



Inquiry on the Introduction of E10 in the UK

**An interim report by the APPG for
British Bioethanol – June 2019**

Interim Report

**Foreword by Nic Dakin MP
Chair of the APPG for British
Bioethanol**



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This Report was researched and drafted with assistance from employees and consultants of Ensus, a member of the CropEnergies Group, which is one of the leading European manufacturers of sustainably produced bioethanol for the fuel sector. Ensus provides the Secretariat to the APPG for Bioethanol. Details of the Secretariat and the registrable benefits received by the group can be found on the official Register Of All-Party Parliamentary Groups:

<https://www.Parliament.uk/mps-lords-andoffices/standards-and-financial-interests/Parliamentary-commissioner-for-standards/registers-ofinterests/register-of-all-party-party-Parliamentary-groups/>

The current state of affairs is as baffling as it is frustrating. The Government has for years stated its ambition to achieve 10% renewable fuels in transport, with the bioethanol industry and investors alike reasonably predicting that this ambition would promptly lead to the UK adopting a doubling of the amount of bioethanol which is blended with petrol available at the pumps - moving from E5 to E10 - especially given the success of this policy in many developed nations throughout the EU and the rest of the world. Why then has the Government not progressed this policy after years of endless deliberation, delays and disappointment?

Nonetheless, this Interim Report highlights a number of key findings identified during this first part of our Inquiry, and proposes recommendations which we hope the Department for Transport's will head as it continues its internal deliberations and planning on E10. We hope our efforts will dislodge a positive decision on this issue in the very near future, bringing forward the introduction of this cleaner, greener fuel by 2020 at the latest. A decision which members of this APPG as well as its Chair believe is a "no brainer".

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Nic Dakin MP
Chair of the APPG for British Bioethanol
Member of Parliament for Scunthorpe

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We are particularly grateful for the time and attention of the following individuals who have continued to support the APPG and champion the Bioethanol Industry in Parliament:

- **Sir Oliver Heald MP** for championing this issue and supporting the work of this Inquiry including contributing to the Westminster Hall Debate in January 2019, hosting the second of the Inquiry's Oral Evidence sessions in May 2019 and raising this important issue with his Parliamentary colleagues, including the Prime Minister, during Prime Minister's Questions in May 2019.
- **Martin Vickers MP; Sir Greg Knight; John Howell MP; David Simpson MP, Jim Shannon MP; Alan Brown MP; Anna Turley MP; Dr Paul Williams MP; Alex Cunningham MP; Phil Wilson MP; Emma Hardy MP** who have all helped raise the profile of the bioethanol industry within Parliament, on which many of their constituents depend for their livelihoods.
- The groups and individuals who provided Written Evidence to the Inquiry and/or attended one of the two Oral Evidence sessions in the Palace of Westminster including: **James Maw**, Managing Director of Glencore Agriculture UK; **Brett Askew**, NFU North East Crops Chairman; **Chloe Lockhart**, NFU Combinable Crops Adviser; **Paul Tompkins**, Chair of NFU Dairy and dairy farmer; **Dr. Jeremy Tomkinson**, Chief Executive of the National Non-Food Crops Centre (NNFCC); **Gaynor Hartnell**, Head of Renewable Transport Fuels, Renewable Energy Association (REA); **Mark Chesworth**, Managing Director, Vivergo Fuels; **Grant Pearson**, Commercial Director, Ensus; **Andy Eastlake**, Low Carbon Vehicle Partnership (Low CVP); **Paul Bray**, Director, European Government Affairs & PR, Valero Energy Ltd; **James Cogan**, Industry & Policy Analyst, Ethanol Europe.

INTERIM FINDINGS

1. The UK economy will likely soon lose a vital and valuable £1 billion bioethanol industry. Without the swift introduction of E10 - by 2020 at the latest - the British Bioethanol Industry will continue to decline and likely disappear forever resulting in the loss of thousands of jobs.
2. Introducing E10 would assist in the UK achieving its GHG reduction targets – saving the equivalent emissions of taking 700,000 cars off the road – while also being delivered at a low carbon cost relative to other options.
3. Petrol fuel sales volumes in the UK are now *increasing*. This is due to the diminishing popularity of diesel cars (which themselves have a greater thermal efficiency than petrol engines, equating to a lower fuel consumption) as well as a trend for bigger, less fuel efficient petrol cars like SUVs. With widespread adoption of electric vehicles decades away, using increasing levels of biofuels in petrol to make the tens of millions of petrol cars on the roads greener and cleaner *must* be a top priority.
4. E10 (or a higher blend of bioethanol) could assist in addressing the UK's serious air quality problems and the many health issues caused by high particulate levels, including strokes, heart disease, lung cancer and respiratory infections.
5. If the British Bioethanol Industry is lost, the UK is unlikely to attract further investment - including for the next generation of biofuels and enhanced animal feed co-products - which would deliver further economic and environmental benefits for the UK.
6. If the British Bioethanol Industry is lost, the UK will likely become dependent on increasingly scarce and less sustainable biofuel from abroad including Used Cooking Oil (UCO) from China .¹
7. If the British Bioethanol Industry is lost, British farmers will need to purchase an increasing volume of animal feed from less sustainable sources, in particular soya based feed from regions in South America, further exacerbating the issue of deforestation. British farmers will also lose an important domestic market for surplus feed wheat.
8. Without E10 (or a higher blend of bioethanol) it is more likely that the UK will miss its

