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Mr. Jerry Mac Evilly,  
Commission for Energy Regulation,  
The Exchange,  
Belgard Square North, Tallaght,  
Dublin 24.

27 January 2012

**Re: CER meeting on mitigation measures to address potential capacity constraints at the Moffat Entry Point in 2013/14**

Dear Jerry,

We are writing in relation to the meeting which followed the Code Modification Forum on the 20<sup>th</sup> of January and in particular to the slides presented by Bord Gáis Networks (BGN) and the CER concerning a potential capacity constraint at Moffat in 2013/14.

The CER asked in their email dated 24 January 2012 that parties revert to them with their views on the need (or otherwise) for regulatory intervention in relation to the issues raised.

#### **Shannon LNG summary response**

From the limited information made available to date from the CER and BGN, the case has not been made that there will be a potential capacity constraint in 2013/14. The information and data made available to date has not adequately substantiated the possible constraint on the current system configuration, has not analysed a sufficient suite of alternative options, has not provided any cost benefit analysis for the limited number of options that have been tabled and has not demonstrated any market support for the twinning proposal. Regulatory intervention is therefore not required in the matter.

Shannon LNG sets out in this letter that, based on the data and information available from the CER and BGN to date, it is reasonable to discount the risks associated with lower pressures at Moffat, a swing/stepped flow profile and a lower gross calorific value at Moffat. Once these input assumptions are adjusted accordingly, the data presented by BGN demonstrates that there will not be a capacity constraint in 2013/14.

#### **General observations on the 20<sup>th</sup> January meeting**

The CER noted in the 20<sup>th</sup> January meeting that the industry responses to the CER's consultation were overwhelmingly sceptical about the potential capacity constraint in 2013/14. The CER stated in the meeting that the sole purpose of the meeting was to discuss whether industry believed there was a potential capacity constraint in 2013/14. Shannon LNG notes that no industry player other than BGN expressed concern with

respect to a potential capacity constraint in 2013/14. While BGN's presentation (slide 19) alludes to "serious concerns" on the part of the TSO (Gaslink), we note that the TSO did not make a presentation at the meeting or make this claim during the meeting.

We are deeply concerned that there has been inadequate publication of data in the BGN presentation, the CER consultation paper and the Joint Gas Capacity Statement (JGCS) 2011. As a result third parties (and the CER) cannot substantiate the BGN claim that there will be a capacity constraint in 2013/14. BGN stated at the meeting that Shannon LNG should read the JGCS 2011 to obtain the data and assumptions behind the potential capacity constraint. As we stated at the meeting, there is inadequate data in the JGCS 2011 to allow the preparation of even a simple pipeline pressure drop calculation for the Interconnectors.

The CER noted in the meeting that one respondent had questioned why BGN did not conduct a market test for additional capacity at Moffat. The CER went on to say that the 20<sup>th</sup> January meeting could be considered the first step in a market test process. Shannon LNG notes that even though all the large shippers of gas were present at the meeting, no party other than BGN either advocated or requested that additional capacity be built at Moffat.

Shannon LNG asked whether the CER would hold another meeting if the CER decided there will be a constraint in 2013/14 that requires regulatory intervention. The CER stated that there may not be another meeting to discuss this issue. Shannon LNG finds it very difficult to understand how the CER could make a decision on this issue without first publishing detailed technical and financial information on each of the potential solutions. This point became very stark when the CER and BGN were asked at the end of the meeting what twinning of the Interconnectors is likely to cost. Neither the CER nor BGN were able to provide a capital cost estimate for twinning of the Interconnectors in the meeting.

In response to a question from Shannon LNG, the CER stated at the end of the meeting that a decision on twinning of the Interconnectors, if the CER deems it necessary, would have to be made in the next three weeks. We cannot see how the CER can make such a decision in the absence of full publication of all the capital and operating cost of twinning the Interconnectors, the knock-on impact to transmission tariffs and the impact of higher gas and electricity prices for consumers in Ireland. It is difficult to see how the CER is meeting its statutory duty to protect the consumer<sup>1</sup> in the absence of this data three weeks before it might authorise the twinning of the Interconnectors.

