of all final aid schemes is published and communicated on the Internet	Quantitative Result Indicator	Indicator measuring the transparency of state aid scheme processes.

IMPACT ASSESSMENT REPORT ON COMMUNICATION FROM THE COMMISSION FRAMEWORK FOR STATE AID FOR RESEARCH AND DEVELOPMENT AND INNOVATION

1. INTRODUCTION

In 2014, the European Commission conducted an Impact Assessment to assess the impact of a change in the EU Framework for state aid for research and development and innovation.

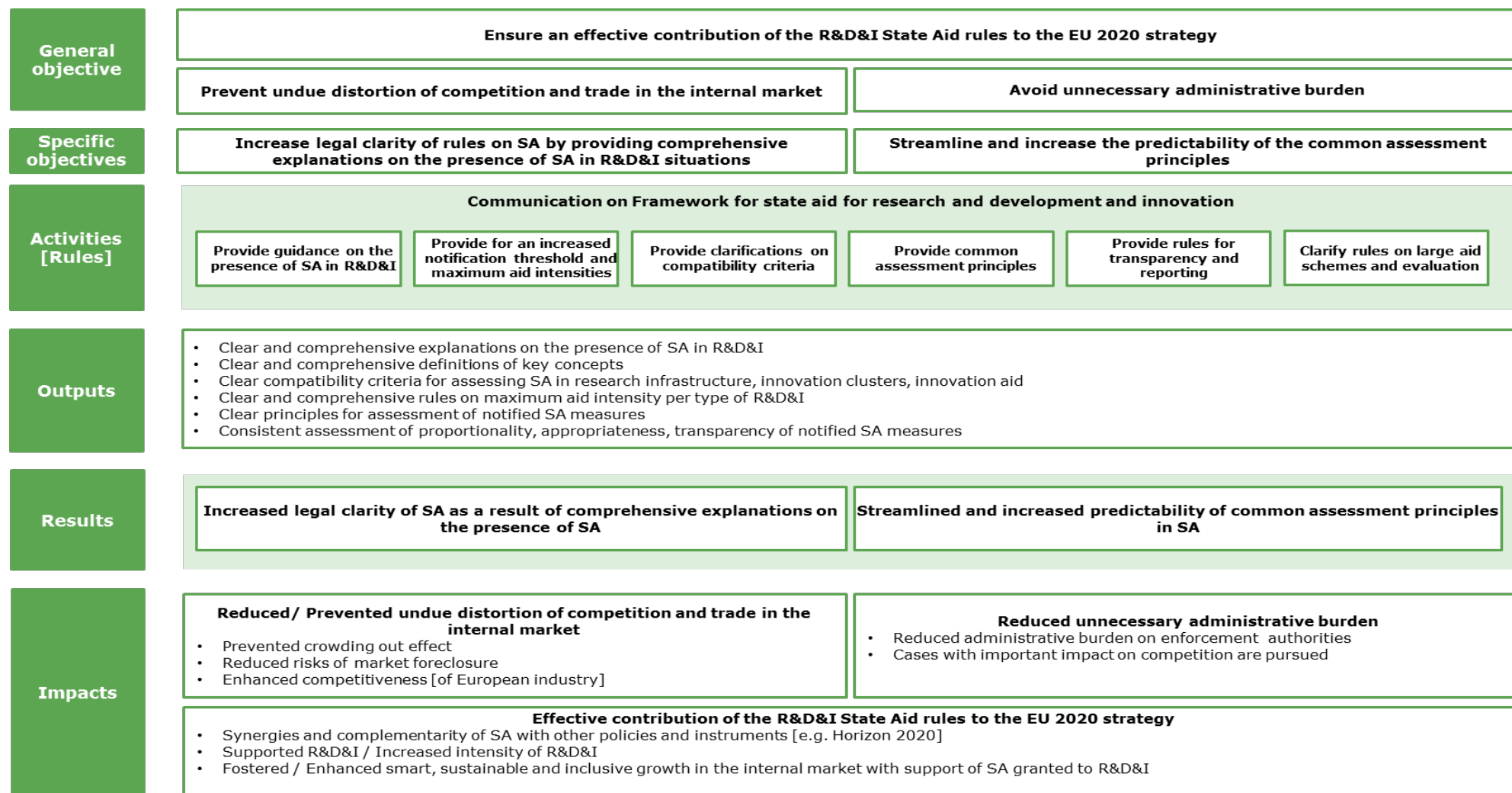
The following sections include the results the mapping of monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

The intervention logic has been drafted based on the Impact Assessment conducted by the European Commission. As stated in the Impact Assessment, the review of the rules had the aim of tackling several problems which are presented in the table below.

Problem definition	➔ Inadequacy, lack of legal clarity and lack of legal certainty of the rules concerning R&D&I state aid for pursuing activities related to EU's growth objectives
---------------------------	---

Figure 1: Intervention logic



Source: Ramboll, Based on Impact Assessment Report, SWD (2014) 163

3. MAPPING OF INDICATORS

A mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic* font.

Table 1: Indicators Impact Assessment

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeline ¹	Indicator or coverage	Baseline	RACER assessment				
										R	A	C	E	R
Effective contribution of SA to EU2020 / Foster growth	Intensity of R&D&I	Quantitative Impact Indicator	Gross domestic expenditure on R&D as a percentage of GDP	%	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	2.06% of GDP (2012) [3% (according to the EU2020)]					
Effective contribution of SA to EU2020 / Foster growth	[Estimated] funding needs for research infrastructure	Quantitative Impact Indicator	Amount of funding necessary for building of research infrastructure	EUR	European Strategy Forum on Research Infrastructure	Ad-hoc	-	EU	EUR 100 bn up to 2020					
Effective contribution of SA to EU2020 / Foster growth	Rate of development of new or improved products and service	Qualitative Impact Indicator	Rate at which new products and services enter the market	-	-	-	-	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	Number of enterprises supported to introduce new products or services on the market	Quantitative Impact Indicator	Number of enterprises supported to introduce new products or services on the market	Number	-	Annual [Time series]	-	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	Profitability of R&D investments	Quantitative Impact Indicator	Not specified	Number / %	Stakeholder assessment	Annual [Time series]	-	EU	Biotechnology: Estimated that every 1 EUR invested in research will result in a 10x return					
Effective contribution of SA to EU2020 / Foster growth	[Trends in] Total factor productivity per MS	Quantitative Impact Indicator	Change in total factor productivity per MS per year	Number	Innovation Union Competitive ness report	Annual [Time series]	-	EU	Not available					
Effective contribution of SA to EU2020 /	Increased employment	Quantitative Impact Indicator	Number of jobs created as a result on investments in	Number / %	Eurostat	Annual [Time	-	EU	With 3% of GDP – 3.7 million jobs created by 2020					

¹ i.e. when does the data become available?

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Foster growth			R&D&I			series]								
Effective contribution of SA to EU2020 / Foster growth	Number of new researchers employed	Quantitative Impact Indicator	Number of new researchers employed	Number	Eurostat	Annual [Time series]	-	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	Number of patents registered	Quantitative Impact Indicator	Number of patents registered	Number	Eurostat	Annual [Time series]	-	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	<i>Positive externalities for public health</i>	Quantitative Impact Indicator	Not specified	-	-	-	-	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	[Amount of] foreign direct investment	Quantitative Impact Indicator	Amount of foreign direct investments made by companies	EUR	Eurostat	Annual [Time-Series]	Annual basis	EU28	See Eurostat					
Prevent undue distortions of competition and trade	Amount of public investments in R&D&I	Quantitative Impact Indicator	Total public expenditure on R&D&I per year [in EU / per MS]	EUR / year	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	EUR 5.5 bn / year [foreseen increase to 11 bn by 2020]					
Prevent undue distortions of competition and trade	[Share of] public investments in R&D&I	Quantitative Impact Indicator	Percentage of public investments in R&D&I of the total investments made per year	%	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	Amount of private investments in R&D&I	Quantitative Impact Indicator	Total private expenditure on R&D&I per year [in EU / per MS]	EUR / year	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	EUR 35 bn / year [foreseen increase to 70 bn by 2020]					
Prevent undue distortions of competition and trade	[Share of] private investments in R&D&I	Quantitative Impact Indicator	Percentage of private investments in R&D&I of the total investments made per year	%	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	2/3 of the 3% investments foreseen by the EU20202					
Prevent undue distortions of competition and trade	Input additionality	Quantitative Impact Indicator	Extent to which firms invest more own resources into R&D&I as a result of public support	%	Academic literature	Ad-hoc	-	EU	-					
Prevent undue distortions of competition and trade	Output additionality	Quantitative Impact Indicator	R&D&I output (i.e. patents, innovations or research jobs) increases as a result of public support	%	Academic literature	Ad-hoc	-	EU						
Prevent undue distortions of competition and trade	Total additionality [R&D investment]	Quantitative Impact Indicator	Private contribution plus the subsidy, increases due to the aid compared to the investment the firm would	%	Academic literature	Ad-hoc	-	EU	-					

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator or coverage	Baseline	RACER assessment				
										R	A	C	E	R
			carry absent the aid											
Prevent undue distortions of competition and trade	Private additionality	Quantitative Impact Indicator	R&D increase by more than the aid amount compared to what the firm would have done absent the aid	%	Academic literature	Ad-hoc	-	EU	-					
Prevent undue distortions of competition and trade	Net extra costs	Quantitative Impact Indicator	Difference between the expected net present values of the aided project or activity and a viable counterfactual investment that the beneficiary would have carried out in the absence of aid	Number	-	-	-	EU	Not available					
Prevent undue distortions of competition and trade	Full Crowding out	Quantitative Impact Indicator	The private R&D investment compared to what the firm would have done absent the aid, remain the same with the aid	Number	Academic literature	Not specified	-	EU	Not available					
Prevent undue distortions of competition and trade	Partial crowding out	Quantitative Impact Indicator	The private R&D investment, compared to what the firm would have done absent the aid	Number	Academic literature	Not specified	-	EU	Not available					
Prevent undue distortions of competition and trade	Amount of aid per sector	Quantitative Impact Indicator	Amount of SA expenditure per sector	EUR	Eurostat	Annual [Time-Series]	Annual basis	EU28 / National	See Impact Assessment, p. 27					
Prevent undue distortions of competition and trade	[Amount of] operating aid [for R&D&I]	Quantitative Impact Indicator	Total amount of operating aid granted to R&D&I [Personnel and administrative costs]	EUR	Not specified	Not specified	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	[Amount of] investment aid [for R&D&I]	Quantitative Impact Indicator	Total amount of investment aid granted to R&D&I [Investment costs in tangible and intangible assets]	EUR	Not specified	Not specified	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	Amount of aid per measure	Quantitative Impact Indicator	Amount of SA expenditure per measure ²	EUR	Stakeholder assessment	Annual [Time-Series]	Annual basis	EU28 / National	Not available					

² aid for R&D projects; aid for technical feasibility studies; aid for industrial property rights costs for SMEs; aid for young innovative enterprises; aid for process and organisational innovation in services; aid for innovation advisory services and for innovation support services; aid for the loan of highly qualified personnel; aid for innovation cluster

