

# MODIFICATION RECOMMENDATION FORM



*RECOMMENDATION TO CER BY EIRGRID OF MODIFICATION TO GRID CODE.*

<b>ABSTRACT / TITLE OF MODIFICATION</b>	Demand Side Units
<b>MODIFICATION NUMBER</b>	MPID 240
<b>RECOMMENDED AT GCRP MEETING NUMBER</b>	Grid Code Review Panel (GCRP) #35
<b>LIST OF GRID CODE SECTION(S) AFFECTED BY PROPOSED MODIFICATION:</b>	All sections
<b>CURRENT GRID CODE VERSION :</b>	4
<b>MODIFICATION DESCRIPTION Overview</b> <b>THE REASON FOR THE RECOMMENDED MODIFICATION</b>	<p>Following the processing of two Demand Side Unit applications and six months operation of a Demand Side Unit, EirGrid carried out a review of the Grid Code with respect to Demand Side Units.</p> <p>The main purpose of the modification is to facilitate DSUs by giving more detail and clarity on the requirements particularly around areas such as the signals required and the quality requirements of those signals.</p> <p>The proposed new text, the red-line version, is presented below. New text is highlighted in blue and deleted text is highlighted in red strike-through.</p>

<p><b>History of Progression through GCRPs, Working Group and/or Consultation</b></p>	<p>The modification proposal was first presented by EirGrid at the GCRP meeting in Belfast on 20<sup>th</sup> February 2013. Based on comments received from members at the meeting an updated modification proposal was circulated on the 14<sup>th</sup> March 2013 seeking comments from members by the 29<sup>th</sup> March 2013. Five responses were received and EirGrid contacted each individual respondent to discuss.</p> <p>Following discussions an updated draft modification proposal was circulated and a new modification proposal was presented at the GCRP meeting held in Dublin on 1<sup>st</sup> May 2013 including one further change to CC.12.6 (a).</p> <p>On the 1<sup>st</sup> May 2013 the proposal was supported and recommended for approval by the CER subject to a number of caveats:</p> <ul style="list-style-type: none"> <li>• Patrick Liddy's (Activation Energy) right to come back with a modification to the GCRP in twelve months time;</li> <li>• Patrick Liddy to engage with the TSO over the next twelve months;</li> <li>• TSO to issue a guideline document by September 2013;</li> <li>• The TSO representative to advise the members of the Distribution Code.</li> </ul>
<p><b>Summary Note of any Objections to the Recommended change from GCRP Members or Consultation Responses</b></p>	<p><b>Summary of objections raised at GCRP 20th February 2013:</b></p> <ul style="list-style-type: none"> <li>• Demand Side Unit MW Response Time - DSU schemes have large numbers of small customers involved and the idea of all the small customers supplying 15 second data is excessive;</li> <li>• There was some debate about whether there should be a de-minimus level set with only larger sites being obliged to comply with Grid Code;</li> <li>• The time allowed for an operator to be present on site following a notice from the TSO.</li> </ul> <p><b>Summary of objections raised at GCRP 1<sup>st</sup> May 2013:</b></p> <ul style="list-style-type: none"> <li>• Demand Side Unit MW Response Time - 15 second data is excessive and the equipment needed to provide this is extremely expensive.</li> </ul>

<p><b>Outcome of any GCRP Meeting Actions Relating to the Recommended Modification</b></p>	<p><b>GCRP 20th February 2013:</b></p> <p>On the 14<sup>th</sup> March 2013, following an action set at the GCRP meeting, EirGrid circulated an updated modification proposal to the GCRP members. DSU participants and prospective DSU participants were provided with two weeks to make a formal comment. Following comments received from five participants EirGrid held a conference call/meeting with each of the individual respondents. A new modification proposal was circulated and discussed at the GCRP meeting in Dublin on 1<sup>st</sup> May 2013.</p> <p><b>GCRP 1<sup>st</sup> May 2013:</b></p> <p>The members of the GCRP recommended for approval, subject to a number of caveats as outlined above, the proposed modification as presented at the GCRP meeting in Dublin.</p>
<p><b>Implication of not implementing the Modification</b></p>	<p>Issues exist today due to a lack of Grid Code standards for DSUs and these issues will continue to escalate if this proposal is not recommended and approved. There is a possibility of 1.6 million Demand Side Customers coming on board without the appropriate standards in place in the Grid Code.</p>

**PC.3****SCOPE**

The **Planning Code** applies to the **TSO** and to the following **Users**:

- (a) **Generators** and **Generator Aggregators** with **Registered Capacity** greater than 10 MW;
- (b) all **Generators** connected to the **Transmission System**;
- (c) **Interconnector Operators**;
- (d) **Transmission Asset Owner**; ~~and~~
- (e) **Demand Customers**; ~~and including both Dispatchable Demand Customers and Demand Side Units.~~
- (f) **Demand Side Unit Operators.**

The above categories of **User** will become bound by the **Planning Code** prior to generating, distributing or consuming electricity, as the case may be, and references to the various categories (or to the general category) of **User** should, therefore, be taken as referring to a prospective **User** in that role as well as to **Users** actually connected.

**GRID CODE – PLANNING CODE APPENDIX****INTRODUCTION**

This appendix specifies data to be submitted to the **TSO** by **Users** or prospective **Users** of the **Transmission System**. The requirement to provide data is governed by the Planning Code (PC4.2, PC4.3, PC4.4, PC5 and PC6).

The specific data requirements depend on whether the **User** is a **Customer** or a **Generator** or **Interconnector** or a **Demand Side Unit Operator** or more than one combined. PC.A1 and PC.A2 apply to all **Users**. PC.A3 applies to demand **Users**. PC.A4 applies to **Generators**. PC.A5 applies to **Interconnectors** and PC.A6 applies to **Demand Side Unit Operators**~~Dispatchable~~~~Demand Customers~~.

Any material changes to the data specified in PC.A3, PC.A4 or PC.A6~~or PC.A4~~ must be notified to the **TSO** as soon as practicable.

#### PC.A2.3.1 Licence:

Details of any **Generation** or **Interconnector** or **Supply Licence** held by the applicant, or of any application for a **Generation** or **Interconnector** or **Supply Licence**.

#### PC.A6: Demand Side Unit Operators

For each **Demand Side Unit Operator**, the following information shall be provided:

- (a) General Details
  - (i) name of **Demand Side Unit**;
  - (ii) address of the **Demand Side Unit Control Facility**;
  - (iii) address of each **Individual Demand Site(s)** comprising the **Demand Side Unit**;
  - (iv) Irish Grid Co-ordinates of the **Connection Point** of each **Individual Demand Site** comprising the **Demand Side Unit**;
  - (v) Meter Point Reference Number for each **Individual Demand Site** comprising the **Demand Side Unit**;
  - (vi) the name of the **Transmission Station(s)** to which each **Individual Demand Site** comprising the **Demand Side Unit** is/are normally connected;
  - (vii) single line diagram for each **Individual Demand Site**;
  - (viii) details of all **Generation Units** used as part of the **Demand Side Unit**, including the **Capacity**, the MVA rating, fuel type, and whether it will be used as a standby plant;

- (ix) details of all **Demand** loads with **Demand** reduction capability of 5 MW or greater, including size in MW and demand reduction capability from load;
  - (x) **Maximum Import Capacity** of each **Individual Demand Site** comprising the **Demand Side Unit** (MW);
  - (xi) **Maximum Export Capacity** of each **Individual Demand Site** comprising the **Demand Side Unit** (MW);
  - (xii) proof of a valid **Connection Agreement** for each **Demand Customer** and proof of a valid **DSO Connection Agreement** for each **DSO Demand Customer** that comprises the **Demand Side Unit** clearly showing **Maximum Import Capacity** and **Maximum Export Capacity** (if applicable);
  - (xiii) whether the **Distribution System Operator** has been informed about the intention of the **Demand Side Unit Operator** to operate a **Demand Side Unit** (the **Demand Side Unit Operator** is obliged to inform the **Distribution System Operator**);
  - (xiv) details of any special operating or network limitations placed by the **Distribution System Operator** on the **Demand Side Unit**;
  - (xv) details of restrictions to the **Operation** of **Individual Demand Sites** comprising the **Demand Side Unit** (e.g. EPA Licence or planning conditions);
  - (xvi) confirmation that all **Individual Demand Sites** comprising the **Demand Side Unit** are not currently registered or shall not be registered as or part of any **Aggregated Generator Unit** or other **Demand Side Unit**;
  - (xvii) whether any **Individual Demand Site** comprising the **Demand Side Unit** participates in any demand side management schemes;
  - (xviii) annual **Demand Side Unit MW Capacity** profile of the **Demand Side Unit** for each **Trading Period** of the year;
  - (xix) annual **Demand Side Unit Energy Profile** of the **Demand Side Unit** for each **Trading Period** of the year;
  - (xx) annual **Demand Side Unit Energy Profile** of each **Individual Demand Site** comprising the **Demand Side Unit** for each **Trading Period** of the year;
  - (xxi) detailed specification of the **Demand Side Unit** control system and method of aggregation, and the communications systems that will be in place between the **Demand Side Unit Control Facility** and the **Individual Demand Sites**;
  - (xxii) project milestones;
  - (xxiii) proposed effective date in **Single Electricity Market**; and
  - (xxiv) proposed date for **Grid Code Testing**.
- (b) Technical Details
- (i) total **Demand Side Unit MW Capacity (MW)** of the **Demand Side Unit**;

- (ii) **Demand Side Unit MW Capacity (MW)** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (iii) total **Demand Side Unit MW Capacity** of the **Demand Side Unit** available from on-site **Generation (MW)**;
- (iv) **Demand Side Unit MW Capacity** of each **Individual Demand Site** comprising the **Demand Side Unit** available from on-site **Generation (MW)**;
- (v) total **Demand Side Unit MW Capacity** of the **Demand Side Unit** available from avoided **Demand** consumption (**MW**);
- (vi) **Demand Side Unit MW Capacity** of each **Individual Demand Site** comprising the **Demand Side Unit** available from avoided **Demand** consumption (**MW**);
- (vii) **Demand Side Unit MW Response Time** of the **Demand Side Unit**;
- (viii) **Demand Side Unit MW Response Time** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (ix) **Minimum Down Time** of the **Demand Side Unit**;
- (x) **Minimum Down Time** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (xi) **Maximum Down Time** of the **Demand Side Unit**;
- (xii) **Maximum Down Time** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (xiii) **Minimum off time** of the **Demand Side Unit**;
- (xiv) **Minimum off time** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (xv) **Maximum Ramp Up Rate** of the **Demand Side Unit**;
- (xvi) **Maximum Ramp Up Rate** of each **Individual Demand Site** comprising the **Demand Side Unit**;
- (xvii) **Maximum Ramp Down Rate** of the **Demand Side Unit**;
- (xviii) **Maximum Ramp Down Rate** of each **Individual Demand Site** comprising the **Demand Side Unit**;

**PC.A6: ~~Dispatchable Demand Customers~~**

For each ~~Dispatchable Demand Customer~~, the following information shall be provided:

- (a) ~~name of Demand Side Unit~~;
- (b) ~~location of Demand Site(s)~~;
- (c) ~~the name of the Transmission Station(s) to which the Demand Site(s) is/are normally connected~~;
- (d) ~~total Demand Side Unit MW Capacity (MW)~~;
- (e) ~~Demand Side Unit MW Capacity available from on-site Generation (MW)~~;
- (f) ~~Demand Side Unit MW Capacity available from avoided Demand consumption (MW)~~;
- (g) ~~annual Demand Side Unit Energy Profile~~.

