

Draft report on the BSSG (Balancing Services Steering Group) discussions on compensation paid under CAP48 and CAP144

Introduction

1. Under certain specific circumstances, generators are entitled to compensation for the loss of access to the transmission system. These arrangements were introduced into the CUSC under three amendment proposals; CAP48, CAP76 and CAP144. Compensation under these amendment proposals is payable for certain categories of system to generator intertrips (CAP76), planned and eligible unplanned disconnections (CAP48) and emergency de-energisation instructions (CAP144).
2. The Balancing Services Standing group (BSSG) has discussed the CUSC compensation arrangements for generator transmission access loss introduced under these three amendment proposals. The group has concluded a review of the arrangements implemented under CAP48 and CAP144 is merited; the group considers CAP76 arrangements are better considered independent to CAP48 and CAP144.
3. This report explains the background to CAP48 and CAP144, how compensation under the two amendments is calculated and some of the issues relating to CAP48 and CAP144 compensation discussed within the BSSG group. The report discusses revised compensation for CAP48 and CAP144.

Background to CAP48 and CAP144

4. CAP43 was introduced on the 1st 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.
5. CAP48 was implemented on 1st April 2004 and defined the compensation which would be payable for the loss of transmission access. The purpose of the interruption compensation arrangements developed under CAP48, is to provide compensation in certain circumstances when an event on the transmission system is the sole cause of a disconnection of a BM Unit. The arrangements aimed to provide compensation to Users when transmission access has been removed solely as a result of National Grid and encourage National Grid to ensure transmission access is maintained at all times or, in the event of an interruption, is restored as soon as possible. The arrangements are not designed to provide compensation where the interruption is also due to the User. By restricting compensation to events caused solely due to a transmission issue, National Grid is exposed to those risks over which it has control. Compensation under CAP48 differs if the transmission outage or fault is planned or unplanned. Sections 8-10 provide more detail of how compensation is calculated under CAP48.
6. CAP144 introduced compensation for emergency de-energisation instructions and was implemented in July 2008. 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 BOA, potentially at a high cost. The compensation agreed under CAP144 is very similar to the unplanned outage component under CAP48. CAP48 attracts MIP (Market Index Price) for eligible lost output during the BM Window whilst CAP144 attracts SBP during the BM Window, post the BM period both CAP48 and CAP144 have identical compensation methods (MIP for up to 24hours followed by a rebate of TNUoS). Section 10 provides further details of the way compensation is calculated under CAP144, table 2 shows a comparison of the compensation under CAP48 and CAP144.

7. Several other modifications relevant to transmission access have been raised and implemented. CAP070 introduced Short Term Transmission Entry Capacity (STTEC); CAP94 introduced Limited Duration Transmission Entry Capacity (LDTEC). Both STTEC and LDTEC have a premium associated with them,

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

FT = Final annual TNUoS Tariff expressed in £/kW
 Gi = Generation zone
 STTEC Period = A period applied for in days as defined in the CUSC

LDTEC (Initial 17 weeks (high rate)):

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

The STTEC and LDTEC tariff recovers 90% of the annual TNUoS charge over 120 days, with the charge set to zero for generators with negative final tariffs.

CAP48 / CAP144 Compensation Calculation

8. Compensation for eligible outages under CAP48 is different depending on the reason for the loss of transmission access. If National Grid provides notice (by 16:00 day ahead), to a generator that transmission access will be lost the outage is deemed a planned outage. For planned¹ outages a generator is entitled to a refund of TNUoS² charges for each day or part day access is lost. Since few outages commence before 08:00 an outage notified at 16:00 would normally give a minimum of 16 hours notice; although in practise an outage that disconnects generation is only likely to be planned at short notice when the work involved is urgent.
9. For unplanned outages, ie when no notice has been provided (tripped) or provided after 16:00 day ahead, the outage is deemed unplanned. For unplanned outages, the settlement periods in which the access is not available are compensated at MIP within the first 24 hours, followed by a rebate of TNUoS¹ charges thereafter. The table below shows an example of the payment that would be payable for an unplanned outage lasting almost eight hours.

