

EU Domestic Climate Policy – Looking Forward

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Introduction

With its 'Climate Law'¹, the EU has decided to be climate neutral by 2050 and to reduce net greenhouse gas emissions by 'at least 55%' by 2030 compared to 1990. This high-level of ambition will entail the mobilisation of all economic, social, and political forces. The annual average

reductions will have to double from 1.3% per year during 2005-2019 to between 2.3% to 2.7% per year in the period 2020-2050. This is an immense challenge, all the more so when recalling the difficult past negotiations on climate legislation and taking into account the economic and social repercussions of the COVID-19 pandemic. This is the context in which this article

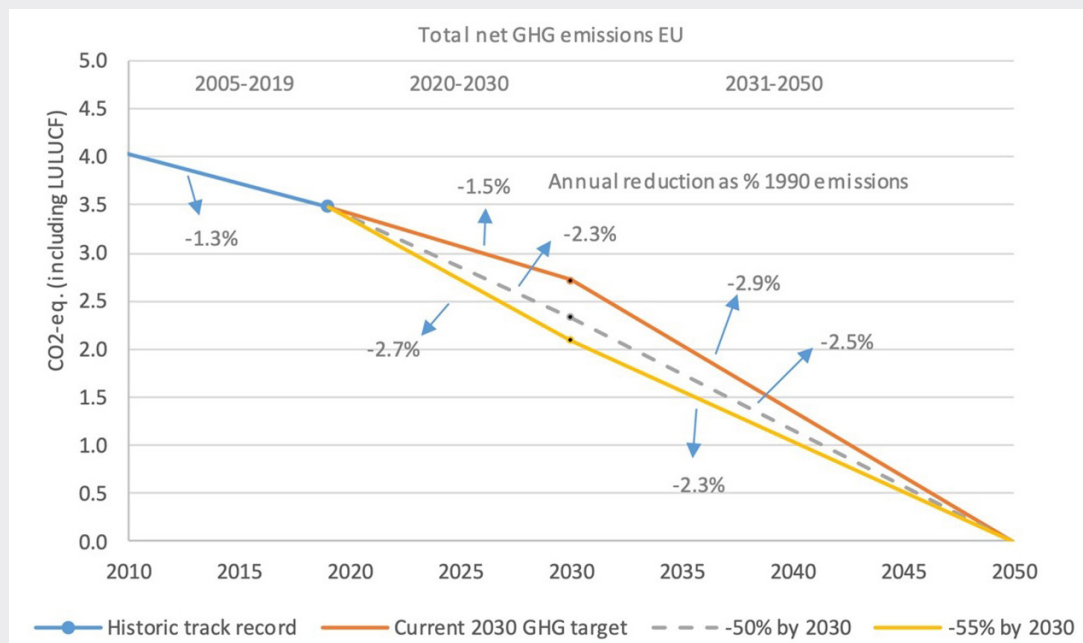


Figure 1. Stylised representation of future EU net greenhouse gas emission pathways compared to historic reduction rates since 1990. Source: European Commission (2020b, figure 1)

¹ www.consilium.europa.eu/en/press/press-releases/2021/05/05/european-climate-law-council-and-parliament-reach-provisional-agreement/

reviews the main challenges for the future of EU policymaking.

The effort will have to be transformative and will imply policy strengthening at all levels of governance, not just at EU-level, and a close monitoring of progress. The EU will have to build further on the current climate policy infrastructure, strengthen existing measures and introduce new measures, especially in areas where climate has not been a primary policy-driver, such as in the context of the Common Agriculture Policy, or energy taxation or trade.

So far, emissions reductions have been predominantly achieved in the electricity and heat generation sectors, where renewable energy technologies have increased, and fuel switching away from fossil fuels has occurred. These developments need to continue much further, and the EU Commission estimates that compared to the last decade at least €350bn additional investment is needed every year until 2030 to achieve the full transformation of the power sector and to significantly accelerate the pace of modernisation of industry, buildings, and transport (EC, 2020a, pg. 12). New ways of financing these investments are needed, in combination with policies that incentivise making such investments. The transformation of these sectors will need to be followed by similar deep transformations in all sectors of the economy, in particular, hard or very-costly-to-abate industrial processes, aviation, and food production.

The Paris Agreement of 2015 will remain the framework for setting levels of ambition, but there is urgent need for more focus on implementing pledges. It is policies and measures that limit and reduce emissions, and policies are invariably difficult to agree and sometimes fail to deliver. Globally, much greater emphasis is needed on effective policy implementation. Europe's continued leadership is conditional upon its strengthened climate policies reducing emissions in line with its ambitious targets.