~~For each Dispatchable Demand Customer which represents an Aggregated Demand Site, the following additional information shall be provided:~~

- ~~(h) Demand Side Unit MW Capacity per Individual Demand Site (MW);~~
- ~~(i) Demand Side Unit MW Capacity from Generation per Individual Demand Site (MW);;~~
- ~~(j) Demand Side Unit MW Capacity from avoided Demand consumption per Individual Demand Site (MW);~~
- ~~(k) Demand Side Unit Export Capacity per Individual Demand Site (MW);~~
- ~~(l) Demand Side Unit Import Capacity per Individual Demand Site (MW);~~
- ~~(m) annual Demand Side Unit Energy Profile per Individual Demand Site (MW).~~

### CC.3

#### SCOPE

The **Connection Conditions** apply to the TSO and to the following **Users**:

- (a) **Generators** with **Registered Capacity** greater than 2MW;
- (b) **Interconnectors**;
- (c) **Demand Customers**; and
- (d) **Demand Side Unit Operators** ~~Dispatchable Demand Customers.~~

~~in relation to their connection to the Transmission System.~~

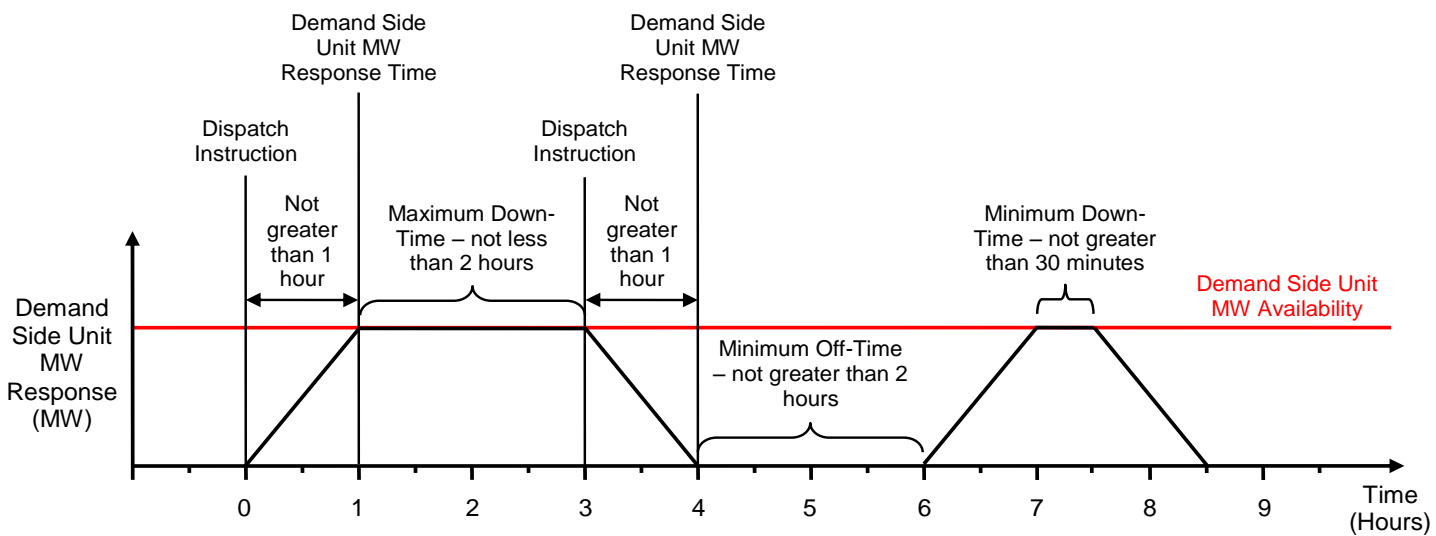
### CC.7.4

Each **Demand Side Unit** shall, as a minimum, have the following capabilities:

- (a) Able to provide **Demand Side Unit MW Response** between 0 MW and the **Demand Side Unit MW Capacity**;
- (b) **Maximum Ramp Up Rate** not less than ~~4.5~~1.67% per minute of **Demand Side Unit MW Response** as specified in the **Dispatch Instruction**. ~~Capacity per minute when the Demand Side Unit is in Normal Dispatch Condition;~~
- (c) **Maximum Ramp Down Rate** not less than ~~4.5~~1.67% per minute of **Demand Side Unit MW Response** as specified in the **Dispatch Instruction**. ~~Capacity per minute when the Demand Side Unit is in Normal Dispatch Condition;~~
- (d) **Minimum Down -Time** not greater than 30 minutes ~~for Demand Side Units;~~ and
- (e) **Maximum Down- Time** not less than 2 hours ~~for Demand Side Units;~~
- (f) **Minimum off time** not greater than 2 hours; and
- (g) **Demand Side Unit MW Response Time** of not greater than 1 hour.

On-site **Generation** that forms part of a **Demand Side Unit**~~Each Demand Side Unit with on-site Generation~~, shall, as a minimum, have the following capabilities:

- (f) operate continuously at normal rated output at **Transmission System Frequencies** in the range 49.5Hz to 50.5Hz;
- (g) remain synchronised to the **Transmission System** at **Transmission System Frequencies** within the range 47.5Hz to 52.0Hz for a duration of 60 minutes;
- (h) remain synchronised to the **Transmission System** at **Transmission System Frequencies** within the range 47.0Hz to 47.5Hz for a duration of 20 seconds required each time the **Frequency** is below 47.5Hz; and
- (i) remain synchronised to the **Transmission System** during a rate of change of **Transmission System Frequency** of values up to and including 0.5 Hz per second.



CC.12.2

Signals and indications required to be provided by **Users** will include but shall not be limited to the following:

- (a) **LV** switchgear positions pertinent to the status of each **Grid Connected Transformer** through a set of two potential free auxiliary contacts (one contact normally open and one contact normally closed when circuit breaker is open) for each circuit breaker;
  - (b) kV at transformer low **Voltage** terminals; and
  - (c) a minimum of four sets of normally open potential free auxiliary contacts in each transformer LV bay for fault indication.
- (d), (e), (f), (g), (h) and (i) are applicable to **Generators** only
- (d) MW and +/-Mvar at alternator terminals of each **Generation Unit**;
  - (e) kV at **Generator Transformer LV** terminals;
  - (f) **Generator Transformer** tap position;



- (g) Measured or derived MW output on each fuel, from **Generation Units** that can continuously fire on more than one fuel simultaneously;
- (h) Where it is agreed between the **TSO** and the **Generator** that signals are not available on the **HV** terminals, +/- **MW** and +/- **Mvar** shall be provided at the **Grid Connected Transformer** low **Voltage** terminals; and
- (i) Remaining **Secondary Fuel** capability (where applicable) in MWh equivalent when running at **Registered Capacity**;

(j) and (k) are applicable to **Demand Customers** only

- (j) **MW** and +/- **Mvar** at the **HV** terminals of the **Grid Connected Transformer**; and
- (k) **Grid Connected Transformer** tap position.

(l), (m), (n), (o), (p), (q), (r) and (s) are applicable to **Demand Side Unit Operators** who represent a **Demand Side Unit**:

- (l) **Demand Side Unit MW Response** from **Generation**;
- (m) **Demand Side Unit MW Response** from avoided **Demand** consumption;
- (n) Remaining **Demand Side Unit MW Capacity**;
- (o) **Demand Side Unit MW Response** from each **Demand** load with a **Demand Side Unit MW Capacity** of greater than or equal to 5 **MW**;
- (p) **MW Output** from **Generation Units** with a **Capacity** greater than or equal to 5 **MW**;
- (q) **Mvar Output** from **Generation Units** with a **Capacity** greater than or equal to 5 **MW** at **Individual Demand Sites** with a **Maximum Export Capacity** specified in the **Connection Agreement** or **DSO Connection Agreement** as applicable, as required by the TSO;
- (r) **MW Output** from **Generation Units** on **Individual Demand Sites** with a combined **Capacity** of greater than or equal to 5 **MW**, as required by the TSO; and
- (s) **Demand Side Unit MW Response** from each **Individual Demand Site** that comprises the **Demand Side Unit**, as required by the TSO.

~~(l) and (m) are applicable to **Dispatchable Demand Customers** who represent a **Demand Side Unit**. For each **Individual Demand Site** (for the purposes of testing):~~

- ~~(l) — Measured or derived **MW Output** for each **Generator** at the **Control Facility** of the **Dispatchable Demand Customer**; and~~
- ~~(m) — **Demand Side Unit MW Response** at the **Control Facility** of the **Dispatchable Demand Customer**.~~

~~(n) and (o) are applicable to **Dispatchable Demand Customers** who represent a **Demand Side Unit** which consists on an **Aggregated Demand Site**:~~

- ~~(n) The aggregated, measured or derived loss adjusted MW output for each Individual Demand Site, Control Facility of the Dispatchable Demand Customer; and~~
- ~~(o) The aggregated Demand Side Unit MW Response aggregated at the HV Control Facility of the Dispatchable Demand Customer.~~

~~(pt), (qu), (rv), (sw) and (tx)~~ are applicable to **Interconnectors** only:

- ~~(pt)~~ +/-MW and +/-Mvar at the high **Voltage** terminals of the **Interconnector Transformer**;
- ~~(qu)~~ **kV** at **Interconnector Transformer** high **Voltage** terminals;
- ~~(rv)~~ **Interconnector Transformer** tap position;
- ~~(sw)~~ **Interconnector** status; and
- ~~(tx)~~ **Frequency**.

