Bord Gáis Energy
Response to
DCCAE Draft National Mitigation Plan
of March 2017

26th April 2017
BGE welcomes the opportunity to respond to this Consultation on the first draft National Mitigation Plan (NMP). As a “living document”, it is anticipated that the NMP will provide an important information tool in understanding the scale of, and the steps required to address, the low carbon transition challenge. We look forward to continued interaction in the development of future NMPs and in the dialogue on the low carbon transition.

Based on the data and analysis presented in the NMP, it is clear that the expected shortfall in meeting Greenhouse Gas Emissions (GHG) emissions reduction targets is most explicit in the Effort Sharing Decision or non-ETS sectors than in the ETS sector. BGE supports the view that in the short term (to 2020) and in laying the foundations for the low carbon transition to 2050, this NMP must focus on the non-ETS sector and the role that sector must play in the low carbon transition.

Significant and real progress has been made in the decarbonisation of Ireland’s electricity fuel mix and in shifting the balance to one with renewables, demand side participation and micro-generation. This progress provides a good basis for Ireland to work towards decarbonisation of other sectors of the economy such as transport, heat and agriculture. A level of urgency applies to the need to develop measures in the sectors of agriculture and transport in particular where emissions are projected to increase towards the upper end of 6-7% and 10-16% respectively.

With regard to the continued decarbonisation of the electricity generation sector, BGE urges consideration of the need for existing and new technologies to compete on a level playing field. This is, in our view, in line with the thrust of the proposed Clean Energy for all Europeans legislation package (CEP). The CEP is clear in its goal for mainstream interaction of all technologies, be they low carbon or renewables, with all other technologies. Renewables and low carbon technologies must come to market at market based prices and in this context we urge avoidance of subsidies for new technologies wherever possible. Subsidies create distortions in competition and also add to the Public Service Obligation (PSO) element of the consumer bill. Rising costs of the PSO can drive a negative perception of the overall decarbonisation agenda amongst consumers. Placing the costs of the low carbon transition on the consumer bill is a regressive step and a general tax would be more progressive. Ideally however, increased private investment in initiatives would occur which requires access to low interest rates, discussed further below. When implementing policy, government should ensure it does not tarnish the relationship between suppliers and customers. Continued increases in prices due to levies and network tariff increases contribute to loss of trust by the consumer. BGE recognises the merits of the low carbon transition but does not believe the Irish energy consumer should bear the burden of the decarbonisation objective. Related costs should be proportionate to ensure the burden is not entirely on energy consumers and such that the costs do not adversely affect competition.

Efforts should be made to convey a greater level of public understanding and acceptance of the low carbon transition and the ultimate benefits it will deliver. This will be a key enabler of progress in meeting low carbon goals and is an area in which SEAI and community based organisations should assist in.

Finally, BGE welcomes the introduction of carbon budgets in the NMP and suggests that further insight into what carbon budgets apply in order to achieve our 2020 and ultimately 2050 targets, in each of the individual sectors would provide a useful indicator of the scope and need for mitigation in these respective sectors.

BGE puts forward its views below on certain questions in this NMP consultation that are considered most relevant from a competition, supplier and consumer protection perspective. Answers are not provided to each question raised but the numbering of questions below follows the numbering format for the 4 sections as outlined in Annex 1 of the draft NMP.
1. Decarbonising Electricity Generation

The electricity generation sector has played a significant role in the low carbon transition to date. The NMP correctly recognises that the focus to 2020 must primarily shift to the non-ETS sectors. The electricity generation sector is responsible for one third of emissions in the energy sector however, focus on the other two thirds of emission sources is most urgent, particularly in the areas of heating and transport. While energy efficiency measures should reduce the level of electricity demand in the market, the increasing demand that electrification of heating, cooling and transport is anticipated to generate will need to be met by increasing levels of low carbon electricity.

