Consultation 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 achieving Ireland's 2020

renewable energy target in the transport sector?

Petrogas do not support the increase in the biofuel obligation rate to 10% from 2019 and 12% from 2020 for the following reasons.

A. Blending capacity currently only supports maximum of E10 and B7

Currently the majority of Fuels placed on the market within the Republic of Ireland (ROI) are sourced from Refineries in the United Kingdom (UK). UK Refineries manufacture Road fuels to E5 Unleaded and B7 Diesel specifications. This specification of fuel will not allow blending of up to 10% biofuel and even with maximum blending of "Double Ticketed" Biodiesel, Fuel Suppliers in ROI will be left with a shortfall of BioFuel Certificates.

B. Car Manufacturers specifications do not support Biofuel to these proposed levels (10/12%)

The introduction of E10 Fuel has been raised as a potential solution for this shortfall. However research of E10 uptake within countries where it is currently sold is mixed. For example in Germany when introduced in 2011 there was widespread consumer uncertainty and even an "E10 Boykott" campaign. Also the current "blend wall" for BioDiesel in Diesel is 7% above which car manufacturers say their cars will not be supported.

C. Reduced Fuel Efficiency limits the effectiveness of E10

Other concerns include the reduction in fuel economy caused by increased ethanol % within Unleaded. In the US the Environmental Protection Agency (EPA) estimate that there is a reduction in Fuel Economy of approx. 3-4% using E10 compared to standard Unleaded. However research carried out by whatcar.com indicate that these results may be significantly higher in Europe due to the higher mix of small engine budget cars in the UK and by proxy the ROI. Their research showed reductions in Fuel economy of up to 11.5%. There is likely to be a significant backlash from general fuel users as car performance declines and/or fails. This attempt to introduce E10 into what is an ageing car fleet in Ireland is premature and requires much more thought.

D. Advanced BioFuels will be expensive for the consumer and not a panacea which will be easily implemented

Another potential solution to the shortfall in BioFuel Certificates could be the introduction of Second Generation Biofuels (Advanced BioFuels). These are currently being rolled out in Finland and Neste appear to be the market leaders in the production of this Advanced BioFuel. However there is currently very limited supply of Advanced BioFuels within Europe so it is highly unlikely that the ROI requirements could be met by using Advanced BioFuels. It is also important to note that using Hydrogenated Vegetable Oil (HVO) in place of regular Diesel or even first generation Biodiesel is likely to lead to significant increases at the pump for the Irish consumer and not likely to be welcomed.

It is highly unlikely to see the country's 2020 Renewable Energy Target for the transport sector being met by using BioFuels alone. It is important that lateral thinking is used here and some other ways of meeting the obligation are investigated such as:

A liquid market for Renewable Energy Tickets is opened in the country. These tickets should be tradeable from other areas of the economy e.g. wind or solar power generation. Other areas that should be investigated include ticket generation for companies who reduce their own energy consumption through efficiency programmes and ticket generation for companies who encourage the uptake of Electric Vehicles by putting Charge Points on their infrastructure.

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

Increasing the biofuel obligation rate to 10%/12% will result in significant increases in fuel prices for Irish consumers. The most recent change in policy from January 2017 resulted in an increase to the end consumer of approx. 1.60 € cpl on Unleaded Petrol and 0.70 € cpl on Diesel. Another increase to 10% is likely to incur a similar increase while the increase in 2020 would result in another similar jump.

Over 52% of CO2 emissions in Ireland in 2015 were produced from private car journeys. There should be a focus put on reducing the number of these journeys. This can be achieved by increased investment in public services and providing incentives to ride sharing for consumers commuting significant distances. Reducing the commuting distance of the average employee should also be an area of focus as recent trends suggest that employees are commuting further and further due to a lack of affordable housing close to their employment.

Another potential solution to achieve Irelands 2020 Renewable Energy target in the transport sector is to look at the area of Public Transport in isolation and focus on increasing levels of BioFuel used in their vehicles alone. Public Passengers account for approx. 5% of the CO2 emissions as of 2015 and any increases to Biofuel blend rates in these vehicles is not likely to have the widespread effect on private consumers/hauliers that a mandated increase to 10%/12% across the board will. Perhaps Advanced Biofuels/higher blend rates of first generation biofuels could be looked at for all Bus/Rail engines.

