

# Consultation on the compensation methodology for loss of transmission access

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The Balancing Services Standing Group (BSSG) has reviewed the compensation arrangements for loss of generator access to the transmission system. This consultation document contains a summary of the issues discussed at the BSSG and seeks industry views on the potential changes to the existing compensation arrangements.

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This document is open for Industry Consultation. Any interested party is able to make a response in line with the guidance set out in Section 5 of this document.

**Published on:** 23<sup>rd</sup> September 2011  
**Length of Consultation:** 20 Working Days  
**Responses by:** 21<sup>st</sup> October 2011

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**Any Questions?**

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## About this document

The Balancing Services Standing Group (BSSG), established under the governance of the Connection and Use of System (CUSC) Panel has discussed the compensation arrangements for loss of transmission access. Some members of the BSSG have stated it is appropriate to amend the compensation arrangements in light of the experience gained from the operation of the current compensation schemes.

This consultation requests interested parties for their views on a number of specific points discussed by the BSSG. Following receipt of responses to this consultation, a report will be produced by the BSSG with appropriate conclusions and recommendations. This report could be used as the basis for developing any CUSC modification proposals to incorporate any recommendations.



### BSSG

The BSSG meets every 4-6 weeks, membership is open to interested industry parties. Details of the BSSG and meeting documentation can be viewed using the following link:

<http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/workings/standinggroups/bssg/index.htm>

The BSSG (Balancing Services Standing Group) is an industry group set up under the governance of the CUSC Panel to provide a focal point for discussions relating to balancing services as well as other areas of industry interest.

One area the BSSG has discussed is the compensation payable to generators for loss of transmission access. Generators are currently compensated for loss of transmission access under CAP48<sup>1</sup> and CAP144<sup>2</sup>. CAP48 covers compensation for notified and eligible unplanned loss of access whereas CAP144 covers payments for de-synchronisation under emergency de-energisation instructions.

This consultation requests industry views on a number of specific areas discussed by the BSSG which include:

1. Alignment of CAP48 and CAP144 compensation schemes
2. Types of access loss eligible for compensation
3. Potential changes to the existing compensation schemes
  - a) Duration of initial compensation period
  - b) Compensation following restoration of access
  - c) Appropriateness of TNUoS-based compensation
  - d) Compensation over and above the existing levels
  - e) Comparison of potential changes to compensation schemes
4. Recovery of costs by National Grid
5. Obligations on both users to raise a claim and National Grid to investigate a claim within a defined period

Following receipt of responses to this consultation, a report will be produced by the BSSG with appropriate conclusions and recommendations. This report could be used as the basis for developing any CUSC modification proposals to incorporate any recommendations.

### How to Respond

The consultation questions listed in Section 3 of this document are summarised in a proforma in Appendix F. Please complete the proforma in Appendix F and send your responses to [tariq.hakeem@uk.ngrid.com](mailto:tariq.hakeem@uk.ngrid.com) by 21<sup>st</sup> October 2011.

### Document Structure

The remainder of the document is structured as follows:

Section 2 - This section provides description of the existing compensation arrangements for loss of transmission access.

Section 3 - This section summarises the issues discussed at the BSSG, including details of the consultation questions.

Section 4 – This section provides details of how to respond to the consultation

Section 5 - This section provides details of the next steps in the consultation process

Sections 6-11 – Appendices A to F

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<sup>1</sup> CAP48 - Firm Access and Temporary Physical Disconnection

<sup>2</sup> CAP144 – Emergency Instruction to Emergency De-energise

## 2 Introduction

The BSSG (Balancing Services Standing Group) is an industry group set up under the governance of the CUSC Panel to provide a focal point for discussions relating to balancing services as well as other areas of industry interest.

One area the BSSG has discussed is the compensation payable to generators for loss of transmission access. Generators are currently compensated for loss of transmission access under CAP48<sup>3</sup> (Temporary Physical Disconnection<sup>4</sup>) and CAP144<sup>5</sup> (Emergency De-energisation<sup>6</sup>). CAP48 covers compensation for notified and eligible unplanned loss of access whereas CAP144 covers payments for de-synchronisation under emergency de-energisation instructions. More detailed information on these two modifications and other related modifications is given in Appendix C.

The compensation amount depends on the level of notice period for loss of transmission access. Table 1<sup>7</sup> shows a summary of the compensation payable for Temporary Physical Disconnections and Emergency De-energisations for notified and unplanned loss of access.

**Table 1**

<b>Notice</b>	<b>CAP48 Temporary Physical Disconnection</b>	<b>CAP144 Emergency De-energisation</b>
Day Ahead by 16:00	Refund of TNUoS <sup>8</sup> charges for each day or part day	Not applicable to notified loss of access
Day Ahead after 16:00	MIP <sup>9</sup> for impacted MW during the first 24 hours followed by a rebate of TNUoS charges for each day or part day	Not applicable to notified loss of access
Unplanned (tripped)	MIP for impacted MW during the first 24 hours, followed by a rebate of TNUoS charges for each day or part day	SBP <sup>10</sup> for impacted MW during the BM Window, followed by MIP for up to the first 24 hours, then rebate of TNUoS charges for each day or part day

It may be observed from Table 1 that, whilst Emergency De-energisation is not relevant to planned loss of access, the two compensation schemes are similar for

<sup>3</sup> CAP48 - Firm Access and Temporary Physical Disconnection

<sup>4</sup> In sections 2 and 3 this term is used when referring to CAP48

<sup>5</sup> CAP144 – Emergency Instruction to Emergency De-energise

<sup>6</sup> In sections 2 and 3 this term is used when referring to CAP144

<sup>7</sup> The calculations for compensation payments can be found under the definition of ‘**Interruption Payment**’ in CUSC section 11

<sup>8</sup> Transmission Network Use of System

<sup>9</sup> Market Index Price

<sup>10</sup> System Buy Price

unplanned loss of access with the main difference being the compensation level immediately after the loss of access.

Since implementation of Temporary Physical Disconnection (CAP48, effective from 1 April 2004) and Emergency De-energisation (CAP144, effective from 27 June 2008), the total compensation paid by National Grid for loss of transmission access is £1.6m<sup>11</sup>. This cost has resulted from six eligible compensation claims; these are detailed in Appendix B. Five of the six claims related to an inability to export, one related to the interruption of station demand which resulted in an inability to generate. The majority of the costs have been incurred have been incurred since 2008.

The Balancing Services Standing Group (BSSG), established under the governance of the CUSC<sup>12</sup> Panel, has carried out a review of the existing compensation arrangements outlined above with a view to improving these arrangements.

This consultation document provides details of the review carried out by the BSSG and outlines how the current compensation arrangements for loss of transmission access could be improved.

### 3 Key areas of loss of transmission access<sup>13</sup> and compensation arrangements

The main areas of loss of transmission access and compensation arrangements discussed by the BSSG can be summarised as follows:

1. Alignment of Temporary Physical Disconnections and Emergency De-energisation compensation schemes
2. Types of access loss eligible for compensation
3. Potential changes to the existing compensation schemes
  - a) Duration of initial compensation period
  - b) Compensation following restoration of access
  - c) Appropriateness of TNUoS-based compensation
  - d) Compensation over and above the existing levels
  - e) Comparison of potential changes to compensation schemes
4. Recovery of costs by National Grid
5. Obligations on both users to raise a claim and National Grid to investigate a claim within a defined period

The subsections below discuss each of the items listed above in more detail.

