Power NI Energy Limited
Power Procurement Business (PPB)

Fixed Cost of a Best New Entrant Peaking Plant & Capacity Requirement for the Calendar Year 2016

Consultation Paper

SEM-15-032

Response by Power NI Energy (PPB)

22 June 2015.

Power Procurement Business

Introduction

Power NI Energy – Power Procurement Business ("PPB") welcomes the opportunity to respond to the consultation paper on the Fixed Cost of a Best New Entrant Peaking Plant and the Capacity Requirement for the Calendar Year 2016.

In addition to this response, PPB also endorses the industry response submitted by the EAI and draws on the expert reports commissioned by the EAI from Frontier Economics on the WACC and from Poyry on elements of the BNE price determination.

PPB is a small regulated business with limited resources that, in respect of Treasury and Corporate Finance matters, relies on service provided by the Viridian Group. We have sought their input and comments in relation to the appropriateness of the WACC proposals which also draw on the evidence provided in the Frontier Economics report.

General Comments

The CRM was designed to reduce the volatility of revenue streams for generators (and costs for suppliers/customers) in the SEM, particularly as it operates alongside the spot market that requires SRMC bidding in accordance with the BCOP. It is therefore alarming that the proposals for 2016 represent a c20% reduction in the capacity pot and which represents a 27.5% reduction for generators in Northern Ireland (reflecting the impact of the movement in exchange rates). This volatility is clearly significantly at odds with the original objective and intent of the CPM.

Gas-fired generators have experienced significant impairment to their revenues since 2012 as a result of the coal/gas switch in the merit order and the growth in renewables that has seen load factors and infra-marginal rent plummet. However, this capacity remains vital to support intermittent wind generators yet is not being remunerated for its services and the proposal to reduce the capacity pot will create further distress for such capacity which is not in the long term interests of customers.

We are also concerned that the Capacity Requirement is significantly under-stated and the plant margin provided by a capacity requirement of 7,070MW equates, in the most optimistic view, to not much more than a single large CCGT unit. This is not a realistic proposition and conflicts radically with the evidence, given NI in isolation requires a bigger margin and the GAR indicates a significantly higher capacity requirement to provide the margin needed to ensure security of supply to the required 8 hours LOLE standard.

The rest of this section addresses PPB's strategic comments on the WACC proposals and PPB's more specific comments follow in the next section.

High level comments on the WACC proposals

The proposals for the WACC have the greatest impact on the BNE price. However, there are a number of fundamental issues that highlight the proposals are flawed. These include :

- The proposed WACC is significantly below recent regulatory benchmarks, and particularly so when those benchmarks are risk adjusted to reflect the BNE plant is a merchant plant.
- The WACC is based on the premise that the investor would be a vertically integrated utility and would invest on the basis of the average WACC of the utility rather than the marginal cost of capital that is relevant to the risks pertaining to that investment. The evidence in relation to investment in generation assets across Europe is that there has been substantial impairment to the value of generation assets[1] (amounting to €32bn in 2013). The growing penetration of renewables has had a major impact and hence the risk to generation investors has increased substantially. It is therefore incorrect to assume the WACC for a BNE plant would be the weighted average cost of capital for an investment graded vertically integrated utility.
- It is also perverse that in a market with high levels of market dominance and which requires alternative new entrants to help diversify the market, that the proposals for the WACC to be based on an investment graded vertically integrated utility will actually tend to exclude and discriminate against those potential new entrants that are required to dilute market dominance. This would have a significant distortionary effect on competition and cannot be in the interests of customers.
- There are a number of errors and inconsistencies in the methodologies employed and the calculations completed by CEPA and these are highlighted in the Frontier Economics report[2] commissioned by the EAI.

We provide further detail on these issues in the section on WACC in our detailed comments below (and in the appendices)

[1] See Ernst & Young's report titled "Benchmarking European Power and Utility Asset Impairments"
[2] Frontier Economics report titled "Benchmarking the BNE WACC for 2016"

Specific Comments

While it is difficult for us to challenge many of the individual elements of the determination of the BNE price without procuring a report to challenge the CEPA /RAMBOLL paper, there are a number of elements that we believe serve to understate the BNE price that we comment on in the Specific Comments section below.

We also draw upon advice and commentary provided to us by Viridian's corporate finance team (that itself draws on the Frontier Economics report) in relation to the appropriateness of the proposed WACC, and we draw on the Poyry report (also commissioned by the EAI) in relation to the IMR calculation.

Chosen Technology Option

The plant selected remains the Alstom GT13E2 which has a capacity of 195.7MW. However, no cognisance has been taken of some key fundamentals that should be considered in assessing the appropriate BNE generating unit.

A review of the OCGTs that have been planned and which CEPA refer to in Table 4.1 of their paper are all smaller units with capacity of less than 100MW. Such smaller units are rational for a number of reasons although even units of such size may now be too large. Additionally, it is worth noting that no-one had proposed a distillate fired unit over the 8 years since the commencement of the SEM and hence the selection of a distillate unit is contrary to real-life commercial decisions.