It is important that the EU continues to share its policy experience with other countries in the world, and it is likely that Europe will increasingly learn from climate action taking place in other jurisdictions.

Five key building blocks of Europe's future climate efforts

1. *Continue and expand the pricing of carbon*

The area in which the EU has been and is likely to remain a pioneer is carbon pricing. The EU's Emissions Trading System (EU ETS) has been successful and must continue to play a central role in the EU's decarbonisation plans. The carbon price is now in the range advocated by economists such as Stern and Stiglitz². The scope of the EU ETS is likely to be extended to further sectors, such as shipping, and other greenhouse gases such as methane from certain sources. At the same time the model might also be developed further by a complementary 'upstream' inclusion of sectors, such as transport and heating, where monitoring and reporting is difficult or administratively too burdensome for downstream actors. As scarcity increases over the decades to 2050, the carbon price will rise and the revenues generated over the coming three decades will be substantial.

However, other methods of carbon pricing should also be expanded in the coming decades, where they do not already exist, most notably carbon taxes based on the potency of the greenhouse gas in question. Taxes are particularly appropriate when monitoring and reporting uncertainties exist, but where taxes could still be levied on the basis of standardised emission factors or quantities supplied³. At European level, CO₂ taxes have been obstructed in the past, and while the logic for applying them equally across the EU's internal market remains strong, the revenues do not need to accrue to the EU. Value Added Tax and excise duties are levied according to EU frameworks, but Member States have

2 Report of the High-Level Commission on Carbon Prices: <https://www.carbonpricingleadership.org/report-of-the-highlevel-commission-on-carbon-prices>

3 The Paris Agreement refers to greenhouse gases as defined in the Convention, which in turn defines greenhouse gases as 'gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation'. Anthropogenic greenhouse gases are most commonly considered to be Carbon dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur Hexafluoride (SF₆).

some flexibility to fix rates, and the revenues are collected nationally⁴. To object to EU-level taxes on grounds of fiscal sovereignty or national determination of the energy mix need not entail rejection of taxation as a valuable policy instrument at the national level.

Fears of carbon leakage and distributive impacts will only increase as climate regulation becomes more stringent, and carbon pricing instruments are no exception. They are unique, however, in contrast to standard-setting and the imposition of emission limits, in that they generate revenues that can be used to attenuate distributional impacts, finance innovation and early-stage deployment, and fund adaptation.

2. *Make the EU a champion of low-carbon technology*

The European Green Deal narrative centres on stepping up the innovative capability of the EU in the 'green' and digital sectors. This indicates that the EU is determined to use the scale of its internal market and funding capabilities to develop breakthroughs in low-carbon technologies. The carbon price is a key element for this, but it will have to be complemented with proactive innovation and deployment policies, and demand-side measures.

Even if the decision on the energy mix remained a national matter for Member States, the EU succeeded in opening up the national energy markets and in realising a spectacular development of its renewable electricity production over the last decade. The joint EU-wide approach created economies of scale and opened a large market, even if some Member States invested more money at the outset than others. The dynamism brought down the costs, especially of solar and wind energy, to the point where market forces in conjunction with carbon pricing are largely taking over. In many other places across the world, renewable energy has become the most cost-effective way of producing electricity and is pushing fossil fuels, in particular coal and lignite, out of the market. These developments are being helped by developments in the digital sector, in energy storage and by policies to reduce fossil fuel subsidies and instead to price carbon.

The EU played a decisive role in this development, knowing that it is not innovation alone that is important to bring forward clean technologies, but that the creation of lead markets for low-carbon products matters too. Such market creation allows for a massive deployment of new technologies that creates the jobs and incomes of the future. A similar experience is now taking place with respect to battery production and could be replicated again in areas such as hydrogen, carbon capture and storage (CCS), biochemicals and resource recovery as integral components of a circular economy.

Especially in 'hard-to-abate' sectors, many more low-carbon technologies will be needed to produce goods for which there is considerable demand in affluent societies. These include shipping and aviation, but also steel, glass, non-ferrous metals, cement, and chemicals that allow the construction of sustainable cities and infrastructure. Ultimately the EU can mandate standards for these essential products that both EU producers and importers will have to respect, ramping up demand for such goods. Such standards have often served as the basis for standards in other jurisdictions, also because all countries want to produce products that can be sold in the large EU market. Climate and environment policies have certainly helped to establish a so-called 'Brussels-effect' (Bradford, 2020) regarding product standards. If the ambition of the European Green Deal is followed through over the coming decades, this effect is likely to become even more significant.

