

Transmission Constraint Licence Condition Guidance

Guidance

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Overview:

This document is our Guidance to our approach to interpreting and enforcing the Transmission Constraint Licence Condition (TCLC). The TCLC applies to electricity generators during periods when there is insufficient capacity to transmit electricity from where it is generated to where the demand is. In such circumstances, known as transmission constraints, the System Operator will need to take actions to ensure that the level of electricity supplied equals the level of electricity demanded. There are often only a limited number of options available to the System Operator, which can sometimes lead to higher costs to balance the system. In cases where the generator obtains a financial benefit from the System Operator in return for reducing their generation during a period of transmission constraint, the TCLC prohibits generators from obtaining an excessive benefit.

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1. Introduction

Purpose

1.1. This document provides guidance to licensees and other interested parties on Ofgem's intended approach to the interpretation and enforcement of the Transmission Constraint Licence Condition (TCLC)¹ coming into force on 16 July 2017. For ease of reference the drafting of this licence condition (Standard Licence Condition 20A of the Generation Licence) is reproduced in full at Appendix 1. In developing this guidance, we have looked at the guidance for the previous TCLC², expiring in July 2017, and taken into account consultation responses received from stakeholders to our consultations published in May 2016³ and February 2017⁴.

Background

1.2. Ofgem has had longstanding concerns that the potential exists for electricity generators to manipulate and exploit market conditions and charge unduly high prices⁵ to the System Operator (SO) to balance the GB electricity system, in connection with periods of transmission constraint. Transmission constraints occur when there is insufficient network capacity to transmit the electricity into or out of a region on the network. Constraints can arise under normal network conditions due to the patterns of supply and demand on a given day. However, they are often triggered or exacerbated by transmission and/or generation outages. An export constraint happens when total generation in an area exceeds the total demand plus transmission capacity to export the excess electricity⁶. During periods of transmission constraint, the SO often has a limited set of options to purchase reduced generation (or demand) from a specific geographic area. Given the limited numbers of options available to the SO, the potential exists in some cases for generators to charge higher than market prices for balancing services; these are costs which will ultimately fall on the consumer.

1.3. Typically, bids are paid by generators to the SO to reduce their generation of electricity, with the level of bids reflecting avoidable costs associated with generation. However, during some periods the SO has had to pay large amounts (ie negative bids) to generators to reduce their generation. It is anticipated that as investment in renewable generation is likely to be concentrated in particular areas, this could potentially increase transmission constraints and therefore increase activity in the BM. This concentration may, in the absence of the TCLC, increase how frequently such negative bids are submitted.

1.4. The licence condition was initially introduced for five years, expiring in July 2017. Following an internal review and a consultation Ofgem has decided to extend the

¹ This is Standard Licence Condition 20A of the Generation Licence

² This was Standard Licence Condition 20 of the Generation Licence

³ <https://www.ofgem.gov.uk/publications-and-updates/extension-transmission-constraint-licence-condition>

⁴ <https://www.ofgem.gov.uk/publications-and-updates/statutory-consultation-transmission-constraint-licence-condition>

⁵ Or pay the SO unduly low 'bid' prices in the Balancing Mechanism.

⁶ Import constraints are not discussed here because these are not covered by the new TCLC to which this guidance refers.

prohibition by introducing a new, permanent licence condition to the Generation Licence as Standard Licence Condition (SLC) 20A, in line with the licensing framework regulated by Ofgem.

Competition law

1.5. The TCLC has been introduced in order to prevent generators⁷ from exploiting periods of transmission constraint. It does not displace the application of competition law where appropriate. It is complementary to it and targeted at this particular harm. Ofgem does not intend to interpret the scope of the TCLC by reference to competition law and REMIT⁸. The assessment of whether or not there has been a breach will be undertaken with reference to the framework of the TCLC and will not apply automatically the analytical framework for establishing excessive pricing under competition law. Whether the licensee is paid or seeks to be paid an excessive amount or whether the licensee pays or seeks to pay an excessively low amount shall be determined by reference to whether the licensee has obtained an excessive benefit which is the overarching test in paragraph 1 of the TCLC.

⁷ The terms “generators” and “licensees” are used interchangeably in this guidance hereon in and refer to those undertakings obligated under the TCLC ie licensed generators.