Demand growth has stalled since the commencement of the SEM in 2007. The annual growth in peak demand in Ireland in 2007 was estimated at c200MW per annum while in the most recent GAR, the annual peak demand growth is c20MW.

This is particularly relevant since in 2007, entry by a 200MW new entrant generator would not have diluted the capacity payment pot very much when demand was growing at a similar annual rate. However, now that demand is growing at one tenth of that rate, any new entry would remove the need for further new entry for 10 years and it would have a very prolonged dilution effect on the revenues earned from the capacity pot. As a consequence, investment in a 200MW unit that immediately overwhelms the investment signal would not be financeable and therefore is not an economically viable new entrant plant.

Site Procurement costs

We do not agree with the proposition that site procurement costs in NI have fallen by around 33% since 2013. Any cost of land will reflect the commercial value of the business that will seek to function on the site and therefore we do not see why the cost will have reduced from the £250k/acre used for industrial last in CEPA's 2012 report. Indeed following the recent upturn in the economy the statistics show that land values in NI have increased. Hence we would have expected an increase in the cost of site procurement in 2015 compared to 2012 and this should further increase in Euro terms following the strengthening of Sterling relative to the Euro (1.3863 vs 1.1958).

Electrical connection costs

The CEPA paper shows the electrical connection costs for NI to be €10.5m. which is is implicated to be higher than in 2012 as a consequence of the site being in a rural location. This is supported by the figures shown in Table A2.1 which indicates this cost is and increase of €2.66m compared to the consultation for 2013. However, the actual electrical connection cost used in the 2013 decision was €12.1m and hence the latest estimate is significantly lower than the 2013 cost and when converted to Sterling, this equates to a c 25% reduction in electrical connection costs notwithstanding the change of location to a site that we would expect should have higher connection costs in both Sterling and Euros.

Gas and Water connection costs

The paper assumes the cost of gas connection has not increased over the last 3 years and the CEPA paper notes the cost is based on estimated received for the 2010 BNE. Hence the estimates are 6 years old and we would have expected these costs to have increased. We would also expect the change in the exchange rate to have increased the NI cost when expressed in Euros.

Similarly, in relation to water costs, there is no apparent reason why NI costs would be the same as the RoI cost.

Interest During construction costs

The cost of Interest During Construction has reduced substantially which we presume is linked to the cost of debt used. We have commented elsewhere in this response on the cost of debt (supported by the Frontier Economics report commissioned by the EAI), and on the appropriate level of gearing for an OCGT project. We would expect the cost of Interest During Construction to be higher reflecting that evidence.

Recurring Costs

Setting aside the Fuel working capital costs that are linked to the WACC, the other recurring costs such as O&M, Insurance and rates seem to only have increased by general market movement but for the NI units, we would have expected them to have increased more in Euro terms to reflect that the costs are incurred in Sterling and when converted to Euros the near 20% increase in the value of Sterling should show a similar increase in these costs when expressed in Euros (in addition to the underlying cost increase).

A further point to note is that the CEPA paper indicates that gas capacity has been excluded from the costs because generators can include gas capacity costs in their market bids. This is not the case for gas fired generators in NI where there have been no short term gas capacity products and the revisions that are being implemented from October 2015 will provide for short term entry products, there are no short term exit products and annual exit capacity must be purchased for the year based on the maximum daily consumption in the year (note for a full days operation this would amount to a requirement for exist capacity of c0.5m therms/day).

WACC proposals

In summary the proposed WACC in both jurisdictions is materially misstated for the following reasons (it should be noted that the list below is not exhaustive and the issues and evidence outlined in Frontier Economics report should also be considered together with detailed evidence considered later in our assessment):

<u>Cost of debt analysis and proposal</u>

The cost of debt analysis and proposal presented by CEPA:

- is manifestly biased towards network regulated assets despite CEPA acknowledging that "regulated networks are not direct comparisons, as these will be typically lower risk than the BNE". Of the 18 benchmark bonds shown for the NI cost of debt analysis, 16 of the bonds are for pure regulated network assets in respect of electricity, gas or water and therefore do not have any vertically integrated utility features despite the key assumption underpinning the proposed WACC is that the BNE peaker is financed by a vertically integrated utility. A key feature of price controls being set for regulated network assets is that the WACC determined by the Regulators is set relevant to the risk profile of the network businesses and specifically disregards the risk profile of the wider organisation. Therefore any business comprising or including network assets materially distorts the benchmark analysis undertaken by CEPA. For the RoI, the only benchmark bonds shown are for ESB for which c65% of ESB's business (including NIE, 59% excluding NIE) is underpinned by regulated network assets, is state owned, which taken together, materially distort the cost of debt of that business. Other vertically integrated utilities across the UK and Europe have not been considered such as SSE, Iberdrola, EON, RWE and EDF. Though despite their higher cost of capital illustrated in Appendix 3, the merits of such large scale organisations is further questioned below.

More detailed analysis in respect of the bond benchmarks provided by CEPA is presented in Appendix 3 together with our views on the appropriate benchmarks to be applied.

