[company]

and

National Grid Electricity Transmission plc

Commercial Intertrip Service from [station] Power Station

HEADS OF TERMS – SUBJECT TO CONTRACT

PARTIES

These Heads of Terms are entered into between [company] ("[company]") and National Grid Electricity Transmission plc ("NGET"), each a "Party" and collectively "the Parties".

1. DEFINITIONS

Unless otherwise defined below, all defined terms in these Heads of Terms shall have the meanings given to them in the [Master Ancillary Services Agreement dated [date] ("the MASA") or the] Commercial Services Agreement for [station] Power Station dated [date] ("the CSA") ([both] as amended from time to time) which was [were] entered into between NGET and [company]

[Any additional definitions should be inserted here. For example if the intertrip scheme has both stability and thermal functionality the following definitions could be included:

Class 1 Trip: A Class 1 trip is used as a Stability trip. The trip signal fires into the HV generator breaker, Boiler Firing, Generator Field switch and Generator auxiliaries directly without delay.

Class 2 Trip: A Class 2 trip is used as a thermal trip. The trip signal fires into the Boiler firing first and then via a permissive interlock into all the other functions as a Class 1 trip. The permissive interlock delay is either less than one second (a **class 2 instantaneous trip**) or set to [seconds] seconds (a **class 2 delayed trip**) to allow time for the Delayed Auto Reclose to return the circuit to service if possible.

If required by the chosen post-tripping treatment, the following could be added:

Restricted Export Level Payment: As defined in the Connection and Use of System Code (CUSC)]

2. SERVICE DESCRIPTION

2.1. General

The Service will provide a commercial framework to facilitate the arming of the [station] Intertrip Scheme (the CIS).

The CIS will allow up to [number] BMUs to be intertripped.

Initially the CIS will be configured to allow an intertrip following a trip of one or more of the following circuits:

[List of circuits/trip conditions]

[Other specific details can be included here, for example to highlight if the intertripping of generators will be via either **class 1 trip** or **class 2 trip** (instantaneous or delayed).]

Other circuits may be added to the CIS, or changes made to existing circuits, by agreement between the parties.

The CIS will be deemed to be available unless otherwise notified by the Generator. The CIS may only be declared unavailable for technical reasons.

Changes in the availability of the CIS will be notified by the Generator to NGET by telephone (to be backed up by fax) and should include an explanation of the change in availability and, where the CIS is being declared unavailable, an estimate of the likely duration of such unavailability.

2.2. Arming/Disarming

NGET will request arming (including the duration of arming, (number of) BMU(s) to select to intertrip and the applicable circuit trip conditions) and disarming of the CIS by telephone (to be backed up by fax).

Arming requests under this commercial framework shall not be deemed to be in accordance with Grid Code provisions as outlined in BC2.10.2 (a).

2.3. Tripping

The generator will ensure that all necessary equipment is maintained such that the appropriate BMU(s) will trip upon receipt of the necessary signal from the CIS.

Trips as a result of operation of the CIS should be confirmed to NGET via fax.

2.4. Post-Tripping

[A number of options exist for dealing with the post-trip scenario:]

2.4.1. Option 1: Equivalent Treatment to 'Category 2' Intertrip

This option mirrors the provisions contained within CUSC section 4.2A.

Following operation of the intertrip pursuant to the terms of the CIS, the tripped generation is prevented from re-synchronising until NGET gives clearance to do so. If the tripped generation is prevented from re-synchronising for a period of greater than 24 hours following operation of the intertrip, a Restricted Export Level payment can be claimed.

The resulting reduction in output for each BMU shall be treated in accordance with the provisions of the ABSVD methodology, as summarised in paragraph 2.7.

2.4.2. Option 2: Post-Trip Bid Acceptance

This option allows the Generator to prepare its BMU(s) for resynchronisation immediately post-trip. The Generator would submit PNs to indicate re-synchronisation, with NGET issuing BOAs (or using such other means as it deems appropriate, such as PGBTs) to keep the BMU(s) desynchronised if the transmission system remains unable to accommodate the generation from the tripped BMU(s).

It would be expected that the BMU(s) would need to remain desynchronised for a Minimum Zero Time. To manage risk NGET would require the MZT to be set out within the CIS terms.