⁸ Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency

<https://www.ofgem.gov.uk/gas/wholesale-market/european-market/remit>

2. The Transmission Constraint Licence Condition

Overview

2.1. Paragraph 1 of the TCLC provides that the licensee must not obtain an excessive benefit from electricity generation in relation to a transmission constraint period.

2.2. A transmission constraint can arise due to a number of reasons, as set out in Appendix 2. The TCLC applies to all periods of export constraints which arise when total generation in an area exceeds the total demand plus transmission capacity to export excess electricity.⁹ A constraint period is any period of time, regardless of the duration, when a transmission constraint occurs.

2.3. Paragraph 2 of the TCLC further provides that the licensee shall be considered to have obtained an excessive benefit from electricity generation in relation to a transmission constraint period if the licensee and the SO enter into, or have entered into, relevant arrangements which relate to a transmission constraint period; and

- a) the licensee pays, or seeks to pay, the system operator an excessively low amount; or
- b) the licensee is paid, or seeks to be paid, an excessive amount by the system operator.

2.4. The relevant arrangements referred to in paragraph 2 of SLC 20A are defined as arrangements entered into between the licensee and the SO within the BM. The entering of such arrangements includes the making of a bid by the licensee whether or not that bid is accepted by the SO.

2.5. The circumstance identified in paragraph 2 of the TCLC essentially captures the following behaviour:

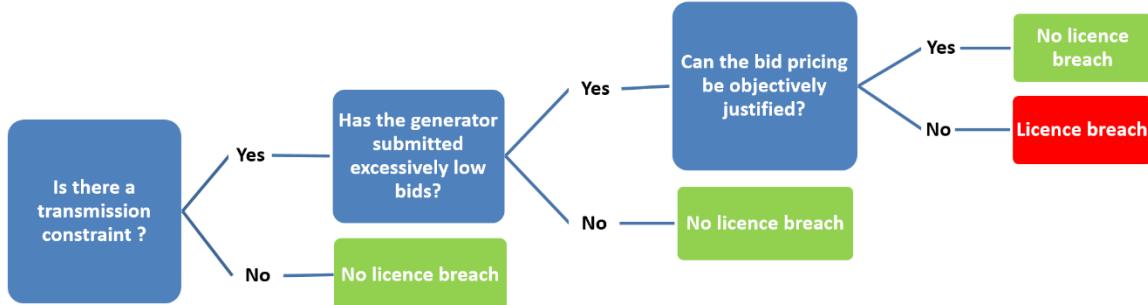
- Generators giving excessive bids in relation to export constraints. In such cases, irrespective of generation, generators may potentially take advantage of being behind an export constraint, and the limited number of options with which the SO can resolve the constraint, by submitting excessive bids.

2.6. There may be instances when it appears that the licensee is in breach of the condition, but their actions can be objectively justified. Any objective justification relied upon by a licensee for breaching any of the circumstances set out in paragraph 2 of the TCLC will need to be clearly evidenced by the licensee and will be assessed by Ofgem on a case-by-case basis.

⁹ A full definition of transmission constraint is set out in the TCLC and a summary of this is in the glossary of this document.

2.7. The remainder of this chapter discusses in detail the circumstance that is prohibited by the TCLC.

2.8. The diagram below provides a high level illustrative example of the steps Ofgem would expect to take in considering whether a breach of the TCLC has occurred.



2.9. Note that a situation where the licensee pays, or seeks to pay, an excessively low amount and a situation where the licensee is paid, or seeks to be paid, an excessively high amount are both captured in the second blue box in the diagram above. The first case refers to excessively low positive bids which result in payments from the generator to the SO. The second refers to excessively low negative bids which result in payments from the SO to the generator.

2.10. This is intended to prohibit generators from taking advantage of their position during export constraints and charging the SO (or seeking to charge) an excessive amount or paying, or seeking to pay the SO an excessively low amount to reduce generation¹⁰.

2.11. Licensees are encouraged to establish their pricing strategy and be ready to provide evidence of objective justification. We would not expect generators behind constrained areas to be disadvantaged in the market when compared to generators outside of constraint zones and vice versa.

