

**Decision Paper in Relation to the Possible
Cancellation of Generating Unit Agreements in
Northern Ireland**

30 April 2012

1 EXECUTIVE SUMMARY

1.1 There are currently seven Generating Unit Agreements (“**GUAs**”) in place between Power NI Energy Limited (effectively its Power Procurement Business (“**PPB**”)) and electricity generators in Northern Ireland. PPB manages the GUAs on behalf of customers and the net benefit or loss made by PPB is passed to customers as an element of the PSO levy. The Northern Ireland Authority for Utility Regulation (“**the Authority**”) has the power to direct cancellation of a GUA before its expiry date. Any direction to cancel early a GUA must be given at least 180 days in advance of the relevant cancellation date.

1.3 On 10 March 2011, the Authority published a Consultation Paper in order to:

- Set out its initial thoughts on the type of issues and factors the Authority believes should inform its decision making process in relation to the potential cancellation of Generating Unit Agreements (“**GUAs**”) in place between PPB and certain generators; and
- Obtain the views of market participants and other interested parties.

1.4 Following consideration of the responses to this consultation, on 9 September 2011 the Authority published a minded-to decision to not instruct cancellation of any GUA, but to keep these contracts under review. A summary of the main points raised in responses to this minded-to decision are detailed in Section 5 of this report.

1.5 Further to this, the Authority issued a notice on its website on 22 December 2011, stating that the Authority has decided to keep the GUAs under review, and a decision paper should be expected in early 2012.

1.6 Sections 6 and 7 of this decision paper contain details of an updated economic analysis. The base case results of this analysis are summarised in the following tables:

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) BASE CASE

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT 10 (106MW)	-£7k	£106k	£148k	£459k	£212k	£271k
Ballylumford CCGT 20 (510MW)	£726k	£1,259k	£1,220k	£1,764k	£577k	£369k
Ballylumford GT1 (58MW)	£10k	£18k	£34k	£77k	-£150k	-£174k
Ballylumford GT2 (58MW)	-£7k	£9k	£39k	£71k	-£148k	-£207k
Coolkeeragh GT8 (58MW)	-£14k	£8k	£25k	£62k	-£74k	-£116k
Kilroot GT1 (29MW)	£20k	£25k	£37k	£47k	-£50k	-£63k
Kilroot GT2 (29MW)	£21k	£26k	£36k	£57k	-£48k	-£60k

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). BASE CASE

£000s					
NET BENEFIT/(COST) £k	2013	2014	2015	2018	2021
Ballylumford CCGT10 (106MW)	£426k	£331k	£304k	£1,299k	£1,363k
Ballylumford CCGT20 (510MW)	£6,405k	£5,298k	£3,281k	£10,095k	£9,943k
Ballylumford GT1 (58MW)	-£1,174k	-£1,230k	-£1,130k	-£949k	-£585k
Ballylumford GT2 (58MW)	-£1,310k	-£1,320k	-£1,276k	-£1,008k	-£648k
Coolkeeragh GT8 (58MW)	-£375k	-£324k	-£319k	-£135k	£212k
Kilroot GT1 (29MW)	-£536k	-£539k	-£526k	-£416k	-£206k
Kilroot GT2 (29MW)	-£532k	-£517k	-£502k	-£392k	-£209k

1.7 These results indicate that the GUAs for the Ballylumford CCGTs are expected to remain beneficial for consumers over the remaining lifetime of the contracts. However, the GUAs for the remaining peaking units at Ballylumford, Kilroot and Coolkeeragh are forecast to become a cost to consumers from November 2012.

1.8 In addition to the economic analysis, the Authority has also taken account of a number of policy considerations in relation to cancellation of the peaker units. Firstly, cancellation of these units is not likely to have a significant impact on market power. Secondly, in terms of security of supply, the Authority has carried out an assessment and

considers that these units should remain profitable and it is unlikely that any of them will exit the market after cancellation.

1.9 Before any direction to cancel a GUA can be issued, the Authority must ensure that the direction is being issued by the relevant authority; it is important that there is clarity in relation to whether the early cancellation decision is one that should be made by the SEM Committee or by the board of the Utility Regulator.

1.10 The SEM Committee was asked at its meeting on 29 November 2011 to decide whether cancellation of GUAs is a SEM matter. The SEM Committee decided that the exercise of relevant functions in relation to the cancellation (or otherwise) of the GUAs for the peaking plant was **not** a SEM matter. The SEM Committee requested to be kept informed of the ongoing review by the Authority of the other GUAs.

1.11 Therefore, having undertaken detailed economic and sensitivity analysis into the financial position of the GUAs, and after considering all relevant policy considerations, the Authority publishes this decision paper in order to confirm its decisions:

- 1. To instruct the cancellation of the GUAs for Ballylumford GT1 and GT2, Coolkeeragh GT8 and Kilroot GT1 and GT2 with effect from 1 November 2012, subject to their being in place an Ancillary Service agreement on the provision of Synchronous Compensation.**

- 2. Not to instruct the cancellation of the GUAs for Ballylumford CCGT10 and CCGT20, but will keep these contracts under review.**

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3 INTRODUCTION

EXISTENCE OF GUAS

3.1 There are currently seven Generating Unit Agreements (“**GUAs**”) in place between Power NI Energy Limited (effectively its Power Procurement Business (“**PPB**”)) and electricity generators in Northern Ireland.

CANCELLATION OF GUAS

3.2 The Northern Ireland Authority for Utility Regulation (“**the Authority**”) has the power, as set out in licence conditions (“**the Cancellation Condition**”) contained within electricity generation licences (Condition 15) and the electricity supply licence of Power NI Energy Limited (Condition 60) to direct the early cancellation of a GUA. Any direction to cancel early a GUA must be given at least 180 days in advance of the relevant cancellation date. Details of each remaining GUA are provided in the table in Section 4.

3.3 On 10 March 2011, the Authority published a Consultation Paper titled “Consultation on Relevant Considerations in Relation to the possible Cancellation of Generating Unit Agreements in Northern Ireland¹”.

3.4 Having considered the responses to that consultation, the Authority undertook detailed economic and sensitivity analysis into the financial position of the GUAs. After considering all relevant policy considerations, on 9 September 2011 the Authority published a second Consultation Paper titled “Second Consultation in Relation to the Possible Cancellation of Generating Unit Agreements in Northern Ireland²”. This paper contained the following minded-to decision:

¹ http://www.uregni.gov.uk/news/consultation_opens_on_possible_gua_cancellation/

²

http://www.uregni.gov.uk/news/view/a_further_consultation_on_the_possible_cancellation_of_generating_unit_agre/

The Authority does not intend to instruct the cancellation of any GUA from 1 April 2012, but will keep these contracts under review.

3.5 Following receipt of and having considered the responses to this second consultation, the Authority has repeated its economic and sensitivity analysis, taking account of comments received and using up-to-date commodity prices. On 22 December 2011, the Authority published a notice on its website confirming this position, and committed to publishing a decision paper in early 2012.

3.6 The Authority has therefore published this decision paper in which it explains the rationale for its decisions in relation to cancellation.

3.7 The report is structured as follows:

- **Chapter 4** provides a background to the history and structure of the GUAs;
- **Chapter 5** provides a summary of the responses to the September 2011 consultation;
- **Chapter 6** describes the economic analysis carried out by the Authority in relation to the GUAs;
- **Chapter 7** provides a summary of the results to the economic analysis;
- **Chapter 8** describes the policy considerations to which the Authority has had regard;
- **Chapter 9** sets out the issues related to jurisdiction of the Authority and the SEM Committee in relation to cancellation;
- **Chapter 10** sets out the intended decision of the Authority in relation to cancellation of the GUAs.

4 BACKGROUND

BACKGROUND TO GUAS

- 4.1 When the electricity industry in Northern Ireland was privatised in 1992, the generating stations were sold to private companies and Power Purchase Agreements (“**PPAs**”) were entered into between these companies and Northern Ireland Electricity plc.
- 4.2 The PPAs with each power station comprise two forms of agreement: a Power Station Agreement (“**PSA**”) relating to the station’s operation and a number of individual Generating Unit Agreements (“**GUAs**”) relating to each generating unit within the power station. These contracts are managed by PPB – a business unit within Power NI Energy Limited. There are seven GUAs still in force: four for units at Ballylumford Power Station, one for a unit at Coolkeeragh Power Station and two for units at Kilroot Power Station. Further details are set out in the table below.

