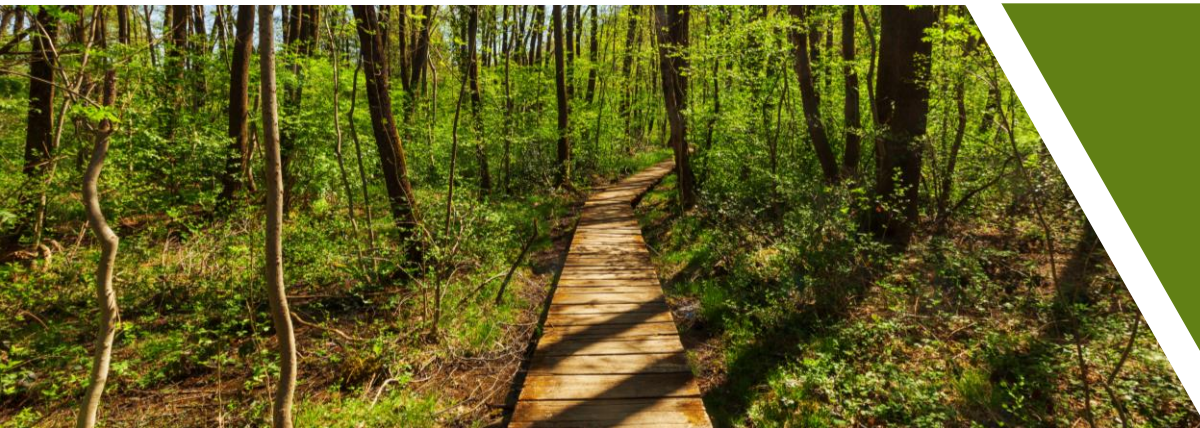


IEEP submission to the European Commission public consultation on the strategy for long-term EU greenhouse gas emissions reduction



1. Introduction

The European Commission is currently carrying out a wide consultation exercise on the development of its Long-Term Strategy for decarbonisation of the European economy. This work responds to the requirements of the Paris Agreement, and should be viewed in the light of Commissioner Arias Cañete's repeated – and welcome – acknowledgement that the EU's current 2030 targets are not sufficiently ambitious to be on track for a 1.5 degree maximum warming target. It is vitally important, both for climate mitigation and for the political future of the EU, that this process leads to a clear-sighted and ambitious strategy, capable of ensuring that the necessary decisions are taken, and the necessary investments made, to bring the EU onto a long-term cost-efficient track towards net zero emissions.

Critically, the strategy needs to consider the economy as a whole. We will need a clear understanding of the likely mitigation achievable in individual sectors; the implications for emissions in other sectors (for example, electrification of the transport or heat sectors has implications for the need for further investment in renewable electricity generation); and the implications for emissions in other economies (for example, the GHG emission leakage impacts if EU agriculture decarbonises by reducing livestock production, but our consumption of livestock products does not change). Reaching net-zero will take effort across all sectors of the economy. Targets for each sector need to over-programme the total level of emissions reduction required across the economy, given the risk of unforeseen difficulties emerging in one or more sectors. Sectoral targets also need to be coherent with each other, reflecting both the fact that not all sectors will be able to decarbonise at the same speed, and the likelihood that successful strategies in one sector will have implications for emissions in another.

Coherent action is therefore needed in all sectors; and **we need to move on from excessive reliance on incremental price signals.** The Emissions Trading System, for example, is a vital backbone of any abatement strategy, but even with a significantly stricter cap trajectory it cannot on its own provide the market with clear enough signals. It encourages an optimisation within the current infrastructure for power and carbon, but it does not provide signals about the need for a shift away from that system, or about the system that should replace it. Unless we set clear political ambitions about, for example, the phase out of petrol use in passenger vehicles, and the phase out of fossil fuels in energy production, we risk a lack of clarity among investors, and stranded assets in the form of new, carbon-based generating capacity (which in turn will create stakeholders with a vested interest in weaker progress towards decarbonisation).

We also need early progress on new low-, zero-carbon, and particularly carbon negative technologies. The story of wind power and solar is one of a transformational reduction in costs as a result of learning from early deployment. As decarbonisation challenges become more complex, and require the involvement of new areas of the economy or new technologies (heat; agriculture, carbon capture and storage, for example), we need to get an early idea of feasibility at scale, and the impacts of these technologies, in order to understand their potential contribution to more ambitious future emissions reduction targets. That in turn demands deployment – but because current carbon targets and prices can be met through existing tried and tested technologies, incentives for deployment of the next generation of

decarbonisation technologies have been weak. A long-term strategy therefore needs to go hand in hand with a short-term focus on innovation and deployment.