2.12. Although each case will be considered on its own facts, there may be situations in which Ofgem would be less likely to take action than others. For example:

- Whilst the TCLC permits enforcement action where the generator has submitted an excessive bid, Ofgem generally expects to focus on whether a generator has an excessive bid accepted. Nonetheless, Ofgem retains the option of taking action against generators if excessive bids are submitted but not accepted.
- Whilst the TCLC permits enforcement action for behaviour during a single short transmission constraint period, Ofgem generally expects to focus on longer transmission constraint periods. Nonetheless, Ofgem retains the option of taking

¹⁰ The rules of the BM under emergency instructions mean that the SO pays the last remaining bid price submitted by the generator, even if that bid price is not related to the current settlement period. Given that emergency instructions can occur during periods of transmission constraint, there is the possibility of a TCLC breach in relation to emergency instructions. That is, if the SO has paid a bid to a generator by emergency instruction which is deemed excessively high and the bid price relates to a bid made after the TCLC came into force, then there is a potential TCLC breach.

action against generators for behaviour during a single transmission constraint period.

2.13. Ofgem would prioritise any action taken in accordance with its most recent enforcement guidelines at the relevant time. Further detail on enforcement can be found in Chapter 3.

2.14. The prohibition in the licence condition applies regardless of whether or not the generator has manipulated its generation output. For example, during an export constraint if a generator charges the SO an excessive amount in the BM to reduce its generation then the generator will be in breach of the TCLC. It will be necessary to assess the level of the bid prices within the framework of the TCLC ie by reference to whether an excessive benefit has been obtained.

2.15. The following is a non-exhaustive list of indicators which Ofgem may consider when determining whether an excessive benefit has been obtained. The assessment should be undertaken with reference to the framework of the TCLC and does not suggest that there should be an automatic alignment with a competition law analysis even though some of the tools for assessing a breach of TCLC may be similar to those used in excessive pricing cases:

- Avoidable costs - Ofgem would compare bids accepted to manage export transmission constraints to estimates of avoidable costs. Avoidable costs can be defined as short-run marginal cost plus additional maintenance and ramping down costs, eg costs of going below the 'Stable Export Limit'. We would also expect to take account of opportunity costs and allow for reasonable profits to be earned. Opportunity costs may include, for example, the price of ROCs in the case of renewable generators. Pumped storage sites may include the opportunity costs related to the reservoir. Additional costs related to providing ancillary services may also be included.
- Comparable generator benchmarks - Accepted bids behind an export constraint could be compared with those charged by any comparable generators, on the other side of a constraint. Comparability could also take into account the differences between bids to, for example, turn down generation incrementally rather than reducing generation below the 'Stable Export Limit' and having to shut down the plant completely.
- Other indicators from general market monitoring, such as historical bids during non-constrained periods and average GB-wide bids.

2.16. If any circumstances, including the above indicators, suggest a potential breach, as set out in Chapter 3, Ofgem may write to the licensee concerned, giving them an opportunity to respond. Licensees are invited to provide an explanation, including objective justification of their pricing. Supporting evidence should be submitted to Ofgem for assessment.

2.17. By way of illustration, although each potential breach will be assessed on a case-by-case basis, Ofgem may consider pricing decisions to be objectively justified if affected by the following:

- Operational risks. For instance, some generators may have to price in the risk that generation cannot be restarted or turned down immediately once the balancing action has been executed. Similarly, new plant may be relatively

inflexible due to testing required during commissioning phases and therefore may reflect this in bid prices.

- Start up and ramp up costs. We recognise that there are costs associated with starting up or ramping up a plant that impact on the economics of dispatch decisions and that such costs may be reflected in bid prices to turn down generation.
- Environmental obligations. Some generators will have to consider environmental and safety factors when determining their pricing decisions. For example generators have to consider safety hazards in extreme weather conditions such as high rainfall or flooding which can impact on hydro power stations.

2.18. Monitoring and enforcement is discussed in more detail in Chapter 3.

3. Monitoring and Enforcement

Monitoring

3.1. Ofgem will monitor compliance with, and operation of, the TCLC. Ofgem has developed a database which contains data on all BMUs in GB, data on Bid-Offer Acceptances as well as the latest fuel and electricity price data. The database is fed with data from Elexon and Bloomberg. The database will help Ofgem to identify when bid prices appear to be considerably above cost, or are out of step with the rest of the market. After identifying any such instances, Ofgem will then analyse the data in more detail to assess whether it indicates that a potential breach may have occurred.

3.2. Ofgem also expects market participants to play their part in identifying any potential breaches. As balancing costs are spread amongst markets participants on a market share basis¹¹ Ofgem believes that there is an incentive for market participants to report any suspected abuses to them. Ofgem will also regularly discuss balancing market actions with the SO to help identify any breaches of the TCLC.

