

Low Carbon Liquid Fuels

A Strategy to Contribute to Climate Neutrality by 2050

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FuelsEurope represents 40 Member Companies ≈ 100% of EU Refining



What is the European Green Deal?

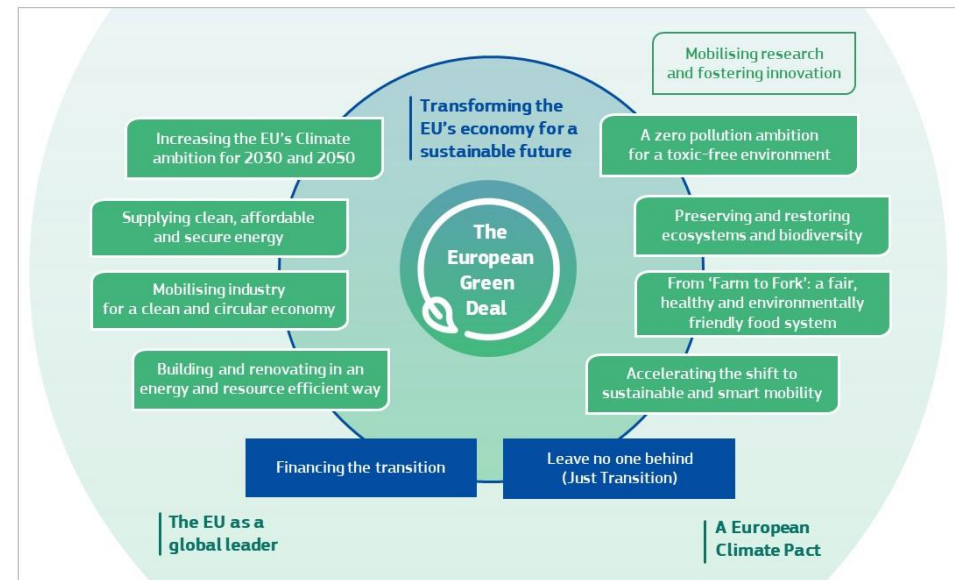
Over-arching package of policies to deliver an ambitious vision, including:

- Climate Neutral by 2050.
- Zero pollution.
- Circular Economy.
- Clean, Reliable and Affordable Energy.

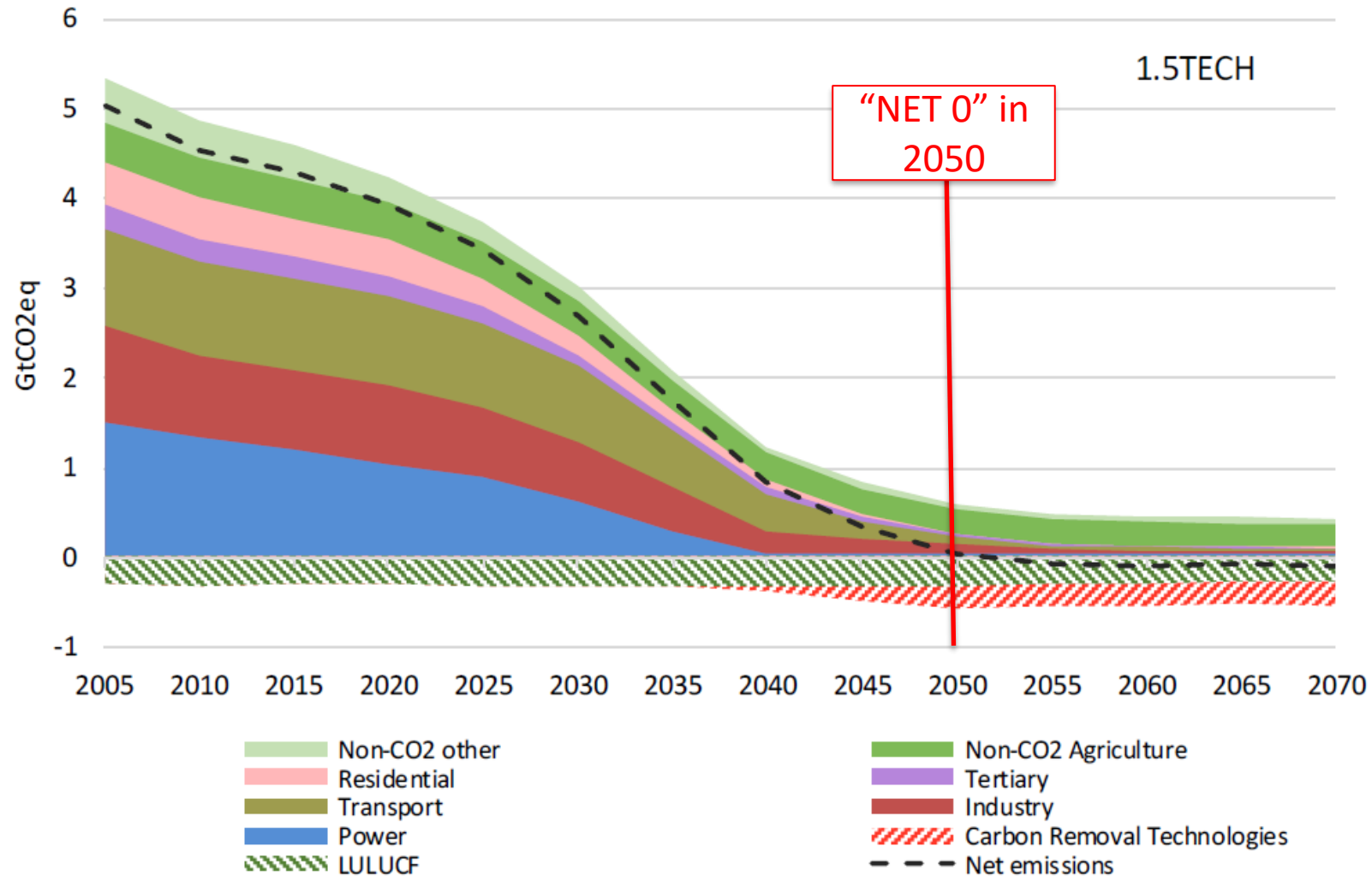
A Clean Planet for All
Commission publication - November 2018