- is predicated on the assumption that a BNE investor has an investment grade credit rating with market data for BBB rating employed. This assumption is not appropriate, it is anticompetitive and discriminates against a number of investors in the Irish energy market which:
  - either will not be of sufficient scale to achieve investment grade; for example Moody's ratings agency methodology for unregulated utilities applies minimum threshold of total assets of greater than €9 billion for investment grade assessment of the relevant grid category; or
  - do not have sufficient mix of operations to achieve investment grade; for example Moody's rating agency methodology for unregulated utilities effectively requires businesses to have operations across various markets to enable investment grade assessment of the relevant grid category.

As there is significant indigenously owned Irish generation currently in the market, it is clearly anticompetitive and discriminatory to generically assume the next BNE investor will have an investment grade rating and if so will apply the benefit of that rating and in turn cost of capital to any investment in the Irish generation market.

The detailed analysis in Appendix 3 shows that an investment grade credit rating of the utilities outlined by CEPA arise due to the regulated network asset backing of the utilities quoted together with the scale and breadth of operations of those utilities.

The fundamental fact that a market participant would make a BNE investment decision on a standalone basis and entirely on the merits of the individual investment case at that point in time has been ignored. Hurdle rates for generation investments particularly considering the dramatic downturn in the generation market seen since 2012, will be considerably higher than the consolidated WACC of a vertically integrated utility. An investor, even if it were a vertically integrated utility, will not apply a blended WACC to individual investment decisions. Cross subsidising asset investments would ultimately impact the company's overall credit profile and rating which would reflect the investment in a riskier asset class leading to higher cost of debt and in turn capital. Cross subsidising is not the manner in which vertically integrated utilities operate and individual hurdle rates would be applied to each investment depending on the risk profile of the investment.

The assumed BNE investor as a minimum should allow for a non-investment grade rating of BB and in reality single B rating is appropriate if the analysis is to be wholly non-discriminatory. As is highlighted by Frontier Economics, the benchmark yields for a non-investment grade are significantly higher than those presented in the CEPA report.

RBS have carried out an illustrative ratings assessment of how a BNE investment would be treated (see Appendix 2). Their assessment also indicates that a BNE peaker would not have investment grade characteristics and therefore even if a vertically integrated utility were to invest in such an asset, the WACC to be applied to such a peaker should bear the ratings characteristics of such an asset. Therefore a non-investment grade rating of B to BB is more appropriate and the cost of debt should be applied accordingly.

RBS observe in their analysis that:

"Without the scale, geographical diversification and substantial EBITDA contribution from regulated networks, a generation & supply utility operating solely in the Island of Ireland market is unlikely to be rated "investment grade" with the gearing levels / capital structure proposed by CEPA / the Regulatory Authorities

- **Utilities referred to in the CEPA/Ramboll "Cost of a best new entrant peaking plant for the calendar year 2016" paper (p.53) and rated "investment grade" in EMEA benefit from scale, diversification and regulated network cash flow advantages which largely drive their investment grade rating. None of these characteristics would benefit the credit profile of the assumed benchmark greenfield plant**

- **All of the referenced integrated utilities maintain gearing significantly below 60%; their ratings are based on the actual leverage rather than an "optimised" capital structure as referred to in the paper.**

As such, the capital structure and rating assumptions put forward in the CEPA paper would appropriately remunerate a hypothetical integrated utility group rather than the assumed benchmark greenfield plant's risk profile at the asset level

- **When making an investment decision, an integrated utility investor would themselves likely consider the risk profile of the stand-alone project – rather than the group's risk profile – to determine an appropriate return / remuneration on their capital."**

- has been incorrectly calculated applying RPI as the inflation factor as opposed to CPI for the calculation of the real risk free rate for the NI WACC which is a clear methodological error by CEPA that has a material effect in determining the real cost of debt.
- departs from the more clearly defined approach applied previously in that an "all in cost of debt" has been determined as opposed to the setting of the risk free rate and debt premium separately. Whilst CEPA's analysis talks to the "all in cost of debt" assumed taking account of factors such as country risk premium, debt issuance costs etc, it is difficult to ascertain the bottom up basis for the "all in cost of debt" determined and departs from the more clearly defined approach taken in 2013 and in recent regulatory benchmarks discussed further below.

Frontier Economics have provided an evidenced based, bottom up approach to the appropriate cost of debt to be applied which more clearly aligns with recent regulatory analysis and takes into consideration the issues outlined above.

- uses current debt yield information that is now out of date. Debt yields are cyclical and are influenced by many ongoing economic and political factors. As highlighted in the Frontier report, underlying debt yields have recently increased to a level significantly above the yields used by CEPA in determining WACC.

Gearing

Gearing at 60% is inappropriate and CEPA appear to have been guided to disregard the evidence outlined in their own assessment by the SEM Committee. Instead of CEPA using their own analysis they have applied the gearing level of 60% on the basis of "for regulatory stability purposes and based on guidance from the SEM Committee''.

