ETIP Bioenergy - Working Group 3 Distribution and End-use

2023 Q2 webinar: "Future of diesel in commercial road transport"
9th June 2023

Summary

Commercial road transport (using HDV) shares many similarities with individual road transport (using LDV): even if the European Commission is successful in forcing a regulation, ending up in a close to 100 % ban of internal combustion engines from new sales in 2040, as it did partially with cars for 2035, the truck pool will slowly evolve toward low-carbon mobility (a couple of decades may be necessary to wipe out ICE-propelled trucks from the roads) and transport decarbonization cannot stop in the meantime, must accelerate to meet the 2050 Net Zero Emissions objective.

This reality forces diesel, the fuel of reference for more than 95 % of trucks, to decarbonize beyond the level attained today (less than 7 % biodiesel incorporation on average in the EU).

First, the webinar addressed feedstocks: biodiesel, FAME and HVO, faces material limitations:

- a cap on edible vegetable oils usage in RED,
- a ban on palm oil, possibly extended to soy oil,
- a critical supply of sustainable Used Cooking Oil and animal fats.

Yuri Herreras, the founder of the Camelina Company, explained how far camelina, this non-traditional oilseed, can be produced in the EU, in the US, in Latin America, on so-called marginal land, like as a winter time cover crop.
Bringing additional revenues to farmers suffering from climate change consequences, with no land-use change issue, RED Annex IX-A qualification, with a decent, profitable, yield, up to an average of 1 ton of oil per hectare (plus revenues from animal feed), ending up in a global potential of 13 to 18 million tons per year of additional lipids for bio-middle distillates (kerosene and diesel) production via FAME, HVO/HEFA pathways.

Second, we discussed the potential for middle distillate-like, low-carbon, liquid molecules to help decarbonize a time-resilient ICE-propelled truck pool: Concawe has published last year a study through a collaboration with IFPEN, identifying potential bio-molecules of interest, beyond FAME and HVO: *Roland Dauphin*, Concawe Science Executive for Fuels Quality and Emissions, presented a summary of this study.
Key characteristics for these molecules: sustainably produced, at scale (re: maturity of technologies), compatible with diesel powertrains, possibly with the right additives:

the latter characteristic may imply a revision of EN590 specification, especially for density and cold flow properties, initiated at CEN.
And the potential for low-carbon molecules is there, between 1/4 and 1/3 of middle distillate future demand, possibly up to 1/2 with green hydrogen boost for thermochemical technologies like gasification-synthesis.

Third, *Thomas Fabian*, Director Commercial Vehicles for ACEA, explained truck manufacturers will make alternative zero-emission powertrains, ZEV, fuelled by electricity or hydrogen, available for 2040, as per Tank-to-Wheel regulation, to complement the efforts to decarbonize fuels, Well-to-Tank, discussed before. So that the road transport industry can properly adapt, bearing in mind issues like refuelling infrastructure and end-customer demand. Two major zones of uncertainty are expected, ZEV market uptake in 2030-2035 and the level of liquid fuel decarbonization around 2045.