

Sufficient sustainable biomass feedstock available to support an ambitious low-carbon liquid fuels strategy for EU transport.

Brussels, 14 October 2021: A new study by Imperial College London Consultants concludes that the potential availability of sustainable biomass, with no harm to biodiversity, could support an advanced and waste-based biofuel production of up to 175 Mtoe in 2050. This conclusion reinforces a study by Concawe showing that advanced and waste-based biofuels, together with synthetic fuels and other low ILUC-risk biofuels, can play a key role, complementary to electrification, for the decarbonisation of EU transport in line with the 2050 climate neutrality objective

A study by Imperial College London Consultants, "[Sustainable biomass availability in the EU, to 2050](#)", commissioned by Concawe, the refining industry's scientific & technical body, shows that the total EU potential sustainable biomass availability (agriculture, forestry and biowastes) is more than sufficient to supply feedstock for bio-based liquid fuels to aviation, maritime and a share of road transport.

Imperial College London Consultants assessed the availability of sustainable feedstock in three different scenarios (low, medium & high mobilisation of feedstock) and found that even after allocation of biomass feedstock to bio-based products and power, industry and residential sectors according to the Commission's estimate, the total share of biomass available for transport in 2050 is estimated sufficient to support the production up to 135 Mtoe of biofuels. Taking into account biomass imports to the EU, then the production capacity could reach up to 175 Mtoe.

John Cooper, Director General of FuelsEurope explained that according to Imperial College London Consultants "*The potential is there. It is important to highlight that the biomass potential availability estimated in this study is based on very conservative assumptions.*" He added "*Furthermore, additional potential to the*

one estimated by this study can be expected from algal biofuels and other sustainable biomass feedstocks not yet included in RED II Annex IX that have not been taken into consideration at all in the above calculations. Therefore, it can be concluded that the biomass potentials in 2030 and 2050 would most probably be higher than those estimated by this study."

What about sustainability and biodiversity?

The biomass sustainability criteria applied by Experts from Imperial College London Consultants are those defined by the Commission under RED II, and traditional biofuel crops (1st generation) are not included. John Cooper stated "*Biodiversity has been carefully considered in the study, which concludes that the available feedstock will have no negative effect on biodiversity. The study is based on two key principles, the conservation of land with significant biodiversity values and land management without negative effects on biodiversity*". He added "*In fact there could be a further extension of the range of environmentally suitable biomass; We have asked another independent organisation, the Fraunhofer Institute, in collaboration with Imperial College Consultants, to evaluate the*

biodiversity impact of the land specifically used for biomass provision.”

Low-carbon liquid fuels scenarios

FuelsEurope’s [Clean Fuels for All](#) strategy describes a pathway that could supply up to 150Mt of low-carbon liquid fuels by 2050, mainly produced for half from lignocellulosic feedstock (agriculture & forestry residues, waste) & half from eFuels. This scenario is one the three scenarios that Concawe has analysed and evaluated in its Report [“Transition towards Low Carbon Fuels by 2050: Scenario analysis for the European refining sector.”](#)

Reinforcing the low-carbon liquid fuels strategy

John Cooper commented *“limited biomass feedstock availability has often been raised as a justification to minimize the role of low-carbon liquid fuels, this study will eventually bring a scientific and factual angle to inform the debate. With 135 Mtoe potential production capacity for biofuels and another 70 or 80 Mtoe for eFuels there will be more than enough availability to supply our scenario and even potentially higher demand levels.”* He added *“electrification will require time for vehicle fleet turnover and distribution infrastructures deployment. Low-carbon liquid fuels are, during the transition to*

electric powered vehicles, the most efficient way to cut emissions from vehicles with an internal combustion engine and allow the optimisation of the use of infrastructures for electrical charging and hydrogen.”

Thanks to the findings of the Imperial College London Consultants’ study low-carbon liquid fuels can clearly be a no-regret option with short-term and long-term benefits: existing vehicles can be decarbonised, and also the build-up of production capacity for these fuels will progressively reduce their cost, through the creation of economies of scale and through the repayment of the capital cost. Over time, the reduction of demand for liquid fuels from road transport will free-up growing volume for aviation and maritime, at an affordable price.

For many decades, a core principle for energy and economic resilience for Europe was the production and storage of energy molecules. Certainly now we must have sustainability and low-carbon as core principles too. Low-carbon liquid fuels, like the petroleum fuels they replace, can be stored in existing infrastructure for months, or even years. Our strategy can assist with the retention of energy and economic resilience as a core principle for Europe.

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FuelsEurope, the voice of the European petroleum refining industry

FuelsEurope represents with the EU institutions the interest of 41 companies operating refineries in the EU. Members account for almost 100% of EU petroleum refining capacity and more than 75% of EU motor fuel retail sales.

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