Even if you were to ignore the clear evidence provided by CEPA that gearing would be in the range of 20-40% for vertically integrated businesses, a simple back cast of the financials proposed by CEPA for the BNE peaker shows that 60% gearing corresponds to a debt/EBITDA multiple of c8x which is at a level too high to effectively be able to raise financing and clearly cuts right across the assumption that financing is representative of an investment grade standing.

RBS have performed a simplified financial assessment of the proposal put forward by CEPA (see Appendix 2) for a BNE peaker and their assessment indicates that applying:

- Gearing of below 35% is the indicative level to meet BBB investment grade status from a financial metric perspective notwithstanding this is then applied against a business risk assessment;
- S&P's methodology debt/EBITDA multiple of 2-3x (effectively equating to 20-30% leverage) is the indicative level to meet BBB investment grade status from a financial metric perspective notwithstanding this is likewise applied against a business risk assessment.

The evidence from all parties, including CEPA, strongly indicates that a gearing level of 60% is not realistic. An instruction from the SEM Committee to use a 60% gearing figure in face of the evidence provided is manifestly wrong.

More detailed analysis on the simple backcast of the financials proposed by CEPA is set out in Appendix 4.

Cost of equity analysis and proposal

- the approach taken on the equity beta has changed from the previous approach even though the gearing assumption of 60% has not changed. Previously the equity beta ranged from 1.2 to 1.3 whereas even though the gearing is unchanged CEPA have proposed a range of 1.10 to 1.35.
- as outlined in Frontier Economics report, a Total Market Return of 7.1% for NI and 6.8% for ROI is more appropriate based on recent regulatory evidence whereas CEPA's analysis proposes ranges of 5.5% to 6.5% for NI and 5.5% to 7.0% in ROI which are not deemed appropriate.

As outlined below for the SONI price control proposed by NIAUR in April 2015, 6.5% was proposed as the Total Market Return which whilst at the high end of the range proposed by CEPA is nonetheless inconsistent with the BNE proposal.

Recent benchmarks

The WACC proposed is completely at odds with the WACC proposed for SONI Limited in April 2015 of 5.42% pre-tax real (CEPA 4.46%) by NIAUR for a 100% NI regulated business for which the business, market and financial risks fall considerably short of the risks that a BNE peaker would be exposed to. The SONI proposal also continues to distinctly apply a debt premium to the risk free rate as opposed to the calculation of an "all in debt cost" with a total cost of debt of 3.2% applied with NIAUR concluding that it "considers a cost of debt of 3.2% to be broadly representative". This is 0.95% to 2.45% higher than CEPA's analysis which is completely illogical. As outlined above the TMR applied by NIAUR in SONI's price control was also 6.5% which whilst at the high end of the range proposed by CEPA is nonetheless inconsistent with the BNE proposal.

The WACC proposed inconceivably disregards the recent findings in February 2015 of the Competition & Markets Authority (CMA) whereby their report entitled "Energy market investigation, Analysis of cost of capital of energy firms” sets out the CMA’s assessment of the WACC appropriate to vertically integrated and standalone generation businesses where the WACCs pre-tax real range from 4.87% to 6.73%, mid-point 5.8%. The evidence supporting the CMA’s assessment is primarily applying information gathered from the Big 6 utilities in the UK which as detailed below benefit from large scale operations primarily underpinned by network assets and therefore a premium would be expected over and above the position set forth by the CMA for an investor in Ireland if it is to be non-discriminatory. The CMA assessment also distinctly applies a debt premium to the risk free rate as opposed to the calculation of an “all in debt cost”.

<u>Other observations</u>

- Whist CEPA’s report makes reference to the recent acquisitions of BGE’s plant by Centrica and SSE’s plant by Endesa as the basis for the assumption of an integrated utility being the appropriate investor, it should be noted that in relation to these acquisitions:
    - the Whitegate plant acquired by Centrica as part of the BGE acquisition was valued at £30m/ £67k/MW and falls considerably short of the cost of a new BNE peaker of £470k/MW. The Whitegate plant was commissioned in November 2010 and within 3 years of its life, BGE took a €232m impairment on the asset. This illustrates the reality of the value of generation assets and the inherent market risks associated with such generation assets in the current SEM market and this will only be further exacerbated with the new iSEM market. It clearly demonstrates that an investor in generation assets will apply a considerably higher cost of capital to a BNE peaker investment to compensate for such risks and to invest at a cost 7 times the value of a CCGT such as Whitegate.
    - Endesa also took an impairment of €200m to sell its Irish assets to SSE in order to exit the Irish generation market. Like Centrica SSE acquired Irish assets at low cost.
- Whilst CEPA acknowledge the Energia Group as a vertically integrated utility in the Irish market, nowhere in its report does it reflect the reality of such an investor which does not have the benefit of regulated network assets or the scale of operations like the Big 6 UK utilities. The Viridian Group has a non-investment grade rating of B (despite having c25% of its business from regulated activities) and in February 2015 issued a bond at 3.8x leverage at a coupon of 7.5% and as outlined by Frontier Economics more typifies the cost of debt for utilities which do not have either network assets or the benefit of scale like the Big 6 UK utilities.
- The use of Centrica and SSE to justify the assumption that an integrated entity is the appropriate investor and therefore applies a low WACC does not match the reality we have seen in Ireland. Both Centrica and SSE have acquired assets at a price which reflects the risk profile such integrated utilities apply to the Irish generation market.

