# An Taisce's Response to the

## Public Consultation on future increases in the biofuels obligation rate

### (from the Department of Communications, Climate Action and Environment)

**January 2018**

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# Glossary

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| AR5 | The Fifth Assessment Report by the IPCC, published 2013 to 2014 |
| ATCC | An Taisce Climate Change (Committee) |
| CCAC | Climate Change Advisory Committee, an expert advisory group set up by the Climate Action and Low Carbon Development Act 2015 |
| $CO_2$ | Carbon dioxide |
| $CO_2e$ | Carbon dioxide equivalent (includes all GHGs including methane and nitrous oxide) |
| DAFM | Department of Agriculture, Food and the Marine |
| DCCAE | Department of Communications, Climate Action and Environment |
| DED | District Electoral Division |
| ESR | Effort Sharing Regulation, as currently proposed to 2030 for national non-ETS emissions |
| ETS | Emissions Trading Scheme. The EU-wide aggregate sector of installations with large point-source emissions (especially, electricity generation, cement, steel and heavy manufacturing). |
| FIP | Feed In Premium |
| GHG | Greenhouse Gas |
| IAM | Integrated Assessment Model, combining climate and economic models |
| IEA | International Energy Agency |
| IPCC | Intergovernmental Panel on Climate Change |
| NMP | National Mitigation Plan |
| Non-ETS | Non-traded national domestic emissions (transport, agriculture and buildings limited by the EU 2020 target of a 20% reduction relative to 1990). |
| NPP | Climate Action and Low-Carbon Development National Policy Position. This is the Government's current outline mitigation plan. |
| RESS | Renewable Energy Support Scheme |
| RHI | Renewable Heat Incentive |
| SEAI | Sustainable Energy Authority of Ireland |
| tCO2 | tonnes of carbon dioxide |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WFQA | Wood Fuel Quality Assurance scheme |

# 1 Executive Summary

The Biofuels Obligation Scheme aims to increase the amount of biofuels added to fuel used in transport. The declared aim of this policy is to reduce the carbon footprint of transport fuel assuming that low-carbon biofuels will replace high-carbon petrol and diesel. However, An Taisce finds the policy to be weakly supported. In our view there is a danger that using biofuels for transport may result in releasing more greenhouse gas emissions than not carrying out the scheme in the first place. Therefore, there is insufficient reason to raise the biofuels obligation rate.

There are strong reasons for rejecting the Biofuels Obligation Scheme approach and proposed increase:

- GHG emissions savings that are claimed from using biofuels will depend on the deeply flawed emissions accounting employed by the EU which assumes that biofuels are carbon neutral and fails to define or enforce strict sustainability criteria;
- Climate impacts of using biomass for transport fuel will depend on lifecycle emissions arising from land-use change, fertiliser use, harvesting, collecting, processing and transport. Estimates for these emissions are uncertain but can be considerable – they are certainly not zero as is commonly assumed;
- EU support for crop-based biodiesel should end as soon as possible and completely ending support for land-based biofuels should be considered;
- Biofuels that are based on wastes and residues can be supported as these will release GHGs as a result of decomposition anyway. However, if non-waste biofuels are also allowed in the EU market then Ireland cannot claim to be using only waste-based biofuels as Ireland's demand increases the value of all biofuels.

An Taisce supports an urgent change in transport policy emphasis to multi-modal transit systems, primarily bus and rail outside towns and cities, and public transport, cycling and walking within towns and cities. Transport and land-use policy must emphasise fewer private cars and away from the internal combustion engine rather than adding increasing amounts of biofuels from different sources to motor fuels. A transport system that phased out the internal combustion engine and replaced it with a transport system run , for example, on electricity produced by renewable energy, would lead to a much greater reduction in GHG emissions.

The Consultation Document also suggested the potential to have a similar obligation in the heating sector. However, many of the same problems apply to the use of biofuels in heating as in transport.

It is important to note that there is an implicit assumption in the document that the addition of biofuels in transport fuels will result in a permanent reduction of fossil fuels use. Since Irish national, and specifically transport emissions are trending ever upward and there appears to be no policy in place to counter this economic-transport growth, then the offsetting assumption is incorrect. In the absence of immediate and radical emission reductions, increasing the biofuels obligation rate merely amounts to fossil fuel subsidy at the expense of taxpayers.