BGE agrees with the NMP that increased renewable shares in electricity must be achieved in the most cost effective way to maintain Ireland’s economic competitiveness. In line with the policy principle of placing the citizen at the heart of the energy industry and the low carbon transition and in the context of the focus of the CEP on market based participation of renewables, low carbon generation that comes to market must participate on a level playing field with existing generation. Their participation must be cost-effective and the costs should not be borne entirely by the energy consumer.

1.1 What further contribution should renewable electricity make towards progressing the transition to a low carbon society and economy? How should this be facilitated?

In the context of the immediate above discussion, it is clear that despite progress towards meeting energy efficiency objectives, demand for electricity generation is likely to increase in the medium term through electrification of the heating, cooling and transport sectors. The increased electricity generation expected to meet this demand must necessarily be of a low carbon nature if EU targets are to be met.

Increasing renewables will reduce the dependence on oil and gas but there will still be reliance on appropriate decarbonised hydrocarbons as part of a diverse fuel mix required to secure supply and meet energy requirements as well as support the intermittency of renewables. The focus should be on the role of all low carbon sources of generation (as opposed to just “renewables”) in the low carbon transition. In this regard, low carbon gas (including renewable gas), carbon capture and storage (CCS) and biomass technologies, together with renewables have a potential role to play in meeting this increased demand.

REFIT 5 (RE5) is already supporting the development and testing of ocean energy but it will not reach commercial scale until the late 2020s. BGE supports the approach to encouraging new technologies through Research and Development (R&D) rather than levying additional costs on consumers to bring new technologies to commercial viability via the PSO.

In the interim, the new I-SEM wholesale electricity market trading arrangements will have a key role to play in providing exit signals for older, more inefficient and often more high carbon plants.

There is also scope for commercialisation of storage solutions such as in the form of batteries, the costs of which are falling considerably on an annual basis.

Going forward, the participation of renewables and low carbon solutions should be on a market basis. Subsidies for their deployment should be avoided or at least minimised to the extent possible. Increasing PSO costs would negatively impact public perception of the need for the low carbon transition and costs thereof. Ultimately, private investment should be encouraged over increasing PSO costs and policy decisions should be made to further the above suggestions.

1.2 In conjunction with the need to improve the energy efficiency of the built environment through deeper levels of renovation, how do we realise the opportunities that decarbonisation of large scale electric power generation provides to decarbonise the heating and transport sectors through electrification?

The NMP clearly identifies the cross-benefits between electrification of the heating and transport sector and the decarbonisation of large scale electric power generation. As described in the above answer under 1.1, the increased electrification of the heating, cooling and transport sectors will increase demand for electricity. It is therefore incumbent on policy makers and regulators to encourage the non-
ETS sector to de-carbonise whereby low carbon (not just renewables based) solutions in decarbonising electricity generation can play a role. The supply of low carbon electricity to heating and transport, will contribute to reducing emissions in the non-ETS (particularly heating and transport) sectors. It will also help reduce the GHG emissions from the ETS (electricity generation) sector.

Policy and regulatory drivers for emissions abatement in the electricity generation sector in line with low carbon targets to 2020, 2030 and 2050 would assist in achieving decarbonisation in the non-ETS sector.

A detailed view on the carbon budgets in each of the heating, cooling and transport sectors and the respective gaps in meeting the target would help identify where mitigation measures should be focused in the short term.

1.3 How can we enhance community engagement with decarbonisation of the electricity system, including achieving greater social and community acceptance of necessary associated electricity infrastructure?

The success of information campaigns as noted in the Energy Efficiency chapter of this NMP is central to increased community engagement. Greater levels of understanding, acceptance and buy in for the low carbon transition and related technologies and infrastructure will be a key enabler in achieving energy efficiency targets in a socially progressive manner.

Information in relation to the size of the targets, the timelines and the potential penalties for failure to meet legally binding targets should be provided in a simple understandable manner so as to facilitate understanding that, in the short-medium term, failure to comply with targets will be very costly due to fines and penalties applicable. Such costs would ultimately fall on the consumer and have to be paid for, but the consumer would not have the benefit of low carbon developments which would have been achieved had the relevant steps to meeting targets in the first place, been taken.