¹ 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

² For a disconnected party in a location with negative TNUoS charges, the refund would be based on the average TNUoS charge

Table 1 – Calculation of CAP48 Payment – unplanned outage

Calculation of 'Interruption Payment' under CUSC Paragraph 5.10

<http://www.elexon.co.uk/marketdata/PricingData/default.aspx>

First 24 Hours Payment									
Date	Time	Period	MIP	Minutes	TEC of Site	Unaffected CEC	MW	Compensation	Notes
01-Sep-10	04:30:00	10	32.84	30	1050	150	900	14,778.00	Interruption 04:35:00
01-Sep-10	05:00:00	11	36.73	30	1050	150	900	16,528.50	
01-Sep-10	05:30:00	12	36.54	30	1050	150	900	16,443.00	Unit A access restored 07:29
01-Sep-10	06:00:00	13	37.76	30	1050	150	900	16,992.00	
01-Sep-10	06:30:00	14	37.52	30	1050	150	900	16,884.00	
01-Sep-10	07:00:00	15	37.06	30	1050	150	900	16,677.00	
01-Sep-10	07:30:00	16	38.92	30	1050	600	450	8,757.00	
01-Sep-10	08:00:00	17	40.86	30	1050	600	450	9,193.50	
01-Sep-10	08:30:00	18	40.19	30	1050	600	450	9,042.75	
01-Sep-10	09:00:00	19	42.65	30	1050	600	450	9,596.25	
01-Sep-10	09:30:00	20	41.78	30	1050	600	450	9,400.50	
01-Sep-10	10:00:00	21	42.07	30	1050	600	450	9,465.75	
01-Sep-10	10:30:00	22	41.62	30	1050	600	450	9,364.50	Unit B access restored 11:45
01-Sep-10	11:00:00	23	42.34	30	1050	600	450	9,526.50	
01-Sep-10	11:30:00	24	42.48	30	1050	600	450	9,558.00	
01-Sep-10	12:00:00	25	42.73	30	1050	1050	0	0.00	
450							Total	£182,207.25	

TEC of site	1050
CEC of Site	1100
Unit A	450
Unit B	500

10. The compensation agreed under CAP144 is very similar to the unplanned outage component under CAP48, with the difference that SBP is paid for the periods in the BM window rather than MIP. The table below shows a summary of the compensation payable under CAP48 and CAP144 under the three different scenarios: Planned (by 16:00 Day Ahead), Planned (after 16:00 Day Ahead) and Unplanned.

Table 2 – Comparison of CAP48/CAP144 Payments

	CAP48	CAP144
Planned Day Ahead (by 16:00)	Refund of TNUoS	n/a
Planned after 16:00 Day Ahead	MIP for first 24 hours followed by rebate of TNUoS	n/a
Unplanned (tripped)	MIP for first 24 hours followed by rebate of TNUoS	SBP for BM Window, MIP for first 24 hours followed by rebate of TNUoS

Eligibility under CAP48

11. Not all instances of transmission access loss are eligible for compensation under CAP48, only Relevant Interruptions are compensated. Relevant Interruptions are defined in the CUSC as below;

“Interruption” 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.

A relevant interruption is essentially one in which a BM unit is de-energised solely due to an issue on the National Electricity Transmission System.

12. The CUSC defines a number of interruptions as Allowed Interruptions these are not compensated under CAP48 and are defined in the CUSC as below;

- an Event other than an Event on the National Electricity Transmission System;
- an event of Force Majeure pursuant to Paragraph 6.19 of the CUSC;
- a Total Shutdown or Partial Shutdown;
- action taken under the Fuel Security Code;
- 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;
- the result of a direction of the Authority or Secretary of State;
- 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).

