Teagasc Response:

DCCAE Biofuels Obligation Scheme

Consultation on Future Increases in the Biofuel Obligation Rate

[redacted]

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Submission:

By email to

biofuel.obligation@dccae.gov.ie

With reference to consultation document issued by DCCAE on 1/12/17

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

About Teagasc

Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities.

The Teagasc advisory programme provides all farmers throughout the country with the opportunity to see best practice in operation and to acquire new skills through public events, public media and contracted clients a specific level of service from their local advisory office.

Teagasc provides a very wide range of practical, financial, technical and environmental training opportunities for farming and farm family members. Teagasc is providing a range of training options to suit full and part-time farmers. The decision to provide additional supports through Pillar 1 and 2 of the CAP for trained young farmers is a huge opportunity for new young farmers to establish themselves.

Teagasc is the leading organisation in the fields of agriculture and food research in Ireland, undertaking innovative research on:

- Animal and Grassland Research and Innovation
- Crops, Environment and Land Use
- Food
- Rural Economy and Development

We collaborate extensively with our colleagues in Irish universities. Our post-graduate fellowship programme, which supports more than 100 MSc and PhD students annually in our research centres, enhances this collaboration. We participate extensively in EU Framework Programmes and we have developed bilateral agreements with research organisations in Europe, the USA and New Zealand.

Teagasc is the main provider of further education in agriculture, food, horticulture, forestry and equine studies. Many of our courses incorporate management practices and technologies on the home farm, supervised project work and discussion groups. We deliver further education courses at our colleges and local centres. Higher level courses are delivered in partnership with third level colleges. Adult courses and Food Industry Development training takes place at centres throughout the country.

Summary

Aggressive decarbonisation of the transport sector is necessary through a combination of increased use of sustainable biofuels, electrification of transport and the progressive taxation of carbon.

It is important to remember that:

- After meeting 2020 targets, 90% of road transport fuel would still be fossil fuel.

- Approximately 40% of engine fuel used in Ireland is not subject to the Biofuels Obligation and is not considered within the RES-T target. Fuels used in aviation, agriculture, marine and construction sectors are excluded from consideration.

- Double counting has also meant that a large proportion of the biofuel reported is notional.

It is essential that the 12% inclusion volume rate is achieved at the earliest possible date, given that it only applies to a subset of overall oil use and this is only a step towards the longer-term decarbonisation challenge.

There is a need for greater awareness by the consumer and industry alike of the impact of increasing blending levels. Teagasc views this as a positive development, as consumers are currently unaware that they are currently driving on biofuel blends. Overall energy policy is trying to encourage the concept of energy citizens and awareness is a key part of this.

Concerns over cost-impact are a function of currently low oil prices and low carbon taxation. If oil prices rise to a level which makes biofuels commercially viable or if carbon emissions are progressively taxed, then there is no net cost impact. Progressive carbon taxation is an effective tool in incentivising investment in renewable energy. Greater awareness around carbon taxation would also send a positive behavioural signal to consumers.

The framing and implementation of biofuels policy over the last decade has not supported Irish biofuel producers. This has occurred despite a growing domestic market for biofuels mandated under the BOS. One of the main reasons has been a lack of coordination and consultation with the industry on appropriate policy implementation.

The potential for biomethane as a transport fuel remains untapped, and not considered adequately in DCCAEs energy policies to-date. Development of biomethane particularly for captive fleet applications could double the existing level of biofuel use based solely around using low-cost waste feed stocks or grass.

Teagasc does not support the proposal to extend the BOS to heating oil. It should be expanded to include all motive applications, rather than static applications. There are

many viable renewable heat and energy efficiency solutions which have more long term strategic benefit than simple liquid fuel substitution in the heating sector.

Teagasc do not see any policy merit in supporting the carryover of certificates. The biofuel levy is also an unnecessary market barrier and should be removed. The levy is not required to fund NORA's operations as a surplus of €92.5m was achieved in 2016.

1 Introduction

Renewable transport has largely been neglected in much of the public discussions on renewable energy and in terms of policy development.

The Biofuel Obligation Scheme has definitely increased the levels of blended biofuels in the petrol and diesel that we consume on a daily basis. The share of road transport fuels on a volume basis increased to 8.7 per cent in 2017. In terms of transports contribution to the overarching 16 per cent RES target, we need to be aware that:

(a) The share is lower in energy terms (than in volume terms) due to the differences in calorific values between biofuels and petroleum products.

(b) Weightings are applied to certain biofuels (e.g. biofuels wastes are counted twice) in terms of compliance with the 8.7 per cent 2017 goal that do not apply to the overall RES target. The double-counting of some biofuels, such as biodiesel derived from tallow or used cooking oil (UCO) has resulted that in practice Ireland's targets are being met via a notional extra credit for some biofuels.

(c) When we calculate the contribution to the overall RES share, all transport energy is considered (i.e. including aviation), not just road and rail transport energy.