Proposal in conjunction with Frontier Economics

As a result of the shortcomings of the WACC proposal outlined in summary above, following consultation with Viridian Group Finance, we recommend that the appropriate WACC to be applied for the 2016 BNE determination should be as ascertained by Frontier Economics on behalf of the EAI, summarised as follows:

	Republic of Ireland		Northern Ireland	
	Low	High	Low	High
Gearing	30.0%	30.0%	30.0%	30.0%
Cost of equity (post-tax, real)	**5.91%**	**5.91%**	**6.07%**	**6.07%**
Risk free rate	2.00%	2.00%	2.00%	2.00%
Equity risk premium	4.80%	4.80%	5.00%	5.00%
Asset beta	0.6	0.6	0.6	0.6
Equity beta	0.81	0.81	0.81	0.81
Cost of debt	**1.98%**	**4.44%**	**2.60%**	**4.96%**
WACC (vanilla , real)	4.73%	5.47%	5.03%	5.74%
WACC (pre-tax, real)	**5.32%**	**6.06%**	**6.09%**	**6.80%**
Midpoint (pre-tax, real)	**5.69%**		**6.45%**	

The above results in a WACC of 6.45% for a BNE peaker in Northern Ireland and 5.69% for ROI. More importantly the WACC is better aligned with:

- the WACC recently determined by NIAUR in April 2015 for SONI which was proposed at 5.42% real pre tax for a 100% regulated business with a much lower business risk profile where a 1% differential would intuitively be expected;
- the WACC recently determined by CMA for a either a vertically integrated business or generation only business in the range of 4.87% –6.73%. Whilst the WACC proposed above is at the top end of the range for the CMA proposal this reflects the reality that:
    - there will be a premium attached for investment in the Irish SEM market where the only mechanism for recovering fixed costs is through the capacity payment mechanism. The benchmarks applied in the CMA review is primarily based on the data from the Big 6 utilities with operations across the UK and Europe (and with the exception of Centrica all have network asset backing);
    - investors will be cognisant of the new market rules due to come into effect from 2017 and the inherent risk that naturally applies.

IMR deduction

PPB has consistently objected to the deduction of IMR from the BNE price and particularly the methodology employed since 2013 following the Medium Term Review.

PPB endorses the Poyry report that was commissioned on behalf of the electricity industry by the EAI. This clearly confirms that there is no potential, even at equilibrium where capacity was just sufficient to meet the generation security standard, for prices to reach PCAP for the 8 hours of loss of load expected by the GSS. The reports concludes that there has been no historical evidence of this occurring, and that the figure is in any event unrealistic given that NI has a higher security standard than RoI and that the evidence is that politicians in actuality require even higher standards as is evident from the decision by the Department for Enterprise Trade and Investment and the Utility Regulator to require SONI to contract with an additional 250MW of capacity in Northern Ireland even when they were projecting a capacity surplus of c200MW relative to the capacity required to meet the GSS.

This clearly highlights that 8 hours of disconnection will not be accepted (never mind that the GSS is for an average of 8 hours and hence in years it must exceed 8 hours to balance those years where customers are disconnected for less than 8 hours) and intervention will occur (as already witnessed) meaning the IMR revenues projected in the CPM calculation cannot be captured in practice and therefore should not be deducted.

Ancillary Service revenues

The calculation of AS revenues assume the BNE units runs for 2% of the time. The CEPA paper notes that the BNE units is expected to meet the last MW of demand and hence it is unlikely to run for 2% of the year. This results in the AS revenues being over-estimated.

Similarly the units is said to have an availability of 95%. If it then runs for 2% of the time, then that implies that the period of the year where it is available but not running is 93%. The calculation determines the revenue for de-synchronised replacement reserve using 95% instead of 93% and hence again over-estimates AS revenues.

PPB is concerned at the proposal to only re-open the ancillary service deduction following any implementation of DS3. There may be other costs affected by DS3 (for example GTUoS charges) and therefore it would be more logical to review any of these associated areas or, given the transition to I-SEM, to just freeze everything.

Capacity Requirement for 2016

The Capacity Requirement determined does not appear credible. The requirement is supposed to represent the capacity required to meet the all-island customer demand to the required generation security standard of 8 hours LOLE. As we have highlighted in previous responses, the figure determined is abnormally low and does not appear credible. It should also be consistent with the analysis in the GAR statement which is also seeking to define the capacity requirement to meet the generation security standard, but there is a substantial gap between the two sets of analysis that should determine the same or at least a very a similar capacity requirement.

A simple review of the Capacity Requirement relative to peak demand as set out in the table below indicates exceptionally low margins that are not credible.

2016	MW	Margin in MW	Margin %
Capacity Requirement	7,070	-	-
Total Energy Requirement (TER) Peak	6,671	399	6.0%
Transmission Peak	6,532	538	8.2%

This shows that the proposed Capacity Requirement only provide a margin to ensure security of supply equivalent to one CCGT unit when measured against the TER Peak and only slightly larger when considered against the Transmission Peak. A plant margin of this magnitude has never been accepted in Ireland where margins were historically in the 30-40% range.