Relevant Interruptions

13. Compensation under CAP48 is limited to those instances of disconnections caused solely as a result of deenergisation of Plant and Apparatus forming part of the National Electricity Transmission System. Solely is not a defined term under the codes, its use in determining a relevant interruption allows an exact interpretation to be applied as to what is, or is not compensated under CAP48.

Each CAP48 claim is individual, upon receipt of the claim an investigation into the specific circumstances would determine if the claim was eligible for compensation. The examples below (which may not be comprehensive) show the type of instances which would not be compensated under CAP48 due to the application of "solely" in determining if the outage is a "Relevant Outage".

Interruption of an initial BMU which then has/causes issues with other BMU's on site – Only the initial BMU interrupted would be compensated.

Interruption of a BMU and restoration of access at a later point, BMU is delayed in being able to synchronise due to an internal issue (which may have been caused by the interruption) - Only the period the initial BMU was interrupted would be compensated.

Disconnection caused by multiple fuses blown, both National Grid and Customer owned. Unclear which fuse initiated the disconnection – No compensation.

Interruption due to a combination of factors BMU/Transmission System – No compensation

Interruption impacting a station transformer which may impact a BMU – No compensation

Disconnection caused by plant and equipment not forming part of the transmission system – No compensation

14. By restricting compensation to events caused solely due to a transmission issue, National Grid is exposed to those risks over which it has control. Compensation is not paid if the disconnection is caused, in part or whole by a User; this ensures Users are treated equally and exposed to risks under their control.

Historical CAP48 and CAP144 Payments

15. CAP48 was implemented on 1st April 2004, the total value of claims paid up to 2011 under the modification totals under £2m. CAP144 was implemented in 2008, no payments have been made.

Issues discussed under the BSSG

16. There are two components to examine when reviewing compensation under CAP48:
- Are the types of interruption classed as a relevant interruption, and hence compensated, reasonable?
 - Is the compensation paid appropriate?

Are the types of interruption classed as a relevant interruption, and hence compensated, reasonable?

As described earlier an interruption is only eligible for compensation if an issue on the National Transmission system is the sole reason for disconnection. Paragraph 13 highlights some examples, under which the disconnection would not be eligible for compensation. EDF have raised a possible defect under CAP48 relating to nuclear generators. Typically a generator will still be able to export power even if supplies to the station transformer(s) are interrupted however in the case of some nuclear generators in the event of interruptions to station transformers, self interruption of exports might be initiated in order to meet safety requirements. The export connection is unaffected and, under current rules, such an interruption would not be eligible for compensation under CAP48. EDF propose that that the rules for CAP48 are modified such that where parts of a Users Equipment is de-energised, as a result of an event or system operator action and this prevents the User from continued operation and export of power from their associated BMU's the disconnection period is compensated under CAP48. The EDF proposal is attached in the appendices.

Is the compensation paid appropriate?

The discussion around the compensation paid under CAP48 and CAP144 has focussed mainly on the unplanned component of CAP48. Five main areas have been discussed:

1) Increase the compensation paid at Market Index Price (MIP) from 24 hours to 36 hours

Compensation for disconnection for the initial 24 hours (under CAP48) is based on the Market Index Price (MIP). This allows a user to trade out of a physical position following loss of access. Some members of the BSSG have suggested 24 hours is not a sufficient period of time, should there be uncertainty over how long a disconnection may last and that a more appropriate period of time for compensation at MIP would be 36 hours.

1a) Introduction of addition period of compensation following restoration of access

The compensation under CAP48 applies for the period of transmission access loss only, once access has been restored compensation is no longer payable. Following restoration of access, some generators might not be able to re-synchronise immediately with other generators able to re-synchronise at short notice. The BSSG group discussed having an additional period of compensation following restoration of access in order to allow the generator a period of time to resynchronise. The addition period of time would be specific to the type of generation; wind for example may have no additional compensation period following restoration of transmission access while a coal fired plant may have an additional period of compensation. The additional compensation period would apply only until the plant had resynchronised or the end of the period was reached, whichever point was reached first. The level of compensation would be based on the MIP.

