SINGLE ELECTRICITY MARKET COMMITTEE

Round 17 of Quarterly Directed Contracts - Q4 2016 to Q3 2017

Information Paper

3rd June 2016

SEM-16-029

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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) subscription. 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 from the RAs follows the quarterly DC approach set out in the June 2012 decision paper (SEM-12-048). It provides information on the quantities and pricing for the upcoming quarterly DC subscription round, Round 17, covering the period Q4 2016 to Q3 2017 inclusive. Suppliers will also receive notification from the RAs of their updated DC eligibilities for Round 17.

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. For the next round of the quarterly DC offerings, Round 17, the Primary Subscription Window will be held from Tuesday 14th to Thursday 16th June 2016 inclusive, with the associated DC Supplemental Subscription Window on Thursday 23rd June. DCs in Round 17 will be offered in quarterly segments for the period Q4 2016 to Q3 2017 inclusive.

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 Q4 2016 to Q3 2017. NI Power PPB's market share does not warrant the offering of DCs. The DC quantities to be offered by ESB for Q4 2016 to Q3 2017 in Round 17

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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

are set out below. The total DC quantities offered by ESB to date for Q4 2016 to Q3 2017 (including these Round 17 quantities) are also shown below.

ESB DCs for Q4 '16 to Q3 '17 in Forthcoming Round 17 Subscription (Only), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2016	109	5	0
Q1 2017	103	8	12
Q2 2017	154	0	N/A
Q3 2017	127	0	N/A

Total DCs for Q4 '16 to Q3 '17 offered to date (including June 2016 subscription), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2016	448	5	0
Q1 2017	307	8	20
Q2 2017	326	8	N/A
Q3 2017	127	0	N/A

Percentage of DCs offered to date (including June 2016 subscription)[4]

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2016	100%	100%	100%
Q1 2017	75%	75%	75%
Q2 2017	50%	50%	N/A
Q3 2017	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 this round), 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 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

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

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 17 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 tonne) for quarterly ARA Coal Futures as reported on www.theice.com as "Rotterdam Coal Futures – ARA" ÷ 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	Q4 16	13.77	50.733	0.0685	0.4446
Mid-Merit	Q4 16	16.99	52.680	0.0850	0.4871
Peak	Q4 16	34.37	46.389	0.1861	0.6849
Baseload	Q1 17	13.07	50.846	0.0775	0.4664
Mid-Merit	Q1 17	16.39	51.239	0.1012	0.5391
Peak	Q1 17	36.12	36.804	0.2479	1.0102
Baseload	Q2 17	10.17	56.435	0.0533	0.4537
Mid-Merit	Q2 17	11.68	59.923	0.0594	0.4712
Baseload	Q3 17	10.52	57.180	0.0365	0.4044
Mid-Merit	Q3 17	10.70	61.739	0.0332	0.4184

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 25th May 2016 are as follows:

	ESTSEM p,q		
	Baseload	Mid-Merit	Peak
Q4 2016	€42.41 /MWh	€47.49 /MWh	€67.64 /MWh
Q1 2017	€43.78 /MWh	€48.75 /MWh	€70.68 /MWh
Q2 2017	€39.74 /MWh	€43.13 /MWh	n/a
Q3 2017	€39.06 /MWh	€41.15 /MWh	n/a

Public/Bank Holidays 2016 and 2017

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 2016 and 31st December 2017:

1 January 2016
17 March 2016
25 March 2016
28 March 2016
2 May 2016
30 May 2016
6 June 2016
12 July 2016
1 August 2016
29 August 2016
31 October 2016
25 December 2016
26 December 2016
2 January 2017
17 March 2017
14 April 2017
17 April 2017
1 May 2017
29 May 2017
5 June 2017
12 July 2017
8 August 2017
28 August 2017
30 October 2017
25 December 2017
26 December 2017

5. PLEXOS Model Updates

The RAs' SEM Plexos Model has been validated for 2016-17 by Baringa and has been used in Round 17.