Proposed modifications to the SONI Grid Code in respect of Demand Side Units

10 May 2013

Amended sections of the SONI GRID CODE

INTRODUCTION

- 4. The Operating procedures and principles governing the TSO's relationship with all Users under the Grid Code, be they the DNO, Generators, Suppliers, Interconnector Users, Interconnector Owners, Generator Aggregators, Demand Side Unit Aggregators, Dispatchable Demand Customers Demand Side Unit Operators or Large Demand Customers are set out in the Grid Code. The Grid Code specifies day-to-day procedures for both planning and operational purposes and covers both normal and exceptional circumstances.
- 5. The **Grid Code** is divided into the following sections:-
 - (a) a **Planning Code** which provides generally for the supply of certain information by **Users** in order that the planning and development of the **Transmission System** may be undertaken. The **Planning Code** applies to:
 - (i) Generators with respect to Generating Units connected to or seeking a new
 or modified connection to the Transmission System;
 - (ii) Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the Distribution System;
 - (iii) Suppliers;
 - (iv) Large Demand Customers;
 - (v) **Aggregators**;
 - (vi) **Interconnector Owners**; and
 - (vii) the **DNO**;
 - (b) Connection Conditions which specify the minimum technical, design and certain operational criteria which must be complied with by Users connected to or seeking connection with the Transmission System. The Connection Conditions apply to:
 - (i) **Generators** with respect to **Generating Units** connected to or seeking a new or modified connection to the **Transmission System**;
 - (ii) Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the Distribution System;
 - (iii) **Suppliers**;

(v) Aggregators; Interconnector Owners; and (vi) the **DNO**; (vii) (c) an **Operating Code** which is split into a number of sections and deals with:-(i) **Demand forecasting (OC1)**, which applies to: Generators with respect to Generating Units connected to the (aa) **Transmission System**; (bb) Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the **Distribution System:** (cc) **Generator Aggregators**; Suppliers; and (dd) (ee) the **DNO**: (ii) the co-ordination of the Outage planning process in respect of Generating Units and Power Station Equipment and Outages of equipment on the Transmission System and Distribution System where relevant for construction, repair and maintenance (OC2). OC2 applies to: (aa) Generators with respect to Generating Units connected to the Transmission System; (bb) Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the **Distribution System**; **Interconnector Owners**; (cc) Large Demand Customers; and (dd) the **DNO**: (ee) (iii) the specification of different types of reserve, which make up the Operating Margin (OC3). OC3 applies to: Generators with respect to Generating Units connected to the (aa)

Transmission System;

Distribution System; and

(bb)

Generators with respect to CDGUs and Controllable WFPSs

connected to or seeking a new or modified connection to the

(iv)

Large Demand Customers;

	(cc)	Interconnector Owners;
(iv)	differe	nt methods of reducing Demand (OC4). OC4 applies to:
	(aa)	Generators with respect to Generating Units connected to the Transmission System or Distribution System;
	(bb)	Suppliers; and
	(cc)	the DNO ;
(v)	_	orting of scheduled and planned actions and unexpected ences such as faults between the TSO and Users (OC5) . OC5 is to:
	(aa)	Generators with respect to Generating Units connected to the Transmission System;
	(bb)	Interconnector Owners;
	(cc)	Large Demand Customers; and
	(dd)	the DNO ;
(vi)	Earthi	ordination, establishment and maintenance of Isolation and ing in order that work and/or testing can be carried out safely . OC6 applies to:
	(aa)	Generators with respect to Generating Units connected to the Transmission System;
	(bb)	Interconnector Owners;
	(cc)	the DNO ; and
	(dd)	the TO;
(vii)	certain aspects of contingency planning (OC7). OC7 applies to:	
	(aa)	Generators with respect to Generating Units connected to the Transmission System;
	(bb)	Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the Distribution System;
	(cc)	Large Demand Customers; and

	(dd)	the DNO ;			
(viii)	•	rision of written reports on occurrences such as faults in certain tances (OC8). OC8 applies to:			
	(aa)	Generators with respect to Generating Units connected to the Transmission System;			
	(bb)	Interconnector Owners;			
	(cc)	Large Demand Customers; and			
	(dd)	the DNO ;			
(ix)	the procedures for determining the number and nomenclature of Plant and Apparatus at Connection Sites (OC9);				
	OC9 applies to:				
	(aa)	Generators with respect to Generating Units connected to the Transmission System;			
	(bb)	Interconnector Owners;			
	(cc)	Large Demand Customers; and			
	(dd)	the DNO ;			
(x)	the procedures for the establishment of System Tests (OC10). OC10 applies to:				
	(aa)	Generators with respect to Generating Units connected to the Transmission System;			
	(bb)	Interconnector Owners;			
	(cc)	Large Demand Customers;			
	(dd)	Aggregators; and			
	(ee)	the DNO ;			
(xi)	Monitoring, Testing and Investigations in relation to User's Plant and Apparatus (OC11). OC11 applies to:				
	(aa)	Generators with respect to Generating Units connected to the Transmission System;			
	(bb)	Generators with respect to CDGUs and Controllable WFPSs connected to or seeking a new or modified connection to the Distribution System;			
	(cc)	Aggregators;			