Shannon LNG asked BGN why they believe they need to build additional capacity at Moffat as there is currently about 23 million cubic metres per day (mscm/d) of unbooked capacity at Moffat for the 2013/14 Gas Year. BGN said they do not know if the 23 mscm/d number is correct and they do not know why shippers are not reserving capacity in advance if they believe there is a constraint. Shannon LNG attaches a printout from the Gaslink website detailing the unbooked capacity at Moffat for 2013/14. We believe that BGN should conduct a market test as required by EU guidelines to better understand if their shippers (customers) wish them to build this additional capacity.

In response to a question from Shannon LNG, BGN stated that they have not updated the demand forecast used in the JGCS 2011. According to the ESRI's Autumn 2011 Quarterly Economic Commentary, GDP growth is forecast to drop more than 50%

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<sup>1</sup> Letter from CER to all energy suppliers, CER/11/195, 11 November 2011.

compared to the growth forecast used in the JGCS 2011. We would call on the CER to request BGN to revise their gas demand forecast based on the updated ESRI forecast.

Shannon LNG asked BGN on a number of occasions if they would publish a load duration curve for the 1 in 50 year peak day demand for the 2013/14 Gas Year. BGN answered that two 1 in 50 year peak-day events had occurred a few weeks apart in 2010 and 2011 and this demonstrated that a load duration curve was not relevant. BGN further went on to say that the 1 in 50 year peak day demand was the only relevant design criteria, not any of the other days of the year. We believe this response is confusing and contradictory. There is either a 1 in 50 year peak day design standard or there is not. The question of two 1 in 50 year peak day events occurring so close together is irrelevant. The reluctance to publish a load duration curve that includes the 1 in 50 year peak day event makes it impossible for industry players to propose meaningful and credible solutions to the potential capacity constraint in 2013/14, since there is no way to assess the duration or magnitude of the claimed constraint.

### **Comments on CER/UR slides presented at the meeting**

#### ***Slide 4 – 2013/14 Primary Inputs & Assumptions***

Slide 4 states:

**With a combination (of one or more) of the following key factors:**

- **Lower pressures at Moffat** – Network analysis currently assumes an Anticipated Normal Offtake Pressure (ANOP) of 47 barg, though lower pressures were observed last winter and the contractual pressure is 42.5 barg
- **Swing/Stepped flow profile** as opposed to a flat flow profile (i.e. no renominations) at the Moffat Entry Point
- **Lower Gross Calorific Value** at Moffat – Network Analysis currently assumes 39.765, in line with typical observations, though lower GCVs recently have been observed.

The pressure data on slide 6 of BGN's presentation showed no dates in the winter of 2010/11 where the average pressure dropped below the ANOP and only one day where it equalled it. **With the data presented to date, it is therefore reasonable for the CER to discount this risk.**

There was a consensus in the 20<sup>th</sup> January meeting that BGN should start with a high flow profile in the early part of the day on the coldest days of the year. Where BGN has not done this, the reason is not clear, nor is it clear the extent to which this operational behaviour is contributing to the apparent problem. If you start with a high flow on the coldest days and demand is subsequently not as high as expected (but still very high as it would be on the coldest days) lowering the flow can easily be accommodated if renominations throughout the day are in fact lower. The challenge of accepting increased flow through renominations if weather is colder (and demand is higher) than forecast is clearly much different than accepting reduced renominations if conditions trend in the opposite direction. **This approach would address BGN's concerns on accommodating renominations throughout the day.**

It is important to note from slide 23 of BGN's presentation that there is a seasonal swing in the average calorific value. In winter it is at the upper end of the range and in summer, at lower flows, it is at lower levels. BGN should be using the winter average GCV in their analysis not the annual average GCV. **With the data presented to date, it is therefore reasonable for the CER to discount this risk.**

Slide 4 states

**Other Potential Factors:**

- Requirement for an increase in system flexibility – further commercial developments may require greater system flexibility;
- Inability to operate Beattock compressor station in series mode;
- Higher demands occurring than forecasted demand.