CC.12.6

**Demand Side Unit Operators**~~Dispatchable Demand Customers~~ and **Generator Aggregators** shall provide the **TSO** the specification of the method of aggregation of SCADA from multiple sites. The minimum specifications shall be agreed with the **TSO** in advance and shall include:

- (a) signals from Demand Side Unit Operators shall be relayed to the TSO Telecommunication Interface Cabinet which reflect the Demand Side Unit MW Response to an accuracy of within 1 MW of the actual Demand Side Unit MW Response within 15 seconds of change occurring to the Demand Side Unit MW Responses~~signals from Demand Side Unit Operators shall be relayed to the TSO Telecommunication Interface Cabinet within 15 seconds of change of demand reduction or Generation Unit Output and with an error of no greater than 0.5 MW or 1% of the Demand Side Unit MW Capacity, whichever is greater; and~~
- (b) a single failure of an item of the **Demand Side Unit Operator's** equipment will not result in:
- (i) loss of control of more than one **Individual Demand Site**;
  - (ii) loss of **Demand Side Unit MW Response** of more than one **Individual Demand Site**; or
  - (iii) the **Demand Side Unit MW Response** from **Generation** or **Demand Side Unit MW Response** from avoided **Demand** consumption signals being incorrect by more than the **Demand Side Unit MW Capacity** of the **Individual Demand Site** with the highest **Demand Side Unit MW Capacity** comprising the **Demand Side Unit**.

## OC2.1 INTRODUCTION

Secure operation of an electricity system requires that maintenance of production facilities (**Generation Units, Interconnectors, Aggregated Generating Units and Demand Side Units**) should be carried out in a timely and orderly fashion. This is essential in order to enable the **TSO** to fulfil its obligations relating to operation of the **Transmission System**, and to enable **Generators, Interconnector Operators, Generator Aggregators** or **Demand Side Unit Operators** ~~Dispatchable Demand Customers~~ to plan their **Outages** in an orderly way with due regard to **Plant** requirements and resource limitations. The mechanisms by which this is achieved are formalised in this Operational Planning Code (Generation).

## OC2.2 OBJECTIVE

The primary objective of OC2 is to promote the development and implementation of a co-ordinated **Generation Outage Programme**, consistent with security of supply and requirements for the secure and economic operation of the **Transmission System** and the **Other Transmission System**, and with the needs of **Generators, Interconnector Operators, Generator Aggregators** or **Demand Side Unit Operators** ~~Dispatchable Demand Customers~~ in respect of **Plant** maintenance requirements and resource limitations.

In order to achieve this objective, OC2 defines:

- (a) the procedure for formal notification of **Outages** by **Generators, Interconnector Operators, Generator Aggregators** and **Demand Side Unit Operators** ~~Dispatchable Demand Customers~~ to the **TSO**;
- (b) the procedures by which the **Indicative, Provisional and Committed Outage Programmes** are reviewed by the **TSO**, in consultation with **Generators, Interconnector Operators, Generator Aggregators**, or **Demand Side Unit Operators** ~~Dispatchable Demand Customers or Demand Side Aggregators~~;
- (c) the co-ordination of **Outage** planning and the interchange of **Outage** schedules with the **Other TSO**; and
- (d) the procedure for formal notification by **Generators, Generator Aggregators**, or **Demand Side Unit Operators** ~~Dispatchable Demand Customers or Demand Side Aggregators~~ of:
  - (i) a decision to cancel a major **Outage** of a **Generating Unit**;
  - (ii) the findings during or following a major **Outage** of a **Generating Unit**;
  - (iii) an unexpected and unplanned failure of a **Generating Unit**.

OC2 shall apply to all proposed **Outages** that may affect the ability of a **Generation Unit, Interconnector, Aggregated Generating Unit** and **Demand Side Unit** to achieve, in accordance with its **Registered Operating Characteristics**, either its full **Registered Capacity**, appropriate to each **Registered Fuel, Interconnector Registered Capacity** or its **Demand Side Unit MW Capacity** as the case may be.

OC2.7 also requires **Generators, Interconnector Operators, Generator Aggregators** and **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ to inform the **TSO** of other proposed maintenance of a **Generation Unit, Interconnector, Aggregated Generating Unit, Demand Side Unit** or any associated **Plant** or **Apparatus**, where such maintenance will affect the availability of **Ancillary Services** in respect of that **Generation Unit**.

### OC2.3

#### SCOPE

Operational Planning applies to the **TSO** and to the following, each of which is a **User** under this OC2:

- (a) **Generators** which for the purposes of OC2 includes all **Generators** with **Registered Capacity** greater than 5 MW or which are subject to **Central Dispatch**;
- (b) **Interconnector Operators**;
- (c) **Generator Aggregators**;
- (d) **Demand Side Unit Operators**~~Dispatchable Demand Customers~~; and
- (e) The **Distribution System Operator (DSO)**.

### OC2.4.2

In rolling over the **Generation Outage Programme** from one year to the next, for every year except the first year of the planning process:

- (a) submissions by the **Generator, Interconnector Operator, Generator Aggregator** and/or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ for year 2 should reflect the current **Provisional Outage Programme** for year 3; and
- (b) submissions by the **Generator, Interconnector Operator, Generator Aggregator** and/or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ for year 1 should reflect the current **Provisional Outage Programme** for year 2.

except, in any such case, to the extent that the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ is reasonably responding to changed circumstances. This does not require **Generators, Interconnector Operators, Generator Aggregators** or **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ to explain changes unless required to do so by the TSO. The aggregate of all **Generators' Outage Programmes** is the **Generation Outage Programme** that will comprise the **COP** and **POP**.

OC2.4.3 By the end of March in year 0, **Generators, Generator Aggregators** and **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ shall submit to the TSO, for each **Generation Unit, Aggregated Generating Unit** or **Demand Side Unit**, details of **Outages** and estimates of the **Forced Outage Probabilities** for inclusion in:

- (a) the **Committed Outage Programme (COP)** for year 1. Other than in the first year after the planning process has commenced, this will be based on the previous year's **Provisional Outage Programme** for year 2, which period through the passage of time has now become year 1, and any changes may only reflect the **Generator's, Interconnector Operator's, Generator Aggregator's,** and **Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ reasonable response to changed circumstances;
- (b) the **Provisional Outage Programme (POP)** for years 2 and 3.

In the case of **Aggregated Generating Units**, and **Demand Side Units** which consist of **Aggregated Demand Sites**, the **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall provide the aggregated **Outages**, and upon request from the TSO the **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall provide the **Outage** for each individual site, in a reasonable time period.

**Generators, Interconnector Operators, Generator Aggregators** and **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ shall specify with regard to each of their **Generation Units, Interconnector, Aggregated Generating Units** or **Demand Side Units**, the start date and time and the duration of each **Outage**.

OC2.4.4 In scheduling **Outages**, and in relation to all other matters under OC2, the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ must act reasonably and in good faith. Without limitation to such obligation, each **Generator, Interconnector Operator, Generator Aggregator** and **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ should act in accordance with **Good Industry Practice** in planning their **Outages** and, in particular, so as to avoid a situation arising in which a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ is obliged to schedule an **Outage** at short notice by reason of obligations imposed upon the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~.

**Customer** by statute as a consequence of the **Generator, Interconnector Operator, Generator Aggregator or Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ not having planned in accordance with **Good Industry Practice**, for example, by not having planned sufficiently in advance its **Outages** for any statutory time limit.

OC2.4.5 When submitting proposed **Outages** for inclusion in the **COP, POP** and **IOP, Generators, Interconnector Operators, Generator Aggregators** and **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ shall, unless they reasonably substantiate that an **Outage** is inflexible, specify:

- (a) an alternative preferred window, or alternative preferred windows, of opportunity within each year for any **Outage**;
- (b) the minimum **Outage** duration which would be acceptable, if less than the scheduled **Outage** duration;
- (c) situations where the paralleling of **Outages** of two or more of its **Generation Units, Interconnectors, Aggregated Generating Units, Demand Side Units or Aggregated Demand Side Units** may be required, desirable, undesirable or not possible;
- (d) a priority order associated with the various **Outages** scheduled by the **Generator, Interconnectors, Generator Aggregators** and **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~;
- (e) any **Outages** where it is particularly desirable that they should take place within the year scheduled; or
- (f) any **Outage** where its timing is dependent on **Generation Unit** run hours, equivalent run hours or starts.

OC2.4.6 **Generators, Interconnector Operators, Generator Aggregators, Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ are required to signal adequately in advance major **Outages** which could impact on capacity adequacy or on the **TSO's** transmission outage maintenance and development. In rolling over the **Generation Outage Programme** from one year to the next each **Generator, Generator Aggregator** and **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ shall not be constrained in making any submission by any previous **Provisional Outage Programme**.

OC2.4.7 Between March and June of year 0, the **TSO** shall carry out a security analysis of years 1 to 7 in light of proposed **Outages** and other relevant matters including:

- (a) **Outages** of other **Generation Units, Aggregated Generating Units** and **Demand Side Units**;
- (b) **Outages** of **Generation Units, Aggregated Generating Units** and **Demand Side Units** on the **Other Transmission System**;
- (c) **Interconnectors** and **Inter-jurisdictional Tie Line**; and

- (d) **Transmission** outages, **Load** growth and fuel security.

In the event that a proposed **Generator's**, **Interconnector Operator's** and **Generator Aggregator's**, **Demand Side Unit Operator's**~~**Dispatchable Demand Customer's**~~ **Outage** has a detrimental effect on **Capacity Adequacy** or system security either in the **Transmission System** or in the **Other Transmission System**, the relevant **TSO** will highlight the shortfall to all **Generators**, **Interconnector Operators**, **Generator Aggregators**, **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ and **Suppliers**.

