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*IENE Conference 11th February 2021*

# The “Clean Fuels for All” Strategy

Transformation of EU Refining and Fuels towards  
Climate Neutrality

# FuelsEurope represents 40 Member Companies ≈ 100% of EU Refining



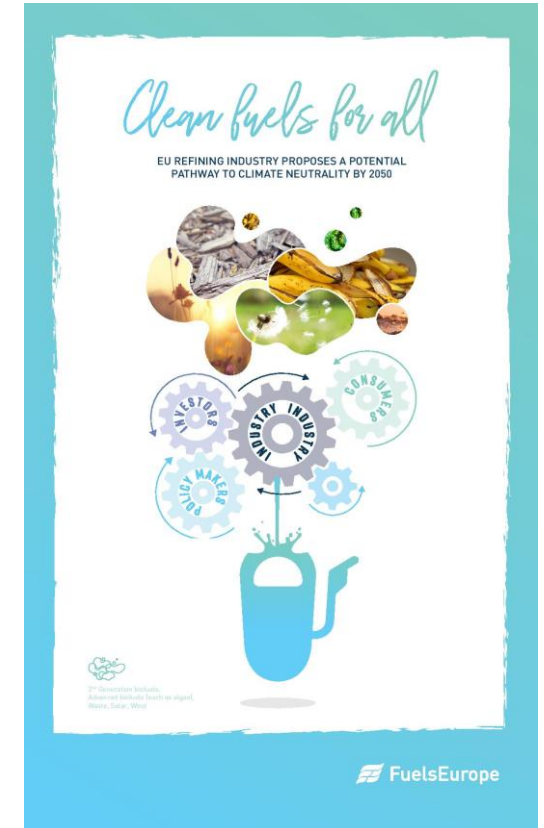
# About *Clean Fuels for All*

- 🚰 A strategy that we started 5 years ago, before the Paris Agreement.
- 🚰 The EU refining industry's potential pathway to enable transport to contribute to EU's Climate neutrality ambition by 2050.

## What are "Low-Carbon Liquid Fuels" ?

Sustainable liquid fuels from non-petroleum origin

Produced from new feedstock such as biomass, renewables, waste and captured CO<sub>2</sub>.