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Prevent undue distortions of competition and trade	<i>Amount of aid per beneficiary</i>	Quantitative Impact Indicator	Amount of SA expenditure per beneficiaries	EUR	Stakeholder assessment	Annual [Time-Series]	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	<i>Amount of aid per type [nature] of organization</i>	Quantitative Impact Indicator	Amount of SA expenditure per nature of organization ³	EUR	Stakeholder assessment	Annual [Time-Series]	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	<i>Amount of aid per instrument</i>	Quantitative Impact Indicator	Amount of SA per instrument ⁴	EUR	Stakeholder assessment	Annual [Time-Series]	Annual basis	EU28 / National	Not available					
Prevent undue distortions of competition and trade	Value of public procurement contracts above EU thresholds for R&D&I	Quantitative Impact Indicator	Total estimated value of the public procurement contracts above EU thresholds for R&D&I	EUR	TED	Annual [Time-series]	Annual basis	EU28 / National	EUR 420 bn [2002]					
Prevent undue distortions of competition and trade	Value of public procurement contracts above EU thresholds for R&D&I relative to GDP	Quantitative Impact Indicator	Percentage of public procurement contracts above EU thresholds for R&D&I of GDP	%	TED / Eurostat	Annual [Time-series]	Annual basis	EU28 / National	3.6% [2002]					
Prevent undue distortions of competition and trade	Value of public procurement contracts for R&D&I above EU thresholds of the overall value of calls for tenders	Quantitative Impact Indicator	Percentage of [Value of] public procurement contracts for R&D&I published on TED of the overall value of calls	% /Number	TED	Annual [Time-series]	Annual basis	EU28 / National	19% [2002]					
Prevent undue distortions of competition and trade	[<i>Number of cases</i>] of private-private collaborations on R&D&I [where there is presence of SA]	Quantitative Impact Indicator	Number of cases of private-private collaborations on R&D [where there is presence of SA] [<i>Measuring the effectiveness of R&D&I aid in enabling collaborative activities</i>]	Number	-	Annual [Time series]	-	EU	Not available					
Prevent undue distortions of competition and trade	[<i>Number of cases</i>] of public-private collaborations on R&D&I	Quantitative Impact Indicator	Number of cases of public-private collaborations on R&D [where there is presence of SA] [<i>Measuring the effectiveness of R&D&I aid in enabling collaborative</i>	Number	-	Annual [Time series]	-	EU	Not available					

³ enterprise, research organisation including higher-education, non-profit entity, other

⁴ direct grants, reimbursable advances, loans, soft loans, fiscal incentives, provision of capital, guarantees, compensation above market prices for goods or services, consultancy, training, provision of infrastructures, public procurement policy, reduction of social-security contributions, debt write-off

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			activities]											
Avoid administrative burden	[Share of/Amount of] block exempted R&D&I SA out of the total aid	Quantitative Impact Indicator	Share of block/Amount of block exempted R&S&I aid as a percentage of total R&D&I aid	%	EC State Aid Scoreboard	Annual	Annual basis	EU	30% (2007-2012) for R&D					
Avoid administrative burden	[Share of/Amount of] non-block exempted R&D&I SA out of the total aid	Quantitative Impact Indicator	Share of / Amount of non-block exempted R&S&I aid as a percentage of total R&D&I aid	%	EC State Aid Scoreboard	Annual	Annual basis	EU	Not available					
Avoid administrative burden	Administrative burden for undertakings	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting)	EUR	Stakeholder assessment	-	-	EU	Not available					
Avoid administrative burden	Transaction costs	Quantitative Impact Indicator	Financial costs arising from transactions related to SA	EUR	Stakeholder assessment	-	-	EU	High					
Avoid administrative burden	Search costs for finding partners for R&D collaboration	Quantitative Impact Indicator	Financial Costs of search for collaboration partners for R&D&I [p. 35]	EUR	Stakeholder assessment	-	-	EU	High					
Avoid administrative burden	Administrative burden for public administrations	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting)	EUR	Stakeholder assessment	-	-	EU	Not available					
Avoid administrative burden	Administrative costs arising from enforcing SA rules	Quantitative Impact Indicator	Costs arising from investigations and from ex post control of existing state aid schemes by the EC	EUR	EC Scoreboard	Annual [Time series]	-	EU	Not available					
Avoid administrative burden	[Change in] duration of notification of cases	Quantitative Impact Indicator	Time spent for processing notifications of SA cases	Days	Stakeholder assessment ⁵	Ad-hoc	-	EU	Increased by 53 days					
Avoid administrative burden	[Change in] duration of cases	Quantitative Impact Indicator	Time spent for processing SA cases	Days	Stakeholder assessment ⁶	Ad-hoc	-	EU	Decreased to 34 days					
Increased legal clarity of the rules	[Degree of] legal certainty of SA rules	Qualitative Result Indicator	Not specified [Extent to which the rules on SA are clear and precise for relevant stakeholders]	[Scale]	[Stakeholder consultation]	Ad-hoc	-	EU	Moderate to Low					

⁵ See: Monitoring Study regarding the State Aid Framework for Research, Development and Innovation: R&D&I State aid Study, DG RTD by Logotech

⁶ See: Monitoring Study regarding the State Aid Framework for Research, Development and Innovation: R&D&I State aid Study, DG RTD by Logotech

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Increased legal clarity of the rules	[Degree of] transparency of SA procedures	Qualitative Result Indicator	Not specified [Extent to which the procedures for granting SA are open and transparent]	[Scale]	[Stakeholder consultation]	Ad-hoc	-	EU	Not available					
Increased legal clarity of the rules	[Degree of willingness] of industry stakeholders to use the "matching clause" for SA	Qualitative Result Indicator	Number of cases in which stakeholders made use of the "matching clause" for SA	Number [Scale]	[Stakeholder consultation]	Ad-hoc	-	EU28 or sample	Very low					
Increased legal certainty of rules / Streamline common assessment principles	[Degree of] complexity of state aid rules	Qualitative Result Indicator	Assessment by stakeholders of the complexity of state aid rules	[Scale]	Stakeholder assessment ⁷	Ad-hoc	-	EU	High					
Increased legal certainty of rules / Streamline common assessment principles	Rate of absorption of SA	Qualitative Result Indicator	Not specified	-	-	-	-	EU	Not available					
Streamline and increase predictability	[Degree of] predictability of rules necessary to make investments	Qualitative Result Indicator	Not specified [Extent to which interpretation of SA rules is consistent in time across MSs]	[Scale]	[Stakeholder consultation]	Ad-hoc	-	EU	Not available					
Streamline and increase predictability	[Degree of use] of other legal instruments for innovation objectives	Qualitative Result Indicator	Not specified [Extent to which other instruments (e.g. de minimis aid) are used for innovation purposes]	[Scale]	[Stakeholder consultation]	Ad-hoc	-	EU	Moderate to High					
Increased legal clarity of the rules	Number of schemes for R&D including SA	Quantitative Result Indicator	Number of schemes for R&D including state aid	Number	-	Annual	Annual basis	EU	248 - fundamental research, 575 - industrial research, 577 - experimental development [2013]					
Increased legal clarity of the rules	Number of innovation measures including SA	Quantitative Result Indicator	Number of innovation measures including SA	Number	-	Annual	Annual basis	EU	201 - industrial property rights for SMEs, 100 - young innovative enterprises, 159 - innovation advisory and support services,					

⁷ See: Report National State aid in support of Innovation and SMEs: Strengths and weaknesses of the EU state aid control system

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
									69 loan of highly qualified personnel					
Increased legal clarity of the rules	Number of cases where MSs have used SA to support research infrastructures	Quantitative Result Indicator	Number of cases where public entities used SA to support research infrastructures	Number	Monitoring Study ⁸	Annual [Time-series]	-	EU	Limited number					
Increased legal certainty	Number of companies collaborating with research organizations or having access to research infrastructure	Quantitative Result Indicator	Number of companies collaborating with research organizations or having access to research infrastructure	Number	-	Annual [Time series]	-	EU	Not available					
Increased legal certainty of rules / Streamline common assessment principles	Number of decisions under the R&D&I Framework	Quantitative Result Indicator	Number of decisions under the R&D&I Framework	Number	DG COMP Statistics	Annual [Time series]	-	EU	289					
Increased legal certainty of rules / Streamline common assessment principles	Average number of decision per year	Quantitative Result Indicator	Average number of decisions per year	%	DG COMP Statistics	Annual [Time series]	-	EU	41.3					
Increased legal certainty of rules / Streamline common assessment principles	Number of decisions on schemes	Quantitative Result Indicator	Number of decisions on schemes	Number	DG COMP Statistics	Annual [Time series]	-	EU	226					
Increased legal certainty of rules / Streamline common assessment principles	Number of decisions on individual aid	Quantitative Result Indicator	Number of decisions on individual aid	Number	DG COMP Statistics	Annual [Time series]	-	EU	63					
Increased legal certainty of rules / Streamline common assessment principles	Number of openings of Article 109	Quantitative Result Indicator	Number of openings of Article 109	Number	DG COMP Statistics	Annual [Time series]	-	EU	6					
Increased legal certainty of rules / Streamline common assessment	Number of negative decisions	Quantitative Result Indicator	Number of negative decisions	Number	DG COMP Statistics	Annual [Time series]	-	EU	0					

⁸ Cf. Monitoring Study regarding State Aid Framework for Research, Development and Innovation

Objective	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness 1	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
principles														
Increased legal certainty of rules / Streamline common assessment principles	Number of no aid decisions	Quantitative Result Indicator	Number of no aid decisions	Number	DG COMP Statistics	Annual [Time series]	-	EU	15					
Increased legal certainty of rules / Streamline common assessment principles	Number of withdrawals of notifications	Quantitative Result Indicator	Number of withdrawals of notifications	Number	DG COMP Statistics	Annual [Time series]	-	EU	9					
Increased legal certainty of rules / Streamline common assessment principles	Number of monitoring cases	Quantitative Result Indicator	Number of monitoring cases	Number	DG COMP Statistics	Annual [Time series]	-	EU	25					
Increased legal certainty of rules / Streamline common assessment principles	Number of analyzed R&D sheets (> EUR 3 million)	Quantitative Result Indicator	Number of analyzed R&D sheets (> EUR 3 million)	Number	DG COMP Statistics	Annual [Time series]	-	EU	561					
Increased legal certainty of rules / Streamline common assessment principles	Number of decisions with detailed assessment [per Member State]	Quantitative Result Indicator	Number of decisions with detailed assessment [per Member State]	Number	DG COMP Statistics	Annual [Time series]	-	EU	56					
Increased legal certainty of rules / Streamline common assessment principles	Number of measures implemented under GEBR [per type]	Quantitative Result Indicator	Number of measures implemented under GEBR [per type]	Number	DG COMP Statistics	Annual [Time series]	-	EU	248					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives are presented below. For each *specific objective* one additional indicator should be proposed. The indicators draw on the issues that the legal instruments is intended to address and on the gaps/overlays identified in the Impact Assessment.

Note: Indicators marked with ** are qualitative concepts identified in the IA which have been converted into quantitative indicators.