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<sup>11</sup> This cost of £1.6m was incurred under CAP48; no compensation has been paid to date under CAP144.

<sup>12</sup> Connection and Use of System Code

<sup>13</sup> In the remainder of this document, the term 'loss of transmission access' is interchangeably used with the term 'interruption'.

### 3.1 Alignment of Temporary Physical Disconnection and Emergency De-energisation compensation schemes

As stated in section 2, the compensation for an eligible unplanned loss of access for Temporary Physical Disconnection is similar to the compensation for Emergency De-energisation. The main difference between the two compensation schemes is that, under Emergency De-energisation, compensation is payable up to the BM window using SBP rather than MIP.

The use of SBP is intended to address exposure to imbalance cashout prices which could be higher than MIP. This may be a particular issue for periods, immediately after the disconnection for which, the affected party is unable to trade out its position (i.e up to the BM window). However, the BSSG considered that, for consistency, the Temporary Physical Disconnection compensation scheme for unplanned access loss could be aligned with the Emergency De-energisation scheme such that any unplanned access loss is initially (i.e. up to the BM window) compensated at SBP. This alignment would ensure that the compensation arrangements for unplanned loss of access reflect users' exposure to imbalance prices.

#### Consultation Question 1

Do you think Temporary Physical Disconnection (CAP48) compensation should be aligned with Emergency De-energisation (CAP144) compensation, such that the compensation up to the BM Window is paid at System Buy Price (SBP) rather than Market Index Price (MIP)?

### 3.2 Types of access loss eligible for compensation

The eligibility for compensation resulting from loss of transmission access is based on the CUSC definition of Interruption and other related terms (Appendix D<sup>14</sup>). A party who suffers a **Relevant Interruption** is eligible for compensation; this is essentially an interruption in which a BM Unit is de-energised solely due to an issue on the National Electricity Transmission System.

In some instances, an interruption or inability to generate, whilst precipitated by the de-energisation of plant or apparatus forming part of the National Electricity Transmission System, is nonetheless in part due to the configuration of the user's plant and apparatus at the time. A different User, with an alternative internal power station configuration, may not be impacted in similar circumstances yet both configurations may be equally valid ways of operation.

There is therefore a question of the extent to which such events are 'solely' due to an issue on the transmission system and whether a generator's configuration should be taken into account in determining if they are eligible for compensation. The BSSG discussed ways to capture these types of disconnections within the scope of CAP48. Discussions focussed on subjecting claims to a 'reasonable and

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<sup>14</sup> Appendix D provides definition of Interruption and other related terms, namely, Relevant Interruption and Allowed Interruption.

prudent' or 'good industry practise' test. Under this proposed methodology the initial trigger would still be a fault/issue on the National Electricity Transmission System with the generator being eligible if a disconnection arose whilst operating in a reasonable and prudent manner or to good industry practise.

The validity of a claim may be determined by the following steps:

- a) Is the initial cause /reason / inability to generate a fault / issue on the National Electricity Transmission System?
- b) Could the inability to generate have been avoided by a reasonable and prudent generator?

The BSSG also discussed events which should not be compensated under CAP48. Total or Partial Shutdowns are excluded from compensation, however, there may be instances in which part of the system becomes islanded without the declaration of a partial shutdown with generation in the island desynchronising either instantaneously or after a period of time. Some members of the BSSG felt that as islanding would potentially affect multiple sites at different geographical locations and more than one power station would be impacted by this type of event, this should also be excluded from CAP48 compensation.

Discussions also focussed on the most appropriate party to make a decision on the validity of a compensation claim, this is discussed further in section 3.5.

#### **Consultation Question 2**

Do you think the scope of Temporary Physical Disconnection compensation should be expanded to include situations where disconnection is, in part, down to a users internal station configuration? Please provide rationale.

#### **Consultation Question 3**

Do you think islanding, impacting multiple sites at different geographical locations, when a partial system shutdown has not been declared should be excluded from loss of access compensation? Please provide rationale.

### **3.3 Potential changes to the existing compensation schemes**

This section outlines potential changes to the existing compensations discussed by the BSSG, and provides an example of the relevant level of likely compensation under modified compensation schemes.

#### **3.3.1 Duration of initial compensation period**

Compensation for an unplanned loss of access for the initial 24 hours is currently paid at Market Index Price (MIP) for the MW impacted. The use of MIP is intended to cover a user's imbalance exposure resulting from loss of transmission access.

Some members of the BSSG suggested that, given the uncertainty over the duration of loss of access, the imbalance exposure could continue beyond this period. For example, a user may be unable to trade out their physical position,

until a full assessment of the fault and likely duration of disconnection is known. For this reason, some members of the BSSG considered that the initial period should be extended to 36 hours.

#### Consultation Question 4

Do you think an initial compensation period of up to 24 hours for transmission access loss is sufficient? Please provide rationale.

#### Consultation Question 5

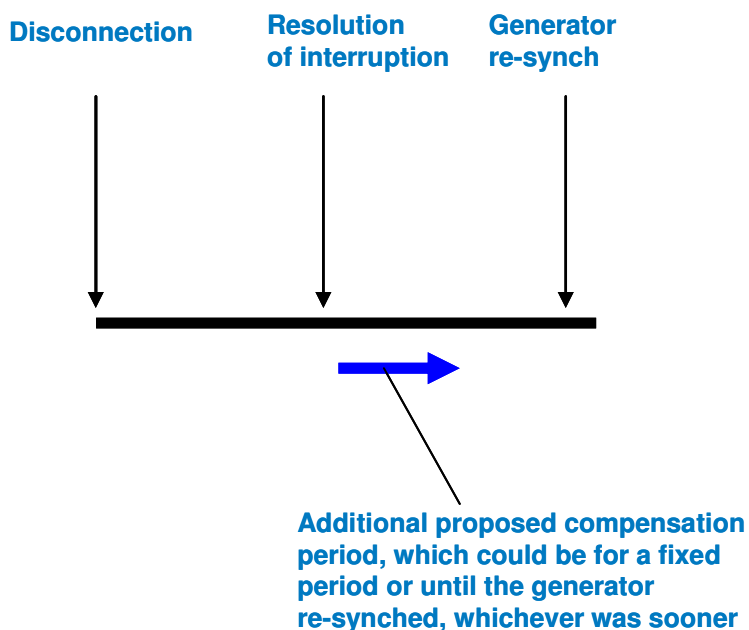
Do you think an initial compensation period of up to 36 hours for transmission access loss would be more appropriate? Please provide rationale.

### 3.3.2 Compensation following restoration of access

Compensation for an unplanned loss of access applies for the period over which the user does not have access to the transmission system. Once access has been restored, compensation ceases. Consequently, no compensation is payable for the re-synchronisation period. Furthermore, the re-synchronisation times after restoration of access are likely to vary according to plant type, with some plant requiring longer than other plant type.

BSSG discussed whether compensation should be payable for an additional period after restoration of access. The compensation for this additional period could either apply to all plant types or it could be specific to plant type. The level of compensation could be based on the MIP. Figure 1 illustrates the proposal.