If BGN believe shippers will require an increase in system flexibility they should hold a market test with an associated tariff for these services. The philosophy of BGN proposing investments without customer underwriting needs to be addressed by the CER.

The CER and BGN should move away from forecasts in establishing the capacity requirements. This approach can lead to stranded assets if forecasts are incorrect, as they inevitably will be. The CER should introduce a requirement to demonstrate long term capacity contracts with shippers before undertaking any import capacity expansions.

**Slide 5 – Primary Assumptions**

The CER stated that the slides delivered by BGN later in the meeting would address the respondents questions on:

- Probabilities of supply/demand assumptions of occurring?
- Probability of wind fluctuations/large renoms on a 1 in 50 peak day?
- Probability of peak demand days for gas and power coincident?
- Other demand assumptions: latest GAR projections, GDP growth, GCV levels at the Moffat Entry point.

While BGN briefly discussed a slide on the Gross Calorific Value (GCV) up at the end of the meeting none of the above questions were addressed in the BGN presentation.

**Slide 6 – 13/14 Potential Constraint and Moffat Capacity**

The question on this slide: *“Higher pressures via National Grid/Ofgem/DECC?”* was not adequately discussed or addressed in the BGN presentation. The current pressure regime at Moffat would appear to address the 2013/14 capacity constraint but no background information on the reasons the pressure was assumed to drop below the ANOP were provided at the meeting. Nor was any information provided as to whether National Grid could supply at a higher pressure (if needed) and what might be required to achieve this result. Indeed, none of the measures indicated on this slide were apparently considered by BGN when reviewed in the context of their presentation.

**Slide 7 – BGN Proposed SWOS Reinforcement**

None of the following points on slide 7 were addressed in the BGN presentation:

- Respondents questioned:
  - Analysis on potential technical capacity increase by c.10% - 15%?
  - CBA over short and long term?
  - Market test for capacity?
  - Impact assessment on shippers and customers?
  - Impact on network tariffs in RoI and NI?
  - Impact on ongoing costs associated with SWOS and IC system?

The lack of information and transparency on cost and tariff information is a worrying concern, particularly when it was stated that the CER may approve an investment in the next three weeks for which no capital costs were known and for which no demand had been demonstrated.

#### ***Slide 8 – CER Considerations***

The CER should include the following bullet points as part of their considerations:

- Market interest in additional capacity
- Market underwriting of additional capacity
- Approving assets that have a high probability of being immediately stranded and the impact on network tariffs

The bullet point “Reinforcement – short term vs long term benefits” should be expanded to read: “Reinforcement - short term and long term benefits versus short and long term costs”.

#### ***Slide 9 – Next Steps***

The next step for the CER is surely to ascertain from this consultation process whether the potential constraint in 2013/14 is real or based on erroneous assumptions. All of the evidence from the 20th of January meeting was that industry has no concern with respect to a potential capacity constraint in 2013/14. There appears to be an approach to attempt to “sell” the twinning project to the CER in the absence of any third party support or meaningful investigation of the alternatives.

#### **Comments on the BGN slides presented at the meeting**

##### ***Slide 5 – What’s changed in the last few years?***

Slide 5 states:

- Moffat Entry Point pressure has dropped below Anticipated Normal Offtake Pressure (ANOP) of 47 barg on a number of occasions in winter 2010/11, flexibility of Moffat Entry Point to provide capacity maybe further limited
- Commercial activities and associated flexibility requirements

The pressure data on slide 6 in fact showed no dates where the average pressure dropped below the ANOP and only one day where it equalled it.

The bullet point “*Commercial activities and associated flexibility requirements*” appears to refer to the process of allowing the continuance of unconstrained upward renominations which have traditionally been allowed due to the lack of capacity constraint on the SWSOS. The fact that BGN now claim such a constraint exists means they should in the first instance review their policy of allowing unlimited flexibility on upward renominations.

