



Indicative Heads of Terms
For the
Generation Curtailment Service
June 2010

Subject to Contract

1. SERVICE DESCRIPTION

The Generation Curtailment Service is service designed for a reduction in output specifically from sites that do not participate in the Balancing Mechanism.

Renewable energy and carbon emission reduction targets mean that over the next decade, up to and beyond 2020 the type and size of generation connected to the electricity transmission networks in Great Britain will change significantly.

This service is primarily designed to further enable safe management of the transmission system during period of low demand and high generation output (notably overnight, bank holidays and weekend periods).

At present our Generation Curtailment requirement and service development is focused on generation in Scotland and is foreseen as a rare event (0 up to 5 times per year).

The service will provide the ability to curtail a variable/specified volume of generation at sites in return for a fee.

The contracting party may be the party providing the service or a representative thereof. The service may be provided from one or more parties/sites aggregated to the contracting party.

2. CONTRACT PERIOD

The contract will be over a fixed term. Both parties have the option to extend this period by mutual agreement. No contract payment will be made upon agreement these arrangements.

3. BASIC SERVICE PARAMETERS

The basic service parameters are detailed below.

Requirements from the contracted party	
Maximum Curtailment Period (Optional)	The maximum time in hours for which you will allow National Grid to utilise the Generation Curtailment Service Operating Reserve in any single continuous utilisation.
Minimum Curtailment Period	The minimum time in hours for which you will allow National Grid to utilise the Generation Curtailment Service Operating Reserve in any single continuous utilisation.
Maximum Curtailment Limit (MaxCL)	A non-BM equivalent of MEL.
Minimum Curtailment Limit (MinCL)	A non-BM equivalent of SEL.
Identified Sites aggregated to provide service	As identified in the contract
Response Time	Time taken to reduce output to the Minimum Curtailment Limit from the Maximum Curtailment Limit following instruction from NGET
Recovery Time	Time taken to return to pre instruction active power output prior to the Curtailment instruction from NGET
Utilisation Price	[] £/MWh Fee paid on calculated

	curtailed volume (MWh).
Operational Day	05:00 hours to 05:00 hours Monday to Sunday
Service Window	[05:00] – [05:00] on each Operational Day

4. AVAILABILITY

Declarations of forecast generation profiles per site under contract are to be made by 11.00 hours each [Friday] (or where not a business day, the immediately preceding business day), the Generator shall submit to National Grid via [either EDT or email] a notice form confirming the Generation Forecast Profile for the [week] ahead. If no declaration is received then an indicative Generation Curtailment Capability can be assumed (MaxCL – MinCL).

5. DESPATCH OF THE SERVICE

The service will be instructed via EDL or telephone to the Contracting Party (using a single point of despatch).

Once a telephone instruction is agreed a fax acknowledgment will be sent from National Grid to the provider as a record of confirmation of the instruction.

The service can be instructed prior to the commencement of the Service Window to take into consideration the Response Time.

The instruction will consist of an agreed holding output/position from each site or aggregate of parties/sites with a total Utilisation Period/Time.

Revision of Instructions

National Grid may issue revisions to instructions. This revision could be to cease the instruction, extend the instruction or increase/decrease the Curtailment level initially instructed.

If a revision to an instruction is issued that extends beyond the Service window, the provider has the right to reject the revised instruction.

In all cases the service revisions will be instructed via telephone followed by fax confirmation.

6. VOLUME DELIVERED

Generation Methodology A - for Cascade, Hydro, Biomass Generation

National Grid shall determine a notional reduction in power output pursuant to an Instruction during the Curtailment Period by reference to the following metered data:-

Pre-Curtailment Output Baseline

- the metered output from the contracted site in the period immediately pre-ceding the time of acceptance by the Generator of the instruction) ending at the time of acceptance by the Generator of the Instruction (a pre-instruction output baseline);

Instructed Curtailment Baseline

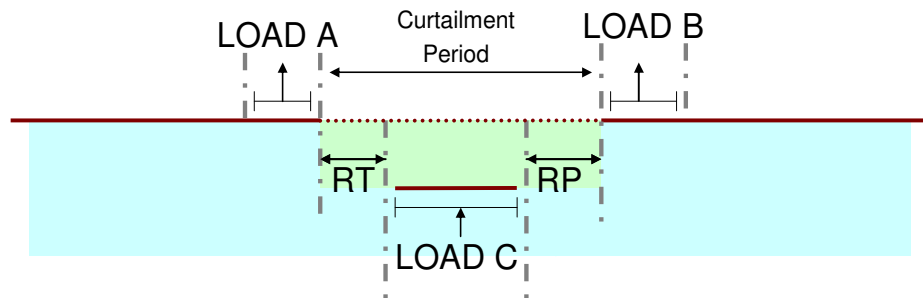
- the metered power output from the Contracted Site during the applicable Curtailment Period (instructed output baseline); and

Post-Curtailment Baseline

- the metered power output from the Contracted Site during the period commencing at the time after expiry of the applicable Curtailment Period (a post-instruction baseline or recovery period).