Figure 1



#### Consultation Question 6

Do you think an additional compensation period following restoration of transmission access is appropriate? Please provide rationale.

### Consultation Question 7

Do you think the additional period should be technology or non-technology specific (e.g. same compensation periods for wind and nuclear plants)? Please provide rationale.

### 3.3.3 Appropriateness of TNUoS-based compensation

A key element of the compensation schemes for both notified and unplanned loss of access is the rebate of TNUoS charges. The rebate of TNUoS charges is currently based on the higher of the actual TNUoS charge (for an affected user) or the average TNUoS charge (Total TNUoS income from generators / Total Transmission Entry Capacity).

Some BSSG members have suggested that limiting compensation to a refund of TNUoS charges does not reflect the disruption caused by loss of access. An alternative compensation method considered by the BSSG is based on the LDTEC<sup>15</sup> charges which carry a premium<sup>16</sup>. Some BSSG members have suggested that as a user is required to purchase short term Transmission Entry Capacity at a premium, the short term loss of access should also be compensated using a similar premium mechanism. The key features of this alternative could be:

- Loss of access is compensated at the higher of the LDTEC tariff<sup>17</sup> using site or average TNUoS charges;
- The LDTEC tariff could be payable for a maximum of 120 days; after this point, the LDTEC tariff could reduce to the TNUoS charge;
- The total annual compensation is capped at the site annual TNUoS charge or average annual TNUoS charge.

LDTEC tariffs would recover 90% of a sites annual TNUoS charge over 120 days. On a daily basis or for individual settlement periods LDTEC tariffs are 274% higher than TNUoS tariffs.

### Consultation Question 8

Do you think that the current compensation based on the higher of average or actual TNUoS charges is appropriate? Please provide rationale.

### Consultation Question 9

Do you think that the compensation for access loss should be based on Limited Duration Transmission Entry Capacity (LDTEC) rather than the TNUoS rate? Please provide rationale.

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<sup>15</sup> Limited Duration Transmission Entry Capacity

<sup>16</sup> Aggregate LDTEC charges (high rate) recover 90% of the annual TNUoS charge. The LDTEC tariff (£/kW/week) is equal to the TNUoS tariff (£/kW) for a given generation zone x  $0.9 \times 7 / 120$ .

<sup>17</sup> See Appendix C, Section 8.4

### 3.3.4 Compensation over and above the existing levels

Some members of the BSSG considered the existing level of compensation to be insufficient to cover ongoing uncertainty for extended loss of access, and suggested the introduction of additional compensation over and above the existing compensation schemes. One option considered by the BSSG is the introduction of a flat weekly payment for each full seven day period of access loss; the weekly payment rate could, for example, be set at £100 /MW (i.e. £100 per week for each MW affected by the access loss). This compensation could be limited to 4 weeks.

#### Consultation Question 10

Do you think that additional compensation for loss of access (e.g. flat weekly rate) should be paid over and above the existing compensation levels? Please provide rationale.

#### Consultation Question 11

- a) Do you think that £100/MW/Week for each full 7 day period of access loss is appropriate?
- b) Do you think that the compensation rate in Q11 (a) should be limited to 4 weeks?
- c) Do you feel other values/timescales (other than those in mentioned in questions 11a and 11b) would be more appropriate? Please provide rationale.

### 3.3.5 Comparison of potential changes to compensation schemes

The potential changes considered in sections 3.3.1 to section 3.3.4 are likely to change the total amount of payable compensation. This can be demonstrated using an example based on the following assumptions:

Affected generation volume: 500MW

Duration of loss of access: 1<sup>st</sup> March – 10<sup>th</sup> March 2011 (inclusive)

TNUoS Tariff: £5/kW (£5000/MW)

Market Index Price (MIP): Varies with Settlement Period

Additional compensation following period following restoration of access = 3 hours

Detailed calculations for the above example are shown in Appendix E.

Table 2 summarises the level of compensation that would be paid under the existing and revised (if implemented) arrangements.

**Table 2**

Reference Section	Proposal	Current Scheme	New Schemes
3.3.1	Initial Compensation	£575,645 (24 Hours)	£848,983 (36 Hours)
3.3.2	Rebate of TNUoS/LDTEC	£61,644 (TNUoS)	£168,750 (LDTEC)
3.3.3	£100/MW for each 7 day disconnection period	n/a	£50,000 *
3.3.4	Compensation following restoration of access	n/a	£64,295 **
<b>Total</b>		<b>£637,289</b>	<b>£1,132,028</b>

\* One 7 day period of disconnection

\*\* compensation based on MIP for an additional three hours

It can be seen from Table 2 that, for each potential change, the level of compensation under the new arrangements is higher than the level under the existing arrangements. Furthermore, if all the potential changes were implemented the level of compensation paid would almost double. Section 3.2 discusses the expansion of scope of loss of access compensation, if this was to be implemented this may result in the increase in the number of valid claims.

### 3.4 Recovery of costs by National Grid

National Grid currently recovers the costs associated with compensation payments for access loss via TNUoS charges. These costs are recovered from users on a pass-through basis. As stated in section 2, the total costs incurred (and recovered) since implementation of CAP48 and CAP144 are £1.6m. This value represents 0.08% of the total TNUoS charge (£1,918m) recovered over the same period (2004/05 – 2009/10). Less than 0.2TWh of access loss has been compensated through these claims; this represents the energy value for period(s) compensated, although generators may have been off the system for longer periods (due to delays in re-synchronisation).

At present, there is no incentive on Transmission Owners to minimise the loss of transmission access and the related costs. However, there is a Transmission Network Reliability Incentive (TNRI) under which National Grid is incentivised to outperform a dead-band for unsupplied volume. Under this incentive, National Grid could lose up to 1.5% (or gain up to 1%) of maximum allowed revenue. For 2010/11 there was a dead-band between 237MWh and 263MWh, unsupplied volumes below 237MWh resulted in gain on the incentive (max gain £13.1m) with unsupplied volumes above 263MWh resulting in a loss on the incentive (max loss 19.7m).

The BSSG noted that Ofgem has previously<sup>18</sup> (2007) decided against an incentive scheme due to the limited information that has been available for historical claims.

<sup>18</sup> Ofgem letter dated 19 October 2007

[http://www.ofgem.gov.uk/LICENSING/WORK/NOTICES/MODNOTICE/Documents1/071008\\_Ex\\_CA\\_P048\\_Licence\\_Letter\\_FINAL2.pdf](http://www.ofgem.gov.uk/LICENSING/WORK/NOTICES/MODNOTICE/Documents1/071008_Ex_CA_P048_Licence_Letter_FINAL2.pdf)

However, the BSSG also noted Ofgem's views that, in the longer-term, an incentive-based mechanism could be beneficial to minimise the frequency and duration of disconnection from the transmission system.

#### **Consultation Question 12**

Do you think that Transmission Owners and System Operators should be incentivised to minimise loss of transmission access and associated costs? Please provide rationale.

### **3.5 Obligations on both users to raises claims and National Grid to investigate claims within a defined period**

The compensation process for temporary physical disconnections is specified in Section 5.10 of the CUSC. This section states that the interruption payment will be made within 28 days following the date of agreement as to the value of the claim.

The CUSC, however, does not specify any timescales within which a user has to submit a claim, or National Grid has to confirm the validity of such a claim. In addition the CUSC does not specify a minimum value of a claim.