We would further note that if allowing upward renominations during a peak day event has allowed some customers to get free benefits and services that now require a significant expenditure of capital to twin the Interconnectors, then those customers desiring such upward renomination flexibility should be the ones to pay for it. Presumably BGN can create an upward nomination “product” and offer it for the cost of the twinning project to see what the market interest might be. Customers not requiring or using this type of renomination flexibility would not then be required to subsidise it as they would not sign up for nor pay for the service.

#### ***Slide 6 – Pressure at the Moffat Entry Point***

The graph on slide 6 does not support the BGN claim that the ANOP of 47 barg is regularly violated. No data has been provided showing the magnitude, duration and flow effects of such a claim even for part of a day.

Instead, the data shows that for 3 of the last 4 years the average pressure has been continuously in excess of the ANOP. The pressure has not dropped below 50 bar at Moffat this winter according to Slide 6.

It could readily be postulated that the UK system is operated efficiently by National Grid in that they are not providing pressures significantly in excess of the ANOP. The data does not support the claim that National Grid cannot continue to provide pressure at or above ANOP and any such claim needs to be supported in writing by National Grid.

#### ***Slide 7 – Technical Capacity at Moffat***

Slide 7 states:

- Technical capacity of the Moffat Entry Point is determined by:
  - Suction Pressure at Moffat (GB NTS dependent), GCV, Temperature
  - Beattock Compressor Station (CS), Brighthouse Bay CS - available power
  - SWSOS (onshore) Pipeline, Twynholm Exit Point

We agree with this but this is not sufficient to conclude anything. What the pipelines can actually flow on any given day (including the peak day) is also dependent on other factors such as: pressure losses in the compressor station yard (both suction side and discharge side), whether the pipeline in question is clean or dirty (higher friction), the temperature of the gas, the transient nature of the flow profile, whether the valves are full opening or restricted and how BGN setup their system to achieve maximum flows. The presenters, presentations and written materials have not provided anything close to sufficient information to analyse where any constraint may exist if one does. Additionally no data has been provided from National Grid that supports a claim that National Grid cannot comfortably provide the ANOP of 47 barg.

Slide 7 states:

- Principle drivers of Beattock CS capacity are
  - Suction pressure available from NTS at the Moffat Entry Point
    - Anticipate Normal Operating Pressure (ANOP) of 47 barg
    - Principle contractual pressure of 42.5 barg

Data provided on Slide 6 shows that on every day the average normal operating pressure is in fact 47 barg or above.

BGN claims shorter duration excursions below 47 barg but provides no details to show by how much, for how long or on what days and under what renomination circumstances (if any) this occurs.

If the average is 47 barg or above then there are times the pipeline flow will exceed the needs (BGN can then pack the line), and when the ANOP falls below 47 barg BGN may be drafting the line (pressure fall). No actual operating data has been provided to show whether the net effect of these swings is detrimental. Instead what appears to have been provided is a "theoretical analysis" using only transient worst case conditions which are then extrapolated for 24 hours.

Slide 7 states:

- Discharge pressure required to meet downstream pressure limits at Twynholm and Brighthouse Bay
  - Substantial pressure loss on the single 50km section of 30" pipeline to Brighthouse Bay
  - Beattock CS is constrained by the requirement to compensate for this pressure loss

These two bullets are mere assertions. They should be substantiated with real data to show how these two alleged influences affect flows and by how much.

Slide 7 states:

- Moffat Technical Capacity published as 31 mscm/d on Gaslink website
  - based on ANOP at Moffat, flat flow profile in SWSOS

According to the Gaslink website, there is currently capacity bookings of about 9.8 mscm/d (108 GWh/day) at the Moffat entry point in 2013/14. If shippers were concerned about a capacity constraint in 2013/14, you would expect they would already have reserved capacity for that time period.

### ***Slide 8 – Key Assumptions in Analysis***

Slide 8 states:

- Gas Supplies
  - Variations of the "JGCS 2011 Low Supply Scenario" considered

No substantiation to support the "variations" to the low supply scenario is given. The CER should ensure these are not selective or self serving assumptions. For example, if BGN is to consider variations on the JGCS 2011 scenarios, why aren't they giving

consideration to lower energy demand associated with lower economic growth as estimated in the latest ESRI forecast?