2) Change compensation rate from TNUoS to LDTEC

For a planned outage a generator is eligible for a refund of TNUoS charges (or average TNUoS charges if negative charges apply), for an unplanned outage the TNUoS charges are refunded after an initial 24 hours. Some members of the BSSG have suggested that limiting compensation to a refund of TNUoS does not correctly reflect the value generators place on transmission access. An alternative compensation method suggests basing compensation on LDTEC charges. As paragraph 7 explains LDTEC introduced a premium rate for generators to access short term transmission entry capacity. Under this proposal loss of access would be compensated at the higher of the LDTEC rate or average TNUoS charge. The LDTEC rate would only be payable for a maximum of 120 days, after this point the rate would reduce to the TNUoS rate, with the total annual compensation payable capped at the site annual TNUoS charge (or average annual TNUoS charge).

3) Introduction of a flat weekly £100/MW/Week compensation for each 7 day period of disconnection

In addition to the two modifications to CAP48 compensation described above, an additional compensation element has been proposed. It has been proposed that a flat weekly fee of £100/MW/Week is paid for each 7 day period of disconnection with a maximum of 4 weeks payment. This would be intended to compensate Users for the uncertainty involved with an ongoing disconnection including managing an ongoing trading position, fuel and services arrangements.

4) Alignment of unplanned compensation portion of CAP48 and CAP144

The compensation for an unplanned outage under CAP48 is very similar to the compensation for emergency de-energisation instructions introduced under CAP144, as shown in section 10. Under CAP144, during the BM Window compensation is calculated using the SBP whilst for CAP48 compensation is calculated using the MIP. The BSSG has discussed aligning the compensation for an unplanned outage under CAP48 to the compensation received under CAP144 i.e. SBP for the BM Window.

Comparison of compensation under existing methodology and BSSG discussions

17. Some of the changes to CAP48/CAP144 discussed at the BSSG and listed under section 16 will increase the total amount of compensation paid. The two tables below show the level of compensation that would be paid under the existing CAP48 methodology, and how much would be paid if items 1-3 discussed under section 16 were implemented.

The generator assumptions used in the example outage are as follows:

Generator MW impacted: 500MW
 TNUoS Rate: £20/kw
 Period 1st March – 16th March 2011 (inclusive)

Current CAP48 Compensation Calculation Example

	Comensation	Comments
Initial 24 hours	£1,151,290	Compensation at MIP
2nd to 16th March inclusive	£410,959	Refund of TNUOS (£27,397 / day)
	£1,562,249	

Alternative CAP48 Compensation Calculation Example

	Comensation	Comments
Initial 36 Hours	£1,697,965	Compensation at MIP
2nd to 16th March inclusive	£1,125,000	Refund at LDTEC rate for each day or part day
Flat weekly 100/MW per 7 day period of disconnection	£100,000	500MW @ £100, two 7 day periods
Additional Period of compensation following access restoration	£156,515	Additional 3 hours compensation @ MIP
	£3,079,480	

If the changes discussed at the BSSG were all implemented then, for the example outage above, there would be a near doubling in compensation paid in comparison to the existing methodology.

Way Forward

The BSSG provide views on the points discussed in section 16 (shown below):

- Should the definition of a relevant interruption be expanded to include the EDF proposal
- Should the initial compensation period be increased to 36 hours
- Should there be an additional compensation period following restoration of access
- Is LDTEC a more appropriate compensation rate than TNUoS
- Is the introduction of a flat weekly payment appropriate
- Should compensation under CAP48 and CAP144 be aligned

Once a view has been agreed, BSSG should then seek CUSC panel views on the way forward e.g. raise a proposal or consider this work further e.g. via TCMF.

Appendices

Extracts from the CUSC and Grid Code



Appendix A - CUSC
& GRID Code ...

EDF Draft Proposal



EDF
CUSCProposa.doc (8

First Hydro Proposal



CUSC CAP 1xx.pdf