

1 Introduction

Shell welcomes the EU's Green Deal and supports anchoring the 2050 climate neutrality target in EU legislation through the European Climate Law. To accelerate the deployment of low carbon technologies needed to achieve climate neutrality, industry needs clear goals and predictable policies to provide the business case for investment. The review of the EU's 2030 greenhouse gas emissions reduction target (2030 GHG target) will help deliver such clarity and predictability. Shell supports the Commission's commitment to raise the 2030 GHG target to between 50 to 55 %, compared to 1990. The choice of 2030 GHG target should deliver a trajectory to climate neutrality by 2050, which is cost-effective, socially fair and supports EU industrial competitiveness.

Even at this time of immediate challenge posed by the COVID-19 crisis, we believe it is important to maintain focus on the long term. We support an economic and social recovery from this crisis which is guided by the transition to climate neutrality by 2050 and provides a pathway to sustainable growth.

Success in delivering the revised 2030 GHG target, and longer-term climate neutrality, will rest on progress made on an enabling policy framework which includes:

- A sectoral approach as a guiding principle for the implementation of the Green Deal, particularly for the hard to abate sectors in transport, energy-intensive industry and buildings. A sectoral approach should consist of policy measures to accelerate and synchronise demand and supply for low carbon energies, such as renewable power, clean hydrogen¹, and biofuels. Policies should incorporate support for infrastructure to transport and deliver low carbon energies at scale. The EU Climate Law offers the appropriate platform to place the sectoral approach at the core of the Green Deal implementation by making it a legislative requirement for key sectors to have pathways to Net Zero Emissions (NZE).
- A reform of the EU Emissions Trading System (ETS) to align it with the climate neutrality target and ensure it is a fit for purpose to balance Greenhouse Gas (GHG) emission sources and sinks.
- A role for carbon removal technologies, including both Nature-Based Solutions (NBS) and Carbon Capture Usage and Storage (CCUS) so that they can scale up to the level required to balance residual emissions as the energy transition progresses.
- Recognition of international climate action under the Paris Agreement within the EU Climate Law and the underlying policy framework.

Below we describe a possible pathway to climate neutrality in Europe and share policy options to enable the business case for investment.

2 A pathway to climate neutrality

Shell's Scenario Sketch²: "A Climate-Neutral EU by 2050" explores a possible, albeit challenging, pathway to achieve NZE in the energy system by 2050. It shows a transition to NZE where:

- The electrification of the energy system would need to grow from around 25% today to at least 60% by 2050 with three quarters of the electricity is generated by renewable sources.
- The use of biofuels would need to triple between 2020 and 2050, with demand increasingly met by advanced biofuels.
- Energy efficiency would need to improve by 45% from today to 2050.
- Clean hydrogen would account for around 10% of final energy use with 1 million hydrogen trucks on the road by 2050, and hydrogen used to heat homes in certain countries after 2040.
- There is an essential role of carbon removals, with around 600 million tonnes captured and stored annually by 2050, and 300 million tonnes of residual CO₂ emissions would need to be balanced by natural sinks.

¹ The term "clean hydrogen" is used in the Commission Communication of 11 December 2019 on the European Green Deal. However, the term is not yet defined in EU legislation. For the purposes of this document, Shell considers clean hydrogen to encompass both green hydrogen (produced through electrolysis powered by renewable electricity) and blue hydrogen (produced by steam-methane reforming of natural gas or through other technologies such as pyrolysis and applying carbon capture and storage and or usage).

² <https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/scenario-sketches/new-sketch-a-climate-neutral-eu.html>

3 Embed a sectoral approach to deliver Net Zero Emissions in hard to abate sectors

Reaching NZE will need unprecedented co-operation and action throughout all sectors of the economy, especially in the hard to decarbonise sectors, such as heavy-duty transport, aviation, maritime, and energy-intensive industries including refining, chemicals, steel and cement. EU policy can foster this cooperation through measures that create sectoral demand for low carbon energies in synchronisation with support for investment in supply and infrastructure. This sectoral approach should be based on following five elements:

1. Pathways to net zero emissions in hard to abate sectors, as a basis for greater co-ordination within sectoral value chains and for the policy synchronisation needed to increase the pace of change and speed up the development, commercialisation, and adoption of efficient and low carbon processes, technologies, and energies. The timeframe and specific policy mechanisms to reach NZE may vary from sector to sector.
2. Create sectoral markets for low carbon energies and products. The market for low carbon energies and products could be created either through a direct demand signal, such as a mandate for renewable energy or GHG emissions intensity of energy, or through an indirect demand signal, for example, performance standards for low and zero carbon vehicles, vessels, and products.
3. Provide time-limited support for the first industrial-scale demonstration projects, such as clean hydrogen, advanced biofuels or CCUS, to help reduce costs and enable commercial deployment, through mechanisms such as the EU Innovation Fund; and, a supportive fiscal treatment to mitigate investment risk in new and/or novel technologies. This includes support mechanisms to leverage private financing, for example, capital grants, investment tax credits, loan guarantees, as well as price support mechanisms including contracts-for-difference or differential tax rates.
4. Ensure there is a robust and rising carbon price. A carbon price will be needed to incentivise greater energy efficiency, drive switching to low carbon energies, re-direct economic resources towards low carbon, and bridge the long-term cost differential between low carbon energies and conventional energies. This can be done explicitly using market-based mechanisms like tax and trading or implicitly through regulatory approaches such as mandates or standards.
5. Drive investment in enabling infrastructure to transport low carbon energies. This includes planning the extension, expansion, and upgrade of the electricity grid in line with investment in renewable electricity, developing infrastructure for the transportation and storage of hydrogen, supporting CO₂ transportation, and storage infrastructure, and building more energy efficient urban infrastructure.

Below we offer some examples of this sectoral approach for heavy-duty transport, aviation and energy-intensive industry.

3.1 Heavy-Duty Transport

A sectoral approach for heavy duty transport will need to set out a clear pathway on how to achieve NZE. This would include a trajectory for tightening vehicle CO₂ standards so that vehicle manufacturers can design towards them, infrastructure build can commence, and fuel suppliers can invest to match growing demand for the volumes of clean energies likely to be required. The following policy options could be considered:

- Setting a heavy-duty vehicle CO₂ emission performance standard to be zero by 2040, and provide incentives for customers to buy low and zero carbon vehicle.
- Ensuring that fuels legislation, such as the Renewable Energy Directive (RED) and/or the Fuels Quality Directive article 7a support all fuels which can reduce GHG emissions, such as renewable electricity, advanced biofuels (liquid and gas), synthetic fuels made from recycled wastes, and clean hydrogen. Fuels legislation should be consistent and support CO₂ emission performance standards for vehicles.
- Delivering the backbone of infrastructure along the Trans-Europe Networks for Transport (TEN-T) network.
- Aligning the taxation of energy products and electricity through the Energy Taxation Directive with the climate neutrality objective and to support the use of low carbon energies.

3.2 Aviation

Decarbonisation of aviation requires significant investments and change across the whole value chain including original equipment manufacturers, airlines, fuel suppliers, airports and consumers. As alternative lower carbon engine technologies are currently not widely available, Sustainable Aviation Fuels (SAF) are the main viable technology to reduce substantially the sector's GHG, especially in the shorter term.

- The key to create demand for SAF in aviation is through an ambitious SAF mandate. The mandate should allow all sustainable feedstocks to be used for compliance and provide clear pathways to production of SAF from advanced feedstocks.
- Innovation support for pre-commercial technologies will be needed to encourage the first wave of installations and support advanced technology development (including for synthetic fuels and clean hydrogen for the longer term).
- A robust and rising carbon price will be needed to incentivise greater energy efficiency in aircrafts and operations and to help partially bridge the long-term cost differential between SAF and conventional aviation fuel.

3.3 Energy-Intensive Industry

To deliver a climate-neutral and competitive energy-intensive industry³ such as refining, steel, cement and chemicals, a sectoral approach should include policy measures to accelerate and support investment in (i) electrification, (ii) clean hydrogen (ii) circularity, and (iii) CCUS. To help make the business case for investment in these actions, the following policy options could be considered:

- Strengthening the EU ETS to ensure a meaningful carbon price signal to incentivise GHG emissions reduction.
- Carbon contracts for difference to close the gap between the conventional and low carbon energy or products and support for innovation through the Innovation Fund and other national schemes to enable demonstration of pre-commercial technologies at scale.
- Low carbon product standards, which reward circularity as well as GHG emissions reduction to enable a market for these differentiated products
- Investment in common infrastructure such as hydrogen, CO₂ transportation and storage, as well as expanded and smart electricity networks.
- A robust system of competitiveness safeguards until there is climate action policy convergence with competing regions.

