Single Electricity Market Committee

Directed Contracts – Q2 2013 to Q1 2014 Quantification and Pricing for December 2012 Auction (Round 3 of Quarterly Auctions)

Information Paper

5th December 2012

SEM-12-109

1. Background

In June 2012 the Northern Ireland Authority for Utility Regulation (Utility Regulator) and the Commission for Energy Regulation (CER), together referred to as the Regulatory Authorities or RAs, published a decision paper (SEM/12/048[1]) on the quantification and pricing for the initial "front loaded" Directed Contract (DC) auction. It covered DCs for the period from Q4 2012 to Q3 2013.

This followed the publication on 19th April 2012 of a SEM Committee[2] decision paper (SEM/12/026[3]) committing to a new rolling quarterly approach to the offering of DCs.

This paper follows the approach set out in the June decision paper (SEM-12-048) and provides information on quantities and pricing for the upcoming DC auctions covering the period Q2 2013 to Q1 2014. Suppliers will also receive notification from the RAs of their updated DC eligibilities for this round of auctions.

The CER will also publish an information note setting out the dates for DC auctions in 2013.

2. Directed Contract Quantities

DC subscription windows will be held every quarter, with DCs being allocated on a rolling basis up to 5 quarters ahead. The December 2012 DC Primary Subscription Window will be held from Monday 10th to Friday 14th December inclusive, with the associated DC Supplemental Subscription Window on Tuesday 18th and Wednesday 19th December. DCs will be offered in quarterly segments for the period Q2 2013 to Q1 2014.

There are three DC products in the market: Baseload, Mid-Merit and Peak. Suppliers can elect to subscribe for any given product in any particular quarter from ESB. The definitions of the products are set out in the Master Agreement. These are as follows:

- Baseload Product: For Trading Periods at the Contract Quantity arising in all hours.
- Mid-merit Product: For Trading Periods at the Contract Quantity during the hours beginning at 07:00 and ending at 23:00 on Business Days and for Trading Periods on days that are not Business Days at 80% of the Contract Quantity.
- Peak: For Trading Periods arising during the hours beginning at 17:00 and ending at 21:00 on all days during, October, November, December, January, February and March at the Contract Quantity.

As previously, the RAs used the Herfindahl Hirschman Index (HHI) to set DC

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[1] Decision Paper on Directed Contracts Version 2 – SEM/12/048.

[2] The SEM Committee is established in Ireland and Northern Ireland by virtue of section 8A of the Electricity Regulation Act 1999 as inserted by section 4 of the Electricity Regulation (Amendment) Act 2007, and Article 6 (1) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007 respectively. The SEM Committee is a Committee of both CER and NIAUR (together the RAs) that, on behalf of the RAs, takes any decision as to the exercise of a relevant function of CER or NIAUR in relation to an SEM matter.

[3] Directed Contracts Implementation for 2012/13 and Beyond - SEM/12/026

quantities and have continued to use a target HHI level of 1,150 for the period Q2 2013 to Q1 2014. NI Power PPB's market share does not warrant the offering of DCs. The DC quantities to be offered by ESB for Q2 2013 to Q1 2014 are set out below. The total DC quantities offered by ESB to date for Q2 2013 to Q1 2014 (including these Round 3 quantities) are also shown below.

ESB DCs for Q2 '13 to Q1 '14 in Forthcoming Round 3 Auction, MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q2 2013	**101**	**0**	**N/A**
Q3 2013	**80**	**0**	**N/A**
Q4 2013	**110**	**0**	**0**
Q1 2014	**78**	**51**	**46**

Total DCs for Q2 '13 to Q1 '14 offered to date (including December 2012 auction)

QUARTER	BASELOAD	MIDMERIT	PEAK
Q2 2013	361	14	N/A
Q3 2013	282	58	N/A
Q4 2013	213	21	0
Q1 2014	78	51	46

Percentage of DCs offered to date (including December 2012 auction)[4]

QUARTER	BASELOAD	MIDMERIT	PEAK
Q2 2013	100%	100%	N/A
Q3 2013	75%	75%	N/A
Q4 2013	50%	50%	50%
Q1 2014	25%	25%	25%

The Concentration Model and the process set out above will continue to be conducted by the RAs on a quarterly basis in line with the rolling approach to DCs as per SEM-12-026.

The PLEXOS validated forecast model has been updated since Round 2 of quarterly DCs and used in the derivation of DC quantities for Round 3 - see Appendix for details.

3. Directed Contract Pricing

The prices of DCs are determined by regression formulae that express the DC strike price in a given quarter and for a given product (Baseload, Mid-Merit or Peak) as a function of forward fuel and carbon prices. The dependent variable in the regression formulae is the DC strike price; the independent variables are forward fuel and carbon prices.

The pricing formulae are updated every quarter in line with the new rolling approach to DCs as per SEM-12-026. Every 2nd quarter whole new pricing formulae will be derived (i.e. including the formulae constant and the coefficients) taking account of new market data such as generator data and demand assumptions (as is the case for this Round), and every other quarter just the formulae constant is changed.