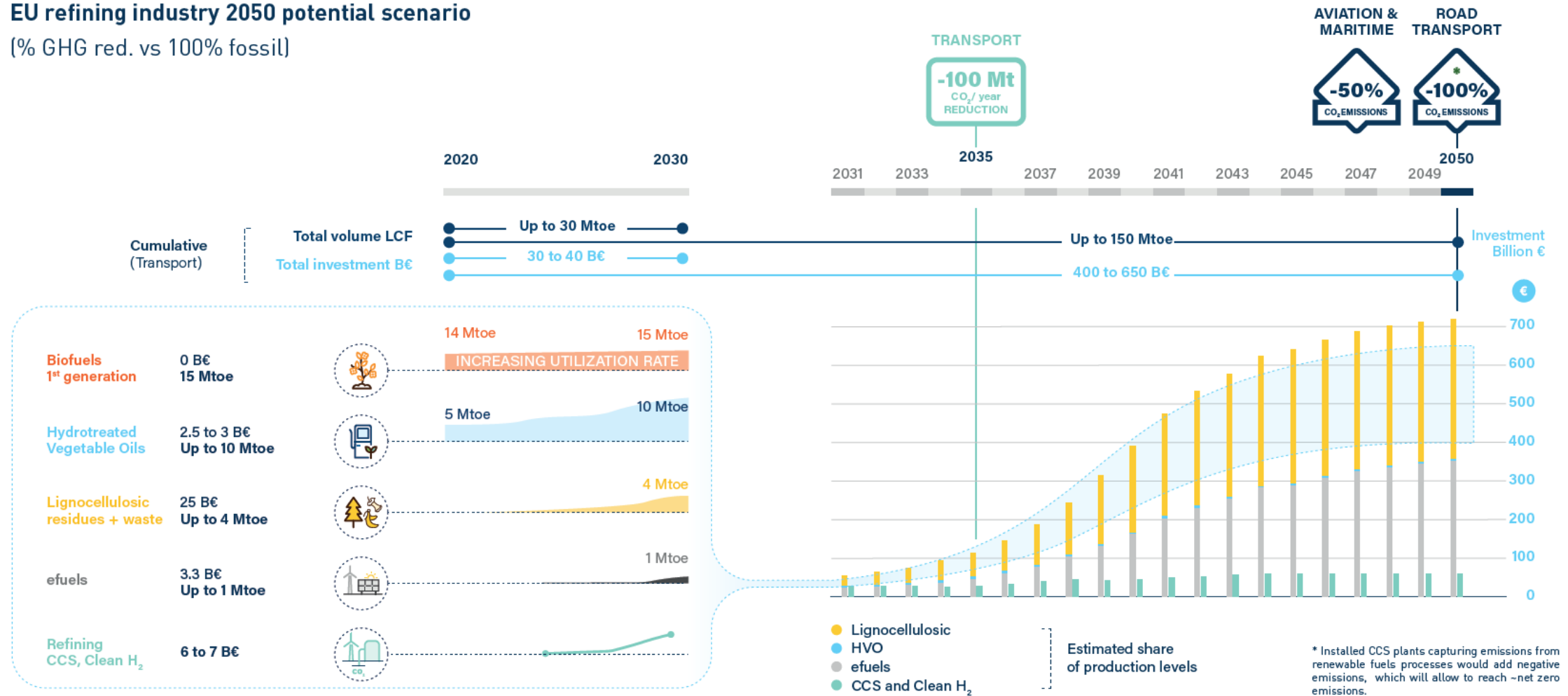


By 2050, at the latest, every litre of liquid fuel for transport can be net climate neutral, enabling the decarbonisation of aviation, maritime and road transport.

# Clean Fuels for All in numbers 2020 - 2050

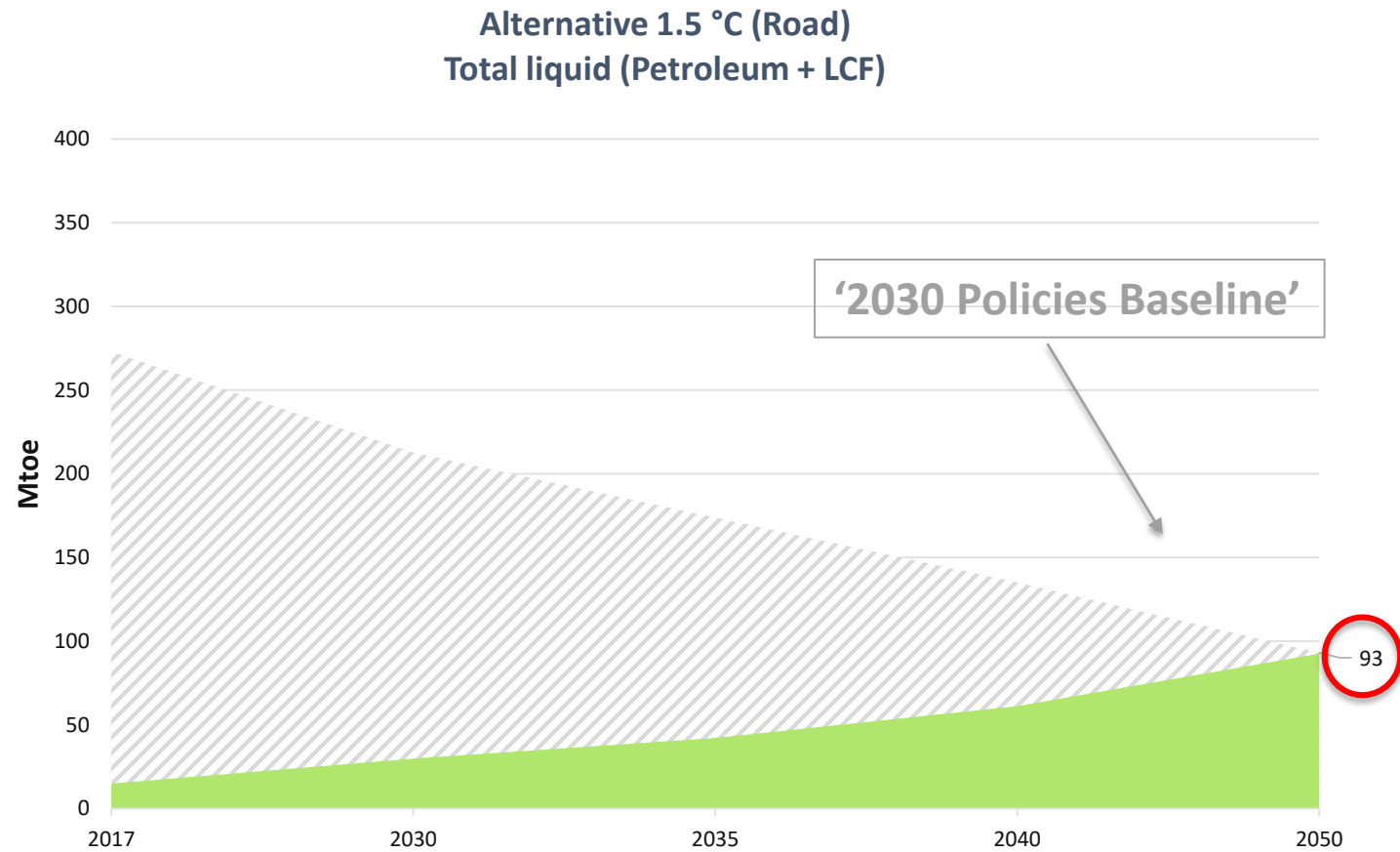
## EU refining industry 2050 potential scenario