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INTRODUCTION

This Interim Report aims to present the salient arguments and evidence captured so far during the initial stage of the APPG's Inquiry into the Introduction of E10 which was launched in March 2019.

During this initial stage of the Inquiry the APPG encouraged a wide group of stakeholders to submit written evidence to the APPG's secretariat, setting out as clearly as they could the possible benefits and barriers to introducing E10 in the UK. The APPG also hosted two Oral Evidence sessions in the Palace of Westminster in April and May 2019, where members of the APPG were able to explore the evidence submitted in further detail with a wide range of expert witnesses.

Given the serious nature of the issues raised and the precarious position of the British Bioethanol Industry at this moment, the APPG was minded to publish this Interim Report containing a number of our key findings as well as urgent recommendations. Alongside this Interim Report the APPG has also published all written evidence received thus far as well as transcriptions from both Oral Evidence sessions held in the Palace of Westminster.

The Inquiry will continue to gather evidence and data from relevant stakeholders over the coming weeks and aim to publish a Final Report - containing final recommendations - in early Summer.

150 directly employed jobs and many more indirectly, with the plant put into long term mothballing. The Ensus site on Teesside announced shortly after that it would also have a production pause and only restarted production in March 2019, albeit on a reduced scale to meet local customer requirements.

Despite the many views expressed that the introduction of E10 would lead to an uptake in domestically produced bioethanol, witnesses did express different views as to its true potential impact. Valero for example suggested that market competition, together with feedstock availability and pricing, had led to the temporary and long term production facility shutdowns, and not in fact due to progress on introducing E10.

Valero Energy Ltd.

Written stakeholder evidence

“The reality is that non-UK suppliers are able to undercut domestic producers, and that the introduction of E10 will simply lead to more imports.” – May 2019

The APPG notes the majority of views expressed by witnesses (while also acknowledging some disagreement on this point) that without a step change in UK demand driven by the swift introduction of E10 in the UK it is difficult to reasonably assume all three plants operating continuously again or at full capacity, and for the current collapse in production and investor confidence to be reversed.

APPG comment

The Bioethanol Industry - indirect employment in the Agricultural sector

The Inquiry received compelling testimony on the secondary economic benefits from the Bioethanol Industry. This included the significant value derived by farmers from the purchase of wheat which in 2018, fluctuated between about £147 and £207 per tonne. This meant that a UK plant processing 1 million tonnes of wheat per year could be expected to spend between £150 and £200 million on purchasing the grain. With the agricultural sector in the UK spending approximately 20% of its output on employees salaries, and assuming the average wage for UK farmworkers was approximately £26,000, Ensus's written evidence suggested that the revenue provided through the procurement of feed wheat from a single UK ethanol plant was sufficient to provide 1,000 to 1,400 jobs in the agricultural sector. Additionally, they calculated that further upstream sectors were indirectly dependent on the sector via the purchase of intermediate goods and services, including storage, haulage, shipping as well as other sectors of the economy which benefited through the expenditure of salaries for all jobs supported by the investment. When taking these additional factors into account, Ensus calculated that a single UK ethanol plant could be calculated to provide the income for up to 3,000 jobs throughout the economy, either directly or indirectly. Therefore, with both grain plants

operating at full rate the sector would support approaching 6,000 jobs in the UK, many of which are in the North East of England where the availability of high quality employment remains challenging.

In written evidence from Glencore Agriculture UK, they noted how the British Bioethanol Industry acts as a relief valve within the UK Wheat Supply and Demand balance sheet, helping to ensure UK farmers received a good price for their feed wheat, rather than having to compete with some of the lowest cost production countries such as Ukraine.