In order to stream-line the process, CUSC obligations could be placed on users to raise a claim within, say, 30 days of the end of an interruption incident and obligations on National Grid to confirm the validity of such a claim within, say, 60 days of receipt. A minimum claim value at say, £5,000 could also be introduced.

Discussions at the BSSG also focussed on other potential improvements to the claims handling process; there may be greater transparency if a body other than National Grid make decisions on the validity of a claim, although it was recognised that such a body may not be appropriate given the relatively low number and value of claims to date.

#### **Consultation Question 13**

- a) Do you think that users should be required to raise claims within 30 days (or other period) of an incident?
  - b) Do you think a body other than National Grid would be more appropriate to determine the validity of a claim?
  - c) If not National Grid, who do you think should determine the validity of a claim?
  - d) Do you think National Grid/ other body should be required confirm the validity of a claim within 60 days (or other period) of receipt.
  - e) Do you think a minimum claim value of £5,000 (or other amount) would be appropriate?
- Please provide rationale.

## 3.6 Impact of Project TransmiT

The BSSG considered that an industry development that may impact the area of loss of transmission access is Project TransmiT. Project TransmiT is a review of the transmission charging and connections arrangements that seek to recover the costs of providing electricity transmission assets, i.e. the TNUoS charges which are an integral part of the compensation schemes for loss of access.

The BSSG considered whether the review of compensation schemes for loss of transmission access should be delayed until the ongoing work under Project TransmiT has been concluded. The group did not feel that there was any specific reason why the review should be delayed by Project TransmiT at this stage.

### **Consultation Question 14**

Do you think that the review of the compensation arrangements for loss of transmission access should be delayed until the completion of Project TransmiT?

### **Consultation Question 15**

Are there any other comments you wish to raise?

## 4 How to respond to the consultation

The consultation questions listed in Section 3 of this document are summarised in a proforma in Appendix F. Please complete the proforma and send your responses to [tariq.hakeem@uk.ngrid.com](mailto:tariq.hakeem@uk.ngrid.com) by 21<sup>st</sup> October 2011. Please state clearly if the response is to be treated confidential.

## 5 Next Steps

Following receipt of responses to this consultation, a report will be produced by the BSSG with appropriate conclusions and recommendations. This report could be used as the basis for developing any CUSC modification proposals to incorporate any recommendations.

The consultation document, consultation report, and all non-confidential responses will be published on the BSSG section of National Grid's website:

<http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/workingstandinggroups/bssg/index.htm>

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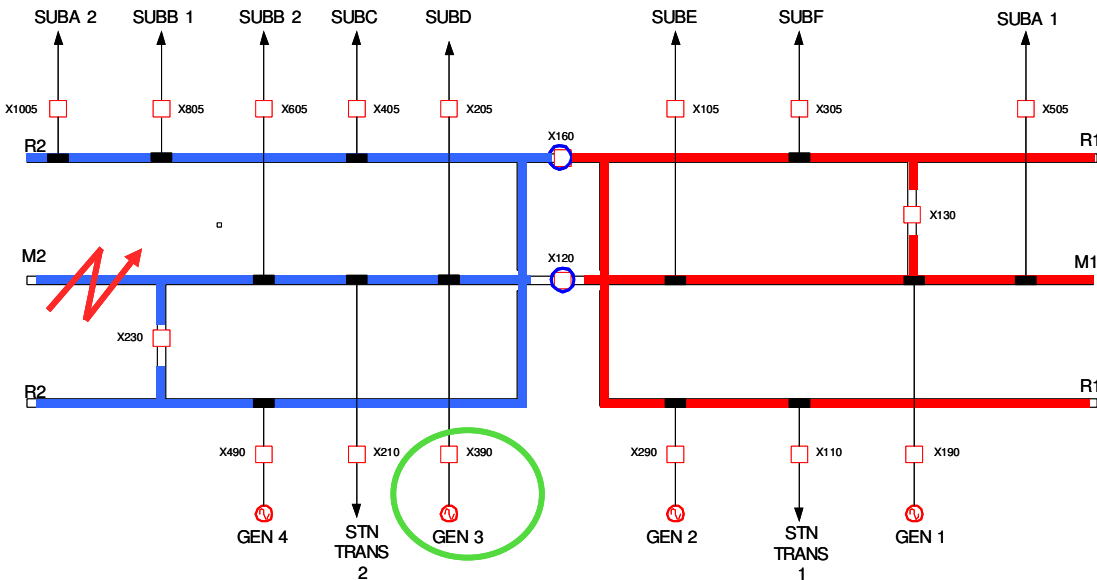
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## 6 APPENDIX A – Potential incidents leading to disconnection

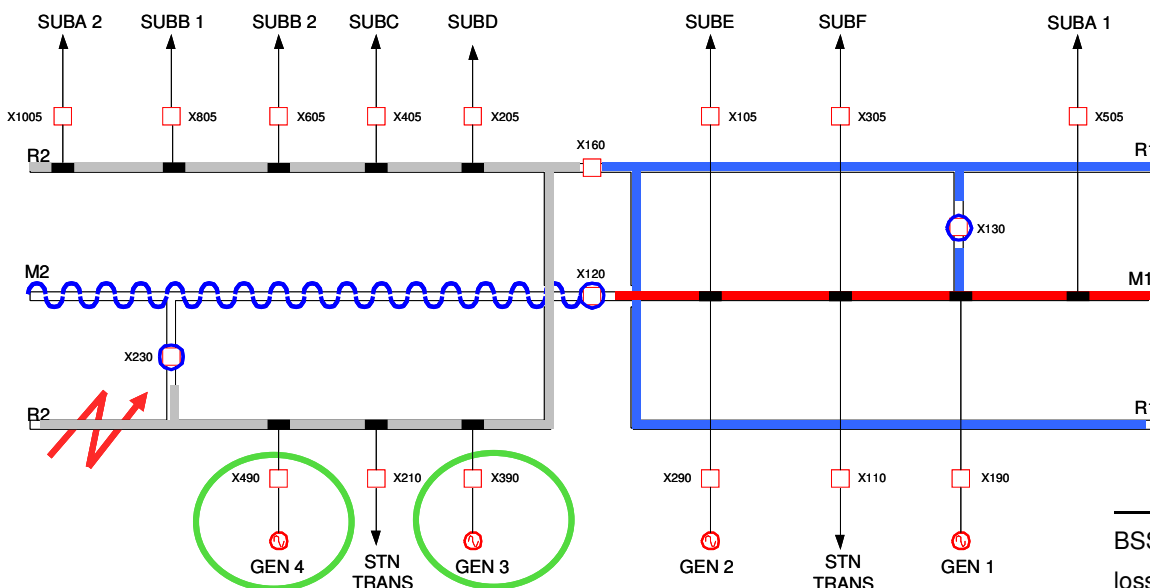
The BSSG discussed several types of incidents which may lead to a disconnection, these are shown below. Note the diagrams below represent a high level view and are not meant to be a comprehensive list of all scenarios that may result in a disconnection or CAP48 claim.

a)- Figure A.1 - A Bar outage in a intact double bus bar station.