# 2 The Climate Benefits of Biofuels are Doubtful

There is a danger that using biofuels for transport - either as an additive to fuel or as the fuel for vehicles that run on 90-100% biofuels - will in some circumstances result in increased GHG emissions. The Biofuels Obligation may therefore result in releasing more greenhouse gas emissions than not carrying out the scheme in the first place.

The Biofuels Obligation Scheme Consultation Document states that biofuels 'must meet a minimum greenhouse gas emissions saving in carbon intensity in comparison to fossil fuels'. However, this will depend on the accounting system used.

The climate impact of using biomass for transport fuel will depend on lifecycle emissions arising from land-use change, fertiliser use, harvesting, collecting, processing and transport**.** Estimates for emissions from these sources are problematic but could be considerable especially where methane emissions from wood storage are taken into account.

If the accounting system does not include proper accounting of the environmental impact of indirect land use change (ILUC) for example, then a true figure for GHG emissions from biofuel will not be possible. When agricultural land is converted for biofuel production this may result in land elsewhere being converted into agricultural land often with the release of GHGs. Assessing the impact of the ILUC and including it in biofuels policy is essential to ensure that the biofuels produced do in fact reduce carbon emissions and not increase them. Tailpipe emissions from vehicles are not counted as it is assumed that they will be absorbed by trees, grasslands, etc., eventually. This may take many decades and in the meantime the GHGs are adding to climate change.

In 2009 the EU decided that 10% of EU transport was going to be powered by biofuels. However, inadequate quality controls were applied and the market was flooded with biofuels that were worse emitters of GHGs than fossil fuels. Crop biodiesel in Europe makes up 80% of the market and emits more GHGs than fossil diesel[1].

The EU should end support for crop-based biodiesel as soon as possible and consider completely ending support for land-based biofuels. It is worth supporting the biofuels that are based on wastes and residues as these will release GHGs as a result of decomposition anyway.

The report adds that policymakers should tighten up accounting rules to ensure the full extent of biomass emissions are included. The analysis outlines how policies intended to boost the use of biomass are in many cases "not fit for purpose" because they are inadvertently increasing emissions by often ignoring emissions from burning wood in power stations and failing to account for changes in forest carbon stocks.

In An Taisce's view, the Renewable Energy Directive has introduced perverse incentives to increase bioenergy use without sufficient sustainability criteria. It would be better to replace the idea of a target for the use of biofuels in transport with a target for GHG reduction in the transport sector.

[1] Transport & Environment 2016 Globiom: the basis for biofuel policy post-2020

# 3 Using Biomass and Biofuels in the Heating Sector is Also Doubtful

The Consultation Document also considers the potential 'to introduce a similar obligation in the heating sector'. An Taisce does not accept this proposal for liquid biofuels for the same reasons given above in transport, and also in the use of woody biomass for heat energy.

Peer-reviewed science and the research summary in the recent Chatham House report[2], concludes that the use of woody biofuels can be considered carbon neutral only in certain limited circumstances, stating:

> *"while some instances of biomass energy use may result in lower life-cycle emissions than fossil fuels, in most circumstances comparing technologies of similar ages, the use of woody biomass for energy will release higher levels of emissions than coal and considerably higher than gas".*

This could also apply to liquid biofuels made from woody biomass and used in the heating sector. Ethanol production, for example, is very land-intensive and this results in pressure on agricultural land.

In An Taisce's assessment of the science[2], biomass policy frameworks including those in the EU and Ireland are not sufficient and are not fit for purpose. A recent open letter[3] in the Guardian newspaper signed by many prominent scientists , including Sir David Beddington, the former Chief Scientist to the UK government severely criticises EU policy. There is a critical flaw in the EU plan to double Europe's current renewable energy by 2030 which would accelerate climate change by allowing countries, power plants and factories to claim that cutting down trees and burning them for energy qualifies as renewable energy. The letter goes on to say that 'even a small part of Europe's energy requires a large quantity of trees and to avoid profound harm to the climate and forests worldwide the European council and parliament must fix this flaw'. The IPCC are raising similar concerns[4]. We are surprised that DCCAE appear unaware of this science.

It would be wise to ensure that policies and subsidies in the area of biomass do not result in the diversion of materials from lower carbon footprint uses such as making fibreboard (in the case of mill residues) to heat production.

