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14<sup>th</sup> December 2011

Mr James McSherry,  
Renewables,  
Commission for Energy Regulation,  
The Exchange, Belgard Square North,  
Tallaght, Dublin 24.

**Re: CER/11/189: Consultation Paper on the Certification Process for High Efficiency CHP**

Dear James,

We are writing in response to the above consultation paper that was published by the CER on the 14<sup>th</sup> of November 2011. Shannon LNG outlines below our comments and observations on the consultation paper.

## **Section 2.3 Background Information**

Section 2.3 states:

Under S.I. No. 499 of 2009 the CER is required to certify HE CHP and the system operator is required to give such generation priority when dispatching the system. Therefore, the CER must now put in place a certification process.

We suggest that the CER clarifies that the HE CHP designation is also a consideration under Article 8(1) of the Cogeneration Directive 2004/8/EC whereby Member States have an obligation to guarantee access to the electricity transmission system for the power exported by the HE CHP.

## **Section 2.4 Legislative Background**

Section 2.4 states:

Therefore it can be seen that the CER has the duty to certify the actual power to heat ratios, and calculate the relative amount of primary energy savings of HE CHP units. And to ensure compliance with Article 8(1) of

the Directive must provide the TSO with the HE CHP certificates. The TSO must give these units priority dispatch.

The CER should provide additional clarity into the nature and scope of the HE CHP certificate to allow prospective applicants to provide substantive comments on it.

Section 2.4 should include a reference to the letter from the European Commission to the Irish Government with respect to the member state obligation under the Cogeneration Directive 2004/8/EC to provide grid access for high efficiency CHP. A copy of this letter is attached. The European Commission letter clarified the Irish Government obligations in relation to High Efficiency CHP in a letter<sup>1</sup> to Department of Communications, Energy and Natural Resources by stating the following,

These rules include an obligation for Member States to guarantee access to the grid system, transmission and distribution, as well as the priority dispatch by transmission system operators of electricity from high efficiency cogeneration.

### Section 3.3 Classification of Useful Heat

Approach 1 in Section 3.3 is entitled “*All Economically Justified Heat is Considered Useful Heat*”. We believe this title is misleading and we suggest the following title is more consistent with the legislation and should be adopted: “*All Heat that Satisfies an Economically Justifiable Demand is Useful Heat*”

Approach 1, as outlined in the CER consultation document, is a preferred interpretation of the High Efficiency CHP legislation with regards to what uses of heat should be considered eligible for study and possible classification as useful heat. Page 13/65 of the consultation reads as follows:

Once the CER was satisfied that the relevant heat demand is economically justifiable ..., all heat produced by the CHP unit would then **be eligible for assessment** as useful heat. This would include any heat which is re-cycled back into the CHP unit itself. This approach could be read as consistent with the requirements under the governing legislation and associated EU decisions and guidelines as one interpretation of these is that there is nothing in these documents to support the exclusion of **recycled heat** from being considered as eligible for assessment as useful heat and that to do so would go beyond what is required of the CER.<sup>3</sup> (emphasis added)

For the sake of clarity we suggest the CER highlights in bold the phrase “**be eligible for assessment**” in the above paragraph.

Page 13/65 goes on to say:

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<sup>1</sup> Letter from Marie Donnelly, Director, European Commission, DG Energy to Ms Sara White, Deputy Secretary and Director of Energy, Department of Communications, Energy and Natural Resources.

For the sake of clarity, under this approach, electricity associated with this re-cycled heat would be considered for certification as HE CHP electricity.

We suggest that the last sentence above is amended to read: “For the sake of clarity, under this approach, electricity associated with this re-cycled heat, **provided it is classified as Useful Heat**, would be considered for certification as HE CHP electricity.

Approach 1 allows the CER to “assess” all heat that is available from a CHP unit when determining the amount of “useful heat” generated. The evaluation or assessment is based on economic and market tests. This is in direct contrast to Approach 2 that categorically excludes some heat from study or consideration when evaluating what is and what is not “useful heat”.

With regard to Approach 2, Section 3.3 states:

Under this approach any heat output from the CHP unit that is **recycled back** into the CHP unit, whether through **internal processes** or through the **processing of fuel** required by the unit would not be considered useful heat. It is considered that this approach could also be seen as consistent with the EU Commission Decision 2008/952/EC, notably with Annex 5.7 and 5.8. and with section II (2.) which describes the cogeneration system boundaries and the consumer area in that context. (emphasis added)

Shannon LNG cannot find any text in the above referenced Decision 2008/952/EC that supports the notion that the EU Commission has taken or supports a position that any “re-cycled heat”, including “re-cycled heat” used to “process fuel” that is then consumed by the HE CHP unit should under all circumstances be denied a classification as useful heat.