(% GHG red. vs 100% fossil)



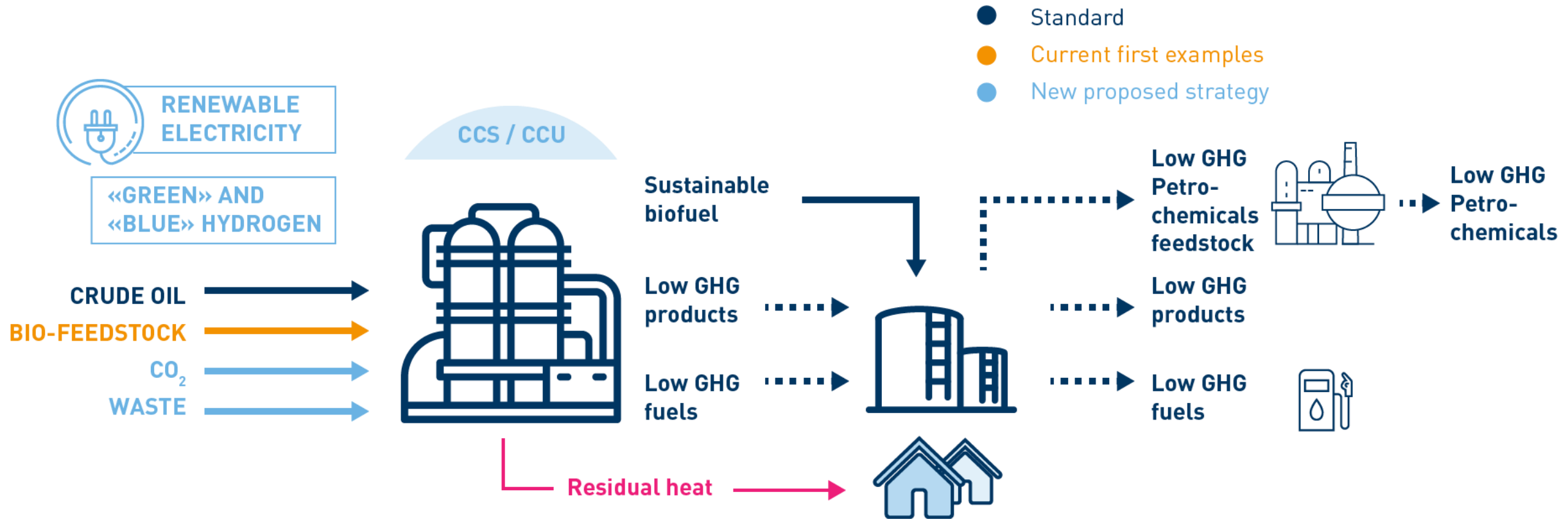
# What does this mean for the renewable content of fuels?

