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Mr. Eugene Ó Cruadhlaioich Uasal,  
Cléireach don Choiste,  
Oireachtas Joint Committee on Environment, Culture and the Gaeltacht,  
Kindare House,  
Kildare Street,  
Baile Átha Cliath 2.

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**RE: Outline Heads of the Climate Action and Low Carbon Development Bill 2013.**

Dear Mr. Ó Cradhlaioich Uasala,

Thank you for the opportunity to respond to the Outline Heads of the Climate Action and Low Carbon Development Bill 2013. Shannon LNG is prepared to appear and discuss the enclosed report with the Committee in Public Session at a Committee meeting.

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Sincerely,

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Martin Regan  
Commercial Manager

# Shannon LNG Report to the Oireachtas Joint Committee on Environment, Culture and the Gaeltacht - Outline Heads of the Climate Action and Low Carbon Development Bill 2013.

## Introduction

Shannon LNG Limited has planning permission to develop a Liquefied Natural Gas (LNG) terminal on the Shannon estuary, in County Kerry. The terminal will receive LNG from ocean-going tankers, then regasify it and deliver natural gas into the national transmission network in Ireland. The Shannon LNG terminal will provide a new source of access to worldwide gas supplies for Ireland. The Shannon LNG terminal will increase Ireland's security of energy supply and provide increased competition in the natural gas market in Ireland.

Shannon LNG has applied for planning permission to develop a 500 MW Combined Heat and Power (CHP) plant on its site in County Kerry. Heat is required to convert LNG to natural gas in the LNG terminal. CHP is an energy efficient process that involves the use of waste heat that would otherwise be lost to the environment. EU and Irish Energy policy encourages the installation of CHP where there is a significant requirement for heat<sup>1</sup>. CHP plants are the most efficient way of generating electricity from gas<sup>2</sup>. This results in a substantial reduction in fuel consumption and greenhouse gas emissions per unit of electricity generated.

Ireland has a CHP target of 800 MW of CHP by 2020 as set out in the Energy White Paper<sup>3</sup>, the National Energy Efficiency Action Plan (NEEAP) 2009-2020<sup>4</sup> and the National Climate Change Strategy document 2007 to 2012<sup>5</sup>. However, according to the latest information from SEAI, it appears these targets for CHP will not be achieved in Ireland<sup>6</sup>:

"The installed capacity at the end of 2010 was 71% of the government's 2010 target. Therefore 2.8 times growth in the existing CHP capacity is required (516MWe) in order to meet the government 2020 target of 800MWe or an average annual growth rate of 11%. There was a reduction of 1.3% in operating capacity in 2010 and the average annual growth rate between 2006 and 2010 was 5%."

## Economic Competitiveness

Shannon LNG agrees that economic development and competitiveness remains a key objective when delivering Climate Change targets as referenced in Head 5, Section 10 (D – I) of the Bill. A successful and sustainable Climate Change policy will allow climate change targets to be met without harming the economic competitiveness of the country.

Wholesale natural gas prices in the United States are two to three times lower than those in Ireland due to the abundance of natural gas supplies in that country. Over the last five years, the United States has reduced its CO<sub>2</sub> emissions by more than any other developed

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<sup>1</sup> EPA BAT Guidance Note on Best Available Techniques for the Energy Sector (Large Combustion Plant Sector) 2008.

<sup>2</sup> Integrated Pollution Prevention and Control Reference Document on Best Available Techniques for Large Combustion Plants – European Commission Reference Document – December 2001.

<sup>3</sup> Department of Communications, Marine and Natural Resources, Energy White Paper, "Delivering a Sustainable Energy Future for Ireland" 2007.

<sup>4</sup> *National Energy Efficiency Action Plan 2009-2020*, Department of Communications, Marine and Natural Resources, 8 May 2009.

<sup>5</sup> The National Climate Change Strategy 2007 – 2012 - Department of the Environment, Heritage and Local Government.

<sup>6</sup> *Combined Heat and Power in Ireland 2012*, Sustainable Energy Authority of Ireland

economy (13%), mainly by replacing coal fired power generation with clean burning, low priced natural gas<sup>7</sup>.

There is a widely held perception in Ireland that building more and more subsidised renewable energy in the form of wind generation will reduce CO<sub>2</sub> emissions. Wind generation levels are now at 14.5<sup>8</sup>% of total electricity generation and, according to Eurostat, Ireland's electricity prices (excluding taxes) are the 2nd highest in Europe for domestic customers<sup>9</sup> and the 3<sup>rd</sup> highest in Europe for industrial customers<sup>10</sup>.

The International Energy Agency (IEA), of which Ireland is a member, has stated that there are over 250 years of natural gas reserves available in the world at current production rates<sup>11</sup>. The vast amount of natural gas reserves in the world will put downward pressure on gas prices, contrary to many assertions in Ireland that natural gas prices can only rise. As CO<sub>2</sub> emissions from coal are 66% higher than natural gas and milled peat emissions are 106%<sup>12</sup> higher than natural gas per unit of energy produced, this transformation in the understanding of the world's gas supplies provides a tremendous opportunity to reduce CO<sub>2</sub> emissions whilst maintaining competitiveness.