Enforcement

3.3. Generators are responsible for ensuring that they comply with the requirements of the TCLC. They should ensure that they are able to demonstrate compliance in the event that concerns are raised about their conduct. We do not consider that this places an unreasonable administrative burden on generators as we would expect generators to already hold relevant information in this regard. We will monitor compliance by the means set out above and by reviewing any evidenced complaints made to us by customers, whistleblowers and other industry players.

3.4. We will enforce the TCLC in accordance with our enforcement guidelines in force at the relevant time. These can be accessed on our Ofgem website¹².

3.5. Consistent with these guidelines, if, on our own initiative or following a complaint, we identify a potential breach under the TCLC, we may write to the licensee concerned, asking the licensee to provide cost and other relevant data. The licensee may also be required at this stage (and/or at a later stage) to provide information which demonstrates that their actions were objectively justified.

3.6. Also as set out in our Enforcement Guidelines, we will assess whether it is appropriate to take enforcement action against our prioritisation criteria. For example, where the evidence of a potential breach is weak or any breach is likely to be trivial or there is no or minimal harm to consumers, an investigation would be less likely.

¹¹ See explanation of the BM in Appendix 3 for a description of BSUoS charging.

¹² <https://www.ofgem.gov.uk/investigations/ofgems-powers>

3.7. If a licensee is found to be in breach, it may face a financial penalty. The amount of any penalty imposed will be determined by the Authority in accordance with its published policy on financial penalties for licence breaches¹³.

3.8. Should the matter remain unresolved after our internal procedures have been exhausted, then appeals against enforcement decisions can be made in line with the standard licence procedures, by making an application to the court. Note, that appeals to the Competition Appeal Tribunal (CAT) cease as of 15 July 2017. Appeals can only be made to the court.

¹³ Guidance with respect to Ofgem's policy on licence breaches and financial penalties is available on the Ofgem website:
<https://www.ofgem.gov.uk/investigations/ofgems-powers>

4. Appendices

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Appendix 1 – Licence Condition

Condition 20A. Transmission Constraint Licence Condition

1. The licensee must not obtain an excessive benefit from electricity generation in relation to a Transmission Constraint Period.
2. For the purposes of paragraph 1, the licensee shall be considered to have obtained an excessive benefit from electricity generation in relation to a Transmission Constraint Period if:
 - (a) the licensee and the system operator enter into, or have entered into, Relevant Arrangements which relate to a Transmission Constraint Period; and
 - (b) under the Relevant Arrangements and in connection with a reduction in electricity generation in the Transmission Constraint Period, either:
 - (i) the licensee pays, or seeks to pay, the system operator an excessively low amount; or
 - (ii) the licensee is paid, or seeks to be paid, an excessive amount by the system operator.
3. For the purposes of paragraph 2 the reference to a reduction in generation by the licensee in a Transmission Constraint Period means:
 - (a) a reduction in comparison to the licensee's Notified Electricity Generation for that Transmission Constraint Period; and
 - (b) a reduction in generation of electricity by particular generating plant, whether or not there is an overall reduction in electricity generation in that Transmission Constraint Period.
4. This licence condition shall be interpreted and enforced in accordance with guidance published by the Authority.
5. Before this condition comes into force the Authority shall publish the guidance referred to in paragraph 4.
6. Before the Authority publishes the guidance referred to in paragraph 4 the Authority shall consult:
 - (a) the holder of any licence under section 6(1)(a) of the Act; and
 - (b) such other persons as the Authority thinks it appropriate to consult.
7. The Authority may from time to time revise the guidance referred to in paragraph 4 and before issuing any such revised guidance the Authority shall consult such person as specified in paragraph 6 setting out the text of, and the reasons for, the proposed revisions.
8. The licensee shall provide to the Authority, in such manner and at such times as the Authority may reasonably require, such information as the Authority may

require or deem necessary or appropriate to enable the Authority to monitor the licensee's compliance with this condition.