A fault on the main bar 2 (M2) results in temporary loss of access for generator 3, as the reserve bar is available the access will be lost until transfer to R2. As access to the system is not lost this would not be compensated under CAP48.

b) Figure A.2 – A Bar outage in a depleted double bus station

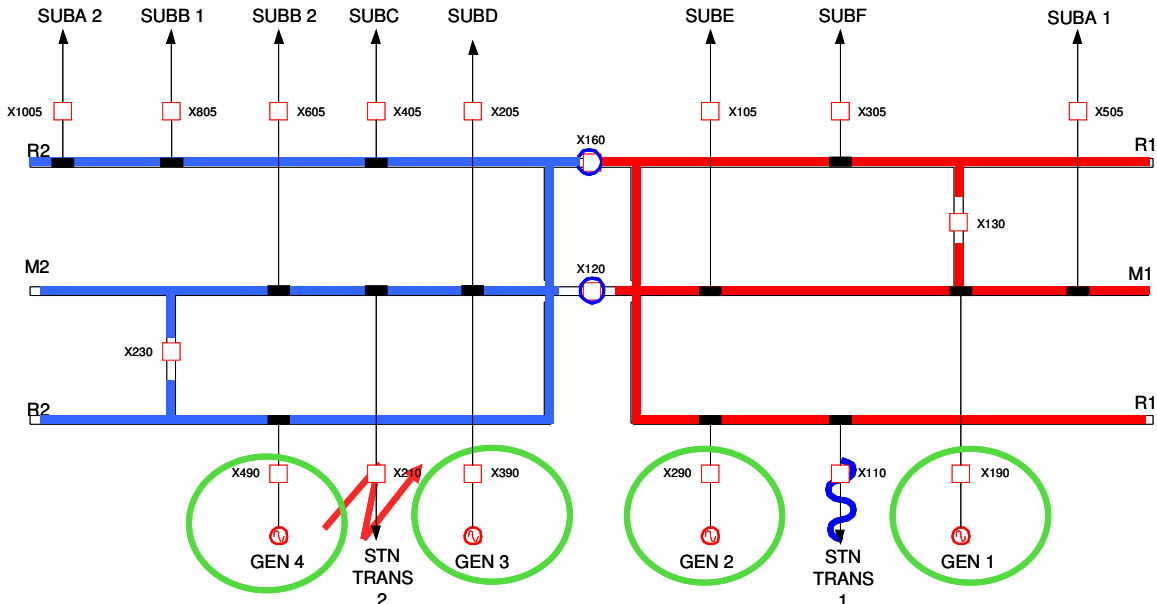


In this situation the main bar 2 (M2) is not available, and the reserve bar 2 (R2) suffers a fault. Generators 3 and 4 will be disconnected until R2 or M2 are restored. This type of disconnection will normally be unplanned as an outage of

the R2 bar would not normally be expected to be planned at the same time as an outage of M2, although in exceptional circumstances this could be required.

In this scenario access to the system is lost and would be compensated under CAP48 for a planned or unplanned outage as appropriate.

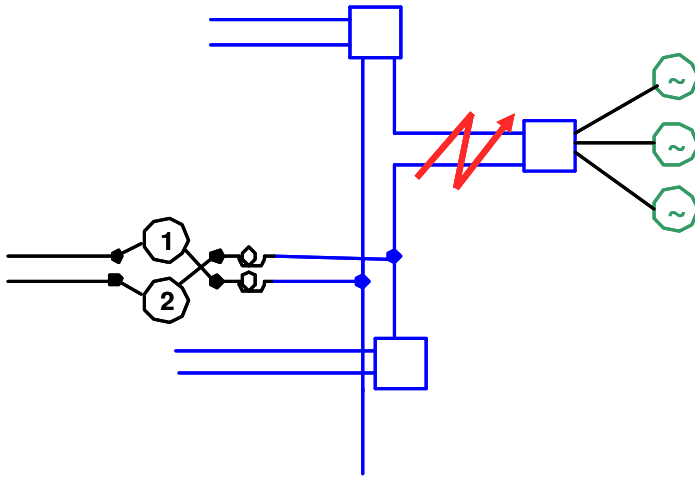
c) Figure A.3 – Loss of station supplies



In this situation station transformer 1 is out of service and station transformer 2 suffers loss of supplies due to an issue on the transmission system. In some cases loss of supplies to transformer 2 may cause generators 1-4 to be disconnected, although access to the transmission system for these generators is still available. In the situation described above the station transformer supplies are supplied from the 400kv system, but this is not always the case as sometimes supplies can be from the distribution system.

Depending on the specific circumstances under which this type of situation occurs, it may result in compensation under CAP48.

d) Figure A.4 – Local circuit outages



In this situation there is a loss of the double circuit connecting the power station to the system.

Where this results from an unplanned outage, (i.e. double circuit fault outage, or planned single circuit outage with coincident fault of remaining single) there may in some circumstances (but not all) be a system to operator intertrip scheme that disconnects the generator, in which case compensation will be as defined by CAP76 (intertrips). Should an intertrip not be installed, CAP48 would apply.

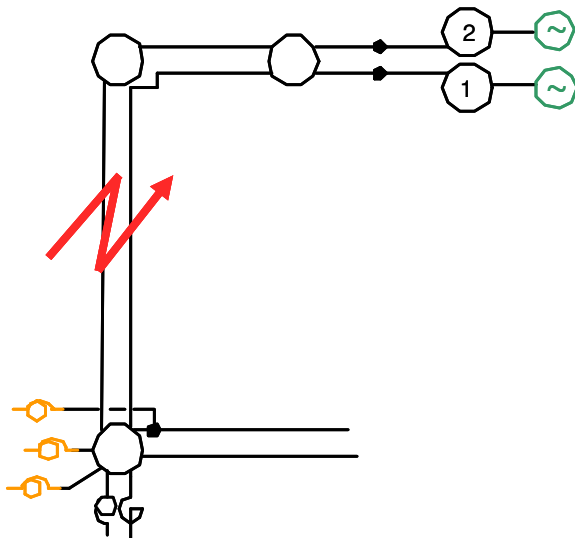
Reconnection will be on restoration of one or more circuits.

A planned double circuit outage would not normally be expected, but may be required in exceptional circumstances, in which case CAP48 would apply.

Some generators are connected via a single circuit connection only. Most (but not all) of these are covered by clauses in their BCA. (Bilateral Connection Agreement) in respect of planned and unplanned outages of the single circuit.