OC2.4.8 Any concerns which the **TSO** may have with the **Generation Outage Programme** must be notified to all **Generators**, **Interconnector Operators**, **Generator Aggregators** and **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ by the end of June in year 0.

OC2.4.9 Between the end of June in year 0 and the end of September in year 0 any concerns raised by the **TSO** shall be notified to **Generators**, **Interconnector Operators**, **Generator Aggregators** and **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~. The **TSO** will enter into discussions with **Generators**, **Interconnector Operators**, **Generator Aggregators** and **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ to find a resolution. If by the end of September in year 0 no resolution has been agreed and in the opinion of the **TSO** there is a capacity shortfall in year 1, the **TSOs** will jointly issue a **System Capacity Shortfall Warning**.

OC2.4.10 The **TSO** shall issue to each **Generator**, **Interconnector Operator**, **Generator Aggregator** and **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ a **Generation Outage Programme** for that **Generator**, **Generator Aggregator**, **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ for years 1 to 3 by the last **Business Day** of September in year 0, including the **COP** for year 1.

OC2.5.1.1 Each week during year 0 after for a forecast period of four weeks, the **TSO** shall:

- (a) use **Generators'**, **Interconnectors'**, **Generator Aggregators'** and **Demand Side Unit Operators'**~~**Dispatchable Demand Customers'**~~ submissions for **Outages**;
- (b) use **Generators'**, **Interconnectors'** and **Generator Aggregators'** submissions for **Forced Outage Probabilities**; use **Generators'** and **Generator Aggregators'** submissions for **Forced Outage Probabilities**;



- (c) in a separate exercise, use the TSO's assessment of the **Generators', Interconnectors' and Generator Aggregators' Forced Outage Probabilities, Generators', Interconnectors'** submissions and historical data; and
- (d) based on (a), (b), (c) and **Demand** forecasts the TSO 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 TSO website at 15.00 every Thursday and updated the following Monday for that forecast period.

OC2.6.1 A request for a change to an **Outage** included in the **Committed Outage Programme** or an additional **Outage** may be initiated either by the TSO or by a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ at any time.

OC2.6.2.1 The TSO may at any time request from a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ a change in the timing or duration of any **Outage** of one of the **Generator's Generation Units, Interconnectors, Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ **Demand Side Units** or an **Individual Demand Site** which constitutes the **Demand Side Unit** in the **Committed Outage Programme**.

OC2.6.2.2 A **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ may respond either by declining the request, or by agreeing to the request (in which case the **COP** shall be deemed to be amended accordingly). **Generators, Interconnector Operators, Generator Aggregators** and **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ shall make every reasonable effort to co-operate with changes requested by the TSO.

OC2.6.2.3 If a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ responds by agreeing to the request subject to specific conditions, the TSO may respond by either confirming agreement to those conditions, in which case the conditions specified by the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall be deemed to have been accepted, or by declining agreement. Where the TSO agrees to the conditions the **COP** shall be deemed to be amended accordingly. Where the TSO declines to agree to the conditions, then the TSO may



negotiate with the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ as to revised or alternative conditions, which would be acceptable.

**OC2.6.3** Outage change initiated by a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~

**OC2.6.3.1** **Generators, Interconnector Operators, Generator Aggregators** or **Demand Side Unit Operators**~~Dispatchable Demand Customers Aggregators~~ may at any time request the **TSO** for a change in the timing or duration of any **Outage** of one of the **Generator's Generation Units, Interconnectors** or **Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ **Demand Side Units** or an **Individual Demand Site** which constitutes the **Demand Side Unit** in the **Committed Outage Programme**.

**OC2.6.3.2** Where a change to the **COP** is proposed by a **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~, the **TSO** shall evaluate whether the change is likely to have a detrimental effect on **Capacity Adequacy** or on the secure operation of the **Transmission System**. This shall be done within a reasonable time frame, taking into consideration the extent of the change and the timing of the **Outage**

**OC2.6.3.3** Where, in accordance with OC2.5, the request is not likely to have a detrimental effect on **Capacity Adequacy** or the secure operation of the **Transmission System** then the **TSO** shall amend the **COP** accordingly. The **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall be advised by the **TSO** that the change has been accepted.

**OC2.6.3.4** Where, in accordance with OC2.5, the **Outage** change is likely to have a detrimental effect on **Capacity Adequacy** or requirements for the secure operation of the **Transmission System** then the **TSO** shall not amend the **COP**. The **TSO** shall contact the **Generator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ and inform the **Generator, Interconnector Operator's, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ that the change to the **COP** has not been accepted, the **TSO** shall at the **Generator's, Interconnector Operator, Generator Aggregator's** or **Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ request enter into discussions with the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ to facilitate an alternative modification which may meet the requirements of the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ while not having an unacceptable effect on **Capacity Adequacy** or requirements for secure operation of the **Transmission System**. In the event that the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~

~~Demand Customer~~ wishes to avail of an alternative modification, it shall submit a change request in accordance with OC2.6.3.1.

OC2.6.3.5 Where the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ has been notified that the change to the **COP** has not been accepted, but in the view of the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ it must force the **Generation Unit, Interconnector** or **Demand Side Unit** to be unavailable due to technical or safety issues, then the **Generator, Interconnector Operator, Generator Aggregator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall inform the **TSO** immediately in accordance with the requirements to submit an **Availability Notice**.

OC2.7.2 The **TSO** may, where security of supply or the secure operation of the **Transmission System** or the **Other Transmission System** would be at risk, request alterations to maintenance notified under Section OC2.7.1. The **TSO** shall make reasonable endeavours to give as much notice as possible for such requests for alterations. Where the **TSO** makes such a request, the **Generator, Interconnector Operator, Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall use reasonable endeavours to comply with the request in arriving at the **User's** final programme for such maintenance.

OC2.7.3 The **DSO** shall co-operate with the **TSO** and **Embedded Generators** and **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ in all phases of **Outage** planning to promote **Capacity Adequacy** and ensure system security.

OC7.1.3.1 OC7.1 applies to the **TSO** and to **Users**, which term in OC7.1 means:-

- (a) **Generators;**
- (b) **Interconnector Operators;**
- (c) **Dispatchable WFPSs;**
- (d) **Distribution System Operator;**
- (e) **Demand Customers;** and
- (f) **Demand Side Unit Operators**~~Dispatchable Demand Customers~~.

- OC7.2.3.1 OC7.2 applies to the **TSO** and to **Users**, which term in OC7.2 means:
- (a) **Generators;**
  - (b) **Interconnector Operators;**
  - (c) **Dispatchable WFPS;**
  - (d) **Distribution System Operator;**
  - (e) **Demand Customers;** and
  - (f) **Demand Side Unit Operators**~~Dispatchable Demand Customers.~~

~~OC7.2.4.3.5 Dispatchable Demand Customers are required to provide a Control Facility. The Dispatchable Demand Customer shall ensure acting in accordance with Good Industry Practice that the Control Facility is staffed with appropriate staffing levels at all times.~~

~~OC7.2.4.3.6 For Dispatchable Demand Customers, the Control Facility shall be staffed by a Responsible Operator(s) who shall respond to communications from the TSO without undue delay (except where otherwise provided for by agreement between the Dispatchable Demand Customer and the TSO, such agreement not to be unreasonably withheld) and are of suitable experience and training and are authorised to perform functions on behalf of the Dispatchable Demand Customer as follows:~~

- ~~(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 Demand Side Unit MW Availability.~~

~~OC7.2.4.3.7 The Responsible Manager shall be authorised by the Dispatchable Demand Customer to perform the following functions on behalf of the Dispatchable Demand Customer:~~

- ~~(a) to make estimates in accordance with Good Industry Practice as to the Demand Side Unit MW Availability;~~
- ~~(b) to make Declarations of the Demand Side Unit MW Availability for Dispatchable Demand Customer; and~~
- ~~(c) to communicate with respect to issues regarding Outages of each Individual Demand Site within the Demand Side Unit.~~

~~The Dispatchable Demand Customer may, from time to time, notify a replacement contact location and personnel which meets the foregoing requirements.~~

OC7.2.4.7 **DEMAND SIDE UNIT OPERATORS**

OC7.2.4.7.1 **Demand Side Unit Operators** are required to provide a **Control Facility**. The **Demand Side Unit Operator** shall ensure acting in accordance with **Good Industry Practice** that the **Control Facility** is staffed with appropriate staffing levels at all times.

OC7.2.4.7.2 For **Demand Side Unit Operator**, the **Control Facility** shall be staffed by a **Responsible Operator(s)** who shall respond to communications from the **TSO** without undue delay (except where otherwise provided for by agreement between the **Demand Side Unit Operator** and the **TSO**, such agreement not to be unreasonably withheld) and are of suitable experience and training and are authorised to perform functions on behalf of the **Demand Side Unit Operator** as follows:

- (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 **Demand Side Unit MW Availability**.

OC7.2.4.7.3 At any point in time, a single person shall be designated by the **Demand Side Unit Operator** and notified to the **TSO** as the **Responsible Manager**. The **Responsible Manager** shall be responsible for dealing with the **TSO** on matters relating to the **Grid Code** other than as provided for in OC7.2.4.3.6 and OC7.2.4.3.7. In the event that the **Responsible Manager** is not a person on duty at the **Control Facility** of the **Demand Side Unit Operator**, then the **Responsible Manager** must be capable of being contacted from the **Control Facility** of the **Demand Side Unit Operator** at all times, and in the event that the **TSO** issues a request to the **Control Facility** of the **Demand Side Unit Operator** requiring the **Responsible Manager** to contact the **NCC**, the **Responsible Manager** shall comply with the request without unreasonable delay and in any case within 15 minutes of the request.

OC7.2.4.7.4 The **Responsible Manager** shall be authorised by the **Demand Side Unit Operator** to perform the following functions on behalf of the **Demand Side Unit Operator**:

- (a) to make estimates in accordance with **Good Industry Practice** as to the **Demand Side Unit MW Availability**;
- (b) to make **Declarations** of the **Demand Side Unit MW Availability** for **Demand Side Unit Operator**; and
- (c) to communicate with respect to issues regarding **Outages** of each **Individual Demand Site** within the **Demand Side Unit**.