Slide 8 states:

- Inch assumed to cease existing operation in 2012/13
  - Decommissioning period from 2013/14 to 2015/16
  - Production and cushion gas will be available during decommissioning period

Why does this assumption have to hold? We understand that Kinsale Energy has indicated the above assumption can be changed through the submission it made to the CER in this consultation. This needs to be investigated and compared to other alternatives, not assumed away.

Slide 8 states:

- Gas is supplied to Moffat Entry Point at a minimum of 47.0 barg (ANOP)
  - Capacity of Beattock CS is sensitive to inlet pressure – lower pressure, lower capacity

As discussed earlier, the limited data provided by BGN shows that pressures are variable and that using the minimum pressure over an entire 24-hour period as the average is likely more conservative than experience would suggest.

Slide 8 states:

- Flat flow is assumed at Beattock CS
  - Swing profile is more typical as flows follow nominations

This is a self serving assumption.

The fact that upward within-day renominations are allowed should not be included within the analysis as they should not be allowed during constrained conditions. As is the case with the previous bullet point, the quantitative impact of considering this variation on the alleged constraint has not been provided.

The CER should undertake a review of the current arrangements whereby BGN accommodates shippers' request of providing a "swing profile" while the shippers are only obliged to pay for capacity on a flat profile basis. It appears there may be merit in the introduction of an additional capacity service whereby shippers that require and use a very flexible profile, pay for that service. The approach whereby shippers are given very high flexibility on upward renominations breaches the principle of cost reflective tariffs. The beneficiaries of the highly flexible renomination regime at entry points should pay for the service.

### ***Slide 9 – Short Term Outlook***

Slide 9 states:

- TSO has serious concerns with respect to continued operation in such a zone

Is it not clear what is meant by this bullet point. Does it mean that BGN is concerned about having to provide the firm capacity that it has offered to the market?

We have not seen any documentation to support this point and to the best of our knowledge no one from Gaslink made this point at the 20<sup>th</sup> January meeting.

Slide 9 states:

- What are the potential consequences of “doing nothing”? What could this constraint look like?
  - Little or no flexibility, e.g. no within day renominations
  - Lower SOS stock levels in the Interconnector system in order to facilitate high flows
  - Need to limit flows to ROI in order to comply with contractual commitments to NI
  - Reduction in technical capacity

In a 1 in 50 year peak day event, there should be no renomination flexibility permitted.

We are not able to provide feedback on the remaining three points in the absence of any analysis or data. We are concerned that comments like these can be put into the public domain without any supporting evidence.

Slide 9 states:

- Immediate action required in the short term to address constraint - options
  - Reduce Demand – Demand Side Management
  - Increase Supply – Additional Capacity Required

While BGN indicates that there are options available to address the potential constraint, this is not reflected in the remainder of the presentation which appears to dismiss all options other than twinning the Interconnectors. A comprehensive, rigorous and transparent analysis of all the options to address the potential constraint (if one exists) should be developed before any decisions to approve the twinning project are made.

We are surprised that no studies of the potential of “Demand Side Management” effects have been carried out by BGN or the CER between the time of issuance of the JGCS 2011 and the time of issuance of Consultation Paper CER/11/206. This is particularly relevant in the context of an interruptible entry product being a legal requirement at entry points.

#### *Slide 10 – Illustration of Capacity of the SWSOS system*

In our view, there is very little useful data on this slide. For example, it is not explained why the “Instantaneous Peak Winter Flow 2010/11” is shown at an operating pressure of what appears to be 52 bar while everywhere else, concern is expressed about 47 bar being the constraint. Nor is the “Uniform Winter Flow” for 2010/11 provided, nor the forecast “Instantaneous Peak Winter Flow” for 2011/12. As a result there is no analytical foundation for understanding the “Uniform Peak Winter Flow 2011/12” which purports to show the risk of the constraint.

