

GB Seven Year Statement 2007

Introduction to Glossary

This Glossary defines and explains some of the key terms and phrases used in the Statement. Other documentation in current use within the Electricity Supply Industry (ESI) in Great Britain (e.g. the GB Grid Code and the GB Transmission System Quality and Security of Supply Standard) may contain similar terms and phrases. Where such terms and phrases carry the same meaning in this Statement, the same definition has been used for consistency. Where the meaning differs in some respect, a modified or new definition, as appropriate, is used. In all cases, for the purpose of this Statement, the definitions set out in this Glossary take precedence.

ACS Peak GB Demand

The estimated unrestricted winter peak demand (MW and Mvar) on the GB Transmission System for the Average Cold Spell (ACS) condition. This includes both transmission and distribution losses and represents the demand to be met by Large Power Stations (directly connected or embedded), Medium and Small Power Stations, which are directly connected to the GB Transmission System, and by electricity imported into the GB Transmission System from External Systems across External Interconnections.

Ancillary Services

This means:

- such services as any authorised electricity operator may be required to have available as Ancillary Services pursuant to the Grid Code; and
- such services as any authorised electricity operator or person making transfers on External Interconnections may have agreed to have available as being Ancillary Services pursuant to agreement made with National Grid and which may be offered for purchase by National Grid.

Annual Load Factor

The ratio of the actual energy output of a Generating Unit, CCGT Module or Power Station (as the case may be) to the maximum possible energy output of that Generating Unit, CCGT Module or Power Station (as the case may be) over a year. It is often expressed in percentage terms.

Apparatus

All equipment in which conductors are used, supported or of which they may form a part.

Authority

This means the Gas and Electricity Markets Authority established by section 1(1) of the

Utilities Act 2000.

Auxiliaries

Any item of Plant and/or Apparatus not directly a part of the boiler plant or Generating Unit, but required for the boiler plant's or Generating Unit's functional operation.

Average Cold Spell Conditions (ACS Conditions)

A particular combination of weather elements which give rise to a level of peak demand within

a financial year (1 April to 31 March) which has a 50% chance of being exceeded as a result

of weather variation alone.

Balancing Services

This means:

- Ancillary Services;
- Offers and bids in the Balancing Mechanism; and
- Other services available to National Grid which serve to assist National Grid in operating the GB Transmission System in accordance with the Electricity Act 1989 or the Conditions of National Grid's Transmission Licence granted under Section 6(1)(b) of the Electricity Act 1989 (as amended by the Utilities Act 2000 and the Energy Act 2004) and/or in doing so efficiently and economically.

Balancing Mechanism

This is the mechanism for the making and acceptance of offers and bids pursuant to the arrangements contained in the Balancing and Settlement Code (BSC).

Bilateral Agreement

Bilateral Agreements are entered into pursuant to paragraph 1.3.1 of the Connection and Use of System Agreement (CUSC). In relation to a User, these are:

- a Bilateral Connection Agreement (BCA), which is for Users with a direct connection to the GB Transmission System and includes directly connected Power Stations, directly connected Distribution Systems, Non-Embedded Customers and directly connected Interconnectors; or
- a Bilateral Embedded Generation Agreement (BEGA), which is for embedded Users who, nevertheless use the GB Transmission System except in cases where a BELLA has been entered into and includes embedded Power Stations (except BELLA), Small Power Station Trading Parties and Distribution Interconnector Owners; or
- a Bilateral Embedded Licence Exemptable Large Power Station Agreement (BELLA), which is for Embedded Exemptable Large Power stations who have no rights and obligations under Section 3 of the CUSC (Section 3 of the CUSC relates to the use of the GB Transmission System).

Boundary Capability

This is the maximum power, which can be transferred across a boundary without causing unacceptable conditions following specified outages as defined in the License Standard.

Busbar

This is the common connection point of two or more Transmission Circuits.

Combined Cycle Gas Turbine Module (CCGT Module)

A collection of Generating Units (registered as a CCGT Module under the Grid Code) comprising one or more Gas Turbine Units (or other gas based engine units) and one or more Steam Units where, in normal operation, the waste heat from the Gas Turbines is passed to the water/steam system of the associated Steam Unit or Steam Units and where the component units within the CCGT Module are directly connected by steam or hot gas lines which enable those units to contribute to the efficiency of the combined cycle operation of the CCGT Module.