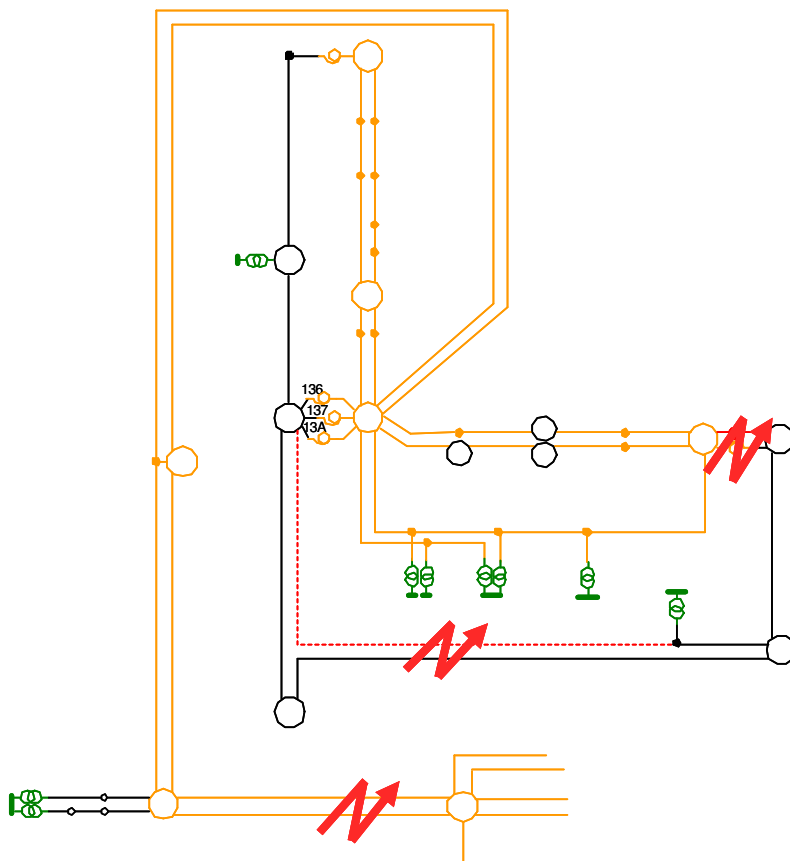
Where a BCA clause applies, CAP48 is not applicable.

e) Figure A.5 – Remote circuit outages



In this situation there is a loss of a remote double circuit connecting a power station to the system which will result in the power station being disconnected. This type of disconnection would be compensated under CAP48.

f) Figure A.6 – Wider outages



In this scenario there are multiple faults which disconnect part of the transmission system. The power island is not viable and a number of stations are disconnected either instantaneous or after a delay. The view at the BSSG was that these type of disconnection should not be covered under CAP48 (see section 3.2).

g) Other disconnections

Other reasons for disconnections may include fault(s) in the proximity (eg Stability / Low Frequency / ROCOF) or switching errors. Compensation under CAP48 would be dependent on the reason for the fault.

## 7 Appendix B Claims received to date

The table below details the claims paid since the implementation of CAP48 and are listed by descending numerical value. For confidentiality reasons the dates of the incidences below are not detailed. The six claims listed occurred in 2004 (1), 2007 (1), 2008 (1) and 2009 (3).

**Table 3**

Claim	Value (000's)	Duration of loss	Description	Type of claim
A	£798	4 units for 7 settlement periods, 2 units for up to 14 days	Closure of faulty switch resulted in trip of two Busbar sections, first returned within 3 hours, second after further 14 days	Appendix A – Section b
B	£424	3 units for 4 settlement periods, 1 unit for additional 13 days	Circuit trip resulting in de-synchronization, restriction in output	Appendix A – Section b
C	£190	2 units for 11 settlement periods	Failure of National Grid owned fuse prevented synchronisation	Appendix A – Section g
D	£89	4 settlement periods	Fault resulted in loss of system access, single circuit security due to maintenance outage.	Appendix A – Section d
E	£75	4 settlement periods.	Part paid, loss of supplies to station transformer resulted in de-synchronisation. Second transformer was on maintenance.	Appendix A – Section c
F	£8	1 settlement period	Circuit trip resulting in de-synchronisation	Appendix A – Section d
<b>Total</b>	<b>£1.6m</b>			

The table below shows claims which have not been paid.

**Table 4**

Claim	Description
G	Event caused by lightning strike, classed as Force Majeure
H	Event caused by multiple blown fuses, some customer owned. Claim not paid as it was not clear if the initiating event was solely on the transmission system.
I	Loss of supplies to station transformer followed by operation of station safety system and de-synchronisation. Claim not paid as

	unit had access to the system and a second station transformer was available.
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In addition to the claims above there are some claims yet to be processed, these include 1 planned outage claim and a number of claims for wind farms.

## 8 APPENDIX C: Details of CAP48 and CAP144, and other related modifications

The CUSC modifications summarised in this appendix can be found on [http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/amendments/amendment\\_archive/](http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/amendments/amendment_archive/).

### 8.1 CAP43: 'Transmission Access Definition'

CAP43 was introduced on 1<sup>st</sup> April 2003. This modification clarified the arrangements on generator connection to the Transmission System. It introduced the products Connection Entry Capacity (CEC) and Transmission Entry Capacity (TEC). The proposal sought to provide clear links between the volume of rights held by a generator to access the system and the associated payment from the generator for that right. Whilst CAP43 introduced obligations on generators to purchase and financially commit to CEC and TEC, there was no compensation in place for the loss of access.

### 8.2 CAP48: 'Transmission Access Definition'

CAP48 (Temporary Physical Disconnection) was implemented on 1<sup>st</sup> April 2004 and defined the compensation which would be payable for the loss of transmission access. This modification was intended to provide compensation for circumstances where an event on the transmission system is the sole cause of a disconnection of a BM Unit. These arrangements are not designed to provide compensation where the User has contributed to the reason for the loss of access. The costs incurred by National Grid are passed through to Users via the TNUoS charges.

If National Grid provides a notice (by 16:00 on day ahead) to a generator that transmission access will be lost, the outage is deemed a planned (notified)<sup>19</sup> outage. For notified outages, a generator is entitled to a refund of the higher of average or actual TNUoS<sup>20</sup> charges for each day or part day of access loss.

For an unplanned outage (i.e. when no notice has been provided (tripped) or a notice is provided after 16:00 on day ahead), the settlement periods in which the access is not available are compensated at MIP within the first 24 hours, followed by a rebate of TNUoS charges thereafter.

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<sup>19</sup> The Grid Code defines "planned" as an outage "coordinated by NGET under OC2". OC2 states that the final plan is issued at 16:00 on the day ahead

<sup>20</sup> For a disconnected party in a location with negative TNUoS charges, the refund would be based on the average TNUoS charge

### 8.3 CAP70: 'Short Term Firm Access Service'

CAP70 was implemented on 1 November 2004 and introduced the Short Term Transmission Entry Capacity (STTEC). The STTEC could be purchased by the Users to meet their short term requirements at a premium.

The STTEC Tariff is calculated as:

$$\text{STTEC Tariff (£/kW/Period)} = FT_{Gi} * 0.9 * \text{STTEC Period} / 120$$

Where,

FT = Final annual TNUoS Tariff expressed in £/kW

Gi = Generation zone

STTEC Period = A period STTEC applied for in days (28, 35 or 42 days) as defined in Section 11 of the CUSC

The charge is set to zero for generators with negative tariffs.

### 8.4 CAP94: 'Limited Duration Transmission Entry Capacity'

CAP94 was implemented on 1 April 2006 and introduced the Limited Duration Transmission Entry Capacity (LDTEC) covering longer periods than the STTEC introduced under CAP70.

The LDTEC Tariff for the first 17 weeks is calculated at a higher rate<sup>21</sup> as:

$$\text{LDTEC tariff (£/kW/week)} = FT_{Gi} * 0.9 * 7 / 120$$

Where,

FT = Final annual TNUoS Tariff expressed in £/kW

Gi = Generation zone

The aggregate LDTEC tariff would recover 90% of the annual TNUoS charge. The charge is set to zero for generators with negative tariffs.

