

MPID 159 - Availability / Delivery Point definitions / ATC

Grid Code clause number: Glossary, definitions of Availability and Delivery Point and SDC1.1.2 and SDC2.4.3

Proposed by: EirGrid

Modification Proposal:

The current Grid Code definition for '**Availability**' is:

Availability: A measure of time a **Generation Unit**, transmission line or other facility is capable of delivering **Energy** to the **Transmission System** at the **Delivery Point** or of providing **Ancillary Services** to the **Transmission System** and the terms "**Available**" and "**Availabilities**" shall be construed accordingly.

It is now proposed to modify the '**Availability**' definition to read:

Availability: At any given time the measure of **Active Power** a **Generation Unit(s)** is capable of delivering to the **Connection Point** and the term "**Availabilities**" shall be construed accordingly. This can be calculated as a gross figure.

And insert a new definition, '**Availability Factor**':

Availability Factor: the ratio of the **Energy** that could have been produced during a specified period of time by a **Generation Unit** operating in accordance with its **Availability**, and the **Energy** that could have been produced during the same period by that **Generation Unit** operating at its **Maximum Continuous Rating**.
Availability Factor can alternatively be reported in gross terms.

'**Connection Point**' is already defined as:

Connection Point: The physical point where the **User's Plant Apparatus** or **System** is joined to the **Transmission System** or the **Distribution System**.

Those instances where '**Availability**' and '**Availability Factor**' are proposed to be used in the Grid Code are shown below.

We also intend to delete the definition of '**Delivery Point**' as it was only ever used in the current definition of '**Availability**' that we are now proposing to change.

In SDC1 there are two references to **Availability Transfer Capacity (ATC)**. This was a typo and should have always read **Available Transfer Capacity (ATC)**. This modification also proposes to modify these two references.

Instances of Availability and Availability Factor in the Grid Code**PC.A4.12.2 § Forecast Availability of Maximum Continuous Rating**

Apart from the expected scheduled maintenance requirements,

Availability of Maximum Continuous Rating	Reason	Available Exported MW	Time %
Maximum Continuous Rating			

Restricted rating

Forced outage probability

Total	100%
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Reasons for restricted rating might include poor fuel, loss of mill, loss of burners, hydro flow restrictions, etc.

OC1.4.2

- (c) The **DSO** shall supply typical MW profiles for the operation, or **Availability** as appropriate, of **Embedded Generation** where the total **Registered Capacity** of **Generation Units** on a single **Site** exceeds 5MW for defined categories of day type as determined by **ESBNG**. The method for submitting MW schedules and/or **Availability** shall be agreed between **ESBNG** and the **DSO**, such agreement not to be unreasonably withheld;
- (d) Notwithstanding OC1.4.2 (c), the **DSO** shall supply typical MW profiles for the operation, or **Availability** as appropriate, of **Embedded Generation** where the total **Registered Capacity** of **Generation Units** on a single **Site** exceeds 2MW, for defined categories of day type as determined by **ESBNG**, if **ESBNG** considers the **Site** to be critical for **Transmission System** operation. The method for submitting MW schedules and/or **Availability** shall be agreed between **ESBNG** and the **DSO**, such agreement not to be unreasonably withheld.

OC2.2

OC2.7 also requires **Generators** to inform **ESBNG** of other proposed maintenance of a **Generation Unit** or any associated **Power Station Plant** or **Apparatus**, where such maintenance will affect the **availability** of **Ancillary Services** in respect of that **Generation Unit**.

Comment: No change required.

OC2.5.1 For years 4-7 **ESBNG** shall:

(c) based on (a), (b), (ba) and **Demand** forecasts **ESBNG** shall promulgate an **Availability** forecast, a **Demand** forecast and a **Capacity Adequacy Indicator** for each weekly peak of each year.

OC2.5.2 For years 2-3 **ESBNG** shall:

(c) based on (a), (b), (ba) and **Demand** forecasts **ESBNG** shall promulgate an **Availability** forecast, a **Demand** forecast, the capacity margin and a **Capacity Adequacy Indicator** for each weekly peak of each year.

OC2.5.3 For year 1 **ESBNG** shall:

(c) based on (a), (b), (ba) and **Demand** forecasts **ESBNG** shall promulgate an **Availability** forecast, a **Demand** forecast, the capacity margin and a **Capacity Adequacy Indicator** for each daily peak of year 1. This information shall be published on the **ESBNG** website at 15.00 on the first **Business Day** of October in year 0 and will be updated on the first **Business Day** of each month until December of year 1.