The potential constraint is in 2013/14, yet a data point is shown in 2019/20 with a Corrib outage. Including worst case, low probability scenarios in 2019/20 reduces the credibility of the whole presentation. What the diagram does apparently show is that the occurrence of “Minimum Suction Pressure” in the Winter 10/11 (represented by the horizontal dashed line) occurred at a period of less than peak demand. Yet much of the case for twinning is predicated on the minimum suction pressure case occurring at the same time as the peak demand (see slide 12).

### *Slide 11 – Actual Flow Profile – 8th December 2010*

After questions from the floor, it was stated by BGN that this scenario was not based on real data as BGN did not set the actual flow at the low level of about 960 kscmh.

There was a consensus in the meeting that BGN should start with a high flow profile in the early part of the day on the highest flow days of the year. If you start with a high flow on the coldest days and demand is subsequently not as high as expected (but still very high as it would be on the coldest days) lowering the flow can easily be accommodated if renominations throughout the day are in fact lower. Operating in the opposite way to this starting with lower than technically achievable flows then allowing upward renominations (as appears to be the case BGN is making), simply exacerbates the problem.

On very high flow days, where nominations approach the entry capacity that has been reserved, BGN should set their initial flow-rate at Moffat at rates high enough to meet historical renomination patterns. As the high flow day goes on, if the renominations do not occur, the flow at Moffat can be reduced accordingly.

This is potentially a very low cost (i.e. effectively zero cost) solution to any potential constraint.

### *Slide 12 – Matrix – Overview of Moffat Capacity*

The Moffat flow for the 1 in 50 year peak day is given as 332 GWh/day. What was the temperature adjusted 1 in 50 year peak day actual gas flow in the winter of 2010/11?

As discussed earlier and as clearly shown by BGN's data, the daily average pressure has never dropped below the ANOP of 47 barg. Why is there a case showing 42.5 barg? There is no case of **Insufficient Capacity** when the ANOP of 47 barg is used.

It is also unclear why the "Moffat Flows – Average Year Peak Day" suddenly jump from 287 and 279 in 2011/12 and 2012/13 to 339 in 2013/14. This appears to be an error – since the 1-in-50 day peak flow for 2013/14 is 339, it cannot also be the average peak day. Correcting this error also removes the **Insufficient Capacity** designation in the 42.5 barg case.

### *Slide 13 and 14 – Medium Term Outlook – Arrival of Corrib Gas*

Slide 14 states

- Reliability - will Corrib gas be available 24/7/365?
  - < 100%, yet to be defined/tested

We do not understand why BGN has provided no data or assessment of the reliability of the UK to supply gas to Ireland, yet calls into question the reliability of indigenous gas.

### *Slide 15 – Longer Term Outlook – Interconnector (IC) System's Future Role*

BGN stated at the meeting that the reason for reducing pressures at Moffat is because volumes of gas entering the UK through St. Fergus are depleting and more gas is coming into the UK from the south in the form of LNG.

The CER should commission an independent review of the long term implications for Ireland of relying on a part of the UK grid where the pressures are in long term decline, where the GCVs are changing and where the underlying upstream supply profile is becoming less secure.

The review should also assess the implications of more and more of Ireland's gas being delivered through LNG terminals in North Wales and southern England and then transported to Moffat in Scotland.

If BGN believes that further capacity will be required at the Moffat entry point they should conduct market tests to prove up demand.

Slide 15 states:

No firm commitments have been provided by the developers of other proposed supply projects

While technically BGN may be correct in stating that no firm supply commitments have been made by other proposed supply projects, this is a misleading statement as it compares apples (supply) with oranges (capacity). BGN is not proposing a supply project, but a capacity project, for which it is unclear there are any firm supply commitments. Indeed given the lack of long term firm bookings on the current Interconnectors it appears that no-one in Ireland is looking for either long term supply or long term capacity – which might explain the lack of long term supply commitments on the part of other supply projects. The hypothesis is completely meaningless for purposes of the present consultation and should be ignored.