Table 4.1 Expiry and Earliest Cancellation Dates of the Remaining GUAs

Company	Generating Unit	GUA Contracted Capacity (MWs)	Fuel Type	Earliest Cancellation Date (ECD)	Contract Expiry Date (CED)
AES(Kilroot)	GT1	29	Distillate	1 Nov 2010	31 March 2024
AES (Kilroot)	GT2	29	Distillate	1 Nov 2010	31 March 2024
AES (Ballylumford)	CCGT 10	106	Gas	1 Apr 2012	23 September 2018 (with a five-year extension option exercisable by PPB with two years notice)
AES (Ballylumford)	CCGT 20	510	Gas	1 Apr 2012	23 September 2018 (with a five-year extension option exercisable by PPB with two years notice)
AES (Ballylumford)	GT1	58	Distillate	1 Nov 2010	31 March 2020
AES (Ballylumford)	GT2	58	Distillate	1 Nov 2010	31 March 2020
Coolkeeragh ESB	GT8	58	Distillate	1 Nov 2010	31 March 2020
Total		1028			

4.3 The GUAs contain provisions relating to the purchase and payment by PPB for a number of services including the availability of capacity, the generation of electricity and the provision of ancillary services from each individual generating unit. The GUAs make provision for two categories of payment, namely:

- (i) energy payments, and
- (ii) availability payments.

4.4 **Energy payments** represent reimbursement of fuel costs, while **availability payments** represent reimbursement for acquisition costs and operating costs. Availability payments are paid irrespective of whether electricity is actually generated; they are paid subject to the unit being available to generate.

EARLY CANCELLATION OF GUAS

- 4.5 As can be seen from the table above, each GUA is scheduled to come to an end at its Contract Expiry Date (“**CED**”). However provisions were included in the GUAs to allow for cancellation from an earlier date, the Earliest Cancellation Date (“**ECD**”).
- 4.6 There is in effect only one procedural requirement which concerns the giving of the direction (i.e. the Authority exercising its early cancellation power). This procedure requires the Authority give at least 180 days’ notice, of its intention to give a direction, to such persons as are specified in the Cancellation Condition.

5.1 Five responses were received to the consultation published in September 2011. A summary of the main points raised within each response is provided below.

Power NI Energy Limited (PPB)

5.2 PPB agrees with the Authority's minded decision not to instruct the cancellation of any GUA from 1 April 2012.

Policy Considerations

5.3 The SEM requires short run marginal cost bidding, which by definition should be incapable of improvement. Therefore the competitiveness in the SEM should not be affected by any decision on whether to retain or to cancel a GUA.

5.4 There is significant risk that there would be a net reduction in overall competition in the contract market as there would be no guarantee that if the CCGT contracts were cancelled that AES would offer CfDs or could be "directed" to offer contracts. Any such reduction in contract liquidity could increase costs for customers as a result of increased exposure to market price volatility. CfD strike prices also include a significant risk margin paid by suppliers in return for cost certainty. This margin, which is over and above the forecast infra-marginal rent, also provides benefits for customers from the GUAs.

5.5 PPB considers that cancellation would create significant local market power concerns in Northern Ireland. This may be compounded if the SEM is found to be incompatible with the EU Target Model (which is generally recognised to be a bilateral market model); as such market power would be a more difficult issue to address in a bilateral market.

- 5.6 PPB disagrees with the view that there is no impact on security and diversity of supply, regardless of the Authority's decision and it states that generators whose GUAs are cancelled will have different commercial incentives which PPB consider will increase the risk to security of supply and which could also increase the cost to customers through higher ancillary service and constraint costs.

Economic Analysis

- 5.7 The paper largely relies on the assumption that the energy cost bid in the Commercial Offer data and the energy payments under the GUAs generally "cancel each other out". The paper notes that an effort is made to capture residual effects, the most significant being VOMs (Variable Operation and Maintenance costs). However, PPB believe this value is understated, and in particular does not take proper account of differentials in heat rates which impacts both on energy costs and carbon costs.
- 5.8 The Plexos model used to derive directed contracts for 2011/12 may be underestimating SMPs as Non-Directed contracts were clearing at higher prices than the DC prices, and therefore the infra-marginal rent may be understated.
- 5.9 Sustainability policies that provide incentives for increased levels of renewable generation will increase the requirement for flexibility and other ancillary services. If the desired levels of wind are to be accommodated on the network, the provision of ancillary services will be even more critical and market payments for reserve, voltage support and inertia may well have to increase (although there would be no change in GUA costs). While not critical given the current minded decision, such considerations would be more critical in relation to "lifetime" analysis in a scenario where cancellation was being actively contemplated.

AES

Economic Considerations

- 5.10 In this latest analysis, the Authority have attributed significant value to constraint payments received by PPB and are including this potential income within the overall economic valuation of the GUAs. Constraint payment revenue was not considered in previous cancellation analysis and AES are surprised it has been included within the Authority's base case scenario in this most recent consultation. Such constraint payments are completely at risk as they are entirely reliant on Variable Operation and Maintenance (VOM) figures provided by AES and constraint dispatch decisions by SONI, which are driven by system constraints on a dynamic real-time basis. AES do not believe this is an appropriate mechanism to try and capture value for Northern Ireland customers.
- 5.11 AES is of the opinion that the Authority has not appropriately considered gas price volatility within the base case valuation. The high and low gas price scenarios are too simplistic and do not represent the industry standard option spread valuation approach, in which commodity volatility would be an integral part of the base case valuation.
- 5.12 AES believe that it is appropriate that disparities between Energy Payments and COD should be considered within a stress case scenario and not the base case valuation.
- 5.13 The GTUoS costs within the Authority's model should be updated to reflect the much higher GTUoS rates from 1 October 2011. Power Import charges should be increased in line with PowerNI's recent tariff increase of 18%.
- 5.14 AES highlight that Ancillary Service Payments are at risk due to the fact that the revenue is only secured when the units are dispatched by SONI. Consequently, whilst

the Authority is using historic figures, the payments going forward could be significantly different due to SONI dispatch decisions and system security dynamics.

- 5.15 AES believes that the OCGTs at Ballylumford and Coolkeeragh will be a cost to customers from Q2-2012 onwards and should therefore be cancelled as soon as possible. AES note that in cancelling the gas turbine contracts in advance of the CCGT GUAs, these latter GUAs will carry the full burden of costs related to PPB.
- 5.16 AES's analysis indicates that the GUAs for the CCGT will be a cost to customers and that the Authority, using commercial criteria as the metric, will cancel on 1 January 2013. This analysis is based on the increased costs related to GTUoS and import charges, the lack of free allocation of carbon, the exclusion of unrealistic constraint revenue, the volatility of gas pricing and the fact that all PPB costs will be smeared across only the CCGT units (as all the GT GUAs should have been cancelled).

Policy Considerations

- 5.17 AES believes that in terms of market liquidity cancellation may enhance liquidity as AES would become a fully merchant player across a portfolio of generation technology.
- 5.18 Market power was considered fully last year by the SEM Committee and the Office of Fair Trading. Given the market power mitigation measures in place within the SEM, this was deemed not to be a material issue, both on an all Island and more regional Northern Ireland basis.
- 5.19 Within the SEM there is a desire for more flexible plant and a fundamental review of ancillary services has commenced. Whilst under contract AES are focussed on complying with the performance characteristics as set out in the GUAs. However, on a merchant basis such units would be incentivised to explore other avenues of revenue including looking at new ancillary services relating to enhanced flexibility.

Consumer Council

5.20 The consultation goes some way to identify potential economic benefits for consumers based on a number of scenarios. However, it does not clarify the opportunity cost of these benefits in relation to the cancellation of the GUAs. It would be useful for the consumer to understand how the benefits from cancellation of GUAs compare to the economic benefits of maintaining contracts as calculated in the consultation.

SONI

5.21 The economic analysis summary outlined in the paper clearly rejects the case for cancellation of the GUAs for the Ballylumford CCGTs at the earliest cancellation date. On balance, SONI would generally support this decision.

5.22 In consideration of the peaking plant cancellation, SONI would also support a delay in the cancellation of these units until economically viable, which seems to be around Q4 2012.