9. In this condition:

"Balancing Mechanism"	means the mechanism for the making and acceptance of offers and bids to increase or decrease the quantities of electricity to be delivered to, or taken off, the total system at any time or during any period so as to assist the system operator in coordinating and directing the flow of electricity onto and over the national electricity system and balancing the national electricity system pursuant to the arrangements contained in the BSC;
"Notified Electricity Generation"	means the intended level of generation notified by the licensee to the system operator for a period pursuant to the notification arrangements established by BETTA and the BSC;
"Relevant Arrangements"	means arrangements entered into by the licensee and the system operator within the Balancing Mechanism, and the entering of such arrangements shall include the making of a bid by the licensee whether or not that bid is accepted by the system operator;
"Transmission Constraint"	means any limit on the ability of the National Electricity Transmission System, or any part of it, to transmit the power supplied onto the National Electricity Transmission System to the location where the demand for that power is situated, such limit arising as a result of factors such as: (a) the need not to exceed the thermal rating of any asset forming part of the National Electricity Transmission System; (b) the need to maintain voltage on the National Electricity Transmission System; and (c) the need to maintain the transient and dynamic stability of electricity plant, equipment and systems directly or indirectly connected to the National Electricity Transmission System; and such limit being used by the system operator to operate the National Electricity Transmission System in accordance with the National Electricity Transmission System Security and Quality of Supply Standard referred to in standard condition C17 (Transmission systems security standard and quality of service) of the standard conditions for electricity transmission licences or any other provision of the transmission licence, the Act or any other requirement of law;
"Transmission Constraint Period"	means any period of time, regardless of the duration, when a Transmission Constraint occurs.

Appendix 2 – Market Arrangements

Overview of BETTA market arrangements

1.1. The BETTA market arrangements have been in place since April 2005 and have helped to facilitate competition in the GB-wide wholesale market for trading electricity (the previous NETA arrangements had applied only within England & Wales). Under BETTA and NETA, participants in the electricity market contract for the supply of electricity either on a bilateral basis or through organised exchanges such as APX. Each participant must notify its contractual position to the SO before real time.

1.2. The SO (NG) is responsible for ensuring the system is in balance at all times to avoid blackouts or overloads. The BM provides a residual market for balancing the system in real-time. Generators are free to choose whether to self-dispatch or offer into the BM.

The Balancing Mechanism (BM)

1.3. Parties trade to balance their positions day ahead and within day. To enable NG as SO to keep the transmission system in balance, the Grid Code requires each participant to submit, daily at 11am, an Initial Physical Notification ("IPN") of its contracted position for each of the half hour trading periods in the following day. Each participant's IPN may be amended at any time prior to "gate closure", which is one hour before the relevant half hourly trading period. At gate closure, an IPN becomes a Final Physical Notification ("FPN"), and these final positions are aggregated by NG and notified to the market¹⁴.

1.4. At gate closure, NG as SO becomes the sole counterparty to all further trades and can adjust the levels of generation and demand to keep the transmission system in balance by using participants' Bids and Offers in the BM¹⁵.

Balancing services

1.5. NG also uses other tools outside the BM such as standing reserve contracts and pre-gate closure transactions (PGBTs)¹⁶ to balance the system. Collectively, these tools are known as Balancing Services. NG uses these services in order to manage the flows of electricity over the GB transmission system in order to:

- ensure the residual balancing of electricity supply and demand;
- ensure that the frequency and voltage of electricity on the system is maintained within the prescribed limits;
- manage constraints which have an impact on the frequency and voltage of particular parts of the system; and
- deal with emergency situations.

¹⁴ Each participant must notify its contractual position for every half-hour trading period of the day to a central system operated by Elexon, the company that administers the Balancing and Settlement Code ("BSC") arrangements.

¹⁵ Bids specify the price participants are willing to pay to NG to reduce generation or increase consumption by a specified volume, while Offers specify the price they will charge to NG to increase generation or reduce consumption by a specified volume. NG will normally accept the highest-priced Bids or lowest-priced Offers first, unless prevented from doing so by transmission constraints or the physical characteristics of the plant in question.

¹⁶ PGBTs are fixed-price contracts struck between NG and a generator before the BM opens. They are another tool used by NG to help balance the system.