Glencore Agriculture UK Ltd

Written stakeholder evidence

“In June 2016, GAUK loaded the largest vessel to leave the UK with Feed Wheat, 72,000mt destined for the SE Asian feed market. This was the lowest price in the UK during the last 10 years and was due to the fact that the UK ethanol industry was not operating at that time.” - May 2019

In written evidence from the NFU, it was highlighted that Brexit had further exacerbated uncertainty, with many farmers having had contracts pulled or cancelled for other crops, stable or increasing domestic bioethanol production would have provided a local, stable, secure market for grain, helping them to mitigate the impacts of these emerging risks and help planning when preparing crop rotations. In their evidence, the NFU highlighted the positive relationship between production at the Viverno plant and the price of Yorkshire feed wheat, demonstrating how the bioethanol industry (and by extension E10) appears to influence the feed wheat prices achieved by UK farmers.

National Farmers Union (NFU)

Written stakeholder evidence

“The bioethanol market would create a UK demand for surplus feed wheat and reduces reliance on the volatile global market. It is a dire shame that E10 introduction has been delayed thus far and that the demand is not established.” - May 2019

The APPG is in agreement with the views expressed by Ensus and Viverno that the continuing collapse of the Bioethanol Industry poses a grave economic threat not just to those hundreds of people directly employed directly at their plants but also to the many thousands employed indirectly in the agricultural sector and upstream from it who are dependent on the continuing operation of these plants for their livelihoods - including many farmers who benefit from a beneficial price for their feed wheat compared to the export market.

APPG comment

In written evidence from Vivergo, they highlighted that their locally grown animal feed grade wheat, which was not appropriate for human consumption, was sourced from approximately 900 farms located an average distance of 34 miles from their site, again demonstrating the wider impact the closure of their facility had on the local economy.

Additional economic benefit of the per tonne premium

The Inquiry heard that the Bioethanol industry added significant value to the domestic agricultural sector in other ways via the £10 per tonne premium offered to UK farmers for their feed wheat compared to the price they would likely achieve on the export market. In total, this premium amounts to the UK Bioethanol industry adding around £25 million of additional value to the UK agricultural sector every year. While a significant additional economic contribution, this secure and stable domestic market has the additional benefit of providing UK farmers with a greater confidence and ability to plan for future production, often leading to increased planting over time, further improving UK food security and potentially contributing to increased crop yields.

The APPG is concerned of the secondary impact on UK farmers of losing a domestic market for their feed wheat, which currently provides both a premium price above foreign markets as well as a stable and reliable market which allows them to better plan ahead for future years planting, which in turn impacts crop volumes and yields.

APPG comment

ECONOMY - FUTURE INVESTMENT

The Department for Transport's stated objective is to encourage and support the development of sustainable alternatives to fossil aviation fuels and how maintaining a profitable and sustainable domestic Bioethanol industry would be a cost-effective route to encourage the development of these fuels. However, to maintain a strong and profitable Bioethanol Industry and the development of these new fuels, there needs to exist a strong domestic demand for existing bioethanol output. The APPG heard that at present the domestic demand for Bioethanol is insufficient to sustain a profitable Bioethanol Industry, let alone further investment in new fuels, making the case for the rapid introduction of E10 compelling.

The APPG is concerned that the production of advanced second generation biofuels - which are the stated aim of the Department for Transport - is unlikely to occur given the current lack of investment in this area due to the current commercial challenges faced by the Bioethanol Industry.

APPG comment

The Inquiry was informed that a profitable Bioethanol Industry would be excellently placed to extend the existing biofuel business to other raw materials for advanced ethanol, likely to be processed in the same plants and alongside the current sustainable bioethanol. Many of the processes involved in an existing plant including fermentation, distillation, separation, electricity/steam production, downstream storage and loading are identical to that required by an advanced biofuel plant. Co-production of first generation and advanced waste-based ethanol offers the potential to reduce maintenance, supply chain, commercial, IT and financial overheads.

The APPG is optimistic that should domestic demand for Bioethanol increase to a level which can sustain a domestic Bioethanol Industry, the UK is well placed to attract further investment to develop a new generation of more efficient biofuels.

APPG comment

The Inquiry also heard from Vivergo at its first Oral Evidence session - which was also highlighted in their Written Evidence - that research into advanced second generation bioethanol fuels which were being researched in partnership with local Higher Educational Institutions were halted when Vivergo plant was closed. Prior to the closure of their facility they had close links with Hull University, sponsoring awards and student projects, as well as offering work experience, training and employment opportunities to students, undertaking a research

project with both Hull University and Bangor University focusing on advanced second generation biofuels.