Shannon LNG finds Approach 2 to be difficult to fully understand, based on the description provided in the consultation. In the above quotes the terms “recycled heat”, “internal processes”, and “processing of fuel” need to be defined within the body of the consultation paper as they do not appear to be defined in any of the regulatory documents that have been referenced as part of this consultation process. Until these terms are defined, Shannon LNG can neither support nor oppose Approach 2 as we simply do not understand it. That said, Shannon LNG does have concerns with regards to how Approach 2 might be implemented by the CER.

The processing of fuel is an industrial operation that consumes energy and that energy when supplied through CHP can in some circumstances contribute to the primary goal of the HE CHP legislation to enhance energy efficiency in Ireland and as such should be evaluated when determining what is and what is not an application of Useful Heat.

Shannon LNG’s proposed LNG import terminal will use heat from a CHP plant to vaporise Liquefied Natural Gas (LNG). A portion of that re-vaporised natural gas will be used as fuel in the CHP plant. It is not possible to determine from the consultation document whether this use of heat would be considered an “internal process” use of heat, “external process” use of heat, or even if this is an application where heat from a CHP is used to “process fuel”.

While Shannon LNG has cited an LNG specific example, a similar level of ambiguity with regards to how to apply Approach 2 to many real world industrial processes will persist until the approach is more fully described. Any clarity that the CER could provide as to the

definition of these terms and how they might be applied in specific cases such as the one cited here would be greatly appreciated. Shannon LNG would be in a better position to comment on Approach 2 (and to either support it or oppose it) after Approach 2 is more fully documented in a revised consultation document.

With regard to Approach 2, Section 3.3 states on page 14/65:

For clarity, under this approach in the event that the heat load in question, or part of that heat load, is linked to an operation associated with fuel re-used in the CHP plant itself, such as fuel processing, fuel drying or conversion technologies for biomass (anaerobic digestion, pyrolysis, gasification), the heat load associated with the **re-used fuel** would not be considered - useful heat. (emphasis added)

Before addressing the intent of the above quote, Shannon LNG would like to point out that the term “re-used fuel” is not defined in the consultation document. The CER should provide a definition for this term as well as those listed previously. It is difficult to see how fuel can be re-used once combusted.

The above quotes in this section suggest an approach that paints with too broad a brush. Shannon LNG believes that there are situations where heat used to process fuel should be classified as Useful Heat. It would be unwise and inappropriate to declare that all heat used to process fuel must be excluded from consideration or study when determining what is and what is not Useful Heat.

Heat supplied by the CHP system to the LNG terminal and used by the LNG terminal to process fuel should be measured and included when the amount of Useful Heat associated with a HE CHP is calculated. Heat used to process fuel can at times meet the purpose of the Directive as stated in Article 1 thereof, and is certainly not excluded from consideration as the consultation paper seems to indicate. As such, heat so used should be included in the calculation of “Useful Heat” as long as the fuel processing system meets an “economically justifiable demand” for heat. The economic and market tests that are applied in determining what is and what is not “useful heat” are articulated and defined in the body of the consultation document and they should be applied to all heat -- including heat used to process fuel. In some cases the heat used to process fuel might pass the tests and be classified as “useful” while in other cases this may not be the case – but in all cases the CER should be obligated to perform an assessment and issue a determination consistent with the EC directive.

For an illustration where heat used to process fuel is clearly useful heat, consider the case of two gas-fired power plants. One is a CHP plant and is located adjacent to the LNG terminal and the other is not a CHP plant and is some 100 kilometres distant. The LNG terminal uses heat from the adjacent CHP plant to vaporise all the LNG passing through the terminal. The heat that is used to vaporise the natural gas fuel that is piped to the distant power plant would be considered Useful Heat under either Approach 1 or Approach 2. However, Approach 2 as apparently proposed by the consultation paper would cast doubt on the “useful” value of the heat used to vaporise the CHP plant fuel. Unless the argument could be made that the LNG terminal was built solely to provide fuel for the adjacent power plant (which is not the case), this exclusion of the heat used for the CHP plant fuel from Useful Heat is not consistent with the goals of the CHP directives and regulations.

Page 14/65 of the consultation paper reads as follows:

For clarity, under this approach in the event that the heat load in question, or part of that heat load, is linked to an operation associated with fuel re-

used in the CHP plant itself, such as fuel processing, fuel drying or conversion technologies for biomass (anaerobic digestion, pyrolysis, gasification), the heat load associated with the re-used fuel would not be considered “useful heat”. .....