OC2.5.4 Each day during year 0 after the fifth (5th) **Business Day** of January for a forecast period of four weeks, **ESBNG** shall:

(c) based on (a), (b), (ba) and **Demand** forecasts **ESBNG** shall formulate an **Availability** forecast, a **Demand** forecast, the capacity margin and a **Capacity Adequacy Indicator** for each daily peak. This information shall be published on the **ESBNG** website at 15.00 each **Business Day**.

OC2.6.3.5 Where the **Generator** has been notified that the change to the **COP** has not been accepted, but in the view of the **Generator** it must force the **Generation Unit** to be unavailable due to technical or safety issues, then the **Generator** shall inform **ESBNG** immediately in accordance with the requirements to submit **Declarations of Availability**.

OC3.4.3 With effect from 19-02-2000 and until further notice, 100 MW **Import ATC** and 30 MW **Export ATC** has been available for independent sector trading activity subject to physical **availability**, generation patterns and **availability** of certain key transmission elements.

Comment: No change required

OC4.4.3.1 **Voltage Control** is achieved by ensuring sufficient **availability** of dynamic and static reactive power from contributions listed in OC4.4.3.2. The factors, which are obviously most readily subject to control by **ESBNG**, are the Mvar produced/absorbed by **Generation Units** and installed dedicated **Voltage Control** facilities.

Comment: No change required

Comment: No change required

OC4.4.3.2 **ESBNG** shall endeavour to maintain sufficient **availability** of dynamic and static reactive power in order to operate **Transmission System Voltages** at

Comment: No change required

Connection Points within the levels specified in CC.8.3, at all times. Factors, which will influence the required MVA capacity, include the following:

OC4.6.3.7 Contingency Reserve is the margin of **Availability** over forecast **Demand**, which is required in the period from 24 hours ahead down to real time, to cover against uncertainties in **availability** of generation capacity and also against weather forecast and **Demand** forecast errors. **Contingency Reserve** is provided by generation plant which is not required to be **Synchronised**, but which must be held available to **Synchronise** within a limited time scale.

Comment: No change required

OC4.6.5.1.1 ESBNG shall determine the amount of **Contingency Reserve** required for each time scale up to 24 hours ahead, taking due consideration of relevant factors, including but not limited to the following:

(a) historical **Availability Factor** and reliability performance of individual **Generation Units**;

OC7.2.4.2.3 The **Control Facility** shall be staffed by a **Responsible Operator(s)** who shall respond to communications from **ESBNG** without undue delay (except where otherwise provided for by agreement between the **Generator** and **ESBNG**, such agreement not to be unreasonably withheld) and are of suitable experience and training and are authorised to perform the following functions on behalf of the **Generator**:

(a) to accept and execute **Dispatch Instructions**;

(b) to receive and acknowledge receipt of requests, for amongst other matters, operation outside the **Declared** values of **Availability**, **Ancillary Service** capability, or **Operating Characteristics** of the **Generation Units** during **System Emergency Conditions**.

Comment: No Change required

OC7.2.4.2.5 The **Responsible Manager** shall be authorised by the **Generator** to perform the following functions on behalf of the **Generator**:

(a) to make estimates in accordance with **Good Industry Practice** as to the available **Availability**, **Ancillary Service** capability and **Operating Characteristics** of each **Generation Unit**;

Comment: No Change required

OC8.6.3 A request by the **Generator** for an **Operational Test** requiring a **Generation Unit** to be **Dispatched** to a particular MW output or operating condition shall not be considered a **Re-declaration** of **Availability**, **Ancillary Service** capability or **Operating Characteristics**.

Comment: No Change required

OC8.7.3 Where an **Operational Test** proposed by a **Generator** in respect of one of its **Generation Units** requires a **Dispatch** that is outside the currently declared values of **Availability**, **Ancillary Service** capability or **Operating**

Comment: No Change required

Characteristics of the **Generation Unit**, then **ESBNG** may so **Dispatch** the **Generation Unit** for the period required for the **Operational Test**, in accordance with the relevant provisions of the **Grid Code**.

OC10.2.2 In order to achieve the primary objective set out in OC10.2.1, OC10 establishes procedures for **Monitoring, Testing and Investigation**. In particular, this facilitates adequate assessment of each of the following:

- (a) whether **Centrally Dispatched Generation Units (CDGU)** comply with **Dispatch Instructions**;
- (b) whether **Generators** are in compliance with **Declarations** of **Availability**, **Ancillary Services** capabilities, **Operating Characteristics** and any other data required to be registered by those **Generators** under the **Grid Code**;

Comment: No Change required

OC10.5.5 **ESBNG** may, from time to time, carry out **Tests** in order to determine that a **User** is complying with its **Connection Conditions, Registered Operating Characteristics** and **Declarations**. **ESBNG** may:

- (b) induce controlled **Power System Frequency** or **Voltage** conditions or variations for the purpose of determining that the **Generation Unit's** response is in accordance with its **Declared Availability**, **Ancillary Service** capabilities and **Operating Characteristics**; and

Comment: No Change required

OC10.7.1.2 On receipt of a **Warning** for non-compliance with a **Dispatch Instruction**, the **Generator** must as soon as possible, and in any case within ten (10) minutes of the receipt of the **Warning**:

- (d) reply to **ESBNG**, giving a reason for inability to comply with the **Dispatch Instruction**, and making a revised **Declaration** in respect of the **Availability**, **Ancillary Service** capabilities or **Operating Characteristics**, as appropriate.