[4] Note the exact percentages shown in this table will vary depending on outturn DC volumes in future auction rounds.

The PLEXOS validated forecast model has been updated for this round of DCs - see Appendix for details.

The DC seller, ESB, will apply the approved published fuel and carbon indices to the regression formulae each day throughout the subscription window and notify suppliers who have elected to subscribe for DC products on that day of the calculated strike price. ESB contracts will be priced in euro.

It should be noted that if, between the publication date of the pricing formulae and a time at which it is applied during the subscription period, forward fuel or carbon markets move to a point outside the range of values for which there is sufficient confidence in the pricing formulae, the Regulatory Authorities reserve the right to suspend subscription and rerun the econometric pricing model or otherwise to amend the determination of the DC strike prices to correct any mispricing. The rerun would be done using the prevailing forward fuel and carbon prices as inputs. In this case, the resulting formulae would replace the original formulae and would be used to establish DC strike prices thereafter. The formulae may also be rerun if there is significant change to plant availability. The subscription window would reopen once the formulae have been revised.

The Directed Contract regression formulae for Round 3 take the following form:

$$DCStrike_{q,p} = \alpha_{q,p} + \beta_{q,p} * Gas_q + \delta_{q,p} * Coal_q + \varepsilon_{q,p} * CO2_q$$

where:

$DCStrike_{q,p}$ = Directed Contract Strike Price (in €/MWh) for the relevant quarter (q) and product (p), i.e., baseload, mid-merit and peak.

$\alpha_{q,p}$ = formula constant, which may vary by quarter (q) and product (p).

$\beta_{q,p}$, $\delta_{q,p}$, and $\varepsilon_{q,p}$ = formula coefficients, which may vary by quarter (q) and product (p).

Gas_q = the price (in pence sterling per therm) for quarterly Intercontinental Exchange Natural Gas Futures for the relevant quarter, as published on www.theice.com as the "Daily Volumes for ICE UK Natural Gas Futures (Quarters)" ÷ (GBP/EURO Exchange Rate) / 100.

$Coal_q$ = the price (in US dollars per metric tonne) for quarterly Forward Coal API2 swap transactions, as reported by Argus Coal Daily International ÷ USD/EURO Exchange Rate.

$CO2_q$ = the settle price (in Euro per tonne of Carbon Dioxide) for the December month Intercontinental Exchange ECX EUA Carbon futures as reported on www.theice.com as "ICE ECX EUA Futures (monthly)" for the given calendar year. This data is available under the report section of this website once the following options are selected – Category "End of Day Report"; Market – "ICE

Futures Europe"; Report – "ICE Futures Europe". The December price for a given year will apply to all quarters falling within that year.

The values of the constants and the independent variable coefficients are set out in the table below.

Coefficients Multiply Gas coefficient by euro/therm Gas price, Coal coefficient by euro/tonne Coal price and CO2 coefficient by euro/tonne C02 price.					
Contract (p)	**Quarter (q)**	**Constant ($\alpha_{q,p}$)**	**Gas ($\beta_{q,p}$)**	**Coal ($\delta_{q,p}$)**	**CO2 ($\varepsilon_{q,p}$)**
Baseload	Q2 '13	9.22	60.308	0.0457	0.4418
Mid-Merit	Q2 '13	11.81	59.952	0.0566	0.4588
Baseload	Q3 '13	9.13	63.760	0.0333	0.4137
Mid-Merit	Q3 '13	11.59	65.374	0.0359	0.4348
Baseload	Q4 '13	13.60	58.791	0.0453	0.4177
Mid-Merit	Q4 '13	17.34	61.584	0.0460	0.4393
Peak	Q4 '13	85.72	21.323	0.0877	0.3698
Baseload	Q1 '14	12.81	62.016	0.0313	0.4042
Mid-Merit	Q1 '14	17.24	63.048	0.0362	0.4313
Peak	Q1 '14	88.65	20.053	0.0586	0.3667
Baseload	Q2 '14	7.04	62.258	0.0428	0.4449
Mid-Merit	Q2 '14	6.18	66.046	0.0481	0.4722

4. Directed Contract Auction Dates

The RAs plan to publish a separate Information Note, outlining details of planned DC auction dates for 2013.

Appendix

Updates to the PLEXOS Validated forecast model for Round 3

Outages

Generator outages have been updated with the latest information.

Moyle Cable Outage

One of the Moyle Interconnector's cables is on outage with no definite return date so its Max and Min Flow are still set at 250MW and -250MW respectively.

Demand File

The demand CSV file has been updated with the latest information from the Transmission System Operators (TSOs). The half hourly CSV file is published with this Information Note.

Installed Wind Capacities

Installed Wind capacities have been updated with the latest information from the TSOs. The MW values are published with this Information Note.

Great Island CCGT

The new Great Island CCGT has been included in the model from the start of Q2 2014.

PLEXOS Version

PLEXOS Version 6207R03 is used.