3. *Develop CO₂ removal solutions, both technological and nature-based*

The EU's net zero commitment in 2050 and the reference in the Paris Agreement '*to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of the century*' both underline the important role that removals must play in the future. Emissions related to human activity will be impossible to reduce to zero within these timeframes. There will be legacy emissions of greenhouse gases,

⁴ An EU 'Own resource' is levied on the harmonised Value Added Tax base, which is distinct from the rates and revenues collected nationally, which need not be the case for taxes levied on greenhouse gases.

whether from livestock rearing or international aviation, to give two likely examples. Such legacy emissions, wherever in the world, will have to be matched by removals.

In the coming decades, starting immediately, Europe needs to scale up efforts to develop carbon dioxide removals, using both technological and nature-based techniques. Greenhouse gas emissions have been produced at an industrial scale since the Industrial revolution, and removals are also going to have to be deployed at industrial scale in future to limit climate change to the 2°C, or if possible 1.5°C, average global temperature increase. It would be a grave mistake to hang all efforts on reducing emissions, and not to put equal efforts into ramping up removals.

There is ambivalence about removals, as some environmentalists fear that they serve as a pretext for continuing to emit, and their development reduces pressure to reduce emissions to their absolute minimum. In order to maintain pressure, the recently agreed EU Climate Law limits the magnitude of nature-based removals to be counted against the -55% target by 2030 to 225 million tonnes CO₂⁵. Some prefer nature-based solutions for their potential environmental co-benefits, but these too can have perverse effects if not carefully framed. The biggest drawback of nature-based solutions is that they are often temporary, keep needing to be renewed to prolong the store of carbon, and can be reversed. By contrast, emissions into the atmosphere of some greenhouse gases will persist for a century or more (and for some gases for thousands of years). A temporary removal hardly counts as a match for emissions that will contribute to global warming for a century or more. Thus, nature-based solutions will work best if combined with permanent storage solutions.

Direct Air Capture is the most comprehensible removal of carbon dioxide from the atmosphere, which if stored permanently, is putting 'right' the 'wrong' created by anthropogenic carbon dioxide emissions. The other type of removal combines the natural process of photosynthesis with carbon capture and storage technology,

which is referred to as Bioenergy with Carbon Capture and Storage (BECCS). There is a belief that CCS is untested as a technology, whereas Norway has been doing it successfully for 25 years. CCS is thought of as too expensive, but carbon prices will go up and costs will come down in the future. Energy used to capture emissions does impose an efficiency loss penalty. However, all these doubts can be adequately answered and are anyway dwarfed by the greater risks posed by climate change.

There is great importance in the announced regulatory framework for carbon dioxide removals foreseen by the European Commission in 2023. Such a framework will enable legacy emissions to be compensated for. Whether these removal certificates are retained by the agriculture and land-use sectors or allowed to be used within the emissions trading system can be decided later, when there is a better idea of their potential supply. What is essential is that removals can be incentivised by having a value that can be realised.

The rapid expansion of technological and nature-based removals needs to start now so as to reach climate neutrality in Europe by mid-century, and prepare for achieving net removals in the second half of the century. It is in Europe's interest to develop carbon removals so as to be ready to meet the global temperature goals of the Paris Agreement⁶.

4. *Address the social dimension of the transformation process*

The comprehensive low-carbon transformation of the European economy will undoubtedly encounter social hesitation and inertia, and hence will have to cope with resistance. Many if not most economic activities related to fossil fuels will be under pressure and destined to disappear, as will the jobs related to these. Other economic activities will take their place, but these may not be necessarily located in the same places or sectors. Social and political support are key for the low-carbon transformation to succeed, so facilitating this transition

⁵ See Art. 4.1 of the European Climate Law: <https://data.consilium.europa.eu/doc/document/PE-27-2021-INIT/en/pdf>

⁶ As part of the agreement on the EU Climate Law the European Commission stated that the net sink will have to be increased to at least 300 million tonnes CO₂: www.europarl.europa.eu/news/en/press-room/20210419IPR02302/meps-reach-deal-with-council-on-obligation-for-eu-to-be-climate-neutral-by-2050

will become one of the most important factors in meeting the goals of the Paris Agreement.

The first signs are already clear in coal-mining regions but other major changes in the field of oil and gas are already looming. Similar changes will happen in the field of manufacturing. The transformation that car manufacturing is going through with respect to electrification is such an example. Fears for unemployment, also due to automatization of entire manufacturing processes, will hinder the process even if the overall requirement for labour will not be any less. Workers may face temporary unemployment and will have to be re-trained and re-skilled for other jobs. For that reason, the EU has established a Just transition Fund the importance of which will surely have to grow over the decades to come.

