26 October 2020

Additional input to the consultation on ReFuelEU Aviation strategy

Amend Energy Taxation Directive & introduce Quota Obligation

The upcoming reform of the Energy Taxation Directive will provide an opportunity to introduce a CO2 price on all energy carriers to supplement the EU ETS and RED II. Price of conventional kerosene relative to the price of SAF is an important barrier to the uptake of low emission fuels. As application of P2L technology in aviation requires a CO2 component; adding a CO2 tax would create an incentive for sourcing the CO2 from alternative sources such as CCU from so-called unavoidable industrial sources, bioenergy and direct air capture (DAC). Tax credits for these sources should be further differentiated based on the carbon intensity of a given source.

To allow distribution of pass-through costs over a wider base a SAF mandate should be imposed both on the supply and demand side with an obligation to respectively source and procure an increasing share of SAF reaching close to 100% by 2050. The SAF mandate would bring certainty on the supply-side and incentivize production of low carbon intensity fuels, while a phase-in of blending mandate on airline operators would allow a gradual recalibration and adjustment of flight prices. On the consumer side studies show willingness to pay up to 50$ more for a 'carbon-neutral' ticket, with a preference for the airlines and government subsidies covering the majority of the cost. Gradual phase in of demand-side obligation would allow development of clear 'green labels', better consumer engagement and acceptance resulting in a larger uptake of 'carbon-neutral' flights over the long-term.

Prioritise Sustainable Circular Carbon over Recycled Carbon

For such a SAF obligation to be truly functional it must be supported by a full LCA methodology that accurately measures total GHG reductions, ultimately measuring the net flow of CO2 into the atmosphere from the entire system. To produce P2L that can be used for aviation the CO2 may come from so-called 'unavoidable' point sources, from the use of bioenergy, and ideally from the atmosphere using direct air capture (DAC.) The use of CO2 point sources should

be limited to industrial emissions in the EU ETS, such as cement industries, and should be limited in volumes and in timeframes, so as not to delay application of CCS technologies that exist today to decarbonise these sectors. When fossil sources of CO2 are used to generate e-fuels, that fossil CO2 is re-emitted upon combustion. While this approach can create relative reduction in comparison to sourcing new fossil CO2 for this purpose, the CO2 reductions achieved through recycling will be substantially reduced due to efficiency losses and energy required for capture and conversions. The potential and availability of biomass is limited, and its use can involve negative environmental side-effects and competition concerns. With an increase of the renewable energy target there will likely be an increase of competition for the use of biomass among different industry sectors and availability of biomass for advanced bio-fuels will be limited in quantities due to land limitations and water requirements.

Our recommendation is to manage the transition towards wider use of SAF by managing both the supply and demand side:

➔ Impose an obligation on fuel suppliers to produce and blend in an increasing share of SAF. Starting from a minimal level in the 2020s the % would be gradually increased in line with expected cost reductions, to reach 100% in 2050. To support a gradual phase-in of Renewable Circular Fuels (RCF) (based on hydrogen and air-captured CO2) a sub-target could be introduced to reach for example 25% share of RCF in the overall volumes of SAF by 2040. The delivery of the sub-target would be supported by either a re-calibration of tax credits for CO2 content in fuels, if CO2 price on all energy carriers was implemented, or through an introduction of a separate trading scheme for fuel suppliers with different than one-to-one equivalence of certificates based on GHG intensity of fuels calculated on a full LCA basis (pooling the emissions across the entire system for industrial sources)

➔ As the first step the current GHG methodology for renewable fuels of non-biological origin (RFNBO) should differentiate between the suppliers of fossil carbon, excluding power and heat generation so as not to hinder their full switch to decarbonised sources, while temporarily privileging hard-to-decarbonise industrial sectors as medium-term suppliers, before direct-air capture scales up to required levels.

➔ The process of capturing CO2 from industrial fossil point sources covered by the

ETS and sold to RFNBO suppliers should still require the industrial actor to pay for allowances under the ETS. In that way the 'CO2 laundering' - whereby the captured CO2 is passed on to non-ETS actors - would be prevented.

Consider measures beyond SAF framework

Negative Emissions Platform supports a number of additional measures listed in the consultation, with particular focus on a European trading system for fuel carbon credits across transport modes - to include shipping alongside aviation sector; institutionalised monitoring of SAF production and use in Europe to allow for recalibration of regulatory and financial measures over time; and finally clear labelling for "green airlines" to allow consumers make comparisons and informed choices.

However, to achieve full decarbonisation of aviation fuels new regulations beyond SAF quota, taxation, and auxiliary measures will be required. Negative Emissions Platform recommends consideration of policies that remunerate permanent storage of atmospheric CO2 as a mechanism to achieve GHG reduction targets, such as California's Low Carbon Fuel Standard (LCFS) in California. The key objective of LCFS is to reduce the carbon intensity of fuels by at least 20% by 2030. The LCFS has been amended as of 2019 to include synthetic fuels made from air-captured CO2 and installations removing CO2 from the air and storing it permanently. These activities, located anywhere in the world are now eligible for LCFS credits. The prices of LCFS credits are determined by the market and in 2019 averaged $200/tCO2 while the current average cost of DACCS currently amounts to $400/tCO2, and $600 in Europe. An option of combining the credits obtained under the LCFS and those generated under 45Q federal scheme which provides tax credits for CO2 storage projects is being explored, where 'stacking' of LCFS and 45Q credits for DACCS would lead the an overall support level closer to the required mark. A similar framework could be explored for Europe, with an obligation on fuels suppliers to remove and store permanently an increasing amount of atmospheric CO2 reflecting a share of carbon content of their products, with storage costs funded partially by the revenue from the new CO2 tax and the credits from the storage obligation eligible for compliance under the low-carbon fuel standard scheme.

For more information contact: anna.dubowik@negative-emissions.org