- (dd) **Interconnector Owners**;
- (ee) <u>Demand Side Unit Operators</u> <u>Dispatchable Demand</u> <u>Customers</u>; and
- (ff) Large Demand Customers.
- (d) a **Scheduling** and **Dispatch Code** which is split into three sections and deals with:-
 - (i) **Scheduling** generally and the preparation of an **Indicative Operations Schedule** indicating which units may be instructed the following day (**SDC1**). SDC1 applies to:
 - (aa) Generators with regard to CDGUs and Controllable WFPSs connected to the Transmission System or Distribution System;
 - (bb) **Pumped Storage Generators** with regard to their **Pumped Storage Demand**;
 - (cc) **Interconnector Owners** with respect to their **Interconnectors**;
 - (dd) **Interconnector Users** in respect of their **Interconnector Units**;
 - (ee) <u>Demand Side Unit Operators</u> <u>Dispatchable Demand</u>
 <u>Customers</u> in relation to their <u>Demand Side Units</u> <u>Individual</u>
 <u>Demand Sites</u>; <u>and</u>
 - (ff) **Dispatchable Demand Customers** in relation to their **Aggregated Demand Sites**; and
 - (ggff) Generator Aggregators in respect of their Aggregated Generating Units.
 - (ii) the issue of **Dispatch Instructions** (**SDC2**). SDC2 applies to:
 - (aa) Generators with regard to CDGUs connected to the Transmission System or Distribution System;
 - (bb) **Pumped Storage Generators** with regard to their **Pumped Storage Demand**;
 - (cc) **Interconnector Owners** with respect to their **Interconnectors**;
 - (dd) <u>Demand Side Unit Operators</u> <u>Dispatchable Demand</u>
 <u>Customers</u> in relation to their <u>Demand Side UnitsIndividual</u>
 <u>Demand Sites</u>; <u>and</u>
 - (ee) **Dispatchable Demand Customers** in relation to their **Aggregated Demand Sites**; and

- (ffee) Generator Aggregators in respect of their Aggregated Generating Units.
- (iii) the procedures and requirements in relation to **Frequency Control** (**SCD3**). SDC3 applies to:
 - (aa) Generators in respect of all Generating Units connected to the Transmission System;
 - (bb) Generators in respect of CDGUs and Controllable WFPSs connected to the Distribution System;
 - (cc) **Suppliers**; and
 - (dd) **Interconnector Owners**.
- (e) a **Data Registration Code** which sets out a unified listing of all data required by the **TSO** from **Users**, and by **Users** from the **TSO**, under the **Grid Code**;
- (f) **General Conditions** which are intended to ensure, so far as possible, that the various sections of the **Grid Code** work together and work in practice and which include provisions relating to the establishment of a **Grid Code Review Panel** and other provisions of a general nature; and
- (g) a **Metering Code** which is split into a number of sections, which deal in particular with:-
 - (i) the basic requirements for metering (**MC**);
 - (ii) specific requirements for tariff and operational metering (**Sub-Codes** 1-3)
 - (iii) procedures for the maintenance, testing, inspection and sealing of metering (**Agreed Procedures No 1 and No 2**);
 - (iv) reconciliation procedures for metering (Agreed Procedures No 3 and No 4);
 - (v) procedures for estimating settlement values in lieu of normal data collection methods (**Agreed Procedures No 5 and No 6**); and
 - (viii) communication protocols (Agreed Procedure No 7).

GLOSSARY AND DEFINITIONS (GD)

GD1. DEFINED TERMS

In the **Grid Code** the following words and expressions shall, unless the subject matter or the context otherwise requires or is inconsistent therewith, bear the following meanings:

Aggregated Demand Sites Connected A group of Individual Demand Sites connected

to the $\overline{\mbox{\bf Transmission}}$ or $\mbox{\bf Distribution System}$ and

represented by a **<u>Demand Side Unit</u>**

Operator Dispatchable Demand Customer, which together are capable of a Demand Side Unit MW Capacity equal to or above 4 MW (and which is therefore subject to Central Dispatch from the TSO). Each Individual Demand Site comprising an Aggregated Demand Site shall be in one currency zone and shall have a Demand Side Unit MW Capacity of no greater than 10 MW. Unless otherwise specified, information submitted in respect of an Aggregated Demand Site shall always be at an aggregated level.

Aggregated Maximum Import Capacity

In the case of a Dispatchable Demand Customer in respect of its Aggregated Demand Site or a Generator Aggregator in respect of its Aggregated Generating Unit, the aggregated values (kW and/ or kVA) provided in each Connection Agreement (or connection agreement)

Connection Agreement (or connection agreement to the Distribution System, as the case may be) for the Individual Demand Sites or Generating Units for which the Dispatchable Demand Customer or

Generator Aggregator is responsible.

