

Proposed Arrangements for Intermittent Dual Scheme Facilities

1. This paper proposes the metering and metered output arrangements for intermittent Dual Scheme Facilities participating in the Contracts for Difference (CfD) Scheme.

Context

2. The UK Government's 2011 Electricity Market Reform white paper¹ stated that “*it would be possible for an existing Generator accredited under the Renewable Obligation (RO) scheme to apply for and receive a CfD for additional (but separate) capacity installed*”. In this instance, it would be possible for a Generator to have some capacity accredited under the RO scheme, and some capacity covered by a CfD contract. These Generators have been termed ‘Dual Scheme Facilities’ (DSFs).
3. Generators termed ‘Biomass Conversion Facilities’² (BCFs) under the CfD scheme shall be treated, for metering purposes, in an identical manner to baseload DSFs.
4. Metering arrangements for baseload DSFs and BCFs have been proposed in a separate paper.
5. Metering arrangements for intermittent DSFs are covered in this paper.

Issue

6. The RO and CfD schemes both require total gross input electricity to be deducted from total gross metered output. The product of this calculation is used to derive net metered output for each settlement period, and therefore informs the payment mechanism under each scheme. Specifically:
 - The RO scheme requires operators of accredited stations to provide total gross inputs and total gross output (measured at station-gate) separately to the scheme Administrator, Ofgem. These values are then netted off for settlement and Renewable Obligation Certificates (ROCs) are issued according to the qualifying technology band applicable. The same process for calculating net metered output is equally applied to all Generators without electricity loss adjustment.
 - The CfD scheme requires a Generator's low carbon Loss-Adjusted Net Metered Output to be calculated for settlement. Generators will receive/pay a difference payment based on the product of their qualifying metered output and the difference between strike and reference prices over each settlement period. How metered data is collected (i.e. at the notional boundary point or station-gate) and loss adjustments applied will vary depending on whether Generators are trading on the public electricity system or on a private wire network.
7. In July 2013, DECC released a draft policy paper which set out that all DSFs (i.e. baseload and intermittent) would need to separately and accurately meter any CfD-accredited additional capacity

¹ <https://www.gov.uk/government/publications/planning-our-electric-future-a-white-paper-for-secure-affordable-and-low-carbon-energy>; Page 125.

² A fossil fuel generating station which will fully convert one or more of their generating units to run solely on solid biomass. The station may or may not have RO support. See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223489/ROtransitionconsultation17July2013.pdf; Page 8 for more details.

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attached to their generation site, and that the metering arrangements adopted by these Facilities would need to be compatible with the requirements under both the RO and CfD schemes.

8. Following industry consultation over August and September 2013, industry feedback indicated that due to the operational and accounting complexities faced by DSFs in undertaking the proposed requirements outlined in paragraph 6, the approach would not be practically possible (nor financially sensible). As such, any obligation to install full, separate, metering to accurately measure the net output from CfD-accredited unit/s would result in Generators opting not to seek CfD subsidy (and therefore DSF/BCF status under the CfD scheme).
9. On further internal discussion, DECC also considered that the combination of the monitoring and administrative requirements imposed under each scheme could be both complex and costly to the RO and CfD scheme administrators and therefore agreed that the proposed approach was not practical.
10. In late September 2013, Drax Limited (Drax) presented an alternative metering methodology, which sought to apply the existing and established RO principle of apportionment to imported input electricity. This approach has been modified to apply it to intermittent generation seeking DSF status.

Solution

11. DECC believes the following approach for intermittent DSFs will work as it provides more flexibility to meet the CfD metering requirements placed on them, at reduced cost. Below is an explanation of how the proposed CfD allocations process and the metering methodology would work in practice.
12. DSFs will be awarded a CfD contract for the additional (and separate) capacity installed (subject to the allocations process and ongoing compliance with the eligibility criteria at award through to contract execution). Where successfully awarded contracts are executed, DSFs will be entitled to determine which metering system is most appropriate according to their individual circumstances, to meet the requirements under each scheme, and as long as they were compatible with BSC metering requirements.
13. Prior to the commencement of their CfD contract and in addition to all relevant contractual Conditions Precedents, DSFs would need to meet the following specific requirements:
 - During the application process, the Facility should demonstrate to:
 - a. National Grid in their CfD application, that the proposed CfD-accredited capacity meets CfD eligibility criteria and that the metered output for which difference payments are to be claimed will only be from CfD-accredited capacity.
 - b. Ofgem (via a process to be determined) that the metered output for which ROCs are to be claimed will only be from RO-accredited capacity and that their metering system will remain consistent with standard RO requirements;
 - Prior to any CfD difference payments being made on the CfD-accredited capacity, the Facility should:
 - a. obtain agreement from Ofgem and the CfD CounterParty (via cross-checking of database systems or an alternative process to be determined) that both are satisfied that the metering system installed can measure metered output as per scheme requirements;

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- b. ensure they have input/output meters installed on all CfD-accredited generating equipment; and
 - c. meet the Conditions Precedent set out in paragraph 17a below.
14. Once the Facility commences operating its CfD-accredited capacity, difference payments under the CfD scheme would be calculated using the metering methodology below, whereby the Facility's daily Loss Adjusted Metered Output (LAMO) per unit is calculated as follows:

$\text{LAMO} = [\text{Metered Unit Gross-Net Output} - (\text{last actual}) \text{ Equipment Fixed Input Power Allowance}] \times \text{TLM}$

15. Once the Facility commences operating its CfD-accredited capacity, two separate processes will be run in parallel, a:
- a. daily settlement process based upon a combination of actual and estimated metering data and expected renewable output; and
 - b. monthly reconciliation, once the actual fuel data is available (see paragraph 19).
16. To derive LAMO for each additional and separate CfD-accredited generating equipment, the Facility would need to provide the following data sets to the CfD Settlement Services Provider:
- a. Daily net Metered Output volumes for each CfD-accredited generating unit/s split out on a half hour basis; and
 - b. Actual imported input electricity data at station level for the previous trading month.
17. All CfD-accredited generating equipment must have accurate metering installed to record gross-net Metered Output each trading day. From this gross-net Metered Output, an 'Equipment Input Power Allowance' would be deducted to provide daily estimated gross-net-net Metered Output for the generating equipment.
18. The CfD Counterparty will derive the daily 'Fixed Input Power Allowance' at station-level at the beginning of each trading month. It would be calculated by evenly apportioning the imported input electricity data used by the Facility in the previous month, across the days in the current trading month.
- a. The DSF will be required, initially as a Conditions Precedent, and thereafter as a [Generator Undertaking] to provide their previous trading month's actual imported input data. This would then be multiplied by the CfD-accredited capacity as a percentage of overall station capacity to work out the monthly estimated 'Fixed Input Power Allowance'.

This monthly estimate would then be divided by the number of days in the current trading month to derive a daily 'Equipment Input Power Allowance', and to account for changes in the Intermittent Reference Price, this would be broken down into an hourly value.

i. Worked example for January 2014:

Total existing RO-accredited capacity = 60MW

Total additional CfD-accredited capacity = 40MW

Total generating units at the Facility = 5

Previous month's actual station-wide imported input data (i.e. December 2013) = 4MW

Monthly estimated 'Fixed Input Power Allowance' = 4MW x % of CfD-accredited capacity
= 4MW x 0.4
= 1.6MW

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Daily estimated 'Equipment Input Power Allowance' = 1.6MW / by Days in Month
= 1.6MW / 31 Days (i.e. in January)
= 0.052MW per day.

= 0.052MW / 24 hours
= 0.22KW per hour.

- b. The allowance is necessary to estimate (and deduct) amount of imported input electricity used by common/shared services to support the CfD-accredited unit/s, without obligating Generator's to accurately meter these services.
- c. During the first three months of operation of the CfD-accredited capacity, the CfD Counterparty will need to 'scale-up' the monthly imported input electricity data to account for the expected increase in imported electricity as a result of the additional capacity. This increase in imported input electricity would otherwise not be captured. The 'scale-up' would be in proportion to the percentage increase in additional capacity.

i. Worked example for January 2014:

Total existing RO-accredited capacity = 60MW

Total additional CfD-accredited capacity = 40MW

Total generating units = 5

Previous month's actual station-wide imported input data (i.e. December 2013) = 4MW

Therefore the estimated % increase = $[1 + (40/100)] * 4\text{MW}$
= 5.6MW used in the month

Monthly estimated 'Fixed Input Power Allowance' = 5.6MW x % of CfD-accredited capacity
= 5.6MW x 0.4
= 2.24MW for the month.

Daily estimated 'Equipment Input Power Allowance' = 2.4MW divided by Days in month
= 2.4MW / 31 Days (i.e. in January)
= 0.077MW per day

= 0.077MW / 24hours
= 0.32KW per hour.

- d. The daily 'Equipment Input Power Allowance' at an hourly level, would be deducted (by the Settlement Agent) from the gross-net metered output value (as per paragraph 16) to calculate hourly (estimated) gross-net-net unit metered output for the CfD-accredited capacity.

19. At the beginning of each trading month, the CfD Settlement Services Provider would use the new month's actual import input data to correct the last month's estimated data. See example reconciliation below:

i. Worked example taking place in February 2014:

Total existing RO-accredited capacity = 60MW

Total additional CfD-accredited capacity = 40MW

Total generating units = 5

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Previous month's actual station-wide imported input data (i.e. January 2013) = 5.4MW

Therefore to reconcile January estimates:

$$\begin{aligned}\text{Monthly actual 'Fixed Input Power Allowance'} &= 5.4\text{MW} \times \% \text{ of CfD-accredited capacity} \\ &= 5.4\text{MW} \times 0.4 \\ &= 2.16\text{MW}\end{aligned}$$

$$\begin{aligned}\text{Daily actual 'Equipment Input Power Allowance'} &= 2.16\text{MW} \text{ divided by Days in Month} \\ &= 2.16\text{MW} / 31 \text{ Days (i.e. in January)} \\ &= 0.07\text{MW per day.}\end{aligned}$$

$$\begin{aligned}&= 0.07\text{MW} / 24 \text{ hours} \\ &= 0.29\text{KW per hour.}\end{aligned}$$

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