Finally, **we need to address issues of consumption**. Decarbonisation policy has – so far – not called on EU citizens to make difficult choices about their own lifestyles, but has applied a carbon price to some of those choices (in energy consumption, in transport, and so on). Policy has therefore largely focused on different approaches to production, and on replacing relatively high-carbon approaches with lower-carbon ones within the same system. The scale of the challenge we now face means that we need to consider whether and how a zero net emissions target, or beyond, requires potentially far-reaching conclusions about types of technology, types of product, and types of infrastructure which are simply not compatible with a least-cost approach to delivering that limit. The physical resource needs of increased consumption impose an irreducible minimum of carbon and wider environmental costs which cannot be innovated away. In some areas, therefore, there will need to be a serious and honest political debate about consumption choices. Livestock products are a case in point – can we significantly reduce the environmental footprint of our food and agriculture systems without reducing the per capita level of consumption of livestock products? Here we get into issues which are – literally – visceral, and cultural, and where politicians are understandably nervous; but the discussion will need to be launched.

All of these issues require us to think through the **governance of the EU's decarbonisation policies**. The current Commission has made a point of focusing on fewer, more important, areas of EU policy. Climate and energy policies are one of the areas where, as the challenges become more demanding, the need for a coherent and integrated response across Europe will push us towards greater EU-level coordination; and, as noted above, the relationship between state action and individual action may need to shift. How these pressures are managed alongside political pressures for less constraining legislation at EU level, and concern about Eurosceptic forces, is not straightforward. We will also need to work with the grain of local experimentation, allowing cities and regions that want to test how much further they can go on decarbonisation to be the fore-runners of European action, whilst ensuring that their additional effort does not allow others to step backwards. The EU needs to be able to identify with confidence the areas where public priorities cannot be delivered without an ambitious EU agenda, and make the case for action in those areas. Issues – like climate change - where the interests of future generations cannot be adequately protected without coordinated action are the most promising to select as centrepieces of European action in the present and in the future.

2. Emissions reduction:

2.1 Agriculture, Forestry and Other Land Use (AFOLU)

The AFOLU sectors, covering agriculture, forests and other rural land uses can make a substantive contribution to the EU's climate mitigation efforts not only by reducing GHG emissions within these sectors, but also through negative emissions (carbon sequestration in soils and biomass) and through support to other sectors in replacing a proportion of carbon-intensive fuels and materials.

Long term strategies need to better manage the carbon that flows through the AFOLU sectors, maximising the size of the carbon sink, and maintaining it for as long as possible.

The AFOLU sectors, particularly forests, are being looked at as a means of offsetting emissions that are costly or difficult to achieve in other sectors, and, given that a residual level of GHG emissions is inevitable, the long-term strategy implicitly relies on the net-sink of the LULUCF sectors to reach net-zero across the economy. Much of Europe's forest is already managed and an important source of income and livelihoods in many rural and remote areas. A long term strategy should consider carefully the challenges in monitoring carbon flows through the land sector over time, and should consider how carbon rights or value can be linked with forest biomass production, recognised as an output from the production process and the effort/investment of the land manager.

Coherence between efforts to reduce emissions, on the one hand, and the demand for bioresources from a growing bioeconomy on the other hand is crucial for AFOLU sectors to play a positive and proportionate mitigation role. In addition to their potential as a carbon sink, the AFOLU sectors are also seen as a source of biomass to replace traditional energy sources in transport, heating and power and as a source of material products to replace more carbon intensive or fossil-based alternatives e.g. traditional plastics. Most forward-looking scenarios, including those from the European Commission, show the EU's LULUCF sink decline towards 2030 and 2050 as a result of increased harvesting and maturation of the forest growing stock. Whilst regrowth of biomass can re-sequester carbon, the 'carbon debt' impact (including that linked to increased intensity of forest extraction) of utilising biomass for energy is significant and limits the generation of a carbon sink thus ability to offset emissions from other sectors. The use of biomass from forests should follow the principles of resource efficiency including cascading use, circularity, promoting the use of harvested wood products, re-use and recovery before its use for energy generation. Prioritisation of desired uses, consideration of scale consequences and application of efficiency principles will help to deliver biomass inputs to the economy while retaining the carbon sink provided by forests.