Aggregator

Either a **Generator Aggregator** or a **Dispatchable Demand Side Unit**

Operator Customer in respect of an Aggregated

Demand Site.

Demand Side Unit Energy Profile

The estimated total **Energy** requirement for an **Individual Demand Site** or aggregated for each **Individual Demand Site** which form part of an **Aggregated Demand Site** for each **Trading Period** in the following **Optimisation Time Horizon** period and which must be submitted to the **TSO** in the **Availability Notice** under SDC

<u>1.4.4.2</u>1.4.1.2.

Demand Side Unit Export Capacity

The export value (in MW, MVA) nominated by the Dispatchable Demand Customer for each Individual Demand Site within the Demand Side Unit.

Demand Side Unit Import Capacity	The import value (in MW, MVA, kW and/or kVA) nominated by the Dispatchable Demand Customer for each Individual Demand Site within the Demand Side Unit.
Demand Side Unit MW Response	The proportion (in MW) of the Demand Side Unit MW Capacity that is delivered at a given time following a Dispatch Instruction from the TSO. This value will be zero unless dispatched by the TSO.
Demand Side Unit MW Response Time	The time as specified by the Demand Side Unit Operator in the Technical Parameters and is the time it takes for the Demand Side Unit Operator to be able to implement the Demand Side Unit MW Response from receipt of the Dispatch Instruction from the TSO.
Demand Side Unit Operator	A person who operates a Demand Side Unit , with a Demand Side Unit MW Capacity not less than 4 MW.
<u>Dispatch</u>	The issue by the TSO of instructions to a Generator, Pumped Storage Generator, Interconnector Owner, Demand Side Unit Operator Dispatchable Demand Customer or Generator Aggregator in respect of its CDGU, Pumped Storage Plant Demand, Demand Side Unit, Aggregated Generating Units or Interconnector tranche pursuant to SDC2 and the term "Dispatched" shall be construed accordingly."
Dispatchable Demand Customer	A person who operates a Demand Side Unit , with a Demand Side Unit MW Capacity not less than 4 MW.
DNO Connection Agreement	The bilateral agreement between the DNO and the DNO Demand Customer, which contains the detail specific to the DNO Demand Customer's connection to the Distribution System.
DNO Demand Customer	A person to whom electrical Energy is provided by means of a direct connection to the Distribution System .
Individual Demand Site	A single premises of a Customer connected to the Transmission System or Distribution System with a Demand Side Unit MW Capacity . The Individual Demand Site can have a Demand Side Unit Export Capacity and a Demand Side Unit Import Capacity .

<u>Initial Demand Side Unit Response</u>	The Demand Side Unit MW Response follow a Dispatch Instruction from the TSO when the
	Demand Side Unit MW Response is at 0 MV for a period greater than 24 hours.
<u>Initial Demand Side Unit MW Response Time</u>	The time as specified by the Demand Side Un Operator Dispatchable Demand Customer in
	Technical Parameters and is the time it takes the Demand Side Unit Operator Dispatchable
	Demand Customer to be able to implement the
	Initial Demand Side Unit MW Response from receipt of the Dispatch Instruction from the
	TSO.
Maximum Ramp Down Rate	The maximum Ramp Down Rate of a Demand Side Unit. In the case of a Demand Side Unit which consists of an Aggregated Demand Site this shall be the aggregated maximum Ramp Down Rate of the Individual Demand Sites.
Maximum Ramp Up Rate	The maximum Ramp Up Rate of a Demand Substitution Unit. In the case of a Demand Side Unit which consists of an Aggregated Demand Site this is be the aggregated maximum Ramp Up Rate of the Individual Demand Sites.
Minimum off time	The minimum time that must elapse from the t of a Generating Unit Shut Down before it can instructed to Start-Up.
	In the case of Demand Side Units , the minimum
	time that must elapse while the Demand Side Unit MW Response is at zero until the next
	delivery of Demand Side Unit MW Response

PLANNING CODE

PC6 PLANNING DATA REQUIREMENTS FROM USERS

- PC6.3.3 In relation to the submission of data on a routine annual basis, **Standard Planning Data** in every case, and **Detailed Planning Data** if required by the **TSO**, by reasonable notice in advance of the submission ("reasonableness" being judged in this context by reference to the amount of time which it may take to collate the required data), shall (unless there has been no change from the data submitted the previous time, in which case the provisions of PC6.1.4 shall apply) be submitted to the **TSO** annually by **Users** in the following categories:-
 - (a) **Generators** in respect of all transmission connected **Power Stations**;
 - (b) **Suppliers**;
 - (c) all Large Demand Customers.
 - (d) Generators in respect of CDGUs (including Aggregated Generating Units) and Controllable WFPSs connected to the Distribution System.
 - (e) Demand Side Unit Operators in respect of their Demand Side Units.—

PC.A3.4.2 **Generator Aggregators**

Aggregators shall, upon request by the **TSO**, provide to the **TSO** any **Connection Site** and **User System** data which the **TSO** may reasonably deem necessary.