Public education/information campaigns highlighting the need for necessary investments in infrastructure should be pursued. These campaigns should identify the role of infrastructure not only in security of supply but also in the longer-term costs savings (versus the shorter term investment costs) infrastructure can provide when one takes into account for example its role in facilitating more low carbon and low cost generation on the system and the potential avoidance of fines for non-compliance when infrastructure helps in achieving targets.

In general however, optimised use of existing infrastructure should occur in order to keep costs down for consumers.

1.5 What other renewable technologies should be considered in order to diversify the power generation mix and progress the transition to a low carbon society in a cost-efficient and cost-effective way?

When considering other technologies that can contribute to the low carbon transition agenda, BGE believes that low carbon as well as renewables technologies should be equally considered. Gas will be the low carbon and flexible facilitator of the electricity system for the medium term. The diversification of gas sources should be pursued through for example optimisation of interconnection with other markets. The I-SEM electricity market design is furthermore expected to incentivise flexible low carbon generation ensuring its participation on a market basis.

It is noted that offshore renewables will not reach commercialisation levels until the late 2020s so alternative low carbon solutions are required in the meantime. Re-generation of onshore wind sites should progress only if they are commercially viable and should not rely on consumer based cost support. I-SEM arrangements in terms of for example aggregation through commercial entities or an Aggregator of Last Resort (AOLR) will also go some way to facilitating market based participation of wind going forward, without the need for subsidies to ensure their commercial viability.

Battery storage, with rapidly falling year on year costs, is also anticipated to have a central role as will other forms of storage. Micro-generation and solar should have a role with participation on a market-
basis only as ultimately BGE is concerned about consumer costs which materialise through PSO increases. Private investment is to be promoted wherever possible (discussed further below).

The potential that biogas can offer to the low carbon transition as a source of clean energy should not be understated. A recent European Commission study shows that it has not yet reached its full potential. Biogas can be a flexible sustainable alternative source supporting GHG reduction in electricity heating and transport and appropriate policies promoting biogas should be pursued.¹

Gas (which could include a portion of renewable gas), should be considered with regard to the REFIT 8 (RE8) measure under consideration in relation to the future role of coal in power generation (for Moneypoint). This is on the basis that the infrastructure is there to support it and because gas-fired generation provides flexible support for an electricity system that is dominated by variable generation. The overall impact on the consumer must have a significant bearing on the choice of fuel to adopt.

Notwithstanding the question of the fuel choice at Moneypoint post 2025, consideration should also be given as to who should be awarded the opportunity to develop what is one of the most strategically important generation sites on the island of Ireland. Given ESB’s dominance in the electricity market, BGE believes that consideration should be given to selling the site in an open competition for a third party to determine the most commercially suitable investment at the site.

Furthermore, future supports should focus on diversity and flexibility and market based participation of technologies. A balanced market driven approach to technologies as opposed to specific, targeted supports is required. Demand side pressures should then ultimately determine the level and mix of technologies that should address (on a cost effective basis), the equilibrium between renewables and energy efficiency investments.

### 2. Energy Efficiency in the Built Environment

BGE strongly supports the role of energy efficiency and the need for targets to achieve the low carbon transition objectives. Achievement of the non-binding targets are crucial not only from the perspective of setting solid foundations for achieving binding 2030 targets, but also in light of the fact that missing binding 2020 renewables targets could cost Ireland up to ~€600m.²

Significant energy efficiency progress has been made but it is time for larger scale projects to make a bigger contribution to the low carbon agenda. Deep renovation of buildings is central to this aim. BGE supports the proposed pilot schemes for deep retrofit, the outcomes of which the NMP notes will inform the design of measures to be implemented post 2020. BGE suggests that the NMP could usefully include a plan for the national Deep Retrofit pilot programme and incremental milestones needed to reach targets.