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Effective contribution of SA to EU2020 / Foster growth	Multiplier effect of the aid granted	Quantitative impact indicator	Ratio of aid granted to direct and indirect investments generated by the aid for a given period of time per MS or for the EU	%	Ex-post primary data collection	Ad-hoc	-	EU-28 or sample	Not available					
Effective contribution of SA to EU2020 / Foster growth	Positive externalities arising from SA investments in R&D&I	Qualitative Impact Indicator	Extent to which SA investments in R&D&I have positive effects per sectors [e.g. on public health, education]	Qualitative assessment	Stakeholder assessment [Survey/ Interviews]	Ad-hoc	Ad-hoc	EU or sample	Not available					
Effective contribution of SA to EU2020 / Foster growth	[Increase in/Trends in] innovation performance per year per MS/EU	Quantitative Impact Indicator	[Trends in/Increase in] Innovation performance by country/ EU per year	Index	Innovation Union Scoreboard	Annual	Annual	EU	See Innovation Union Scoreboard					
Effective contribution of SA to EU2020 / Foster growth	[Increase in] eco-innovation as a result of state aid per MS / EU per year	Quantitative Impact Indicator	[Increase in] eco-innovation performance per MS per year correlated with the amount of SA granted to R&D&I for eco-innovation per MS per year	Number	Eco-innovation Index [Innovation Union Scoreboard], SA statistics/Stakeholder assessment	Annual	Annual	EU	Not available					
Effective contribution of SA to EU2020 /	Innovative firms operating in international	Quantitative Impact Indicator	Innovative firms operating in international markets as	%	OECD Innovation Indicators	Periodically [2015, 2013]	Ad-hoc	EU	See OECD Innovation Indicators					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Foster growth	markets		a percentage of all innovative firms											
Effective contribution of SA to EU2020 / Foster growth	Externally developed goods innovation	Quantitative Impact Indicator	Externally developed goods innovation as a percentage of product innovation firms innovating in goods [total, SMEs, large, manufacturing, R&D, no R&D]	%	OECD Innovation Indicators	Periodically [2015, 2013]	Ad-hoc	EU	See OECD Innovation Indicators					
Effective contribution of SA to EU2020 / Foster growth	Externally developed services innovation	Quantitative Impact Indicator	Externally developed services innovation as a percentage of product innovation firms innovating in goods [total, SMEs, large, manufacturing, R&D, no R&D]	%	OECD Innovation Indicators	Periodically [2015, 2013]	Periodically	EU	See OECD Innovation Indicators					
Effective contribution of SA to EU2020 / Foster growth	[Additional] amount of /[Share of] cross-border investments in R&D created via state aid	Quantitative Impact Indicator	[Additional] Number/Volume/Share of contracts (above procurement thresholds) in the area of R&D awarded to providers established outside of the MS of the contracting authorities as a result of SA	Number / %	TED	Annual	Annual basis	EU	Not available					
Effective contribution of SA to EU2020 / Foster growth	Comparison of amount of state aid provided to "far from the market" versus state aid provided to "close-to-the-market" research	Quantitative Impact Indicator	Proxy indicator showing how much State Aid goes to "basic research" versus "close-to-market research"	Number	Stakeholder consultation [e.g. Survey/ Interviews]	Ad-hoc	Ad-hoc	EU or sample	Not available					
Effective contribution of SA to EU2020 / Foster growth	Increased research and innovation quality as a result of SA per sector	Qualitative Impact Indicator	Qualitative indicator assessing the contribution of SA to enhanced quality of research and innovation per sector	Qualitative assessment	Stakeholder consultation [e.g. Survey/ Interviews]	Ad-hoc	Ad-hoc	EU or sample	Not available					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities	Quantitative Impact Indicator	Firms cooperating on innovation activities, as a percentage of product and/or process innovative firms, including abandoned and ongoing innovative activities [total, SMEs, large, manufacturing, services, R&D, no R&D]	%	OECD Innovation Indicators	Periodically [2015, 2013]	Ad-hoc	EU	See OECD Innovation Indicators					
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities with higher education or government institutions	Quantitative Impact Indicator	Firms cooperating on innovation activities with higher education or government institutions, as a percentage of product and/or process innovative firms, including abandoned and ongoing innovative activities [total, SMEs, large, manufacturing, services, R&D, no R&D]	%	OECD Innovation Indicators	Periodically [2015, 2013]	Ad-hoc	EU	See OECD Innovation Indicators					
Prevent undue distortions of competition and trade	Public-private co-publications per million population	Quantitative Impact Indicator	Number of public-private co-publications per million population	Number	Innovation Union Scoreboard	Once	Once	EU	Data available only for 2003 and 2008 and aggregated at EU level					
Prevent undue distortions of competition and trade	Incentive effect	Qualitative Impact Indicator	Extent to which SA has an impact on the behaviour of undertaking(s) on the market in such a way that it makes them engage in additional activity, which they would not carry out without the aid or would carry out in a restricted or different manner or location	Qualitative assessment	Stakeholder assessment [e.g. interviews or surveys]	Ad-hoc	Ad-hoc	EU	Not available					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Prevent undue distortions of competition and trade	Amount of aid granted in the EU for R&D&I compared to the amount of aid granted outside the EU	Qualitative Impact Indicator	Aid intensity for R&D&I in the EU compared to aid intensity for R&D&I outside the EU ⁹	Number or %	OECD	Annual	Annual	EU	Not available					
Avoid administrative burden	Administrative /Regulatory burden for public administrations	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting) and for enforcement of the rules	EUR	Stakeholder consultation [Interviews with national authorities]	Ad-hoc/ Annual	Ad-hoc/ Annual	EU	Not available					
Avoid administrative burden	Administrative /Regulatory burden for public administrations	Quantitative Impact Indicator	Human resources necessary for implementing obligations related to SA (i.e. notification, information, monitoring, reporting) and for enforcement of the rules	FTE	Stakeholder consultation [Interviews with national authorities]	Ad-hoc/ Annual	Ad-hoc/ Annual	EU	Not available					
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	Financial costs arising from obligations related to SA (i.e. notification, information, monitoring, reporting)	EUR	Stakeholder consultation [Interviews with national authorities]	Ad-hoc/ Annual	Ad-hoc/ Annual	EU	Not available					
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	Human resources necessary for implementing obligations related to SA (i.e. notification, information, monitoring, reporting)	FTE	Stakeholder consultation [Interviews with national authorities]	Ad-hoc/ Annual	Ad-hoc/ Annual	EU	Not available					
Increase legal clarity of the rules/ Streamline and increase predictability of rules	Degree of legal certainty of SA rules	Qualitative Result Indicator	Extent to which the rules on SA are assessed by stakeholders as being clear, precise and relevant and	Scale	Stakeholder assessment [e.g. interviews or surveys]	Ad-hoc	Ad-hoc	EU	Moderate to Low					
Increase legal	Degree of	Qualitative	Extent to which	Scale	Stakeholder	Ad-hoc	Ad-hoc	EU	Not available					

⁹ Matching of aid intensities to the ones provided to competitors outside the EU, in order to allow MSs to match aid that competitors located outside receive for similar activities [p. 23].

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
clarity of the rules/Streamline and increase predictability of rules	transparency of SA procedures	Result Indicator	stakeholders assess the procedures for granting SA as open and transparent		assessment [e.g. interviews or surveys]									
Increase legal clarity of the rules/Streamline and increase predictability of rules	Number of complaints by competitors received by the EC	Quantitative Result Indicator	Number of complaints from competitors received by the EC per year	Number	EC	Ad-hoc		EU	Not Available					

Justification of additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Relevance
Effective contribution of SA to EU2020 / Foster growth	Multiplier effect of the aid granted	Quantitative impact indicator	Relevant to measure the effect that SA has on fostering growth and investments.
Effective contribution of SA to EU2020 / Foster growth	Positive externalities arising from SA investments in R&D&I	Qualitative Impact Indicator	The potential of R&D&I to bring about social improvements in individual aid cases is mentioned in the IA [p. 37]. As a result, a systematic analysis of the positive externalities arising from SA investments in R&D&I in specific sectors can support the development of future impact assessments and policy evaluations and a better understanding of their impact.
Effective contribution of SA to EU2020 / Foster growth	[Increase in/Trends in] innovation performance per year per MS/EU	Quantitative Impact Indicator	Investments in R&D&I can have positive externalities on innovation performance. These can be measured amongst others through the innovation performance index.
Effective contribution of SA to EU2020 / Foster growth	[Increase in] eco-innovation as a result of state aid per MS / EU per year	Quantitative Impact Indicator	The indicator will contribute to measuring the impact that state aid has on eco-innovation performance.
Effective contribution of SA to EU2020 / Foster growth	Innovative firms operating in international markets	Quantitative Impact Indicator	The indicator will measure performance in innovation of EU firms in international markets.
Effective contribution of SA to EU2020 / Foster growth	Externally developed goods innovation	Quantitative Impact Indicator	The indicator will support the measurement of the contribution of SA to the development of innovative goods.
Effective contribution of SA to EU2020 / Foster growth	Externally developed services innovation	Quantitative Impact Indicator	The indicator will support the measurement of the contribution of SA to the development of innovative services.
Effective contribution of SA to EU2020 / Foster growth	[Additional] amount of /[Share of] cross-border investments in R&D created via state aid	Quantitative Impact Indicator	The indicator will support the measurement of the contribution of SA to cross-border investments in R&D.
Effective contribution of SA to EU2020 / Foster growth	Comparison of amount of state aid provided to "far from the market" versus state aid provided to "close-to-the-market" research	Quantitative Impact Indicator	The indicator will support the measurement of the contribution of SA to research that is close to the market and that is far from the market.
Effective contribution of SA to EU2020 / Foster growth	Increased research and innovation quality as a result of SA per sector	Qualitative Impact Indicator	The Impact Assessment indicates that the investments in SA can lead to an enhancement of research and innovation quality.
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities	Quantitative Impact Indicator	The indicator will support the measurement of the effect that SA has on incentivizing firms to cooperate on innovation activities.
Prevent undue distortions of competition and trade	Firms cooperating on innovation activities with higher education or government institutions	Quantitative Impact Indicator	The indicator will support the measurement of the effect that SA has on incentivizing firms to cooperate with higher education and government institutions on research and innovation activities.
Prevent undue distortions of competition and trade	Incentive effect	Qualitative Impact Indicator	The indicator will measure from a qualitative perspective the effect that SA has on incentivizing firms to engage in additional research and innovation activities, which they would not have carried out without the aid or would have carried out in a restricted or different manner.

Objective	Indicator name (Result or impact indicator)	Type of indicator	Relevance
Prevent undue distortions of competition and trade	Amount of aid granted in the EU for R&D&I compared to the amount of aid granted outside the EU	Qualitative Impact Indicator	The comparative indicator will support the measurement of the impact that state aid has on market competition, in particular on distorting the competitive stance of entities active on the research and development market in the EU.
Avoid administrative burden	Administrative /Regulatory burden for public administrations	Quantitative Impact Indicator	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on public authorities.
Avoid administrative burden	Administrative /Regulatory burden for public administrations	Quantitative Impact Indicator	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on public authorities.
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on undertakings.
Avoid administrative burden	Compliance costs	Quantitative Impact Indicator	The indicator would measure the effect that the change in rules would have on the administrative burden placed by the obligations on undertakings.
Increase legal clarity of the rules/ Streamline and increase predictability of rules	Degree of legal certainty of SA rules	Qualitative Result Indicator	The indicator would measure the effect that the implementation of the new guidelines would have on enhancing legal certainty for relevant stakeholders.
Increase legal clarity of the rules/ Streamline and increase predictability of rules	Degree of transparency of SA procedures	Qualitative Result Indicator	The indicator would measure the effect that the implementation of the new guidelines would have on enhancing the transparency of the SA procedures.
Increase legal clarity of the rules/ Streamline and increase predictability of rules	Number of complaints by competitors received by the EC	Quantitative Result Indicator	The indicator would measure the effect that the implementation of the new guidelines would have on reducing the number of complaints by competitors received by the EC.

IMPACT ASSESSMENT REPORT ON MERGER CONTROL

1. INTRODUCTION

In 2014, the European Commission conducted an Impact Assessment to assess the impact of reforming the EU rules on effective merger control.

The following sections include the results of the pilot work on mapping the monitoring indicators utilised in the Impact Assessment. The first section includes the intervention logic that guided the mapping of the explicitly mentioned and "hinted at" indicators in the Impact Assessment.