#### ***Slides 16, 17 and 18 - Capacity of SWSOS***

This graph illustrates strongly that there is no capacity constraint in 2013/14 if BGN adopt a flat profile at Moffat and the ANOP of 47 barg is delivered. Indeed, slide 17 strongly suggests there would be essentially no capacity constraint in 2014/15 even if Corrib was delayed beyond the peak winter demand period of the 2013/14 winter. If demand was re-forecast using the lower expected GDP growth numbers, we would hazard a guess the constraint completely disappears that winter.

This graph supports the concept that days where demand is approaching the 1 in 50 year peak day demand, BGN should adopt a flat profile taking account of historical renomination patterns in the early part of the day. The alternative is to limit increases in upward renominations when day-ahead nominations reach a certain defined level.

In response to a question from Shannon LNG, BGN stated at the meeting the new 500 MW East-West electricity Interconnector had a “very high load factor” on the 1-in-50 year peak day in 2013/14. A review of Figure 3-11 of the JCGS 2011 does not support the BGN statement. Assuming the EirGrid interconnector has import capacity of 500MW and the Moyle Interconnector has import capacity of 450 MW, Figure 3-11 suggests the two electricity interconnectors are running at a combined load factor of between 15% and 20%.

We would repeat the point we made to the RAs in our 16<sup>th</sup> December letter on this subject:

*“If the RAs have a genuine concern with respect to a constraint at the Moffat entry point in 2013/14 they could instruct the electricity market operator to purchase electricity in GB and use the full capacity of the 500 MW electricity interconnector. This would be the equivalent of taking 500 MW of CCGT demand off the Irish system and would be a much lower cost option than building a new gas pipeline in Scotland.”*

An unnamed gentleman at the 20 January meeting stated that the electricity interconnectors could be exporting power to GB on the 1 in 50 year peak gas demand day.

During the very cold weather experienced in late 2010 and early 2011, there was very limited wind generation so the export of wind generation can be ruled out on that day. The CER then posed the following question on the export of electricity to GB on the peak day: Does it make sense to reinforce a gas interconnector to provide fuel to a power station that would then export that electricity to the UK using an electricity interconnector? The answer is clearly no where this activity is underwritten by the general gas and electricity consumer as a result of building otherwise unneeded capacity on the gas transmission network.

### *Slide 19 – Need to resolve Onshore Scotland constraint - options*

Slide 19 states

- Latest 'Winter Outlook' indicates SWSOS system capacity limits will be approached in the coming winters
  - Almost zero system flexibility by 2013/14
  - Involves operating the network in a 'Zone' of increased risk
  - TSO has serious concerns regarding operations in this "Zone"

Shannon LNG would expect that there is little system flexibility in 2013/14 if a 1 in 50 year peak day event occurs. Industry standards suggest that systems are designed to operate on the 1-in-50 peak day without offering any flexibility of the kind that is currently offered at Moffat as the norm.

The TSO should state what its serious concerns are regarding operating its system at the level it is selling firm capacity for.

Slide 19 states

- Need to consider these in light of a sustained period of peak demands
  - Power generation sector is the most suitable sector
  - Significant economic and technical issues associated with fuel switching
  - EirGrid consider fuel switching is unsuitable as a market demand side measure

----- winter 2012

Can BGN provide copies of the documentation where EirGrid state that fuel switching is unsuitable as a market demand side measure? This point is very relevant to the CER's recent consultation on the new EU Regulation on Security of Gas Supply.

EirGrid may have a vested interest in supporting the development of renewable energy at the expense of the gas consumer. If BGN were to twin the Interconnectors, this increases the Moffat entry capacity and would permit ongoing renomination flexibility to the power sector at the cost of gas shippers, and at no cost to EirGrid or the wind generators.

Gas fired power plants are required to invest millions of euro in building and operating fuel oil storage tanks and holding five days of back-up fuel reserves. Gas fired generators are also required to do regular change-over tests between gas and fuel oil. If there are significant economic and technical measures associated with fuel switching,

which apparently (in BGN's view) appear impractical, why are gas fired generators obliged to build such facilities?