The **Demand Side Unit Operator** may, from time to time, notify a replacement contact location and personnel which meets the foregoing requirements.

- OC.7.2.4.7.5 Unless otherwise agreed with the **TSO**, each **Individual Demand Site** comprising a **Demand Side Unit** shall have a **Responsible Operator** that must be capable of being contacted from the **Control Facility** of the **Demand Side Unit Operator** at all times and is capable of being at the **Individual Demand Site** within 1 hour of request to respond to any query or issue from the **Responsible Operator** at the **Control Facility** of the **Demand Side Unit Operator** or the **TSO**.
- OC7.2.5.3.2 For **Demand Side Unit Operators**~~Dispatchable Demand Customers~~, **SCADA** remote terminal equipment shall also be required at the **Control Facility** for the transmission of signals and indications to and from the **NCC**. The signals and indications which must be provided by **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ for transmission by **SCADA** equipment to the **NCC** are the signals and indications referred to under **Connection Conditions** together with such other information as the **TSO** may from time to time, by notice to **Demand Side Unit Operators**~~Dispatchable Demand Customers~~, reasonably require.
- OC7.2.5.3.3 Interface cabinets shall be installed in the control room of the **Transmission Station** at the **User Site** and also on the **User's Site** or, in the case of a **Demand Side Unit Operators**~~Dispatchable Demand Customers~~, in the **User's Control Facility**. Provision and maintenance of wiring and signalling from the **User's Plant** and **Apparatus** to the **User's** interface cabinet shall be the responsibility of the **User**. The **TSO** shall provide the cables to interconnect these interface cabinets.
- OC7.2.6.1.1 Other than where specifically provided for in other sections of the **Grid Code**, communication between the **TSO** and **Users** on matters pertaining to the real time operation of the **Transmission System** shall take place between the **NCC** and the **User**~~Generator's~~ **Control Facility**.
- OC7.2.7.2 Data and notices to be submitted to the **TSO** under the **Grid Code** shall be addressed to the person, and at the address, notified by the **TSO** to **Users** for such purpose, following entry into the **Connection Agreement** or for a **Demand Side Unit** prior to issuance of the **Operational Certificate**, or to such other person or address, as the **TSO** may notify to **Users** from time to time.

OC7.2.7.3 Data and notices to be submitted to **Users** under the **Grid Code** shall be addressed to the **User's** nominated representative (at the address notified by **Users** to the **TSO** following entry into the **Connection Agreement** or for a **Demand Side Unit** prior to issuance of the **Operational Certificate** for such purpose (and failing such notification to the principal office of the addressee)), or to such other person or address as **Users** may notify to the **TSO** from time to time.

### OC8.3 SCOPE

OC8 applies to the **TSO** and to all **Users**, which term in this OC8 means:

- (a) **Generators** which includes all **Generators** with units with **Registered Capacity** greater than 5 MW and **Generator Aggregators**;
- (b) **Interconnectors**;
- (c) **Demand Side Unit Operators**~~Dispatchable Demand~~;
- (d) The **Distribution System Operator**; and
- (e) **Demand Customers**.

OC8.6.2.5 where the **User** is a **Generator**, **Interconnector Operator**, **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~, the **Dispatch** or **Dispatches** required by the **Generator**, **Interconnector Operator**, **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ for completion of the test, if any, including the duration of **Dispatch** shall be supplied to the **TSO** as part of the proposal. Where the **Generator**, **Interconnector Operator**, **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ may not know the entire **Dispatches** required for completion of the test until part of the test is completed then the **Generator**, **Interconnector Operator**, **Generator Aggregator** or **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ when proposing the test shall:

- (a) divide the test into sections as appropriate;
- (b) indicate and discuss with the **TSO** which sections of the test can be completed in stages and which cannot; and
- (c) indicate possible variations of the test for the sections that can be completed in stages.

Additionally, the factors that influence the completion of the stages should be outlined to the **TSO**, namely, if the procedure to be followed for a certain stage depends on the outcome of a previous stage.

OC8.6.3 A request by the **Generator, Interconnector Operator, Generator Aggregator or Demand Side Unit Operator**~~Dispatchable Demand Customer~~ for an **Operational Test** requiring a **Generation Unit, Interconnector or Demand Side 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**.

OC8.7.3 Where an **Operational Test** proposed by a **Generator, Interconnector Operator, Generator Aggregator or Demand Side Unit Operator**~~Dispatchable Demand Customer~~ in respect of one of its **Generation Units, Interconnector or Demand Side Units** requires a **Dispatch** that exceeds the currently declared values of **Availability, Ancillary Service** capability where applicable, or **Operating Characteristics** of the **Generation Unit, Interconnector or Demand Side Units**, then the **TSO** may so **Dispatch** the **Generation Unit, Interconnector or Demand Side Units** for the period required for the **Operational Test**, in accordance with the relevant provisions of the **Grid Code**.

### OC9.3 SCOPE

OC9 applies to the **TSO** and to all **Users**, which term in this OC9 means:

- (a) **Generators** which for the purposes of OC9 includes all **Generators** with **Registered Capacity** greater than 5 MW;
- (b) **Interconnector Operators**;
- (c) The **Distribution System Operator**;~~and~~
- (d) **Demand Customers**~~including Dispatchable Demand Customers~~; and
- (e) **Demand Side Unit Operators**.

OC9.4.1 In the event of a **System Emergency Condition** or imminent shortfall of MW capacity, the **TSO** may issue any of several **Alerts** to the **Generator, key Transmission Stations, and Distribution Control Centres and Demand Side Unit Operators**. These **Alerts** may include an **Amber Alert, Red Alert or Blue Alert**, or other **Alerts** as may be agreed from time to time.

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), Interconnectors** and **Demand Side Units** comply with **Dispatch Instructions**;
- (b) whether **Generators, Interconnectors, Demand Side Unit Operators**~~Dispatchable Demand Customers~~ and **Generator Aggregators** are in compliance with **Declarations of Availability, Ancillary Services** capabilities, **Operating Characteristics** and any other data required to be registered by those **Generators, Interconnectors, and Demand Side Unit Operator**~~Dispatchable Demand Customers and Demand Side Unit Aggregators~~ under the **Grid Code**;
- (c) whether **Power Quality** of **Users** conforms with International Electro technical Commission Standards: 'Electromagnetic Compatibility-Limits-Limitation of emission of harmonic currents for equipment connected to medium and high voltage power supply systems [IEC/TR3 61000-3-6] and 'Electromagnetic Compatibility-Limits-Limitation of voltage fluctuation and flicker for equipment connected to medium and high voltage power supply systems ' [IEC/TR3 61000-3-7];
- (d) whether **Users** are in compliance with protection requirements and protection settings under the **Grid Code, Users' Connection Agreements, Ancillary Service Agreements** and **System Support Agreements** between **Users** and the **TSO**;
- (e) whether **Generators** have the ability to generate on **Primary Fuel** and **Secondary Fuel** (where applicable) and have the ability to carry out on on-line fuel changeover; and
- (f) whether **Generators** have the required **Secondary Fuel** stock levels at the **Generator Site** and **Off-Site Storage Location**.

### OC10.3 SCOPE

OC10 applies to the **TSO** and to the following **Users**

- (a) **Generators** which, for the purposes of OC10, include all **Generators** with **Generation Unit(s)** subject to **Central Dispatch** or with **Generation Unit(s)** that have a total **Registered Capacity** greater than 4 MW on a single **Site**;
- (b) **Interconnector Operators**;
- (c) The **Distribution System Operator**;



- (d) **Suppliers;**
- (e) **Demand Customers;**
- (f) **Demand Side Unit Operators** ~~Dispatchable Demand Customers~~ in respect of their **Demand Side Units**; and;
- (g) **Generator Aggregators** in respect of the **Generation Units** which they represent.

#### OC10.4.5.2 Compliance of **Demand Side Units** with **Dispatch Instructions**

The following validation will be performed in real time:

- (i) ~~For a Demand Side Unit or Aggregated Demand Side Unit which achieves the Demand Side Unit MW Response only by operating a Generator or Generators, the~~ **A Demand Side Unit or the Aggregated Demand Side Unit** shall be deemed compliant if the **SCADA** signal confirms that the ~~increased output of the generation is within 5% of the~~ **Demand Side Unit MW Response** is within 5% of the **Dispatch Instruction**.

The following validation will be performed ~~post event on a needs-be basis and will not be performed in real time:~~

- (ii) ~~For a~~ **A Demand Side Unit or Aggregated Demand Side Unit** which achieves the ~~Demand Side Unit MW Response only by reducing their Demand, the Demand Side Unit or the Aggregated Demand Side Unit~~ shall be deemed to be compliant with the **Dispatch Instruction** if the difference between the **Demand Side Unit Energy Profile** and the metered **Demand** plus the **Demand Side Unit MW Response** is within 5% of the **Demand Side Unit Energy Profile**.
- ~~(iii) For a Demand Side Unit or Aggregated Demand Side Unit which achieves the Demand Side Unit MW Response by reducing their Demand and operating a generator or generators, the Demand Side Unit or the Aggregated Demand Side Unit shall be deemed to be compliant with the Dispatch Instruction if the difference between the Demand Side Unit Energy Profile and the metered Demand plus the Demand Side Unit MW Response is within 5%.~~
- (iii) For **Demand Side Units** which are not **Dispatched** but have been declared **Available** in an **Availability Notice**, the **Demand Side Unit** shall be deemed to be compliant with its declared **Demand Side Unit Energy Profile** if the difference between the **Demand Side Unit Energy Profile** and the metered **Demand** is within 5% of the **Demand Side Unit Energy Profile**.

**OC10.7.1** Non-compliance with a Dispatch Instruction issued by the TSO to a Generator, Interconnector Operator, Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or Generator Aggregator.

