

The case for introducing E10 in the UK – August 2016

Background – Department for Transport’s Transport Energy Task Force

The Transport Energy Task Force was established by the Department for Transport (DfT) and the Low Carbon Vehicle Partnership (LCVP) to assess options to de-carbonise transport energy in the light of the UK’s commitments to 2020 and beyond, in particular as set out in the UK’s own Carbon Budgets. The Task Force reported in March 2015ⁱ having agreed that displacing petrol with E10 (a blend of 10% renewable low carbon bioethanol and 90% fossil petrol) from the current E5 would be required if the UK was to meet its short term low carbon and renewable transport targets, and recognising that UK biofuels plants offer economic and environmental benefits.

The REA and its members were key participants in the Task Force and have been working with partners since then to establish UK low carbon fuels policy to 2020 and to 2030. This has included a specific work stream looking at the case for E10 and how best this could be introducedⁱⁱ.

Conclusion

The REA has concluded that, in the light of the economic, carbon saving and air quality benefits to the UK of our domestic bioethanol industry, and bearing in mind our low carbon national and international commitments, the introduction of E10 over the current E5 should be supported by:

- **establishing an obligation level under the Renewable Transport Fuels Obligation (RTFO)ⁱⁱⁱ significantly higher than 6%, from April 2017 with the aim of reaching 10% by 2020**

The current level is 4.75% and the target for 2020 set under the EU Renewable Energy Directive^{iv} is over 10%. Notwithstanding the vote to leave the EU, the Parliamentary Under-Secretary of State in DECC, giving evidence to the Energy and Climate Change Select Committee on 13 July 2016^v confirmed that “our domestic targets are generally at least as challenging as the EU targets” and that the EU targets “remain relevant and binding on the United Kingdom”

- **giving specific Government endorsement to the environmental benefits of E10**
- **having done this, allowing the market to decide on how best obligations levels can be met to 2020 and beyond and how E10 is to be introduced**

The case for E10

Economic

- Nearly £1 billion invested in UK bioethanol facilities
- Over 8,000 jobs supported
- Direct employment includes many in the STEM sectors
- Facilities based in some of the UK’s most deprived regions - Humberside and Teesside
- Production capacity from surplus animal feed grade wheat and beet sugar feedstocks:
 - c. 900 million litres low carbon bioethanol– more than enough to meet the current E5 blend – with Brexit, future prospects for UK exports are highly uncertain and UK bioethanol can add to fuel security by reducing petrol imports by around 600 million litres annually
 - Co-product of 800,000 tonnes of high protein animal feed – adding to feed security by reducing soybean meal imports by around 400,000 tonnes annually
- Supporting UK arable farmers by putting a floor in the market, thereby enabling them to better manage volatile commodity markets, and livestock farmers by providing an alternative feed supply to imported soybean
- Bridge to future investment in advanced biofuels for the benefit of UK plc

- Cost-effective means of reducing transport GHG emissions - using 2014 prices the cost of carbon abatement using bioethanol is £94/tonne, compared with e.g. current costs for electric vehicles of c £400-£800^{vi}

Environmental

- GHG savings over 60% compared to fossil petrol^{vii}
- UK GHG emissions from UK domestic transport are 117 MtCO₂eq and have risen by 1.1% since 2013, while emissions in all other sectors of the economy have fallen by between 16% and 73%^{viii}
- According to DfT statistics^{ix} E10 would reduce annual emissions from the UK transport sector by up to 1.2 MtCO₂eq (over 1%) – at current electricity grid carbon intensity, equivalent to the GHG savings of 4.2 million mid-range electric vehicles
- E10 would add 1 percentage point to the 10% 2020 target^x

Consumers

- E10 reduces emissions of some environmental pollutants that adversely impact air quality including carbon monoxide, hydrocarbons and Particulate Matter^{xi}
- Increasing use of E10 and retiring older petrol vehicles reduces emissions still further
- The theoretical increase in the price to the consumer of moving to E10 would be about 1 penny per litre^{xii} – in practice this is well within the realms of competitive fuel pricing
- According to the AA over 80% of consumers feel it is important to reduce our dependency on fossil fuels and that more environmentally friendly fuels should be widely available^{xiii}