For Road Transport, we expect overall liquids demand to fall, but by 2050, supply can be 100% renewable



By 2050 the potential Renewable Liquid Fuels supply of circa 150Mtoe could easily exceed road transport needs

# The Refinery as an ENERGY HUB within an INDUSTRIAL CLUSTER



# European Fuel Refining Industry - The Transition to Low-Carbon Liquid Fuels has started

## Refining industry projects planned, contributing to the Green Deal & Climate Neutrality:

- Well over 20 projects for low-carbon liquids have already been started or are planned until 2030 (in the public domain).
- Projects facilitate industrial clustering through links with Chemicals, Recycling, Steel and Cement Industries, ...
- Scaling up and increasing the overall number of projects will be possible with the right enabling framework in place.

## Provisional examples\*:

- 8 Advanced biofuel projects, with capacities between 100.000 and 750.000 tonnes of output.
- 6 CCUS projects, up to 6 mt. of capacity for CO2 sequestration.
- 10 Green Hydrogen Projects, some of which lower the GHG intensity of manufacturing processes, others combine the green H2 with captured carbon to produce synthetic fuels with a capacity of up to 3.4 million tonnes of output per year.
- 3 Waste-to-fuel projects, with a capacity of up to 100.000 tonnes per year in output (derived from urban waste).

9.9 MT

Potential quantity of low-carbon liquid fuels produced per year in 2030

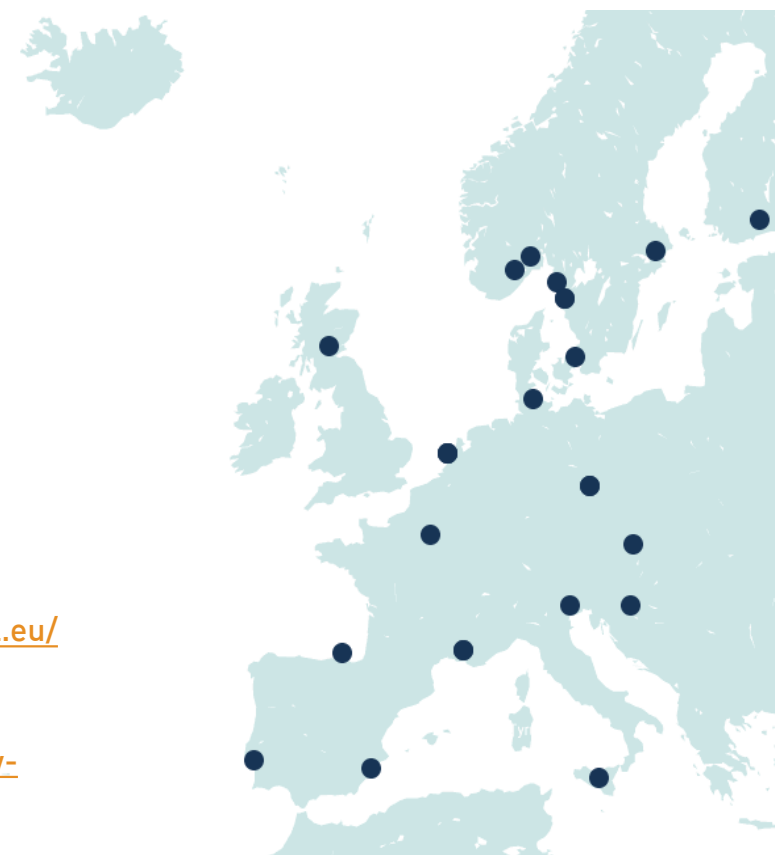
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New sites in Europe

See more:

<https://www.cleanfuelsforall.eu/towards-climate-neutrality/>

<https://www.concawe.eu/low-carbon-pathways/>



\*While the final list of projects may differ from the map or the list shown here, these projects are being considered by FuelsEurope's members to be put forth for support under the EU Recovery Fund.