We would encourage the Joint Committee to question the presumption that increased wind energy will lead to reduced CO<sub>2</sub> emissions and to look to experience in the US as to how reducing CO<sub>2</sub> emissions through the greater use of natural gas does not have to hurt competitiveness.

### **Renewable Objectives**

The Eirgrid Group, Annual Renewable Report 2012, entitled "*Towards a Smart, Sustainable Energy Future*" states that

*"In order to meet the **renewable electricity targets** it is projected that the amount of wind generation across the island of Ireland will reach an installed capacity of between 4,800 MW and 5,300 MW by 2020. At this level, **Ireland and Northern Ireland will have one of the highest penetrations of renewable generation, as a percentage of system size, in the world.** Even today, we are managing instantaneous penetration levels of variable wind generation above 40% more often than ever before, **putting us in a world-leading position for managing high levels of wind generation on a synchronous power system.**"*

[Emphasis Added]

There is no justification for Ireland to take a world leadership role in renewable energy. The costs associated with getting this strategy wrong could be huge and could lead to a major loss of the economy's competitiveness. Wind generation requires substantial direct subsidies of €54.3 million<sup>13</sup> per annum and indirect subsidies such as reinforcing the electricity grid across the country to transmit electricity to the centres of demand.

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<sup>7</sup> United States Energy Information Administration (EIA), *Monthly Energy Review*, January 2013, Table 12.1

<sup>8</sup> Eirgrid All Island Generation Capacity Statement, 2013-2022, Section 3.6.

<sup>9</sup> Eurostat - Electricity - domestic consumers - bi-annual prices - new methodology from 2007 onwards  
[nrg\_pc\_204] [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_pc\\_204&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_pc_204&lang=en)

<sup>10</sup> Eurostat - Electricity - industrial consumers - bi-annual prices - new methodology from 2007 onwards  
[nrg\_pc\_205] [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg\\_pc\\_205&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_pc_205&lang=en)

<sup>11</sup> IEA Special Report entitled "Are we entering a golden age of gas", World Energy Outlook 2011, page 7.

<sup>12</sup> See Sustainable Energy Authority of Ireland website:

[http://www.seai.ie/Publications/Statistics\\_Publications/Emission\\_Factors/](http://www.seai.ie/Publications/Statistics_Publications/Emission_Factors/)

<sup>13</sup> The PSO levy for renewables for 2012/13 is €54,278,540. CER/12/121, 1 August 2012

Generators are paid “Uplift charges” in the Single Electricity Market as compensation for stopping and starting in order to meet demand at any given time. As wind generation is intermittent by nature, conventional generation plants have to be started up and curtailed to accommodate wind generation. When setting policy to meet climate change targets, the government should consider the full cost of renewables, including costs such as the increasing uplift charge paid to Generators in the Single Electricity Market to accommodate increasing amounts of wind generation.

Ireland has a target of producing 40% of its electricity through renewable energy by 2020, while at the same time providing a subsidy to peat generation, which has the highest CO<sub>2</sub> emissions per unit of electricity produced of all the fossil fuels. Peat fired generation currently requires a subsidy of €51.6 million<sup>14</sup> per annum. The amount of electricity being generated by coal has also increased over the last number of years. There are major contradictions in providing increasing subsidies and supports to wind generation to reduce CO<sub>2</sub> emissions while at the same time subsidising the burning of peat. This contradiction needs to be resolved by policy makers in Ireland<sup>15</sup>.

### **Change in the approach to Climate Change in Ireland is required**

#### A. Switching from Coal to Natural Gas will reduce CO<sub>2</sub> Emissions.

The Wall Street Journal, *Green Energy Rush Hit by Headwinds*, April 2010 states; "Offshore wind is one of the most expensive short-term ways you can conceive of to reduce CO<sub>2</sub> emissions," says Dieter Helm, professor of energy policy at Oxford University. *"It's economic nonsense to put all your eggs in one basket like this."* Dr. Helm says the most cost-effective way of "de-carbonizing" U.K. energy, at least in the short term, would be to switch from coal to cleaner-burning natural gas in power generation. *"If you take out 4 to 5 gigawatts of coal and replace it with gas, the CO<sub>2</sub> savings would be similar and it would only cost £5 billion to £7 billion, compared to £100 billion for offshore wind,"* he says.

Additionally, the following extracts from articles from the Financial Times support the switching of coal to natural gas in power generation:

A Financial Times April 2013 article, *"Energy no cleaner despite renewables boom"* reports that the International Energy Agency Executive Director recently stated:  
*"The picture is as clear as it is disturbing; the carbon intensity of the global energy supply has barely changed in 20 years, despite successful efforts in deploying renewable energy."*

A Financial Times May 2012 article *"Shale gas boom helps slash US emissions"* reports:  
*"The shale gas boom has led to a big drop in US carbon emissions, as generators switch from coal to cheap gas."*

*Gas is fast becoming the new fuel of choice for the US power sector: in the past 12 months, coal generation has slumped by 19 per cent while gas generation has increased by 38 per cent, according to US Department of Energy figures."*

<sup>14</sup> CER/12/121, 1 August 2012

<sup>15</sup> We recognise that these PSO levies will expire in 2015 and 2019; however, these remain a charge on the consumer until then.