Petrol car compatibility with E10

- Fuel suppliers have said they can supply 85% of petrol as E10 as the Regular grade, with 15% as Super grade E5 available for cars which cannot run on E10^{xiv}
- In 2014, out of 18.6 million petrol cars, according to the Low CVP 16.9 million were compatible with E10 and this number will have risen to 17.6 by 2017 and 18.3 by 2020 as older vehicles are retired^{xv}.
- By 2017 fewer than 1 million cars that cannot run on E10 will remain in the vehicle parc and most of these will be historic vehicles not driven for everyday use
- This represents 3% of petrol sales, well within the 15% E5 availability suggested by the fuel suppliers

What is the problem?

Low carbon transport alternatives

- Electric vehicle up-take is increasing but out of 30.3 million cars on the road only 360,000 electric vehicles have been registered^{xvi} – and the majority are hybrid petrol vehicles for which E10 would be the only way to de-carbonise the petrol element

UK bioethanol producers

- Sales of bioethanol have reached the E5 current blending mandate so the market is now constrained and half the size that was foreseen when UK bioethanol investment decisions were taken
- One UK bioethanol facility has been off-line for over a year and another has had its investment impaired
- If the market is not expanded by an increase in the RTFO target and the introduction of E10, the future of these plants is in jeopardy – it would be politically difficult to justify the UK meeting its own low carbon targets by using imported bioethanol while UK jobs and investment disappear

Consumers

- The protracted debate on indirect land use change since 2012 was largely aimed at the negative effects of palm oil based biodiesel. Palm oil is not used in biodiesel blends in the UK, and the clear distinction between bioethanol and biodiesel has not been made
- The benefits of home-grown bioethanol have been obscured in an increasingly emotional debate
- Consumers are understandably confused and need Government re-assurance that bioethanol is good for the environment, good for the UK and will not harm their vehicles

- The energy content of bioethanol is about two thirds that of petrol – this reduces the energy content of E10 compared to the current E5 by less than 2%. Moreover, modern petrol cars are designed and certified for optimum fuel consumption and performance using E10^{xvii}
- Fuel suppliers
- While there is an agreed fuel specification for E10 the Coalition Government asked suppliers to give 3 months' notice if they intended to introduce E10 – this letter of 21 December 2012 has never been withdrawn
- Fuel suppliers need positive Government support for a switch to E10 which will be required to be labelled at the pump

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References

ⁱ <http://www.lowcvp.org.uk/projects/transport-energy-task-force.htm>

ⁱⁱ <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/34288.html>

ⁱⁱⁱ <http://www.legislation.gov.uk/ukdsi/2015/9780111126776>

^{iv} <https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energy-directive>

^v <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/35118.html>

^{vi} Modelling work supplied to the Cabinet Office by NNFCC

^{vii} <https://www.gov.uk/government/statistics/biofuel-statistics-year-7-2014-to-2015-report-6>

^{viii} https://documents.theccc.org.uk/wp-content/uploads/2015/06/6.737_CCC-BOOK_WEB_030715_RFS.pdf

^{ix} <https://www.gov.uk/government/statistics/biofuel-statistics-year-7-2014-to-2015-report-6>

^x <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/34288.html>

^{xi} <https://www.gov.uk/government/publications/road-transport-biofuels-impact-on-uk-air-quality>

^{xii} <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/35118.html>

^{xiii} <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/34288.html>

^{xiv} <http://www.lowcvp.org.uk/projects/transport-energy-task-force.htm>

^{xv} <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/2020-renewable-heat-and-transport-targets/oral/34288.html>

^{xvi} https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/516429/vehicle-licensing-statistics-2015.pdf

and <http://www.smmr.co.uk/2016/08/july-2016-ev-registrations/>

^{xvii} http://ec.europa.eu/clima/policies/transport/fuel/index_en.htm