The European Green Deal
Commission publication – December 2019



The Commission strategy for 2050 is based on the 1.5 C Tech scenario of “Clean Planet for All”*



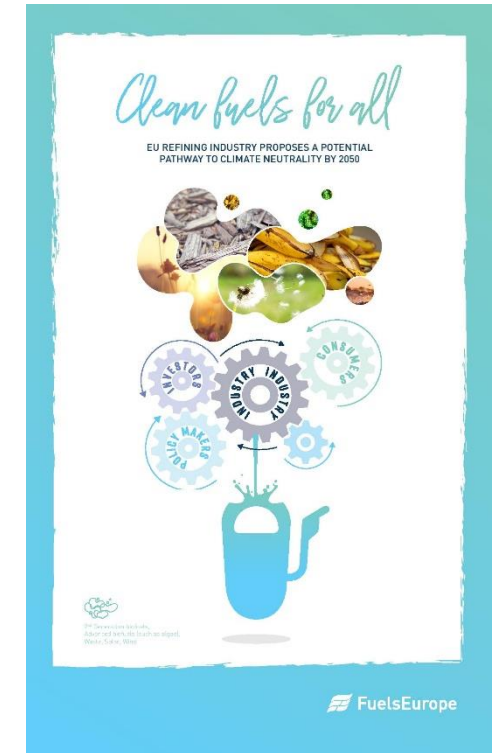
The Clean Fuels for All Strategy

A proposal ...

- FuelsEurope outlines a potential pathway to meet climate neutrality by 2050 and to develop low-carbon liquid fuels for road, maritime, and air transport.
- Investments estimate: between €400 to €650 billion will be needed.
- Our pathway shows how a 100 Mt CO₂/y reduction could be delivered in transport by 2035, equivalent to the CO₂ savings of 50 million Battery Electric Vehicles (BEVs) on the road.

...and a request

- A combination of critical technologies is needed: to meet the 2050 climate-neutrality goal, low-carbon liquid fuels and electrification/hydrogen in road transport play complementary roles.
- An enabling regulatory framework to create the market conditions and incentivise investments in new low-carbon technologies.



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

What are Low-Carbon Liquid Fuels?