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

We do not support the reduction/restriction in the current level of use of carried over certificates in 2020. Fuel Suppliers in ROI currently have a significant risk with regard to the blending of BioFuels and ensuring that they are meeting the Biofuel obligation rate. Any operational issues with blending equipment will put suppliers behind on their "ticket" generation and they will not be able to subsequently over-blend to catch up. This results in significant penalties for the fuel supplier which are not recoverable. Removing the carryover is likely to increase cost to end consumers.

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?

It is extremely difficult to see the current 6% GHG reduction being met through the use of first generation biofuels. Even with the introduction of E10 into the product mix the effect of this on the overall GHG saving is negligible as :

1. The Carbon Intensity of Bioethanol is much greater than the Carbon Intensity of Biodiesel
2. Diesel is a much higher % of the overall product mix for Road Transport Fuels therefore changes in Unleaded don't have as large an impact on the industry

Other areas that should be investigated more fully are:

- Upstream Emission Reductions
- Incentivised Uptake in Electric Vehicles
- Use of Higher blends of biofuels in Public Vehicles
- Incentivising employee work from home/ride sharing on private car commutes
- Allow for the trading of excess renewable energy tickets from other areas of the economy

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

There are a number of technical challenges with the introduction of B7 and E10 on the current consumer in ROI.

It is currently technically possible to sell B7 within ROI. However the highest level of BioDiesel blending recorded in ROI was in June 17 when 5.9% of the total road fuel on the market was BioDiesel. The reasons for Fuel Suppliers in ROI not blending up to the maximum level of 7% are numerous however some of them are outlined below:

- Product quality issues with higher blend rates of BioDiesel especially at lower temperatures in the winter
- Stability of BioDiesel when stored in tanks especially at lower temperatures
- Certain car makes appear susceptible to filter blocking at higher levels of Biodiesel blending
- Higher Cost of BioDiesel to Regular Diesel
- Availability of BioDiesel for blending, especially as other European countries increase their blending rates e.g. the UK

There are a number of issues with introducing E10 into the Irish market some of which are outlined below:

- **The Irish market currently imports a large part of its Unleaded requirements from the UK where the Unleaded BOB produced is suitable for E5 and not E10, it is not likely that these refiners will produce E10 just for the Irish market and if they do it will be at a significant price premium**
- Not all the ROI fleet would be able to take E10 resulting in a protection grade of E5 being needed
- Significant Capital Expenditure required by Fuel Suppliers to update fuel terminals and fuel stations for the new grade of E10 while also keeping a protection grade available
- Reduction in the fuel economy of cars in the fleet (Irish car fleet likely to be closer to the cars used in the whatcar.com analysis (up to 11.5% reduction) than the EPA in the US (3-4%))

- Significant negative customer sentiment noted in other countries in the EU on the introduction of E10 even “E10 Boykott” in Germany
- Higher cost to the customer per litre at the pump due to higher commodity prices as well as higher delivery costs

In relation to the use of drop in or advanced biofuels being used in Ireland. The production capacity of these biofuels within Europe is currently limited. With other European countries also mandating increased Biofuel blend rates there is likely to be increased interest in the use of these drop in biofuels. This will lead to significant price premia for drop in biofuels to regular biofuels and therefore significant price increases for the customer at the pump.

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 Irish government should look to public transport vehicles as a first stage of the introduction of second generation biofuels. The government should look to have Public Passenger/Rail vehicles use the advanced biofuels to ensure their suitability for the Irish climate and market.

There should also be significant research undertaken by the DCCAE which will provide information to the industry through briefings and awareness.

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

The technical barriers to the introduction of a biofuel scheme within the Heating sector are outlined below.

Currently the majority of Heating Oil that is used in ROI is either Kerosene. Kerosene which is imported into the ROI is imported primarily as Dual Purpose Kerosene (DPK) which means that it is imported and stored to a higher specification than Kerosene imported primarily for Heat.

Currently biofuels are not used in the Aviation sector and mandating the oil industry to now blend biofuels (or bioliquids) within Kerosene is likely to lead to significant increases in cost. There would need to be significant capital expenditure at import terminals throughout the country in order to make this technically feasible. This is likely to result in significantly increased cost to the end customer.

There are also technical issues with the long term storage of biofuels in households or industry which could cause issues with degradation, low temperature issues and cold filter plugging.