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Standing still is moving backward for the ABC of the CBA

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Highlights

- Developments in both gas and electricity are fast moving with higher risks for stranded assets in Trans-European Networks. This puts increasingly higher demands on the CBA method that is used to select priority investments. Standing still in the development of that method would be going backward.
- The ABC of the CBA for so-called Projects of Common Interest (PCIs) is about: A. dealing with interactions between PCIs (coordination); B. gaining trust and public acceptance (transparency); and C. deciding where the experts stop and the politics start in the valuation of PCIs (monetisation).
- To deal with the interactions between PCIs, we recommend additional improvements to the clustering of projects and the baseline definition in the common CBA method; and we also recognise that individual project promoters might lack the information and resources to do this, which is why we suggest that this could become a task for the ENTSOs or Regional Groups instead of the promoters.
- To gain trust and public acceptance, we recommend harmonised and disaggregated cost and benefit reporting, noting that we still have a long way to go, and noting that this is not even enough because the ambition should be an open source CBA model rather than a common method.
- To reduce the politics, we emphasise the importance of a full monetisation of the value of PCIs, and note that we could ask the Regional Groups to express their policy priorities at the start of the process via the eligibility criteria, which would also increase the transparency of the process.

POLICY
BRIEF

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Introduction

To support the EU climate and energy policy objectives for 2020 and 2030, the EU infrastructure policy is to accelerate investments in projects of common interest (PCIs). The EU is increasingly relying on an economic assessment to select these priority projects, i.e. a common cost benefit analysis method (CBA). This is a big step forward because the selection process used to be purely political, solely relying on the national level for the economic assessment of projects.

Of course, a lot depends on the quality of the CBA method that is being used at EU level. Not only do we need a good method, we also need a common method so that we can compare projects from different countries and developers. The EU bodies representing TSOs, i.e. ENTSO-E¹ and ENTSOG², are driving the development of this method for electricity and gas infrastructure projects, respectively.

The FSR has been involved as advisor to the European Commission (EC) and ACER since the beginning of the process in 2012.³ In this brief, we focus on three long-standing issues, an ABC of the CBA: A. how to deal with interactions between PCIs (*coordination*), B. how to gain trust and public acceptance (*transparency*) and C. where do the experts stop and the politics start in the valuation of PCIs (*monetisation*)⁴.

For each of these issues we recommend the ENTSOs together with ACER and the EC to urgently take another significant step in the development of the method. The context in both gas and electricity (e.g. decentralisation) is fast moving with higher risks for stranded assets, putting increasingly higher demands on the method, so standing still in the development of that method would

be going backward. A lot can be done within the current institutional setting, and the EC also has an opportunity to amend the TEN-E Regulation in 2017, or to propose a new regulation in 2020.

1. A. Coordination - how to deal with interactions between PCIs

Investments can be independent, competing, or complementary. Ideally, complementary investments are defined as a single PCI. In practice, this is not always possible, which is why we need a CBA method that can discover complementary as well as competing PCIs. If we do discover them, additional analysis might be needed at the regional level to allow a coordinated investment decision.

1.1 Clustering complementary investments into single PCI

ENTSOG has no specific approach for defining strongly complementary investments as a single PCI because it is common practice to consider gas pipeline segments crossing different borders as a single project. In electricity, projects are typically defined bilaterally instead of multi-laterally. ENTSO-E CBA 2.0 includes a rule that all investments in a project cluster should be necessary to realise the intended task of the cluster, which can be considered as a proxy for complementarity, but there is a lot of room for interpretation.⁵ ENTSO-E CBA 1.0 had a clear quantitative rule for clustering, but it did not capture complementarity.⁶