PC.A3.4.3 **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 **Bulk Supply Point**(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 DNO Connection Agreement for each DNO
 Demand Customer that comprises the Demand Side Unit clearing
 showing Maximum Import Capacity and Maximum Export Capacity
 (if applicable);
- (xiii) whether the **Distribution Network Owner** 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 Network Owner**);
- (xiv) details of any special operating or network limitations placed by the

 Distribution Network Owner on the Demand Side Unit;
- (xv) details of restrictions to the Operation of Individual Demand Sites

 comprising the Demand Side Unit (e.g. Northern Ireland

 Environmental Agency 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** participate 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** Compliance 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.A3.4.43 Interconnector Owners

Interconnector Owners shall submit to the **TSO Planning Data** of the nature required from other **Users** under the **Planning Code**. This obligation shall be satisfied as at 1 November 2007 by the **Planning Data** already submitted as at that date by the **Interconnector Owner**. This PC.A3.4.3 will be superseded once the **Planning Code** has been updated to include specific data requirements from **Interconnector Owners**.

PC.B3.3.2 **Generator Aggregators**

Aggregators shall, upon request by the **TSO**, provide to the **TSO** any connection site and **User System** data which the **TSO** may reasonably deem necessary.

PC.B3.3.3 **Demand Side Unit Operators**

For each **Demand Side Unit Operator**, the following information shall be provided: (c) General Details

- (iii) name of **Demand Side Unit**;
- (iv) 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 **Bulk Supply Point**(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 DNO Connection Agreement for each DNO
 Demand Customer that comprises the Demand Side Unit clearing
 showing Maximum Import Capacity and Maximum Export Capacity
 (if applicable);
- (xiii) whether the **Distribution Network Owner** 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 Network Owner**);
- (xiv) details of any special operating or network limitations placed by the

 Distribution Network Owner on the Demand Side Unit;
- (xv) details of restrictions to the Operation of Individual Demand Sites

 comprising the Demand Side Unit (e.g. Northern Ireland

 Environmental Agency 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** participate 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** Compliance Testing.

(d)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;

CONNECTION CONDITIONS

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**.

CC12 GENERATOR AGGREGATORS

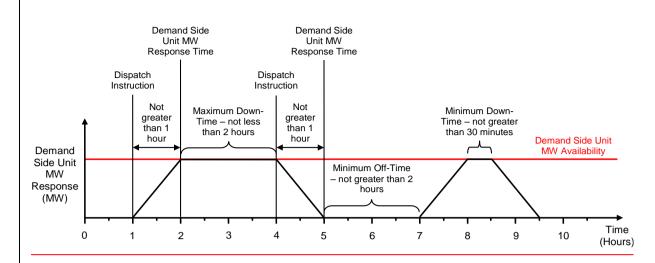
Each **Aggregator** shall give to the **TSO** such information in relation to **Connection Conditions** related issues from time to time that the **TSO** may reasonably deem necessary.

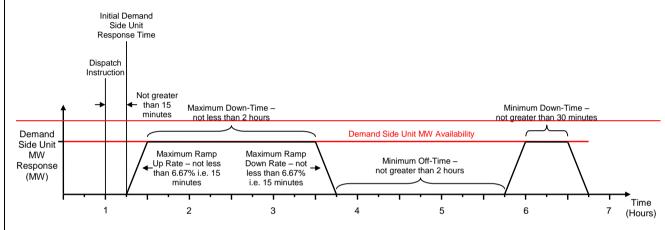
CC13 **DEMAND SIDE UNITS**

- 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 1.67% per minute of Demand Side
 Unit MW Response as specified in the Dispatch Instruction;
 - (c) Maximum Ramp Down Rate not less than 1.67% per minute of Demand
 Side Unit MW Response as specified in the Dispatch Instruction.;
 - (d) **Minimum Down -Time** not greater than 30 minutes;
 - (e) **Maximum Down- Time** not less than 2 hours;
 - (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**, shall, as a minimum, have the following capabilities:

- (h) operate continuously at normal rated output at **Transmission System**Frequencies in the range 49.5Hz to 50.5Hz;
- (i) remain synchronised to the **Transmission System** at **Transmission System**Frequencies within the range 47.5Hz to 52.0Hz for a duration of 60 minutes;
- 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
- (k) 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.