The implausibility of such a margin is also evident by a simple consideration of the margin required in Northern Ireland in isolation, given the DETI/UR decision to require 250MW to be tendered to ensure security of supply. This is best considered looking at the analysis in the 2014-2023 GAR and a simple review, ignoring any contribution from renewable generation or potential rescue flows from RoI shows that NI in isolation requires a much greater margin than is proposed in the BNE consultation paper for 2016. The figures are set out in the following table use the higher TER Peak as it shows the worst case position.

2016 – NI only from the 2014-23 GAR	MW	Margin in MW	Margin %
Total Energy Requirement (TER) Peak	1,781	-	-
Dispatchable plant in NI	2,109	328	18.4%
Dispatchable plant in NI + additional contracted 250MW	2,359	578	32.5%

This clearly illustrates that the margin required for NI only, ignoring any contribution from renewables or rescue flows from RoI, is 578MW which is higher than the margin provided by the proposed Capacity Requirement for 2016 for the whole all-island market. This clearly highlights that the requirement is significantly under-stated.

Finally, we would expect the Capacity Requirement would be consistent (if not the same) with the requirement inherent in the GAR as both are seeking to identify the capacity required to provide security of supply to customers to the same Generation

Security Standard. The following table takes the data from the 2015-2024GAR to estimate the underlying plant margin required to provide the required security of supply. It uses the most worst assumptions to derive the lowest margin by using the higher TER peak and using the Total Time Weighted Wind Capacity and associated Capacity Credit Scaler used in the BNE paper (Total wind is consistent with the TER peak which adds back in demand met by embedded generation). It also scales the capacity surplus identified in the GAR by 30% to account for conversion from Perfect plant to Real plant.

All- Island Assessment	MW	Notes
TER Peak (MW)	6,671	*(from table A-1)*
Total Conventional capacity in RoI	7,494	*(from table A-4)*
Total Conventional capacity in NI	2,417	*(from table A-5)*
Total Dispatchable Renewables in RoI	255	*(from table A-9, excluding wind and solar)*
Total Dispatchable Renewables in NI	101	*(from table A-6, excluding wind and solar)*
Total Dispatchable Capacity in Ireland	**10,267**	
Wind Credit for 3464MW	429	*(GAR shows wind & solar capacity as 3744MW but this uses the "Time Weighted Total Wind" of 3464MW quoted in Section 11.4 of the BNE Consultation paper and the Capacity Credit Scaler of 0.117)*
Total Capacity available in 2016	**10,696**	
Surplus Capacity determined in GAR	- **2,633**	*(as per Table A-16 – perfect plant surplus of 2025MW increase by a factor of 30% to convert back to real plant equivalent)*
Inherent Capacity needed to meet GSS	**8,063**	*(deducting the surplus capacity from the total capacity to leave the capacity needed to meet the Generation Security Standard)*
Plant Margin vs TER Peak	**20.9%**	

This clearly shows that the Capacity Requirement inherent in the GAR is substantially greater than has been determined in the BNE and Capacity Requirement consultation paper yet if they are both targeting the capacity required to supply customers to the same generation security standard of 8 hours LOLE then they should come to broadly the same answer.

As is clear from the simple conceptional analysis above a margin of 399-538MW is not credible given it equates to a risk to security of supply following an outage on a large generating unit. The backcast analysis using data from the GAR shows a more credible margin in excess of 20% which is c 1000MW more than is proposed as the Capacity Requirement for 2016. We therefore consider this proposal significantly under-states the true Capacity Requirement needed to provide security of supply to the required GSS.

Other comments

We assume that all the cost elements that are associated with the WACC or the underlying cost of debt (e.g. Interest during construction costs) will be modified to reflect the final WACC that is adopted.

Appendix 1: Frontier Economics Report

The Frontier Economics report commissioned by the EAI and titled “Benchmarking the BNE WACC for “2016” is attached.

Appendix 2: RBS Analysis

The RBS analysis titled “Preliminary ratings consideration for a BNE peaking plant”” is attached.

Appendix 3: Bond Benchmarks

Bias toward network regulated assets

The cost of debt analysis performed by CEPA is manifestly biased towards network regulated assets despite CEPA acknowledging that “regulated networks are not direct comparisons, as these will be typically lower than the BNE” (pg 49 CEPA report). Of the 18 benchmark bonds shown for the NI cost of debt analysis (pages 58-59 CEPA report) and as depicted below, 16 of the bonds are for pure regulated network assets in respect of electricity, gas or water and therefore do not have any vertically integrated utility features despite the key assumption underpinning the proposed WACC is that the BNE peaker is financed by a vertically integrated utility. It is inappropriate and illogical to include these bonds in the analysis. A key feature of price controls being set for regulated network assets is that the WACC determined by the Regulators is set relevant to the risk profile of the network businesses and specifically disregards the risk profile of the wider organisation. Therefore any business with networks assets materially distorts the benchmark analysis undertaken by CEPA.