5.23 In consideration of future GUA cancellations, SONI would again re-iterate to the Authority the wider benefits:

- Increased transparency, liquidity and competitiveness of the SEM as a result of generators operating directly in the market.
- Cancellation of the GUAs will in effect transfer a significant degree of local market power from PPB to AES (although in SEM terms, the AES share of the market would be less significant)
- Removal of legacy contractual arrangements and the overhead in their administration and interfacing. For example, the NI Grid Code and the complexities around the provision of Ancillary Services to SONI through PPB as an Intermediary.

- Increased flexibility with the introduction and consistent application of any amended arrangements which would support the SEM and ultimately assist the Authority and the SEM Committee in carrying out their primary duties.
- Facilitating increased transparency and consistency in SONI's dealings with generators and suppliers.

5.24 In addition, it would be prudent to continue to closely monitor the actual economic benefit of the GUAs vis-à-vis the ongoing administrative and wider costs of maintaining the PPB to determine the optimum time of termination for each of the GUAs.

Power NI

5.25 Power NI notes the Utility Regulator's draft decision not to instruct the cancellation of any GUA from 1 April 2012. Reliant on the analytical information provided by the Utility Regulator, Power NI supports this decision.

5.26 Any realised benefit from the retention of the GUAs should be returned to customers in a timely manner. The Utility Regulator should also be mindful of the disruptive nature of previous mid-year PSO adjustments and look to reflect the benefit in a consistent, predictable manner.

5.27 While the UR confirms an intention to keep the contracts under review, no timetable is included in the consultation paper. Power NI recommends that the UR create a framework to manage important contracting considerations in such a way as to provide participants with clarity regarding factors affecting the CFD auction timetable and volumes.

5.28 Power NI also notes the Utility Regulator's comments regarding the effect of cancellation on contract liquidity. Any further reduction in available CfDs will compound product scarcity and inflate price premiums which will ultimately be

borne by the end consumer. The economic analysis of the GUAs should assess the impact on PSO in conjunction with the likely effect on the CfD market.

6.1 The previous two consultations described the economic analysis the Authority intended to carry out in relation to the cancellation decision. The key consideration was to be the likely effect on total PSO charges to Northern Ireland consumers resulting from cancellation (or otherwise) for each GUA between the earliest cancellation date and the contract expiry date.

6.2 In order to determine the likely effects on the PSO, it is necessary to compare:

- forecast payments due to the generators under the GUAs; with
- forecast revenues due to PPB in the form of SEM Revenues and ancillary service payments from SONI over the remaining lifetime of the contracts.

6.3 If forecast SEM revenues and ancillary services payments (and other net revenues) are greater than forecast GUA payments for any particular generating unit, it would be rational, on an economic basis, to retain that GUA. If forecast SEM and other revenues are less than forecast GUA payments for any particular generating unit, it would be rational, on an economic basis, to cancel that GUA.

6.4 However, cancellation is not exclusively an economic concern. There are also a number of non-economic policy considerations (discussed in Chapter 8) which must also be taken into account.

6.5 After carrying out the economic analysis, the Authority performed a number of sensitivities around commodity prices and demand. One of these sensitivities was to take account of the HM Treasury's proposal to introduce a carbon price floor from 1 April 2013.

6.6 For practicality of modelling, the Authority has chosen to carry out analysis to determine the net economic position of the GUAs over a number of representative time periods, rather than the full term of the contracts up to the Contract Expiry Date. This will

provide an estimate of the value of the contracts in the short to medium term, as well as giving an indication of their longer term value. These time periods are:

- 1 July 2012 to 31 December 2015;
- 1 January 2018 to 31 December 2018;
- 1 January 2021 to 31 December 2021.

GUA COSTS

6.7 All the payments under this subheading represent a cost to PPB and therefore consumers via the PSO.

AVAILABILITY PAYMENTS

6.8 The Availability Payments of the GUAs remunerate the owner of the unit for the provision of generation capacity. For every MWh of availability, a 'base' payment is made, called the Base Availability Credit ("**BAC**").

6.9 There are a number of elements which act to change the base value, but the most important is the seasonal and time-of-day weighting table. The payments are weighted so that they are increased during more intense demand periods, and reduced during low demand periods. The weightings therefore signal to the plant owner that the provision of capacity is more valuable at peak times than at off-peak times.

6.10 In the Authority's model the Availability Payments for the GUA units were all forecast using the availability profiles that were produced by the forecast *Plexos* model. These profiles were a function of the forced and planned outage rates for the units, which were taken from historical performance. The weighting algebra was applied to each year and a weight calculated for every trading period in the forecast horizon.

- 6.11 Availability rebates payable by the generator to PPB for plant inflexibility were rolled forward from historic performance.

RELIABLE GT START PAYMENTS

- 6.12 Start failure is a significant operational risk associated with peaking plant operation. To address this, there is an additional availability payment made to the Gas Turbine units for each time they successfully start when called.
- 6.13 This incentivises owners of peaking plant which are rarely dispatched to ensure that their unit is capable of providing generation when it is required.
- 6.14 The assumed start reliability of each Gas Turbine was taken from the historical performance and rolled forward.

ENERGY PAYMENTS

- 6.15 The Energy Payments of the GUAs recompense the owner of the unit for the fuel-related costs of generating electricity. These payments are calculated by reference to generally accessible liquid market data and reflect the Opportunity Cost of the fuel. For example, the payments made to the counterparties for gas that is burned will be referenced to the prevailing gas prices.
- 6.16 This arrangement has an important and elegant match to the Commercial Offer Data (“**COD**”) that must be submitted by PPB to the SEM for the units; essentially they are based upon the same principle, since COD in the SEM must be submitted to reflect Opportunity Cost.
- 6.17 Because these two variables (COD and Energy Payments under GUA) are notionally equal they generally cancel each other out and as such were not modelled explicitly in this project. Instead, residual effects that can arise between the bids submitted

and the costs paid under the GUAs were captured heuristically. The most significant of these are costs related to Variable Operation and Maintenance (“**VOM**”), which is captured implicitly under Availability Payments in the GUAs rather than Energy Payments. As such, this item appears as a mismatch between the Energy Payment revenue and the SEM Energy Revenue taken by PPB.

- 6.18 Note that carbon emissions must be bid in to the SEM. Therefore the carbon emission costs faced by PPB are also cancelled out by the bids submitted to the SEM.

OTHER GUA COSTS

- 6.19 PPB pay a suite of other costs, such as Transmission Use of System (“**TUoS**”), Market Operator charges, gas transportation capacity (applicable only at the Ballylumford CCGTs), electricity import charges, fuel stocking and testing charges. These contribute only a small amount to the overall cost of the GUAs compared with the three items above.

- 6.20 In the Authority’s model these parameters were forecast by rolling forward historic performance and historic values; TUoS charges were calculated using published rates.

SEM REVENUES

- 6.21 All the payments under this subheading represent a payment to PPB and therefore consumers via the PSO. The two main revenue streams that PPB collects from the SEM are Capacity Payments and Energy Payments.

CAPACITY PAYMENTS

- 6.22 All generators in the SEM are eligible for Capacity Payments which compensate the participant for the provision of available generation capacity to the market. For units which are subject to a GUA, PPB retains this capacity payment.

6.23 In the Authority's model, forecast Capacity Payments for each GUA Unit were calculated by inflating the capacity pot determined for the Annual Capacity Payment Sum for the Calendar Year 2012 by the forecast growth in demand. Each station's share of capacity payments was then calculated based on plant size, historic availability, assumed outage rates and taking account of the assumptions of new entry and exit.

ENERGY PAYMENTS

6.24 Because the modelling method assumes that the COD submitted by PPB matches the cost paid for any fuel, carbon and VOM under the GUAs, there is a residual component of the Energy Revenue from the SEM which must be captured called the "Infra-Marginal Rent". This rent represents the difference between the costs submitted to the SEM, and the System Marginal Price ("**SMP**") paid to the generator when it is scheduled to generate.

6.25 For example, if Ballylumford faced a £40/MWh cost to generate from gas, PPB would bid a value of £40/MWh in to the SEM. If the unit is scheduled in the SEM and the SMP is, for example, £50/MWh, then PPB would enjoy a payment of £50/MWh while concurrently incurring a £40/MWh cost under the Energy Payment component of the GUA. As such there is a £10/MWh infra-marginal rent that is retained by PPB.