(please see diagram below for Illustration of the above methodology)

Energy paid for calculated as:
 $(\text{Load A} + \text{Load B})/2 - \text{Load C} \times \text{Curtailment Period} \times \text{Utilisation Price}$



Response Time = RT

Recovery Period = RP

Prior call off period = time before instruction received or pre instruction output baseline/pre active power output

Post call off period = time after instruction ceased including recovery time or post instruction baseline/post active power output

LOAD A = average output prior to acceptance of Curtailment instruction

LOAD B = average output in the post call off period

LOAD C = average output during call off period (Instructed output baseline/Utilisation active output)

National Grid shall use the metered data to determine a notional average power output Curtailed from the Contracted Site as follows:-

$$\text{Average Curtailed power output} = ((\text{Pre-instruction output baseline} + \text{Post-instruction output baseline})/2) - \text{instructed output baseline}$$

National Grid shall use the above calculation to determine the Generation Reduction as follows:-

$$\text{Generation Reduction} = \text{average Curtailed power output} \times \text{duration of Curtailment period}$$

The Generator shall procure all necessary access to metered data at the Contracted Site for the purposes of enabling National Grid to perform all calculations hereunder. This methodology does not calculate a specific curtailed volume for ramping periods as it is expected this element will be reflected in the Utilisation Price.

Generation Methodology B - for Windfarms

Following an instruction to provide the service within an agreed time period, the Contracting Party will provide;

- Minute by minute MW output achievable should no curtailment instruction have been issued by National Grid (Taking into account any unit outages)
- Recorded minute by minute MW windspeed data for the utilisation period for all site(s) providing the Curtailment Service.
- Metered minute by minute values by site(s) over the duration of the instructed period.
- Number of available turbines at time of instruction.

7. PAYMENTS

Utilisation Payments

As this contract will mainly consist of several units under an aggregated position then two different utilisation payment methodologies will be in effect dependent upon the type of site listed within the contract. The two methodologies are set out below;

Payment A – Generation Curtailment

The Generation Curtailment Payment is calculated as follows;

Generation Curtailment Payment = Generation Reduction x Utilisation Price

Utilisation Price (£/MWh) is agreed on a bilateral basis and detailed in the Bi-lateral Agreement. It is only paid when the service is utilised and energy is delivered.

Payment B – Generation Curtailment

A payment will be paid post monthly following a utilisation. The Utilisation Payment (£/MWh) will be determined post event using calculated volumes curtailed during the instructed period. The curtailed volume will be determined post event using average wind speed per settlement period at the windfarm site using wind speed data supplied by the provider (verified by NGET) mapped against the windfarm's wind speed/MW output profile to be supplied by the provider with the number of turbines available and verified by NGET. This volume will be calculated for each settlement period over the duration of the instructed period. The total volume (capped at the Maximum Curtailment Limit) of generation curtailed for each instruction for the contracted site(s) is multiplied by the Utilisation Price to provide a utilisation payment payable to the contracted party.

Price Changes

Prices changes may be made to the Utilisation Price by 11:00 on the 15th Calendar Day of the month to be effective from the 01st Calendar Day of the following month until such time another price change is received.

8. TIMESCALE

The Parties shall use reasonable endeavours to enter into an agreement for this Service by no later than [].

9. COSTS

Each Party shall be responsible for its own costs in connection with the preparation of these Heads of Terms and any subsequent preparation of an agreement giving effect to these Heads of Terms.

10. DATA PROVISION

All operational data submitted from the provider to National Grid shall be via EDT or email as agreed between the provider and National Grid prior to contract.

11. OTHER PROVISIONS

Interaction with any other Services will be considered on a contract by contract basis.

12. TRANSPARENCY

National Grid shall be permitted to publish and/or announce details of this Generation Curtailment Service. All information published will not disclose details that would identify specific site(s) or owner/operator of a site(s). The information National Grid would publish relates to pricing and volume information to facilitate a transparent market.