### 8.5 CAP144: 'Emergency Instruction to Emergency De-energise'

CAP144 (Emergency De-energisation) was implemented on 27 June 2008 and introduced compensation for emergency de-energisation instructions (which are, by definition, unplanned). This modification corrected a defect under CAP48 which did not capture emergency de-energisation instructions. Prior to the implementation of CAP144, emergency de-energisation would have been achieved with a Bid-Offer Acceptance (BOA), potentially at a higher cost than under CAP144.

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<sup>21</sup> CAP94 also has lower rate tariff for the period after 120 days but the BSSG considered the higher rate tariff to be more relevant for short term access loss.

Under this modification, the immediate period up to the BM window is compensated at System Buy Price (SBP). Each subsequent period which occurs within the first 24 hours is compensated at Market Index Price (MIP), followed by a rebate of TNUoS charges thereafter.

## 9 APPENDIX D: Definitions of Interruption, Allowed Interruption, and Relevant Interruption

CUSC Section 11 defines an **Interruption** as follows:

“where either:-

- (i) solely as a result of **Deenergisation of Plant and Apparatus** forming part of the **National Electricity Transmission System**; or
- (ii) in accordance with an **Emergency Deenergisation Instruction**;
  - a) a **BM Unit** comprised in the **User’s Equipment** of an **Affected User** (other than an **Interconnector Owner**) is **Deenergised**; or
  - b) an **Interconnector** of an **Affected User** who is an **Interconnector Owner** is **Deenergised**; or
  - c) The **Maximum Export Limit** in respect of the **BM Unit(s)** associated with such **User’s Equipment** is zero.”

Not all instances of transmission access loss are eligible for compensation. The CUSC Section 11 identifies a number of interruptions as **Allowed Interruptions** that are not eligible for compensation. The CUSC states that:

“An Allowed Interruption shall mean an **Interruption** as a result of any of the following:

- a) an **Event** other than an **Event** on the **National Electricity Transmission System**;
- b) an event of **Force Majeure** pursuant to Paragraph 6.19 of the **CUSC**;
- c) a **Total Shutdown** or **Partial Shutdown**;
- d) action taken under the **Fuel Security Code**;
- e) **Disconnection** or **Deenergisation** by or at the request of **The Company** under Section 5 of the **CUSC**, except in the case of an **Emergency Deenergisation Instruction**;
- f) the result of a direction of the Authority or **Secretary of State**;
- g) tripping of the **User’s Circuit Breaker(s)** following receipt of a signal from a **System to Generator Operational Intertripping Scheme** which has been armed in accordance with Paragraph 4.2A.2.1(b).

or if provided for in a **Bilateral Agreement** with the affected **User**;

An Interruption that is eligible for compensation is defined in CUSC Section 11 as a Relevant Interruption which is:

“an **Interruption** other than an **Allowed Interruption**;

## 10 APPENDIX E: An example showing the effect of potential changes on the compensation levels for loss of transmission access

This appendix provides details of the compensation calculations behind Table 2 in section 3.3.5; the table summarises an example of a 10 day outage under the current and potential new arrangements. The example is based on the following assumptions:

Affected generation volume: 500MW

Duration of access loss: 1<sup>st</sup> March – 10<sup>th</sup> March 2011 (inclusive)

TNUoS Tariff: £5/kW (£5000/MW)

Market Index Price (MIP): Varies with Settlement Period

Additional compensation following period following restoration of access = 3 hours

### 10.1 Calculation for section 3.3.1

The initial compensation for both the current and new schemes is derived using the formula (for relevant settlement periods): Affected generation volume / 2 x MIP. Table 5 shows the calculation for each settlement period with the totals showing the compensation values for the initial (total to 24 hours) and new scheme (total to 36 hours).

**Table 5**

Settlement Date	Settlement		Price (MIP)	
	Period	Time	£/MWh	Calculation £*
01/03/2011	1	00:00:00	46.53	£11,633
01/03/2011	2	00:30:00	48.61	£12,153
01/03/2011	3	01:00:00	48.59	£12,148
01/03/2011	4	01:30:00	44.93	£11,233
01/03/2011	5	02:00:00	43.35	£10,838
01/03/2011	6	02:30:00	42.8	£10,700
01/03/2011	7	03:00:00	41.91	£10,478
01/03/2011	8	03:30:00	41.78	£10,445
01/03/2011	9	04:00:00	41.18	£10,295
01/03/2011	10	04:30:00	41.16	£10,290
01/03/2011	11	05:00:00	42.95	£10,738
01/03/2011	12	05:30:00	42.83	£10,708
01/03/2011	13	06:00:00	45.23	£11,308
01/03/2011	14	06:30:00	46.16	£11,540
01/03/2011	15	07:00:00	51.36	£12,840
01/03/2011	16	07:30:00	52.58	£13,145
01/03/2011	17	08:00:00	52.88	£13,220
01/03/2011	18	08:30:00	53.1	£13,275
01/03/2011	19	09:00:00	50.7	£12,675
01/03/2011	20	09:30:00	50.59	£12,648
01/03/2011	21	10:00:00	50.66	£12,665
01/03/2011	22	10:30:00	50.42	£12,605
01/03/2011	23	11:00:00	45.17	£11,293
01/03/2011	24	11:30:00	45.34	£11,335
01/03/2011	25	12:00:00	45.27	£11,318
01/03/2011	26	12:30:00	45.16	£11,290

Settlement Date	Settlement		Price (MIP)		Calculation £*		
	Period	Time	£/MWh				
01/03/2011	27	13:00:00	44.44		£11,110		
01/03/2011	28	13:30:00	43.88		£10,970		
01/03/2011	29	14:00:00	44.07		£11,018		
01/03/2011	30	14:30:00	43.7		£10,925		
01/03/2011	31	15:00:00	46.25		£11,563		
01/03/2011	32	15:30:00	46.55		£11,638		
01/03/2011	33	16:00:00	45.81		£11,453		
01/03/2011	34	16:30:00	49.77		£12,443		
01/03/2011	35	17:00:00	56.29		£14,073		
01/03/2011	36	17:30:00	60.53		£15,133		
01/03/2011	37	18:00:00	65.04		£16,260		
01/03/2011	38	18:30:00	65.35		£16,338		
01/03/2011	39	19:00:00	59.25		£14,813		
01/03/2011	40	19:30:00	53.17		£13,293		
01/03/2011	41	20:00:00	52.23		£13,058		
01/03/2011	42	20:30:00	51.95		£12,988		
01/03/2011	43	21:00:00	47.89		£11,973		
01/03/2011	44	21:30:00	47.36		£11,840		
01/03/2011	45	22:00:00	43.55		£10,888		
01/03/2011	46	22:30:00	41.9		£10,475		
01/03/2011	47	23:00:00	41.13		£10,283		
01/03/2011	48	23:30:00	41.23		£10,308	<b>£575,645</b>	<b>(total to 24 hours)</b>
02/03/2011	1	00:00:00	41.92		£10,480		
02/03/2011	2	00:30:00	41.88		£10,470		
02/03/2011	3	01:00:00	41.72		£10,430		
02/03/2011	4	01:30:00	41.18		£10,295		
02/03/2011	5	02:00:00	40.74		£10,185		
02/03/2011	6	02:30:00	40.73		£10,183		
02/03/2011	7	03:00:00	39.57		£9,893		
02/03/2011	8	03:30:00	39.52		£9,880		
02/03/2011	9	04:00:00	39.7		£9,925		
02/03/2011	10	04:30:00	39.51		£9,878		
02/03/2011	11	05:00:00	40.53		£10,133		
02/03/2011	12	05:30:00	40.74		£10,185		
02/03/2011	13	06:00:00	42.72		£10,680		
02/03/2011	14	06:30:00	43.52		£10,880		
02/03/2011	15	07:00:00	52.75		£13,188		
02/03/2011	16	07:30:00	51.9		£12,975		
02/03/2011	17	08:00:00	51.67		£12,918		
02/03/2011	18	08:30:00	51.33		£12,833		
02/03/2011	19	09:00:00	52.49		£13,123		
02/03/2011	20	09:30:00	52.94		£13,235		
02/03/2011	21	10:00:00	53.25		£13,313		
02/03/2011	22	10:30:00	54.55		£13,638		
02/03/2011	23	11:00:00	48.93		£12,233		
02/03/2011	24	11:30:00	49.56		£12,390	<b>£848,983</b>	<b>(total to 36 hours)</b>