Connection Entry Capacity (CEC)

(a) In the case of a Generating Unit other than that forming part of a CCGT Module, the maximum sent out active power of a Generating Unit as declared by the Generator. This maximum active power is net of the MW consumed by the Generating Unit through the Generating Unit's Unit Transformer when producing the same.

(b) In the case of a CCGT Module, the maximum sent out active power of a CCGT Module as declared by the Generator, being the active power declared by the Generator as being deliverable by the CCGT Module at the Grid Entry Point (or in the case of an Embedded CCGT Module, at the User System Entry Point), expressed in whole MW).

(c) In the case of a Power Station, the maximum amount of active power deliverable by the Power Station at the Grid Entry Point (or in the case of an Embedded Power Station at the User System Entry Point), as declared by the Generator, expressed in whole MW. The maximum active power deliverable is the maximum amount deliverable simultaneously by the Generating Units and/or CCGT Modules less the MW consumed by the Generating Units and/or CCGT Modules in producing that active power.

Customer

A person to whom electrical power is provided (whether or not he is the same person as the person who provides the electrical power)

Cyclic Rating

The load carrying capability of an item of equipment in excess of its nominal rating which can be achieved given the expected daily load cycle of the equipment. Such additional capability will normally arise as a result of the thermal inertia of the equipment.

Declared Net Capability (DNC)

The maximum output of a generator that can be sustained indefinitely without causing damage to the plant, less the auxiliary load associated with the plant. For plants with an energy source of water, wind or solar power, the maximum output, less site demand, is reduced by an appropriate factor to reflect the availability of the source energy.

Embedded

Having a direct connection to a User System or system of any other User to which Customers and/or Power Stations are connected, such connection being either a direct connection or a connection via a busbar of another User or of a Transmission Licensee (but with no other connection to the GB Transmission System).

Existing Network

The present GB Transmission System, as at 11 December 2006.

External Interconnection

Apparatus for the transmission of electricity to or from the GB Transmission System, or to or from a User System in Great Britain, into or out of an External System. External Interconnections may comprise several circuits operating in parallel.

Externally Interconnected System Operator (EISO)

A person who operates an External System which is connected to the GB Transmission System or a User System by an External Interconnection.

External System

A transmission or distribution system located outside Great Britain which is electrically connected to the GB Transmission System, or to a distribution system in Great Britain, by an External Interconnection.

Gas Turbine Unit

A Generating Unit driven by a gas turbine (for instance by an aero-engine).

GB Transmission System

The system consisting (wholly or mainly) of high voltage electric lines owned or operated by Transmission Licensees within Great Britain and used for the transmission of electricity from one Power Station to a sub-station or to another Power Station or between sub-stations or to or from any External Interconnection, and includes any Plant or Apparatus and meters owned or operated by any Transmission Licensee in Great Britain in connection with the transmission of electricity but does not include any remote transmission assets.

Generating Unit

Any apparatus which produces electricity including, for the avoidance of doubt, a CCGT unit.

Generation Uncertainty Model (GUM)

A computer program, which provides a probabilistic representation of the electricity market based on a set of input assumptions relating to demand and generation. Using Monte Carlo techniques, GUM generates up to 10,000 probabilistically derived backgrounds and calculates transfers into and out of specified zones, or groups of zones, for each background. The characteristics of the resultant transfer ranges provide an indication of the future transfers most likely to be experienced.

Generator

A person who generates electricity under license or exemption under the Electricity Act acting in its capacity as a generator in Great Britain.

Great Britain or GB

Has the meaning set out in Schedule 1 of National Grid's Transmission License.

Grid Code

The Grid Code is an interface document setting out the planning and operating procedures and principles governing NGET's relationship with all Users of the GB Transmission System, be they Generators, DC Converter owners, Suppliers or Non-Embedded Customers. The Grid Code specifies the day to day procedures for both planning and operational purposes and covers both normal and exceptional circumstances. The Grid Code is drawn up pursuant to the Transmission license, and from time to time revised in accordance with the Transmission License.

Grid Entry Point (GEP)

A point at which a Generating Unit or a CCGT Module or a CCGT Unit, as the case may be, which is directly connected to the GB Transmission System, connects to the GB Transmission System.

Grid Supply Point (GSP)

A point of supply from the GB Transmission System to Network Operators or Non-

Embedded Customers.

Interconnection Allowance

An allowance in MW to be added in whole or in part to transfers arising out of the Planned Transfer Condition to take some account of non-average conditions (e.g. Power Station availability, weather and demand). This allowance is calculated by an empirical method described in the Licence Standard.