In summarising forestry research[5], Stephen Mitchell comments on the inherent trade-offs between forestry for climate mitigation or for bioenergy:

> "The message of our study is that managing forests for maximal carbon storage can yield appreciable, and highly predictable, carbon mitigation benefits within the coming century,"

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[2] Ter-Mikaelian et al (2015) The Burning Question: Does Forest Bioenergy Reduce Carbon Emissions? A Review of Common Misconceptions about Forest Carbon Accounting. http://www.ingentaconnect.com/content/saf/jof/2015/000000113/00000001/art00009

[3] A flaw in Europe's clean energy plan allows fuel from felled trees to qualify as renewable energy when in fact this would accelerate climate change and devastate forests http://bit.ly/2FCHqrC

[4] IPCC (2016) Scoping document, see Table 1 on recommended action to prevent emission miscounting. www.ipcc-nggip.iges.or.jp/public/mtdocs/pdfiles/1608_Minsk_Scoping_Meeting_Report.pdf

[5] Mitchell et al. (2012) Carbon debt and carbon sequestration parity in forest bioenergy production http://onlinelibrary.wiley.com/doi/10.1111/j.1757-1707.2012.01173.x/abstract

[but] "Harvesting forests for bioenergy production would require such a long time scale to yield net benefits that it is unlikely to be an effective avenue for climate-change mitigation."[6]

# 4 An Taisce's Comment on overall framing of the consultation document

The Consultation is badly flawed due to faulty underlying assumptions therefore An Taisce urges the Department to reconsider this proposal in terms of the extreme urgency of action now required to face up to climate reality and to meet Ireland's obligations to align action with the Paris Agreement temperature target.

In particular:

- Ireland's climate policy is failing to limit national emissions, and specifically transport emissions, which are projected to rise due to inadequate and incoherent policies. Ireland is missing even the weak EU targets that will have to be ratcheted up in ambition to align action with the Paris agreement.
- **Therefore, increasing the biofuels obligation rate makes no sense because coherent climate policy resulting in planned emissions reduction is absent.**
- Similarly, if an alternative fuel or energy is low carbon and is enabled then the energy it provides cannot simply be assumed to replace fossil fuel energy. The assumption is incorrect. In reality most of the energy is simply additional to using fossil fuel:
    - *"the average pattern across most nations of the world over the past fifty years is one where each unit of total national energy use from non-fossil-fuel sources displaced less than one-quarter of a unit of fossil-fuel energy use" (York, 2012)*[7]
    - This means it is likely that increasing the biofuels obligation rate will in fact act as an additional fossil fuel subsidy.
- **Therefore, whole-economy policies to limit polluting activities are required. For transport that means limiting car numbers and car mileage and reducing roads investment while prioritising increased investment in coherent, multi-modal networks of public transport, cycling and walking.**
- Fuel efficiency and carbon intensity improvement result in in direct and rebound effects that are not adequately estimated in current policy.
- Furthermore the results of biofuel policies are highly uncertain and therefore more caution is required than this consultation allows:
    - "the climate effects of the increased use of biofuels depend on social, economic, technological, and regulatory factors that are difficult or impossible to predict accurately." Plevin 2016[8]

[6] https://nicholas.duke.edu/about/news/forests-more-valuable-carbon-storage-source-carbon-neutral-fuel-study-shows

[7] York,(2012) Do alternative energy sources displace fossil fuels? http://rdcu.be/E0zn

[8] Plevin 2016 http://onlinelibrary.wiley.com.dcu.idm.oclc.org/doi/10.1111/jiec.12507/abstract

# 5 Answers to the Document's Specific Questions

***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?***
***-What biofuels do you envisage contributing to meeting these increased rates?***
***-What alternative approaches do you view as being more likely to achieve Ireland's renewable energy target in the transport sector?***

**An Taisce's Answer:** No. As noted in section 2 above there is much evidence suggesting the use of current biofuels for transport fuel and heating is in many cases more carbon intensive than using fossil fuels.
The use of electric vehicles (especially public transport) powered by electricity generated by renewable energy is in our view a better way of achieving the EU target.