4 Reform the EU Emissions Trading System to enable climate neutrality

The sectoral approach should be complemented by reform of the EU ETS and the Effort Sharing Regulation (ESR) to align with the new 2030 GHG target. Shell welcomes the Commission's sectoral impact assessments under the 2030 Climate Target Plan, and calls for a cost-effective division of effort between ETS and ESR sectors. For the EU ETS specifically, we support:

- A tightened emissions cap through a higher linear reduction factor, and at the same time review the market stability reserve to enable the effective functioning of the system to ensure a meaningful carbon price signal to deliver fuel switching as well as renewable electricity.
- Strengthening the Innovation Fund to support large-scale demonstration of pre-commercial technologies and enable industrial decarbonisation.
- The gradual extension of emissions trading to non-covered sectors as a means to create an economy-wide price for carbon. The inclusion of new sectors should depend on the market structure and cost of abatement options in the respective sectors. For example, and as mentioned above in the sectoral approach in Section 3, before 2030 we believe that other measures are more effective to reduce GHG emissions in the road transport sector.
- Reform to deliver NZE by or before 2050, and therefore encourage investments in CO₂ removal through geological and natural sinks.

³ refers to industrial installations which emit more than 25,000 tonnes of CO₂ a year and are participants in the EU Emissions Trading System (ETS).

- Safeguards and innovation support will need to remain in place to address the competitiveness impact for EU industries arising from higher carbon costs if globally there aren't comparable climate policies.

5 International Co-operation

International co-operation delivered through Article 6 of the Paris Agreement could drive climate action at a faster and larger scale and deliver a cost-effective transition to climate neutrality. A recent study⁴ by the University of Maryland commissioned by the International Emissions Trading Association found that international co-operation could deliver savings of \$250 billion a year by 2030, which could be reinvested in additional climate action. We support that the EU continues to promote international climate cooperation through Article 6 of the Paris Agreement to deliver NZE globally. The EU Climate Law and underlying EU policy framework should provide for the rules and criteria to recognise international projects in accordance with Article 6, once a robust framework is agreed to ensure high environmental integrity and a mechanism to adjust Nationally Determined Contributions (NDCs).

6 Summary

Shell supports raising the 2030 GHG target to between 50 and 55 % compared to 1990, and the subsequent reset of the underlying policy framework to give industry clear goals and provide the business case for investment. Placing a sectoral approach for the hard to abate sectors at the core of the Green Deal implementation is vital to accelerate the transition to NZE. Based on sectoral pathways to NZE, this sectoral approach would help accelerate and synchronise demand and supply of low carbon energies and support the enabling infrastructure for renewable power, clean hydrogen, and biofuels. In parallel, the EU ETS needs to be strengthened to ensure the continuation of a meaningful carbon price signal and to deliver NZE. International action under the Paris Agreement should be recognised once a robust process is agreed to ensure high environmental integrity and a mechanism to adjust NDCs. Finally, safeguards for industry exposed to international competition alongside support for innovation to enable the large-scale demonstration of low carbon technologies is vital to deliver climate neutrality in the EU.

⁴ https://www.ieta.org/resources/International_WG/Article6/CLPC_A6%20report_no%20crops.pdf

Disclaimer

On March 4, 2020, the EU Commission proposed the European Climate Law that would establish a legally binding target of net-zero greenhouse gas emissions by 2050. Shell strongly supports the proposed European Climate Law and its binding target of net-zero greenhouse gas emissions by 2050.

We believe meeting this target will be extremely challenging but possible. This report contains an assessment of what we believe may be needed to decarbonise the energy system in order for the EU to meet the proposed target of net-zero greenhouse gas emissions by 2050. This overview is not intended to be proscriptive and there are other pathways for the EU to follow in reaching the target. It is important to note that the suggestions contained in this report are those to be taken by the EU, and not necessarily Shell. While Shell is supportive of the EU target of net-zero greenhouse gas emissions by 2050, our current business plan is not consistent with the proposed EU target. However, as announced on April 16, 2020, Shell aims to be a net-zero emissions energy business by 2050. Accordingly, we expect that over time, our business plan will change as society and our customers move toward meeting the goals of the Paris Agreement. We believe that the proposed European Climate Law is a significant step in this journey.

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