6.26 In the Authority's model, forecast energy payments for each generating unit, used to calculate the infra-marginal rent, are a product of the forecast unconstrained dispatch volume, or the Market Scheduled Quantity ("**MSQ**") and the forecast SMP. A model was constructed based upon the 2011-12 SEM Plexos Model for forecasting Directed Contracts.

DIFFERENTIAL PAYMENTS

6.27 As highlighted in PPB's response, there is a variance between the Short Run Marginal Cost bids submitted by PPB into the SEM, and the energy payments under the contracts from PPB to the counterparties. This difference effectively represents additional Infra-Marginal Rent to PPB. The main cause of this difference is Variable Operation and Maintenance costs, which are included in SEM bids, but not accounted for in the energy payments.

6.28 To account for this, the Authority based estimates of this additional payment on historic dispatch of each unit.

CARBON

6.29 Under the EU Emissions Trading Scheme, generators in Northern Ireland were allocated a share of the free CO₂ allowances until the end of Phase II which concludes on 31 December 2012.

6.30 Most of these allowances transferred to PPB because of the Change in Law provisions within the GUAs. Because of this allocation, PPB essentially enjoys a net asset in the form of these allowances because they can be sold or used to offset the cost PPB otherwise have to pay for the emission of carbon by the contracted units. The allowances therefore represent a significant amount of net wealth for consumers in Northern Ireland.

6.31 In the Authority's model the value of the free carbon allowances for each unit was calculated by multiplying the number of free allowances by the forward carbon price.

ANCILLARY SERVICE REVENUES

6.32 Ancillary Services include the provision of spinning and replacement reserve, as well as reactive power. Under the GUAs, the units are required to provide this service to a very specific technical standard, but no payment is explicitly made. Instead, the value of the services is accounted for under the Availability Payment. These services are purchased by the System Operator for Northern Ireland (“**SONI**”) and the revenues retained by PPB. These payments were rolled forward from historic rates.

EVALUATING THE VALUE OF THE GUAS

6.33 In order to evaluate the value of each of the GUAs, the Authority has subtracted the costs faced by PPB in relation to each contract from the revenue PPB receives in relation to each unit for each quarter. This subtraction is a direct way of evaluating the net economic benefit of the contracts for consumers.

MODELLING INPUTS AND ASSUMPTIONS

6.34 A Base Case was run in which the Authority configured its *Plexos* market forecasting software with the most up-to-date input assumptions.

6.35 Undertaking an economic and sensitivity analysis involves working with a significant amount of data and using that data to help inform the assumptions required for the purposes of considering the different scenarios.

6.36 Given the volume of data used, the manner in which it is used and the complexities involved in undertaking the modelling exercise, the Authority has not attempted to explain in detail in this paper the intricacies of all the data, inputs and assumptions that were used in the economic analysis. Rather, a description is given of the process undertaken, the sources of data and the key inputs and assumptions which informed the process.

Fuel and Carbon Prices

6.37 Forward fuel and carbon prices were taken from the Intercontinental Exchange (“ICE”) and the data was ‘frozen’ for modelling by taking an average of the prices over the period 23 to 27 January 2012. Exchange Rate data was also ‘frozen’ and averaged over the same period.

Generation and Demand

6.38 Assumptions around demand growth and new generation build were taken from the All-Island Generation Capacity Statement 2012-2021³ and the Validated Plexos Model for Forecasting Directed Contracts in 2011-12.

SCENARIOS

6.39 The Authority ran several scenarios on a number of key variables in order to test the sensitivity of the results to changes in these variables. These are summarised below:

Base Case

6.40 This case represented what the Authority sees as the “most likely” scenario, based on the inputs and assumptions described above.

High/Low Gas Prices

6.41 Relative fuel prices will have an effect on the amount of infra-marginal rent earned by generation units, as they affect the ‘merit order’ in which units of different fuel types are dispatched.

³ <http://www.soni.ltd.uk/upload/All-Island%20GCS%202012-2021.pdf>

6.42 To test the effect of changes in the price of gas, relative to all other fuels, scenarios were run where the “most likely” future gas price was inflated and deflated by 50%. The prices of all other inputs were held constant.

Carbon Price

6.43 The value of the free carbon allowances will be affected by the price of carbon. To test this effect, scenarios were run where the most likely future carbon prices were inflated and deflated by 50%. The prices of all other inputs were held constant.

6.44 In acknowledgment to the current consultation by HM Treasury to introduce a carbon price floor from 1 April 2013⁴, a scenario was run which included a minimum price for carbon from 1 April 2013. This minimum price was reflected in the bids of Northern Ireland generators only. It should be noted that at this time the SEM Committee has yet to consider whether the carbon price floor should be reflected in generator bids. Nevertheless, it was thought that it was appropriate to model this scenario given the responses to the previous consultation.

Demand

6.45 To take account of potential changes in demand, scenarios were run to reflect an increase or decrease in demand by 10%. All other factors were held constant.

PPB Price Control

6.46 The cost of managing PPB is not likely to vary significantly depending on the number of GUAs it is administering. Therefore, the cost of the PPB Price Control is borne solely by the 510MW CCGT in the analysis below (CCGT 20). The contract for CCGT20 is forecast to be the most economically beneficial, and therefore likely to be the last contract to be cancelled. Cancellation of other units should not affect these costs.

⁴ http://www.hm-treasury.gov.uk/consult_carbon_price_support.htm

7.1 This section provides details of the expected impact on customers from retaining each GUA.

7.2 All monetary values shown in the tables that follow are in thousands of pounds and in real terms. They represent the net contract value or impact on the PSO during that quarter:

- positive (black) figures mean the contract is to the benefit of consumers;
- negative (red) figures mean the contract is a cost to consumers.

7.3 If the contract with forecasted positive value was cancelled, consumers would not receive the benefit of this value. Conversely, if a contract had negative value, cancellation would mean that consumers did not face this cost.

7.4 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA under the most like scenario.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) BASE CASE

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT 10 (106MW)	-£7k	£106k	£148k	£459k	£212k	£271k
Ballylumford CCGT 20 (510MW)	£726k	£1,259k	£1,220k	£1,764k	£577k	£369k
Ballylumford GT1 (58MW)	£10k	£18k	£34k	£77k	-£150k	-£174k
Ballylumford GT2 (58MW)	-£7k	£9k	£39k	£71k	-£148k	-£207k
Coolkeeragh GT8 (58MW)	-£14k	£8k	£25k	£62k	-£74k	-£116k
Kilroot GT1 (29MW)	£20k	£25k	£37k	£47k	-£50k	-£63k
Kilroot GT2 (29MW)	£21k	£26k	£36k	£57k	-£48k	-£60k

7.5 For example: in July 2012 the contract between PPB and Ballylumford for CCGT20 has a forecast benefit of £726,000 for consumers. Over the six months (July 2012 to December 2012), the total benefit of the CCGT20 contract to consumers is £5.9 million.

Annual Net Benefit/(Cost) to consumers of retaining each GUA until 2021 (£k). BASE CASE

£000s						
NET BENEFIT/(COST) £k	2012 ⁵	2013	2014	2015	2018	2021
Ballylumford CCGT10 (106MW)	£1,189k	£426k	£331k	£304k	£1,299k	£1,363k
Ballylumford CCGT20 (510MW)	£5,916k	£6,405k	£5,298k	£3,281k	£10,095k	£9,943k
Ballylumford GT1 (58MW)	-£185k	-£1,174k	-£1,230k	-£1,130k	-£949k	-£585k
Ballylumford GT2 (58MW)	-£243k	-£1,310k	-£1,320k	-£1,276k	-£1,008k	-£648k
Coolkeeragh GT8 (58MW)	-£110k	-£375k	-£324k	-£319k	-£135k	£212k
Kilroot GT1 (29MW)	£16k	-£536k	-£539k	-£526k	-£416k	-£206k
Kilroot GT2 (29MW)	£31k	-£532k	-£517k	-£502k	-£392k	-£209k

7.6 For example, in 2013, the contract for CCGT 20 at Ballylumford is forecast to be a £6.405m benefit to consumers.

BALLYLUMFORD CCGTS

7.7 The results of this base case scenario predict that the GUAs for the two CCGTs at Ballylumford are likely to be a net benefit for consumers over the lifetime of the contracts.