If such a heat demand were to be considered useful heat for the purposes of certification this approach proposes it could create a self-reinforcing calculation where the applicant would be incentivised to increase electricity production due to the fact that the heat demand is a function of electricity generation. It may be argued such a state of affairs would be contrary to the purpose of the Directive as stated in Article 1 thereof and may lead to the creation of heat demands for the purpose of gaining the benefits certification as HE CHP confers.

In the LNG specific example cited above,<sup>2</sup> it is hard to see how a “self-reinforcing calculation”, or any situation that would be contrary to Directive as stated in Article 1 could result.

Shannon LNG believes that the only justifiable test for “useful” status is found in the definitions of “Useful Heat” and “Economically Justifiable Demand” as defined in the consultation document. There is no need to create other tests such as “recycle heat” or “heat used to process fuel” to further limit the amount of Useful Heat associated with a particular CHP application.

The standards expressed in Approach 1 are nearly identical to the standards in the United Kingdom. The following text addresses UK standards and was extracted from the web site reference in footnote 3 on Page 13/65 of the consultation document:

#### **What is the definition of useful heat?**

Useful Heat is the heat from a CHP Scheme delivered to satisfy an economically justifiable demand for heat or cooling.

For example: Heat used for drying the incoming biomass or waste fuel to the CHP plant may be classified as a useful CHP heat output, but only if it can be demonstrated that such a use of heat is an economically justifiable precursor to the combustion of the fuel within the CHP plant.

This means that it must be demonstrated that the drying of the fuel using boiler plant independent of the CHP could be justified economically as an alternative to using CHP heat, taking account of the required capital expenditure, operating and maintenance costs and the resulting benefit (including the capital cost of the alternative boilers and the cost of the displaced fuel that would otherwise be used for the drying).

A simple ‘payback’ analysis should be included:

Simple Payback=Capex of Alternative Boilers / [Theoretical benefit from improved efficiency-cost of fuel]

Boiler heat used for power generation and heat that would not otherwise be generated are not considered useful heat.

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<sup>2</sup> i.e. one power plant is 100km distant from the LNG terminal and one is adjacent to the LNG terminal.

Similar standards to those applied in the United Kingdom should be used in Ireland to address Useful Heat used to process fuel.

In the context of LNG, the heat required to enable the regasification of LNG is a Useful Heat demand. This has been confirmed in other EU markets (including the UK) as being Useful Heat in the context of the EU Directive 2004/8/EC on cogeneration.

While Shannon LNG reserves further comment on Approach 2 until such time as definitions of the terms used in describing that approach are more fully documented, Shannon LNG believes that Approach 1 is a better methodology for addressing the classification of Useful Heat and is most closely aligned with the EC directive.

### **Section 3.4 Required information for Assessing Useful Heat.**

Shannon LNG supports the approach the being proposed by the CER with respect to the required information for assessing the Useful Heat.

### **Section 4.3 Overall Efficiency**

We suggest the CER include in the final decision the note that electricity from CHP,  $E_{CHP}$ , must be measured at the generator terminals, as specified in Annex II section 3.0 of the 2008/952/EC Guidelines.

### **Section 5.1 Calculation Methodology Information Requirements – Introduction**

Shannon LNG supports the approach being proposed by the CER with respect to the calculation methodology information requirements as set out in Section 5.1.

### **Section 5.3 Operational Data and Measurement**

In discussing the data that must be supplied by the CHP developer or operator, the first portion of Section 5.3 states:

#### **5.3 Operational Data and Measurement**

Operational Measurements required as per Part IIa of the draft application form are:

- Fuel input on a net calorific value (NCV) basis. **Natural gas NCV should be reported as a weighted average of the gas NCV reported by Bord Gáis Networks.** Oil and LPG NCVs should be on the basis of supplier's information. For solid fuels with varying moisture content and varying NCV, the moisture content and NCV should be sampled and tested and details of this testing regime provided. (emphasis added)

Shannon LNG suggests the CER insert the phrase “*or other approved Natural Gas Undertaking*”. after the phrase “*Natural gas NCV should be reported as a weighted average of the gas NCV reported by Bord Gáis Networks*” as the heat content of natural gas varies by supply source.