<u>CC13.2</u> Signals and indications required to be provided by <u>Demand Side Unit Operators</u>will include but shall not be limited to the following:

- (a) **Demand Side Unit MW Response** from **Generation**;
- (b) **Demand Side Unit MW Response** from avoided **Demand** consumption;
- (c) Remaining **Demand Side Unit MW Capacity**;
- (d) **Demand Side Unit MW Response** from each **Demand** load with a **Demand Side Unit MW Capacity** of greater than or equal to 5 **MW**;
- (e) **MW Output** from **Generation Units** with a capacity greater than or equal to 5 **MW**;
- (f) 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 DNO Connection Agreement as
 applicable, as required by the TSO;
- (g) 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

- (h) **Demand Side Unit MW Response** from each **Individual Demand Site** that comprises the **Demand Side Unit**, as required by the **TSO**.
- CC.13.3 **Demand Side Unit Operators** 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**telemetry outstation interface 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 Response**; 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**.

CC143 FUEL SECURITY CODE

Each Generator whose Plant and Equipment is connected to the Transmission System and each CDGU connected to the Distribution System agrees to comply with the Fuel Security Code to the extent that it is expressed to apply to it and with any instructions from the TSO pursuant to the Fuel Security Code, including in relation to CDGUs, with Dispatch Instructions issued by the TSO.

OPERATING CODE NO. 2 OPERATIONAL PLANNING

OC2.3	SCOPE	<u>3</u>	
OC2.3.1	OC2 applies to the TSO , Generators (in respect of all Generating Units connected to the Transmission System and in respect of CDGUs and Controllable WFPSs connected to the Distribution System), Interconnector Owners , <u>Generator Aggregators</u> , <u>Demand Side Unit Operators</u> , the DNO and Large Demand Customers .		
OC2.4	INFORMATION EXCHANGE WITH THE DNO IN RESPECT OF INDEPENDENT GENERATING PLANT		
OC2.4.1	Such information as the TSO may reasonably require relating to Independent Generating Plant connected to the Distribution System shall, where required by the TSO for the purposes of this OC2, be provided by the DNO .		
OC2.5	SUMMARY		
OC2.5.1	Under OC2 the interaction between the TSO , the DNO₂ and Generators and Aggregators will be as follows:-		
OC2.5.1	(a)	each Generator and the TSO : in respect of Outages of CDGUs (and/or in the case of a CCGT Installation , CCGT Modules , as provided under OC2), Controllable WFPSs , Dispatchable WFPSs , Demand Side Units , Aggegated Generators and/or Power Station Equipment ;	
OC2.5.1	(b)	the DNO and the TSO : in respect of Outages of Independent Generating Plant connected to the Distribution System with a Registered Capacity of 2 MW and greater;	
OC2.5.1	(c)	the TSO and each Generator: in respect of Transmission System Outages relevant to the Generator's CDGUs (and/or in the case of a CCGT Installation, CCGT Modules, therein), Controllable WFPSs, and Dispatchable WFPSs.	
OC2.5.1	(d)	the DNO and the TSO : in respect of Outages on the Distribution System relevant to distribution connected CDGUs , Controllable WFPSs , Dispatchable WFPSs , Demand Side Units , Aggregated Generators and Generators with distribution connected Independent Generating Plant with a Registered Capacity of 2 MW and greater;	
OC2.5.1	(e)	the TSO and the DNO: in respect of Outages of CDGUs connected to the Distribution System including Controllable WFPSs, Dispatchable WFPSs, Demand Side Units, Aggregated Generating Units and/or associated Power Station Equipment;	
OC2.5.1	(f)	the DNO and the TSO : in respect of Outages of 33kV circuits on the Distribution System ; and	

OC2.5.1 (g) the **DNO** and the **TSO**: in respect of **Outages** on the **Distribution System** which may affect **Customers** with a **Demand** greater than 10 **MW** and which are connected to the **Distribution System**.

The provisions of this paragraph also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**".

The provisions of this paragraph also apply to **Aggregators** as if "**Generators**" and to a Generator's units were references to an "**Aggregator**" in respect of a "**Demand Side Unit**" or an "**Aggregated Generator**".

- OC2.5.2 Under OC2 the interaction between the **TSO** and **Large Demand Customers** will be in respect of **Transmission System Outages** relevant to each **Large Demand Customer.**
- OC2.5.3 (a) In relation to all matters to be undertaken pursuant to this OC2, including (without limitation) making requests for **Outages** and supplying information to the **TSO** concerning overruns, each **Generator** must act reasonably and in good faith. Without limitation to such obligation, each Generator shall act in accordance with Prudent Operating Practice in planning its Outages and, in particular, so as to avoid a situation arising in which the Generator is obliged to request an **Outage** during the **Outage Planning** process by reason of obligations imposed upon the Generator by statute as a consequence of the Generator not having planned its Outages in accordance with Prudent Operating Practice, for example, by not having planned its Outages sufficiently far in advance of any statutory time limit. The provisions of this paragraph also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph also apply to Aggregators as if "Generators" and to a Generator's units were references to an "Aggregator" in respect of a "Demand Side Unit" or an "Aggregated Generator".
- OC2.5.3 (b) In relation to all matters to be undertaken pursuant to this OC2:
 - (i) the **DNO** must act reasonably and in good faith; and
 - (ii) the \boldsymbol{DNO} shall procure that
 - each **Customer** with a **Demand** greater than 10 **MW** and which is connected to the **Distribution System**, and
 - each **Generator** with **Independent Generating Plant** with a **Registered Capacity** of 2 MW and greater
 - <u>each **Aggregator**</u>

must act reasonably and in good faith.