Large Power Station

A Power Station in NGET's Transmission Area with a Registered Capacity of 100MW or more or a Power Station in SPT's Transmission Area with a Registered Capacity of 30MW or more or a Power Station in SHETL's Transmission Area with a Registered Capacity of 10MW or more.

Licence Standard

The Standard (the GB Transmission System "Security and Quality of Supply Standard", Version 1.0, 22 September, 2004) referred to in Condition C17 of National Grid's Transmission Licence and/or Condition D3 of a relevant Transmission Licensee's Transmission Licence. (Note: the standard is often simply referred to as the SQSS)

Main Interconnected Transmission System (MITS)

This comprises all the 400kV and 275kV elements of the GB Transmission System and, in Scotland, the 132kV elements of the GB Transmission System operated in parallel with the Supergrid, but excludes Generation Circuits, transformer connections to lower voltage systems and External Interconnections between the GB Transmission System and External Systems.

Medium Power Station

A Power Station in NGET's Transmission Area with a Registered Capacity of 50MW or more, but less than 100MW. The Medium Power Station category does not exist in the Transmission Areas of SPT or SHETL.

Mothballed

A term often used for long term storage of Generating Units. Such plant is sometimes referred to as 'decommissioned'.

MVA

The flow of 'active' power is measured in MegaWatts (MW). When compounded with the flow of 'reactive' power, which is measured in Mvar, the resultant is measured in Megavolt-amperes (MVA).

NGET

National Grid Electricity Transmission plc. NGET is a member of the National Grid ("National Grid") group of companies.

Network Operator

A person with a User System directly connected to the GB Transmission System to which Customers and/or Power Stations (not forming part of that system) are connected, acting in its capacity as an operator of the User System, but shall not include a person who operates an External System.

Node

A transmission node is a point on a network at which Circuits meet. When a substation is run split into two or more sections (separated by open circuit breakers), it consists of two (or more) nodes.

Non-Embedded Customer

A customer in Great Britain, except for a Network Operator acting in its capacity as such, receiving electricity direct from the GB Transmission System irrespective of from whom it is supplied.

Planned Transfer

The power transfer arising from the Planned Transfer Condition.

Planned Transfer Condition

This is defined by scaling the output capacities of all directly connected Power Stations and embedded Large Power Stations to equal the ACS Peak Demand minus imports from External Systems. This scaling shall follow the straight scaling technique and, where the Plant Margin exceeds 20%, also follow the ranking order technique, both of which are described in Appendix C of the Licence Standard. These two techniques are also described in [Modelling of the Planned Transfer Condition](#).

Plant

Fixed and movable items used in the generation and/or supply and/or transmission of electricity, other than Apparatus.

Plant Margin

The amount by which the total installed capacity of directly connected Power Stations and Embedded Large Power Stations and imports across directly connected External Interconnections exceeds the ACS Peak Demand. This is often expressed as a percentage (e.g. 20%) or as a decimal fraction (e.g. 0.2) of the ACS Peak Demand.

Power Station

An installation comprising one or more Generating Units (even where sited separately) owned and/or controlled by the same Generator, which may reasonably be considered as being managed as one Power Station.

Rating

The continuous rating of a Circuit is the maximum power flow that can be passed through the Circuit, following a fault nearby on the GB Transmission System, without damaging equipment, or infringing statutory clearances on overhead lines. This will normally be for a period within 24 hours. This rating varies for each season of the year, because of the effect of differing climatic conditions on equipment performance.

Registered Capacity (RC)

- (a) In the case of a Generating Unit other than that forming part of a CCGT Module, the normal full load capacity of a Generating Unit as declared by the Generator, less the MW consumed by the Generating Unit through the Generating Unit's Unit Transformer when producing the same (the resultant figure being expressed in whole MW).
- (b) In the case of a CCGT Module, the normal full load capacity of a CCGT Module as declared by the Generator, being the Active Power declared by the Generator as being deliverable by the CCGT Module at the Grid Entry Point (or in the case of an Embedded CCGT Module, at the User System Entry Point), expressed in whole MW).
- (c) In the case of a Power Station, the maximum amount of Active Power deliverable by the Power Station at the Grid Entry Point (or in the case of an Embedded Power Station at the User System Entry Point), as declared by the Generator, expressed in whole MW. The maximum active power deliverable is the maximum amount deliverable simultaneously by the Generating Units and/or CCGT Modules less the MW consumed by the Generating Units and/or CCGT Modules in producing that active power.