Long term strategies need to look at what can be done to reduce emissions in each sector coherently, before looking to net sinks in the forestry sector. **In the land use sector, this means that agriculture needs to focus on improved management of livestock and manures, more efficient use of organic and inorganic fertilisers, and improved management of carbon in soils and vegetation.** The EU agriculture sector is a net source of emissions. Whilst emissions in the sector remain below 1990 levels, they have been increasing since 2012. Reasons for inaction in the sector include the lack of specific GHG emission reduction targets for agriculture, the perceived cost of addressing emissions per tonne of carbon and the specificity of the sector's role in providing food and other commodities. However, with

concurrent reductions in other sectors agriculture's emissions are gaining more prominence in economy-wide emissions.

The Commission's proposals for the future Common Agricultural Policy (CAP) post 2020, which is meant to make the CAP move towards a more results-based policy than one based on compliance, contain a specific objective on climate ('Contribute to climate change mitigation and adaptation, as well as sustainable energy'). There are several results-based indicators linked to this target, including one on reducing livestock GHG emissions. Member States will therefore have to develop within their CAP national action plans, measures to address GHG emissions, including from the livestock section, which have so far remained largely outside emission reduction efforts. When assessing the plans, the Commission should ensure that effort is maintained to both reduce emissions across the land using sectors as a whole, and that trade-offs made between CO₂ and non-CO₂ at national level are minimised.

Finally, policy to maximise emissions reductions in the agriculture sector will increasingly need to be complemented by a debate on consumption, and the scope for measures to reduce the environmental footprint of EU food consumption by reducing its focus on livestock products.

2.2 Transport

Transport GHG emissions make up an increasing share of the total, and making progress in mitigation has proven difficult in comparison with most other sectors. In 2015, transport made up about 26% of all EU GHGs. Road transport makes up the vast bulk of this (about 75%), but aviation and shipping emissions are growing more rapidly and must also be urgently addressed. Transport emissions have not yet been decoupled from economic growth, and the rapid growth in mobility over recent decades has led to large increases in emissions despite major improvements in efficiency. Thus, technical efficiency improvements are important and within reach with the right policies, but without a broad range of strategies and initiatives to change patterns of transport use it will be difficult to make the necessary reductions in emissions by 2050. These individual strategies often produce only modest reductions on their own, but can work in synergy to add up to major improvements as well as offering important co-benefits in terms of other SDGs.

Transport infrastructure investment must immediately be directed to avoid lock-in of carbon intensive modes over the next decades, and efforts to integrate electrification, new fuels and low carbon modes into the existing infrastructure redoubled. Electrification of ground transport is the most important single technology to emphasise given the technological feasibility of electrification especially for lighter vehicles, and their high turnover rate. Personal vehicles running on the internal combustion engine should be heavily curtailed, and widespread bans on new sales could be implemented by 2040 at the latest. Urban mobility makes up about 40% of all CO₂ emissions of road transport, and has many possible mitigating strategies given that most urban trips are over short distances. Sustainable Urban Mobility Plans should be further emphasised and integrated into planning, with renewed emphasis on improved public transit, increased use of non-motorised transport and improved land use strategies. HDVs (mostly trucks and busses) can be made zero GHG by 2050 using a combination of technologies and policies.

Emissions from leisure travel, primarily from aviation, must also be addressed. Aviation made up 13% of EU transport emissions in 2015. ICAO projects a 300-700% increase by 2050 under a business as usual scenario (BAU). Technological and managerial solutions can be developed to lower emissions, but a global agreement to reduce aviation emissions is necessary, and

viable alternatives for medium distance trips should be developed, possibly high speed rail or low emission busses. Fiscal and regulatory advantages of the airline industry should be eliminated, and international integration of the railway industry should be encouraged. Mechanisms focused on managing the EU's responsibility for aviation emissions (i.e. from flights landing in and taking off from EU airports) including broader application of the ETS, will need to be kept continually under consideration in order to be able to respond to any weakness in international efforts to reduce emissions (and to galvanise more ambitious international action).

2.3 Buildings

Buildings account for about 36% of EU CO2 emissions. Fortunately, the technologies needed to make most buildings near zero emission are well known and all that is required is implementation. However, this will require a major effort, particularly in terms of renovation of the existing building stock, much of which is old and energy inefficient. Building renovation could also have co-benefits in terms of economic activity, health, social well-being, and reduced energy poverty. With renovation rates of only 0.4-1.2% in different EU countries, this rate will need to be rapidly scaled up to take advantage of this predictable decarbonisation pathway. Member States will need to make renovation a more attractive option through the use of subsidies and other consumer level programmes. New builds should all be near zero emission by 2020 according to the existing Energy Performance of Buildings Directive. The most important technologies for reducing GHGs in the building sector are full deployment of district heating, proper insulation, the implementation of LED lighting throughout the building, and heat pumps.