OC2.5.3 (c) The **TSO** must, in relation to all matters to be undertaken pursuant to this OC2, including (without limitation) the co-ordination of **Generators'**₂ OC2-2

<u>Aggregators'</u> or <u>Interconnector Owners' Outages</u>, act reasonably and in good faith in the discharge of its obligations.

- OC2.5.4 Where in this OC2 there are references to outages of CCGT Modules, such provisions only apply where the Power Station Agreement and/or Generating Unit Agreement relating to the CCGT Installation of which the CCGT Module forms part so provides.
- OC2.6 OUTAGE PLANNING PROCEDURES FOR CDGUs, Dispatchable WFPSs, Controllable WFPSs, AND/OR POWER STATION EQUIPMENT
- OC2.6.1 Indicative Term **Operational Planning** Planning for Years 4 to 7

The provisions of this section OC2.6 shall only apply if reasonably required and requested by the **TSO**. In each calendar year:

OC2.6.1 (a) By the End of March

Each **Generator** will provide the **TSO** in writing with a suggested **Indicative Outage Programme** for Years 4 to 7 which will contain the following information in relation to each proposed **Planned Outage** in the suggested **Provisional Outage Programme**:-

- identity of the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Controllable WFPSs, Dispatchable WFPSs (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
- (ii) **MW** concerned (i.e. **MW** which will not be **Available** as a result of the **Outage** and that which will, notwithstanding the **Outage**, still be **Available**, if any);
- (iii) required duration of **Outage**;
- (iv) preferred **Start Date** or range of **Start Dates**;
- (v) whether the **Outage** is a **Flexible Planned Outage** or an **Inflexible Planned Outage**, provided that the **Generator** must not declare an **Outage** to be an **Inflexible Planned Outage** unless **Prudent Operating Practice** would not permit the **Outage** to be declared as a **Flexible Planned Outage**;
- (vi) if it is a **Flexible Planned Outage**,
 - (aa) the period for which the **Outage** could be deferred at the request of the **TSO**, which period shall be not less than 30 days in length;
 - (bb) the period for which the **Outage** could be advanced at the request of the **TSO**, which period shall be not less than 10 days in length; and

(vii) where relevant, that the **Generator** wishes to take the **Outage** in order to enable it to comply with obligations relating to the operation and maintenance of **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), **Controllable WFPSs** or **Dispatchable WFPS** (or **Generating Unit(s)** therein) and/or **Power Station Equipment** imposed upon the **Generator** by statute and, if so, the latest date by which the **Outage** must be taken.

In relation to sub-paragraph (v), the **Generator** must provide the **TSO** with such evidence as it may reasonably require in order to substantiate the declaration as an **Inflexible Planned Outage** and, if the **Generator** fails to establish to the **TSO** 's reasonable satisfaction that the **Outage** is required to be an **Inflexible Planned Outage**, the **Outage** shall be deemed to have been submitted as a **Flexible Planned Outage** with an attendant **Flexible Planned Outage Period** of 10 days for advancement and 30 days for deferment.

Details of proposed **Outages** for years 4 to 7 are required to signal adequately in advance major **Outages** which could impact on capacity adequacy or on the **TSO's** or the **Other TSO's Transmission Outage Maintenance and Development Programmes** and are indicative only. In rolling over the **Provisional Outage Programme** from one year to the next each **Generator** shall not be constrained in making any submission to any previous **Indicative Outage Programme**.

The provisions of this paragraph OC2.6.1(a) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**".

The provisions of this paragraph OC2.6.1(a) also apply to **Aggregators** as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generated Unit" or a "Demand Side Unit".

OC2.6.1 (b) Between the End of March and the End of September

- (i) The **TSO** will be calculating the weekly capacity required from **Generating Plant** in Years 4 and 7 taking into account insofar as the **TSO** may consider to be appropriate:-
 - (aa) **Demand Forecasts**;
 - (bb) The **TSO's** estimate of **Customer Demand Management**;
 - (cc) forecast Availability of CDGUs;
 - (dd) forecast output available from any **Interconnectors**;
 - (ee) the **Margin** as set by the **TSO**;

- (ff) **NI System** constraints and constraints on the **Interjurisdictional Tie Line** between Northern Ireland and the Republic of Ireland; and
- (gg) NI System Outages to ensure that, in general, these have the least restraint on CDGU, Dispatchable WFPS, Controllable WFPS and Power Station Equipment Outages.
- (ii) The calculation under (i) will, with anticipated **Outages** other than **Planned Outages** then taken into account, effectively define the envelope of opportunity for **Planned Outages** of **CDGUs**, (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), **Dispatchable WFPSs**, **Controllable WFPSs** (or **Generating Unit(s)** therein) and/or **Power Station Equipment**.

