

Jody O'Boyle
Northern Ireland Authority for Utility Regulation
Queens House
14 Queens Street
Belfast
BT1 6ER

13th January 2012

Dear Jody,

RE: CPM Medium Term Review Draft Decision Paper, SEM-11-088 (Draft Decision)

Bord Gáis Energy (BG Energy) is thankful for the opportunity to comment on the Draft Decision paper, SEM-11-088, on the CPM Medium Term Review.

At the outset BG Energy would be grateful if its view on the deduction of Infra-Marginal Rent (IMR) could be correctly reflected and amended in the Draft Decision to show that the status quo (Option 3) is favoured. To be clear, BG Energy should not be in the “no preference” box, our preference and stated position was for the retention of the status quo over all other options.

BG Energy has concerns with a number of items in this Draft Decision, particularly the proposed formula to deduct IMR from the BNE peaker costs, the Flattening Power Factor and the WACC calculations. According to the Draft Decision, the SEM Committee (SEMC) has taken on board that the majority of respondents would not support any substantive changes to the CPM. BG Energy however considers that the effect of the Draft Decision is in fact a substantive change. For instance, if the Forced Outage Probability (FOP) increase and IMR deduction proposals had been applied to the 2011 pot, this would have reduced the pot by €35,180,900 or 6.5%. Such a change greatly undermines investor certainty in the SEM particularly in light of the large reductions in the pot year on year since the SEM's inception. This is particularly counter-intuitive considering the increased costs that investors have faced in recent years.

Moreover, consistent pricing provides strong incentives to reinforce reliability in operations. Market theory assumes that participants respond to incentives. When the prices are not right, participants will respond to the wrong incentives. Increased unpredictable regulatory interference with inaccurate pricing enhances financial risks; increases consumer costs and threatens the adequacy of capacity in the SEM, contrary to CPM objectives.

The remainder of this response focuses on BG Energy's key concerns with the detail of this Draft Decision.

1. The Deduction of IMR from BNE Fixed Costs

BG Energy believes that the status quo of deducting IMR should be maintained as it currently encourages capacity adequacy in line with CPM objectives. Moreover, as noted by the SEMC in the Draft Decision, the current CPM is generally working well and there is no compelling need to make major changes to the current design and methodology. Adopting the proposed formula in place of the status quo is considered a major design change.

This section deals in turn with the key factors applicable to the rationale of the IMR deduction before concluding on BG Energy's overall position on this particular issue.

i. CPM Design and Methodology Decisions and SMP Experience

The CPM was designed in conjunction with the energy market as a mechanism to ensure continued generation adequacy. BG Energy urges the SEMC to be mindful of the combined intention of the revenue streams as per the stated objectives of the SEM.

Ascertaining the correct basis for deducting IMR requires consideration of the decisions made on the CPM design and methodology at SEM's adoption. The design of the CPM identified that proper consideration of energy prices is critical as if such price expectations are overstated, new peaking generators will not recover investment costs.¹ This would result in inefficient low levels of entry and unacceptable generation adequacy. The BNE final decision paper in 2007, in referring to the underlying theory of a market in equilibrium assumption, noted that the SEMC are interested in "*establishing the IMR resulting from the current competitive system state and not an artificial scenario.*"² BG Energy contends that these points underscore the fact that it is the competitive market IMR - that IMR that can actually be earned in the SEM as it operates in reality - that should be used in assessing the IMR earned by a BNE peaker, not an artificial theoretical IMR. BG Energy does not believe that the market environment has changed significantly to warrant revisiting or changing this approach.

Past experience has shown that the only time that SMP reached PCAP on 20/1/2010, the market was re-run, and in fact PCAP has not been reached since SEM's inception. Thus to state that PCAP will be earned annually by a BNE Peaker for 8 hours Loss of Load Expectation (LOLE), is to overstate IMR price expectations, to the detriment of investor certainty and investment recovery in the CPM and its objectives.

ii. "Volatility"

BG Energy does not believe that the underlying rationale regarding the volatility of the IMR has been adequately justified or illustrated.