2. INTERVENTION LOGIC

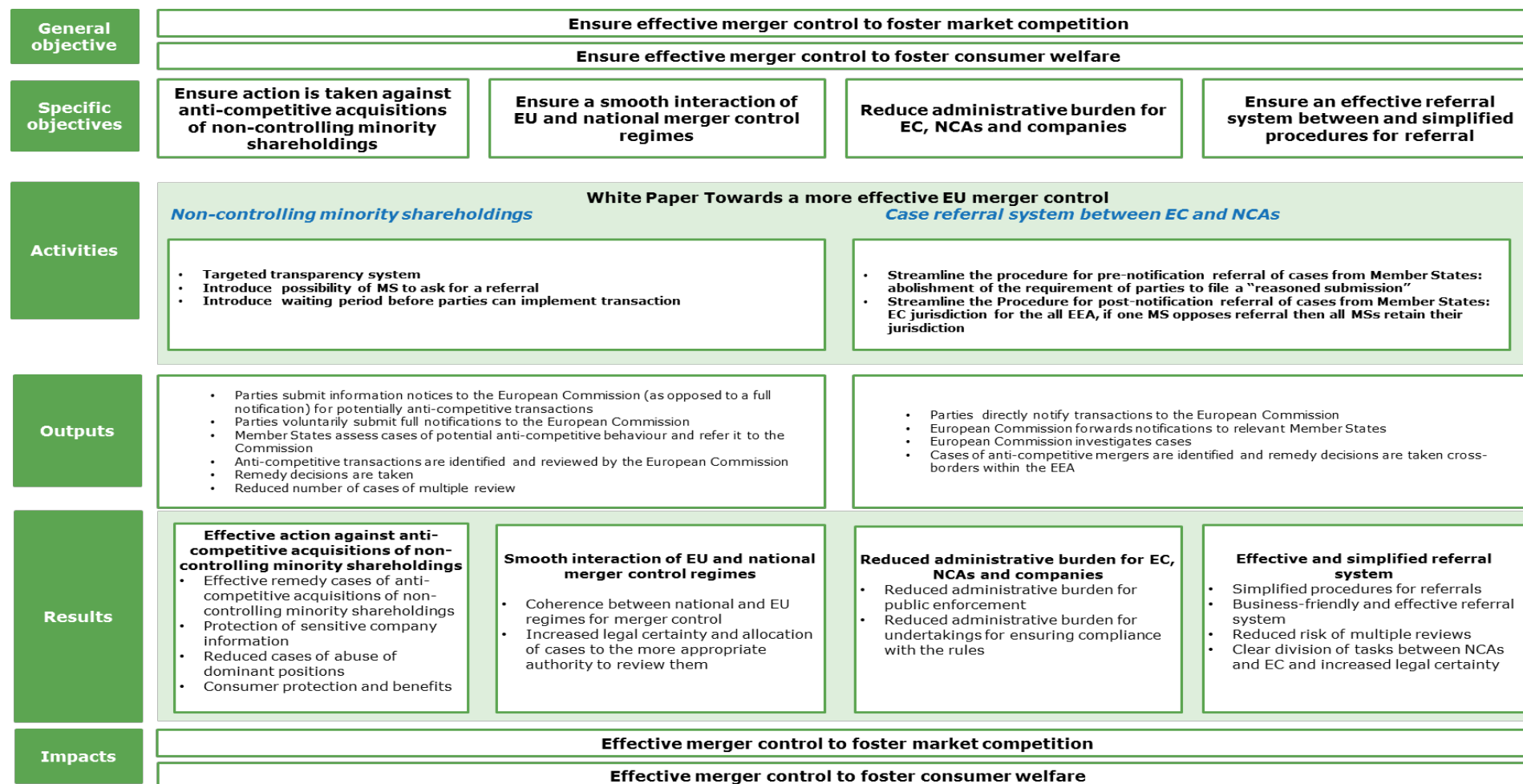
The intervention logic has been drafted based on the Impact Assessment conducted by the European Commission. As stated in the Impact Assessment, the review of the rules had the aim of tackling several problems which are presented in the table below.

Problem definition	<ul style="list-style-type: none">➔ Enforcement gap for merger control policy with regard to acquisitions of minority shareholdings which can result in competitive harm;➔ Suboptimal performance of the referral system (process is relatively slow and burdensome) in connection to the pre-notification referral of cases (Article 4(5) of the Merger Regulation) and post-notification referral of cases (Article 22 of the Merger Regulation).¹
---------------------------	--

The Impact Assessment addressed in particular the issue of market power of buyers and the increase in sales over the internet, that were translated in several specific objectives as presented in the intervention logic below.

¹ The referral system aims at preventing parallel reviews by the European Commission and NCAs by giving the Commission jurisdiction for a referred case for the whole EEA- territory.

Figure 1: Intervention logic of the white paper on effective EU merger control (provisions on non-controlling minority shareholding and case referral system)



Source: Ramboll, Based on Impact Assessment Report, SWD (2014) 217 final

Note: The **Better Regulation Guidelines** indicate that general objectives are Treaty-based goals which the policy aims at contributing to. Specific objectives are those set out concretely what the policy intervention is aimed at achieving. The IA presents two dimensions of the intervention: one related to minority shareholdings (p. 22) and another one related to case referral system (p. 41). For each of the dimensions general objectives and specific objectives are presented. However, in the case of the case referral system dimension, the general objectives mentioned are not compliant with the Better Regulation Guidelines of how a general objective should be defined. In ensuring consistency with the Better Regulation Guidelines, the following understanding (see above) of the intervention is presented.

3. MAPPING OF INDICATORS

A mapping of the indicators explicitly mentioned and hinted at in the Impact Assessment was conducted. The result of the mapping exercise is presented in the table below. The indicators that are explicitly mentioned in the Impact Assessment are written in Normal font, whereas the indicators that are "*hinted at*" are written in *Italic* font.

Table 1: Indicators Impact Assessment

Objective/Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Ensure consumer welfare	<i>[Degree of]</i> harm to consumers	Qualitative Impact Indicator	Not specified	[Scale]	-	-	-	-	Not available					
Ensure consumer welfare	Consumer savings resulting from corrective merger decisions	Quantitative Impact Indicator	Estimated consumer savings related to price increases on the set of markets where there was an intervention	EUR	-	Annual	-	-	EUR 4,000 – 6,000 million per year [observable benefits] (2089-2011) EUR 2,200 – 5,600 million (2012)					
Effective action against anti-competitive minority shareholdings	Number of cases of ownership transactions in listed companies	Quantitative Output Indicator	Number of cases of ownership transactions in listed companies in EU	Nº	Zephyr database	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Total value of ownership transactions in listed companies	Quantitative Output Indicator	EUR value of ownership transactions in listed companies	EUR	Zephyr database	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Number of information notices for transactions received by EC	Quantitative Output Indicator	Number of information notices of transactions concerning acquisition of minority shareholdings per year	Nº	DG COMP Statistics	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Number of voluntary of full notifications received by the EC	Quantitative Output Indicator	Number of voluntary submissions of full notifications concerning acquisition of minority	Nº	DG COMP Statistics	Annual [Time-series]	-	EU	Not available					

² i.e. when does the data become available?

Objective/Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			shareholdings per year											
Effective action against anti-competitive minority shareholdings	Number of cases of minority shareholdings above EU turnover thresholds	Quantitative Output Indicator	Number of cases concerning acquisition of minority shareholdings that fall under EC jurisdiction [per year]	Nº	NCAs, Zephyr database, DG COMP Estimates	Annual [Time-series]	-	EU	Estimated: 20-30 cases per year ³					
Effective action against anti-competitive minority shareholdings	Share of cases of minority shareholdings above EU turnover thresholds out of total merger cases	Quantitative Result Indicator	Percentage of cases of minority shareholdings above EU turnover threshold out of the total merger cases	%	[DG COMP Statistics, NCAs]	Annual [Time-series]	-	EU	7-10%					
Effective action against anti-competitive minority shareholdings	Intervention rate in non-controlling minority cases	Quantitative Output Indicator	Number of cases/Share of cases in which the EC would intervene per year	Nº / %	[DG COMP Statistics]	Annual [Time-series]	-	EU	Estimated: 1-2 cases per year					
Effective action against anti-competitive minority shareholdings	Intervention rate for cases concerning concentrations	Quantitative Output Indicator	Number of cases /Share of cases in which the EC would intervene per year	Nº / %	[DG COMP Statistics]	Annual [Time-series]	-	EU	5-8%					
Effective action against anti-competitive minority shareholdings	Share of cases of non-controlling minority shareholdings per Member State	Quantitative Result Indicator	Share of non-controlling minority shareholdings of the total numbers of mergers cases examined by NCAs per year	%	NCAs	Annual [Time-series]	-	EU	DE: 10-12%, UK: 5%					
Effective action against anti-competitive minority shareholdings	[Share of] cases of non-controlling minority shareholdings not reviewed by NCAs	Quantitative Result Indicator	Number of cases of cases of acquisition of minority shareholdings that are not reviewed by NCAs	%	NCAs	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Number of cases of non-controlling minority shareholdings reviewed by NCAs	Quantitative Result Indicator	Number of cases of non-controlling minority shareholdings reviewed by NCAs	Nº	NCAs	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Frequency of minority shareholding transactions per country of origin	Quantitative Result Indicator	Number of minority shareholding transactions per country	Nº	NCAs	Annual [Time-series]	-	EU	Varies between MS: Targets: between 13 (IT) and 3 (UK) Acquirers: 8 (IT)					

³ Calculated based on (a) information provided by the Member States that have currently national merger control rules that also give them competence to review minority shareholdings, (ii) direct calculation of cases that would be brought to the EC attention under a targeted approach, (iii) an analysis of the Zephyr database

Objective/Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
									and 2 (UK)					
Effective action against anti-competitive minority shareholdings	Frequency of minority shareholding transactions per sector	Quantitative Result Indicator	Number of minority shareholding transactions per country	Nº	NCAs	Annual [Time-series]	-	EU	Highest: telecoms, banking and energy					
Effective action against anti-competitive minority shareholdings	Number of cases of remedy in situations of infringements	Quantitative Output Indicator	Number of cases of full divestiture, cases of non-structural remedies connected to voting rights and access to information	Nº	NCAs	Annual [Time-series]	-	EU	Not available					
Effective action against anti-competitive minority shareholdings	Proportion of price increases prevented	Quantitative Result Indicator	Not specified	%	DG COMP	Annual	-	-	3-5% price increase for 3-5 years in affected relevant markets					
Smooth interaction EU and national regime	Number of Member States competent to review acquisitions of minority shareholdings	Quantitative Result Indicator	Number of Member States where NCAs have competences to review acquisition of minority shareholdings	Nº	National legislation	Once / Ad-hoc	Available	EU	3 MSs (AT, DE, UK)					
Smooth interaction EU and national regime / Effective and simplified referral system	Number of cross-border cases subject to multiple review	Quantitative Output Indicator	Number of cross-border cases subject to multiple review	Nº	DG COMP, NCAs	Annual [Time-series]	-	EU	100 cases (2007) resulting in 360 investigations by NCAs					
Smooth interaction EU and national regime	[Degree of] consistency of procedures at EU level with those at national level	Qualitative Result Indicator	Benchmark the extent of coherence between national and EU procedures concerning merger control (i.e. the lack of overlap)	[Scale]	Stakeholder assessment	Not available	Not available	EU	Not available					
Smooth interaction EU and national regime	[Degree of] legal certainty regarding right authority to handle the case	Qualitative Result Indicator	Benchmark the extent of legal certainty regarding the right authority to handle cases	[Scale]	Stakeholder assessment	Not available	Not available	EU	Not available					
Reduce administrative burden	Costs of public enforcement related to processing information on transactions	Quantitative Result Indicator	Number of transactions r X financial resources per transaction	EUR	Estimates by the EC / NCAs	Annual /Ad-hoc	-	EU	Not available					
Reduce administrative burden	Costs of investigation for the EC	Quantitative Result Indicator	Total estimated internal costs and external advisors costs per investigation x	EUR	[Stakeholder estimations]	Annual /Ad-hoc	-	EU	Not available					