During this period the **TSO** may, as appropriate, contact each **Generator** which has supplied information to seek clarification on information received or such additional relevant information as is reasonable. The provisions of this paragraph OC2.6.1(b) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.1(b) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.2 <u>Long Term **Operational Planning** - Planning for Years 2 and 3</u>

In each calendar year:

OC2.6.2 (a) By the End of March

Each Generator will provide the TSO in writing with a suggested Provisional Outage Programme for Years 2 and 3 (that part of the programme relating to Year 2 showing any updates to the programme for Year 3 which, by effluxion of time, has become that for Year 2) which will contain the following information in relation to each proposed Planned Outage in the suggested Provisional Outage Programme:-

- identity of the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Controllable WFPSs, Dispatchable WFPSs (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
- (ii) **MW** concerned (i.e. **MW** which will not be **Available** as a result of the **Outage** and that which will, notwithstanding the **Outage**, still be **Available**, if any);
- (iii) required duration of **Outage**;
- (iv) preferred **Start Date** and **Start Time** or range of **Start Dates** and **Start Times**;

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- (v) whether the Outage is a Flexible Planned Outage or an Inflexible Planned Outage, provided that the Generator must not declare an Outage to be an Inflexible Planned Outage unless Prudent Operating Practice would not permit the Outage to be declared as a Flexible Planned Outage;
- (vi) if it is a **Flexible Planned Outage**,
 - (aa) the period for which the **Outage** could be deferred at the request of the **TSO**, which period shall be not less than 30 days in length;
 - (bb) the period for which the **Outage** could be advanced at the request of the **TSO**, which period shall be not less than 10 days in length; and
- (vii) where relevant, that the **Generator** wishes to take the **Outage** in order to enable it to comply with obligations relating to the operation and maintenance of **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), **Controllable WFPSs** (or **Generating Unit(s)** therein) and/or **Power Station Equipment** imposed upon the **Generator** by statute and, if so, the latest date by which the **Outage** must be taken.

In relation to sub-paragraph (v), the **Generator** must provide the **TSO** with such evidence as it may reasonably require in order to substantiate the declaration as an **Inflexible Planned Outage** and, if the **Generator** fails to establish to the **TSO** 's reasonable satisfaction that the **Outage** is required to be an **Inflexible Planned Outage**, the **Outage** shall be deemed to have been submitted as a **Flexible Planned Outage** with an attendant **Flexible Planned Outage Period** of 10 days for advancement and 30 days for deferment.

The updates to the programme for Year 3 when, by effluxion of time, Year 3 has become Year 2, may only reflect the **Generator**'s reasonable response to changed circumstances and changes which, in the context of the **Provisional Outage Programme** as a whole, are minimal in their effect on the operation of the **NI System**; otherwise it must reflect the **Provisional Outage Programme** for Year 3 issued the previous September.

The provisions of this paragraph OC2.6.2(a) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.2(a) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.2 (b) Between the End of March and the End of September

- (i) The **TSO** will be calculating the weekly capacity required from **Generating Plant** in Years 2 and 3 taking into account insofar as the **TSO** may consider to be appropriate:-
 - (aa) **Demand Forecasts**;
 - (bb) The **TSO's** estimate of **Customer Demand Management**;
 - (cc) forecast Availability of CDGUs;
 - (dd) forecast output available from any **Interconnectors**;
 - (ee) the **Margin** as set by the **TSO**;
 - (ff) **NI System** constraints and constraints on the **Interjurisdictional Tie Line** between Northern Ireland and the Republic of Ireland; and
 - (gg) NI System Outages to ensure that, in general, these have the least restraint on CDGU, Dispatchable WFPS, Controllable WFPS and Power Station Equipment Outages.
- (ii) The calculation under (i) will, with anticipated **Outages** other than **Planned Outages** then taken into account, effectively define the envelope of opportunity for **Planned Outages** of **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), **Dispatchable WFPSs**, **Controllable WFPSs** (or **Generating Unit(s)** therein) and/or **Power Station Equipment**.

During this period the **TSO** may, as appropriate, contact each **Generator** which has supplied information to seek clarification on information received or such additional relevant information as is reasonable. The provisions of this paragraph OC2.6.2 (b) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.2(b) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.2 (c) By the End of September

(i) The TSO will, in conjunction with the Other TSO and having taken into account the information notified to it pursuant to (a), the factors specified in (b) and, having discussed it with the Generator if appropriate, provide each Generator in writing with a Provisional Outage Programme showing the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment it may OC2-7

potentially withdraw from service during each week of Years 2 and 3 for a **Planned Outage** (including, for the avoidance of doubt, both **Flexible Planned Outages** and **Inflexible Planned Outages**) and showing the **Flexible Planned Outage Periods**, by way of amendment to, or confirmation of, the suggested **Provisional Outage Programme** submitted by the **Generator**. When preparing the **Provisional Outage Programme** with respect to an **Interconnector**, the **TSO** shall take into account the arrangements it has in place under its Operating procedures with National Grid Electricity Transmission.