The Inquiry heard of other research which is currently being undertaken in other countries which could and arguably should be taking place in the UK, and which would further enhance the domestic bioethanol industry and the many economic and environmental benefits it would deliver. Glencore Agricultural UK highlighted in their written evidence how they had recently visited the PannoniaBio facility in Hungary to see the investments being made to bring the co-product of ethanol production, Distillers Dark Grain with Solubles (DDGS) improve its typical protein of approximately 30% to 40%.

Low Carbon Vehicle Partnership (LowCVP)

Oral stakeholder evidence

Andy Eastlake, Managing Director

“One of the key benefits of clear, consistent and progressive policy is to give that confidence to the investment community to take risks with the next generation of innovative technology.” – 1st May 2019

ENVIRONMENT - CLIMATE CHANGE AND DEFORESTATION

The evidence received by the Inquiry on the benefits to the environment and addressing the serious issue of climate change - which would be realised by the introduction of E10 - were both clear and compelling. The evidence highlighted the fact that the vast majority of vehicles currently on UK roads continue to use petrol, and this would continue to be the case for a significant time to come before greater numbers of motorists move to hybrid or purely electric vehicles. Indeed, evidence received continued to reiterate the fact that the number of these vehicles continues to increase.

NNFCC – The Bioeconomy Consultants

Written stakeholder evidence

“By the start of 2018 there was nearly 40 million licenced vehicles in Great Britain, representing an increase of more than 10 million vehicles over the last 20 years.” – May 2019

It is unsurprising therefore that the overall CO2 emissions from the transport sector are increasing. The NNFCC highlighted in their written evidence that in 2017 the transport sector was responsible for around 34% of the UK's CO2 emissions, an increase from 21% in 1990, a fact which was due in part to other sectors considerably reducing their emissions, with those from transport barely changing.

The APPG was encouraged to learn that the introduction of E10 could deliver Greenhouse Gas emissions-savings equivalent of taking potentially up to 700,000 cars off British roads (at the current GHG saving level of bioethanol in the UK) - providing a quick and practical way for the Government to meet its renewable energy targets and address the issue of Climate Change in the short term.

APPG comment

LowCVP shared calculations in their written evidence that if E10 was used across the mass petrol market in the UK it could deliver an immediate greenhouse gas saving of over 1 million tonnes CO2 per annum, which represented almost 1% of the total greenhouse gas emissions from UK road transport.

Low Carbon Vehicle Partnership (LowCVP)

Written stakeholder evidence

The GHG saving from E10 is the equivalent GHG saving of taking 450,000 cars off the road, or of changing 700,000 cars to full electric operation. (LowCVP calculations)” – May 2019

Bioethanol as a cost-effective means of carbon mitigation

The APPG received testimony that a British Bioethanol Industry would be a cost-competitive means of carbon mitigation when considered in the context of transport decarbonisation, both in terms of cost per tonne of CO₂ abated and also when costed against alternative renewable fuels for the consumer such as biodiesel. Recent data provided by the EU Commission estimated the cost of carbon abatement in transport to range from between £100 and £300 per tonne of CO₂ abated. Written evidence from Ensus highlighted that based on a comparison of 2014 petrol and ethanol prices, an ethanol fuel achieving a 60% GHG saving on petrol (well within the current capability of the UK sector) can be estimated to have a cost for carbon abatement of around £120 per tonne of CO₂ abated. At 75% GHG saving, an ethanol fuel would see a cost of carbon abatement drop below £100 per tonne of CO₂ abated, beneath the low range assumed by the Commission.

Sustainable sources of animal feed and impact of deforestation

The Inquiry was presented with strong, secondary arguments on how a secure domestic Bioethanol Industry would help reduce UK farmer's reliance on imported, less environmentally sustainable sources of protein-rich animal feed, which continues to hasten levels of deforestation in other parts of the world.

Written evidence by Ensus highlighted that in 2017/18, the UK imported approximately 735,000 tonnes of soybean and 1,870,000 tonnes of soybean meal, predominantly for use as an animal feed in the agricultural sector. Meanwhile, the Bioethanol Industry produced large quantities of Distiller's Dried Grains with Solubles (DDGS) a cereal byproduct of the distillation process, and which functions as a substitutable product for soya within the feed market. DDGS has a protein content of 30-40% compared to soyameal with levels of 43-45%. In its evidence the NFU highlighted that no crop providing a source of such high protein can be widely grown in the UK (for example soya) which means DDGS is an important, if not unique method for the UK farmers to source a UK derived animal feed protein.