SEMC believes that IMR results in generators receiving an unstable and unpredictable income every year which goes against the CPM objectives of volatility and price stability. However, the

¹ AIP/SEM/19/05 Capacity Payment Mechanism Options Paper

² AIP/SEM/07/187 Fixed Cost of a New Entrant Peaking Plant for the Capacity Payment Mechanism Final Decision Paper

Plexos model, used to determine hypothetical IMR, has since 2008 illustrated that a peaker earns zero levels of IMR in the energy market. BG Energy therefore requires clarification as to where the perception of supposed IMR volatility comes from? BG Energy contends that it is in fact the undue regulatory interference in removing the IMR by an improbable formulated approach, that will actually *introduce* uncertainty and further heighten risks of investing in the market as compared to the status quo.

iii. A “Market in Equilibrium” Theory

BG Energy asserts that while the opportunity for IMR does exist for a BNE, the theory underlying the proposed formula for deduction is flawed and therefore must be withdrawn.

The SEMC’s premise for IMR deduction, as reiterated in the Draft Decision, is that “...at equilibrium the BNE does earn *infra-marginal rent*...” The SEMC further contends that at equilibrium the peaker is expected to earn *excess* IMR in the energy market during the hours of lost load, as at equilibrium the peaker will set the marginal price (whenever it is scheduled) as it has the highest variable costs. SEMC also states that there must be some hours with non-served energy and a marginal price equal to VOLL as otherwise the system cannot be in equilibrium.

Firstly, BG Energy requires clarification as to what exactly the suggestion that “excess IMR” is earned during hours of lost load “at equilibrium” means? If “at equilibrium” the peaker sets the marginal price/ SMP, by corollary IMR cannot be earned by the peaker. This is further supported by a recent CER publication stating that the plant “*that sets the marginal price in a half hour, i.e. the one with the highest running costs among those that are scheduled to run, does not receive any IMR which is typically a peaking plant... (H)ence its costs are covered through the SMP and the capacity payments it receives.*”³ The suggestion of “excess IMR” is thus incorrect.

Secondly, market commentators opine that the ideal situation where supply and demand always reaches equilibrium requires a number of conditions to be met which in practice cannot be met in a market with, for example, price caps.⁴ As the SEM structure and design does not allow the SMP to reach VOLL due to price caps, this extinguishes the second of the SEMC’s stipulated characteristics of a market in equilibrium. In fact the very requirement for a CPM itself contradicts the equilibrium theory.

iv. A Reasonable Expectation of Profits

BG Energy believes that the proposed formula for deduction is not a reasonable expectation that a rational investor would make when assessing financing decisions.

The SEMC stipulates that a BNE plant “*will reasonably expect to earn*” profits from the energy and ancillary service markets and that these should be deducted from BNE costs. Otherwise “*over compensation*” or double-payment of all generators would occur.

³ CER Factsheet on the Single Electricity Market SMP & Infra-marginal Rent, April 2011, CER-11-075

⁴ Batlle, C., Vazquez, C., Rivier, M., Perez-Arriaga, I J., *Enhancing power supply adequacy in Spain: Migrating from capacity payments to reliability options*, Energy Policy 35 (2007) 4545-4554

BG Energy accepts that while there is *potential* to earn IMR, as previously stated the Plexos modelling from 2008 to date, calculated zero IMR for a peaker. This, in BG Energy's view, is a more accurate projection of what a peaker might *reasonably* earn in IMR (and what investors would base financing estimates on in reality), and therefore a more reasonable input into the capacity payment calculation as per the stated intentions of the CPM design and methodology.

Empirical evidence from certain North American states' also shows that peakers mostly earn zero IMR.⁵ It is therefore not an unusual or unexpected position for peakers in energy markets, not to earn IMR.

While recognising that double-payment needs to be avoided, so too must underpayment as otherwise the price stability and capacity adequacy objectives of the CPM in particular, would be undermined. The SEMC's approach to the calculation of the capacity pot is contradictory, where in general it is based on the amount a BNE peaker might "reasonably earn" in the energy market, the SEMC purports that the CPM is based on a theory of a market in equilibrium. Applying PCAP grossly overstates the potential IMR *reasonably* obtainable by a peaker in the SEM and in so doing undervalues the capacity provided in the market.

v. Summary BG Position on IMR Deduction

In summary, the SEMC must be cognisant of the intentions and objectives in designing and implementing the CPM. In the interests of stability, transparency and the provision of appropriate entry and exit signals, the status quo, with respect to the forecasting and deduction of IMR, must be retained. Proper consideration of energy prices is critical as if such price expectations are overstated, new peaking generators will not recover investment costs and the investment signals in the market will be muted, contrary to the CPM's objectives of capacity adequacy, price stability and efficient price signals.

