

Transition, Transformation, and Innovation

Our role in the Net-Zero Challenge

The UK downstream oil sector is capable and willing to play a significant role in meeting societal targets for decarbonisation to Net-Zero

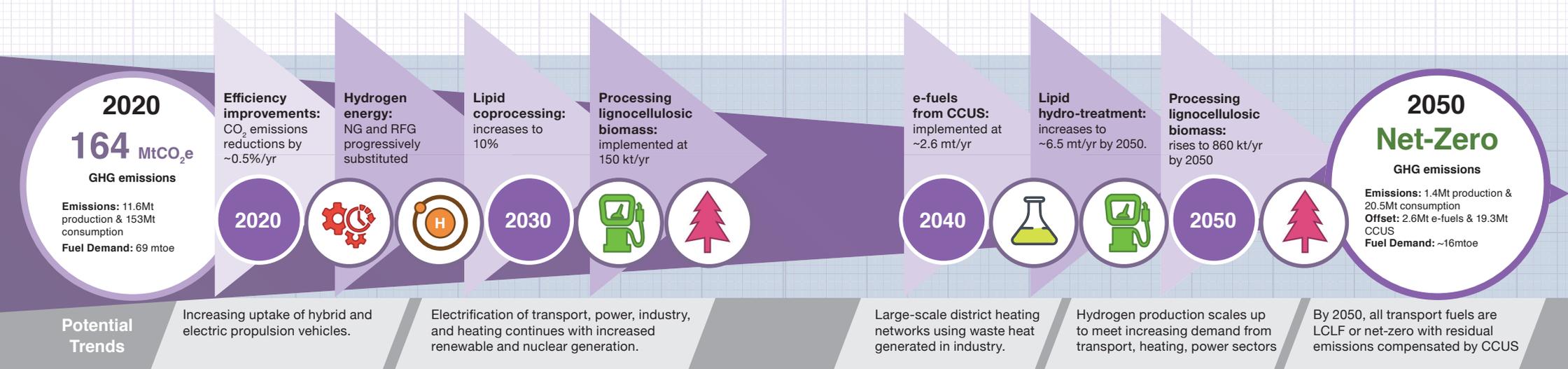
This pathway shows just one way that a Net-Zero sector can be delivered – reducing manufacturing emissions from 11.6 MtCO₂e to 1.4 MtCO₂e and potentially negative depending on use of CCUS, hydrogen and low carbon feedstocks for energy. As well as manufacturing this shows that across the lifecycle of the fuels themselves, they can also be Net-Zero – reducing the UK's transport emissions by up to 153 MtCO₂e versus today.

Report findings

Low-carbon liquid fuels can play a key role in the UK's decarbonisation - and are doing so already. There are a number of technological pathways for the Downstream Oil Sector to deliver further decarbonisation of products and their manufacture.

A systems-based approach and enabling policy framework is required to produce low carbon- and eventually Net-Zero liquid fuels. As part of this, consider bespoke approaches for sectors with limited decarbonisation options (aviation) to enable greater collaboration in supply chains' pathways.

We see Hydrogen as a critical component of meeting Net-Zero – the downstream sector is the largest producer of hydrogen in the world and can maintain and grow its role in producing and delivering zero-carbon emitting hydrogen.



Progress to date – The sector is already making changes today...

Using wind to make hydrogen in LCLFs in the Humber Refinery – Phillips 66

ITM Power Trading Ltd, in collaboration with Ørsted, Phillips 66, and Element Energy, are progressing the Gigastack project to:

- Scale up and reduce costs in the development of electrolyser technology.
- Develop a cluster-based approach using renewable electricity supplied from an offshore wind farm to generate hydrogen via electrolysis.
- Use green hydrogen to reduce refinery CO₂ emissions.



Source: Phillips66

Developing CCUS and hydrogen at Stanlow Refinery – Essar Oil UK

The HyNet Low Carbon Hydrogen Project involves the development of hydrogen production and supply

- The first plant is being designed to produce 3000 GWh/yr of hydrogen and up to six times that.
- Hydrogen production would be integrated with the HyNet CCUS infrastructure.
- The capital expenditure requirements for the first plant have been estimated at around £253.9m, with the possibility that it can be commissioned by end 2024 if the linked CCUS project and hydrogen firing within the refinery can also be implemented by this date.



Source: Cadent

Policies to decarbonise the downstream oil sector:

Today's policies won't be enough to deliver Net-Zero as they don't offer a reward for decarbonising at scale. UKPIA believe that the following measures, if taken now, can deliver the necessary incentives to business to move to Net-Zero while delivering a "just transition".

- 1 Stimulate early demand for LCLFs and hydrogen for transport;
- 2 Ensure consumers are informed on the role of LCLFs for decarbonisation;
- 3 Revise CO₂ standards and emissions labels for vehicles to show lifecycle emissions;
- 4 Industries and UK Government to develop sector-specific plans to decarbonise sectors with limited decarbonisation options (e.g. aviation);
- 5 Deliver a hydrogen strategy that sets out policy, regulatory and preferred business frameworks and gives clarity about how supply and demand can be grown together;
- 6 Improve the UK business environment to position the UK as first choice for decarbonisation investment and enable companies to compete globally;
- 7 Continue to promote industrial clusters with the downstream oil sector at their centre;
- 8 Prepare the workforce to deliver Net-Zero in a "just transition";
- 9 Ensure Government support for UK research, development and deployment of all manufacturing and transport decarbonisation technologies aligns with company needs; and
- 10 Deliver a regulatory framework that allows for innovation.

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