Nationa Farmers Union (NFU)	Written stakeholder evidence
<p><i>“If E10 was to be implemented, there would be an increased and constant demand for bioethanol which would enable DDGs to become a consistent provision for the livestock sector. At the moment, the intermittent and fluctuating levels of bioethanol production has meant that the supply of DDGs obviously also follows this pattern.” – May 2019</i></p>	

An industry consortium led by *The Agricultural, Horticultural Development Board* published the results of the ENBBIO research project which strongly supported the nutritional and economic benefits of using DDGS in animal feeds. With the average price for soymeal over 2015 to 2018 achieving around £314 per tonne compared to DDGS at £163 per tonne over the same period, DDGS was 30% cheaper per tonne of protein.

The APPG was persuaded that a successful UK Bioethanol Industry could assist the UK in becoming more self-sufficient in animal feed while also de-risk the potential for UK feed supply chains having an indirect impact on deforestation in other parts of the world which itself a key contributor to climate change.

Sustainable sources of Bioethanol and impact of deforestation

The APPG is concerned that one “hidden” cost of the collapse of the domestic production of bioethanol is a growing reliance on a less sustainable, less secure and less regulated supply of other biofuels - including Used Cooking Oil (UCO).

ENVIRONMENT - AIR QUALITY

The UK has a serious air quality problem which requires urgent attention. The World Health Organisation has estimated that 30 areas in the UK have fine-particle air pollution levels above 10 micrograms per cubic metre, with another 17 at that limit. The Mayor of London's office published data in 2018 which found the average roadside PM2.5 levels in the city reached 18 micrograms per cubic meter.³ This type of fine-particle air pollution is serious public health issue, with particulates penetrating deep into the lungs and cardiovascular system, causing diseases including stroke, heart disease, lung cancer and respiratory infections.

NNFCC – The Bioeconomy Consultants

Written stakeholder evidence

“Increased concentrations of fine particulate matter (PM_{2.5}) in populated areas has serious implications for public health, with small particles having the greatest potential to penetrate deep into the respiratory system. The most susceptible members of the public are the old and the young; there are implications that increased exposure to air pollution can potentially impact the lung function of adolescent children.” – May 2019

The APPG was persuaded that the introduction of E10 could make a significant contribution in addressing the UK's serious air quality problem in the short to medium term (which poses a serious threat to public health) and to do this ahead of a possible mass move by motorists from petrol to electric vehicles over the longer term which itself would require a major infrastructure investment by the Government.

APPG comment

The Government's 2019 Clean Air Strategy highlighted the issue of air quality as being the largest environmental health risk in the UK. Although the Clean Air Strategy document highlights the large impact of transport on air quality - with road transport, domestic shipping, aviation and rail being responsible for 50% of nitrogen oxides, 16% PM2.5 and 5% of NMVOCs - the Strategy does not go far enough to emphasise the importance of E10, indeed, neglecting to even mention it within the entire document, and again places too much emphasis on electrification.

³ <https://www.telegraph.co.uk/science/2018/08/03/uk-safe-pollution-threshold-should-halved-heart-experts-warn/>

ENVIRONMENT - ELECTRIC VEHICLES

Much has been made of the potential of alternatives to the use of petrol vehicles and by extension the use of bioethanol, including the greater use of electric vehicles. However, the APPG heard in its oral evidence sessions that there was no silver bullet, and that a range of technologies should play a role in lowering transport emissions and improving the environment.

Low Carbon Vehicle Partnership (LowCVP)

Written stakeholder evidence

“Petrol fuel sales volumes are now increasing (having been declining for many years due to dieselisation). In the quarter Dec 18 to Feb19, petrol consumption increased 2% over the same period from the previous year and diesel consumption decreased 2.5%. (HMRC Oils Bulletin Feb 2019)

In its written evidence, LowCVP highlighted some important underlying trends in respect of the potential impact of electric vehicles. This included the shift in purchasing habits of new car buyers towards petrol powered vehicles “partly due to dieselgate” and as well as these cars getting larger and less fuel efficient. Over 70% of new cars sold so far in 2019 have a petrol combustion engine and are fully compatible with E10, including conventional, hybrid and plug in hybrid vehicles. By contrast only 27.5 of new cars sold have been diesel cars.

In 2015, the UK reported a 121.4g/km new car average, which had increased to 128 g/km new car average in Q4 2018. And these trends were combined with a relatively slow uptake of electric vehicles. Combined, these factors have led to petrol fuel sales volumes now increasing. This led LowCVP to conclude the introduction of E10 was increasingly urgent.

