



SINGLE ELECTRICITY MARKET COMMITTEE

**Round 6 of Quarterly Directed Contracts
Q3 2019 to Q2 2020**

Information Paper

14th March 2019

SEM-19-012

Table of Contents

	Page
1. Background.....	2
2. Additional Modelling Assumptions	2
3. Directed Contract Quantities.....	2
4. Directed Contract Pricing.....	4
5. Subscription Rules.....	6
6. PLEXOS Model Updates.....	9
7. Details for Round 7.....	9

1. Introduction

This information paper provides information on the quantities and pricing for the upcoming quarterly DC subscription round, Round 6, covering the period Q3 2019 to Q2 2020 inclusive. Suppliers will also receive notification from the Regulatory Authorities (RAs) of their updated DC eligibilities for Round 6 by Wednesday 13th March 2019.

2. Additional Modelling Assumptions

In addition to the modelling approach undertaken by the RAs as set out in SEM-12-026 and SEM-17-081, the RAs have made two additional assumptions to the DC modelling in response to the publications of the following documents: [CRU-18-228](#) and [SEM-19-004](#).

- Per [CRU-18-228](#), Viridian's Huntstown Unit 2 is assumed not to be running in the Day-Ahead Market before the 1st October 2019 due to the terms of its Local Reserve Service Agreement (LRSA). This assumption was made for Round 5 and Round 6. As Round 7 of the quarterly Directed Contracts will not be modelling Q3 2019, this assumption will no longer hold after Round 6.
- Per [SEM-19-004](#), Synergen's Gas Supply Agreement (GSA) is due to terminate by the end of Q3 2019. Starting in Q4 2019 the RAs have set the gas price for the Synergen Plant to be the standard ROI gas price used in PLEXOS.

3. Directed Contract Quantities

DC subscription windows are typically held every quarter, with DCs being allocated on a rolling basis up to 5 quarters ahead. For the sixth round of the quarterly DC offerings under the revised SEM arrangements: Round 6, the Primary Subscription Window will be held from Tuesday 19th March to Thursday 21th March 2019 inclusive, with the associated DC Supplemental Subscription Window on Thursday 28th March 2019. DCs in Round 6 will be offered in quarterly segments for the periods Q3 2019, Q4 2019, Q1 2020 and Q2 2020.

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 ESB PG's DC Subscription Rules.

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 Product*: 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 is the case with DCs, 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 Q3 2019 to Q2 2020.

The DC quantities to be offered by ESB for Q3 2019 to Q2 2020 in Round 6 are set out in Table 1 below.

Quarter	Baseload	Mid-Merit	Peak
Q3 2019	118	68	N/A
Q4 2019	60	136	0
Q1 2020	137	41	0
Q2 2020	57	98	N/A

Table 1: ESB DCs for Q3 2019 to Q2 2020 in Forthcoming Round 6 Subscription, MW

The cumulative (all rounds) percentage of DC quantities offered by ESB to date for Q3 2019 to Q2 2020 (including these Round 6 quantities) are also shown in Table 2 below.

Quarter	Baseload	Mid-Merit	Peak
Q3 2019	100%	100%	N/A
Q4 2019	75%	75%	-
Q1 2020	50%	50%	-
Q2 2020	25%	25%	N/A

Table 2: Percentage of DCs offered to date (incl. this Round 6 subscription)¹

Per section 3.2.13 of the quarterly DC approach set out in the November 2017 decision paper (SEM-17-081), the SEM Committee has changed the part of the Market Concentration methodology, such that a fixed fraction will be solely used in the first round that a product is offered and in subsequent rounds up to the penultimate round, previous volumes sold are now deducted from the annual total determined by the Market Concentration Model in that round; then the balance is multiplied by the remaining fixed fraction.

In the final round, all the previous volumes sold are deducted from the annual total determined. There is no fixed fraction in the final round for which a product is on offer.

If the volumes in the previous rounds for a particular product add up to more than the annual total volume determined by the Market Concentration Model in the last round, then the volumes for that product are set to zero.

4. Directed Contract Pricing

The prices of DCs are determined by regression formulae that express the DC CfD Fixed 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 pricing formulae are updated every quarter in line with the established rolling approach to DCs as per [SEM-12-026](#) and [SEM-17-081](#).

The CFD Fixed Price for each transaction will be set using the published formulae and associated forward fuel prices, as set out in the Subscription Rules [SEM-18-036d](#).

The DC seller, ESB, will apply the approved published fuel and carbon indices to the

¹ Note that the exact percentages shown in this table will vary depending on outturn DC volumes in future subscription rounds.

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 CfD Fixed 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 RAs reserve the right to suspend subscription and rerun the econometric pricing model or otherwise to amend the determination of the DC CfD Fixed 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 CfD Fixed 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 DC regression formulae for Round 6 take the following form:

$$\text{CfD Fixed Price}_{q,p} = \alpha_{q,p} + \beta_{q,p} * \text{Gas}_q + \delta_{q,p} * \text{Coal}_q + \epsilon_{q,p} * \text{CO2}_q$$

where:

CfD Fixed Price_{q,p} = DC Fixed Price (in €/MWh) for the relevant quarter (q) and product (p), i.e., baseload, mid-merit and peak.

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

β_{q,p}, **δ**_{q,p}, and **ε**_{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	Q3 19	7.94	61.772	0.0674	0.4941
Midmerit 1	Q3 19	9.95	66.654	0.0816	0.5443
Baseload	Q4 19	9.96	60.133	0.0587	0.4721
Midmerit 1	Q4 19	12.91	68.609	0.0530	0.4975
Peak	Q4 19	24.33	85.342	0.0637	0.6230
Baseload	Q1 20	13.62	56.715	0.0748	0.5043
Midmerit 1	Q1 20	18.19	62.684	0.0777	0.5382
Peak	Q1 20	32.99	78.670	0.0974	0.6716
Baseload	Q2 20	8.39	64.487	0.0418	0.4414
Midmerit 1	Q2 20	10.19	68.509	0.0504	0.4769

5. Subscription Rules

The Subscription Rules ([SEM-18-036d](#)) for the DCs have been made evergreen. To allow this to happen two items which require updating will be included in the Information Paper published by the RAs 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 (i.e. margin) 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 12th February 2019 are as follows:

	ESTSEM p,q		
	Baseload per MWh	Mid-Merit per MWh	Peak per MWh
Q3 2019	€54.62	€61.14	N/A
Q4 2019	€61.72	€70.16	€95.48
Q1 2020	€67.93	€77.47	€107.30
Q2 2020	€55.43	€60.73	N/A

Public/Bank Holidays 2019 and 2020

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 2019 and 31st December 2020:

01 January 2019
18 March 2019
19 April 2019
22 April 2019
06 May 2019
27 May 2019
03 June 2019
12 July 2019
05 August 2019
26 August 2019
28 October 2019
25 December 2019
26 December 2019
01 January 2020
17 March 2020
10 April 2020
13 April 2020
04 May 2020
25 May 2020
01 June 2020
13 July 2020
03 August 2020
31 August 2020
26 October 2020
25 December 2020
26 December 2020

6. PLEXOS Model Updates

The recent validated and published PLEXOS model ([SEM-18-175](#)) for 2018-23 has been used for this round (Round 6) of the DCs under the revised SEM arrangements.

7. Details for Round 7

The next round of DCs will take place on Tuesday 18th June as per [SEM-18-163](#)