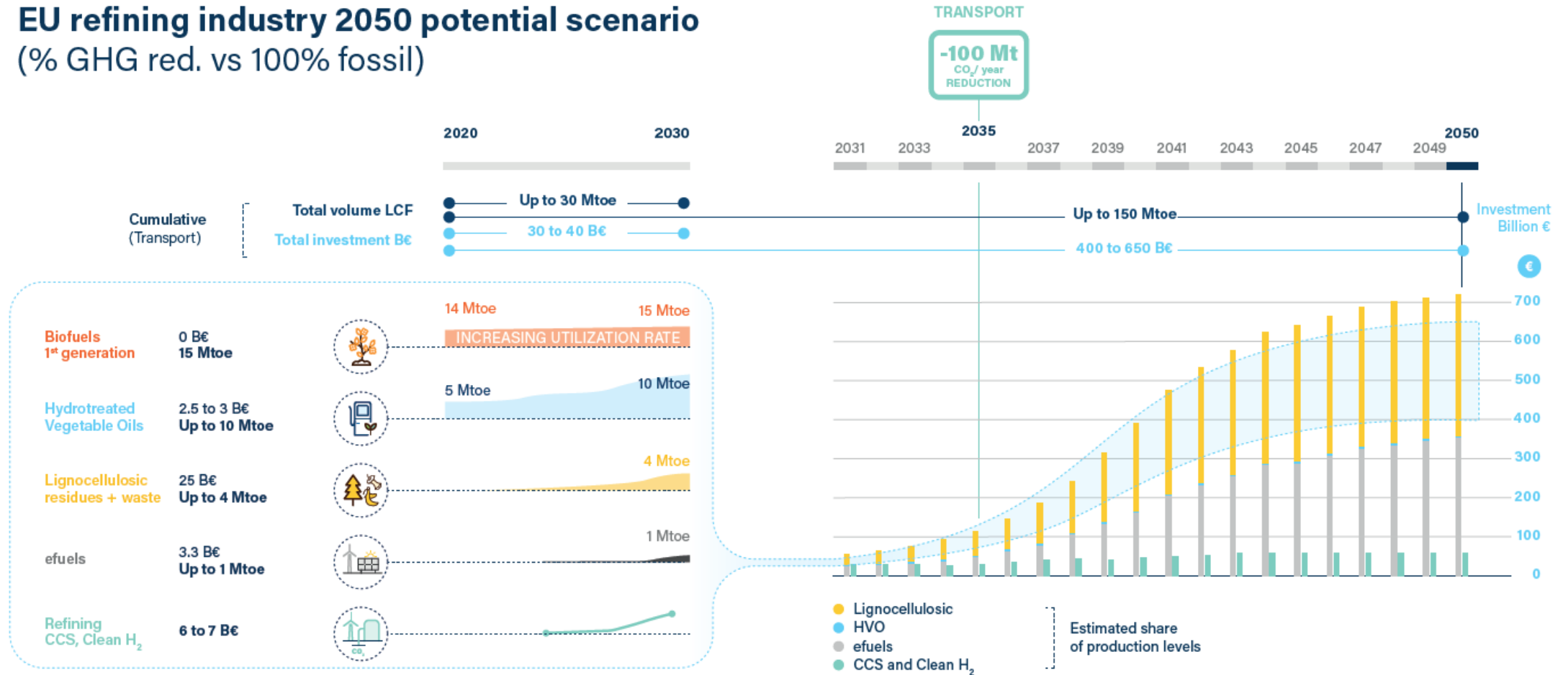
- Sustainable liquid fuels from non-petroleum origin, produced from new feedstock such as biomass, renewables, waste and captured CO₂.



- With no or very limited net CO₂ emissions during their production and use compared to fossil-based fuels.
- These feedstock are sustainable and comply with the existing EU sustainability standards.
- Low-Carbon Liquid Fuels are complementary to electrification and hydrogen. We will need all technologies to deliver climate neutrality.

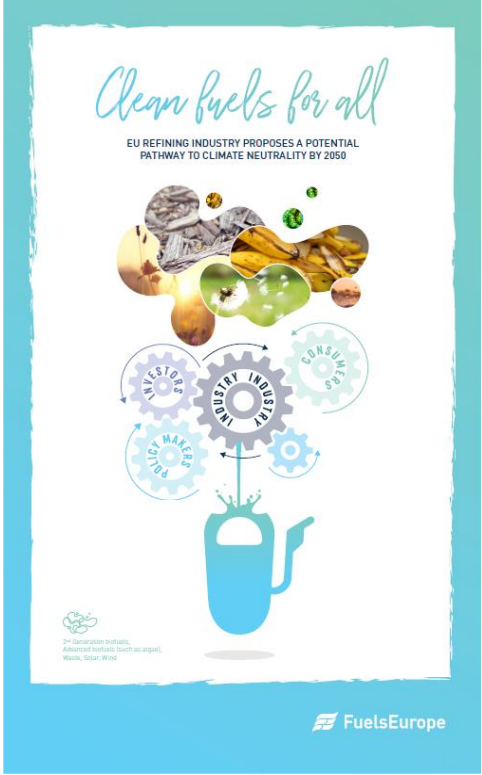
Clean Fuels for All in numbers

EU refining industry 2050 potential scenario (% GHG red. vs 100% fossil)



Conclusions

- 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 Europe in 2050 can be Climate Neutral.
- Road Transport may eventually be mostly electrified, but recognising and rewarding renewable fuels has value in the transition, it brings additional emission savings, and is strategic in building capacity.
- 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.
- 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.



www.cleanfuelsforall.eu

Thank you