2.5 Emissions Trading System (ETS)

The **Emissions Trading System** is a cornerstone of European decarbonisation policy. While it has – rightly – faced criticism for the lack of ambition in the caps set, and for the resulting weak carbon price, these are problems with political will and decision-making, rather than with the mechanism itself. Ideally, a political response to the economic downturn of 2008/2009 would have seen a reduction in availability of allowances to ensure that the carbon price provided the right level of incentive for investment in low carbon generation and energy efficiency. As noted above, however, the incremental signal from carbon pricing is not, on its own, ever likely to be sufficient to drive sufficient investment in decarbonisation; partly as a result of political uncertainty (uncertainty on both the future of caps in the ETS, and on which decarbonisation technologies are likely to be favoured by the market or by other regulation), and partly as a result of short-termism among investors. In principle, a low carbon price is not a failure of the ETS; indeed, carbon markets are a mechanism for delivering a given level of abatement at the lowest cost to the economy, as reflected in the carbon price. The focus should therefore be more on whether the emissions from the sectors covered by the ETS are genuinely reducing at the level required, and taking advantage of all cost-effective opportunities for emissions abatement; and on what measures need to accompany the ETS carbon price signal in order to ensure future-oriented investment decisions.

Decisions on the ETS's role in the long-term strategy will need to reflect the arbitrage between sectoral strategies, and the understanding of linkages between them, that are essential to deliver a credible long-term strategy. For example, will a carbon price mechanism be used to encourage carbon sequestration investments in the land use sector and elsewhere, and if so,

should it be driven by the ETS? (in which case, ETS caps will need to be set at a level of stringency which drives both decarbonisation investment in the ETS and carbon sequestration investment at scale). Or alternatively, what is expected to be the pace of electrification of the transport and heat sectors, and what implications does this have for the carbon price? We would offer the following recommendations for ensuring that the ETS is better fitted to a long-term strategy:

- (i) Set a front-loaded trajectory for cap reduction, with steeper percentage reductions in the five-year time-horizon, in order to maximise the impact on timely decarbonisation investment.
- (ii) Introduce a clear legislative principle that caps may be tightened, but may not be relaxed; this will provide greater certainty for investors in decarbonisation technologies. The definition of “cap” for this principle should reflect the operation of the stability reserve, and any effective relaxation created by allowing carbon sequestration at scale to benefit from the ETS carbon price.
- (iii) Move swiftly to a system of 100% auctioning of allowances, accompanied where appropriate by grant funding (financed from the receipts from auctions) for decarbonisation investments in sectors genuinely exposed to external competition.

2.6 Carbon capture and storage

Without an understanding of the implications of negative emissions technology, and hence its potential contribution at scale in later decades, it is impossible to develop a clear understanding of the sorts of emissions trajectories required in other sectors. EU investment in carbon capture and storage technologies has so far trailed behind that of other economies – in part, because the carbon incentive provided by the ETS has been insufficient to overcome the high capital costs and technology risks associated with CCS projects. EU efforts to encourage early deployment, through the CCS Demonstration Project Network, have run into the sand. However, there is a strong case to be made for enhanced public support for innovative projects, in particular with a view to identifying both the potential for sequestration, and the potential unintended consequences in terms of environmental impacts. It will be critically important to ensure that successful deployment of CCS does not lead to the exploitation of new fossil fuel resources or lead to unsustainable harvesting of biomass, but that it is used as a bridging technology to minimise the impact of current carbon-emitting infrastructure. In addition, further research is needed for concepts such as bio-energy with carbon capture and storage (BECCS), including on its impact on the wider bio-economy (identifying, for example, the risks of making energy use of biomass more attractive than material uses).

3. Wider challenges of a low carbon world

3.1 Employment and a socially fair transition

Long term strategies must aim at transition that is fair and rights-based. Moving towards a decarbonised Europe will mean big transformations in most economic sectors and have implications on Europeans' everyday lives, livelihoods and consumption. It is crucial that the burden of the transition is distributed fairly between and within countries. Transformation strategies must be drawn up and put in motion for both geographical regions and economic sectors relying on fossil fuels. This should be coupled with investments into the transition, the creation of alternative livelihoods, and a major investment in skills and training for those affected. A shift away from fossil fuels can also become a driver for sustainable economic growth and job creation. In this transition there is also a potential to shift ownership structures, especially relating to energy systems, towards public ownership and democratic participation in the energy production. It is key to empower, with information, knowledge and access to seed funding, individuals as well as communities to set up renewable and sustainable energy sources. A successful GHG emissions reduction strategy needs to be seen to be fair, and requires the active participation of all stakeholders and open communication to help find solutions that can assure that the transition does not punish the most vulnerable or lead to unemployment blackspots. Rather, the potential employment benefits of future low-, zero- and negative-carbon technologies need to be emphasised, and attention focused on the potential for locating those opportunities in areas with current high levels of carbon-intensive industry.

