



FUEL SPECIFICATIONS

Introduce incentives and fuel specifications for higher biofuel blends to enable higher GHG reductions

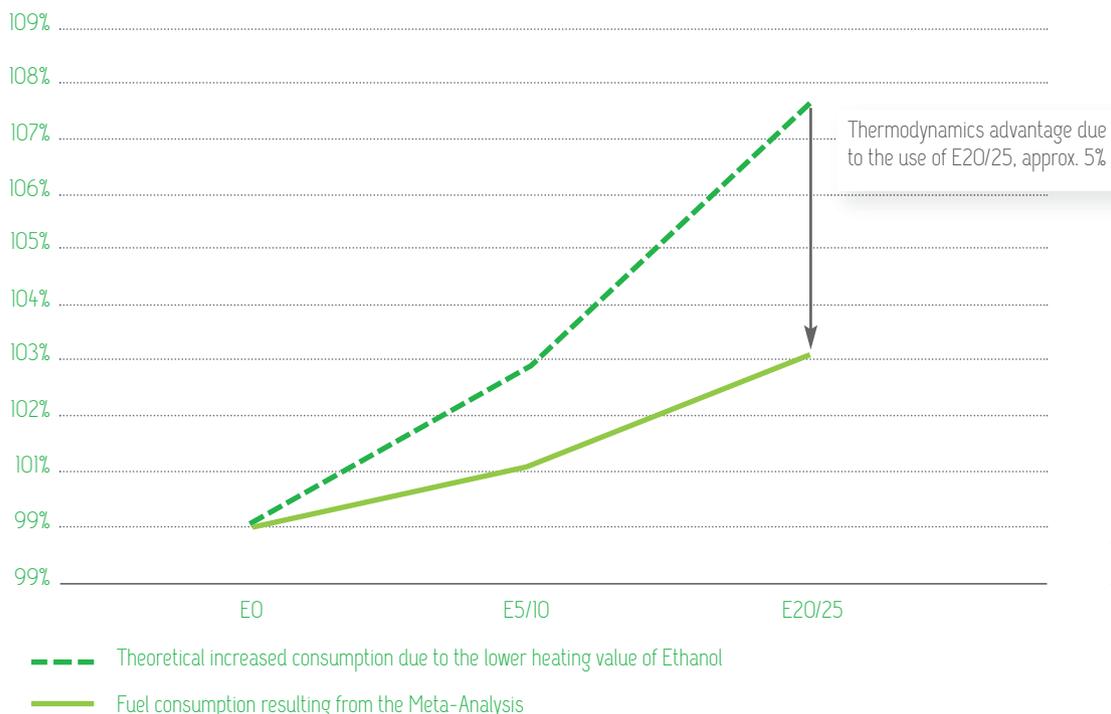
Ethanol is not just a fuel with direct climate savings but it also makes petrol burn more cleanly and efficiently due to its higher-octane content. The scientific literature on ethanol's efficiency benefits is extensive and a meta-study by the University of Vienna, conducted under a framework contract for the European Commission Directorate General for Energy¹⁷ was conducted in 2014. When ethanol is mixed into petrol, two things happen:

◇ First, energy from the combustion of the ethanol itself is used to power the vehicle and this direct impact is at the center of current GHG accounting methodology for biofuels.

◇ Secondly, the nature of the combustion in the engine changes for the entire fuel mix, and that physical change in the nature of the combustion increases the conversion efficiency of petrol, in effect adding extra energy to the transport sector.

This indirect benefit means that, for E5/E10 blends, efficiency gains are in the order of 30%.

■ Theoretical fuel consumption due to the lower heating value of ethanol compared to the fuel consumption observed



17. Meta-analysis for an E20/25 technical development study - Task 2: Meta-analysis of E20/25 trial reports and associated data*, TU Wien, Institute for Powertrains and Automotive Technology, May 2014