Charges and Payments

1.6. NG's actions in balancing the system give rise to charges and payments from and to participants in the BETTA market, including:

- Balancing Services Use of System Charges ("BSUoS"), which aggregate all the costs incurred by NG in balancing the electricity system in real-time, and charge these back to participants based on their proportion of the total market.
- Bid and Offer cash flows, which represent the charges or payments between NG and all BSC parties for changes to output due to accepted BM Bids and Offers.
- Balancing Services Contract Costs ("BSCC"), which are charged by NG for services procured from all participants in the electricity trading markets, regardless of whether they use the BM, to ensure the safe operation of the transmission system
- Energy Imbalance Charges ("EIC"), also known as "cash-out prices", which are the charges paid or received by any market participant based on the difference between their contracted energy position (as set out in the FPN) and their physical position according to actual outturn metered volume; and
- Residual Cashflow Reallocation Charge ("RCRC"): after physical imbalances have been financially settled, the remaining net cash flow is paid to or from all market participants in the same way as the BSUoS mechanism re-distributes or collects monies.

The GB transmission system

1.7. The transmission network has a finite capacity to transit electricity between any two locations. If flows on the system are too high, the network can overload which could lead to blackouts. On the other hand, in order for electricity to flow freely, the network must have sufficient capacity available. If insufficient capacity is available, the ability to meet demand for power in a particular area may be limited. A transmission constraint (referred to in this document as a "constraint") occurs where the transmission system is unable to transmit the power supplied onto the transmission system to the location where the demand for that power is situated, and can arise due to:

- the limitations on the thermal (heating) ratings of electric lines within the GB transmission system being exceeded;
- the inability to maintain voltages on the GB transmission system within prescribed limits set out in the Great Britain Security and Supply Standard (GBSQSS¹⁷); or
- limitations to ensure the transient and dynamic stability of electrical plant, equipment and systems directly or indirectly connected to the transmission system being breached.

1.8. It should be noted that constraints can arise under "normal" network conditions, simply due to the patterns of supply and demand on a given day. However, constraints are often triggered or exacerbated by transmission outages (which reduce the available capacity on the network) and/or generation outages (which disrupt the usual pattern of electricity supply).

1.9. In the event of a constraint, the SO will seek to reconfigure the system and/or take actions in the market to increase and decrease the amount of electricity at different

¹⁷ Condition C17 of the Transmission Licence requires NG and the Scottish transmission companies to act in accordance with the GBSQSS unless a derogation has been granted by the Authority. The GBSQSS sets out, among other things, the design criteria for the transmission system and for connections to that system, eg the capability to deal with faults/outages without exceeding equipment loadings or voltage limits.

locations on the network in order to manage the flow of electricity across the GB transmission system. The exact way in which a constraint is managed by the SO depends on a number of factors including the nature of the flows on the transmission system; the local level of generation output; and the local level of system demand. In the first instance, SO (NG) will normally seek to manage constraints by reconfiguring the transmission system: this includes, for example, splitting a substation to control power flows or switching a circuit out to manage high voltage issues. However, the constraint may still exist once all such actions have been exhausted and therefore require further management actions to be taken by the SO, such as:

- deferring transmission outages: if the constraint has arisen as a result of an outage due to maintenance or the installation of new transmission assets, deferring the outage where possible may avoid the constraint for the time being, but it will disrupt the construction programme and the constraint may then re-emerge at a later date;
- commercial inter-trips: when an inter-trip arrangement is in place, additional power may be flowed over the relevant transmission lines without breaching the GBQSS, since if a selected circuit trips the generation or demand in question will automatically be disconnected to avoid the lines overloading;
- taking Bid-Offer Acceptances (BOAs) in the BM, in order to increase the level of local generation on one side of the constraint and reduce it on the other;
- entering into BMU-specific trades (Over-the-Counter ("OTC") trades or PGBTs) with particular generators, which achieve a similar impact as do BOAs in the BM but may have the advantage of allowing NG to negotiate prices ahead of real-time and reduce the risk of exposure to volatile prices in the BM; and negotiating longer-term bilateral contracts for constraint management, which may have a variety of terms depending on the contract in question.

Appendix 3 - Glossary

A

Authority

The Gas and Electricity Authority ('GEMA') established under section 1 of the Utilities Act 2000.

B

British Electricity Trading and Transmission Arrangements (BETTA)

The British Electricity Trading and Transmission Arrangements, created a fully competitive British-wide wholesale electricity market for the first time. The new arrangements were implemented on 1 April 2005 and followed on from the implementation of NETA in England and Wales in 2001.

Balancing Mechanism (BM)

The Balancing Mechanism is the principal tool used by the System Operator to balance the electricity transmission system on a second-by-second basis, by procuring commercial services (Balancing Services) from generators and suppliers post gate closure, in accordance with the relevant provisions of the Balancing and Settlement Code (BSC) and the Grid Code.