The regional impact of the low-carbon transformation has already led the EU to develop a specific initiative towards regions heavily dependent on coal mining as part of its regional policy. Equally, several climate policy regulations incorporate the differentiated regional impact in their design. The EU ETS reserves more allowances for Member States likely to bear a more significant economic impact, and transition arrangements are foreseen for the fossil-fuel based power sector. The Modernisation Fund reserves part of the EU ETS revenues for deploying a low-carbon transition in lower income Member States. The Effort Sharing Regulation (EC, 2018) has differentiated targets for Member States in line with differences in wealth between Member States. In addition, new funds are likely to be needed to counter social impacts on more vulnerable groups and regions.

An increased awareness by the consumer and a willingness to change habits is important for the uptake of new technologies and low-carbon behaviours. Climate policies will have to foresee convincing and transparent explanations to the public, who may not be well versed in the impacts and consequences of the changes ahead. Consumers will be confronted with relative price increases of many goods and services. The example of the protest of the so-called *'gilets jaunes'*, or 'yellow jackets', in France is to be kept in mind. All this pleads

in favour of gradual changes while the climate change reality tells us there is no time to lose.

A crucial field is food where meat consumption, in particular of red meat, has a major climate and environmental impact. The EU's Common Agricultural Policy needs a substantial overhaul as neither its way of producing food, nor the consumption patterns that it implicitly encourages, can be sustained. Consumers as well as the farmers will be confronted with significant change in the decades ahead. A successful handling of it will depend on solid explanation as well as significant support in terms of re-orienting skills and investments.

5. *The EU as a pioneer in Sustainable Finance*

Finance needs will be enormous, for mitigation, new infrastructure, as well as adaptation. The low-carbon transformation therefore requires a solid and supportive financial system. While EU funds are in high demand at present, particularly so in the aftermath of the coronavirus global pandemic, private finance has an even larger role to play, and must be aligned with the public interest in addressing the climate crisis in time.

The EU has been a pioneer in the rapidly growing market of Green Bonds and is now the biggest sustainable finance market in the world. The disclosure of climate and sustainability risks by financial companies of their products and policies have been made mandatory (EC, 2019). In addition, new regulations related to the sustainable finance taxonomy defines 'sustainable' activities (EC, 2020c). The EU is also moving forward with a new corporate sustainability reporting Directive, extending well beyond financial companies (EC, 2021). It will be crucial in the coming years to implement these new regulations rigorously and to establish practical tools and benchmarks.

In addition to carbon pricing, the EU has chosen a mandatory approach to the disclosure of climate risks by financial companies and corporates, and is the first major economy to do so. This underlines the EU's determination to strengthen its market-based approaches. The purpose is to ensure that high quality and transparent information is provided to market

participants, that facilitates capital allocation and pricing, and avoids stranded assets. It should also be able to prevent ‘greenwashing’ and to re-assure the public.

The multitude of net-zero and carbon-neutral announcements that major companies have recently been announcing will have to be reported on in a standardised and transparent manner. So far, the EU has not engaged deeply in voluntary carbon markets but has preferred the development of compliance markets, transparency and consistency. The EU has also opted for a comprehensive approach, framed to avoid backtracking by a ‘do no harm principle’ that takes account of more dimensions of sustainability than climate change alone. In choosing the regulatory approach, Europe has moved faster than all voluntary initiatives and has created global benchmarks against which other standards will be compared and may be inspired by.

Conclusion

To become a climate neutral continent by 2050, Europe has to brace itself for radical change, both reducing its emissions to net-zero and in adapting to the inevitable impacts of climate change. Only if it does both will resilience be assured, and even then, Europe needs the rest of the world to act. Essential will be the steering of market forces and the EU has already decided a regulatory framework on two essential measures: carbon pricing and disclosure of climate and sustainability risks by private companies. While the former has a history of 16 years, the latter is just now starting. Removing carbon from the atmosphere must start now with a view of undertaking this at scale by 2050. Breakthrough low-carbon technologies will have to be deployed massively, and if well managed could lead to a reinforcing of the so-called ‘Brussels effect’, setting *de facto* standards for global markets. The transformation process should not be delayed but rather strengthened through addressing distributive impacts and through appropriate action in the field of regional policy and the re-skilling of workers. In conclusion, while foundations have been laid, so much more needs to be done to adequately address the climate crisis, and there is no time to lose.

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