Objective/Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
			number of investigations per year											
Reduce administrative burden	Costs for submitting information notices	Quantitative Result Indicator	Total net costs for preparing information notices for companies	EUR	[Stakeholder estimations]	Annual /Ad-hoc	-	EU 28	EUR 5,000 – 50,000					
Reduce administrative burden	Costs of preparing a full notification	Quantitative Result Indicator	Total net costs for preparing full notifications for companies	EUR	[Stakeholder estimations]	Annual /Ad-hoc	-	EU 28	EUR 50,000 – 75,000 to EUR 500,000					
Reduce administrative burden	Amount of cost savings as a result of simplified procedures	Quantitative Result Indicator	Total cost savings as a result of simplified procedures	EUR	[Stakeholder estimations]	Annual /Ad-hoc	-	EU	Estimates: 20-30% lower					
Effective and simplified referral system	[Degree of] business friendliness	Qualitative Result Indicator from qualitative concept	Extent to which procedures are clear and easily accessible for businesses	[Scale]	[Stakeholder consultation]	Ad-hoc	-	EU	Not available					
Effective and simplified referral system	Length of referral procedures	Quantitative Result Indicator	Amount of time spent per referral procedure	Months	[Stakeholder estimations]	Annual [Time-series]	-	EU	Not available					
Effective and simplified referral system	Estimated time savings as a result of simplified procedures	Quantitative Result Indicator	Amount of time saved	Months	[Stakeholder estimations]	Annual [Time-series]	-	EU	1-2 months					
Effective and simplified referral system	Number of pre-notification referrals cases	Quantitative Output Indicator	Number of pre-notification referrals cases	Nº	DG COMP, NCAs	Annual [Time-series]	-	EU	261 referral requests (2014-2014)					
Effective and simplified referral system	[Share of] pre-notification cases of total of notified cases to the EC	Quantitative Result Indicator	Percentage of pre-notification referral cases of the total number of cases notified to the EC	%	DG COMP, NCAs	Annual [Time-series]	-	EU	8% (2004-2014)					
Effective and simplified referral system	Number of pre-notification referral cases vetoed by Member States	Quantitative Output Indicator	Number of pre-notification referral cases vetoed by MSS	Nº	DG COMP, NCAs	Annual [Time-series]	-	EU	6 out of 261 (2014- 2014)					
Effective and simplified referral system	[Share of] pre-notification referral cases vetoed by Member States	Quantitative Result Indicator	Percentage of pre-notification referral cases vetoed by Member States of the total number of cases notified to the EC	%	DG COMP, NCAs	Annual [Time-series]	-	EU	Not available					
Effective and simplified	Number of post-	Quantitative	Number of post-notification	Nº	DG COMP,	Annual	-	EU	30 referral					

Objective/Result	Indicator name	Type of indicator	Technical definition	Unit	Source of data	Frequency	Timeliness ²	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
referral system	notification referral cases	Output Indicator	referrals cases		NCAs	[Time-series]			requests (2004-2014)					
Effective and simplified referral system	[<i>Share of</i>] pre-notification referral cases of total of notified cases to the EC	Quantitative Result Indicator	Percentage of post-notification referral cases of the total number of cases notified to the EC	%	DG COMP, NCAs	Annual [Time-series]	-	EU	Not available					
All objectives	Number of companies with more than EUR 10 million annual turnover	Quantitative Output Indicator	Number of companies with more than EUR 10 million annual turnover in the EU	Nº	Zephyr database	Annual [Time-series]	-	EU	Not available					
All objectives	[<i>Degree of</i>] activeness of capital market	Quantitative Output Indicator	Not specified	-	Zephyr database	Annual [Time-series]	-	EU	Not available					
All objectives	Degree of legal certainty of rules	Qualitative Result Indicator	Extent to which rules are clear and precise and easy to interpret by NCAs, EC and businesses	[Scale]	-	-	-	EU	Not available					

4. PROPOSED ADDITIONAL INDICATORS

As required by the Terms of Reference, additional indicators that would be suitable for measuring progress in the achievement of the general and specific objectives are presented below. For each *specific objective* one additional indicator should be proposed. The indicators draw on the issues that the legal instruments is intended to address and on the gaps/overlays identified in the Impact Assessment.

Note: Indicators marked with ** are based on qualitative concepts identified in the impact assessment

Table 2: Overview of proposed potential indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
										R	A	C	E	R
Ensure effective merger control to increase consumer welfare	Total welfare effects of merger control intervention	Quantitative Impact Indicator	Consumer welfare gains compared to producer welfare losses	EUR	National Competition Authorities	Ad-hoc	Ad-hoc	Ad-hoc	Not available					
Effective action in minority shareholdings transactions	Degree of protection of minority investors ⁴	Qualitative Result Indicator	Index of protecting minority investors ⁵	Not specified	World Bank	Ad-hoc	Ad-hoc	EU	Not available					
Smooth interaction EU and national regime	Degree of coherence of national and EU regimes	Qualitative Result Indicator	Benchmark the extent of convergence between national and EU regimes (i.e. existence of uniform rules)	[Scale]	Stakeholder assessment [NCAs]	Ad-hoc	Ad-hoc	EU	Not available					
Reduce administrative burden	[Change in] estimated financial costs for national competition authorities from enforcing the rules**	Quantitative Result Indicator	[Change in] the estimated costs for national competition authorities for enforcing the rules compared to the baseline [prior to the implementation of the	EUR	Stakeholder assessment [NCAs]	Periodical	Ad-hoc	EU	Not available					

⁴ <http://www.doingbusiness.org/methodology/protecting-minority-investors>

⁵ Index measures the protection of shareholders against directors' misuse of corporate assets for personal gain by distinguishing 3 dimensions of regulation that address conflicts of interest: transparency of related-party transactions (captured by the extent of disclosure index), shareholders' ability to sue and hold directors liable for self-dealing (extent of director liability index) and access to evidence and allocation of legal expenses in shareholder litigation (ease of shareholder suits index).

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
			amendments]											
Reduce administrative burden	[Change in] estimated human resources involved in the enforcement of rules**	Quantitative Result Indicator	[Change in] the estimated costs for national competition authorities for enforcing the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews NCAs]	Periodical	Ad-hoc	EU	Not available					
Reduce administrative burden	[Change in] estimated financial costs for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	[Change in] estimated financial costs for businesses for ensuring compliance with the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews Businesses]	Periodical	Ad-hoc	EU	Not available					
Reduce administrative burden	[Change in] estimated human resources for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	[Change in] estimated human resources for businesses for ensuring compliance with the rules compared to the baseline [prior to the implementation of the amendments]	EUR	Stakeholder assessment [Interviews Businesses]	Periodical	Ad-hoc	EU	Not available					
Effective and simplified referral system	Degree of willingness of parties to use the post-notification referral system**	Quantitative Result Indicator	Number of cases of use of post-notification referral system	Scale	Stakeholder assessment	Ad-hoc	Ad-hoc	EU	Not available					
Effective and simplified referral system	Awareness of relevant stakeholders to the European Commissions' powers in the field of merger control	Qualitative Result Indicator	Assessment of stakeholders of the EC's powers in the field of merger control	Qualitative assessment	Stakeholder assessment [Survey businesses]	Ad-hoc	Ad-hoc	EU	Not available					
Effective and simplified referral system	Awareness of relevant stakeholders to the NCAs powers in the field of merger control	Qualitative Result Indicator	Assessment of stakeholders of the NCAs powers in the field of merger control	Qualitative assessment	Stakeholder assessment [Survey businesses]	Ad-hoc	Ad-hoc	EU	Not available					

Objective	Indicator name (Result or impact indicator)	Type of indicator	Technical definition	Unit of measurement	Source of data	Frequency of measurement	Timeliness	Indicator coverage	Baseline	RACER assessment				
Effective and simplified referral system	Degree of complexity of referral procedures **	Qualitative Result Indicator	Assessment of the extent to which procedures are clear and easily accessible for businesses	Qualitative Assessment	Stakeholder assessment [Survey businesses]	Ad-hoc	Ad-hoc	EU	Not available					
Effective and simplified referral system	Degree of legal certainty of rules**	Qualitative Result Indicator	Assessment of the extent to which rules are clear and precise and easy to interpret by NCAs, EC and businesses	Qualitative Assessment	Stakeholder assessment [Survey businesses]	Ad-hoc	Ad-hoc	EU	Not available					

Justification for the additional indicators

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Ensure effective merger control to increase consumer welfare	Total welfare effects of merger control intervention	Quantitative Impact Indicator	The IA indicates that the one of the objectives for the initiative is to prevent consumer harm that might arise due to mergers. However, no clear indicator was found in the IA in relation to how the effectiveness of the initiative in relation to this will be measured.
Effective action in minority shareholdings transactions	Degree of protection of minority investors ⁶	Qualitative Result Indicator	World Bank Doing Business has designed an index that measures the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse. The most recent data collected was completed in June 2015.
Smooth interaction EU and national regime	Degree of coherence of national and EU regimes	Qualitative Result Indicator	The IA indicates that one of the specific objectives is to ensure a smooth interaction between the EU and national regime. By benchmarking the degree of coherence between the two regimes one can measure the effectiveness with which the objective is achieved.
Reduce administrative burden	[Change in] estimated financial costs for national competition authorities from enforcing the rules**	Quantitative Result Indicator	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Reduce administrative burden	[Change in] estimated human resources involved in the enforcement of rules**	Quantitative Result Indicator	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Reduce administrative burden	[Change in] estimated financial costs for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.

⁶ <http://www.doingbusiness.org/methodology/protecting-minority-investors>

Objective	Indicator name (Result or impact indicator)	Type of indicator	Justification
Reduce administrative burden	[Change in] estimated human resources for businesses for ensuring compliance with the rules**	Quantitative Result Indicator	The initiative aims at reducing the costs for both public enforcement authorities, as well as for businesses. Thus, collecting concrete quantitative data from stakeholders related to administrative costs and comparing it against the baseline can provide an indication of the effectiveness of the initiative in reducing the administrative burden.
Effective and simplified referral system	Degree of willingness of parties to use the post-notification referral system	Quantitative Result Indicator	The IA indicates that the initiative is aimed at increasing the effectiveness of the post-notification referral system. An indicator measuring the effectiveness of an amended procedure would be the actual use of the post-notification referral system by stakeholders.
Effective and simplified referral system	Awareness of relevant stakeholders to the European Commissions' powers in the field of merger control	Qualitative Result Indicator	The IA indicates that the initiative is aimed at clarifying the task delineation between NCAs and the EC. The indicator would measure whether the action is successful.
Effective and simplified referral system	Awareness of relevant stakeholders to the NCAs powers in the field of merger control	Qualitative Result Indicator	The IA indicates that the initiative is aimed at clarifying the task delineation between NCAs and the EC. The indicator would measure whether the action is successful.
Effective and simplified referral system	Degree of complexity of referral procedures	Qualitative Result Indicator	The IA indicates that the initiative is aimed at simplifying the referral system. As such, a qualitative indicator measuring the extent to which the procedure is simplified would be appropriate.
Effective and simplified referral system	Degree of legal certainty of rules**	Qualitative Result Indicator	The IA indicates that the initiative is aimed increasing the legal certainty for businesses. The indicator would be a measure of the extent to which this result was attained.

Annex 3 – Reviews of indicators by other Commission DGs

Directorate-General CONNECT

The following table presents the results of the mapping of indicators used by DG CONNECT that could be relevant in the evaluation of competition policy.