Company	Maturity	Amount	Credit Rating	All in yield	Spread to Gilt (bps)	Gas Networks Transmission	Gas Networks Distribution	Electricity Networks Transmission	Electricity Networks Distribution	Water Network	Generation & Supply	Other	% Network assets	Suitable comparator
NIE Finance	Jun-26	£400m	BBB+	3.01%	103	x	x	✓	✓	x	x	x	100%	x
Wales and West Utilities	Dec-23	£250m	A-	2.67%	120	x	✓	x	x	x	x	x	100%	x
Wales and West Utilities	Mar-30	£750m	A-	3.22%	107	x	✓	x	x	x	x	x	100%	x
Western Power Distribution	Oct-24	£400m	BBB	2.82%	112	x	x	x	✓	x	x	x	100%	x
Western Power Distribution	Apr-32	£800m	BBB	3.40%	115	x	x	x	✓	x	x	x	100%	x
Scotia Gas Networks	Feb-25	£350m	BBB	2.68%	91	x	✓	x	x	x	x	x	100%	x
National Grid	Jun-27	£525m	A-	2.78%	80	✓	✓	✓	x	x	x	✓	90%+	x
Centrica	Mar-29	£750m	A-	3.33%	134	x	x	x	x	x	✓	✓	0%	✓
Centrica	Sep-44	£550m	A-	3.86%	138	x	x	x	x	x	✓	✓	0%	✓
Northern Power Grid	Jul-32	£150m	A-	3.34%	109	x	x	x	✓	x	x	x	100%	x
Northern Gas Networks	Mar-40	£200m	BBB+	3.64%	122	x	✓	x	x	x	x	x	100%	x
Kelda Water	Feb-20	£200m	BB-	4.62%	331	x	x	x	x	✓	x	x	100%	x
Wessex Water	Sep-21	£300m	BBB+	2.31%	90	x	x	x	x	✓	x	x	100%	x
United Utilities	Mar-22	£375m	BBB+	2.44%	121	x	x	x	x	✓	x	x	100%	x
Thames Water	Jun-25	£500m	A-	2.79%	102	x	x	x	x	✓	x	x	100%	x
Anglian Water	Feb-26	£200m	BBB	3.38%	160	x	x	x	x	✓	x	x	100%	x
Anglian Water	Oct-27	£250m	A-	3.03%	105	x	x	x	x	✓	x	x	100%	x
Affinity Water	Mar-36	£250m	A-	3.43%	104	x	x	x	x	✓	x	x	100%	x

The only suitable comparator in respect of its business being a vertically integrated utility is with respect to Centrica however it has a credit rating of A- which is notably better than the CEPA basis of BBB.

For the RoI, the only benchmark bonds shown (page 76) is for ESB for which c65% of ESB’s business (including NIE, 59% excluding NIE) is underpinned by regulated network assets and is state owned, which taken together, materially distorts the cost of debt of that business.

Company	Maturity	Amount	Credit Rating	All in yield	Spread to Gilt (bps)	Gas Networks Transmission	Gas Networks Distribution	Electricity Networks Transmission	Electricity Networks Distribution	Water Network	Generation & Supply	Other	% Network assets
ESB	Sep-17	€600m	BBB+	0.36%	53	x	x	✓	✓	x	✓	x	65% (59% exc NIE)
ESB	Nov-19	€500m	BBB+	0.52%	69								
ESB	Jan-24	€300m	BBB+	1.14%	95								
Average per CEPA					72								
Pricing average at 17 June 2015					92								

The bonds quoted for ESB by CEPA are also primarily short dated bonds and thus materially distort the average spreads quoted even though ESB does have a bond in issue with maturity 2027 as outlined further below. It should be further noted that the pricing of such short dated bonds has increased by 20bps to 92bps since CEPA's analysis was performed.

Other vertically integrated utilities across the UK and Europe have also been ignored such as SSE, Iberdrola, EON, RWE and EDF even though the merits of such large scale organisations is to a large extent flawed as outlined further below in respect of the appropriateness of their investment grade standing.

Outlined below is the recent pricing of bonds for the Big 6 utilities with operations across the UK and Europe together with ESB in the RoI. As can be seen the Spread to gilts for GBP bonds are on average 160 bps some 35bps higher than CEPA's analysis for UK bonds above. For the Euro bonds the average spreads are 134 bps some 62bps higher than those quoted for ESB above.

