

## Question 1

(a)

Yes this is feasible. Ambitious it isn't. 14% is the minimum set out by the EU. Ireland has been behind in terms of innovative ideas to cut carbon emissions relative to the rest of Europe. This is evident by the fact that when we do want to innovate we look to Europe for companies and technology suppliers to help us with the innovation. If Ireland were to set more ambitious targets and invest in developing industries around the new EU directives in a few years one would expect to see European governments and companies using Irish companies to further their own development. One potential example that comes to mind is electrolysis, we have wind farms all over the country turning the brakes on when they have too much power being generated. In the future the excess power will be used to produce hydrogen as long term energy storage. Other example would be to investigate the use of hydrogen for biomethane upgrading or the use of waste plastic to produce as some Australian researchers are doing (I'm not sure if this meets RED II criteria). There is no shortage of lab scale technologies that could be piloted in Ireland to help meet our targets. If Irish innovators and researchers were given the opportunity I'm sure an internationally recognised start-up companies could come out of it.

(b)

No, further to my point above I think the obligation should be frontloaded and the department should spend the money on incentivising industry early rather than playing catch up. A linear increase sounds good but in practice I would imagine there will be delays that will keep the achieved results below the planned linear line. I would like to see a tilted bell curve which is more ambitious at the start and drops off towards 2030 to arrive at the same point. During this early phase, while there is a dependence on petrol/diesel and the customs and excise is being paid at such a high rate, the exchequer should incentivise the technologies and companies that will operate in this space to get the industry up and running. Then as the reliance on fossil fuels reduces the income from customs and excises will decrease, fines and taxes will be needed to make up the deficit. Hopefully then, as the rest of Europe will be in a rush to meet their targets and Ireland can export our knowledge, innovations and technologies.

## Question 2

(a)

Yes consumers are going to want to keep some older cars on the road. I see two potential pathways to overcome this. If a consumer wants 100% (or close to it) petroleum based petrol they should be expected to pay a premium for it in terms of carbon tax, there is no getting away from that in these times. My opinion is that these petroleum based fuels should be phased out of mainstream forecourts and make those who want the fuels have to go out of their way. The second pathway would be the modification of some older engines to take the new blend or an alternative fuel such as LPG. We are not an automotive country so the expertise for this would probably have to be imported but it could encourage a domestic market for modifications. Both of these pathways add expense to having an older car on the road, incentives or scrappage schemes can then encourage some consumers to trade up to a car that will handle the new blends or to go electric.

(b)

Same as a. above but with the added point that diesel can be replaced by CNG and bio-CNG vehicles. It may be possible to convert some older diesel engines to run on CNG. Consumers will look to save money, slowly encouraging them away from 100% fossil fuels will be possible with the correct incentives and if the infrastructure is available.

(c)

Bioethanol from sugar beet and other plant residues. Biodiesel from waste oil, algae and some specifically grown crops/residues. Biomethane from Anaerobic digestion and LPG/bioLPG as a secondary route to increase blending by conversion of engines that cannot take the blend and hence reducing the overall use of petrol or diesel. There may also be the possibility of producing fuel from waste plastic.

(d)

France has a good bioethanol industry which could supply the Irish market, I would like to see an Irish domestic industry but I would be sceptical if we could do it as cheap as importing it now and how feasible hitting the 70% reduction in emissions criteria would be would require investigations. We had a biodiesel industry in development but it has since fallen out of favour, we could harvest a lot of waste oils and use algae to produce biodiesel domestically if these could be done using excess electricity from the grid it may be more attractive. Again, specifically grown energy crops may not hit the emissions reduction criteria so importing from Europe may be necessary. Biomethane or bio CNG is a fuel we could produce lots of if the market was there for the biomethane. GNI and RGFI have been active in this space but the recent KPMG report shows there is large gap between the breakeven cost of a kWh of energy shows that subsidies are needed. Once the market is developed the Anaerobic digesters will begin to be developed all over the country as the farming community is keen to try something new but currently the gap is too large.

(e)

Yes consumer communication is needed, climate change is quite prevalent at the moment so I don't think that will be an issue. Consumers will need to see that this blend work and won't damage engines and won't decrease the value of their cars.

(f)

Consumers need to start seeing that the more environmentally friendly option is also the cheaper option. Road tax should disincentivise cars that will not take the blended fuels. Blended fuels should be cheaper than petroleum fuels through carbon tax etc.. Congestion charges to could disincentivise people to have polluting cars in built up areas.

### Question 3

(a)

Yes energy is what is needed to move us around, heat our homes and for industry. Currently consumers and industry are looking for green energy, under the RED II this will have to reduce emissions by 70%. This is a good step to get green energy on the market in the quantities that is needed. There may come a time when the renewable energy on the market is in a strong enough position to shift obligations to an emissions basis. Operating on an energy basis now allows all renewable technologies to compete with oil. In the future the renewables may need to compete with each other on an emissions basis.

### Question 4

(a)

Yes the laws taking effect in 2022 seems to be a good time. However, I would like to see proactive measures taken prior to that, measures such as increasing carbon tax, developing a native biofuel sector, dissemination of information, promotion of CNG/bio-CNG for heavy goods, etc.