Balancing Services

The services that the electricity System Operator needs to procure in order to balance the transmission system.

Bid-Offer Acceptances (BOAs)

Acceptances by the SO of Balancing Mechanism offers to increase output on the system, or bids to reduce output on the system. The prices of BOAs form the basis for the calculation of the Energy Imbalance or cash-out prices.

Balancing and Settlement Code (BSC)

The legal document setting out rules and governance arrangements for electricity balancing and settlement in Great Britain. All licensed electricity generators and suppliers must sign up to the BSC and other interested parties may also choose to do so.

Balancing Services Use of System (charges) (BSUoS)

The charge levied by the System Operator (SO) on users of the transmission system, in order to recover the costs the SO incurs in the Balancing Mechanism and in procuring Balancing Services. They are charged on a half-hourly basis based on proportion of total output and demand

B

Bid

Participants specify the price that they are willing to pay to NG to reduce generation or increase consumption by a specified volume by submitting bids in the Balancing Mechanism.

C

[Cash-out prices](#)

Cash-out prices (or Energy Imbalance Prices) applied to parties for their imbalances in each half-hour period.

G

[Great Britain Security and Supply Standard \(GBSQSS\)](#)

The GBSQSS sets out, among other things, the design criteria for the transmission system and for connections to that system, eg the capability to deal with faults/outages without exceeding equipment loadings or voltage limits.

Grid Code

Code revised under BETTA to permit the development, maintenance and operation of an efficient, co-ordinated and economical system for the transmission of electricity, to facilitate competition in the generation and supply of electricity and to promote the security and efficiency of the power system as a whole. National Grid and users of its transmission system are required to comply with the Grid Code.

L

[Large Combustion Plant Directive \(LCPD\)](#)

An EU Directive placing restrictions on the levels of sulphur dioxide, nitrogen oxides and dust particulates which can be produced by combustion plants with a thermal output greater than 50MW. The implementation of the LCPD in the UK requires coal and oil plant to fit flue gas de-sulphurisation (FGD) equipment or have their total running hours restricted to 20,000 between 1 January 2008 and 31 December 2015 before closing prior to the end of that period.

N

[New Electricity Trading Arrangements \(NETA\)](#)

Under NETA, bulk electricity is traded on one or more exchanges and through a variety of bilateral and multilateral contracts. Those buying and selling electricity on exchanges and through bilateral contracts include not only generators and suppliers (who produce or consume physical quantities of electrical energy), but non-physical traders as well.

O

Offers

Participants specify the price they are willing to charge to NG to increase generation or reduce consumption by a specified volume by submitting offers in the Balancing Mechanism.

Over the counter (OTC)

Term used to refer electricity trading contracts which are negotiated directly between the parties concerned.

P

Pre-gate closure transaction (PGBT)

PGBTs are fixed-price contracts struck between NG and a generator before the BM opens. They are another tool used by NG to help balance the system.

R

Renewable Obligation Certificate

The Renewable Obligation is the main support mechanism for renewable electricity projects in the UK. It places an obligation on UK electricity suppliers to source an increasing proportion of electricity they supply to customers from renewable sources. Renewables Obligation Certificates (ROCs) are green certificates issued by the Authority to operators of accredited renewable generating stations for the eligible renewable electricity they generate. Operators can then trade the ROCs with other parties, with the ROCs ultimately being used by suppliers to demonstrate that they have met their obligation.

S

Stable Export Limit

The Stable Export Limit of a generation plant refers to the minimum value at which the BM Unit, under stable conditions, may export (in MW) to the GB Transmission System at the Grid Entry Point or Grid Supply Point as appropriate.

System Operator (SO)

The entity charged with operating either the GB electricity or gas transmission system. NG is the SO of the high voltage electricity transmission system for the GB.

T

Transmission Constraint

There are various parts of the transmission network where import or export capacity is limited. Transmission constraints can become active when this capacity limit is reached. An export constraint is said to occur where total generation output in a given area exceeds the sum of demand plus transmission capacity to export from that area (ie excess supply over demand on one side of a transmission constraint). On the other hand, an import constraint occurs where there is an excess demand over supply on one side of a transmission constraint. Transmission constraints may require the SO to take 'sub-economic' balancing actions.

Transmission system

The national high voltage electricity network, operated by the SO.