Single Electricity Market Committee

Directed Contracts – Q3 2014 to Q2 2015 Quantification and Pricing for March 2014 Auction - Round 8 of Quarterly Directed Contract Auctions

Information Paper

(Corrected Version – Error in Round 8 Table p.3 "Midmerit Q1 2015")

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SEM-14-020

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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 2012 decision paper (SEM-12-048) and provides information on quantities and pricing for the upcoming DC auctions covering the period Q3 2014 to Q2 2015. Suppliers will also receive notification from the RAs of their updated DC eligibilities for this round of auctions.

2. Directed Contract Quantities

Further to SEM/12/026 DC subscription windows are held every quarter, with DCs being allocated on a rolling basis up to 5 quarters ahead. The March 2014 DC Primary Subscription Window will be held from Tuesday 25th to Thursday 27th March inclusive, with the associated DC Supplemental Subscription Window on Thursday 3rd April. DCs will be offered in quarterly segments for the period Q3 2014 to Q2 2015.

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 quantities and have continued to use a target HHI level of 1,150 for the period Q3 2014 to Q2 2015. NI Power PPB's market share does not warrant the offering of DCs. The DC quantities to be offered by ESB for Q3 2014 to Q2 2015 are set out

[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

below. The total DC quantities offered by ESB to date for Q3 2014 to Q2 2015 (including these Round 8 quantities) are also shown below.

ESB DCs for Q3 '14 to Q2 '15 in Forthcoming Round 8 Auction (Only), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q3 2014	**109**	**15**	**N/A**
Q4 2014	**99**	**0**	**39**
Q1 2015	**98**	**9**	**89**
Q2 2015	**99**	**26**	**N/A**

(Value for Midmerit Q1 2015 corrected from previous version)

Total DCs for Q3 '14 to Q2 '15 offered to date (including March 2014 auction), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q3 2014	457	15	N/A
Q4 2014	294	0	90
Q1 2015	196	14	128
Q2 2015	99	26	N/A

Percentage of DCs offered to date (including March 2014 auction)[4]

QUARTER	BASELOAD	MIDMERIT	PEAK
Q3 2014	100%	100%	N/A
Q4 2014	75%	75%	75%
Q1 2014	50%	50%	50%
Q2 2015	25%	25%	N/A

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.

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, including the formulae constant and the coefficients (as is the case in the previous Round 7), and every other quarter just the formulae constant is changed.

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

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

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 8 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 http://data.theice.com as the “ICE UK Natural Gas Futures – NBP - (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 http://data.theice.com as “ICE ECX EUA Futures – EUX - (monthly)” for the given calendar year. 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	Q3 '14	5.35	65.342	0.0393	0.4606
Mid-Merit	Q3 '14	6.30	74.270	0.0199	0.4722
Baseload	Q4 '14	19.35	50.881	0.0431	0.3591
Mid-Merit	Q4 '14	26.59	54.540	0.0341	0.3495
Peak	Q4 '14	90.91	19.220	0.0896	0.4658
Baseload	Q1 '15	19.19	53.511	0.0354	0.3842
Mid-Merit	Q1 '15	27.55	53.600	0.0322	0.4001
Peak	Q1 '15	89.64	23.762	0.0766	0.4680
Baseload	Q2 '15	7.28	62.066	0.0359	0.4072
Mid-Merit	Q2 '15	7.78	69.177	0.0279	0.4250

4. Subscription Rules

The Subscription Rules for the Directed Contracts have been made evergreen. To allow this to happen two items which require updating will be included in the Information Paper published by the Regulatory Authorities prior to each quarterly DC round. These are the details of the matrix of ESTSEM p,q prices for the purpose of credit cover calculations and Bank Holidays.

Prices for Credit Cover calculations

The matrix of ESTSEM p,q prices for the purpose of credit cover calculations based on closing fuel and carbon prices from 7th March 2014 are as follows:

	ESTSEM p,q		
	Baseload	Mid-Merit	Peak
Q3 2014	€57.62 /MWh	€64.00 /MWh	n/a
Q4 2014	€64.95 /MWh	€74.54 /MWh	€114.59 /MWh
Q1 2015	€69.07 /MWh	€77.43 /MWh	€117.45 /MWh
Q2 2015	€57.85 /MWh	€63.24 /MWh	n/a

Bank Holidays 2014 and 2015

The following dates are those known at the time of execution to be bank and public holidays (in the Republic of Ireland and Northern Ireland) between 1st January 2014 and 31st December 2015:

01 January 2014
17 March 2014
18 April 2014
21 April 2014
5 May 2014
26 May 2014
2 June 2014
14 July 2014
4 August 2014
25 August 2014
27 October 2014
25 December 2014
26 December 2014
01 January 2015
17 March 2015
03 April 2015
06 April 2015
04 May 2015
25 May 2015
1 June 2015
13 July 2015
3 August 2015
31 August 2015
26 October 2015
25 December 2015
28 December 2015

5. PLEXOS Model Updates

The following updates, provided by EirGrid, were incorporated into the Plexos model from Round 7:

- Updated Scheduled outages for 2014 & 2015
- 2013-14 TLAFs
- Revised installed wind capacities for 2014 & 2015
- Revised started date for Great Island CCGT – 21/9/2014 (Source SSE, Jan 2014)
- Addition of the Maydown Biomass station, starting December 2014 (Estimated Characteristics below)

Max Capacity	17.6	MW
Min Up Time	4	hrs
Min Down Time	0.5	hrs
Max Ramp Up	1.76	MW/min.
Forced Outage Rate	10	%

These will be published along with this paper.