3.2 Adaptation

Long term strategies should also focus on adaption, as climate change is not just something which will be happening in the future, but something that we can experience already today, but whose impact will increase over time. There should be increased efforts and investment to model climate impacts at regional, national and local levels and to create plans to prepare for potential extreme weather events and climate extremes. The Commission and the legislators have so far taken a largely voluntary approach to adaptation – which reflects the idea that adaptation action usually makes clear sense from the point of view of the individual or organisation taking the action. However, we are now developing a better understanding of the ways in which coherent adaptation action can be more effective, and more experience of the effectiveness of policy approaches to encourage action; and this, coupled with the way in which recent climate and weather events have increased public understanding of the urgency, mean that the time is right to consider a more active approach. . One option would be to improve transparency and visibility of adaptation preparedness: the Member States could, for example, have increased reporting obligations on climate adaptation action, which could be further developed through the EU's GHG monitoring mechanisms and the governance framework for climate and energy. Direct work with the local and regional levels, funded through the EU budget, could also help to scale up adaptation efforts and disaster preparedness, and to improve planning mechanisms to limit future climate change impacts. For the AFOLU sectors, adaptation actions often take precedence over mitigation actions. To improve coherence between private interests and societal needs, adaptation support (such as that provided through the CAP) should be 'mitigation proofed' to ensure adaptation action contributes to mitigation needs, or is at least consistent with them. Climate adaptation requires coordination across different levels of decision making; this needs to be addressed,

and implementation of public sector action needs to improve, in order to make sure that the adaptation measures and decisions needed can start to take shape now rather than later.

3.3 The role of EU globally

Long term strategies must take into account the importance of a strong EU leadership in the global climate arena. The EU should also in the future play an important role in increasing global climate ambitions and should lead not only in principle, but by example. Within the global decision making structures as well as in domestic implementation, the globally agreed Sustainable Development Goals (SDGs) and Agenda 2030 should be respected and any efforts must be in-line with these.

Long term strategies need to recognise the impact of EU action outside its borders, and seek to minimise any GHG emission leakage. A key example is agricultural commodities traded globally, where the EU's climate footprint from consumption is significant. Long term strategies need to recognise these impacts outside the EU's borders and to ensure that production focussed measures do not lead to a concurrent increases in imports and emission footprints in third countries. Especially for the food and agriculture sectors in the EU this will, as noted above, require a greater consideration of the consumption and demand side for food and biomass from agriculture (and forests), as well as addressing emission losses within the agri-food system, such as from food waste.

Long term strategies need to recognise the potential impact of EU development cooperation and trade agreements. Low carbon paths to growth have been an element in EU development policies; but environmental issues need to be much more at the heart of EU trade policy, both with developing countries but also developed economies. In any future trade agreements the EU should make sure the agreements comply with the Paris Agreement and that the agreements include measures which support the levels of reduction in GHG emissions required from both EU and the third party country. The EU should be sceptical of trade agreements with economies which are failing to comply with their Paris Agreement obligations; and should at a minimum ensure that mechanisms are in place to avoid carbon leakage.

4. Conclusions

The debate on Europe's long-term decarbonisation strategy comes at a crucial time. On the one hand, there is an underlying urgency for low-carbon investment, belied by the relative lack of challenge in meeting the 2030 targets, which means that we need to change the terms of discussion and focus on long-term coherence. On the other hand, the EU is looking for priority policies and projects which can give a refreshed meaning and sense of purpose to the EU institutions.

The challenges involved in developing a credible long-term strategy are significant. In particular, it demands an approach which looks at the interactions between sectors, and creates an understanding of the systemic nature of decarbonisation decisions. We have set out in this paper some initial suggestions on policies and priorities, which may or may not be the right choices. What matters more than the specific choices made, however, is that hard choices are identified and resolved. The key tests for the credibility of the long term strategy will be whether it generates real political debate, leading to resolution; and whether it galvanises early action and investment.