Beyond 2020, financing in energy efficiency is an issue. An increase in private financing is required to close the energy efficiency financing gap. While ideally, decarbonisation investment should be driven by market-based mechanisms such as the EU ETS, other sectors including buildings and transport and energy carriers aside from electricity should make equitable financial contributions also. Ideally non-economic barriers in financing need to be addressed at EU level where for example stronger development of innovative financing tools (e.g. Energy Performance Contracts) and standardisation of processes in public financing to attract investment and lower potential investment burdens, are required.

Policy support costs in the electricity bill should be minimised in order to reduce the pressure on electricity consumers that are currently carrying the bulk of decarbonisation costs. BGE urges a reduction of the placement of energy obligations on suppliers as it has a direct impact on end consumer bills. Further outgoings to support measures beyond those today should be mainly exchequer, rather than PSO, funded. A focus and review is also required on the policy based elements of the customer bill over which suppliers have no control. Ireland has among the highest transportation costs for

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¹ For further information please see https://ec.europa.eu/energy/sites/ener/files/documents/ce_delft_3g84_biogas_beyond_2020_final_report.pdf
² According to Eurostat
household electricity customers in the EU. With reducing demand and increasing energy efficiency costs, this will likely increase therefore there is an urgency to reduce these elements wherever possible. Incentives and penalties should be imposed on network asset owners and operators to ensure they balance the operation and development of the network in a way that adds value for the consumer. BGE looks forward to receipt of and responding to the Commission for Energy Regulation’s consultation regarding system operator incentives expecting in the coming months.

2.1 What further practical measures could be introduced to encourage and enable householders in undertaking deep energy efficiency renovations to their homes?

The success of energy efficiency measures is heavily reliant on decisions relating to people’s home or workplace and communication of potential measures to assist these decisions is critical. Past experience has proven that information campaigns have been very successful and there is a case for increasing the advisory support available to householders regarding measures to undertake and manage energy and energy efficiency.

There is scope also to extend the Home Renovation Incentive (HRI) Scheme beyond 2018 and refine it to focus on deep retrofitting.

Inclusion in the NMP of more details on the Deep Retrofit Pilot Scheme planned for 2017 and expansive advertising and information thereon should have a key role to play, together with the HRI.

A recognised barrier to market activity is finance. In line with the aim of empowering the consumer and placing the citizen at the heart of energy policy consumers should be enabled to finance energy efficiency tasks via: tax breaks on retrofit investments; reduction in VAT on energy efficiency products; and access to low interest loans. The provision of low cost finance is crucial if we are to create a sustainable market. The rate of finance should be such that it enables consumers to decide to undertake retrofit work which can be achieved by lending at nominal interest rates or slightly below the target rate of inflation. Germany has a tried and tested model of this where the KfW lends on a wholesale basis to retail banks in order to make credit available at attractive rates. This incentivises consumers to borrow (as the interest rate is in real terms ~0%) and would empower consumers to enhance the market for energy efficiency measures. Demand for such could be fostered by selling the concept as a scarce resource through for example capping loan volumes on an annual basis. Loans should be given on a first come, first served basis and no commitment should be given to long term maintenance of the scheme.

Notwithstanding our overarching view of minimising the impacts on consumer bills, the current PSO mechanism has certain scope to assist in subsidising such measures in order to enable deep retrofit to occur to the extent necessary. The expiry of certain subsidised plants from the PSO bill provides some scope to apply certain of these revenues to embedding energy efficiency measures. It is thought that funds in the region of €45-55m could be re-allocated to subsidise interest rates applicable to retrofit works. This could be extended to deep retrofit work now required to meet projected targets.

Existing energy efficiency measures should however continue to ensure there is no impact on the rate at which energy efficiency savings are currently being realised.

2.2 How should the Government support those who do not have the financial means to engage in renovations for example, those in energy poverty?

BGE is a strong supporter of consumer protection for those in Energy Poverty and has been a party to the voluntary Energy Engage Code since the outset which is central to addressing the needs of those that find themselves in the position of being energy poor.