7.8 Based on this most likely scenario, it would make sense, on an economic basis, **not to cancel these contracts**. They should be retained and the forecast benefit to customers captured. The value of the contracts can be regularly monitored. Should fuel prices move in such a way where the contracts would become a burden to customers, the cancellation decision can be re-addressed.

PEAKING UNITS

7.9 While the GUAs for the gas turbines appear to be a benefit to customers in the short run, all the contracts for the peaking units are forecast to become a cost to customers from November 2012. Based on the figures above, it would make sense, on an economic basis, to **cancel these contracts** from 1 November 2012.

⁵ six months only

CARBON PRICES

7.10 Given the sensitivity to carbon prices as described above, scenarios were run where the carbon price was inflated and deflated by 50%.

a) High Carbon Prices

7.11 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA when forward carbon prices are increased by 50%.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) HIGH CARBON

	£000s					
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT10 (106MW)	£93k	£194k	£513k	£475k	£301k	£365k
Ballylumford CCGT20 (510MW)	£1,842k	£1,338k	£2,799k	£1,796k	£878k	£868k
Ballylumford GT1 (58MW)	£37k	£45k	£61k	£104k	-£122k	-£147k
Ballylumford GT2 (58MW)	£20k	£36k	£66k	£98k	-£120k	-£180k
Coolkeeragh GT8 (58MW)	-£14k	£8k	£25k	£62k	-£74k	-£116k
Kilroot GT1 (29MW)	£41k	£47k	£59k	£69k	-£29k	-£42k
Kilroot GT2 (29MW)	£42k	£47k	£57k	£78k	-£27k	-£39k

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). HIGH CARBON

£000s						
NET BENEFIT/(COST) £k	2012 ⁶	2013	2014	2015	2018	2021
Ballylumford CCGT10 (106MW)	£1,940k	£685k	£643k	£553k	£1,551k	£1,772k
Ballylumford CCGT20 (510MW)	£9,521k	£6,373k	£6,047k	£3,913k	£8,825k	£10,964k
Ballylumford GT1 (58MW)	-£22k	SAME AS BASE CASE				
Ballylumford GT2 (58MW)	-£81k					
Coolkeeragh GT8 (58MW)	-£110k					
Kilroot GT1 (29MW)	£144k					
Kilroot GT2 (29MW)	£159k					

7.12 The tables above indicate that when future carbon prices are inflated by 50% (all other factors being held equal), the value of the contracts to customers increases. This is due to two reasons: the increased value of the free carbon allowance and the increase in scheduled running.

7.13 Because the free carbon allowances granted to PPB end on 31 December 2012, the increase in their value only has an impact in 2012.

7.14 The increase in scheduled running only impacts the CCGTs (the peakers are not scheduled to run in this model). Therefore this factor only increases the forecast value of the CCGTs. The forecast value of the peakers is not affected in any year after 2012.

b) Low Carbon Price

7.15 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA when forward carbon prices are reduced by 50%.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);

⁶ six months only

- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) LOW CARBON

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT10 (106MW)	-£56k	£59k	£99k	£377k	£191k	£229k
Ballylumford CCGT20 (510MW)	£504k	£542k	£984k	£1,240k	£252k	£158k
Ballylumford GT1 (58MW)	-£17k	-£9k	£7k	£49k	-£177k	-£202k
Ballylumford GT2 (58MW)	-£34k	-£18k	£12k	£44k	-£175k	-£235k
Coolkeeragh GT8 (58MW)	-£14k	£8k	£25k	£62k	-£74k	-£116k
Kilroot GT1 (29MW)	-£1k	£4k	£16k	£26k	-£72k	-£85k
Kilroot GT2 (29MW)	£0k	£5k	£15k	£35k	-£70k	-£82k

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). LOW CARBON

£000s							
NET BENEFIT/(COST) £k	2012 ⁷	2013	2014	2015		2018	2021
Ballylumford CCGT10 (106MW)	£899k	£153k	£287k	£261k		£845k	£1,267k
Ballylumford CCGT20 (510MW)	£3,680k	£5,343k	£4,495k	£4,298k		£7,278k	£9,907k
Ballylumford GT1 (58MW)	-£347k	SAME AS BASE CASE					
Ballylumford GT2 (58MW)	-£406k						
Coolkeeragh GT8 (58MW)	-£110k						
Kilroot GT1 (29MW)	-£112k						
Kilroot GT2 (29MW)	-£96k						

7.16 The tables above indicate that when future carbon prices are deflated by 50% (all other factors being held equal), the value of the contracts to customers decreases. Because the free carbon allowances end on 31 December 2012, this change in carbon prices only affects the value of the peakers in 2012. In all subsequent years, the contract value of the peakers is the same as the base case.

⁷ six months only

7.17 For the CCGTs, the decrease in value of the GUAs in 2012 is due to a combination of the decreased value of the carbon allowances and a decrease in scheduled running (when carbon prices are low, coal units will get dispatched ahead of gas units). In subsequent years, there are no carbon allowances, but the decreased running remains.

7.18 Sensitivities were carried out by inflating and deflating gas price by 50%. In the September 2011 consultation, gas price sensitivity inflated/deflated gas prices by 25%. However, due to recent volatility in gas prices, where the spot price increased from around 60p/therm to 100p/therm in a few days, it was decided to increase the sensitivity threshold to 50%.

a) High Gas Price

7.19 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA when forward gas prices are increased by 50%.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) HIGH GAS PRICE

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT10 (106MW)	-£8k	£106k	£246k	£490k	£282k	£309k
Ballylumford CCGT20 (510MW)	£444k	£543k	£697k	£1,228k	£351k	£322k
Ballylumford GT1 (58MW)	SAME AS BASE CASE					
Ballylumford GT2 (58MW)						
Coolkeeragh GT8 (58MW)						
Kilroot GT1 (29MW)						
Kilroot GT2 (29MW)						

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). HIGH GAS PRICE

£000s							
NET BENEFIT/(COST) £k	2012 ⁸	2013	2014	2015		2018	2021
Ballylumford CCGT10 (106MW)	£1,426k	£634k	£416k	£626k		£958k	£1,597k
Ballylumford CCGT20 (510MW)	£3,585k	£801k	£141k	£113k		£3,928k	£7,138k
Ballylumford GT1 (58MW)	SAME AS BASE CASE						
Ballylumford GT2 (58MW)							
Coolkeeragh GT8 (58MW)							
Kilroot GT1 (29MW)							
Kilroot GT2 (29MW)							

7.20 When future gas price is increased by 50%, there is no impact on the value of the GUAs for the peakers (which are forecast not to run).

7.21 For the CCGTs, especially CCGT20 (510MW), the value of the GUAs decreases as gas price increases. This is because as gas becomes more expensive, coal units will become relatively less expensive and will be scheduled ahead of gas units.

b) Low Gas Price

7.22 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

⁸ six months only

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six of 2012 (£k)

LOW GAS PRICE

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT10 (106MW)	£296k	£171k	£311k	£571k	£342k	£360k
Ballylumford CCGT20 (510MW)	£3,173k	£1,609k	£2,147k	£2,301k	£1,717k	£1,734k
Ballylumford GT1 (58MW)	SAME AS BASE CASE					
Ballylumford GT2 (58MW)						
Coolkeeragh GT8 (58MW)						
Kilroot GT1 (29MW)						
Kilroot GT2 (29MW)						

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). LOW GAS PRICE

£000s						
NET BENEFIT/(COST) £k	2012 ⁹	2013	2014	2015	2018	2021
Ballylumford CCGT10 (106MW)	£2,051k	£1,013k	£595k	£804k	£1,194k	£1,617k
Ballylumford CCGT20 (510MW)	£12,682k	£14,184k	£15,133k	£11,983k	£12,421k	£16,523k
Ballylumford GT1 (58MW)	SAME AS BASE CASE					
Ballylumford GT2 (58MW)						
Coolkeeragh GT8 (58MW)						
Kilroot GT1 (29MW)						
Kilroot GT2 (29MW)						

7.23 Decreasing the price of gas by 50% has no impact on the value of the GUAs for the peaker units. This is because these units are not scheduled to run.

