

Glossary & Definitions Section:

Embedded Generation Control	Any or all of the following methods by which a Network Operator can achieve a reduction in the Active Power output of Embedded Generators to implement an instruction issued by The Company : (a) Embedded Generation Disconnection ; or (b) where this is achievable in a suitable timescale to comply with an instruction, fast deloading of Embedded Power Stations or Embedded Generator Units from their System to reduce their Active Power output.
Embedded	Having a direct connection to a User System or the 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 Relevant Transmission Licensee (but with no other connection to the National Electricity Transmission System).
Generator	A person who generates electricity or undertakes Electricity Storage under licence or exemption under the Act acting in its capacity as a generator in Great Britain or Offshore . The term Generator includes a EU Generator and a GB Generator .
Generating Unit	An Onshore Generating Unit and/or an Offshore Generating Unit which could also be part of a Power Generating Module .
Power Station	An installation comprising one or more Generating Units or Power Park Modules or Power Generating Modules or Electricity Storage Modules (even where sited separately) owned and/or controlled by the same Generator , which may reasonably be considered as being managed as one Power Station .
Embedded Generation Disconnection	The disconnection by Network Operators of one or more Embedded Power Stations or Embedded Generator Units from their System as part of an Embedded Generation Control action.
National Electricity Transmission System Warning – System NRAPM	A warning issued by The Company , in accordance with OC.7.4.8.9, which is intended to invite a response from and to alert recipients to a decreased System NRAPM .
National Electricity Transmission System Warning – Localised NRAPM	A warning issued by The Company , in accordance with OC.7.4.8.10, which is intended to invite a response from and to alert recipients to a decreased Localised NRAPM .
National Electricity Transmission System Warning - High Risk of Embedded Generation Reduction	A warning issued by The Company , in accordance with OC7.4.8.11, which is intended to alert recipients that there is a high risk of Embedded Generation reduction being implemented and which may result from a National Electricity Transmission System Warning – System NRAPM .
National Electricity Transmission System Warning – Embedded Generation Control Imminent	A warning issued by The Company , in accordance with OC7.4.8.12, which is intended to provide short term notice, where possible, to those Network Operators who are likely to receive Embedded Generation Control instructions from The Company within 30 minutes.

Commented [A1]: Added this to allow some flexibility to avoid totally disconnecting a site if possible – for example, if a deload capability is build into an ANM scheme or if a DNO has the time to contact a customer and tell them to deload.

Commented [A2]: Had considered saying 'Embedded Generators' here but changed to Power Station as more consistent with GC0143 although essentially meaning the same.

Other relevant sections of code:

BC1.5.5 System And Localised NRAPM (Negative Reserve Active Power Margin)

(a) (i) System Negative Reserve Active Power Margin

Synchronised Gensets must at all times be capable of reducing output such that the total reduction in output of all **Synchronised Gensets** is sufficient to offset the loss of the largest secured demand on the **System** and must be capable of sustaining this response;

(ii) Localised Negative Reserve Active Power Margin

Synchronised Gensets must at all times be capable of reducing output to allow transfers to and from the **System Constraint Group** (as the case may be) to be contained within such reasonable limit as **The Company** may determine and must be capable of sustaining this response.

(b) **The Company** will monitor the total of **Physical Notifications** of exporting **BM Units** and **Generating Units** (where appropriate) received against forecast **Demand** and, where relevant, the appropriate limit on transfers to and from a **System Constraint Group** and will take account of **Dynamic Parameters** and **Export and Import Limits** received to see whether the level of **System NRAPM** or **Localised NRAPM** for any period is likely to be insufficient. In addition, **The Company** may increase the required margin of **System NRAPM** or **Localised NRAPM** to allow for variations in forecast **Demand**. In the case of **System NRAPM**, this may be by an amount (in **The Company's** reasonable discretion) not exceeding five per cent of forecast **Demand** for the period in question. In the case of **Localised NRAPM**, this may be by an amount (in **The Company's** reasonable discretion) not exceeding ten per cent of the forecast **Demand** for the period in question; Issue 5 Revision 40 BC1 05 March 2020 12 of 26