Table 1: Monitoring Indicators – DG CONNECT

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original Source
4G mobile broadband (LTE) coverage as a percentage of households	Percentage of 4G mobile broadband coverage per Member State	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA on the use of the 470-790 MHz frequency band, 2016, p. 23	See IA Report, p. 23	Eurobarometer (2014)
Percentage of EU households with a mobile subscription giving access to the Internet	Percentage of households with a mobile subscription for access to the Internet	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA on the use of the 470-790 MHz frequency band, 2016, p. 24	See IA Report, p. 24	Eurobarometer (2014)
Mobile data traffic growth rate	Growth ratio for mobile data traffic	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA on the use of the 470-790 MHz frequency band, 2016, p. 60	48% in 2015 in Western Europe	CISCO VNI Mobile, (2015) ¹ Ericsson (2014) ²
Total annual spending of IoT supported services	Annual expenditure of Internet of Things supported services	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA on the use of the 470-790 MHz frequency band, 2016, p. 28	EUR 55 billion in the EU28 countries in 2016	Gartner (2015) ³
Average GDP increase generated by the Internet economy	GDP growth rate (%) generated by the Internet economy	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA broadband investment environment, 2013, p. 7	Internet economy generates on average 3.4% of GDP (with up to 21% of GDP in some cases)	McKinsey Global Institute (2011)
Consumer surplus increase (million € per year) in relation to	Based on empirical data: average broadband speed increase, projected willingness to pay for additional speed, projected	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband	DG CNECT, IA broadband investment environment, 2013, p.	EUR 4.3 to 11.5 billion per year [estimated]	WIK Consult

¹ CISCO (2015), Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2014–2019

² Ericsson (2014), Ericsson Mobility Report

³ Gartner (2015, 11 10), Gartner Says 6.4 Billion Connected "Things" Will Be in Use in 2016, Up 30% From 2015. Newsroom. Stamford, Connecticut, USA.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original Source
broadband	decrease in average subscription prices ⁴		networks	55		
Fibre investment increase in the Union (in 5 years' time)	Amount of investments in fibre access networks	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA broadband investment environment, 2013, p. 64	Not available	Not available
Total NGA coverage by country in the EU	% of coverage of NGA per Member State	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA costs deployment high-speed networks, p. 11	See IA Report, p. 11	Broadband Coverage in Europe in 2011 ⁵
Economies with Highest Penetration of FTTH/FTTB	Household penetration of FTTH/FTTB per Member State	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA costs deployment high-speed networks, p. 12	See IA Report, p. 12	Fibre-to-Home-Council
Deployment costs	Based on: cost of active equipment, labour rates, topography of area concerned, pre-existing network infrastructure, population density, average size of multi-unit dwellings and legislation imposing certain technical specifications for civil engineering works	State aid [broadband]	Relevant for measuring the effects and impacts of competition policy on the deployment of broadband networks	DG CNECT, IA costs deployment high-speed networks, p. 16	Not available	WIK Consult
Direct and indirect employment created by broadband rollout	Number of jobs created directly by broadband rollout Number of jobs created indirectly (through spill-over to other sectors) by broadband rollout	State aid [broadband]	Relevant indicator for measuring the effect of competition policy on consumer welfare and economic growth through improved rapid deployment of broadband networks	DG CNECT, IA costs deployment high-speed networks, p. 61	Indirect jobs are even more numerous than direct jobs	Tech412 and Analysys Mason (2012) Liebenau et al.(2009)
Broadband Retail Prices	Retail broadband prices, stand-alone offers 12 to 30 Mbps	State aid [broadband]	Relevant indicator for measuring the effect of	DG CNECT, IA single market for electronic	See IA report, p. 124	EC Services based on Van

⁴ In the event of a decrease in access prices, from the producers' side, the operators would provide the actual broadband lines at a lower price, thereby leading to revenue losses (the so called producer surplus loss) but also expand their customer base as new customers would now subscribe to a broadband network thereby leading to revenue gains (the so called produce surplus gain).

⁵ <http://ec.europa.eu/digital-agenda/en/news/study-broadband-coverage-2011>

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original Source
			competition policy on consumer welfare through improved through improved rapid deployment of broadband networks	services, p. 124		Dijk, 2012
Average revenue per user in mobile communications	Total amount of revenue per user in mobile communication per year	State aid [broadband]	Relevant indicator for measuring the effect of competition policy on consumer welfare and economic growth through improved through improved rapid deployment of broadband networks	DG CNECT, IA single market for electronic services, p. 125	€195 (2011)	Communications Committee
Operator Market Share	Market share of incumbent operators for fixed Broadband lines	State aid [broadband]	Relevant indicator for measuring the effect of competition policy on consumer welfare and economic growth through improved through improved rapid deployment of broadband networks	DG CNECT, IA single market for electronic services, p. 126	See IA Report, p. 126 From 23% in BG to 71% in LU	Communications Committee
Mobile Broadband Penetration	Percentage of active users utilising mobile broadband	State aid [broadband]	Relevant indicator for measuring the effect of competition policy on consumer welfare and economic growth through improved through improved rapid deployment of broadband networks	DG CNECT, IA single market for electronic services, p. 121	See IA Report, p. 121	Communications Committee
Broadband speed (Mbps)	Average delivered broadband speed	State aid [broadband]	Relevant indicator for measuring the effect of competition policy on consumer welfare and economic growth through improved through improved rapid deployment of broadband networks	DG CNECT, IA single market for electronic services, p. 38	See IA Report, p. 121	CISCO, Visual Networking Index

Directorate-General JUST

The following table presents the results of the mapping of indicators used by DG JUST that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Market Performance Indicator (MPI)	MPI is calculated based on the components: comparability, trust, problems & detriment, expectations and choice. This calculation is computed for each market-respondent combination before being aggregated for reporting purposes.	Antitrust Policy/ Merger control	Relevant for analysing country, regional and socio-economic differences in market assessment as well as differences between market clusters in the evaluation of competition policy effects and impacts	DG JUST	Consumer Markets Scoreboard [Time-series since 2008]	Consumer Markets Scoreboard
Variation in number of enterprises trading cross-border	Quantitative analysis according to the variation in the average number of EU countries that companies export to and variation in share of consumers shopping cross-border	Antitrust policy	Relevant for the measurement of the effect of competition policy on facilitating the expansion of cross-border trade in the internal market and ensuring high level of consumer protection.	DG JUST IA; SEC (2011) 1166 final.	Not specified	Statistical data for the estimation is available in Eurostat
Opportunity costs for intra-EU trade	Measurement to find out if and to what extent companies are dissuaded from exports due to national legislations barriers. The calculation of opportunity costs in the main IA report depends on the assumptions on the weighting of the qualitative answers indicating the frequency as "often" or "not very often" of failed transactions of the surveyed enterprises which were dissuaded from trade due to contract law from various degrees.	Antitrust policy / Merger control	A similar indicator could be used in evaluating competition policy in order to measure the costs of compliance with EU and national competition law.	SEC(2011) 1165 final, annex 3	The calculation of opportunity costs for intra-EU trade is based on the value of total intra-EU trade estimated by Eurostat at €2,704 billion in 2008.	Eurobarometer Survey
Costs in B2B transactions	The average costs associated with B2B transactions are calculated within a low and high estimate. The costs are estimated at the average value of the indicated transaction costs by companies (high and low).	Antitrust	Relevant for comparing compliance costs to other costs for businesses.	SEC(2011) 1165 final, Annex 3	Not specified	Eurobarometer survey
Effectiveness of public action	Indicator measuring the change in the costs of public action and the transaction costs of economic actors.	All policies	Relevant for the assessment of public enforcement procedures. A decrease in the costs for public action and	SEC(2011) 1165 final	Not specified	Not specified

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
			transaction costs for economic actors would generally improve competitiveness of EU economy.			
Consumer Conditions Index	The Consumer Conditions Scoreboard monitors national conditions for consumers in 3 dimensions (knowledge and trust, compliance and enforcement, complaints and dispute resolution) and examines progress in the integration of the EU retail market based on the level of business-to-consumer cross-border transactions and the development of e-commerce. ⁶	All policies	Relevant to monitor and evaluate the functioning of the internal market and therefore tailored the competition policies.	Consumer Markets Scoreboard, Chapter 2	The Consumer Market Monitoring Survey allows ranking markets on the basis of the 'Market Performance Indicator' (MPI).	Consumer Markets Scoreboard
Level of individuals' data protection rights	Clarification of provisions, reinforcement of individuals' rights and increased coordination between national authorities, are variable influencing the level of individuals' data protection rights. Enhancing the coherence and contributing to eliminate gaps are ways of enhancing data protection. Enhanced data protection could enable European companies to capture the market share of Europeans who do not shop online because of a lack of trust.	All policies	Privacy and data protection can increase consumer confidence. Data protection can lead to innovation, European industry could become world leaders in privacy enhancing technology or privacy by design solutions, drawing business, jobs and capital to the EU	SEC(2012) 72 final	Not specified	Eurobarometer

⁶ The findings of this Scoreboard are based on the fifth wave of a large scale survey on consumers' concrete experiences and perceptions regarding the functioning of key goods and services markets in the 28 Member States of the European Union, Iceland and Norway, carried out in 2015. The surveys provide statistically reliable and comparable results for the relevant national markets which are assessed in terms of key "components" that contribute to their performance.

Directorate-General ECFIN

The following table presents the results of the mapping of indicators used by DG ECFIN that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Level of cost of capital and investment cost	Cost of capital depends on the mode of financing used – it refers to the cost of equity if the business is financed solely through equity or to the cost of debt if it is financed solely through debt.	State aid (risk finance)	Economic growth can be encouraged through the use of sound investments at the business level. Cost of capital and investment costs are relevant indicators in assessing the necessity of providing state aid, for example for risk finance.	SEC(2011) 1237 final, p.25	Not specified	Not specified
Economic Sentiment Indicator (ESI)	The economic sentiment indicator is the weighted average (of the industrial confidence indicator (40%), the services confidence indicator (30%), the consumer confidence indicator (20%), the construction confidence indicator (5%) and the retail trade confidence indicator (5%)). Data is seasonally adjusted.	All policies	Relevant indicator in making any macro-economic assessment of competition policy effects.	Key Indicators For The Euro Area ⁷	Long term average = 100	DG ECFIN
Consumer inflation expectations	The consumer confidence indicator is the arithmetic average of the balances (%) referring to the questions on the financial situation of households, general economic situation, unemployment expectations (with inverted sign) and savings; all over next 12 months. The long-term average refers to the period as from publishing of the indicator up to now. Data are seasonally adjusted.	Antitrust	Relevant indicator in making any macro-economic assessment of competition policy effects.	Key Indicators For The Euro Area ¹²	Long term average = 19	DG ECFIN
Retail confidence indicator	The retail confidence indicator is the arithmetic average of the balances (%) referring to the questions on the present and the future business situation and the volume of stocks (with inverted sign). The long-term average refers to the period from publishing of the indicator up to now. Data are seasonally adjusted.	Antitrust	Relevant indicator in making any macro-economic assessment of competition policy effects.	Key Indicators For The Euro Area ¹²	Not specified	DG ECFIN
Industry / Business Climate Indicator (BCI)	Time series data of the Member States regarding the general trends in manufacturing sector	All policies	Relevant indicator in making macro-economic assessment of competition policy effects.	The exact wording of the questions can be found in the User Guide available online.	Not specified	DG ECFIN, but also on Eurostat

⁷ See: http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Cost and price competitiveness	Changes in the nominal and real effective exchange rates of the euro area and the EU MS. The nominal effective exchange rate (NEER) or, equivalently the "trade-weighted currency index", tracks changes in the value of a given country's currency relative to the currencies of its principal trading partners. The real effective exchange rate (REER) or, equivalently the "relative price and cost indicators", aims to assess a country's (or currency area's) price or cost competitiveness relative to its principal competitors in international markets. It corresponds to the NEER deflated by selected relative price or cost deflators.	All policies	Changes in cost and price competitiveness depend not only on exchange rate movements but also on cost and price trends. These are relevant indicators for the competitiveness of the EU economy and can be considered in economic assessments of the effects of competition policy.	DG ECFIN	Data available since 1999	DG ECFIN reports ⁸
Tax wedge	The tax wedge shows the proportional difference between the costs of a worker to their employer and the employee's net earnings.	State aid	Could be relevant contextual factor for the effects of state aid policy.	Tax and benefits database	The database covers all EU MS with annual data going back to the year 2001.	Tax and benefits indicators database ⁹

⁸ http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm

⁹ http://ec.europa.eu/economy_finance/db_indicators/tax_benefits_indicators/index_en.htm