The resulting reduction in output for each BMU shall be treated in accordance with the provisions of the ABSVD methodology, as summarised in paragraph 2.7. The Tripping Fee for option 2 would need to cover imbalance risk for the duration of the MZT less the period for which ABSVD treatment applies, which shall be treated in accordance with the provisions of the ABSVD methodology, as summarised in paragraph 2.7.

If the tripped generation is prevented from re-synchronising for a period of greater than 24 hours following operation of the intertrip, a Restricted Export Level payment mechanism could be used as per Option 1.

2.4.3. Option 3: Post-Trip Payment based on Market Index

This option allows NGET to prevent the Generator from re-synchronising its tripped BMU(s) until the transmission system without using BOAs, PGBTs, etc.

The resulting reduction in output for each BMU shall be treated in accordance with the provisions of the ABSVD methodology, as summarised in paragraph 2.7. The remaining imbalance resulting from the trip is paid for at an agreed market index rate.

If the tripped generation is prevented from re-synchronising for a period of greater than 24 hours following operation of the intertrip, a Restricted Export Level payment mechanism could be used as per Option 1.

2.4.4. Other Options

The list of options presented here for dealing with the post-trip period are not exhaustive and either the Generator or NGET may suggest alternatives.

2.5. Payment

Capability Payment

National Grid shall pay to [company] an annual Capability Payment in consideration of the maintenance of the CIS, being an amount per month determined by reference to (a) the number of Settlement Periods during the month in question and (b) an amount in £ per Settlement Period. This amount being in the order of £1.72 per Settlement Period specified at April 2005 base, to be subject to indexation in accordance with Paragraph 4.5 of the CUSC.

Arming Fee

Whenever the CIS is armed, NGET shall pay to the generator an Arming Fee (an amount in £ per Settlement Period).

Tripping Fee

Whenever generation trips in accordance with the CIS, NGET shall pay to the generator a Tripping Fee (an amount in £ per trip per BMU).

2.6. Withholding of Payments

Arming Fee

NGET shall not be obliged to pay any Arming Fees:

(a) Following acceptance of arming requirements, failure to arm in accordance with those requirements. Under these circumstances the availability of the CIS will be deemed to have been withdrawn from the time at which it was agreed to be armed

(b) Failure to maintain such armed state for the duration of the arming period. Under these circumstances the availability of the CIS will be deemed to have been withdrawn from the start of the Settlement Period in which the Generator ceased to maintain arming of the CIS in accordance with the agreed arming requirements

(c) Failure of the plant to trip in accordance with the agreed arming requirements. Under these circumstances the availability of the CIS will be deemed to have been withdrawn from the start of the agreed arming period

Tripping Fee

NGET shall not be obliged to pay any Tripping Fees where the tripping of BM Unit(s) occurs:

(a) during any period where the CIS is not instructed by NGET to be armed

(b) where [company] has failed to arm the CIS in accordance with the agreed arming requirements

(c) where no signal is received by [company]'s Circuit Breaker(s) from the CIS.

Should NGET take other actions to trip or reduce output from [station] then [station] will repay to NGET any payment received (including those via Grid Code, CUSC or BSC) in excess of any Tripping Fee [station] would have received if the CIS has operated correctly. such repayment being limited to a volume of actions equal to the capacity of the unit which failed to trip.

For all failures, the Generator shall provide to National Grid, within 2 working days, an explanation of the reasons for failure (where not already supplied to National Grid pursuant to Grid Code OC7 and OC10).

2.7. ABSVD Methodology Statement

This CIS will be treated as an 'applicable balancing service'. To enable this, the Generator shall write to National Grid in accordance with the Notification Procedure set out in Section 2 of National Grid's ABSVD Methodology Statement to set the Service Flag for Commercial Intertrips to 1.

