Ethanol Europe Renewables Ltd.

By email to: biofuel.obligation@dccae.gov.ie
Heat and Transport Energy Policy Division
Department of Communications, Climate Action and Environment
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Re: Consultation on future increases in the biofuels obligation rate

This is the EERL submission to the public consultation published on link:

www.dccae.gov.ie/en ie/news and media/consultations/Pages/Biofuel Obligation Rate Consultation.aspx

Ethanol Europe Renewables Ltd (EERL) is an Irish firm founded in 2010 with the objective of supplying renewable energy to the EU transport sector following the passage into legislation of the 2009 Renewable Energy Directive. EERL funded and built a biorefinery in Hungary which converts corn into ethanol (a climate friendly and renewable petrol subsitute) and GMO free and antibiotic free animal feed. The EERL biorefinery is now the largest of its kind, producing 500 million litres annually of ethanol for the European fuel market and 350 tonnes of quality feed. The firm has generated over 2000 jobs and is Europe's most active bioeconomy investor.

EERL's responses relate to the use of Europe sourced crop based ethanol as a biofuel blended in petrol. Irish petrol already contains 5% such ethanol by volume and is known as E5. Our responses relate principally to the prospect of an increase from 5% to 10% (E10).

Responses to Consultation questions on link: www.dccae.gov.ie/en ie/news and media/consultations/Documents/11/consultations/Biofuels%20Obligation%20Scheme%20Consultation.pdf

Question 1

In order to meet Ireland's 2020 renewable energy target in the transport sector, it is proposed to increase the biofuel obligation rate to 10% from 2019 and circa 12% from 2020.

- Do you support this policy measure?

Response: EERL supports this measure. In the petrol sector E10 should be introduced as standard without delay. E15 should be introduced shortly after. Captive fleets running on ED95 (95% ethanol) should be considered, as is the case in Sweden, as well as fuel distribution options for flexifuel vehicles which can use up to 85% ethanol or even more. A combination of these measures will allow the petrol sector meet and exceed the 12% obligation in the short to medium term and in a cost effective and non disruptive manner.

- What biofuels do you envisage contributing to meeting these increased rates?

Response: Crop based European biofuels – ethanol in particular are the most economical, effective and immediate means for increasing the share of renewables in transport and for reducing the carbon intensity of energy on the road. They are fully suited to today's fleet at the blend levels required and bring the parallel benefits of 7 billion euros of demand to Europe's farmers, co produced GMO free and antibiotic free animal feed, green growth and jobs (over 200,000) in rural areas, cleaner air, energy security and a platform for bioeconomy investment and innovation. Contrary to arguments sometimes heard in the EU biofuels debate, and in particular from the European Commission itself, EU sourced crop based biofuels come with no down sides or adverse knock on effects of any kind.

Biofuels or biofuels crops which cannot or will not contribute include those imported from outside the EU (such as palm oil diesel) as they fail to meet climate and sustainability criteria, either directly or indirectly. Waste based and advanced biofuels are also unlikely to satisfy demand as they are either unable to scale to meet the volumes (used cooking oil or pine tree sap for example) or they are dependent on technologies and value chains which have no chance of being ready for industrial application in the 2020 2030 timeframe. In the ethanol sector over 40 "advanced" biofuels projects have been announced in the last ten years yet to date there is effectively zero advanced ethanol on the market.

The International Energy Agency in its 2017 *Technology Roadmap on Sustainable Bioenergy* says that in order to keep the planet within a two degree temperature change by 2060 biofuels use in transport will need to grow to ten times 2016 levels. Not only that, they say biofuels will actually be bigger than electricity in 2060. In this inevitable scenario Ireland could and should aim to build its own biofuel production base. A modest sized sugar beet ethanol plant could supply a significant portion of Ireland's ethanol requirement in the petrol sector while assuring Irish farmers of long term secure demand for beet crops.

- What alternative approaches do you view as being more likely to achieving Ireland's 2020 renewable energy target in the transport sector?