There are also limits to the extent to which blending may occur before it may impact on standard car warranties. The target for electric vehicles (i.e. to achieve 10 per cent share of the vehicle fleet) – which would require over 200,000 electric vehicles (EVs) on Irish roads by 2020 – has recently been reduced to a target of 50,000 EVs by 2020. (Not all the electricity consumed by EVs is produced from renewable sources). This remains a very ambitious target compared with the current numbers of less than 1,723 (by the year 2016, or 2,109 if we include plug in hybrid EVs).

We are clearly not on track to achieve the 50,000 EV target by 2020; and even if we did, the impact on the RES target would be small with EVs contributing less than 0.5 per cent to RES target. The 2016 BOS report has indicated that Ireland sources only 17.5% of its biofuel feedstock's indigenously. The Biofuel Obligation Scheme has primarily supported the importation of biofuels into Ireland rather than generating an industry within Ireland.

1.2 Challenge

Increasing RES-T is challenging because of the blending limits for biodiesel and ethanol, the timing required for Compressed Natural Gas (CNG) refuelling infrastructure (to enable biomethane in transport) and the timing required for establishing renewable (hydro treated vegetable oil) diesel infrastructure at the Whitegate refinery.

A revision to the Renewable Energy Directive in 2015 limits to 7% RES-T the level that can be sourced from "food crops" feedstock's. In addition, weightings are used to increase the use of biofuels from waste and from second and third generation biofuels. To measure the contribution of these favoured biofuels towards the 10 per cent RES-T target, their energy contribution is increased by a weighting of two. The renewable electricity portion of electricity

used to charge electric vehicles is also increased, by a weighting of five. It is important to note that these weightings apply to the RES-T target only and not to the overall RES target.

2 Response to Consultation Questions

2.1 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?

Yes

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

Continue use of bioethanol and biodiesel blending as the time is not available to do anything else. The higher blending rates will be an issue for engine suppliers and this is a concern.

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

Teagasc supports Ireland both meeting and exceeding our obligations under the Renewable Energy Directive. There are challenges in the way in achieving a 12% by volume blend by 2020.

The BOS target will continue to be met by the fuel majors by primarily purchasing imported biofuels. There is substantial potential to incorporate biomethane as a renewable transport fuel especially in captive fleets. This could double the existing level of biofuel use based around low-cost waste feed stocks and grass. Policy need to be developed to facilitate the development of biomethane and note should be taken of what is happening in Sweden and Finland.

2.2 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* [Increasing BOS rate] *will have on fuel prices?

The cost will correlate to the counterfactual fuel cost i.e. oil and taxation policy.

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

There is very little time left to do anything else to deal with 2020 targets. Biomethane would have a role post 2020. Should oil prices increase to a level which makes biomass fuels more commercially competitive then there will not be a net cost impact.

2.3 Question 3: Carryover of Certs In order to maximise the contribution of the BOS 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?

No comment

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

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.

Policies such as forward purchase contracts or commodity hedging for purchase of biofuels in subsequent years could be considered here.

2.4 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

- How do you envisage this requirement being met?

We should be aim to either meet and if necessary exceed our RED obligations.

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

The most effective way to decarbonise the transport sector is through increased use of sustainable biofuels. The electrification of transport and a progressive carbon taxation policy will assist.

2.5 Question 5: Increasing the biofuel obligation rate is likely to involve the introduction of fuels with higher concentrations of biofuel (such as E10 and B7). 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)?

No comment

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

There is very little knowledge at consumer level of various biofuel blending currently in operation. A public awareness campaign through TV or radio could raise awareness levels. There is an imperative need to make consumers aware of the climate impact of their energy choices with a focus on road transport fuels.

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

No comment

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

No comment

2.6 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?

The SEAI Biogas Biomethane Study (June 2017)[1] shows the latent potential in Ireland to produce biogas/biomethane from indigenous feedstocks. Grass is a unique resource in Ireland and research has demonstrated that the country can produce over 12mt of grass dry matter in excess of the requirements of conventional agriculture[2]. Grass is a second generation biofuel and so its use as a feedstock for biogas/biomethane is not restricted by "land use change" issues. The current Teagasc Grass 10 programme[3] demonstrates in practice how grass production can be increased on the existing grassland area. While the initial effort is targeted at increasing production on bovine farms, the programme shows the potential of what could be achieved across the country. CNG fuelling infrastructure is available in many EU countries and Ireland is starting to roll out such facilities. Gas Networks Ireland are facilitating the injection of biomethane to the NG grid. There is a very interesting opportunity for Ireland to use biomethane as a component of transport fuel using the gas grid to deliver the product. A second opportunity is to target "captive fleets", e.g. buses, and

[1] https://www.seai.ie/resources/publications/Assessment-of-Cost-and-Benefits-of-Biogas-and-Biomethane-in-Ireland.pdf
[2] McEniry et al., 2013 How much grassland biomass is available in Ireland in excess of livestock requirements? *Irish Journal of Agricultural and Food Research* **52:** 67–80, 2013
[3] https://www.teagasc.ie/crops/grassland/grass10/

provide up to 100% biomethane as their fuel. These practices are advancing in other EU countries.

2.7 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?

Teagasc does not support the proposal to extend the BOS to heating oil. There are many viable renewable heat and energy efficiency solutions which have more long term strategic benefit than simple liquid fuel substitution in the heating sector.

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

No comment

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