7.24 However, decreasing the price of gas has a positive impact on the value of the GUAs for the CCGTs. These units will be scheduled to run more and earn more infra-marginal rent when the gas price is low.

⁹ six months only

DEMAND

7.25 The tables below show the effects on the contract value by increasing or decreasing forecast demand by 10%.

a) High Demand

7.26 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA when demand is increased by 10%.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) HIGH DEMAND

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT10 (106MW)	£12k	£123k	£239k	£507k	£202k	£257k
Ballylumford CCGT20 (510MW)	£976k	£1,484k	£2,186k	£1,672k	£626k	£837k
Ballylumford GT1 (58MW)	SAME AS BASE CASE					
Ballylumford GT2 (58MW)						
Coolkeeragh GT8 (58MW)						
Kilroot GT1 (29MW)						
Kilroot GT2 (29MW)						

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). HIGH DEMAND

£000s							
NET BENEFIT/(COST) £k	2012 ¹⁰	2013	2014	2015		2018	2021
Ballylumford CCGT 10	£1,339k	£641k	£509k	£558k		£1,531k	£2,351k
Ballylumford CCGT 20	£7,781k	£7,382k	£5,826k	£4,972k		£13,048k	£15,170k
Ballylumford GT1	SAME AS BASE CASE						
Ballylumford GT2							
Coolkeeragh GT8							
Kilroot GT1							
Kilroot GT2							

7.27 When demand is increased, the forecast value of the GUAs for the CCGTs increases. The units will be scheduled to run more often and will therefore earn more infra-marginal rent.

Low Demand

7.28 The following tables show the monthly/annual benefit or cost to consumers (through the PSO) in thousands of pounds of retaining each GUA by forecast demand is reduced by 10%.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers (and would therefore be economic to retain);
- A negative (red) figure means that the GUA is forecast to be a cost to consumers (and would therefore be economic to cancel).

¹⁰ six months only

Monthly Net Benefit/ (Cost) to consumers of retaining each GUA for each month during last six months of 2012 (£k) LOW DEMAND

£000s						
NET BENEFIT/(COST) £k	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
Ballylumford CCGT 10	£4k	£107k	£153k	£427k	£219k	£269k
Ballylumford CCGT 20	£1,463k	£819k	£1,071k	£1,305k	£612k	£721k
Ballylumford GT1	SAME AS BASE CASE					
Ballylumford GT2						
Coolkeeragh GT8						
Kilroot GT1						
Kilroot GT2						

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). LOW DEMAND

£000s							
NET BENEFIT/(COST) £k	2012 ¹¹	2013	2014	2015		2018	2021
Ballylumford CCGT 10	£1,179k	£146k	£78k	£161k		£804k	£1,201k
Ballylumford CCGT 20	£5,993k	£5,367k	£4,123k	£3,414k		£5,554k	£9,561k
Ballylumford GT1	SAME AS BASE CASE						
Ballylumford GT2							
Coolkeeragh GT8							
Kilroot GT1							
Kilroot GT2							

7.29 When demand is decreased, the forecast value of the GUAs for the CCGTs decreases. The units will be scheduled to run less often and will therefore earn less infra-marginal rent.

¹¹ six months only

CARBON PRICE FLOOR

7.30 A scenario was run where the effects of the carbon price support mechanism, proposed by HM Treasury, were accounted for in the bids of Northern Ireland generators.

7.31 Because the proposed Carbon Floor Price does not take effect until 2013, it will not have any impact on the value of the GUAs during 2012.

7.32 As stated in Chapter 6, the SEM Committee has not yet taken into consideration whether the carbon price floor should be reflected in generator bids.

7.33 The following table shows the annual benefit or cost in thousands of pounds of retaining each GUA.

- A positive (black) figure means that the GUA is forecast to provide an economic benefit to consumers
- A negative (red) figure means that the GUA is forecast to be a cost to consumers.

Annual Net Benefit/ (Cost) to consumers of retaining each GUA until 2021 (£k). CARBON PRICE FLOOR

£000s							
NET BENEFIT/(COST) £k	2012	2013	2014	2015		2018	2021
Ballylumford CCGT 10		£207k	£173k	£302k		£816k	£1,302k
Ballylumford CCGT 20		£3,423k	£745k	£1,617k		£2,416k	£5,983k
Ballylumford GT1	NO IMPACT	-£1,174k	-£1,230k	-£1,130k		-£949k	-£585k
Ballylumford GT2		-£1,310k	-£1,320k	-£1,276k		-£1,008k	-£648k
Coolkeeragh GT8		-£375k	-£324k	-£319k		-£135k	£212k
Kilroot GT1		-£536k	-£539k	-£526k		-£416k	-£206k
Kilroot GT2		-£532k	-£517k	-£502k		-£392k	-£209k

7.34 The annual value of the contracts at the CCGTs would reduce as a result of the introduction of a carbon floor price.

- 7.35 Due to the current low forward price of carbon, a Carbon Price Support Mechanism in the UK would almost double the price of carbon faced by Northern Ireland generators. The units would be dispatched less often in favour of units in the Republic of Ireland where the Carbon Floor Price does not take effect.
- 7.36 Please note that this analysis on the Carbon Price Floor does not take into effect any impact of the cost of the Carbon Revenue Levy in Ireland, which was recently decided by the Irish High Court could be included within generators' Commercial Offer Data.

SUMMARY OF MODELLING AND SCENARIO ANALYSIS

- 7.37 The results of the modelling carried out for the base case (the most likely scenario), indicate that the contracts for the CCGTs are likely to be of benefit to consumers in the future. However, the contracts for the peaker units at Ballylumford, Coolkeeragh and Kilroot are forecast to become a cost to consumers from November 2012. The results of the scenario analysis into carbon prices, fuel prices and demand indicate that this position is unlikely to change.
- 7.38 It would therefore appear economic to cancel the contracts for these peaker units with effect from 1 November 2012.

8 POLICY CONSIDERATIONS

8.1 The last section considered the likely economic effect, in terms of price impact on customers, of retaining the existing contracts.

8.2 However, the decision to cancel or not cannot be based solely on economic analysis. There are also a number of policy considerations which must be taken into account by the Authority.

8.3 In the exercise of its functions, the Authority is guided by its statutory principal objective and duties.

8.4 The principal objective of the Authority (in relation to electricity) is to:

“protect the interests of consumers of electricity supplied by authorised suppliers, wherever appropriate by promoting effective competition between persons engaged in or in commercial activities connected with the generation, transmission or supply of electricity”

8.5 In furthering this principal objective, the Authority must have regard to:

“The need to secure that all reasonable demands for electricity are met”, and

“The need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under Part 11 of the Electricity (Northern Ireland) Order 1992 or the Energy Order (Northern Ireland) Order 2003”.

8.6 The Authority may or must also have regard to a number of additional matters including securing a diverse, viable and environmentally sustainable long-term energy industry. Finally, the Authority shall not discriminate between electricity companies in the exercise of its functions.

8.7 As it did when making the decision to cancel the GUAs for the two coal units at Kilroot, the Authority has considered the likely effects of GUA cancellation on:

- The promotion of effective competition;
- Security of supply;
- Diversity of Supply;
- Environmental Sustainability

THE PROMOTION OF EFFECTIVE COMPETITION

8.8 As highlighted by a number of respondents to the first consultation, the effect of cancelling or retaining the GUAs could impact competition in the SEM. In this respect, the impact on contract liquidity and market power was of particular concern to a number of respondents. These key issues are explored below in more detail:

Contract Liquidity:

8.9 The impact of cancellation on contract liquidity (or the provision of Contracts for Difference (“**CfDs**”)) is difficult to gauge. It is likely to only affect any decision to cancel GUAs relating to the CCGTs due to the low load factors and unpredictable running associated with the peaker units under consideration.

8.10 PPB currently provides liquidity to the market through the provision of Non-Directed CfDs (“**NDCs**”). They are incentivised to provide liquidity products to align with customer needs and agree a Risk Management Strategy with the Authority, through Price Control conditions in their licence. Should the GUAs be cancelled, AES will have no such requirement or incentive, hence there will potentially be less certainty that contract liquidity would be provided.