1.2 Baseline or reference grid that can flag competing and complementary PCIs

ENTSOG compares each PCI against two extreme baselines or reference grids, i.e. the business-as-usual grid with all PCI projects included (take one out at a time, TOOT), and one with no PCIs (put one in at a time, PINT). If a certain PCI has a strongly competing PCI, the value of that PCI will be much higher in PINT than in TOOT. If a PCI has a strongly complementary PCI that has not been defined as a single project, while it should have been, the value of that PCI will be much lower in PINT than in

1. ENTSO-E, 2015. CBA 1.0: ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects. FINAL- Approved by the European Commission, 5 February 2015. ENTSO-E, 2016. CBA 2.0: ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects. Version for ACER opinion, 29 July 2016.
2. ENTSOG, 2015. Energy System-Wide Cost Benefit Analysis. Approved by European Commission on 4 February 2015. INV0175-14, 13 February 2015.
3. For a discussion of best practices for a good CBA method see Meeus, L., von der Fehr, N.H., Azevedo, I., He, X., Olmos, L., Glachant, J.M., 2013. Cost benefit analysis in the context of the energy infrastructure package. Final report of the EU FP7 Funded Research project THINK (Topic n° 10/12: <http://think.eu.eu>). doi:10.2870/60065.
4. In order to be able to rank and select the projects, the total net benefit, in monetary terms, is required.

5. CBA 2.0 also defines five “stages of maturity”; clustered projects can maximum be one stage of maturity apart.
6. Every project in a cluster has to contribute at least twenty percent to the total grid transfer capability; additionally, the commissioning dates of projects in a cluster must remain within five years from each other.



TOOT. This then flags the need for additional analysis, and ENTSOG also invites project promoters to elaborate the synergies of their projects as part of the qualitative analysis. ENTSO-E's CBA 1.0 and proposed 2.0 only requires promoters to evaluate projects with the TOOT method. They are also encouraged to do multiple TOOTs, which is good for the second step of additional analysis, but we also need PINT in the first step.

Recommendations to deal with interactions between PCIs

Improve project clustering and baseline definition in the common CBA methods: ACER could require that quantitative evidence complements the qualitative rule for clustering and it could also require that a method with two baselines (TOOT and PINT) is used to flag strongly interactive PCIs, which in some cases could lead to a more detailed supplementary analysis.

ENTSOs or Regional Groups should apply the CBA method rather than individual project promoters: promoters might lack the necessary resources and up-to-date information about the status of other PCIs to fully deal with the coordination among projects. The ENTSOs could play that role as it is an extension of what they already do in the context of the Ten-Year Network Development Plans (TYNDP), or the competencies of the Regional Groups could be expanded to allow a more active role in making a coherent selection of projects of common interest in their respective regions.

action with electricity; two sets of micro-scenarios are then used for the assessment. ENTSO-E's CBA 1.0 and 2.0 build the set of scenarios from the "four visions" that are used in the TYNDP 2016. The scope of these visions is somewhat limited as they all mainly vary in the projected amount of renewables in the future generation mix. As part of the TYNDP electricity 2018, ENTSO-E is improving the diversity of scenarios by having more input of stakeholders in the selection of scenarios. ENTSO-E and ENTSOG (for TYNDP gas 2018) are also co-developing their respective TYNDP scenario sets which is also a positive evolution.

2.2 Harmonised and disaggregated cost and benefit reporting

ENTSO's CBA discusses an approach to calculate geographically disaggregated benefits, but leaves it to the project promoters to implement the details of the approach. Project promoters have to consider CAPEX and OPEX, it is unclear to what extent they have been reported separately. ENTSO-E's CBA 1.0 and 2.0 leave it to the individual project promoters to provide geographically disaggregated benefits. Several cost components are to be considered in estimating the total cost, but both methods only require the total cost estimate to be reported by the project promoters.⁷ ENTSO-E CBA 2.0 also introduces the concept of a complexity factor for immature PCIs to explain some of the cost differences. In other words, there are very first steps towards a more harmonised consideration of cost and benefits, but the method does not require the promoters to report in a disaggregated fashion.