BG Energy requests clarification of the grounds for insisting that the current treatment of IMR in the CPM calculation gives rise to volatility particularly as Plexos shows no IMR for BNE since 2008? The introduction of PCAP for 8 hours of LOLE will actually *introduce* heightened risks of undue regulatory interference and further dampen signals in the market.

The theory on which the SEMC bases its proposed formula for IMR deduction (a market in equilibrium) is flawed and must be withdrawn. The theory provides that at equilibrium the peaker will set the market price (whenever it is scheduled) as it has the highest variable costs; and that there must be some hours with non-served energy and a marginal price equal to VOLL. It is inappropriate to apply the theory of equilibrium in SEM for IMR deduction purposes, as a peaker setting the marginal price implies that it earns no IMR, and marginal prices equal to VOLL can never be achieved in SEM due to price capping. In short, the rationale underpinning the SEMC's proposed decision is flawed and would introduce a significant anomaly in the market as well as considerable uncertainty. Given the wider market uncertainties faced by investors in the current market environment, such controllable uncertainties should be avoided.

⁵ ISO New England Inc. Market Monitoring Unit, et al., *Internal Market Monitoring Unit Review of the Forward Capacity Market Auction Results and Design Elements*, June 5 2009, available at http://www.iso-ne.com/markets/mktmonmit/rpts/other/fcm_report_final.pdf

The methodology used to calculate the capacity pot should be consistent and reflect the realities faced by investors in the market if it is to legitimately meet its objectives. It is inappropriate to pick and choose aspects of a “market in equilibrium” for part of the calculation while employing consultants to derive realistic forecasts of costs and system stability for other aspects. Using such a theory drastically conflicts with the SEMC’s stated intentions of calculating the IMR a peaker might *reasonably expect* to earn in a *competitive system state*.

Investors make decisions in a market world – not a theoretical world. Unless the market price, not theoretical price, of an investment is recoverable the investment will not be made. Ancillary services and WACC calculations attempt to reflect real market realities and there should be consistency across the CPM. It is inconceivable that an investor could expect to earn PCAP for 8 hours of the year in energy revenues and as such this is not a “reasonable expectation” of profits. International experience indicates that peakers generally do not earn IMR.

In short, BG Energy does not support the adoption of Option 2 on the basis that it is a flawed principle that only acts to increase regulatory and financial risk for existing and potential investors in the SEM. BG Energy urges the SEMC to retain the status quo, forecasting IMR for each relevant year through the modelling of the market and the realistic revenues that a generator can reasonably expect to earn from the market. The maintenance of the status quo will not increase volatility as realistic market revenue figures are used. As peakers do not reasonably expect to earn IMR and therefore in reality make their investments based on expected revenues from capacity payments, this is considered a low risk approach and more in line with CPM objectives particularly capacity adequacy, price stability, simplicity (and predictability) and efficiency of price signals.

2. Flattening Power Factor

BG Energy believes that it is unnecessary to increase the Flattening Power Factor (FPF) from 0.35 to 0.50 in the near future.

The intention of the FPF is to reduce volatility between trading periods, therefore to increase it at this point and to dampen its affect on volatility would seem to contradict the intention of the CPM Medium Term Review. Analysis indicates that the proposed increase would significantly increase the revenue risk faced by all generators, and would particularly impact independent generators and renewable generators who are more at risk of not being available during certain trading periods. Furthermore, increasing the FPF will increase the deadband for interconnector trading. As the FPF moves closer to 1.0, the volatility in generator capacity value increases, enhancing the risk of interconnector trading and thereby increasing the cost of interconnector trading. This is contrary to the intention of the Framework Guidelines on Capacity Allocation and Congestion Management, which aims to allow for capacity to be allocated more efficiently.

Introducing further risk and volatility in CPM payments is undesirable, particularly in light of other pending changes such as regional integration. Unlike the IMR proposals, this is a real volatility risk faced by market participants. BG Energy urges the SEMC to reverse their proposed decision and to maintain the original FPF of 0.35.