# What policy framework is needed to support the growth of supply and demand?

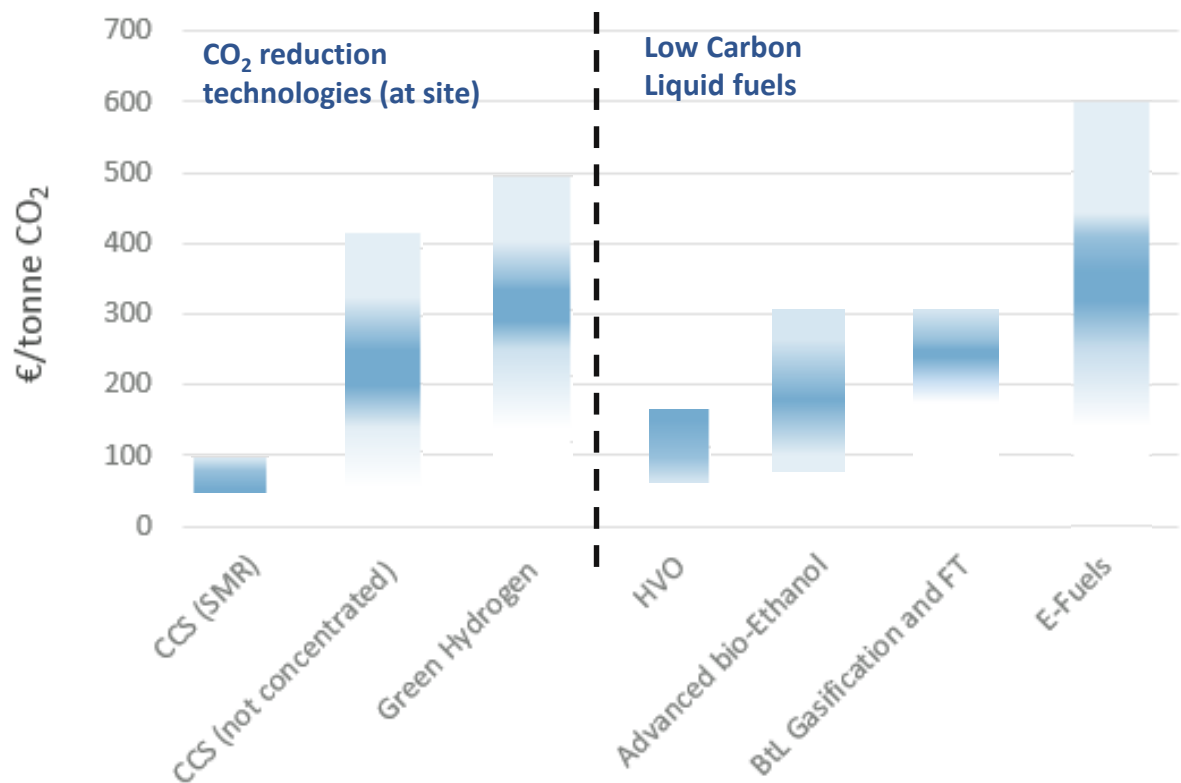
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- EU Commission has announced the formation of the “Renewable and Low Carbon Fuels Value Chain Alliance”, this is very welcome.
- EU Initiatives “ReFuel EU Aviation”, for sustainable aviation fuels, and “Fuel EU Maritime” for shipping fuels are also welcomed.
- Fuels Europe believes that Road Transport also is an essential part of our strategy, as faster transport decarbonisation is possible with this additional market pull, and the additional route for decarbonisation has many benefits for society.
- FuelsEurope proposes that long term contracts for renewable liquid fuels, with key consumer groups, could be used as a critical enabling mechanism, and these could be linked to customer and fuel/vehicle provider incentives.
- To fully realise this potential the EU should develop a cross-sectoral Renewable Liquid Fuels Strategy to drive growth, this should be led by the EU Commission, embraced by Member States