Directorate-General ENV

The following table presents the results of the mapping of indicators used by DG ENV that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Trends in energy efficiency	Calculated through the total energy consumption per unit of GDP	State aid	Relevant to assess the impact of energy and climate change state aid provided on the levels of energy efficiency	SWD(2014)21/F1, p17	Not specified	Enerdata, Global Energy Statistical Yearbook
Trends in resource productivity	Gross Domestic Product (GDP, €) compared to Domestic Material Consumption (DMC, kg) Proxy for measuring resource efficiency (i.e. how efficiently the economy uses material resources to produce the products and services available in the market).	State aid	Relevant indicator in order to assess the compatibility of a state aid with the general objectives of article 107 TFUE.	COM(2011) 571 final EU Resource Efficiency Scoreboard 2015	Overall, resource productivity for EU28 has improved from 1.52 EUR/kg in 2002 to 1.95 EUR/kg in 2014	Eurostat [http://ec.europa.eu/eurostat/statistics-explained/index.php/Resource_productivity_statistics]
Trends in MSW recycling rates	The percentage, by weight, of material recycled from all waste services provided to residents i.e. kerbside, vergeside, drop-off locations and transfer station sites.	State aid	Relevant to assess the expansion of the EU waste recycling market through the development of specific activities and assess the functioning of the internal market	SWD(2014)207 final; Part 2/6	Not specified	Not specified
Trends in total waste generated	Amount of waste generated per waste stream [kg/person]	State aid	Relevant to assess developments in a market where state aid interventions take place. State aid for the management of waste, in particular for activities aimed at the prevention, re-use and recycling of waste, can make a positive contribution to environmental protection.	SWD(2014)207 final; Part 2/6, p41	2004: 5160 kg/person	Eurostat
Trends in waste prevention	Calculated from existing data linking waste generation and GDP or consumption.	State aid	Relevant to measure progress towards achieving the environmental objectives of the EU. Could be correlated with the amount of SA provided to support waste prevention.	SWD(2014)207 final; Part 2/6	Not specified	Building upon EEA indicators under development, Eurostat databases and EEA reviews of waste prevention programmes
Trends in the amount of waste treated	Trends in the overall amounts of waste treatment per waste stream	State aid	Relevant to measure progress towards achieving the environmental objectives of the EU.	SWD(2014)207 final; Part 2/6	Not specified	Eurostat - MS are already collecting these data based on existing legislation and gentlemen's agreement

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Composite Environmental Impact Index (CEII)	The higher number, the higher impact on the environment. The Composite Environmental Impact Index (CEII) is composed of three parts: the Depletion index (DI), the Entropy index (EI) and the Pollution index (PI).	Antitrust / State aid	Relevant indicator to assess the characteristics of a product. Could be used to appreciate the relevance of a state aid or to compare the substitutability of two products.	SWD(2012)398	Not specified	Not specified

Directorate-General ENER

The following table presents the results of the mapping of indicators used by DG ENER that could be relevant in the evaluation of competition policy. Indicators marked with * are indicators identified in DG COMP IAs, but not operationalised to the level of full technical definition, source data and baseline.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Trends in energy intensity*	Calculated as units of energy per unit of GDP	State Aid	Relevance to measure the economy's energy efficiency in a market where competition policy interventions have taken place.	EU energy trends and macroeconomic performance, 2016, p. 8	The EU has seen a reduction in the share of energy-intensive industries in its GDP in the past decade	Eurostat [http://ec.europa.eu/eurostat/en/web/products-datasets/-/TSDEC360]
Energy efficiency*	Primary energy consumption in Mtoe	State Aid	Relevance for measuring the impact of competition policy on energy efficiency	Strategic Plan, 2016-2020 ¹⁰	2013: 1 566.5 million tonnes of oil equivalent (Mtoe) 2013: 1 104.6 Mtoe)	DG ENER
Renewable energy share in final EU energy consumption*	Percentage of renewable energy as share of the gross final energy consumption	State Aid	Relevance for measuring the impact of competition policy on the share of RES in the final energy consumption	Strategic Plan, 2016-2020	2013 : 15% (ESTAT) 2014 : 15.3%	Eurostat
Degree of energy prices convergence in the EU	Convergence of wholesale electricity and gas prices both for industry and household in the EU internal energy market	State Aid	Relevance for measuring the impact of competition policy on energy prices in the EU	Strategic Plan, 2016-2020	See report, p. 17	See report, p. 17
Interconnection levels of MSs	Number of Member States having reached the 10% electricity interconnection target	State Aid	Relevance for measuring trends in a market where competition policy interventions have taken place.	Strategic Plan, 2016-2020	See report, p. 16	See report, p. 16
Roll out of smart meters in the consumer market	Roll-out of smart meters in the consumer market	State Aid	Relevance for measuring trends in a market where competition policy interventions have taken place.	Strategic Plan, 2016-2020	See report, p. 27	National Regulators, DG ENER
Trends in number of jobs created in the energy sector	Trends in the amount of jobs in the energy sector	State Aid	Relevance for measuring trends in a market where competition policy interventions have taken place.	Strategic Plan, 2016-2020	2.5 million job in energy related sectors: (2010)	Eurostat
[Trends in] the number of energy providers on the	[Trends in] the number of energy providers on the energy market per type of energy	State Aid	Relevance for measuring trends in a market where competition policy interventions have taken place.	Strategic Plan, 2016-2020	Not available	Not specified

¹⁰ Ref. Ares(2016)2086086 - 02/05/2016

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
energy market per type of energy						
Carbon leakage*	Emissions per tonne of product resulting from the shift of production outside the EU	State Aid	Relevance for measuring the impact that SA rules have on reducing the risk of carbon leakage. A possible indicator of reduced competitiveness of energy-intensive industries as a result of environmental regulation.	EU energy trends and macroeconomic performance, 2016, p.50	Not specified	DG ENER
Trends in energy prices*	Trends in energy prices per type of energy	Antitrust/State Aid	Relevant to measure trends in prices in a market where competition policy interventions have taken place.	SEC(2010) 1395 final	Not specified	Price monitoring is already being done by DG ENER's Energy Market Observatory.
[Trends in] primary energy consumption*	Total energy demand of a country [consumption of the energy sector, losses during transformation and distribution of energy, and the final consumption by end users; it excludes energy carriers used for non-energy purposes (such as petroleum not used not for combustion but for producing plastics)].	State Aid	Relevant to measure trends in energy consumption in a market where competition policy interventions were delivered.	*EU energy trends and macroeconomic performance, 2016, p.2	Analysis of trends over 1973-2013	IAE Energy, Eurostat
Country-specific supplier concentration index (SCI)	Sum of squares of the quotient of net positive imports of gas from an extra EEA country to an importing MS (numerator) and the gross inland consumption of gas in the importing MS (denominator).	Antitrust/State Aid	Relevance for measuring market characteristics of a market where competition policy interventions take place. Smaller values of SCI indicate larger diversification and hence lower risk of concentration of the market.	SWD(2016) 25 final	Not specified	Not specified
Uncooperative Supply Source Dependence (USSD)	This indicator identifies zones whose physical supply and demand balance depends strongly on a single supply source when each zone tries to minimize its own dependence.	Antitrust	Indicator measuring market characteristics.	SWD(2016) 25 final	Not specified	Not specified
Cooperative Supply Source Dependence (CSSD)	This indicator identifies zones whose physical supply and demand balance depends strongly on a single supply source when all zones together try to minimize the relative impact (the flow pattern resulting from modelling will spread the dependence as wide as possible in order to mitigate as far as possible the dependence of the	Antitrust	Indicator measuring market characteristics.	SWD(2016) 25 final	Not specified	Not specified

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
	most dependent zones).					
Supply Source Price Diversification (SSPD _i)	This indicator measures the ability of each zone to take benefits from an alternative decrease of the price of each supply source (such ability does not always mean that the zone has a physical access to the source).	Antitrust	Indicator measuring market characteristics.	SWD(2016) 25 final	Not specified	Not specified

Directorate-General RTD

The following table presents the results of the mapping of indicators used by DG RTD that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Amount of investments in R&D	Percentage of EU GDP invested in R&D (combined public and private investment)	State aid	Relevant for assessing the impact in fostering R&D and correlating it with the contribution of SA to the sector.	Strategic Plan, 2016-2020	2012: 2.01%	Eurostat
Digital Economy and Society Index	Aggregate score in Digital Economy and Society Index (DESI) EU-28; DESI is a composite index that summarizes relevant indicators for EU digital performance.	State aid	Relevant for assessing the digital competitiveness of EU Member States and correlate it to the contribution of SA to the sector.	Strategic Plan, 2016-2020	2015: 0.478	DESI
Greenhouse Gas Emissions	Amount of greenhouse gas emissions	State aid	Relevant for assessing the impact on climate policy goals. The indicator can be correlated to the amount of GGH innovation in the sector that was generated through state aid.	Strategic Plan, 2016-2020	2013: 80.2	Eurostat
Share of co-publications with international partners	Proportion of EU co-publications with at least one International Partner Country to the total of EU publications	State aid	Relevant for assessing the impact in fostering R&D and correlate it with the contribution of SA to the sector.	Strategic Plan, 2016-2020	2013: 36%	Science Matrix based on Scopus database
Number of projects for long-term solutions for nuclear waste	Number of projects contributing to the development of safe long-term solutions for the management of ultimate nuclear waste	State Aid	Relevant for assessing the impact on innovation. The indicator could be further streamlined to look into solutions that are resulting from SA interventions.	Strategic Plan, 2016-2020	2007-2013: 15	Common Support Centre
Amount of public and private investments in R&D	Level of investment in energy research and innovation (both public and private sectors)	State aid	Relevant to assess the impact of SA on investments in R&D (incentive effect, crowding out of private funding).	Strategic Plan, 2016-2020	Not available	JRC
EU innovation Output Indicator	Measure of EU performance in innovation	State aid Antitrust	Relevant to assess the performance of EU in innovation.	Strategic Plan, 2016-2020	Not available	DG RTD
Trends in patents	Trends in patents	State aid Antitrust	Relevant to assess the impact of SA interventions in fostering R&D.	Strategic Plan, 2016-2020	Not available	JRC
[Trends in] the number of researchers in energy sector	Number of researchers active in energy sector	State aid Antitrust	Relevant to assess the impact of SA interventions on fostering the creation of new research positions	Strategic Plan, 2016-2020	Not available	JRC
SMEs growth	SME growth in terms of turnover and employment	State aid	Relevant for the assessment of state aid impact on fostering sustainable, smart and inclusive growth in a competitive internal	SWD(2013) 255 final	Not specified	Not specified

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
			market.			
Increase of knowledge base for R&D intensive SMEs	Composite indicator related to the number of patents regarding new or improved products and services.	Merger control/ State Aid	Relevant for the assessment of improving R&D within the EU market (can be linked with the significant impediment of effective competition (SIEC) test for merger control).	SWD(2013) 253 final, p.49	Not specified	Not specified
Turnover from new or significantly improved products and services	Indicator developed under the assumption that programme investments in research at NMIs/DIs for basic/challenge driven and industrial research (€ 400 million) should at least yield the same amount of new products/services as a directly attributed outcome.	Antitrust	Relevant for specific objective of boosting industrial uptake and improve standardisation of newly marketed products, also relevant for the assessment within article 101(3) TFEU.	SWD(2013) 249 final	Not specified	Not specified