3. Weighted Average Cost of Capital (WACC)

As stipulated in a number of previous responses, BG Energy believes that the WACC is one of the more volatile parameters in the SEM. Current WACC levels are highly volatile and unreflective of the cost of capital in the current SEM environment.

The RAs' estimation of WACC has been much lower than required or could be achieved by an investor in the SEM. The UK calculated pre-tax WACC has dropped from 8.07% to 6.41% since 2009 whereas the pre-tax WACC in ROI has increased from 7.07% to 9.74% since 2009. It is not acceptable to use a UK WACC when an investment is being made in an all-island market such as the SEM. Similar to BG Energy's position on the treatment of IMR in the CPM calculation, the WACC calculation should also more closely reflect the reality faced by investors and use a reasonable WACC provision for investors in the SEM (as opposed to an investment solely in the UK). BG Energy submits that it would be more appropriate to use a combined average of a pre-tax NI WACC and a pre-tax ROI WACC to more accurately reflect the market in which investors and financiers will make decisions.

Accepting that calculating an overall WACC for a BNE is a complex matter, the CPM is a core element of the SEM in providing market stability and certainty, ensuring prices and revenues remain stable underpinning business plans, financial projects and risks of investing *in the market*. Investments in generation are by their nature long-term investments, thus to minimise volatility and reflect market realities the WACC should be fixed for three years.

Furthermore, the BNE plant has, in the market, been unable to earn any IMR since 2008 and given the uncertainty in impending changes to ancillary services and the dampening of energy prices, existing and future investments will be increasingly dependent on the capacity pot for more of their revenues. This would be further exasperated by an IMR deduction of the magnitude suggested by the SEMC whereby, due to the uncertainty this would introduce in revenues, higher risk premiums would have to be added to projects to attract financing and WACC would be even higher. Investors would require a higher rate of return on their investment as cost of financing changes for WACC has implications on the cost of finance. Regulatory intervention increases finance risk and a doubling of industry-wide uncertainty can even raise the required rate of return on new capital by about 20 percent.⁶ This will directly increase the price paid by customers. This significantly conflicts with the CPM objective of price stability which provides that there should be more stable revenue streams for generators and more stable revenue payments by the beneficiaries of a secure supply (consumers), as opposed to in an energy-only market.⁷

It seems inconsistent for the SEMC to propose a change to the calculation of the IMR in the interest of stability, but to leave what has been the most volatile element of the calculation relatively unchanged. It is unacceptable to merely state that the SEMC will endeavour to continue to publish extensive data and assumptions on the WACC parameters and it is respectfully requested that this issue is explored further before a final determination on its application for the 2013 BNE Peaker costs calculation is made.

⁶ Caballero, R. J., Pindyck, R.S., *Uncertainty, Investment, and Industry Evolution, International Economic Review*, 37 (3) (1996) 641-662

⁷ AIP/SEM/53/05 Capacity Payment Mechanism and Reserve Charging High Level Decision Paper

4. Fixing of BNE

The proposal to fix the elements of the BNE calculation for three years “*as at a high-level, this will provide transparency and stability*” is a misnomer should the key most volatile parameters such as the WACC continue to be consulted on annually. The step change in capacity pots is also unpredictable and may further hamper financing attempts coupled with the unknown outcome of regulatory decisions such as that on regional integration. The use of a rolling average cost of a BNE over a time period such as three years is more favourable as it would ensure that costs are market reflective on an ongoing basis and provide greater stability to the market in a consistent manner. This is in line with a position previously proposed by the RAs. Alternatively, only the key volatile elements of the BNE fixed costs should remain static for three years, e.g. WACC, while the less volatile elements would continue to be consulted on annually to continue market reflectivity. Clarification is however required as to whether the WACC is a factor that will remain fixed under the Draft Decision?

5. Forced Outage Probability (FOP)

BG Energy agrees that the FOP should be increased from 4.23% as this was an unrealistic value to apply to FOP in CPM calculations. Further detail on the methodology to calculate FOP is required, as it is difficult to comment positively or negatively on the proposed increase to 5.91% without understanding the methodology behind it and how it may change in the future, for investment certainty reasons.