Low Carbon Vehicle Partnership (LowCVP)

Written stakeholder evidence

“Renewable fuels such as E10 can be introduced with minimum disruption to behaviour and the lowest cost per tonne of carbon saved. They can provide the most immediate and greatest carbon reduction in the short term, while policies such as electrification of the car and van fleet take time to develop.” – May 2019

It was highlighted to the Inquiry that purely electric vehicles still only represent 0.5% of new car sales in the UK, whereas petrol cars account for 64% of new car sales, and that it will take a long time for electric vehicles to reach a critical mass to make a major impact on both carbon emissions and air quality. With approximately 40 million vehicles licenced for use on UK roads there are currently only 200,000 plug in vehicles registered.⁴

⁴ <https://www.racfoundation.org/motoring-faqs/mobility#a1>

NNFCC – The Bioeconomy Consultants

Written stakeholder evidence

“The electrification of transport vehicles should not be relied upon entirely to reduce local air pollution; it is important that other pathways for transporting goods and people are identified and developed, particularly in urban areas.” – May 2019

The APPG agrees that electric vehicles will only make a small contribution to addressing carbon and air quality problems in the near future due to the very low numbers currently on the road, and the low numbers of pure electric vehicles being sold in comparison to petrol vehicles.

APPG comment

The APPG also heard that most ‘alternatively fuelled vehicles’ are in reality hybrids vehicles which have both an electric and petrol engine, and that E10 could also benefit the growing use and popularity of these vehicles.

It was also highlighted in the evidence received that to gain the same environmental impact as E10, there would need to be 2 million Electric Vehicles on the road while the current numbers currently stand at around 100,000. Calculations submitted by LowCVP in their written evidence, claimed that under current policy the cost to the Treasury of encouraging the mass switch to electrical vehicles would also come at a vast cost to the public purse.

Low Carbon Vehicle Partnership (LowCVP)

Written stakeholder evidence

“Under current policy the cost to treasury of 700,000 full electric EVs would be £2.45 billion in grants and around £350 million reduction in fuel duty per annum. (LowCVP calculations)” – May 2019

Nevertheless, while take up of electric and hybrid vehicles remains limited in the short to medium term, it was also highlighted to the Inquiry that the use of biofuel blended fuels by these cars could still help deliver much needed CO₂ and air pollution reductions.

NNFCC – The Bioeconomy Consultants

Written stakeholder evidence

“Petrol hybrids can also benefit from alternative fuels, using petrol blended with alcohols such as ethanol or methanol. The increased oxygen content of ethanol and a lack of complex organic compounds in methanol means that their use will result in reduced PM emissions.” – May 2019

The NNFCC also raised the important issue that electric vehicles low carbon credentials and capacity to help deliver CO2 and air pollution reductions is also dependent upon some large changes in the electricity sector. While the UK has taken significant steps in reducing its CO2 emissions from energy generation, should electricity demand increase as a result of more electric vehicles there will be a greater strain placed on the grid and its ability to meet demand with increasingly intermittent energy generation sources such as wind and solar technologies.

Glencore Agriculture UK

Oral stakeholder evidence

James Maw, Managing Director

“We wont be able to have electric vehicles next year – but we can have E10. We have the infrastructure to take care of climate issues now, on the road to electrification. We should take action now and I’m sure in 10 or 15 years time most of the big cities and the urban areas will be using electric vehicles. But they won’t be being used in the more rural areas across the United Kingdom and this highlights just a further reason as to why we should be doing this now.” – 30th April 2019

The APPG agrees there is a strong argument for politicians and policymakers alike to work with the circumstances on the ground, including ensuring petrol vehicles, which represent the vast majority of cars on UK roads get cleaner and greener, sooner rather than later. Mass adoption of electric vehicles is decades away and will require major investment by the Government in both vehicles subsidies and additional green energy production.

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APPG comment

COST TO MOTORISTS - FUEL QUALITY DIRECTIVE

The NNFCC made the APPG aware of the fact that the DfT concluded in its most recent consultation that, in order for the Renewable Transport Fuel Obligation (RTFO) to succeed in the future, E10 will need to become more widely available.

Each supplier of fuel to the UK market is required to demonstrate that biofuel has been supplied to cover a set proportion of their overall fuel supply. For the 2017-18 year, this proportion was 4.75%.⁵ Suppliers can meet this obligation by redeeming certificates that they have received for their own biofuel supply, or by redeeming certificates that they have bought from other suppliers of biofuel.

