SINGLE ELECTRICITY MARKET COMMITTEE

Round 21 of Quarterly Directed Contracts - Q4 2017 to 'Q2' 2018

Information Paper

7th June 2017

SEM-17-036

CLARIFICATION STATEMENT

The Directed Contracts on offer for Round 21 will only apply until the expiration of the existing mandatory pool arrangements for SEM, such that Quarter 2 (Q2) 2018 will have the meaning 1st April 2018 to 22nd May 2018 and May 2018 will have the meaning 1st May 2018 to 22nd May 2018. This will be labelled as 'Q2' 18.

The cutover time for the new SEM trading arrangements is 23:00 GMT on 22nd May 2018.

The first trading day runs from 23:00 GMT on 22nd May to 22:59 GMT on 23rd May 2018.

The first day ahead auction results for the new SEM trading arrangements will be published at 12:00 GMT on 22nd May 2018.

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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 21, covering the period Q4 2017 to 'Q2' 2018 inclusive. Suppliers will also receive notification from the RAs of their updated DC eligibilities for Round 21 by Wednesday 7th June.

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 21, the Primary Subscription Window will be held from Tuesday 13st June to Thursday 15th June 2017 inclusive, with the associated DC Supplemental Subscription Window on Thursday 22nd June. DCs in Round 21 will be offered in quarterly segments for the period Q4 2017 to 'Q2' 2018 inclusive.

There are three DC products in the market: Baseload, Mid-Merit and Peak. Suppliers can elect to subscribe for any given product for which they are eligible 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 continue to use a target HHI level of 1,150 for the period Q4 2017 to 'Q2' 2018. NI Power PPB's market share does not warrant the offering of DCs.

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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

The DC quantities to be offered by ESB for Q4 2017 to 'Q2' 2018 in Round 21 are set out below. The total DC quantities offered by ESB to date for Q4 2017 to 'Q2' 2018 (including these Round 21 quantities) are also shown below.

ESB DCs for Q4 '17 to Q2 '18 in Forthcoming Round 21 Subscription (Only), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2017	339	11	0
Q1 2018	337	0	0
'Q2' 2018	372	0	N/A

Total DCs for Q4 '17 to Q2 '18 offered to date (including June 2017 subscription), MW

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2017	463	125	0
Q1 2018	337	0	0
'Q2' 2018	372	0	N/A

Percentage of DCs offered to date (including June 2017 subscription)[4]

QUARTER	BASELOAD	MIDMERIT	PEAK
Q4 2017	100%	100%	
Q1 2018	50%	50%	N/A
'Q2' 2018	50%	50%	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 21), and every other quarter just the formulae constants are 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 confidence in the pricing formulae, the Regulatory Authorities reserve the right to suspend

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

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 21 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 following table.

Coefficients					
Multiply Gas coefficient by euro/therm Gas price, Coal coefficient by euro/tonne, Coal price and CO_2 coefficient by euro/tonne CO_2 price.					
Contract (p)	Quarter (q)	Constant ($\alpha_{q,p}$)	Gas ($\beta_{q,p}$)	Coal ($\delta_{q,p}$)	CO_2 ($\epsilon_{q,p}$)
Baseload	Q4 17	13.77	51.352	0.0713	0.4881
Mid-Merit	Q4 17	16.74	58.313	0.0610	0.4797
Peak	Q4 17	38.25	40.038	0.0754	0.5674
Baseload	Q1 18	16.72	48.392	0.1010	0.5813
Mid-Merit	Q1 18	21.68	50.297	0.1106	0.6014
Peak	Q1 18	42.98	31.578	0.1885	0.8043
Baseload	'Q2' 18	11.88	60.787	0.0335	0.4267
Mid-Merit	'Q2' 18	12.10	66.245	0.0293	0.4201

In order to facilitate trading till the end of SEM the RAs have decided – for Round 21 - to replace the quarterly quoted Gas Price for 'Q2' 18 with the average of the April '18 and May '18 monthly index prices quoted on ICE (see Clarification Statement above).

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 2017 are as follows:

	ESTSEM p,q		
	Baseload	Mid-Merit	Peak
Q4 2017	€47.10/MWh	€52.92/MWh	€66.47/MWh
Q1 2018	€52.64/MWh	€59.36MWh	€76.19MWh
'Q2' 2018	€44.37/MWh	€46.85MWh	

Public/Bank Holidays 2017 and 2018

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 June 2017 and 31st December 2018:

5 June 2017
12 July 2017
8 August 2017
28 August 2017
30 October 2017
25 December 2017
26 December 2017
01 January 2018
19 March 2018
30 March 2018
02 April 2018
07 May 2018
28 May 2018
04 June 2018
12 July 2018
06 August 2018
27 August 2018
29 October 2018
25 December 2018
26 December 2018

5. PLEXOS Model Updates

The RAs' SEM Plexos Model has been validated for Round 21 of the Directed Contracts by Baringa including the following additional updates since Round 20:

Generator and System Updates

The following system and generator assumptions have been updated since Round 20. The updates include the following:

- The bid heat rate for the interconnectors has been updated to reflect recent historical bids in the market;
- Demand projections and half-hourly profiles updated to match the Generation Capacity Statement (GCS) 2017-2026;
- Embedded generation projections updated to match GCS 2017-2026;
- Wind capacity projections and half-hourly profiles updated to match GCS 2017-2026; and
- Demand-side unit (DSU) capacity projections updated to match GCS 2017-2026 and €/MWh cost updated to embed additional "Shutdown Cost" incurred when using DSU.