Determination of QAS_{ij} as outlined in ABSVD Methodology Statement

QAS will be determined in accordance with the ABSVD Methodology Statement:

$$QAS_{ij} = \sum_{s \in i} \left(SE_{sj} \times SF_{sm} \right)$$

where

QAS_{ij} = BMU Applicable Balancing Services Volume per period

SE_{sj} = Expected energy delivered by services in period j

SF_{sm} = Service flag for service s in month m

Intertrip-Specific Information

The reduction in Output of Active Power of each relevant Unit via the CIS shall be determined as follows:

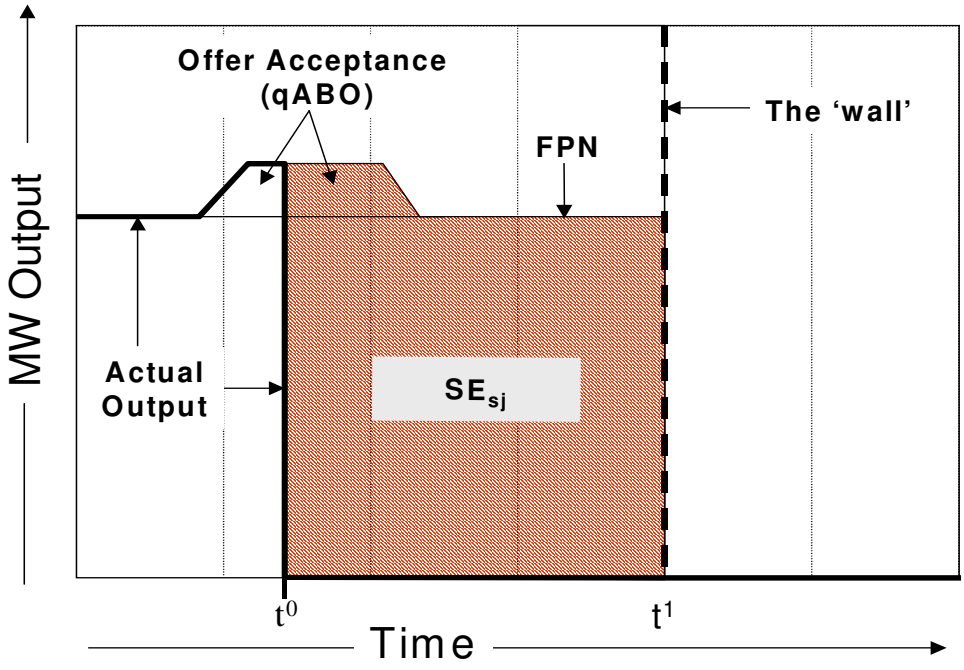
$$SE_{sj} = \int_{0}^{SPD} E_{sj}(t)dt$$

between t_0 and t_1

where:

$E_{sj}(t)$ is the required energy from the CIS s, at time t from the start of Settlement Period j.

The required energy is determined with reference to Figure 1 below:



$$E_{sj}(t) = \left(FPN_{ij}(t) + \sum_{n} qABO^{kn}{}_{ij}(t) \right) - QM_{ij}(t)$$

where

$FPN_{ij}(t)$	has the meaning attributed to it in the Balancing and Settlement Code
$\sum_{n} qABO^{kn}{}_{ij}(t)$	has the meaning attributed to it in the Balancing and Settlement Code
$QM_{ij}(t)$	is the BM Unit Metered Volume (as defined in the Balancing and Settlement Code) at spot time t
t_0	is the time at which the Generator's Circuit Breaker(s) disconnect the generating units(s) from the GB Transmission System in response to a signal from the Commercial Intertrip Scheme.
t_1	s the time at the end of the Balancing Mechanism Window as defined in the Balancing and Settlement Code

3. **TIMESCALE**

The Parties shall use reasonable endeavours to enter into an agreement giving effect to these Heads of Terms by no later than [date].

4. **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.

5. **MASA**

The Parties agree that clauses "confidentiality" and "governing law" of the [MASA]/[CSA] shall apply as if set out in full in these Heads of Terms and as if all references in the clauses to "this Agreement" were substituted with the expression "these Heads of Terms".

6. OTHER PROVISIONS

Except for the paragraphs entitled “Timescale”, “Costs” and [“MASA”]/[“CSA”], which are legally binding, these Heads of Terms and all communication both written and oral and whether or not individually described as “subject to contract”, between the parties and their respective advisers are at all times subject to contract, and no legal commitments shall arise, unless and until a written agreement is made between the Parties giving effect to these Heads of Terms.

Signed for and on behalf of
National Grid Electricity Transmission plc

……..
[Name]
[Title]

Date……..

Signed for and on behalf of
[company]

……..

Date……..