Response: There are no other options which will make a significant enough contribution in the 2020 or even 2030 timeframe. EU sourced crop based biofuels such as ethanol are the only viable and cost effective option, and they bring immense collateral benefits.

Electric vehicles will ideally dominate the sector from 2050 onwards (over 50% of fleet) but up until 2035 the oil burning fleet will continue growing quicker than electromobility can catch up.

Question 2

In order to meet Ireland's 2020 renewable energy target in the transport sector, it is proposed to increase the biofuel obligation rate to 10% from 2019 and circa 12% from 2020.

- What impact do you believe this will have on fuel prices?

Response: There will be no impact on fuel prices arising from increased ethanol use in petrol. EU crop based ethanol is available at a cost in the same ballpark as fossil petrol, any cost differential of going from E5 to E10 is spread over the other 95% and most importantly, ethanol is a high octane fuel enhancing additive (as well as a fuel in its own right) and using it allows fuel blenders (a) dispense with other costly chemical additives and (b) use lower grade and lower cost fossil oil blendstock (though we strongly advocate against this as it negates much of the benefit of adding ethanol in the first place).

- What alternative approaches could provide a more cost effective method of achieving Ireland's 2020 renewable energy target in the transport sector?

Response: There simply is no more cost effective method. Ethanol is proven as the lowest cost option.

Question 3

In order to maximise the contribution of the Biofuels Obligation Scheme to Ireland's renewable energy target in the transport sector, it is proposed to restrict / reduce the current level of use of carried over certificates in 2020.

- Do you support this approach?

Response: No comment.

- What would be the appropriate level of carryover for use in 2020 and beyond?

Response: No comment.

- If you feel the current level should be maintained, please provide reasoning including an alternative approach to maximising the contribution from biofuels to achieve Ireland's renewable energy target in the transport sector.

Response: No comment.

Question 4

The recently amended Fuel Quality Directive (Directive 98/70/EC) places obligations on suppliers to reduce emissions – specifically the reduction in carbon intensity of at least 6% to be met by 31 December 2020 compared to 2010.

- How do you envisage this requirement being met?

Response: EU sourced crop based ethanol currently achieves 66% savings in greenhouse gas emissions compared to fossil oil. These are certified weighted average values and they are on a steep trajctory to 90% and higher by 2030. Hence E10 achieves close to 5% carbon intensity reduction already, and improving, while E15 already achieves over 6%.

- Are there any measures that Government could take to assist obligated parties reach the Fuel Quality Directive target?

Response: Yes, the government could incentivise obligated parties to adopt E10 as standard before 2020. The only barrier to E10 is organisational inertia among the fuel blenders and distributors. No single party can make a move until they all move together. Parties with links to fossil oil can hold back progress with little effort.

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Question 5

Increasing the biofuel obligation rate is likely to involve the introduction of fuels with higher concentrations of biofuel (such as E10 which is petrol blended with 10% ethanol and B7 which is diesel blended with 7% biodiesel). This may lead to compatibility issues with older vehicles, consumer cost, the necessity of consumer awareness in order to ease its introduction, and potentially the development in forecourt infrastructure.

- What do you view as the technical and consumer challenges associated with increasing the biofuel obligation rate (including introducing fuels such as E10 and B7)?

Response: The fleet of petrol vehicles in Ireland is virtually 100% compatible with E10.

On December 15 2017 the Department of Transport kindly supplied us with current data on the number of vehicles under taxation as of November 30 2017 broken down by Vehicle Make, Fuel Type & Year of Registration. This a summary of our analysis:

There are 2.7 million vehicles in Ireland and 40% of them (1.1 million) are petrol. By 2020 more than 99% of petrol vehicles will be suitable for E10 without concerns while a large portion of the remaining 1% of mostly older and vintage vehicles will probably be unaffected.