(c) Where the level of **System NRAPM** or **Localised NRAPM** for any period is, in **The Company's** reasonable opinion, likely to be insufficient, **then this will be treated as a National Electricity Transmission System Warning as defined in OC7.4.8**. **The Company** may contact all **Generators** in the case of low **System NRAPM** and may contact **Generators** in relation to relevant **Gensets** in the case of low **Localised NRAPM**. **The Company** will raise with each **Generator** the problems it is anticipating due to low **System NRAPM** or **Localised NRAPM** and will discuss whether, in advance of **Gate Closure**:-

(i) any change is possible in the **Physical Notification** of a **BM Unit** which has been notified to **The Company**; or

(ii) any change is possible to the **Physical Notification** of a **BM Unit** within an **Existing AGR Plant** within the **Existing AGR Plant Flexibility Limit**;

in relation to periods of low **System NRAPM** or (as the case may be) low **Localised NRAPM**. **The Company** will also notify each **Externally Interconnected System Operator** of the anticipated low **System NRAPM** or **Localised NRAPM** and request assistance in obtaining changes to **Physical Notifications** from **BM Units** in that **External System**.

(d) Following **Gate Closure**, the procedure of BC2.9.4 will apply. **In this case The Company will also endeavor, where time allows, to issue a National Electricity Transmission System Warning – High Risk of Embedded Generation Reduction and/or a National Electricity Transmission System Warning Embedded Generation Control Imminent as applicable.**

BC2.6.3 Communication With Network Operators In Emergency Circumstances

The Company will issue **Emergency Instructions** direct to the **Network Operator** at each **Control Centre** in relation to actions including special actions as set out in BC1.7, actions in the categories set out under BC2.9.3.3, **Embedded Generation Control** and **Demand Control** actions. **Emergency Instructions** to a **Network Operator** will normally be given by telephone (and will include an exchange of operator names). OC6 contains further provisions relating to **Demand Control** instructions; **OC6B contains further provisions relating to Embedded Generation Control instructions.**

BC2.9.1 Emergency Actions

BC2.9.1.1 In certain circumstances (as determined by **The Company** in its reasonable opinion) it will be necessary, in order to preserve the integrity of the **National Electricity Transmission System** and any synchronously connected **External System**, for **The Company** to issue **Emergency Instructions**. In such circumstances, it may be necessary to depart from normal **Balancing Mechanism** operation in accordance with BC2.7 in issuing **Bid-Offer Acceptances**. **BM Participants** must also comply with the requirements of BC3.

BC2.9.1.2 Examples of circumstances that may require the issue of **Emergency Instructions** include:-

- (a) **Events** on the **National Electricity Transmission System** or the **System** of another **User**; or
- (b) the need to maintain adequate **System** and **Localised NRAPM** in accordance with BC2.9.4 below; or
- (c) the need to maintain adequate frequency sensitive **Gensets** in accordance with BC2.9.5 below; or
- (d) the need to implement **Demand Control** in accordance with OC6; or
- (e) (i) the need to invoke the **Black Start** process or the **Re-Synchronisation of De-Synchronised Island** process in accordance with OC9; or
- (ii) the need to request provision of a **Maximum Generation Service**; or
- (iii) the need to issue an **Emergency Deenergisation Instruction** in circumstances where the condition or manner of operation of any **Transmission Plant** and/or **Apparatus** is such that it may cause damage or injury to any person or to the **National Electricity Transmission System**; or
- (f) the need to implement **Embedded Generation Control** in accordance with OC6B

BC2.9.1.4 In the case of a **Network Operator** or an **Externally Interconnected System Operator**, **Emergency Instructions** will be issued to its **Control Centre**.

