

## ETIP Bioenergy - Working Group 3 Distribution & End-use

### 2023 Q1 Webinar: “Higher Renewable Blends in Gasoline: Compatibility”

10<sup>th</sup> March 2023

#### Key take-aways

The webinar was intended to debate about the ways and means to increase the decarbonization of gasoline in the context of the EU car pool, which will remain populated with Internal Combustion Engine Vehicles (ICEV) for many years, decades possibly, even if the ICE technology is de facto banned in 2035 by the EU zero-emission regulation for new vehicles.

The webinar was structured around 5 presentations, 2 giving US insights, 3 giving EU perspectives.

*Kristy Moore*, a leading US consultant on renewable fuels and chemicals, long-term associate of the Renewable Fuels Association, presented the history of ethanol incorporation in gasoline in the US, way back to 1978 when 10 % incorporation rate was coined by EPA as the reference, without much technical justification (noting some countries around the world mandate 20 %).

The discussions to increase this reference incorporation rate have been taking place for many years, since 2009 for E15, which is already distributed in the USA (approved in 48 states), E20 being the next stage (octane increase). The World Fuels Charter is a reference for compatibility of car engines with higher ethanol incorporation rates (category 6 would accept 20 %, categories 2-5 remain at 10 %): a working group, Ag-Auto-Ethanol, is meeting on a regular and frequent basis, to help prepare the best proposals of increased renewable content in gasoline, acceptable for both the fuels and car-making industries, for further normalization by ASTM and officialization at federal and state levels.

*Reid Wagner*, executive director of the Nebraska Ethanol Board, a Nebraska State entity, presented the first large-scale experiments conducted in Nebraska with E30, with a view to evaluate technical, economical and performance aspects of this high-blend, in a context of an ageing car pool (average ICEV age has increased to 17-20 years): the results have been positive, showing no compatibility or performance issue and a limited price impact (Nebraska is home to a large corn-based ethanol production activity, which gives a location advantage).

*Roland Dauphin*, Concawe science executive for fuels quality and emissions, presented the EU regulatory landscape, first showing that even fully deployed E20 would not be sufficient to meet RED II or III renewable content (14 %) or CO<sub>2</sub> emission reduction (13-16 %) objectives in 2030, then relating the stalled situation in the EU normalization body, CEN, regarding E10+ grades, with a strong debate around minimum and maximum ethanol contents, in the complex EU context of the 7 % cap for first-generation biofuels and the lack of advanced, cellulosic,

ethanol supply so far. During the Q&A, the constant lack of proactive attitude in favor of biofuels by the European Commission was noted: any E10+ proposal that could be proposed by the industry would only be “considered” by the European Commission, which explains why a technical specification is first to be proposed, before any EU normalization by CEN, can take place.

*Norbert Neumann*, from BP in Germany, reported on a very positive marketing experiment of a gasoline with a higher renewable content (31 %, respecting the 10 % maximum ethanol European standard EN228), ARAL Futura, a super 95 grade with a 25 % CO<sub>2</sub> emission reduction performance: the grade, which was manufactured and supplied in Germany without any problem, received a positive response by German motorists, historically E10 shy, and Environmental NGOs.

*Dorothee Lahaussais*, from Toyota Motor Europe, made the final presentation, representing the European automotive industry views (and Toyota). Highlighting the various aspects of ethanol incorporation, availability, performance (from a regulatory point of view), compatibility. First, the roll-out of E10 is needed across all EU Member States to ensure full market deployment (currently: around 35% of gasoline are E10 grade). To increase further the renewable content in gasoline, the use of higher blends such as E85 remains a local situation in a few European countries. Moving behind 10% ethanol is under investigation in CEN and will need revision of the Fuel Quality Directive (FQD), whilst the use of drop-in renewable molecules (e.g. methanol to gasoline or Fisher-Tropsch synthetic gasoline from biomass gasification) looks promising, but subject to availability and cost. E10+ grades would have to be taken into account by other regulations, like FQD, Euro 7. Finally, Dorothee presented Toyota vision for the future, based on the necessary diversification of powertrains and decarbonized fuels, in order to reach a carbon neutral mobility.