More specifically, by 2020 98% of the petrol fleet will be 20 years old or younger and hence overwhelmingly E10 compatible. Regarding the other 2%, most pre 2000 vehicles are E10 compatible too as most makers have been producing E10 friendly cars since 1986 when ethanol averse carburetors finally exited all models and fuel injection became standard. For instance all the big German makes plus Ford, Jaguar, Jeep, Land Rover, Saab, Volvo and Lexus from 1986 onwards are suitable for E10. French and Japanese makes from 1997 are virtually all good. Italian cars and bikes are generally not a problem either.

Just 0.6% of the current fleet dates from before 1986 and with fifty to seventy thousand vehicles being scrapped each year the population of the least E10 friendly vehicles is quickly going extinct.

For vintage car owners there are guidelines on how to successfully adapt to E10.

In the event E10 becomes standard in Ireland EERL would be prepared to fund a website and smartphone app allowing Irish drivers insert their registration numbers and receive instant confirmation of the E10 suitability of their vehicle or advice in the event their vehicles are among the very few exceptions.

E10 is a market leader in France, Belgium, Finland, Australia and the USA. Brazil blends three times that level on average. China is moving to E10 by 2020.

- Can fuels such as E10 and B7 be brought to the market in Ireland by 2020?

Response: Yes of course. The only barrier is inertia among the blenders and distributors which supply fuel to Ireland and the fact that some of them are strongly tied to the fossil oil sector.

- Are there technical barriers to achieving 7% conventional biodiesel blend (B7) averaged across the full year, including the winter months?

Response: No comment.

- For biodiesel blend rates higher than 7%, are drop in biofuels a viable solution for Ireland?

Response: No comment.

Question 6

Since the publication of *A European Strategy for Low Emission Mobility* in July 2016, the European Commission has designated that food based biofuels have a limited role in decarbonising the transport sector due to concerns about their actual contribution to the decarbonisation. It is envisaged that a gradual reduction of food based biofuels and their replacement by more advanced biofuels will realise the potential of decarbonising the transport sector and minimise the overall indirect land use change impacts. The EU Commission has signalled that the trajectory of biofuels is away from first generation biofuels towards advanced or second generation biofuels. This is primarily to be achieved through the introduction of a cap on first generation biofuels and the incentivisation of advanced biofuels.

- How should the development of increased levels of advanced biofuels be supported in Ireland?

Response: The European Commission's *European Strategy for Low Emission Mobility* should be disregarded. The Strategy provides no evidence to support a reduction of what it incorrectly and biasedly labels "food based" biofuels. Instead it cites another Commission document from 2014 (*COM (2014) 15 A policy framework for climate and energy in the period from 2020 to 2030*) as its justification. The 2014 document also presents no evidence that crop based ethanol causes adverse effects, instead referring the reader to the Commission's 2012 *draft ILUC Directive*. And the ILUC Directive likewise presents no evidence. In fact it circumvents the duty of evidence by presenting

an undifferentiated cap on all food based biofuels with no scientific or empirical basis and with "no difference in treatment across conventional biofuels according to their ILUC impacts" (*P. 67, SWD(2012) 343 Impact Assessment for the ILUC Directive*).

The tragic outcome of the Commission's process is that palm oil diesel the most ILUC destructive fuel imaginable has grown from a trickle in Europe to a torrent under the ILUC Directive, accounting for close to a third of biofuel consumption and the loss of a million or more hectares of biodiverse carbon rich vegetation in Malaysia and Indonesia. At the same time safe and effective domestic biofuels have stagnated or even contracted, with loss of farm incomes, jobs, energy security, GMO free feed and climate progress.

The Commission then completed the evidence free circle in its latest proposal for a new *Directive on energy from renewable sources* (RED II) when it cites its Strategy on Low Emission Mobility as its basis for justifying the cap and phase out all "food based" biofuels, conventional ethanol included.

On the matter of advanced liquid biofuels the Commission has been equally misleading, and it has allowed itself be misled by ill informed NGOs and technology developers who display little interest in climate progress or any of the other stated aims of RED II (sustainable development, protecting the environment, improving citizens' health, inclusive economic growth, jobs and energy security). Advanced biofuel plants have failed in large numbers costing investors billions. Production of advanced biofuel in the world is negligible. The technology is not yet technically mature enough, scalable, economical or effective to be deployed in any meaningful way in the 2020 2030 timeframe. Of the 40 or more advanced ethanol projects announced worldwide in the last ten years none are producing biofuel in any meaningful volume. The European Commission is forcefully advocating future unproven solutions to today's immediate problems while marginalising solutions that are proven to work.

