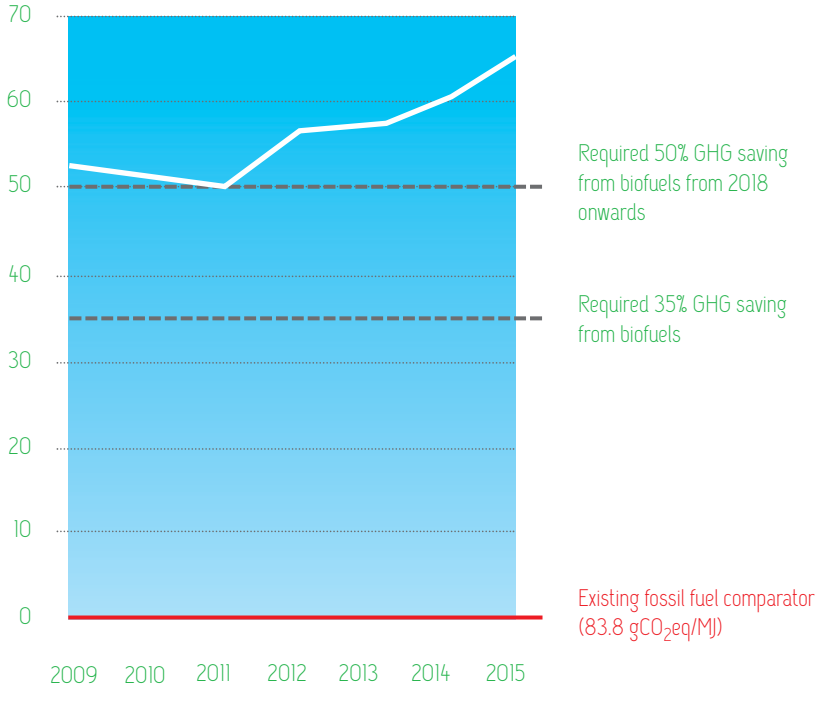
TRANSPORT FUEL EMISSIONS REDUCTION

The 2030 policy framework for transport decarbonisation needs to incentivise the continuous decrease of transport fuels' carbon intensity

To meet the Council's mandate and agreed targets, the post-2020 policy framework for transport decarbonisation needs to be ambitious and binding. The decarbonisation policy for transport should be based on the continuous improvement of the carbon footprint of transport fuels and include incentives for the deployment of sustainable low-carbon fuels, including both conventional and cellulosic ethanol.

The conventional ethanol industry has invested significantly over the last 15 years to develop a clean renewable fuel with currently certified savings of over 63% on average, an increase of 22% since 2009. Some European ethanol even achieves GHG savings as high as 90%. These savings need to be capitalised upon beyond 2020.

Average certified emissions savings from European renewable ethanol compared to fossil fuel (%)



Source: Copartner for ePURE (2016)

POLICY RECOMMENDATIONS

1. In line with the 12-20% emissions reduction needed in transport there should be a target to decrease continuously the carbon intensity of transport fuels (with UERs and refining optimisation to be applied as additional measures) by at least 12%[12] against a 2010 baseline by 2030. Ensuring policy continuity with the existing EU legislative framework (e.g Art. 7a of the Fuel Quality Directive) would allow for better and swift implementation of Europe's climate goals while also helping meet the Commission's objectives of 'better regulation' by maintaining investment stability for the low carbon fuels sector.

2. In line with the 12-14% RES-T needed in transport Member States should be encouraged to establish (higher) targets for the minimum incorporation of renewables in transport and must ensure that at least 10% of the energy in road and rail transport comes from renewable sources, single counted, on a constant basis beyond 2020 in order to maintain the baseline agreed in the Renewable Energy Directive and ensure that progress to replace oil use with 10% RES-T is not lost.

Both measures would enable the contribution of sustainable biofuels to help meet the 12-14% RES-T and 12-20% emissions reductions in transport that are required and expected from the Commission's 2030 Impact Assessment.

An obligation to lower the carbon intensity of transport fuels would be a cost effective and technology neutral driver for the EU to deliver on its 2030 ambitions and would therefore fit well with the mandate given to the Commission by the Council in 2014.