What is most disturbing about slide 19 is what it does not state. The dog which didn't bark in this case are all the other options which any person reasonably familiar with operating a pipeline system might have considered. Without repeating those here (Shannon LNG enumerated many in its 16<sup>th</sup> December written submission), we would simply note that it appears that no effort has been made to consider any options other than twinning to address the alleged physical constraints of the Interconnectors, and no economic analysis has been provided comparing the cost and benefits of the limited suite of options it has tabled (and which in most cases it has failed in any event to substantiate) let alone the options it should have tabled. Unsurprisingly, the conclusion is then reached that only realistic option is twinning the Interconnectors.

#### **Slide 20 – Increase the SWSOS capacity**

If 8 mscm/d (circa 25%) of flow leaves the system at Twynholm, why does the pressure drop slope not return to a much gentler (lower) slope between Twynholm and Brighthouse Bay?

For example, take the blue line representing 39 mscm/d. The flow of the blue line downstream of Twynholm should be 31 mscm/d ( $39 \text{ mscm/d} - 8 \text{ mscm/d} = 31$ ). The green line has a flow of 32 mscm/d between Beattock and Twynholm. The slope of the green line between Cluden and Twynholm and the slope of the blue line between Twynholm and Brighthouse Bay should be about the same – clearly they are not the same. Why is this?

Likewise the flows at 34 mscm/d and 36 mscmd/d from Cluden would drop by 8 mscm/d at Twynholm. For the same diameter pipeline with similar pipeline properties, the pressure drop slope (bar per km) should be about 75% of the slope of the upstream segment. In other words, the slope of the lines between Twynholm and Brighthouse Bay, should be about 75% of the slope between Cluden to Twynholm. This does not appear to be the case from the lines on the graph.

No support is provided for the statement "Additional compression won't solve the issue". Why not? There is clearly the opportunity to add compression at Twynholm or Brighthouse Bay, since the inlet and outlet flows will have dropped significantly below MAOP in the scenario shown. What is the technical limit downstream of Beattock? Is 78 barg discharge the MAOP of the system? Can this be up-rated?

The actual flow profiles for the maximum flow condition that has been experienced, along with all relevant flow and pipe data, should be provided to allow independent verification of the pressure drop. Shannon LNG has not been able to duplicate the pressure drop end points shown on slide 20 unless we assume extraordinarily low pipeline efficiency numbers (very high friction factors).

Page 7 of the November consultation paper states:

*"The RAs therefore committed to consulting on potential mitigation measures with a view to implementing the **most economic and flexible** solution(s) as soon as reasonably practicable."*

The addition of a 50 km pipeline between Cluden and Brighthouse Bay would result in increases in pressure and flows far in excess of those required to meet the potential 2013/14 capacity constraint. The twinning of the pipeline would be completely incompatible with the above statement in the RA's November consultation paper.

**Slide 23 – Gross Calorific Value (GCV) at the Moffat Entry Point**

While we recall a similar graph that was shown at the meeting, to the best of our knowledge the 6 month moving average was not shown on the graph at the meeting. Could the CER confirm the differences, if any, between the slides shown at the meeting and the slides that were subsequently circulated to industry?

**It is important to note that there is a seasonal swing in the average calorific value. In winter it is peaking and in summer, at lower flows it is at a minimum. BGN should be using the winter average GCV in their analysis not the annual average GCV.**

We enclose a copy of the questions that we handed over at the meeting.

Finally, Shannon LNG would like to thank the CER for arranging a public meeting to discuss the potential capacity constraint at Moffat in 2013/14. From the evidence provided in the November consultation paper and the January 20 public meeting, the case has not been made that there will be a potential capacity constraint in 2013/14. If the CER decides there may be a capacity constraint, we have outlined a number of low cost solutions to this constraint in this letter and our December 16 submission. We would be pleased to discuss any aspect of this letter with the CER.

Yours sincerely,



Martin Regan

**Enc:** Printout from Gaslink website of capacity reservations at Moffat in 2013/14

Questions handed over by Shannon LNG to the CER at the 20<sup>th</sup> of January meeting.