**OC10.7.1.1** When the TSO considers that a Generator, Interconnector Operator, a Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or a Generator Aggregator is not in compliance with a Dispatch Instruction then the TSO shall inform the Generator, the Interconnector Operator, the Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or the Generator Aggregator by agreed methods, identifying the relevant Generation Unit, Interconnector or Demand Side Unit, and identifying the Dispatch Instruction and the time of issue of the Dispatch Instruction with which the TSO considers the Generator, the Interconnector Operator, the Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or the Generator Aggregator is not in compliance. This shall be known as a "Warning for non-compliance with a Dispatch Instruction". The Warning is to contain a Dispatch Instruction which may be identical to the original Dispatch Instruction or which may differ from it. The occurrence of the Warning shall be logged by the TSO and by the Generator, the Interconnector Operator, the Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or the Generator Aggregator.

**OC10.7.1.2** On receipt of a Warning for non-compliance with a Dispatch Instruction, the Generator, the Interconnector Operator, Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or Generator Aggregator must as soon as possible, and in any case within ten (10) minutes of the receipt of the Warning:

- (a) commence to comply with the Dispatch Instruction included with the Warning (this may be the original or a modified Dispatch Instruction as outlined in OC10.7.1.1); or
- (b) reply to the TSO, disputing in good faith the validity of the original Dispatch Instruction, detailing the grounds on which the validity is being disputed; or
- (c) reply to the TSO, disputing in good faith the validity of the assessment of non-compliance. In this event the Generator, the Interconnector Operator, the Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or the Generator Aggregator must as soon as is reasonably practicable, inform the TSO in detail of the grounds on which the assessment of non-compliance is being disputed; or
- (d) reply to the TSO, 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.

**OC10.7.1.3** If the Generator, Interconnector Operator, Demand Side Unit Operator ~~Dispatchable Demand Customer~~ or Generator Aggregator complies in accordance with OC10.7.1.2

- (a), no further action shall arise.

- OC10.7.1.4 In the event of the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** making a revised **Declaration** under OC10.7.1.2 (d), the **TSO** shall then issue a new **Dispatch Instruction**, consistent with the revised **Declaration**. The revised **Declaration** will be backdated to the time of issue of the relevant **Dispatch Instruction**. Notwithstanding the backdating of the revised **Declaration**, the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** will still be deemed under OC10.7.1.1 as having failed to comply with a **Dispatch Instruction**.
- OC10.7.1.5 In the event of OC10.7.1.2 (b) or OC10.7.1.2 (c) applying, the **TSO** shall consider the substance of the **Generator's, Interconnector Operator's, Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ or **Generator Aggregator's** dispute. The **TSO** shall, where the **TSO** considers appropriate, communicate with the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** to clarify aspects relating to the issue and receiving of the **Dispatch Instruction**, and the **Generator's, Interconnector Operator's, Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ or **Generator Aggregator's** actions. The **TSO** shall acting reasonably determine the validity of the **Generator's, Interconnector Operator's, Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ or **Generator Aggregator's** dispute, and shall inform the **Generator, Interconnector Operator's, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** as to its decision. The **TSO** shall record both its decision, and also all pertinent information relating to the event, including the **Generator's, Interconnector Operator's, Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ or **Generator Aggregator's** dispute and such information shall be deemed to be **Operational Data**.
- OC10.7.1.6 Where the **TSO**, acting reasonably, is of the view that a dispute given by a **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** is not valid or not wholly valid or if the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** has not replied in accordance with OC10.7.1.2, the **TSO** shall inform the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** that it is overriding, by means of a **Post Event Notice**, the **Generator's Declaration** or **Interconnector's Declaration** in respect of the **Availability, Ancillary Service capabilities** or **Operating Characteristics** of the **Generation Unit** or **Interconnector** as appropriate. The **Post Event Notice** shall govern until such times as the **Generator, Interconnector Operator, Demand Side Unit Operator**~~Dispatchable Demand Customer~~ or **Generator Aggregator** submits a revised **Availability Notice**.

- OC10.7.3 Non-compliance by a Generator, Interconnector Operator, Demand Side Unit Operator~~Dispatchable Demand Customer~~ or Generator Aggregator with an Availability Notice**
- OC10.7.3.1 In the event that the performance of a **Generation Unit, Interconnector, Demand Side Unit or Aggregated Generator** is deemed by the **TSO** to be in non-compliance with its **Declared Availability**, then the **TSO** shall notify the **Generator, Interconnector Operator, Demand Side Unit Operator~~Dispatchable Demand Customer~~** or the **Generator Aggregator** of the non-compliance.
- OC10.7.3.2 Having so informed the **Generator, Interconnector Operator, Demand Side Unit Operator~~Dispatchable Demand Customer~~** or **Generator Aggregator**, the **TSO** shall, by means of a **Post Event Notice**, override the **User's Availability Notice**, 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 the **TSO** acting reasonably, be appropriate if the non-compliance did not apply to the full period of the **Test or Investigation**.
- OC10.7.3.3 The economic consequence of non-compliance by a **Generator, Interconnector Operator, Demand Side Unit Operator~~Dispatchable Demand Customer~~** or **Generator Aggregator** with **Declared Availability** will be addressed in the **SEM Trading and Settlement Code** and other agreements as appropriate.
- OC10.7.4 Non-compliance by a Generator, Demand Side Unit Operator or Interconnector Operator with Declared Ancillary Services or Declared Technical Parameters**
- OC10.7.4.1 In the event that the performance of a **Generation Unit, Demand Side Unit or Interconnector** is deemed by the **TSO** to be in non-compliance with its **Declared Ancillary Services** capability or **Operating Characteristics**, then the **TSO** shall notify the **Generator, Demand Side Unit Operator or Interconnector Operator** of the non-compliance, and having so informed the **Generator, Demand Side Unit Operator or Interconnector Operator** then the **TSO** shall by means of a **Post Event Notice** override the **Generator's Declaration, Demand Side Unit Operator Declaration or Interconnector Operator's Declaration** in respect of **Ancillary Services or Operating Characteristics** as appropriate.
- OC10.7.4.2 The consequences of non-compliance by a **Generator, Demand Side Unit Operator or Interconnector Operator** with **Declared Ancillary Services or Declared Technical**

**Parameters** will be addressed in the **SEM Trading and Settlement Code** and other agreements as appropriate.

OC10.7.5.3 In the event that the performance of a **Demand Side Unit** is deemed by the **TSO** in accordance with the provisions of this OC10 to be in non-compliance with its **Operating Characteristics**, including **Demand Side Unit Energy Profile**, or with a **Connection Condition**, then the **TSO** shall notify the **Demand Side Unit Operator**~~Dispatchable Demand Customer or the Aggregator~~ of the non-compliance and the **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ shall take immediate action to remedy such non compliance. The terms of this OC10.7.5 shall be without prejudice to the rights of the **TSO** to **De-energise** the **Demand Site** and **Apparatus** in accordance with the terms of OC9.6.

### OC11.3 SCOPE

OC11 applies to the **TSO** and to the following **Users**:

- (a) **Generators**;
- (b) **Interconnector Operators**;
- (c) the **Distributor System Operator**;
- (d) **Demand Customers**;
- (e) **Demand Side Unit Operators**~~Dispatchable Demand Customers~~;
- (f) the **TAO**; and
- (g) agents of **the TSO** or agents of any **User** (as defined in OC 11.3 (a), (b), (c) and (d)).

### SDC1.3 SCOPE

SDC1 applies to the **TSO** and to the following **Users**:

- (a) **Generators** with regard to their:  
**CDGUs**; and  
**Controllable WFPSs**.
- (b) **Pumped Storage Generators** with regard to their **Pumped Storage Plant Demand**;
- (c) **Interconnector Owners** with regard to their **Interconnectors**;

- (d) In respect of the submission of **Commercial Offer Data** under SDC1.4.4.5 only, **Interconnector Users** in respect of their **Interconnector Units**;
- ~~(e) **Dispatchable Demand Customers** in relation to their **Individual Demand Site**;~~
- (ef) **Demand Side Unit Operators**~~**Dispatchable Demand Customers**~~ in relation to their **Demand Side Units**~~**Aggregated Demand Sites**~~; and
- (f) **Generator Aggregators** in respect of their **Aggregated Generating Units**.
- Each of which (other than the **TSO**) is a “**User**” under this SDC1.

#### SDC1.4.3.4 Availability of Demand Side Units

Each **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ shall, subject to the exceptions in SDC1.4.3.5, use reasonable endeavours to ensure that it does not at any time declare the **Demand Side Unit MW Availability** and the **Demand Side Unit** characteristics of its **Demand Side Unit** at levels or values different from those that the **Demand Side Unit** could achieve at the relevant time. The **TSO** can reject declarations to the extent that they do not meet these requirements.

#### SDC1.4.3.5 SDC1.4.3.4 shall not apply to the extent:

- (a) it would require the **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ to declare levels or values better than **Demand Side Unit MW Capacity** and **Technical Parameters** as submitted under the Planning Code in respect of a **Demand Side Unit**;
- (b) necessary during periods of **Scheduled Outage** or **Short Term Scheduled Outage** or otherwise with the consent of the **TSO**;
- (c) necessary while repairing or maintaining the **Demand Side Unit** or equipment necessary to the operation of the **Demand Side Unit** where such repair or maintenance cannot reasonably, in accordance with **Prudent Utility Practice**, be deferred to a period of **Scheduled Outage** or **Short Term Scheduled Outage**.
- (d) necessary to avoid an imminent risk of injury to persons or material damage to property (including the **Demand Side Unit**);
- (e) it is not lawful for the **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ to change its **Demand Side Unit MW Response** or to operate its **Demand Side Unit**.

#### SDC1.4.3.6 Changes in Availability:

- (a) Increasing: If a **Generator**, a **Generator Aggregator** or a **Demand Side Unit Operator**~~**Dispatchable Demand Customer**~~ in respect of a **CDGU**, an **Aggregated Generating Unit**, a **Demand Side Unit** or **Pumped Storage Plant** in relation to **Demand**, issues an **Availability Notice** increasing (from zero or otherwise) the level of

**Availability** or **Demand Side Unit MW Availability** from a specified time, such notice shall be construed as meaning that:

- (i) in the case of a **CDGU** and/or **Aggregated Generating Unit**, the **CDGU** and/or **Aggregated Generating Unit** is capable of being synchronised to the **Transmission System** or **Distribution System** at that specified time or increasing its **MW Output** at that specified time as the case may be;
  - (ii) in the case of a **CDGU** which is an **Open Cycle Gas Turbine**, the **CDGU** is capable of being started at that specified time; or
  - (iii) in the case of a **Demand Side Unit**, the **Demand Side Unit** is capable of delivering a greater **Demand Side Unit MW Response** at that specified time.
- (b) **Controllable WFPS:** If a **Generator** or, where relevant a **Generator Aggregator**, in respect of a **Controllable WFPS**, issues an **Availability Notice** increasing (from zero or otherwise) or decreasing the level of **Availability** from a specified time, such notice shall be effective from the **Trading Period** following the specified time.