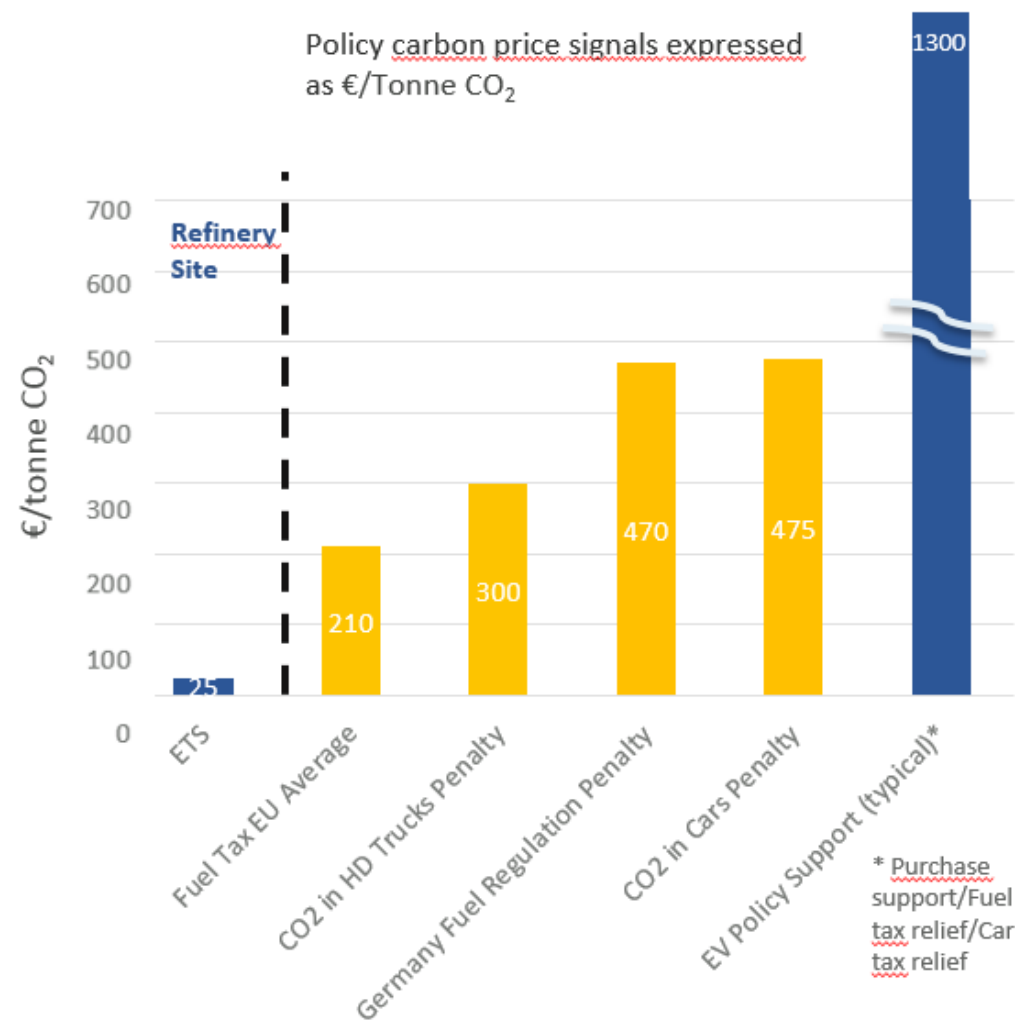


# Low Carbon Fuels: Technology Costs and Policy Price Signals

Decarbonised fuel costs expressed as  
 €/tonne CO<sub>2</sub> avoided.  
 (Fully-built-up capex + opex costs)



Policy carbon price signals expressed  
 as €/Tonne CO<sub>2</sub>



\* Purchase support/Fuel tax relief/Car tax relief

Fixed price

Market Price

# Conclusions

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- 🚰 Europe's climate policy ambition expects only a very small role for petroleum transport fuels in 2050.
- 🚰 However it will be very difficult to replace all liquid fuels with electricity or hydrogen fuels.
- 🚰 Liquids remain simply the best form of energy storage and delivery for many forms of transport.
- 🚰 Using a range of technologies, biomass, waste and residue feedstocks, captured carbon, renewable electricity and clean hydrogen, we can make significant quantities of Low Carbon Liquid Fuels.
- 🚰 All remaining requirements for liquid fuels in 2050 can be Climate Neutral.
- 🚰 Production costs are expected to be higher than for petroleum fuels, but this is counterbalanced by ability to use existing storage and distribution infrastructure, and high practicality for users. Road transport can play a key role in growing scale.
- 🚰 In addition, this strategy has important links and benefits with Industrial strategy and Transport strategy.
- 🚰 In the context of Europe's strong climate and taxation policies, this ambitious strategy for the Fuels Refining industry is within reach, from technical, commercial and political aspects.

THANK YOU FOR  
YOUR ATTENTION

[www.cleanfuelsforall.eu](http://www.cleanfuelsforall.eu)

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