Directorate-General REGIO

The following table presents the results of the mapping of indicators used by DG REGIO that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Trends related to smart growth in regions and cities	Based on the coefficient of variation of: GDP per head, employment rate (15-64), unemployment rate and EU-27 NUTS 2 regions	State aid (regional)	Relevant indicator to consider in the assessment of how state aid rules have contributed to effects of regional aid on regional development across the EU	Sixth Report on economic, social and territorial cohesion.	Not specified	Not specified
Productive investment	Based on the number of enterprises receiving support, grants and other financial aid.	State aid (regional)	Relevant indicator in order to assess the relevance of state aid. Relevant in order to understand the economic performance of a specific region.	Sixth Report on economic, social and territorial cohesion.	Not specified	Not specified
Trends related to inclusive growth in regions and cities	Based on national indicator related to R&D and innovation IT infrastructure, competitiveness and business environment or education.	State aid (regional)	Relevant indicator to consider in the assessment of how state aid rules have contributed to effects of regional aid on regional development across the EU	Sixth Report on economic, social and territorial cohesion.	Not specified	Not specified
Trends related to sustainable growth in regions and cities	Based on specific indicators related to climate change, environment or transport.	State aid (regional)	Relevant indicator to consider in the assessment of how state aid rules have contributed to effects of regional aid on regional development across the EU	Sixth Report on economic, social and territorial cohesion.	Not specified	Not specified
Potential increase in road accessibility	% increase in current pot. Accessibility in a high-speed scenario	State aid (regional)	Relevant indicator to consider in the assessment of how state aid rules have contributed to effects of regional aid on regional development across the EU	DG Region website	Not specified	Not specified
Contribution of State aid errors to estimated level of error in cohesion policy	The contribution of State aid errors to the estimated level of error for cohesion policy depends on the gravity as well as the number of State aid errors.	State aid (regional)	Relevant indicator in order to assess the enforcement of state aid rules.	Special Report No 24/2016, European Court of Auditors.	2010-2014	European Court of Auditors.
State aid errors detected as part of annual compliance audits	Number of state aid errors detected as part of annual compliance audits	State aid (regional)	Relevant indicator in order to assess the enforcement of state aid rules.	Special Report No 24/2016, European Court of Auditors.	2010-2014	European Court of Auditors.
Amount EU expenditure on cohesion	Amount of EU funds spent on cohesion policy per Member State	State aid (regional)	Relevant indicator to assess the share of state aid related to cohesion projects.	Special Report No 24/2016, European Court of Auditors.	European Court of Auditors, based on Commission	European Court of Auditors.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
policy per MS					accounting data and Eurostat statistics on government expenditure.	
Trends in expenditure on SA and GDP per capita per Member State	Comparison of Member State spending on State aid and GDP per capita	State aid (regional)	Relevant indicator in order to assess the enforcement of state aid rules and impacts on improving the development of regions.	Special Report No 24/2016, European Court of Auditors.	Based on the Commission's 2015 State aid scoreboard and Eurostat's data on population and GDP per capita in current prices.	European Court of Auditors.
Firms with new to firm products	Number of enterprises supported to introduce new to the firm products	State aid (regional)	Relevant for specific objective of boosting industrial uptake and improve standardisation of newly marketed products.	DG REGIO cohesion policy database ¹¹	Target 2014-2020: 62 184 Enterprises	Not specified
Firms in RD cooperation	Number of enterprises participating in cross-border, transnational or interregional research projects	State aid (regional)	Relevant for the assessment of State aid and its impact on fostering sustainable, smart and inclusive growth in a competitive internal market.	DG REGIO cohesion policy database	Target 2014-2020: 5 177 Enterprises	Not specified
Private match investment	Private investment matching public support in innovation or R&D projects	State aid (regional)	Can be used to calculate multiplier effect of state aid interventions aiming to generate private investment	DG REGIO cohesion policy database	Target: 27 897 Enterprises	Not specified
Number of firms working with RSI	Number of enterprises cooperating with research institutions	State aid (regional)	Relevant for assessing the impact in fostering R&D and correlate it with the contribution of SA to the sector.	DG REGIO cohesion policy database	Target 2014-2020: 72 339 Enterprises	Not specified
Number of new direct jobs	Direct employment increase in supported enterprises	State aid (regional)	Impact indicator relevant to assess the economic impact of competition policy over growth and jobs.	DG REGIO cohesion policy database	Target 2014-2020: 423 114 Full time equivalents	Not specified
Users on smart grids	Number of additional energy users connected to smart grids	State aid (regional)	Impact indicator relevant to assess the effect of competition rules on energy efficiency	DG REGIO cohesion policy database	Target 2014-2020: 1 243 944 Users	Not specified

¹¹ <https://cohesiondata.ec.europa.eu/overview>

Directorate-General TRADE

The following table presents the results of the mapping of indicators used by DG TRADE that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Original source
Change in bilateral trade of goods /services and investment	Quantifiable through relative and absolute/percent change in value of bilateral exports and imports of goods/services by sector and investment flow	Antitrust/ State aid	Relevant indicator to consider in the assessment of the international competitiveness of the EU economy and the effect of competition policy on trade, economic growth and consumer welfare.	SWD(2012)209	Not available	Eurostat and IMF data when available
Proportion fully liberalised trade with the world	Percentage of fully liberalised trade with the world	All policies	Relevant indicator to consider in the assessment of the international competitiveness of the EU economy and the effect of competition policy on trade, economic growth and consumer welfare.	Strategic Plan 2016-2020, DG TRADE	Not available	Eurostat
Share of EU trade in goods and services as well as investment covered by applied EU preferential trade and investment agreements	Percentage of EU trade in goods and services as well as investment covered by applied EU preferential trade and investment agreements	All policies	Relevant indicator to consider in the assessment of the international competitiveness of the EU economy and the effect of competition policy on trade, economic growth and consumer welfare.	Strategic Plan 2016-2020, DG TRADE	Not available	Not available
[Trends in] the number of EU's exporting and importing SMEs	Number of EU's exporting and importing SMEs	All policies	Relevant indicator to consider in the assessment of the international competitiveness of the EU economy and the effect of competition policy on trade, economic growth and consumer welfare.	Strategic Plan 2016-2020, DG TRADE	Not available	Eurostat
[Trends in] the EU share in imports of partner countries with which the EU has a preferential trade agreement in force	EU share in imports of partner countries with which the EU has a preferential trade agreement in force	All policies	This indicator will demonstrate the effects of preferential access to export markets stemming from the preferential agreements. The deeper the liberalisation and the more effective its implementation, the stronger the anticipated EU's competitive position vis-à-vis other partners on the export market.	Strategic Plan 2016-2020, DG TRADE	Not available	Eurostat
Trends in number of jobs in sectors covered by the trade defence measures	Trends in number of jobs in sectors covered by the trade defence measures	Antitrust	Relevant indicator to consider in the assessment of the international competitiveness of the EU economy and the effect of competition policy on trade, economic growth and consumer welfare.	Strategic Plan 2016-2020, DG TRADE	Not specified	DG TRADE

Directorate-General GROW

The following table presents the results of the mapping of indicators used by DG GROW that could be relevant in the evaluation of competition policy.

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Source
Level and quality of innovative activity	Innovation activities are all scientific, technological, organisational, financial and commercial steps which actually lead to the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation.	All policies	Innovation – key to the growth of output and productivity. The relationship between innovation and economic development is widely acknowledged. Relevant indicator for competition policy's effect on innovation in the EU.	SEC(2011) 482 final,	Not specified	Not specified
Trends in R&D expenditure in the public sector (% of GDP)	All R&D expenditures in the government sector (GOVERD) and the higher education sector (HERD)	State aid	R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. As such, trends in the R&D expenditure indicator provide key indications of the future competitiveness and wealth of the EU. Relevant indicator for competition policy's (specifically state aid) effect on R&D in the EU.	European Innovation Scoreboard 2016	Not specified	Eurostat
Venture Capital (% of GDP)	Venture capital investment is defined as private equity being raised for investment in companies. Management buyouts, management buy-ins, and venture purchase of quoted shares are excluded. Venture capital includes early stage (seed + start-up) and expansion and replacement capital.	All policies	The amount of venture capital is a proxy for the relative dynamism of new business creation. In particular for enterprises using or developing new (risky) technologies venture capital is often the only available. Indicator relevant to assess markets within which competition takes place in general and specifically in relation to state aid rules on risk finance aid measures.	European Innovation Scoreboard 2016	Three-year averages have been used	Eurostat
SMEs innovating in-house (% of SMEs)	Sum of SMEs with in-house innovation activities. Innovative firms are defined as those firms which have introduced new products or process either 1) in-house or 2) in combination with other firms.	All policies	Relevant indicator to assess firms' activities and competitiveness. Relevant indicator for competition policy's effect on innovation in the EU.	European Innovation Scoreboard 2016	The EIS 2016 Methodology report provides detailed instructions how to calculate this indicator using tabulated CIS data as available from Eurostat's Statistics	Eurostat

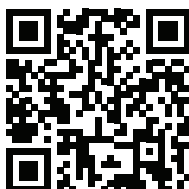
Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Source
					Database.	
Employment in fast growing enterprises (average innovativeness scores) (% of total employment)	Employment in fast-growing enterprises in innovative sectors is calculated through sector-specific innovation coefficients, reflecting the level of innovativeness of each sector, serving as a proxy for distinguishing innovative enterprises. These coefficients are weighted with sectoral shares of employment in fast-growing enterprises, providing an indication of the dynamism of fast-growing firms in innovative sectors. Fast-growing enterprises are defined as firms with average annualised growth in number of employees of more than 10 % a year, over a three-year period, and with 10 or more employees at the beginning of the observation period (period of growth).	All policies	This indicator provides an indication of the dynamism of fast-growing firms in innovative sectors as compared to all fast-growing business activities. It captures the capacity of a country to transform rapidly its economy to respond to new needs and to take advantage of emerging demand.	European Innovation Scoreboard 2016	Not specified	Eurostat
Exports of medium and high technology products as a share of total product exports	Value of medium and high tech exports, in national currency and current prices.	All policies	The indicator measures the technological competitiveness of the EU i.e. the ability to commercialise the results of research and development (R&D) and innovation in the international markets.	European Innovation Scoreboard 2016	Not specified	Eurostat (ComExt) for MS, UN ComTrade for non-MS
Sales of new-to-market and new-to-firm innovations as % of turnover	Sum of total turnover of new or significantly improved products, either new-to-the-firm or new-to-the market, for all enterprises	All policies	The indicator thus captures both the creation of state-of-the-art technologies (new to market products) and the diffusion of these technologies (new to firm products).	European Innovation Scoreboard 2016	Not specified	
Number of bidders in public procurement procedures	The "One Bidder" indicator measures the proportion of contracts awarded where there was just one bidder (excluding framework agreements, as they have different reporting patterns).	All policies	This indicator reflects several aspects of procurement, including competition and bureaucracy. More bidders are better, as this means the public buyers have more options, and can get better value for money. Relevant for assessing the level of competition in sectors with large share of government expenditure (e.g. transport, utilities, healthcare)	DG GROW Website	Not specified	Not specified
Reporting Quality	The indicator measures the proportion of contracts awarded containing no information about the value of the contracts awarded	All policies	A higher "Reporting Quality" score is better, as it means companies can make better bidding decisions and citizens know	DG GROW Website	Not specified	Not specified

Indicator name	Technical definition	Policy area	Justification of relevance for competition policy	Source	Baseline	Source
	(excluding framework agreements, as they have different reporting patterns). This represents the content of notices as a whole..		how their money is being spent. Relevant for assessing the level of competition in sectors with large share of government expenditure (e.g. transport, utilities, healthcare)			
Unit labour cost (ULC) / Labour productivity	Ratio between labour compensation and labour productivity. Labour productivity is calculated by combining the indexes of production and number of persons employed or number of hours worked.	All policies	The indicator measures the extent to which labour costs rise in line with productivity gains, going up if compensation rises faster than productivity — a possible indication of falling cost competitiveness. Relevant indicator to assess the average labour productivity in different sectors and markets.	"EUROPEAN COMPETITIVENESS REPORT 2014", DG GROW, September 2014	Not specified	Not specified
Level of internationalisation of SMEs	Determined according to the export participation in EU manufacturing (goods excluding services) by firm size based on trade statistics	All policies	Relevant indicator to appraise the impact of competition policies on the growth of SMEs	"EUROPEAN COMPETITIVENESS REPORT 2014", DG GROW, September 2014	Contains data for 23 EU countries (EU-28 excluding IE, BE, EL, HR and MT). Business enterprise sector excludes financial services, agriculture and non-business public services,	Eurostat, TEC database, New Cronos



other
publications
and subscriptions

<http://ec.europa.eu/competition/publications>



Publications Office

KD-01-17-397-EN-N

doi: 10.2763/1790