### Question 5

(a)

The obligation is a good way to promote the use of advanced biofuels but why does it have to be an obligation? The use of advanced biofuels could be very good for Ireland and shouldn't need to be forced on us. Domestic biofuel production would mean energy security going forward

(b)

The potential for Ireland to produce a biofuel is possibly greatest with Biomethane. Bioethanol from sugar beet is also an option it is not as easy to store and the refineries are large and expensive. The farming community would be very accepting of any alternative sector to operate in such as biofuels. The reliance on meat and dairy is unsustainable I feel, especially with the shift towards less meat consumption in the global west. Giving farmers the option to rotate their systems and include biofuel crops will add more resilience to the Irish agri sector which should in turn create rural jobs. The farming community is ready and waiting to start building AD plants. The waste products and agricultural residues are available, what's missing is the investors to pay the €1 - 5 million required for a farm scale AD plant. The reason the investors aren't interested is that there is a minimal market for biomethane and the payback period is deemed too long. Connecting an AD plant to the ESB grid is not currently viable so the GNI graze project is attempting to provide a market is the only sign of hope. A subsidy for biomethane would certainly help but this has been encouraged over and over again to no avail. So perhaps encouraging or obligating sectors such as transport and especially haulage to move towards CNG and bioCNG could create more of a demand for biomethane this in turn would create enough demand to develop a viable market and encourage investors to get involved.

Question 6

Yes rail should be included suppliers and consumers would not appreciate to be hit with obligations, taxes, and levys around using diesel only to see Irish rail or other operators continue to buy diesel locomotives. However, it should be done sensitively as public transport and rail in particular need to be promoted, encouraged and expanded so anything that impedes this or increases ticket prices for rail users should be avoided.

Question 7

Yes the fuels listed should be exempt to start off with as they all have the potential to be 100%. Electric vehicles and hydrogen vehicles can easily be run on renewables however it should be ensured that CNG and LNG vehicles are comparable with all international standards for biomethane. Vehicles and boilers/CHPs that could potentially burn out of spec biomethane could be beneficial. GNI and other distributors will have a very tight tolerances that may be missed by producers at times meaning there may be a market for rejected biomethane.

Question 8

Yes I agree with the approach. I do have some comments though. Will petrol/diesel suppliers be buying credits from the biomethane sector? I.e. will all biofuel 'green certificates' be traded on a like for like basis as long as they fit into one of the 4 categories of RED II regardless of the biofuel produced? This would be of benefit as the demand will be high for green certificates so this could push up the price acting as incentive for the domestic industries.

I agree with the idea not to include electricity due to the administration required however, if hydrogen production via electrolysis is advanced in the next few years could there be a situation where renewable electricity producers decide not to export to the grid? o

Opting to produce hydrogen instead because the sale of the hydrogen and the sale of the certificates equate to more than the electrical grid feed in tariff?

Question 9

(a)

Yes the multipliers provide a good platform to encourage certain activities. I believe a time limit for reviewing the multipliers should be included in case a particular sector or activity does better than expected. The review process should only change the multipliers by a maximum of 10 or 20% so as not to create uncertainty for investors

(b)

Yes there will be a risk of fraud. People will always try to play the system to make more money. I can't see any way of avoiding this other than regular auditing and inspections.

Question 10

Yes this is appropriate.

Question 11

I agree with the idea of not wanting biofuels to compete with food or feed crops but the 2% seems very small. It would be nice to see some allowances where the farming practices used are also used to sequester carbon in the soil or where the farmer is transitioning away from a high carbon (or equivalent) emissions enterprise. It would also be nice to see definitions of what is residue and what is food/feed be a bit flexible to encourage some practices, for example could sugar beet roots be considered the residue for Ethanol production and the tops of the beets used for animal feed?

Question 12

Yes I agree with the approach to ask the EU for an exemption. Ireland is 800% self sufficient in beef and we produce a lot of animal by-products. If there are better alternatives that would displace as much fossil fuels they should be considered but until then they should definitely not be ruled out.

Question 13

Yes

Question 14

Yes minimising the use of this buy out fee is important.

Question 15

Yes provided this is not taken lightly or used for political gain.

Question 16

(a)

Yes I would like to see some measures introduced to help phase out these fossil fuels in the heat

sector. However not at the expense of causing rural Ireland massive distribution. Home heating oil is a popular fuel for home heating as it can be stored for long periods at low cost (compared to a pressurised gas tank) and can be called upon quickly to heat a home or building via central heating. Heat pumps are an option for displacement of oil burners but heat pumps will not react as quickly in the event of a cold snap. Heat pumps in conjunction with a back up boiler of any description may be necessary to utilize the efficiency of heat pumps while maintaining the same flexibility people are used to and need in some cases.

#### Question 17

I feel I have expressed most of my opinions in the above answers. My final point would be around cooperation. In my line of work I attended a number of different events from the RGFI decarbonising the gas network to workshops and events held with and by farmers about how to plan for the future. I feel there is a bit of a disconnect. Farmers get a hard time for contributing to about a third of Irish emissions in the agri sector yet the majority of farmers are not the ones that benefitting the most from the exports bod Irish produce. We all benefit from Irish exports and we all need to do our bit for climate change, the agricultural sector has the potential to do a lot of good if the right policies are put in place. I hope you will consider this in your decisions and help to ensure no area of Ireland gets left behind as we need to all move forward together.

Thank you for your time,

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