8.11 On the other hand, should the CCGT GUAs be cancelled, AES would become a portfolio player with both coal and gas fuelled generation. This should make it easier for AES to offer more contract liquidity than would be the case if commercial

operation of the CCGTs were to remain separate from that of the other units under AES's ownership (i.e. if the CCGT GUAs were not to be cancelled).

- 8.12 During the 2011/12 tariff year it is expected that PPB's CfD offering will represent between 5 and 10% of the total CfDs offered. The PPB CfD offering in previous years has been much greater. This reduction has been influenced by the cancellation of the Kilroot units, although perhaps more significantly, the diminishing capacity factors of contracted generation. For example, in previous years the Ballylumford CCGTs ran as baseload units, whereas they currently run as mid-merit units.
- 8.13 As described above, in respect of contract liquidity, there are both risks and potential benefits associated with cancellation. On balance the Authority believes that the impact on liquidity is not significant enough to be considered within the cancellation decision.

Market Power:

- 8.14 The sent out installed capacity of the seven GUA contracted units under consideration is approximately 814MW (this is slightly different to the contracted capacity). If these GUAs were to be cancelled the new combined AES installed capacity would increase to 1,884MW. The installed dispatchable capacity in the SEM by the end of 2012 is expected to be 10,000MW, meaning that if all contracted units were cancelled AES would control approximately 18% of installed capacity in the market.
- 8.15 The following tables show the impact of cancellation, under various scenarios, on the Herfindahl-Hirschman Index (HHI), an international standard measure of market concentration. As a rule of thumb, a market with an HHI below 1,000 is considered unconcentrated, and a market with an HHI over 1800 is considered highly concentrated. Between 1000 and 1800 is considered moderately concentrated. The

HHI in the following table is considered in terms of both capacity and forecast energy volumes.

	Impact on SEM HHI			
	No GUAs Cancelled	Peaker GUAs Cancelled		All GUAs Cancelled
By Capacity	1390	1405	1.1%	1529 10.0%
By Energy (2012-14)	1676	1676	0.0%	1703 1.6%

8.16 The table above illustrates that using the HHI metric, cancellation of GUAs associated with contacted peaker units would have a minimal effect on market concentration. Cancellation of all remaining GUA contracts would increase HHI by 10% in capacity terms but only 1.6% in forecast energy terms. This difference is because the remaining GUAs are expected to run with a relatively low capacity factor.

Local market power:

8.17 There is currently a significant constraint between the transmission network in Northern Ireland and the Republic of Ireland. Because of this constraint the impact of the proposed purchase is also considered in a local context. The following table illustrates the expected impact cancellation of GUAs would have on HHI in Northern Ireland.

	Impact on NI HHI			
	No GUAs Cancelled	Peaker GUAs Cancelled		All GUAs Cancelled
By Capacity	1644	2132	29.7%	4098 149.3%
By Energy (2012-14)	1775	1775	0.0%	2576 45.1%

8.18 The above table illustrates that the impact of GUA cancellation on market concentration would be much greater in Northern Ireland than in the SEM as a whole. It should be noted, there already exists a number of market power mitigation measures in place. These include a Market Monitoring Unit, the Bidding Code of

Practice and Directed Contracts¹². In addition the issue of local market power should be reduced if and when a second north-south interconnector is built. However, in a SEM Committee consultation¹³ following acquisition of Ballylumford by AES, the existence of the current arrangements where PPB control the commercial activity of the contracted units in the SEM, was considered as an additional safe guard against local market power abuse.

- 8.19 In their response to the consultation on acquisition, AES stated that the issue of market power was considered fully in 2010 by the SEM Committee and the Office of Fair Trading. Given the market power mitigation measures in place, this was deemed not to be a material issue, both on an all-island basis and a more regional Northern Ireland basis. They also stated that cancellation may enhance liquidity as AES would become a fully merchant player across a portfolio of generation technology.
- 8.20 SONI argued that cancellation would increase transparency, liquidity and competitiveness. It will also in effect transfer a significant degree of local market power from PPB to AES (although in SEM terms the AES share of the market would be less significant).
- 8.21 However, PPB stated that there could be a net reduction in contract market liquidity as there would be no guarantee that if the contracts were cancelled that AES would offer CfDs. They also agreed that cancellation would create significant local market power concerns in Northern Ireland. This would be compounded if the SEM is found to be incompatible with the EU Target Model.
- 8.22 Overall the Authority believes the impact of cancellation of the peaker units is not likely to have a significant impact on market power, while cancellation of all GUAs (peakers plus CCGTs) would have a significant impact on local market power.

¹² It should be noted that there is currently no condition in AES's Generation Licences that would allow the Authority to direct AES to offer CfDs, but it is something which may be considered before any cancellation takes place.

¹³ http://www.allislandproject.org/en/mmu_current_consultations.aspx?article=553f4c7f-2da3-4bc9-8821-3a98604384f5&mode=author

8.23 A number of Security of Supply concerns were raised in the responses to the earlier consultation.

The provision of Synchronous Compensation from CGT8

8.24 This is an Ancillary Service which is provided to SONI by Coolkeeragh GT8. If the GUA for the Coolkeeragh unit was cancelled, there is no guarantee that ESBI would continue to offer this important service.

8.25 However, the proposals around Ancillary Service harmonisation¹⁴ mean that in future there should be a defined remuneration available for providing this service, and it is unlikely that ESBI would withdraw it after any cancellation. The Authority considers it prudent to reserve its rights of cancellation subject to this issue being addressed.

The exit of Ballylumford Units 4, 5 and 6

8.26 The Ballylumford 'B' station units are due to be decommissioned in 2016. This will significantly reduce the capacity margin, especially in Northern Ireland in the absence of a second North-South Interconnector. If the GUAs for the peaker units were cancelled and the units subsequently decommissioned by their owners, this capacity situation would be exacerbated.

8.27 However, the peaker units are not designed to provide long-term capacity. They are designed to meet demand for a few hours at peak times and to provide reserve capacity in the event of outages to other units; they would not be capable of high load factors.

¹⁴ http://www.soni.ltd.uk/upload/HAS_Consultation_2011_2012.pdf

8.28 The Authority therefore believes that the decommissioning of other units is not a compelling enough reason to delay cancellation of the peaker units.

Reliable Start Incentive Payments

8.29 As mentioned in Chapter 6, the peaker units receive additional availability payments for being available to start when required by SONI. SONI consider that the high reliability at the units is useful to it in its operations, and the reliability of these units is higher than that for other units where no incentive scheme exists.

8.30 Given the Security of Supply concerns described above, the Authority has carried out an assessment of the likelihood of the peaker units exiting the market after being cancelled.

8.31 Given the expected annual operational costs of these plants, compared to their forecast revenue and the fact that a number of new units have entered the SEM in recent years (with these units having significant capital costs to recover, while the capital on the peakers the Authority intends to cancel the GUAs for has been paid off while under contract), the Authority considers that these units will remain profitable and it is unlikely that any of them will exit the market after cancellation.

DIVERSITY OF SUPPLY

8.32 The Authority does not seem any impact on diversity of supply from the cancellation or otherwise of any of these units.

ENVIRONMENTAL SUSTAINABILITY

8.33 The Authority does not seem any impact on environmental sustainability from the cancellation or otherwise of any of these units.

9 JURISDICTION FOR DECISION

- 9.1 Before any direction to cancel a GUA can be issued, the Authority must ensure that the direction is being issued by the relevant authority. It is important that there is clarity in relation to whether the early cancellation decision is one that should be made by the SEM Committee or by the board of the Utility Regulator.
- 9.2 Article 6(2) of the SEM Order provides that “any decision as to the exercise of a relevant function of the Authority in relation to a SEM matter must be taken on behalf of the Authority by the SEM Committee”.
- 9.3 Article 6(3) of the SEM Order confirms that “a matter is an SEM matter if the SEM Committee determines that the exercise of a relevant function of the Authority in relation to that matter materially affects, or is likely materially to affect, the SEM”.
- 9.4 During the process which resulted in the cancellation of the GUAs for the two coal units at Kilroot, the SEM Committee determined that since the economic analysis carried out indicated that only two GUAs should be cancelled, the exercise of relevant functions in relation to cancellation was not a SEM matter as it would be unlikely to materially affect the SEM (in terms of competition, security and diversity of supply, environmental impacts and liquidity).
- 9.5 The SEM Committee requested to be updated on the ongoing review by the Authority of the other GUAs. It was agreed that where the Regulatory Authorities were in doubt as to the question of jurisdiction in the future, the matter should be referred to the SEM Committee for consideration.
- 9.6 The SEM Committee was asked at its meeting on 29 November 2011 to decide whether cancellation of GUAs was a SEM matter.