Section 14 Consent

Refers to Section 14 of the Energy Act 1976.

Section 36 Consent

Refers to Section 36 of the Electricity Act 1989.

Section 37 Consent

Refers to Section 37 of the Electricity Act 1989.

SHETL

Scottish Hydro-Electric Transmission Ltd.

Small Power Station

A Power Station in NGET's Transmission Area with a Registered Capacity of less than 50MW or a Power Station in SPT's Transmission Area with a Registered Capacity less than 30MW or a Power Station in SHETL's Transmission Area with a Registered Capacity less than 10MW.

SPT

Scottish Power (SP) Transmission Ltd.

Station Transformer

A transformer supplying electrical power to the Auxiliaries of a Power Station, which is not directly connected to the Generating Unit terminals (typical voltage ratios being 132/11kV or 275/11kV)

Station Transformer Load

That load in MW consumed by a power station during normal operation, which may be fed through the station transformers. This demand may be fed from the HV busbar in the ownership of a Transmission Licensee, and in such cases is accordingly declared to the Transmission Licensee in the same way as all other demands are declared.

Steam Unit

A Generating Unit whose prime mover converts the heat energy in steam to mechanical energy.

Supergrid

That part of the GB Transmission System operated at a nominal voltage of 275kV or above.

Supergrid Transformer (SGT)

Power transformers which interconnect the 400 kV and 275 kV transmission system with the distribution systems (typically 132kV or 66 kV).

Transmission Area

Has the meaning set out in the Transmission Licence of a Transmission Licensee.

Transmission Circuit

Part of the GB Transmission System between two or more circuit-breakers which includes, for example, transformers,

reactors, cables and overhead lines but excludes Busbars and Generation Circuits.

Transmission Contracted Generation

The existing generation plus any other generation for which an appropriate Bilateral Agreement has been entered into. Thus, it excludes any speculative generation schemes and presumes that existing generation remains in service indefinitely, other than where the relevant Transmission Licensee has received formal notification of its closure date (i.e. termination of the Agreement).

Transmission Entry Capacity (TEC)

The Transmission Entry Capacity of a power station is the maximum amount of active power deliverable by the Power Station at the Grid Entry Point (or in the case of an Embedded Power Station at the User System Entry Point), as declared by the Generator, expressed in whole MW. The maximum active power deliverable is the maximum amount deliverable simultaneously by the Generating Units and/or CCGT Modules less the MW consumed by the Generating Units and/or CCGT Modules in producing that active power and less any auxiliary demand supplied through the station transformers.

Transmission License

The License granted under Section 6(1)(b) of the Electricity Act 1989 (as amended by the Utilities Act 2000 and the Energy Act 2004).

Transmission Licensee

This means the holder, for the time being, of a Transmission License. For the purpose of this GB SYS, this means National Grid Electricity Transmission plc or Scottish Power Transmission Ltd or Scottish Hydro-Electric Transmission Limited.

Triad Demand

Triad Demand is measured as the average demand on the system over three half hours between November and February (inclusive) in a financial year. These three half hours comprise the half hour of system demand peak and the two other half hours of highest system demand which are separated from system demand peak and each other by at least ten days.

Unit Transformer

A transformer directly connected to a Generating Unit's terminals, and which supplies power to the Auxiliaries of a Generating Unit. Typical voltage ratios are 23/11kV and 15/6.6kV.

User

A term used to refer to persons using the GB Transmission System.

User System

Any system owned or operated by a User comprising:

(a) Generating Units; and/or

(b) Systems consisting (wholly or mainly) of electric lines used for the distribution of electricity from Grid Supply Points or Generating Units or other entry points to the point of delivery to Customers or other Users;

and Plant and/or Apparatus connecting:

(c) The system as described above; or

(d) Non-Embedded Customers equipment;

to the GB Transmission System or to the relevant other User System, as the case may be. The User System does not include any part of the GB Transmission System.

User System Entry Point

A point at which a Generating Unit, a CCGT Module or a CCGT unit, as the case may be, which is Embedded connects to the User System.

Week 24 Demand

The Week 24 Demand forecast is based on the submissions made by Users, principally the

Distribution Companies, in week 24 in accordance with the Grid Code.

Zone

A zone is an area of the country (i.e. in England, Wales or Scotland), with strong internal electrical connections, but which may have weaker connection to the rest of the System.

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