Following the amendments to the RTFO in April 2018, the main obligation increased to 7.25%. From 1 January 2019 the RTFO was raised to 8.5% and is set to rise to 9.75%. In 2019, an additional development fuel target was introduced, starting at 0.1% proportion of their overall fuel supply. Development fuels will be issued separate development fuel RTFCs (dRTFCs). Suppliers also have the option to buy out of their obligation, paying 30 pence per litre of biofuel for which they have not redeemed an RTFC, or 80 pence per litre of development fuel for which they have not redeemed a dRTFCs. This protects consumers from excessive increases in fuel prices by setting a maximum value for RTFCs and dRTFCs.

A further issue is the ‘crop cap’ placed upon the RTFO, which has served to suppress the market by placing a 4% limit for the amount of crop-derived biofuels which may be counted under a Member State’s transport target. Despite calls for it to be increased at least since 2013, the government in 2017 decided to introduce a year-on reduction starting in 2020, stopping at 2% by 2032. News of this was met with disappointment by the bioethanol industry:

Vivergo Fuels

Secondary stakeholder evidence

Mark Chesworth, Managing Director

“...we would question whether E10 can be successfully introduced and sustained with a crop cap which, even at its highest point, is the lowest in Europe. We would therefore call on the Government to mandate E10, enabling a swift co-ordinated roll-out and a clear and consistent message to consumers.” – 15th September, 2017

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790538/rfto-annual-report-2017-2018-web.pdf

Additionally, the greenhouse gas (GHG) reduction requirement for fuels which is currently set at 4% in 2019 and is set to rise to 6% in 2020 adds further risk for both the Government and motorists. In its written submission, Ensus stated that achieving this target with B7 Biodiesel and E5 Bioethanol appears to be impossible without the availability of Upstream Emission Reductions (UER's) with no UER's having been approved or certified at that date of their submission.

The implications for fuel suppliers means that “buy out” of the obligation becomes a likelihood, freeing the obligated oil retailers to comply with GHG reduction at the pump. In the written submission from Ensus, the “buy out” is estimated to be approximately £250,000,000 per annum. Introducing E10 would likely reduce this amount by approximately £100,000,000. To meet the 6% GHG target without UER's would require higher blends of ethanol / biodiesel (E20/E85/B30) and or fast uptake of alternative fuel vehicles (e.g. bio methane, hydrogen).

The APPG is deeply concerned that motorists may ultimately pay the price for the Government not mandating the introduction of cleaner and greener fuels to meet its GHG targets, and that these additional costs may amount to hundreds of millions of pounds.

APPG comment

COMPATIBILITY OF OLDER VEHICLES

One of the remaining issues which appears to preoccupy the Department for Transport on E10 and inhibit its Officials and Ministers from fixing firm plans for mandating this new fuel, is that of compatibility. While the majority of cars manufactured after 2000 are fully warranted to run on E10 - indeed, many of these are optimized for E10 - concerns remain around compatibility of cars manufactured prior to 2000. There are fears that the higher ethanol concentration might cause blockages or cause internal corrosion in these older cars. However little research appears to exist to categorically prove any link in this regard. Indeed, the APPG has yet to receive any data or research on this but is keen to see it should it exist.

Low Carbon Vehicle Partnership (LowCVP)

Written stakeholder evidence

“France introduced E10 in 2009 when less than 65% of petrol fleet were warranted compatible. E10 was the largest volume petrol grade sold in France in 2018 (47% of market) priced typically 2 cents less than E5 (29% of market).” – May 2019

It is notable that, with E10 being introduced across parts of Europe and the United States, not one report has surfaced that shows evidence of E10 causing significant damage to any vehicle that was manufactured prior to 2000. Further, no reports of engine damage have come to light of motorists in the UK travelling to countries in Europe where E5 is being phased out at the forecourts, such as France and Belgium, and where they will inevitably be filling their vehicles with E10. This is despite repeated sensationalist national media articles repeatedly raising this risk to UK holidaymakers.

Ethanol Europe

Written stakeholder evidence

"All petrol engine types the world over run safely and efficiently on E10. Three hundred million vehicles of all ages, makes and models have been running solely on E10 and higher blend ethanol petrol for a decade or more and no engine compatibility incident has been recorded." – May 2019

This does not mean to undermine the possible risk that some cars might be damaged by E10. Indeed, a small minority of cars were never fully warrantied to use the fuel. It is worth noting that these cars predominantly belong to the 'classic cars' group, which account for an extremely low annual mileage. But this is something that must be communicated clearly with consumers by all stakeholders across the industry in the event of a rollout. Many cars come equipped with signage or accompanying paperwork to notify their users as to their compatibility with all kinds of fuel blends. Motorists can also check online whether their vehicles are fully warrantied for E10, or of course contact their car company directly.