12. This could be delivered by biofuels based on the following assumptions:
- In 2020: 8% biofuels in energy content, with advanced biofuels delivering 80% savings and conventional biofuels delivering 70% savings, against a fossil comparator of 94.1 gCO_2eq/MJ
- In 2030: 15% biofuels in energy content, out of which 3.5% advanced biofuels in energy content delivering 90% savings, and the rest conventional biofuels delivering 80% savings, against a fossil comparator of 94.1 gCO_2eq/MJ

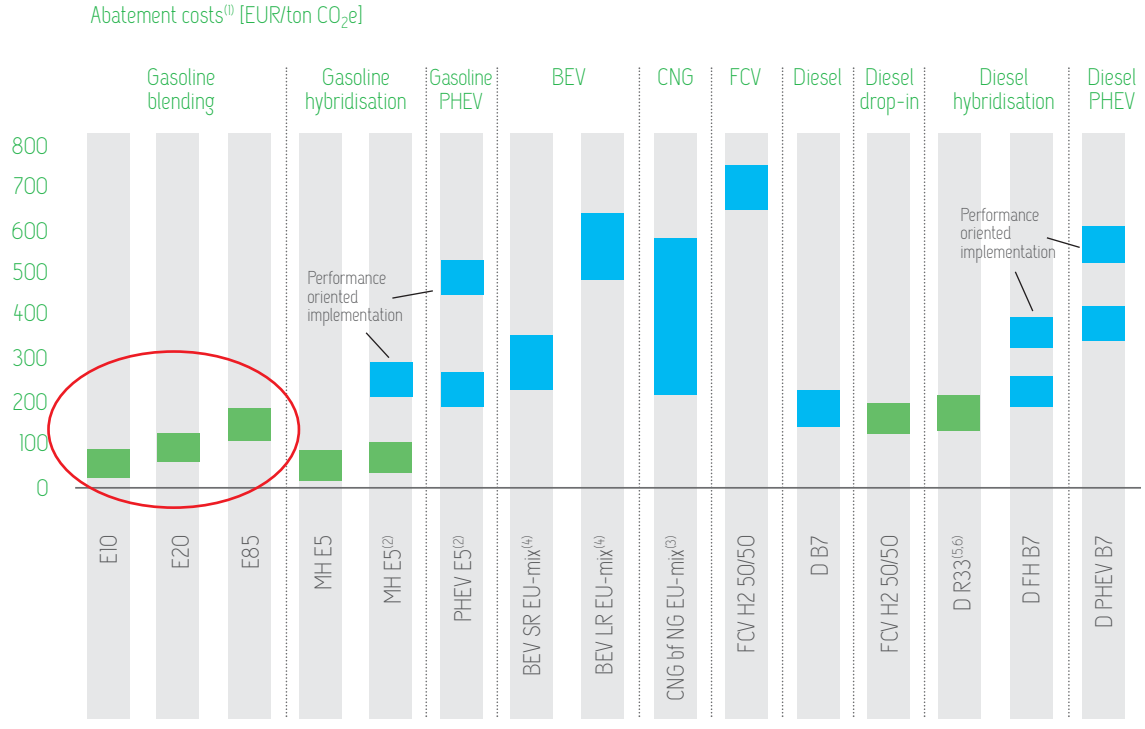
Ethanol is a cost-effective way to reduce transport emissions to meet the targets

European renewable ethanol is well placed to make a cost effective contribution to decarbonising the transport sector as it has the lowest GHG abatement cost among several tools to decarbonise transport, even negative carbon abatement costs:

- The recent integrated "Fuels and Vehicles – Roadmap to 2030+" developed by a consortium of vehicles manufacturers[13] and fuels suppliers finds that to ensure passenger cars deliver further GHG emissions reductions up to 2030 *"it is cost-efficient for society to promote the uptake of higher ethanol blends, such as E10, E20 for gasoline and E85"*.
- Ethanol may even have negative carbon abatement costs when considering that it is a technology that reduces GHG emissions, costs less than the fossil fuel it substitutes[14] and creates employment[15].

Higher ethanol fuel blends are a cost-effective GHG abatement tool

Well-to-Wheel GHG abatement costs



Recommended until 2030

Not cost efficient until 2030

1) Compared to optimised Gasoline powertrain 2030 using E5, all technologies with 250,000 km lifetime mileage

2) 30% e-driving, higher e-driving share reduces abatement costs

3) Large range between scenarios driven by decoupling effect of natural gas price

4) Risk of higher abatement costs due to need of second battery over lifetime. SR – short range with 35kWh battery capacity, LR – long range with 65 kWh battery capacity, both using 2030 EU mix electricity

5) Diesel fuel with 7% FAME and 25% HVO

6) Abatement cost in existing vehicle: -67 EUR/ton CO_2 (high oil price), -7 EUR/ton CO_2 (low oil price)

Source: Roland Berger (2016)

13. Integrated Fuels and Vehicles Roadmap to 2030+, Roland Berger (2016). The Auto Fuel Coalition comprises BMW, Daimler, Honda, NEOT/St1, Neste, OMV, Shell, Toyota and Volkswagen
14. In 2014, T2 ethanol (free of circulation within the internal market) was cheaper than petrol, F.O. LICHT
15. Evaluating the macroeconomic impacts of bio-based applications in the EU, Institute for Prospective Technological Studies, Joint Research Centre (2014)