Comment: No Change required to Availability, but delete the word Generator's

OC10.7.1.6 Where **ESBNG**, acting reasonably, is of the view that a disputation given by a **Generator** is not valid or not wholly valid or if the **Generator** has not replied in accordance with OC10.7.1.2, **ESBNG** shall inform the **Generator** that it is overriding, by means of a **Post Event Notice**, the **Generator's Declaration** in respect of the **Availability**, **Ancillary Service** capabilities or **Operating Characteristics** of the **Generation Unit**, as appropriate. The **Post Event Notice** shall govern until such times as the **Generator** makes a further **Declaration**.

Comment: No Change required

OC10.7.1.7 Where **ESBNG** gives a **Post Event Notice** under OC10.7.1.6, the **Post Event Notice** shall be backdated to the time of issue of the relevant **Dispatch Instruction**, or the latest time for which there exists compelling evidence that the

Generation Unit was acting in compliance with the **Dispatch Instruction**, whichever is the later. The **Post Event Notice** shall set the level of **Declared Availability**, **Declared Ancillary Service** capability or **Declared Operating Characteristic**, as the case may be, at such level as the **Monitoring, Testing** or **Investigation** indicates the **Generation Unit** actually achieved. Notwithstanding the backdating of the **Post Event Notice**, the **Generator** will still be deemed under OC10.7.1.1 as having failed to comply with a **Dispatch Instruction**.

Comment: No Change required

OC10.7.2.1 In evaluating the adequacy of the performance of a **Generation Unit**, **ESBNG** shall compare the actual performance as measured, with the expected performance for that **Generation Unit**. The expected performance from the **Generation Unit** shall be calculated based on the **Frequency** deviation from the **Pre-Incident Frequency**, and the **Generation Unit's** then **Declared** values of **Availability**, **POR**, **SOR**, **TOR1**, **TOR2** and Governor Droop;

Comment: No Change required

OC10.7.3 Non-compliance by a Generator with Declared Availability

Comment: No Change required

OC10.7.3.1 In the event that the performance of a **Generation Unit** is deemed by **ESBNG** to be in non-compliance with its **Declared Availability**, then **ESBNG** shall notify the **Generator** of the non-compliance.

Comment: No Change required

OC10.7.3.2 Having so informed the **Generator** **ESBNG** shall by means of a **Post Event Notice** override the **Generator's Declaration** in respect of **Availability**, with a value as appropriate to the outcome of the **Test** or **Investigation**. The revised **Declaration** shall be effective from the time of commencement of the **Test** or **Investigation** on which the non-compliance has been assessed, or such later time as may, in the opinion of **ESBNG** acting reasonably, be appropriate if the non-compliance did not apply to the full period of the **Test** or **Investigation**.

Comment: No Change required

OC10.7.3.3 The economic consequence of non-compliance by a **Generator with Declared Availability** will be addressed in the **Trading and Settlement Code** and other agreements as appropriate.

Comment: No Change required

SDC1.1.2 **Generation Scheduling Code (SDC1)** establishes procedures whereby the following necessary information is made available to **ESBNG**:

- (a) **Availability** of **Centrally Dispatched Generation Units (CDGUs)**;
- (b) **Availability** of **Ancillary Services**;
- (c) **Generator Nominations**;
- (d) **Operating Characteristics** of **CDGUs**;

Comment: No Change required

Comment: Previously **bolded**, now unbolded.

- (e) **Available Transfer Capacity (ATC); and**
- (f) **Supplier Nominations** for export/ import across **Interconnector**

Comment: "Availability" should read "Available".

SDC1.5.2 The list of **Declaration** values with respect to each **CDGU** is as follows:

- (a) **Ancillary Service** capability;
- (b) **Availability**;

Comment: No Change required

SDC1.6.1.7 If at any time after the submission of a **Nomination** in respect of a **CDGU** for a **Trading Day** the **Generator** becomes aware of any change to any of the values in its day-ahead nomination or **Availability Declaration** or predicts that any such value will be subject to change before the end of the relevant **Trading Day**, (other than any of the prices submitted or other items that shall not be subject to revision), it shall promptly inform **ESBNG** of such change or predicted change. This shall be known as a **Redeclaration**.