In June 2017 the Impact Assessment Institute in Brussels found that in RED II "The policy to cap food based biofuels for transport was assumed without supporting analysis".

The European Court of Auditors in September 2017 published its Review on *EU Action on Energy and Climate Change* finding "Evidence based policy making" to be the second biggest challenge in achieving climate progress.

The Cologne based Nova Institute in its September 2017 analysis of EU biofuels finds that "First generation biofuels are just as sustainable as second generation (advanced)" and that the Commission has no basis for suggesting otherwise in its RED II policy proposal.

EU sourced "food based" biofuels bring none of the adverse side effects that the Commission claims to be concerned about. In terms of food security even the FAO now states that there is a less than 1% correlation between food prices and biofuels demand (unlike the correlation with oil prices which is extremely high). Biofuels increase food security by maintaining EU land under cultivation that would otherwise be abandoned (in the unlikely event of a food security crunch biofuels crops can be diverted to food). EU crop output is immense in comparison to biofuels needs and crop output is increasing several times faster than biofuels could ever absorb. There is vast untapped

crop capacity in Europe, especially in Eastern Europe, but also in Ireland where tillage crop output has been diminishing due to low demand and low prices.

The most authoritiative study there is on the indirect land use change effects of EU biofuels is the 2016 Globiom Study and this shows that even under the "shock demand" scenarios applied in the Globiom modelling EU food based ethanol presents low ILUC risk (even lower than some advanced variants). When the Globiom approach is applied to real world volumes of EU ethanol and biodiesel the ILUC risk is zero or as near as makes no difference.

Biofuels and bioenergy derived from biomaterial other than tillage crops are of great value and should be promoted and developed vigorously. Ireland has great untapped potential. However upcoming blending obligations should be based on science and evidence relating to the pros and cons of conventional biofuels and the real viability and cost of advanced biofuels.

In summary, Ireland should energetically contest the Commission's position both on food based biofuels and on advanced biofuels.

Question 7

Currently, the Biofuels Obligation Scheme is limited to the transport sector. In the heating sector, there is a high use of fossil fuels (including oil) and a target 12% of energy consumption from renewable sources by 2020.

- What is your opinion on the potential for an obligation scheme (similar to the Biofuels Obligation Scheme) in the heat sector?

Response: No comment.

- What do you see as the technical barriers to introducing such a scheme?

Response: No comment.

Finally, EU sourced crop based E10 ethanol blend will allow:

- Ireland achieve nearly three quarters of its 2020 target for renewable energy in the petrol sector and nearly a fifth of its target for transport overall
- Greenhouse gas savings equivalent to taking 70 thousand cars off Irish roads

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- 125 million tonnes less climate damaging CO2 emissions to the atmosphere
- Cleaner urban air, as E10 allows cars run cleaner and leaner, cutting carbon monoxide emissions by 70% and particulate emissions by 80% compared to standard petrol
- 100 thousand tonnes more GMO free livestock feed (rations for a million head of cattle)
- 40 million euros in additional demand for EU tillage farmers
- 80 million euros in off farm EU economic activity in rural areas
- Oil imports to EU cut by 400 thousand barrels per year

In addition..

- E10 is compatible with virtually all petrol engines on the road today and is a market leader in Belgium, Finland, France, Australia and the USA
- E10 is the cheapest way to decarbonise Ireland's transport sector and meet the 2030 targets
- E10 will greatly reduce the risk of palm oil being used in Ireland's energy mix (palm diesel does four times more climate damage than oil and results in millions of hectares of devasting deforestation)

Should it be helpful to you, we would be happy to meet in person to present and discuss the above responses with a range of stakleholders.

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