Company	Maturity	Amount	Credit Rating	All in yield	Spread to Gilt (bps)	Gas Networks Transmission	Gas Networks Distribution	Electricity Networks Transmission	Electricity Networks Distribution	Water Network	Generation & Supply	Other	% Network assets
Centrica	Mar-29	£750m	Baa1/A-	3.86%	152	x	x	x	x	x	✓	✓	0%
Centrica	Sep-44	£550m	Baa1/A-	4.36%	158	x	x	x	x	x	✓	✓	0%
EDF	Jul-31	€500m	A+	4.00%	151	x	x	✓	✓	x	✓	✓	Not disclosed will be sizeable
SSE	Nov-28	£500m	A-	3.66%	135	x	✓	✓	✓	x	✓	✓	50%
EON	Jun-32	£975m	BBB+	4.23%	169	x	✓	x	✓	x	✓	✓	30%
RWE	Jun-30	£760m	BBB+	4.56%	212	x	✓	x	✓	x	✓	✓	45%
Iberdrola	Sep-27	£350m	Baa1/BBB	3.68%	145	x	x	✓	✓	x	✓	✓	50%
Average				4.05%	160								

Pricing 17 June 2015 Euro bonds

Company	Maturity	Amount	Credit Rating	All in yield	Spread to Gilt (bps)	Gas Networks Transmission	Gas Networks Distribution	Electricity Networks Transmission	Electricity Networks Distribution	Water Network	Generation & Supply	Other	% Network assets
EDF	Oct-24	€500m	A+	1.76%	102	x	x	✓	✓	x	✓	✓	Not disclosed will be sizeable
ESB	Jun-27	€500m	Baa1/A-	2.31%	137	x	x	✓	✓	x	✓	x	65% (59% exc NIE)
Iberdrola	Jan-23	€600m	Baa1/BBB	1.82%	131	x	x	✓	✓	x	✓	✓	50%
RWE	Feb-43	€150m	BBB+	3.09%	165	x	✓	x	✓	x	✓	✓	45%
Average				2.25%	134								

For Centrica it should be noted that their spreads have increased by c20bps since CEPA's analysis.

The above also highlights how with the exception of Centrica, all the utilities benefit from a large proportion of their business operations (c50%) being regulated network assets and as outlined below this very much underpins their investment grade standing and in turn their low cost of debt. The intrinsic benefit of such underpinnings has not been excluded in CEPA's analysis.

The following benchmark bonds more accurately reflect the cost of debt that is appropriate to generation investment in today's market. Such bonds do not have the benefit of investment grade standing as they reflect the position that the assets being financed do not have the benefit of scale, network assets support or state ownership and therefore are indicative of the cost of debt/hurdle rate that even a vertically integrated utility should apply in its investment decision for a BNE peaker.

Pricing 17 June 2015 non-investment grade generation asset bonds

Company	Maturity	Amount	Credit Rating	All in yield	Spread (bps)
MEIF Renewable Energy	Feb-20	£190m	BB	6.03%	470
Infinis	Feb-19	£350m	BB-	5.54%	434
AES	Oct-19	$200m	BB-/BB	4.85%	337
AES	Mar-24	$750m	BB-	5.79%	356
Intergen	Jun-23	$750m	B+	7.76%	559
Intergen	Jun-21	£175m	B+	8.08%	649
Viridian	Mar-20	€600m	B	7.69%	773
Average				6.53%	511

The above clearly demonstrates the increased cost of debt associated with generation assets which due to the inherent business risk profile of such assets will not benefit from investment grade status and ratings are in the non investment grade range of B to BB. Spreads are on average 511bps, some 350bps wider than the investment grade vertically utility entities above; even for BB rated assets, the average spreads are 400bps some 250bps higher.

As outlined previously, hurdle rates applied by organisations are with respect to the underlying risks of the assets themselves and organisations do not cross subsidise investments. The above demonstrates the additional cost of debt that should be applied to a BNE peaker in the determination of its WACC.

Appendix 4: Gearing Assessment

The following is a simple back cast of the financials proposed for the BNE peaker and what that implies in terms of leverage multiples. Applying 60% gearing implies EBITDA/debt leverage of 7.8x which is clearly inconsistent with investment grade ratios and financing at such levels would not be achievable.

BNE consultation 2016 inputs		
Plant capacity	MW	195.7
BNE capacity payment	€/Kw	65.5
Inframarginal rent	€/Kw	6.10
Ancillary service income	€/Kw	4.64
Operating costs	€m	5.187
Capital cost	€m	126.94
Gearing assumed	%	60

Annual EBITDA	**€m**
Capacity revenue	12.8
Inframarginal rent	1.2
Ancillary service income	0.9
	14.9
Operating costs	(5.2)
EBITDA implied	**9.7**

Implied leverage	**€m**	
Capital cost	126.9	
Gearing	**60%**	
Implied level of debt	76.2	
Implied debt/EBITDA	**7.8x**	
Typical leverage for investment grade	2.0x	3.0x
Typical gearing expected	**15%**	**23%**

It should be noted the above is based on a BNE peaker:-

- being able to earn inframarginal rent at the levels outlined by CEPA for which historic evidence outlined previously has proven not to be the case; and
- the demand assumption applied in the calculation of the BNE capacity pot aligning with actual demand. Again we have outlined the issues we have in relation to the calculation of demand.

Both of which will fundamentally result in a BNE peaker not being able to achieve EBTIDA earnings of £9.7m and therefore negates the financing ability of such an asset.

Appendix 5: Poyry Report

The Poyry report commissioned by the EAI and titled “Review of Consultation on Proposed Annual Capacity Payment Sum for 2016” is attached.