6. Financial Justification of a Peaker under Current SEM Conditions

One of the key objectives of the CPM is to encourage investment to ensure capacity adequacy by providing efficient price signals for long term investments and ensuring price stability to reduce market uncertainty and risk premiums. BG Energy analysis however shows that if a peaker entered the SEM today, there would be substantial under-recovery of costs. BG Energy notes that energy prices are diminishing and there is an ongoing review of ancillary services for which an outcome is far from known at this stage, and contends that any further reduction of the capacity pot will leave investors with no choice but to put peaker-financing decisions on hold until such time as cost-recovery can be ensured. This in turn may jeopardise the reliability and stability of the system. The proposed changes put forward in the Draft Decision can only be made with robust assessment against CPM objectives if the SEMC desires continued investments in capacity to ensure adequate capacity in the medium-long term.

Summary and Conclusions

The SEMC has acknowledged that no significant changes are required in the CPM; however the changes being proposed in the Draft Decision heighten CPM volatility and price instability. This increases the risk of finance in SEM. Increased unpredictable regulatory interference with pricing also increases consumer costs and threatens the adequacy of capacity and stability in the SEM contrary to CPM objectives. The CPM intended to provide an effective incentive for new generators and to compensate them for constraints on energy market prices,⁸ yet current SEM

⁸ AIP/SEM/19/05 Capacity Payment Mechanism Options Paper

revenues (energy, ancillary services and capacity payments) are discouraging in terms of cost recovery for new peakers. Further reductions in the pot, and increased volatility and regulatory uncertainty will suspend investment decisions and dampen exit signals.

In summary, BG Energy's key positions on the proposals put forward in the Draft Decision are as follows:

- There must be consistency in the approach across the calculation of the CPM pot, which reflects the market and financial environment faced by today's investors;
- The status quo (Option 3) of calculating the IMR deduction must be maintained;
- The status quo of the Flattening Power Factor of 0.35 must be maintained;
- WACC levels must reflect the real market environment in which investors are investing;
- The most volatile elements of the BNE costs are the only elements that should be fixed;
- More information on the Forced Outage Probability calculation methodology is required.

BG Energy's disagrees with SEMC's proposal on IMR deduction. Firstly, Plexos, as a proxy for a competitive system, has forecasted zero levels of IMR since 2008. On that basis a rational investor in the SEM would not "reasonably expect" to earn IMR at PCAP for 8 hours LOLE. Secondly, the theory of market equilibrium used in the Draft Decision is flawed as equilibrium requires: 1. the peaker to set the marginal price; and 2. VOLL to be reached for unserved energy hours. In practice, these assumptions can never be met in the SEM as the marginal peaker will set the SMP and therefore cannot earn IMR and price caps in the SEM ensure that VOLL cannot be reached. As such, to include such an unrealistic assumption within the CPM calculation undervalues the price of capacity provided in the SEM, dampening the signals for investors and eroding value in the market.

With respect to the proposal to increase the FPF, BG Energy believes that this will only act to enhance volatility in the market with the greatest impact on independent and renewable generators as well as on traders of the interconnector. This is likely an unintended consequence of the Draft Decision, which BG Energy believes should be reversed.

Finally, the CPM calculation should seek to calculate a WACC figure which more appropriately reflects the risks and revenues of its participants. A more appropriate method of reflecting WACC for investors investing in SEM (ROI and UK), would be to use a combined RoI/UK WACC calculation as opposed to the UK only.

Given the existing regulatory uncertainty, e.g. regional integration and ancillary services, the SEMC should seek to minimise the controllable risks faced by SEM participants. This is an opportunity for the SEMC to maintain confidence in CPM operations in a manner that best meets the CPM objectives of price stability, simplicity and efficient price signals. BG Energy therefore urges the SEMC to retain the status quo with respect to the treatment of IMR and the FPF and to work towards providing a more reflective cost of finance (or WACC) for SEM participants

I hope that you find the above comments and suggestions useful and BG Energy would respectively urge the SEMC to consider these, particularly those relating to IMR calculation, FPF

and WACC issues, before making a decision for 2013. Please do not hesitate to contact me should you wish to discuss further.

Yours sincerely,

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Bord Gáis Energy

{By email}