***Question 2:***
***In order to meet Ireland's renewable energy target in the transport sector, it is proposed to increase the biofuel obligation rate from 10% in 2019 and circa 12% from 2020.***
***-What impact do you believe this will have on fuel prices?***
***-What alternative approaches could provide a more cost-effective method of achieving Ireland's 2020 renewable energy target in the transport sector?***

**An Taisce's Answer:** It is our view that there will be added pressure on fuel prices after the introduction of transport fuels with higher biofuel content. As stated in the Consultation document not all cars in the country are suitable for E10 fuel. This may lead to extra costs for the petrol retailers as they may have to have pumps with different fuels with different biofuels content.

Ireland should name targets for a complete phase-out of the internal combustion engine, whether fired by fossil fuels or fossil fuels with biofuels added. It would be better to plan for the sustained and escalating replacement of fossil fuel engines with electric vehicles and especially putting more emphasis on the increased use of public transport (electric), cycling and walking.

Electric buses are already strongly competitive options for urban[9] and even for interurban transport (especially if a carbon price in line with Paris targets is assumed).

***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.***

**An Taisce's Answer:** In the context of the Consultation we agree that the use of carried over certificates should be restricted. However, An Taisce thinks that biofuel certificates should only be allowed if the entire EU biofuel market is subject to them.

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

**An Taisce's Answer:** Biodiesel is assumed to be less problematic than bioethanol on the basis, as stated in the Consultation Document, that all biodiesel was from feedstocks that were waste or residues. However, if non-waste biofuels are also allowed in the EU biofuel market then Ireland cannot claim to be using only waste-based biofuels because Ireland's biofuel demand increases the value of all biofuels including non-waste ones. If any increase in biofuels in diesel fuel can also be sourced from feedstocks and waste the carbon intensity in diesel may well satisfy the conditions of the Fuel Quality Directive. However, in the EU as a whole the market is now dominated by crop biodiesel which has a much greater carbon intensity than using feedstocks and waste. As stated in the Consultation Document biofuel production has not increased in Ireland since the introduction of the Biofuels Obligation Scheme.

***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***

[9] https://www.vox.com/energy-and-environment/2017/10/24/16519364/electric-buses

***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?***
***-Can fuels such as E10 and B7 be brought to the market in Ireland by 2020?***
***-Are there technical barriers to achieving 7% conventional biodiesel blend (B7) averaged across the full year, including winter months?***
***-For biofuel blend rates higher than 7%, are drop-in biofuels a viable solution for Ireland?***

**An Taisce's Answer:** There are some older cars on the road that are not compatible with the use of E10 fuel. Most modern cars (those with fuel injection rather than carburettors) can use E10 - owners can consult the vehicle's manual. In some older vehicles ethanol can damage the fuel system.
In theory all diesel vehicles can run on biodiesel as the diesel engine was designed to run on plant oil. Parts attached to the engine could be damaged but the vast majority of diesel vehicles on the road can run on 100% biodiesel.
It should be possible to bring E10 and B7 to the market by 2020 and a publicity campaign will be necessary to inform the public of this change and provide any necessary advice concerning compatibility.

***Question 6:***
***Since the publication of 'A European Strategy for Low Emissions 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 release 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 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 biofuels be supported in Ireland?***

**An Taisce's Answer:** The move away from first generation biofuels is to be welcomed but biofuels have only a limited role in fueling road traffic. Second generation biofuels made from lignocellulosic biomass or woody crops, agricultural residue or waste should have a smaller carbon footprint. Moving away from ICE engines altogether should be the primary aim.

***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 of 12% 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?***
***What do you see as the technical barriers to introducing such a scheme?***

**An Taisce's Answer:**
It is possible that using biofuels for heating as proposed in this question will result in releasing more greenhouse gas emissions than not carrying out the scheme in the first place. As noted in **section 2** above in the Chatham House report[2] the use of woody biofuels can be considered carbon neutral only in certain limited circumstances. Contrary to this reality, EU policy incorrectly treats using biofuels as carbon neutral and also ignores uncounted land-use emissions on imported wood pellets from North America. It is highly likely that the loophole due to these accounting flaws – already identified by the Intergovernmental Panel on Climate Change – will be closed in the near term thereby undermining the carbon neutral assumption in the consultation document.

**The climate impact of using biomass for energy will also depend on lifecycle emissions arising from land-use change, fertiliser use, harvesting, collecting, processing and transport.** Estimates for emissions from these sources are problematic but could be considerable especially where methane emissions from wood storage are taken into account.