The underlying causes of Energy Poverty are income, energy costs and thermal efficiency. Regardless of upgrades taken, a household with insufficient income may continue to suffer in terms of fuel poverty if it is still unable to pay reduced bills. It is regressive to believe that improving thermal efficiency only is the sole solution. In this regard, non-commodity costs such as network costs and taxes (e.g. PSO and VAT) can comprise up to 50% of bills, which costs are not within the control or influence of the supplier at all. BGE has been strongly encouraging reviews of this element of the bill for some time. Any reductions there will benefit all consumers. Ultimately we urge the CER to introduce incentives and
penalties on network owners and operators so transparent competitive tensions apply to their method of operating and developing networks; and, ensure repatriation of revenues earned from ancillary business activities to the energy customers who underwrite the regulated asset base that supports the ability to generate these ancillary returns in the first place. We urge review on this area as soon as possible and look forward to interacting in the consultation process expected this summer on system operator incentives in the Irish electricity market.

BGE also has significant concerns that placing onerous energy efficiency targets on suppliers and penalising them for underperformance to an extent that is much greater than our European supplier counterparts, may exasperate the energy poverty problem. Despite best efforts, suppliers ultimately have to pass through such costs to consumers including those in energy poverty which is regressive. It is important that any increase in Energy Poverty targets are matched with a proportionate increase in funding to the Better Energy Communities (BEC) scheme to control the cost of delivering obligations in this sector.

In principle, moves towards the long term migration of income support and deep retrofits are encouraged despite a mismatch between deep retrofitting costs and current income support levels. There is scope to create a “win win” situation for households whereby when they receive deep retrofit measures the level of income support to them could be partially adjusted to reflect the savings achieved but overall the adjustment should leave the householder in a marginally better position, after taking the retrofit benefit into account. This would also enable re-direction of scarce exchequer funding to additional deep retrofits and simultaneously boost economic activity. Households in a position to benefit from deep retrofit could be incentivised to take up retrofits in order to continue receiving the same level of income support. This suggestion should apply to all households in receipt of energy related income supports where they are eligible for an upgrade.

There is also scope to allow those in receipt of the Fuel Allowance (FA) to borrow for retrofit measures and volunteer a portion of their allowance towards repayment of the loan. The scheme could be designed to ensure that the energy saving would outweigh the repayment amount and the Department of Social Protection would divert certain of the FA to the loaning bank thereby repaying the loan and simultaneously de-risking the interest rate.

There is potential scope for the eligibility criteria for any new (or existing) scheme to provide for a certain minimum portion of supported customers to come from the energy poverty portion of the consumer base. Consideration could be given to including a minimum percentage of households with poor energy efficiency as a key selection criterion in the new deep retrofit pilot scheme for example.

The NMP states that shallow retrofit schemes have been successful to date therefore we should build on this success and the awareness of these schemes and double back on those households that have already benefitted from shallow upgrades to encourage them to deep retrofit. It would assist if a database of the energy efficiency levels of households was compiled to enable a phased approach to the BEC retrofit. BEC retrofits should extend to deep retrofit measures and allow certain quotas in each BEC cycle. Development of a marker system to allow for these higher cost projects or an increase in the volume of credits available for deep retrofits would be required.

With regard to social tariffs, BGE deems these to be overly complex and a distortive intervention in a competitive market. They would disincentivise retrofitting and could impact those at the fringes of energy poverty who would face higher bills. Obliging suppliers to provide social tariffs would represent a distortion to competition and necessitate an industry wide risk equalisation system (akin to Health Insurance). The complexity and administrative burden of such would again fall on the general consumer which is not considered a sustainable outcome. Measures suggested above such as allowing those on FAs to borrow for retrofits are preferable.