Comment: No Change required

SDC1.10.1 Each day between 1100 hrs and 1600 hrs **ESBNG** shall produce the **Generation Schedule (GS)**. **ESBNG** may produce the **GS** more or less frequently, or reasonably delay its production in response to changes in **Availability** and other events that may arise. The **GS** is utilised by **ESBNG** in its **Scheduling** and in its preparation for **Dispatch** of **CDGUs**.

Comment: No Change required

SDC2.4.3 The **Available Transfer Capacity** (ATC) for the **Interconnector** is jointly agreed between **ESBNG** and the **External System Operator (ESO)** as described in OC3.

Comment: This should read "Available Transfer Capability".

SDC2.4.6 In real time as variations occur due to, e.g., **Demand** or **Availability** variations **ESBNG** will adjust **Generation Unit MW Output** by using a merit order based on the **Incremental** and **Decremental Prices** provided by **Generators** as part of the **Nomination** for each **CDGU**.

Comment: No Change required

SDC2.5.6 For a **Dispatch Instruction** to be valid, it must observe the limits of **Availability**, **Ancillary Service** capability and **Operational Characteristics** as properly **Declared** to **ESBNG** in accordance with SDC1 in a **Declaration** relevant to the time and period to which the **Dispatch Instruction** relates, subject to provisions of SDC2.11.

Comment: No Change required

SDC2.9.2 The **Generator** must then ensure that the **Centrally Dispatched Generation Unit** achieves the new **Dispatched Operating Mode**, without undue delay, in accordance with the **Centrally Dispatched Generating Units Declared Availability** and **Declared Operating Characteristics**.

Comment: No Change required

SDC2.9.3 Dispatch Instructions in relation to operating modes issued by **ESBNG** shall reflect the applicable **Declarations** of **Availability** and **Declared Operating Characteristics**.

Comment: No Change required

GLOSSARY

Capacity Adequacy Indicator	An indication issued by ESBNG for each weekly peak of the year based on Availability and Demand forecasts whether or not there is sufficient Generation Capacity to meet Demand .	Comment: No Change required
Capacity Shortfall Warning	A warning issued by ESBNG that based on Availability and Demand forecasts there is insufficient Generation Capacity to meet the peak Demand .	Comment: No Change required
Contingency Reserve	The margin of available Generation Capacity over forecast System Demand which is required in the period of 24 hours ahead down to real time, to cover against uncertainties in availability of Generation Capacity and against Demand forecast errors or variations	Comment: No change required
Declaration	A notice prepared by the Generator in respect of a Generation Unit submitted to ESBNG in accordance with the requirements of SDC1 and setting out the values (and times applicable to those values) of Availability , Ancillary Services capabilities, Operating Characteristics and other items listed or referred to in SDC1 applicable in the Commitment Period , and “ Declared ” shall be construed accordingly.	Comment: No change required
Generation Schedule	A statement prepared and issued by ESBNG under SDC1 on a daily basis (or more frequently in response to changes in Availability and other events) setting out with Central Dispatched Generation Units are anticipated to be required to ensure so far as practicable the integrity of the Transmission System , the security and quality of supply and that they are in sufficient Generation to meet Demand at all times (to extend practicable) together with an appropriate margin of Reserve	Comment: No Change Required
Maximisation	An increase in MW Output above the Availability up to the level of the Short Term Maximisation Capability , and the terms “Maximise” and “Maximised” shall be construed accordingly.	Comment: No change required
Outage	In relation to a Generation Unit , a total or partial reduction in	

	Availability such that the Generation Unit is unavailable achieve its full Registered Capacity in accordance with its Registered Operating Characteristics .	Comment: No change required
Re-declaration	Notification to ESBNG by the Generator at any time after the submission of a Daily Nomination , in respect of a CDGU , of any change to any of the values in its day-ahead Nomination or Availability Declaration or prediction that any such value will be subject to change before the end of the relevant Trading Day , (other than any of the prices submitted or other items that shall not be subject to revision)	Comment: No change required
Short Notice Re-declaration	Notification to ESBNG by the Generator after the submission of a Daily Nomination , in respect of a CDGU , of any change to any of the values in its day-ahead Nomination or Availability Declaration or prediction that any such value will be subject to change, where such changes apply to values relating to Trading Periods occurring within 4 hours of the time of receipt by ESBNG of this notification.	Comment: No change required
System Capacity Shortfall Warning	A warning issued by ESBNG if, the Availability forecast and Demand forecast indicate that there will be a deficit in any week,	Comment: No Change required