BC2.9.2.3 In all cases under this BC2.9 except BC2.9.1.2 (e) where **The Company** issues an **Emergency Instruction** to a **BM Participant** which is not rejected under BC2.9.2.1, the **Emergency Instruction** shall be treated as a **Bid-Offer Acceptance**. For the avoidance of doubt, any **Emergency Instruction** issued to a **Network Operator** or to an **Externally Interconnected System Operator** or in respect of a **Generating Unit** that does not form part of a **BM Unit**, will not be treated as a **Bid-Offer Acceptance**.

BC2.9.2.4 In the case of BC2.9.1.2 (e) (ii) where **The Company** issues an **Emergency Instruction** pursuant to a **Maximum Generation Service Agreement** payment will be dealt with in accordance with the **CUSC** and the **Maximum Generation Service Agreement**.

BC2.9.2.5 In the case of BC2.9.1.2 (e) (iii) where **The Company** issues an **Emergency Deenergisation Instruction** payment will be dealt with in accordance with the **CUSC**, Section 5.

BC2.9.2.6 In the case of BC2.9.1.2 (e) (i) upon receipt of an **Emergency Instruction** by a **Generator** during a **Black Start** the provisions of Section G of the **BSC** relating to compensation shall apply.

BC2.9.2.7 In the case of BC2.9.1.2 (f) upon implementation of an **Emergency Instruction** by a **Network Operator** to carry out **Embedded Generation Control** the relevant provisions of the **DCUSA** and **CUSC** relating to compensation to an **Embedded Generator** subject to such **Embedded Generation Control** shall apply.)

BC2.9.3.3 Instructions to **Network Operators** relating to the **Operational Day** may include:

(a) a requirement for **Demand** reduction and disconnection or restoration pursuant to OC6;

(b) an instruction to effect a load transfer between **Grid Supply Points**;

(c) an instruction to switch in a **System to Demand Intertrip Scheme**;

(d) an instruction to split a network;

(e) an instruction to disconnect an item of **Plant** or **Apparatus** from the **System**.

(f) a requirement for **Embedded Generation Control** or restoration pursuant to OC6B for until October 25 2020, an instruction requiring a **Network Operator** to disconnect **Embedded Power Stations** from their **System**. For the avoidance of doubt, this includes the disconnection of **Embedded Power Station(s)** connected to the **Network Operator's System** which are owned or operated by generators that are not **BM Participants**. Such an instruction may:

i) be specific and require the **Network Operator** to disconnect specified **Embedded Power Station(s)**;

ii) be for the **Network Operator** to disconnect **Embedded Power Stations** supplied via one or more specified **Grid Supply Point(s)** with an aggregate **Registered Capacity** of a specified value; or

iii) be for the **Network Operator** to disconnect **Embedded Power Stations** supplied via one or more specified **Grid Supply Point(s)** such that a specified proportion of the aggregate **Registered Capacity** is disconnected.

In any such case the **Network Operator** will not be required to disconnect **Embedded Power Stations** with an aggregated **Registered Capacity** greater than that of the **Embedded Power Stations** supplied via the specified **Grid Supply Point(s)**. An instruction from **The Company** to the **Network Operator** will be given to commence reconnection. Reconnection shall not take place until such an instruction has been received and be carried out in accordance with the instruction.

BC2.9.4.1:

Where **The Company** is unable to satisfy the required **System NRAPM** or **Localised NRAPM** by following the process described in BC1.5.5, **The Company** will issue an **Emergency Instruction** to exporting **BM Units** for **De-Synchronising** on the basis of **Bid-Offer Data** submitted to **The Company** in accordance with BC1.4.2(d). If **The Company** is still unable to satisfy the required **System NRAPM** or **Localised NRAPM** then **The Company** may issue **Emergency Instructions** to **Network Operator(s)** as set out under OC6B BC2.9.3.3(f) to carry out **Embedded Generation Control**.



Commented [A3]: As noted in the consultation report, it is likely that this clause could be the basis for an alternative after the workgroup consultation so that we are able to have two solutions covering both of the with/without compensation options.