A Financial Times April 2013 article, “Close coal power stations to meet carbon targets” reports that a Carbon Connect<sup>16</sup> paper entitled *Power from Fossil Fuels* argues:

*“that the continued retirement of coal-fired power stations in favour of bolstering gas in the energy mix is essential to fulfil hopes of reducing carbon emissions.”*

- B. Climate change policy should be spread across all sectors, i.e. transport, heating and power generation.

Irish climate change policy is overly focused on renewable electricity generation and does not address the other major energy uses that contribute to CO<sub>2</sub> emissions. The Sustainable Energy Authority of Ireland (SEAI) has identified three broad uses for energy in Ireland; transport, heating and electricity. SEAI data shows that heat is the largest user of energy in Ireland, and has been for the last 10 years<sup>17</sup>. Emissions from electricity represent the lowest emissions of the three energy sectors in Ireland<sup>18</sup>.

The transport sector in Ireland is responsible for 34.6<sup>19</sup>% of Ireland’s greenhouse gas emissions. There are major developments underway in the US to convert the commercial transport fleet to run on natural gas, thereby lowering costs and reducing emissions. We believe it is imperative that Ireland addresses the high greenhouse gas emissions in the transport sector, rather than just relying on the power generation sector to reduce emissions.

The committee should investigate the potential for greater use of natural gas in the running of the commercial transport fleet in Ireland to reduce CO<sub>2</sub> emissions in the transport sector. For instance, United Parcel Service (UPS) is reported to be buying 700 Liquefied Natural Gas (LNG) fuelled trucks and building four refuelling stations by the end of next year in the United States<sup>20</sup>.

Finally, we believe that it is important that all stakeholders are involved in formulating Ireland’s climate change policy. The International oil and gas industry provides over 78%<sup>21</sup> of Ireland’s energy, and many of these companies operate in Ireland. We believe that it is essential that the Expert Advisory Group is well balanced and includes representation from the oil and gas industry which, according to the IEA, will continue to provide most of the world’s energy well into the future.

<sup>16</sup> Carbon Connect is the independent forum in the UK that facilitates discussion and debate between business, government and parliament to bring about a low carbon transformation underpinned by sustainable energy.

<sup>17</sup> Section 2.2 Energy Use by Mode of Application, Energy in Ireland 1990 – 2011, 2012 Report, Sustainable Energy Authority of Ireland “Energy use can be categorised by its mode of application; that is, whether it is used for mobility (transport), power applications (electricity) or for thermal uses (space or process heating). These modes also represent three distinct energy markets. In 1990 thermal uses for energy (4,211 ktoe) accounted for a significant proportion of all primary energy (45%), while electricity accounted for 33% (3,094 ktoe) and transport 22% (2,019 ktoe). This contrasts with the situation in 2011 when the transport share had risen to 33% (4,448 ktoe), thermal had fallen to 34% (4,550 ktoe) and the share of energy use for electricity generation was unchanged at 33% (4,506 ktoe)”.

<sup>18</sup>Section 3.1.1 Greenhouse gas emissions, Energy in Ireland 1990 – 2011, 2012 Report, Sustainable Energy Authority of Ireland “In 2011, the shares of energy-related CO<sub>2</sub> emissions from transport, electricity and thermal applications were 34.6%, 31.8% and 33.7% respectively”

<sup>19</sup> Section 3.1.1 Greenhouse gas emissions, Energy in Ireland 1990 – 2011, 2012 Report, Sustainable Energy Authority of Ireland “

<sup>20</sup> Transport Topics, *UPS to Buy 700 LNG Tractors, Add Four Nat-Gas Fueling Stations*, 23 April 2013.

<sup>21</sup> SEAI, Energy in Ireland 1990 – 2011, 2012 Report, Section 2.1.

## **Recommendations**

1. We would encourage the Joint Committee to look to experience in the United States as to how CO<sub>2</sub> emissions can be reduced through the greater use of natural gas without hurting economic competitiveness.
2. We would encourage the Joint Committee to consider the full cost of renewable electricity generation including direct and indirect subsidies (e.g. reinforcing the electricity network or increased uplift charges) and question the merits of Ireland taking a world leading position for high levels of wind generation.
3. We would encourage the Joint Committee to investigate the developments underway in the United States to change their commercial transport fleet from running on diesel to running on natural gas in the form of liquefied natural gas (LNG) or compressed natural gas (CNG).
4. We would encourage the Joint Committee to investigate further how switching from coal and peat to natural gas could reduce CO<sub>2</sub> emissions in the power generation sector.
5. We would encourage the Joint Committee to examine how Climate Change policy could be applied proportionally across the three main energy sectors, i.e. transport, heating and power generation.
6. We would encourage the Joint Committee to ensure the Expert Advisory Group is well balanced and includes representation from the international oil and gas industry and other sectors.