2. B. Transparency – how to gain trust and public acceptance

The CBA method of PCIs must adopt the highest transparency standards to be trusted and accepted as the key instrument to identify the EU investment priorities for energy infrastructure. It is important that the scenarios used for the valuation of the PCIs have a sufficiently wide scope, and that the costs and the benefits are reported in a harmonised and disaggregated fashion.

2.1 Scenarios with a sufficiently wide scope

ENTSO's CBA method considers micro-scenarios for the global context, for supply, for demand and the inter-

7. Expected cost for materials and execution costs, expected costs for temporary solutions, expected environmental and consenting costs, expected costs for replacements, eventual dismantling costs, maintenance and operation costs.



Recommendation to gain trust and public acceptance

Harmonised and disaggregated cost and benefit reporting: ENTSO-E is doing this already for benefits in another context than PCIs.⁸ ACER could impose it for benefits, as well as, for costs in the context of PCIs for electricity, and for gas. For gas, we would then also need a more detailed list of cost components.

Open source CBA model (instead of common CBA method): National Grid, for instance, made her open source electricity scenario simulator⁹ available for other stakeholders to play with. The open source model could be made a responsibility of the ENTSOs as it is an extension of what they do in the TYNDPs. The model could also be made available under the patronage of the Regional Groups.

3. C. Monetisation – where do the experts stop and the politics start in the valuation of PCIs

The whole idea of having a common CBA method is to have an economic, rather than a political assessment of PCIs. If the experts resort to indicators rather than a monetisation of the value of PCIs, they basically push the decision back to the political level. It is therefore important to go towards a full monetisation, and in the meantime reduce the number and improve the quality of the indicators.

3.1 Full monetisation of the benefits (and the costs)

Both ENTSO-E's CBA 1.0 and 2.0 and ENTSG's CBA put forward a multi-criteria analysis (MCA) for assessing the PCIs, meaning that the benefits are not all on the same monetary footing. Moreover, the monetisation part

remains restricted to roughly the consumer and producer surpluses in the commodity markets. The ENTSOs motivate this standstill by arguing that they cannot define appropriate monetary factors such as a value of lost load (VOLL) or a cost of disruption per unit of energy (CoDu), due to the political sensitivity of these numbers.

3.2 Reduce the number and improve the quality of the indicators

Both ENTSO-E's and ENTSG's CBA methods propose several indicators for the non-monetised benefits, linking them to the criteria in the TEN-E regulation such as the impacts on sustainability or emissions. ENTSO-E's CBA 2.0 has reformulated the indicators covering the security of supply benefits, going from three indicators in CBA 1.0 to two indicators in CBA 2.0. To what extent the reformulated indicators represent an improvement remains to be seen once they have been applied.

Recommendations to reduce the politics in the valuation of PCIs (or to move the politics from the economic assessment to the eligibility criteria at the start of the selection process)

Full monetisation: ACER could simply require full monetisation. If the ENTSO experts do not feel comfortable choosing a value for controversial factors such as VOLL or CoDU, ACER or the EC could appoint other experts to propose a value. This has already been done for the discount factors. It should also be noted that the ENTSO-E common CBA method for balancing market design already adopted the spirit of full monetisation.

Note finally that Regions might still want to express their energy policy priorities, such as security of supply or integration of renewable energy. Today they can do that by attributing a different weight to different indicators from the MCAs. If we go towards a full monetisation, this is not possible anymore. Instead, Regional Groups could be asked to express their policy priorities via the PCI eligibility criteria. This would also be more transparent than working with weighing factors that are not known to the public.

8. The ENTSO-E common CBA method for electricity balancing requires the geographical distribution of the benefits to be reported. Reference: "Cost Benefit Analysis for Electricity Balancing – general methodology" prepared by Frontier Economics and Consentec – final version 15 June 2015

9. See National Grid's Network Options Assessment Report Methodology, 30 June 2015.

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The Florence School of Regulation

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