Finally, BGE suggests that debt management solutions need to ensure that the costs of those “won’t pay” customers do not fall on energy poverty consumers and that smart metering can allow adaptation to consumer patterns to cheaper priced periods (light touch regulation is required however) to enable suppliers to offer consumers products that fit their needs. This would empower consumers to make a real contribution to the low carbon transition. Smart meters also have a role in raising awareness among consumers of Ireland’s energy obligations.
With regard to awareness of deep retrofitting and its benefits BGE supports the training of health care professionals to “bring home” the benefits of energy efficiency supports, particularly to those in fuel poverty. An extended use of Community Based Organisations to communicate the message of these benefits within local communities would also be helpful.

2.3 How can we motivate the construction industry to promote deeper energy renovations to their clients?

The DCCAE has in the past recognised the failings of policy makers and the construction industry to sufficiently apply robust building standards until recent years. Arguably, the construction industry should contribute to some of the cost of meeting energy efficiency targets, and supporting those in energy poverty, based on the principle that those responsible should bear some of the costs. This would alleviate to an extent the burden of energy efficiency costs on the exchequer and directly on energy consumers. If such costs are established and applied, the construction industry could then perhaps be encouraged to promote deeper renovations on the premise that the quantum of renovations undertaken would reduce the said costs payable by the construction industry. To maintain standards, the construction sector and large industrial customers should be further encouraged towards achieving the Energy Efficiency Design standard IS 399 and ISO 50001 for large industrial customers.

The construction industry should be provided with information on the benefits of deep retrofits and the potential savings and role it plays in achieving energy efficiency objectives in a simple understandable manner. They could then convey this to their potential customers helping to spread awareness and potentially increase buy in from consumers.

2.4 For those householders and businesses that have carried out energy efficiency improvements, how should we encourage the adoption of low carbon heating solutions including those that would facilitate the decarbonisation of electricity generation?

Success in the decarbonisation of the electricity generation sector should significantly contribute to decarbonisation in the heating sector.

BGE believes that optimisation of existing energy infrastructure should occur to minimise the costs of the transition. The government should encourage those capable of connecting to the gas grid, to do so. With estimates of 200,000 domestic customers being within 30 metres of the gas network and 50,000 Small & Medium Enterprises being within 40 metres of the gas network connecting these homes and businesses could reduce the carbon intensity of the heating sector at a limited cost. Currently only approximately 3,000 customers switch to natural gas annually. To economically incentivise switching, the cost of connection would be applied to the Regulated Asset Base on the basis that additional customers will ultimately drive down costs for all other users.

For those of the population unable to connect to the gas network, incentives towards energy efficient/renewable energy technologies such as biomass, heat pumps could be made available only where connection is not feasible, e.g. through a renewable heat incentive.

While low carbon heat solutions may have high upfront costs, over the medium term the costs of using low carbon heat solutions will reduce e.g. in terms of bills, and the public need to be educated in this regard. As such, information campaigns have a significant role to play which can be facilitated by local energy agencies and the SEAI. Consideration to phasing out installations of fossil fuel based heating systems in future could be given as well as increased taxation on existing fossil fuel based heat systems.

The scope for further decarbonisation using existing infrastructures can be enhanced by providing a role for biogas which could be introduced to the network without any operational consequences and could reduce the carbon intensity of gas.

Reduced reliance on the Exchequer to fund the transition is encouraged and access by private investors to low interest finance has a role to play.
2.5 How could the regulatory regime be developed to best complement Government incentives and supports for the residential and commercial sectors post-2020?

The regulatory regime could commit to a phase out plan for non-low carbon based fuels in the heating sector with an increasing role for biogas. Those near the gas grid should be encouraged to connect to it and gain from the benefits of low carbon gas as well as potential future biogas contributions.

BGE urges significant consideration of the need to avoid over-burdening energy consumers through the PSO with the costs of the energy efficiency transition. Exchequer funded initiatives are preferred though ideally private funding will be promoted which in turns requires removal of barriers such as high interest rates (as discussed in 2.1 above). In terms of information, the SEAI and local energy agencies and Community Based Organisations have a role to play in relaying the importance of energy efficiency in terms of targets and the benefits for bills as well as the need to avoid potential penalties for missing EU binding targets.