Ensus**Written stakeholder evidence**

“Analysis by the REA of the number of main household vehicles that are not officially warrantied to run on E10, suggests it to be almost half that suggested by the DfT, likely to represent less than 1% of registered vehicles by 2020. Additionally, a large percentage of these older vehicles are what most would deem prestige marques including Rolls Royce’s, vintage vehicles and classic sports cars, which are generally very low annual mileage.” – May 2019

The issue of compatibility also goes hand in hand with fears over customer choice at the fuel pumps. The bioethanol industry has given express reassurances that were E10 to be mandated, motorists would still be able to purchase E5 (as octane 98) at many forecourts. Thus, any older cars which are not expressly warrantied for E10 can still have access to fuel that is compatible with their engines.

The APPG recognises the seriousness of the issue relating to the compatibility of E10 given potential costs to motorists. However, the Group believes these concerns can be overcome by a clear communication campaign involving both fuel suppliers and the Government to assure motorists that E10 is extremely unlikely to damage the small percentage of pre-2000 vehicles which remain on the roads - but should they have concerns, that E5 fuel options remain available.

APPG comment

CO2 SUPPLY

A stable and secure supply of CO2

The APPG also heard evidence of the other benefits which the Bioethanol Industry provides, and which would be secured and safeguarded with the introduction of E10. For example, the Ensus plant on Teesside captures CO2, a by-product of ethanol production and liquefies this product for use in a wide range of industries, including food, beverage and nuclear industry. As one of only three facilities in the UK, the country is very exposed to CO2 supply problems. When these occur, such as last summer, costs for consumers rise, industry safety problems can occur and product shortages are evident. The benefit of an E10 mandate increases the likelihood that the Ensus plant remains in operation and CO2 capture, liquefaction and supply remains continuous.

Ensus

Oral stakeholder evidence

Grant Pearson, Commercial Director

“If we have a robust [bioethanol] market that is driven by demand for E10 then we will be running and providing CO2 to the market, and so I believe we can provide a lot of security in this area.” – 1st May 2019

The APPG recognises the additional benefits of having a sustainable bioethanol industry including a secure and stable supply of CO2 - not only vital in the drinks sector - but of importance to the agricultural sector as well as the nuclear industry.

APPG comment

Written stakeholder evidence

“No single company has introduced this as a replacement for E5, due to both cost and risk of failure, with customers instead seeking out E5 from other suppliers. Even the proposals from the ethanol industry to compensate motorists for the lower energy content is unlikely to persuade companies to launch E10. A simple legislative change, requiring all 95 octane fuel to be labelled as E10 (meaning it could contain up to 10% ethanol) would remove the main hurdle to market introduction of higher ethanol percentage fuels.” – May 2019

The APPG believes that for E10 to be successfully introduced the Department for Transport must rapidly translate verbal, unofficial statements into written, public policies - publishing its plans and bringing forward legislation to mandate the introduction of E10 by 2020.

APPG comment

Regardless of the options chosen, it is clear that the Government **must** play a central leadership role in ensuring a swift and efficient introduction of E10 at the forecourts. This would include introducing a strong fuel duty incentive coordinated with the RTFO obligation signal to ensure a coherent rollout. Any such rollout, however, that takes place over time - usually as a result of regional constraints in the supply chain - may lead to confusion at the petrol stations for consumers as to what is available and where. Any rollout must therefore require coordination across the supply chain and a robust communication campaigns - a role that can only be led by the Government. In their written submission, LowCVP highlighted the unsuccessful roll of E10 in Germany in 2011, and how this was not successful in large part due to the lack of a co-ordinated public information campaign.

Written stakeholder evidence

“A simple legislative change, requiring all 95 octane fuel to be labelled as E10 (meaning it could contain up to 10% ethanol) would remove the main hurdle to market introduction of higher ethanol percentage fuels.” – May 2019

This necessity - especially with regards to the communication element behind a significant rollout - can be seen in other initial rollouts across Europe. According to research carried out by the Low Carbon Vehicle Partnership, in Germany, for example, the same level of fuel duty was applied to petrol and bioethanol - thus undermining the incentive of the fuel to consumers. Conversely, a well-coordinated national launch with government backing alongside an obvious and effectively communicated incentive to adopt E10 can lead to rapid uptake nationwide. This was especially seen in Finland, with a rapid uptake achieving close to 70% market share by

2017, after being introduced in 2011. Similarly, LowCVP also highlight how Belgium successfully introduced E10 in 2015 with the support of a government led public information campaign.

The APPG encourages the Department for Transport to learn the lessons from other countries where E10 has been successfully introduced in recent years - including Belgium and Finland - with roll outs supported by well run and resourced public information campaigns.

APPG comment