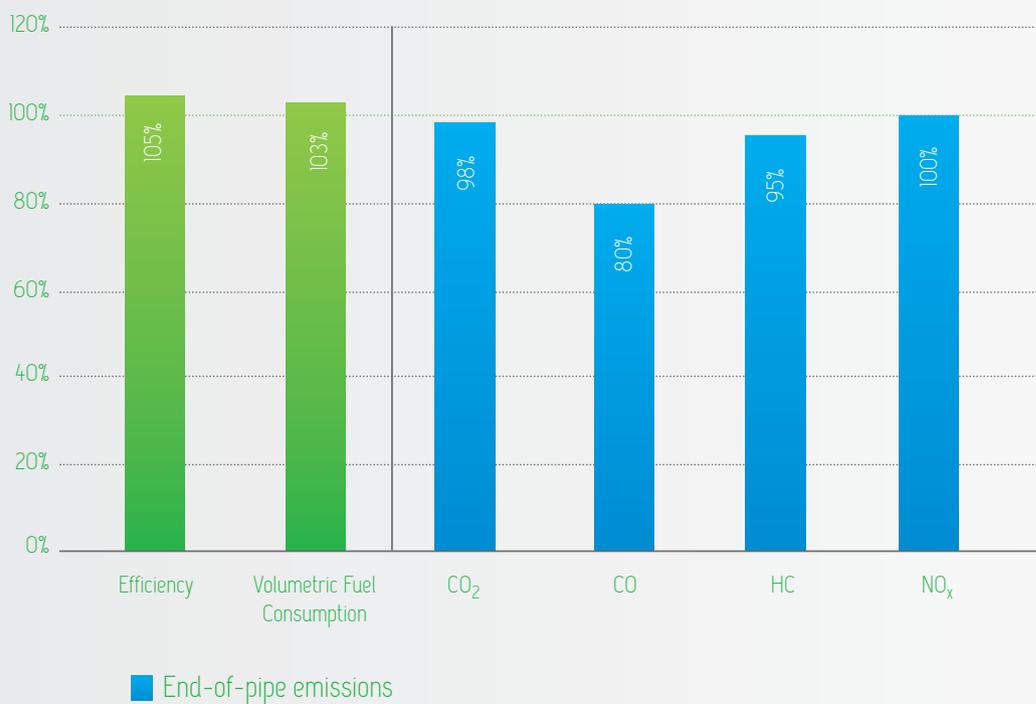
Higher blends maximise ethanol's benefits in terms of energy efficiency and reduction of CO₂ and air pollutants

The meta-analysis confirms the efficiency gains triggered by E10, and shows that engine efficiency increases significantly when higher ethanol blends such as E20/E25 (containing up to 20/25% ethanol respectively) are used, thereby improving the effect of these higher blends on fuel consumption.

It also shows that E20/E25 reduce significantly other emissions.

Higher ethanol blends mean less harmful tailpipe emissions than petrol

E20/E25 compared to petrol (EO)



POLICY RECOMMENDATIONS

1. The inclusion of 5% in volume in the petrol protection grade of E5, the full roll-out of E10 (petrol containing 10% ethanol in volume), and the introduction (at the latest by 2023) of a higher-octane petrol ethanol blend (min. E20) are imperative to achieve reductions in both CO₂ and other air pollutants even further. The higher the ethanol content, the higher the climate and air quality benefits.
2. Higher-octane petrol blends are crucial in order to exploit the energy efficiency potential by, for example, facilitating the realization of downsizing concepts. Ethanol as a high octane fuel additive is a cost effective basis to exploit this potential and higher blends should be incentivised towards all market players including:
 - **Fuel suppliers:** a higher minimum octane requirement for fuels and a minimum octane requirement for the blendstock would encourage fuel suppliers to use ethanol to provide the octane needed, and ensure that base fuel quality is maintained when ethanol is blended.
 - **Vehicle Manufacturers:**
 - Incentivising vehicle manufacturers to produce E20-approved vehicles through a credit towards car CO₂ targets once E20 is made available. The integrated “Fuels and Vehicles – Roadmap to 2030+” recommends to set tailpipe emissions to zero for the renewable part of the fuel that the vehicle is compatible with, above 2020 levels (e.g. E10 for petrol).
 - Incentivising vehicle manufacturers to declare their vehicles tolerant to E20 by the retrospective application of fuel labelling rules showing vehicle compatibility with different fuels (Fuel Labelling Directive), applied at technical check.
 - **Member States:** should also acknowledge the importance of E20 in public procurement.
3. As part of the implementation of the Alternative Fuels Infrastructure Directive, it would be most effective for Member States to enable access to infrastructure for high ethanol blends such as E85 for dedicated flex-fuel vehicles, and ED95 for buses and trucks.