9.7 The SEM Committee decided that the exercise of relevant functions in relation to the cancellation (or otherwise) of the GUAs for the peaking plant was not a SEM Matter.

9.8 The SEM Committee requested that it be kept informed of the ongoing review by the Authority of the other GUAs. It was agreed that where the RAs were in doubt as to the materiality of any effect on the SEM of cancellation, the matter should be referred to the SEM Committee for consideration.

10 DECISIONS

10.1 Having undertaken detailed economic and sensitivity analysis into the financial position of the GUAs, and after considering all relevant policy considerations, the Authority publishes this decision paper in order to confirm its decisions:

- 1. To instruct the cancellation of the GUAs for Ballylumford GT1 and GT2, Coolkeeragh GT8 and Kilroot GT1 and GT2 with effect from 1 November 2012, subject to their being in place an Ancillary Service agreement on the provision of Synchronous Compensation.**

- 2. Not to instruct the cancellation of the GUAs for Ballylumford CCGT10 and CCGT20, but will keep these contracts under review.**

10.2 As stated in the cancellation condition, the Authority must give not less than 180 days; notice to:

- The Department for Enterprise, Trade and Investment;
- The Power Procurement Business;
- All Electricity Licensees; and
- The Consumer Council for Northern Ireland

of its intention to do so.

10.3 Accordingly, the Authority is issuing notice on 30 April 2012 to the parties listed above of its intention to issue:

- (a) A direction to Power NI Energy Limited and AES Kilroot Power Limited to terminate early (from such date as shall be specified in the direction) each of:

- (i) A cancellable GUA dated 1 April 1992 in respect of the generating unit GT1 at the AES Kilroot Power Station located at Larne Road, Carrickfergus, County Antrim, Northern Ireland, BT38 7LX, and
 - (ii) A cancellable GUA dated 1 April 1992 in respect of the generating unit GT2 at the AES Kilroot Power Station located at Larne Road, Carrickfergus, County Antrim, Northern Ireland, BT38 7LX.
- (b) A direction to Power NI Energy Limited and AES Ballylumford Limited to terminate early (from such date as shall be specified in the direction) each of:
- (i) A cancellable GUA dated 1 April 1992 in respect of the generating unit GT1 at the Ballylumford Power Station located at Islandmagee, Larne, County Antrim, Northern Ireland, BT40 3RS, and
 - (ii) A cancellable GUA dated 1 April 1992 in respect of the generating unit GT2 at the Ballylumford Power Station located at Islandmagee, Larne, County Antrim, Northern Ireland, BT40 3RS.
- (c) A direction to Power NI Energy Limited and Coolkeeragh ESB Limited to terminate early (from such date as shall be specified in the direction) the cancellable GUA dated 1 April 1992 in respect of the generating unit GT8 at the Coolkeeragh Power Station located at 2 Electra Road, Maydown, Londonderry, Northern Ireland, BT47, 6UL

10.4 The Authority intends to issue direction on or immediately after 28 October 2012.

10.5 The full text of this notice of intent can be found at Appendix 1.

Notice given under paragraph 6(e) of:

- 1 Condition 60 of the electricity supply licence held by Power NI Energy Limited,
- 2 Condition 5 of all other electricity supply licences, and
- 3 Condition 15 of all electricity generation licences.

Issued To:

- (1) Department for Enterprise, Trade and Investment
- (2) The Power Procurement Business of Power NI Energy Limited
- (3) All Electricity Licensees
- (4) Consumer Council for Northern Ireland

30 April 2012

WHEREAS:

- 1 The Northern Ireland Authority for Utility Regulation (the **Authority**) is empowered by virtue of Condition 60 of the electricity supply licence held by Power NI Energy Limited, Condition 5 of other electricity supply licences¹⁵, and Condition 15 of electricity generation licences¹⁶ (the **Cancellation Condition**), to direct parties to a cancellable Generating Unit Agreement (**GUA**) to terminate that GUA from a date or event specified in the direction (referred to in this notice as **early termination**).
- 2 The Authority is empowered by Clause 9.3 of the GUA between Coolkeeragh ESB Limited and Power NI Energy Limited relating to the generating unit GT8 at the Coolkeeragh Power Station, to direct Coolkeeragh ESB Limited to terminate that GUA from a date or event specified in the direction (referred to in this notice also as **early termination**).
- 3 The Authority may only exercise its power to issue a direction under the Cancellation Condition directing the early termination of a cancellable GUA (the **cancellation power**) if the Authority has determined that requisite arrangements which satisfy the requirements of paragraph 3 of the Cancellation Condition have been developed.
- 4 The Authority determined on 23 October 2007 that requisite arrangements had been developed and that they satisfied the requirements of paragraph 3 of the Cancellation Condition.

¹⁵ Refers only to electricity supply licences which include Condition 5: Modification of Single Electricity Market Trading and Settlement Code and Cancellation of Contracts.

¹⁶ Refers only to electricity generation licences which include Condition 15: Modification of Single Electricity Market Trading and Settlement Code and Cancellation of Contracts.

- 5 Before exercising the cancellation power under the Cancellation Condition in respect of any cancellable GUA the Authority must give not less than 180 days' notice to the above named parties of its intention to do so.
- 6 On 28 October 2010, the Authority (having given notice of its intention to do so on 30 April 2010) directed NIE Energy Limited (the company name of Power NI Energy Limited at that date) and AES Kilroot Power Limited to terminate the cancellable GUAs referred to in that direction (namely in respect of generation sets no. 1 and no. 2 at the AES Kilroot Power Station).
- 7 There are seven cancellable GUAs presently in force.
- 8 The Authority has -
 - (a) carried out two formal consultations on 10 March 2011 and 9 September 2011 respectively, on the relevant matters for consideration in respect of the potential early termination of one or more of the cancellable GUAs presently in force,
 - (b) met with relevant stakeholders and interested parties to receive and understand their views on the relevant matters,
 - (c) had due regard to the views of respondents to the consultations and of other interested parties, and
 - (d) further reviewed and considered all relevant facts and circumstances relating to the GUAs presently in force.

NOW:

In accordance with its principal objective and general duties as set out in Article 12 of the Electricity (Northern Ireland) Order 1992, and with paragraph 6(e) of the Cancellation Condition, the Authority hereby gives notice of its intention to issue:

- (a) A direction to Power NI Energy Limited and AES Kilroot Power Limited to terminate early (from such date as shall be specified in the direction) each of -
 - (i) a cancellable GUA dated 1 April 1992 in respect of the generating unit GT1 at the AES Kilroot Power Station located at Larne Road, Carrickfergus, County Antrim, Northern Ireland, BT38 7LX, and
 - (ii) a cancellable GUA dated 1 April 1992 in respect of generating unit GT2 at the AES Kilroot Power Station located at Larne Road, Carrickfergus, County Antrim, Northern Ireland, BT38 7LX.
- (b) A direction to Power NI Energy Limited and AES Ballylumford Limited to terminate early (from such date as shall be specified in the direction) each of -
 - (i) a cancellable GUA dated 1 April 1992 in respect of the generating unit GT1 at the Ballylumford Power Station located at Islandmagee, Larne, County Antrim, Northern Ireland, BT40 3RS, and

- (ii) a cancellable GUA dated 1 April 1992 in respect of the generating unit GT2 at the Ballylumford Power Station located at Islandmagee, Larne, County Antrim, Northern Ireland, BT40 3RS.

- (c) A direction to Power NI Energy Limited and Coolkeeragh ESB Limited to terminate early (from such date as shall be specified in the direction) the cancellable GUA dated 1 April 1992 in respect of the generating unit GT8 at the Coolkeeragh Power Station located at 2 Electra Road, Maydown, Londonderry, Northern Ireland, BT47 6UL.

The Authority intends to issue each direction on or immediately after 28 October 2012.

Signed

Name: Shane Lynch

Date: 30 April 2012

Authorised by and on behalf of the Northern Ireland Authority for Utility Regulation