The bottom of page 30 (in Section 5.3 Operational Data and Measurements) states:

For steam boilers with condensate return, the heat content of the condensate returned **may be deducted** from the useful heat output. Applicants shall specify the method used to determine the rate of condensate return and record the energy content of returned condensate. (emphasis added)

In the above text, the CER should replace the phrase “**may be deducted**” with “**must be deducted**”. As addressed in Section 5.7 of the 2008/952/EC Guidelines, condensate return is not considered useful heat. Specifically, Annex I, Section 5.7, step 1 of the 2008/952/EC Guidelines states:

The heat content of the returned condensate to the cogeneration plant (e.g. after being used for district heating or in an industrial process) is not considered as useful heat and may be subtracted from the heat flow associated with the steam production in line with the Member States practices.

## Section 6.2 – Initial and Annual Application Process

For clarity, we suggest that the CER point out in this section that the validity period for HE CHP certificates for plants in the design phase remains valid until the completion of the first year of operation.

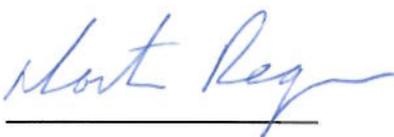
## Appendix C: Worked Examples

In the table entitled “Overall Efficiency”, we believe the note “(a) should be replaced with “Note 1”.

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We would like to thank the CER for allowing Shannon LNG to participate in this consultation. We would be happy to discuss the comments we have made in this submission with the CER.

Yours Sincerely,



Martin Regan, Commercial Manager

Attachment 1: Letter from *Marie Donnelly, Director, European Commission, DG Energy* to Ms Sara White, Deputy Secretary and Director of Energy, Department of Communications, Energy and Natural Resources.



EUROPEAN COMMISSION  
DIRECTORATE-GENERAL FOR ENERGY  
DIRECTORATE C - New and Renewable Energy Sources, Energy Efficiency & Innovation  
Director

Brussels,  
ener.ddg1.c.3(2010)1063703

Ms Sara White,  
Deputy Secretary and Director of  
Energy  
Department of Communications,  
Energy and Natural Resources,  
29-31, Adelaide Road,  
Dublin 2, IRELAND.

Dear Ms White,

The European Commission has received a number of queries on grid system issues regarding electricity from high efficiency cogeneration. These questions have been raised following the amendment of Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources (2001 Renewable Electricity Directive)<sup>1</sup> and the amendment of Directive 2003/54/EC concerning common rules for the internal market in electricity (2003 Electricity Directive)<sup>2</sup>. These directives are referenced in Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal market (Cogeneration Directive).<sup>3</sup>

Grid system and tariff rules for electricity from high efficiency cogeneration are defined in Article 8(1) of the Cogeneration Directive. This Article by a reference makes applicable Article 7(1), (2) and (5) of the 2001 Renewable Electricity Directive<sup>4</sup>, as well as the relevant provisions of the 2003 Electricity Directive<sup>5</sup>.

In 2009, some provisions of the 2001 Renewable Electricity Directive were deleted with effect from 1 April 2010 as a consequence of the entry into force of the new Renewable Energy Directive 2009/28/EC<sup>6</sup> while the 2003 Electricity Directive was repealed by the new Electricity Directive 2009/72/EC with effect from 1 March 2011. The Commission intends to issue an Interpretative Note to provide more transparency and ensure the continued correct implementation of the Cogeneration Directive following these amendments. The Commission however would like to provide a preliminary clarification

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<sup>1</sup> OJ L 283, 27.10.2001, p. 33.

<sup>2</sup> OJ L 176, 15.7.2003, p. 37.

<sup>3</sup> OJ L 52, 21.2.2004, p. 50.

<sup>4</sup> OJ L 283, 27.10.2001, p. 33.

<sup>5</sup> OJ L 176, 15.7.2003, p. 37.

<sup>6</sup> OJ L 140, 5.6.2009, p. 16.

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2) 299 11 11.  
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of the main rules in view of the national transposition of the 2009 Renewable Energy Directive that in many Member States is linked to the implementation of the electricity grid system rules under the Cogeneration Directive.

Against this background it is important to point out that the Cogeneration Directive remains in force and applies fully as intended by the legislator. This means that the key rules remain the same before and after the legislative change. These rules include an obligation for Member States to guarantee access to the grid system, transmission and distribution, as well as the priority dispatch by transmission system operators of electricity from high efficiency cogeneration. The latter is subject only to what is necessary to ensure the secure, reliable and efficient operation of the national electricity system. These mandatory requirements do not allow Member States to exercise discretion as regards the grid access and system rights of electricity from high efficiency cogeneration and should not be confused with the discretion Member States may have for granting the same rights for electricity from cogeneration not meeting the criteria of high efficiency cogeneration.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Marie C. Donnelly". The signature is written in a cursive style with a large, looped 'M' and 'D'.

Marie Donnelly