SDC1.4.3.7

Decreasing: When a **CDGU** and/or **Controllable WFPS** is **Synchronised** to the **System** the **Generator** may have occasion to issue an **Availability Notice** decreasing the level of **Availability** of the **CDGU** and/or **Controllable WFPS** from a specified time. Such notice shall be construed as meaning that the **CDGU** and/or **Controllable WFPS** is capable of maintaining **Load** at the level of the prevailing **Availability** until the time specified in the notice. Thereafter, the **CDGU** and/or **Controllable WFPS** shall be capable of maintaining **Load** to the level which would have been achieved if a **Dispatch Instruction** had been given to reduce the **Load**. This would have occurred with effect from the specified time, at the maximum **De-Loading Rate** and/or **Ramp-Down Rate** declared for the **CDGU** and/or **Controllable WFPS** as a **Technical Parameter** at such time down to the level of **Availability** specified in the new **Availability Notice**.

When a **Demand Side Unit** is providing a **Demand Side Unit MW Response** the **Demand Side Unit** may have occasion to issue an **Availability Notice** decreasing the level of **Demand Side Unit MW Availability** of the **Demand Side Unit** from a specified time. Such notice shall be construed as meaning that the **Demand Side Unit** is capable of maintaining **Demand Side Unit MW Response** at the level of the prevailing **Demand Side Unit MW Availability** until the time specified in the notice. Thereafter, the **Demand Side Unit** shall be capable of maintaining **Demand Side Unit MW Response** to the level which would have been achieved if a **Dispatch Instruction** had been given to reduce the **Demand Side Unit MW Response**. This would have occurred with effect from the specified time, at the **Maximum Ramp Down Rate** declared for the **Demand Side Unit** as a **Technical Parameter** at such time down to the level of **Demand Side Unit MW Availability** specified in the new **Availability Notice**.



SDC1.4.4.2 **Additional Grid Code Characteristics Notice**

The following items are required to be submitted by each **User**, ~~with the exception of **Generator Aggregators**~~, direct to the **TSO**:

- (a) Individual **CCGT Unit** data equivalent to the data required for a **CCGT Installation**. It shall also show any revisions to the **Technical Parameters** for each of the **CCGT Units** within it.  
*[Note: The term “CCGT Module” applies to the SONI Grid Code and the term “CCGT Unit” will apply to the EirGrid Grid Code.]*
- (b) Different Fuels: In the case where a **CDGU** is capable of firing on different fuels, then the **Generator** shall submit an **Additional Grid Code Characteristics Notice** in respect of any additional fuel for the **CDGU**, each containing the information set out in SDC1.4.4.1 above for each fuel and each marked clearly to indicate to which fuel it applies.
- (c) *Export adjustment factors applied by the **User** in submitting data and that may be applied by the **TSO** where applicable in issuing **Dispatch Instructions** and otherwise in calculations relating to instructions in relation to the relevant **Plant** and/or **Apparatus**, between the **Generator Terminals** and the **Connection Points**.*
- (d) In the case of **Interconnector Owners**, **Interconnector** data, including but not limited to the **Availability** of **Interconnector Filters**.
- (e) In relation to each **Demand Side Unit**, the **Demand Side Unit Energy Profile** and the ~~Initial~~ **Demand Side Unit MW Response Time**.
- (f) Where there is a **Ancillary Services Agreement** in place, the **Ancillary Services** which are **Available**.
- (g) The parameters listed in Appendix A Part 2 of SDC1.
- (h) A **Generator** shall submit to the **TSO** the **Operating Reserve** capabilities for each category of **Operating Reserve** defined in OC4.6.3 for each of its **CDGUs** for each **Trading Period**.  
*[Note: Please note that the above paragraph only applies to the EirGrid Grid Code only.]*

A **User** shall notify the **TSO** as soon as it becomes aware, acting in accordance with **Prudent Utility Practice**, that any of the data submitted under SDC1.4.4.2 changes.

SDC1.4.4.5 **Commercial Offer Data**

- (a) Each:
  - **Generator**;



- Pumped Storage Generator;
- Interconnector User;
- Demand Side Unit Operator ~~Dispatchable Demand Customer~~; and
- Generator Aggregator,

shall in respect of:

- each of its CDGUs;
- each of its Pumped Storage Plant Demand;
- each of its Interconnector Units;
- each of its Demand Side Units; and
- its Aggregated Generating Units,

submit to the TSO, either directly or by means of an Intermediary on its behalf, Commercial Offer Data by Gate Closure for the following Trading Day in accordance with the TSC.

- (b) Each Generator shall in respect of each of its Energy Limited Generating Units submit an Energy Limit as well as the Commercial Offer Data by Gate Closure for the following Trading Day.
- (c) Each Pumped Storage Plant will, with respect to its Pumped Storage Plant Demand, submit its Target Reservoir Level by Gate Closure for the following Trading Day.

The TSO may require, by notice to the relevant User, the data referred to at SDC1.4.4.5 (a) to (c) to be submitted to it directly under the Grid Code. All data items submitted under this SDC1.4.4.5 are to be at levels of MW Output at the Connection Point.

SDC1.4.8.7 (a) The Synchronising and De-Synchronising times (and, in the case of Pumped Storage Plant Demand, the relevant effective time) shown in the Indicative Operations Schedule are indicative only and it should be borne in mind by Users that the Dispatch Instructions could reflect more or different CDGU, Aggregated Generating Unit and/or Controllable WFPS, Pumped Storage Plant Demand and/or Aggregate Generating Unit requirements than in the Indicative Operations Schedule. The TSO may issue Dispatch Instructions in respect of any CDGU and/or Aggregated Generating Unit, Controllable WFPS, Pumped Storage Plant Demand or Aggregated Generating Unit which has not declared an Availability or Demand Side Unit MW Availability of 0 MW in an Availability Notice. Users with CDGUs and/or Aggregated Generating Units, Controllable WFPS, Pumped Storage Plant Demand shall ensure that their units are able to be Synchronised, or in the case of Pumped Storage Plant Demand, used at the times Scheduled, but only if so Dispatched by the TSO by issue of a Dispatch Instruction. Users shall, as part of a revision to the Technical Parameters, indicate to the TSO the latest time at which a Dispatch Instruction is required to meet the

scheduled **Synchronising** time or in the case of **Pumped Storage Plant Demand**, the **Scheduled** relevant effective time.

- (b) The provisions of SDC1.4.8.7(a) shall apply to **Demand Side Units** with the exception that reference to relevant effective time shall be read as a reference to ~~Initial~~ **Demand Side Unit MW Response Time**.

**SDC1 - Appendix A**

Technical Parameter	CDGU				Control WFPS	DSU		Agg. Gen	CDGU <10MW	Pump Storage Demand
	Thermal	Hydro / En Ltd	Disp. WFPS	Pump S Gen		Individual Demand Site	Aggregated Demand Sites			
<b>Demand Side Unit MW Availability</b>					-	✓	✓		-	-
<b>Forecast Minimum Generation Profile</b>	✓	✓	✓	✓		✗	✗		✓	
<del>Initial</del> <b>Demand Side Unit MW Response Time</b>						✓	✓			
<b>Minimum off time</b>	✓	✓	✓	✓	✓	✓	✓		✓	

SDC2.1.2 SDC2 sets out the procedure for the **TSO** to issue **Dispatch Instructions** to:-

- (a) **Generators** in respect of their **CDGUs** (which for the avoidance of doubt comprise, **Generating Units** subject to **Central Dispatch**, **CCGT Installations**, **Hydro Units**, **Pumped Storage Generation** and **Dispatchable WFPSs**);
- (b) **Pumped Storage Generators** in respect of their **Pumped Storage Plant Demand**;
- (c) **Interconnector Owners** in respect of their **Interconnectors**;
- ~~(d) **Dispatchable Demand Customers** in respect of their **Individual Demand Sites**;~~

- (ed) **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ in respect of their **Demand Side Units**~~Aggregated Demand Sites~~; and
- (e) **Generator Aggregators** in respect of their **Aggregated Generating Units**. **Controllable WFPSs** are not currently subject to **Dispatch Instructions**.

## SDC2.3

## SCOPE

SDC2 applies to the **TSO**, and:-

- (a) **Generators** with regard to their **CDGUs**;
- (b) **Pumped Storage Generators** with regard to their **Pumped Storage Plant Demand**;
- (c) **Interconnector Owners** with regard to their **Interconnectors**;
- ~~(d) **Dispatchable Demand Customers** in relation to their **Individual Demand Sites**;~~
- (ed) **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ in relation to their **Demand Side Units**~~Aggregated Demand Sites~~; and
- (fe) **Generator Aggregators** in respect of their **Aggregated Generating Units**.

Each of which (other than the **TSO**) is a "**User**" under this SDC2.

## SDC2.4.1.2

Additional factors which the **TSO** will also take into account are:

- (a) those **Generators** or **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ who have not complied with **Dispatch Instructions** or **Special Actions**;
- (b) real time variation requests; and
- (c) the need to **Dispatch CDGUs, Aggregated Generating Units, Demand Side Units, Interconnector transfers, and Pumped Storage Plant Demand for Monitoring, Testing or Investigation** purposes (and/or for other trading purposes whether at the request of a **User**, for **Commissioning** or **Acceptance, System Tests** or otherwise).

## SDC2.4.2.2

Issue of **Dispatch Instructions**

The **TSO** will issue **Dispatch Instructions** direct to:

- (a) the **Generator** for the **Dispatch** of each of its **CDGUs**.