## 10.2 Calculation for section 3.3.2

Under the current scheme, compensation for a day's loss of access (or part day) is equal to the daily TNUoS charge. In this example, the daily charge TNUoS charge is calculated as: affected generation volume (500MW) \* TNUoS Tariff (£5000/MW) /365, which equates to £6,849/day.

For the new scheme, the daily compensation for loss of access is equal to the weekly LDTEC charge / 7. The weekly LDTEC charge is calculated as: weekly LDTEC tariff (£/kW/week) x affected generation volume (500,000kw) where,

Weekly LDTEC tariff (£/kW/week) = TNUoS Tariff (£5/kw) x 0.9 x 7 /120 = 0.2625.

The weekly LDTEC charge is therefore 0.2625 x 500,000 which is equal to £131,250 (£/kW/week). Hence the daily compensation for loss of access is £131,250 / 7 which is equal to £18,750.

Table 4 shows a comparison of the compensation levels, (over the duration of loss of access) for the existing and new scheme.

**Table 6**

	<b>Current Scheme (TNUoS based)</b>	<b>New Scheme (LDTEC based)</b>
Day 2	£6,849	£18,750
Day 3	£6,849	£18,750
Day 4	£6,849	£18,750
Day 5	£6,849	£18,750
Day 6	£6,849	£18,750
Day 7	£6,849	£18,750
Day 8	£6,849	£18,750
Day 9	£6,849	£18,750
Day 10	£6,849	£18,750
<b>Total</b>	<b>£61,644</b>	<b>£168,750</b>

## 10.3 Calculation for section 3.3.3

In the example the access loss is for 10 days, at a rate of £100/MW for each full week of access loss. The resulting weekly compensation equates to £50,000. No compensation is paid for the remaining 3 days which do not comprise a full week.

## 10.4 Calculation for section 3.3.4

The formula for the calculation of compensation following restoration of access is the same as the one used for compensation calculation in Section 8.1 of this Appendix i.e.: Affected generation volume (500MW) / 2 x MIP.

Table 5 shows the total compensation for 3 hours following restoration of access (i.e. 6 settlement periods).

**Table 7**

Settlement Date	Settlement		Price	Calculation		
	Period	Time	£/MWh	£*		
11/03/2011	1	00:00:00	44.2	£11,050		
11/03/2011	2	00:30:00	45.04	£11,260		
11/03/2011	3	01:00:00	42.73	£10,683		
11/03/2011	4	01:30:00	42.58	£10,645		
11/03/2011	5	02:00:00	41.39	£10,348		
11/03/2011	6	02:30:00	41.24	£10,310	<b>£64,295</b>	<b>(total for 3 hours)</b>

\* formula  $= (500\text{MW} / 2) \times \text{Price } \text{£/MWh}$

## 11 APPENDIX F: Response Proforma

National Grid invites responses to this consultation by 21<sup>st</sup> October 2011. The responses to specific consultation questions (summarised below) or any other aspect of this consultation can be provided by completing the following proforma.

This proforma is also available as a word document.

Please return the completed proforma to [tariq.hakeem@uk.ngrid.com](mailto:tariq.hakeem@uk.ngrid.com).

<b>Company Name:</b>	
<b>Respondent:</b>	
<b>Contact Number:</b>	
<b>Does this response contain confidential information? If yes, please specify.</b>	

No	Question	Response (Y/N)	Rationale
1	Do you think Temporary Physical Disconnection (CAP48) compensation should be aligned with Emergency De-energisation (CAP144) compensation, such that the compensation up to the BM Window is paid at System Buy Price (SBP) rather than Market Index Price (MIP)?		
2	Do you think the scope of Temporary Physical Disconnection compensation should be expanded to include situations where disconnection is, in part, down to a users internal station configuration? Please provide rationale.		
3	Do you think islanding impacting multiple sites at different geographical locations, when a partial system shutdown has not been declared should be		

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No	Question	Response (Y/N)	Rationale
	excluded from loss of access compensation? Please provide rationale.		
4	Do you think an initial compensation period of up to 24 hours for transmission access loss is sufficient? Please provide rationale.		
5	Do you think an initial compensation period of up to 36 hours for transmission access loss would be more appropriate? Please provide rationale.		
6	Do you think an additional compensation period following restoration of transmission access is appropriate? Please provide rationale.		
7	Do you think the additional period should be technology or non-technology specific (e.g. same compensation periods for wind and nuclear plants)? Please provide rationale.		
8	Do you think that the current compensation based on the higher of average or actual TNUoS charges is appropriate? Please provide rationale.		
9	Do you think that the compensation for access loss should be based on Limited Duration Transmission Entry		

No	Question	Response (Y/N)	Rationale
	Capacity (LDTEC) rather than the TNUoS rate? Please provide rationale.		
10	Do you think that additional compensation for loss of access (e.g. flat weekly rate) should be paid over and above the existing compensation levels? Please provide rationale.		
11	<p>a) Do you think that 100/MW/Week for each full 7 day period of access loss is appropriate?</p> <p>b) Do you think that the compensation rate in Q11 (a) should be limited to 4 weeks?</p> <p>c) Do you feel other values/timescales (other than those in mentioned in questions 11a and 11b) would be more appropriate? Please provide rationale.</p>		
12	Do you think that Transmission Owners and System Operators should be incentivised to minimise loss of transmission access and associated costs? Please provide rationale.		
13	<p>a) Do you think that users should be required to raise claims within 30 days (or other period) of an incident?</p> <p>b) Do you think a body other than National Grid would be more appropriate to determine</p>		

No	Question	Response (Y/N)	Rationale
	<p>the validity of a claim?</p> <p>c) If not National Grid, who do you think should determine the validity of a claim?</p> <p>d) Do you think National Grid/ other body should be required confirm the validity of a claim within 60 days (or other period) of receipt.</p> <p>e) Do you think a minimum claim value of £5,000 (or other amount) would be appropriate? Please provide rationale.</p>		
14	<p>Do you think that the review of the compensation arrangements for loss of transmission access should be delayed until the completion of Project TransmiT?</p>		
15	<p>Are there any other comments you wish to raise?</p>		