With regard to consumers in energy poverty, please see our answer above under 2.2.

3. Decarbonising Transport

As the fastest growing source of GHG emissions due to economic output and car ownership levels having more than doubled between 1990 and 2015, transport must have an instrumental role to play in achieving the targets of the low carbon transition to 2050.

3.1 The demand for transport can be expected to increase over the coming years. Improving the integration of land use and transport planning is one approach that should help address this challenge. How else could the Government manage this projected change in order to ensure a functioning, low carbon transport network that supports growing communities and businesses?

BGE supports the promotion of increased use of public transport in a bid to reduce private car usage and reduce GHG emissions. In parallel, increased electrification of the car fleet and light vans is expected to drive the low carbon transition in transport particularly from 2025 onwards.

When outlining the policy applicable to electric vehicles, it is critical that all suppliers have access to all charging points and that the consumer has a choice and can choose suppliers with more “green” in their fuel mix. This will empower the consumer and also encourage suppliers to enhance the low carbon fuel mix. A strict utility style regulated framework is not required but some form of regulatory oversight will be needed to ensure that access to the charging infrastructure is in line with Ireland’s Transport Policy and wider Climate Change Policy targets.

Although the RAB should be developed to facilitate new connections, including the connection of charging infrastructure, the roll-out and cost of increasing the EV charging infrastructure should not be borne by the electricity customer. Instead, a connection policy relating to EV charge points which accounts for the reinforcement costs and benefits that they deliver to the system, should be developed such that any party wishing to connect charging infrastructure to the network has transparent and open access to the network.

Given the low carbon nature of gas, it is important that its role in the future energy mix is not overlooked. CNG should have a key role in the freight transport sector. Until the public fleet such as buses, is in a position to switch to electrification, the commercial sector will be highly reliant on biofuels and / or biogas to fuel them in a low carbon manner. The gas network extends to most of Ireland’s largest cities and towns and could be used to support a low carbon commercial transport sector.
3.4 As a small economy, Ireland has limited influence on the international pace of progress and market development for alternative fuels and technologies. Should the Government consider early investment in the adoption of these alternative fuels and technologies or delay investment until they advance further and become more cost-efficient and cost-effective?

The government should build on initiatives that have been started and that the government is satisfied will be successful in reaching targets on a cost effective basis.

However, given the likely impact of the costs of new alternative fuels and technologies falling on to the Exchequer, progression of such should only occur once the benefits over the costs of such, clearly points to the positive contribution that can be made by the measure assessed. Support or incentives in new technologies should primarily focus on the R&D stage rather than commercial roll out which is the stage at which private investment should take over. Adoption of alternative fuels and technologies should only occur when they prove cost effective for consumers and attract private investment and avoid over-reliance on PSO funding.

3.5 At present, Irish businesses are predominately reliant on the heavily-emitting road freight sector for transporting goods throughout the country. What measures could the Government, or businesses, employ to accelerate the decarbonisation of the Irish freight sector?

CNG and natural gas (including renewable gas) can play a significant role in both reducing the carbon footprint of our transport fleet and providing security of supply through fuel diversity. It also has the effect of increasing gas demand and helping to reduce the unit price of gas network costs with a consequent positive impact on consumer bills. It is likely that tax incentives for fuel siting and supports for renewable gas production will be required to drive the initial investments and mitigate costs to businesses. Consideration to mitigating the pressure on the Exchequer should occur mainly through the promotion of private investment for which barriers to take up should be mitigated as discussed in response to question 2.1 above.

4. An Approach to Carbon Neutrality for Agriculture, Forest and Land Use Sectors

It is crucial that sectors outside the ETS play an increasing role in the low carbon transition. As these sectors (agriculture, forest, land use) are responsible for the majority of GHG emissions currently, BGE urges considerable review of the role agriculture can play in the low carbon transition, at least in the medium term to 2030.