- (b) the **Generator Aggregator** for the **Dispatch** of its **Aggregated Generating Units**.
- (c) the **Demand Side Unit Operator**~~Dispatchable Demand Customer~~ and the **Pumped Storage Demand User** in respect of each of their **Demand Side Units** and **Pumped Storage Plant Demand** respectively.
- (d) the **Interconnector Owner** for the **Dispatch** of the **Interconnector** transfers.
- (e) The **TSO** may issue **Dispatch Instructions** for any **CDGU, Demand Side Unit, Interconnector** transfers, **Pumped Storage Plant Demand** and/or **Aggregated Generating Units** which has been declared **Available** in an **Availability Notice** even if that **CDGU, Demand Side Unit, Interconnector** transfers, **Pumped Storage Plant Demand** and/or **Aggregated Generating Units** was not included in an **Indicative Operations Schedule**.

- SDC2.4.2.13
- (a) Subject to the exception set out below in this SDC2.4.2.13, **Generators** will only **Synchronise** or **de-Synchronise CDGUs** to the **Dispatch Instructions** of the **TSO** or unless it occurs automatically as a result of **Special Protection Schemes** or **Low Frequency Relay** operations. Subject to the exception set out below in this SDC2.4.2.13, **Demand Side Unit Operators**~~Dispatchable Demand Customers~~ will only reduce or increase their **Demand Side Unit MW Response** to the **Dispatch Instructions** of the **TSO** or unless it occurs automatically as a result of **Special Protection Schemes** or **Low Frequency Relay** operations.
  - (b) **De-Synchronisation** may otherwise only take place without the **TSO's** prior agreement if it is to avoid, in the **Generator's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **CDGU**). **Demand Side Units**, who can not maintain the provision of any **Demand Side Unit MW Response**, may otherwise only take place without the **TSO's** prior agreement if it is to avoid, in the **Demand Side Unit Operator's**~~Dispatchable Demand Customer's~~ reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **Demand Side Unit**).
  - (c) If one of these exceptions occur, then the **TSO** must be informed that it has taken place as soon as possible.

~~SDC2.A.12.1~~ If the time of the ~~Dispatch Instruction~~ is 1400 hours, the Unit is Unit 1 and the ~~Demand Side Unit MW Response~~ to be achieved is 25 MW, the relevant part of the instruction would be, for example:

~~"Time 1400 hours. Unit 1 to 25 MW"~~

~~SDC2.A.12.2~~ If the start time is 1415 hours, it would be, for example:

~~"Time 1400 hours. Unit 1 to 25 MW, start at 1415 hours"~~

~~SDC2.A.12.3~~ ~~Max Ramp Up~~ and ~~Max Ramp Down Rates~~ are assumed to be in accordance with ~~Technical Parameters~~ and ~~Additional Grid Code Characteristics Notice~~ data unless otherwise stated. If different ~~Max Ramp Up~~ and ~~Max Ramp Down Rates~~ are required, the time to be achieved will be stated, for example:

~~"Time 1400 hours. Unit 1 to 25 MW by 1420 hours"~~

~~SDC2.A.12.4~~ SDC2.A.12.4 **Dispatching a Demand Side Unit to an Initial Demand Side Unit MW Response**

~~SDC2.A.12.4~~ SDC2.A.12.4 In this instance, for Demand Side Units, the Dispatch Instruction issue time will always have due regard for the ~~Initial Demand Side Unit MW Response Time~~ declared to the TSO by the ~~Demand Side Unit Operator~~ Demand Side Unit Operator ~~Dispatchable Demand Customer~~ as a ~~Technical Parameter~~ or as part of ~~Additional Grid Code Characteristics Notice~~ data. The instruction will follow the form, for example:

"Time 1300 hours. Unit 1, ~~Initial Demand Side Unit MW Response~~ at 14600 hours"

~~In relation to an instruction to the Initial Demand Side Unit Response, the start time referred to in SDC2.A.12.1 will be deemed to be the time at which Initial Demand Side Unit MW Response is to take place.~~

**DEFINITIONS**

<p><b>Aggregated Demand Site</b></p>	<p>A group of <b>Individual Demand Sites</b> represented by a <b>Demand Side Unit Operator</b> <del>Dispatchable Demand Customer</del>, which together are capable of a <b>Demand Side Unit MW Capacity</b> equal to or above 4 MW (and which is therefore subject to <b>Central Dispatch</b> from the TSO). Each <b>Individual Demand Site</b> comprising an <b>Aggregated Demand Site</b> shall be in one currency zone and shall have a <b>Demand Side Unit MW Capacity</b> of no greater than 10 MW. Unless otherwise specified, information submitted in respect of an <b>Aggregated Demand Site</b> shall always be at an aggregated level.</p>
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<del>Aggregated Maximum Import Capacity</del>	In the case of a <del>Dispatchable Demand Customer</del> in respect of its <del>Aggregated Demand Site</del> or a <del>Generator Aggregator</del> in respect of its <del>Aggregated Generating Unit</del> , the aggregated values (kW and/ or kVA) provided in each <del>Connection Agreement</del> (or connection agreement to the <del>Distribution System</del> , as the case may be) for the <del>Individual Demand Sites</del> or <del>Generating Units</del> for which the <del>Dispatchable Demand Customer</del> or <del>Generator Aggregator</del> is responsible.
Aggregator	Either a <b>Generator Aggregator</b> or a <b>Demand Side Unit Operator</b> <del>Dispatchable Demand Customer</del> in respect of an <b>Aggregated Demand Site</b> .
Demand Side Unit Energy Profile	The estimated total <b>Energy</b> requirement for an <b>Individual Demand Site</b> or aggregated consumption for each <b>Individual Demand Site</b> which form part of an <b>Aggregated Demand Site</b> for each <b>Trading Period</b> in the following <b>Optimisation Time Horizon</b> period and which must be submitted to the <b>TSO</b> in the <b>Availability Notice</b> under <del>SDC1.4.4.2</del> <b>SDC1.4.1.2</b> .
<del>Demand Side Unit Export Capacity</del>	The export value (in MW, MVA) nominated by the <del>Dispatchable Demand Customer</del> for each <del>Individual Demand Site</del> within the <del>Demand Side Unit</del> .
<del>Demand Side Unit Import Capacity</del>	The import value (in MW, MVA) nominated by the <del>Dispatchable Demand Customer</del> for each <del>Individual Demand Site</del> within the <del>Demand Side Unit</del> .
Demand Side Unit MW Response	The proportion (in MW) of the <b>Demand Side Unit MW Capacity</b> that is delivered at a given time following a <del>Dispatch Instruction</del> <b>Dispatch Instruction</b> from the <b>TSO</b> . This value will be zero unless dispatched by the <b>TSO</b> .
<b>Demand Side Unit Operator</b> <del>Dispatchable Demand Customer</del>	A person who operates a <b>Demand Side Unit</b> , with an aggregated <b>Demand Side Unit MW Capacity</b> not less than 4 MW.
Dispatch	The issue by the <b>TSO</b> of instructions to a <b>Generator</b> , <b>Pumped Storage Generator</b> , <b>Interconnector Owner</b> , <b>Interconnector Operator</b> , <b>Demand Side Unit Operator</b> <del>Dispatchable Demand Customer</del> or <b>Generator Aggregator</b> in respect of its <b>CDGU</b> , <b>Pumped Storage Plant Demand</b> , <b>Demand Side Unit</b> , <b>Aggregated Generating Units</b> , or <b>Interconnector</b> tranche pursuant to <b>SDC2</b> and the term " <b>Dispatched</b> " shall be construed accordingly.

<b>DSO Connection Agreement</b>	The bilateral agreement between the <b>DSO</b> and the <b>DSO Demand Customer</b> , which contains the detail specific to the <b>DSO Demand Customer's</b> connection to the <b>Distribution System</b> .
<b>DSO Demand Customer</b>	A person to whom electrical <b>Energy</b> is provided by means of a direct connection to the <b>Distribution System</b> .
<b>Individual Demand Site</b>	A single premises of a <b>Demand Customer</b> connected to the <b>Transmission System</b> or a <b>DSO Demand Customer</b> connected to the <b>Distribution System</b> with a <b>Demand Side Unit MW Capacity</b> . <del>The Individual Demand Site can have a Demand Side Unit Export Capacity and a Demand Side Unit Import Capacity.</del>
<del>Initial Demand Side Unit Response</del>	<del>The Demand Side Unit MW Response following a Dispatch Instruction from the TSO when the Demand Side Unit MW Response is at 0 MW for a period greater than 24 hours.</del>
<del>Initial Demand Side Unit MW Response Time</del>	The time as specified by the <b>Demand Side Unit Operator Dispatchable Demand Customer</b> in the <b>Technical Parameter</b> and is the time it takes for the <b>Demand Side Unit Operator Dispatchable Demand Customer</b> to be able to implement the <del>Initial Demand Side Unit MW Response</del> from receipt of the <b>Dispatch Instruction</b> from the <b>TSO</b> .
<b>Maximum Ramp Down Rate</b>	The maximum <b>Ramp Down Rate</b> of a <b>Demand Side Unit</b> . In the case of a <b>Demand Side Unit</b> which consists of an <b>Aggregated Demand Site</b> this shall be the aggregated maximum <b>Ramp Down Rate</b> of the <b>Individual Demand Sites</b> .
<b>Maximum Ramp Up Rate</b>	The maximum <b>Ramp Up Rate</b> of a <b>Demand Side Unit</b> . In the case of a <b>Demand Side Unit</b> which consists of an <b>Aggregated Demand Site</b> this shall be the aggregated maximum <b>Ramp Up Rate</b> of the <b>Individual Demand Sites</b> .
<b>Minimum off time</b>	The minimum time that must elapse from the time of a <b>Generation Unit Shutdown</b> before it can be instructed to <b>Start-up</b> .  In the case of <b>Demand Side Units</b> , the minimum time that must elapse while the <b>Demand Side Unit MW Response</b> is at zero until the next delivery of <b>Demand Side Unit MW Response</b> .
<b>Operating Characteristics</b>	The technical capabilities, flexibilities and limitations for the operation of a <b>Generation Unit</b> or <b>Demand Side Unit</b> as

	registered or declared in accordance with the provisions of the <b>Grid Code</b> .
<b>Shutdown Costs</b>	<del>The costs associated with shutting down a</del> The costs associated with shutting down a <b>Demand Side Unit</b> .