- (ii) The **Provisional Outage Programme** may differ from the suggested **Provisional Outage Programme** as follows:-
 - (aa) Flexible Planned Outages (and associated Flexible Planned Outage Periods) and Inflexible Planned Outages may have been moved to co-ordinate all Outage proposals received by the TSO or generally for reasons relating to the proper operation of the NI System and the Other TSO's Transmission System. When dealing with Year 2, the TSO will give priority to including proposed Inflexible Planned Outages for the dates proposed by the Generator in the case of newly proposed Inflexible Planned Outages and for the dates included in the Provisional Outage Programme prepared the previous September in the case of Inflexible Planned Outages which were included in that Provisional Outage Programme;
 - (bb) a **Flexible Planned Outage** may have been re-designated as an **Inflexible Planned Outage**;
 - in addition, when preparing the **Provisional Outage Programmes** for Year 3 and for Year 2, where in the opinion of the **TSO** the **Licence Standards** could not otherwise be met, the **TSO** may request that a **Flexible Planned Outage** proposed by the **Generator** be deferred to a specific date (with an attendant **Flexible Planned Outage Period**) in the following year (then Year 4 or Year 3, as the case may be) and given priority over all other **Outages** in subsequent planning for that year. The **Generator** must accept such request unless this would not be in accordance with **Prudent Operating Practice**, in which case (subject to (iii) below) the **Outage** shall be included in the **Provisional Outage Programme** for Year 3 or Year 2, as the case may be;

provided that in Year 2 only (but not in Year 3) the **TSO** may not move a **Planned Outage** relating to which the **Generator** has informed the **TSO** under OC2.6.2(a)(vii) that it needs it to comply with statutory obligations, if to do so would result in the **Generator** being in breach of those statutory obligations. However, the **TSO** OC2-8

may discuss the **Planned Outage** with the **Generator** and may request the **Generator** to approach the relevant authorities for an extension of time in order to avoid the breach of those statutory obligations. The **Generator** must accede to that request and use reasonable endeavours to obtain such an extension. In the case of a **Generator** with **PPA CDGUs**, the provisions of GC13.2 shall be imported into (and for the purposes of the **TSO Licence**, regarded as forming part of) this OC2.6.2(c)(ii). The **Generator** must, in all cases, inform the **TSO** of the position. In the event that an extension is obtained, the **TSO** may (subject to the other provisions of this paragraph (c)(ii)) move the **Planned Outage** accordingly.

- (iii) In addition, where in the opinion of the **TSO** the **Licence Standards** could not otherwise be met, the **TSO** may (by giving the **Generator** a written notice designated as being under this OC2.6.2(c)(iii)) request:-
 - (aa) that a **Flexible Planned Outage** or an **Inflexible Planned Outage** which:-
 - (1) (where planning for Year 3) was requested by the **Generator** (and in the case of a **Flexible Planned Outage** was not deferred to Year 4 under (ii)(cc) above); or
 - (2) (where planning for Year 2) was shown in the **Provisional Outage Programme** for such year (prepared the previous September as the Year 3 programme) or is newly requested by the **Generator** (such request not reflecting a change in any **Outage** included in the **Provisional Outage Programme** prepared the previous September as the Year 3 programme);

be excluded from the **Provisional Outage Programme**; or

(bb) that an **Inflexible Planned Outage** which was proposed by the **Generator** be re-designated as a **Flexible Planned Outage** (with an attendant **Flexible Planned Outage Period** not exceeding 10 days for advancement and 30 days for deferment).

In the case of a **Generator** with **PPA CDGUs**, the provisions of GC13.1 shall be imported into (and for the purposes of the **TSO Licence**, regarded as forming part of) this OC2.6.2(c)(iii).

(iv) Subject to (iii) above, the amendments may be made by the **TSO** in relation to Year 2, even if the offered **Planned Outages** in the suggested **Provisional Outage Programme** reflect the **Provisional Outage Programme** for Year 3 issued the previous September, to

the extent necessary for the **TSO** to carry out its obligations in relation to **Operational Planning**.

The provisions of this paragraph OC2.6.2(c) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.2(c) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.2 (d) By the End of October

- (i) Where a **Generator** objects to the **Provisional Outage Programme** showing the **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), **Dispatchable WFPSs**, **Controllable WFPSs** (or **Generating Unit(s)** therein) and/or **Power Station Equipment** it can withdraw from service during each week of Years 2 and 3 for **Planned Outage** it may contact the **TSO** to explain its concerns and the **TSO** and that **Generator** will then discuss the problem and seek to resolve it.
- (ii) The resolution of the problem may require the **TSO** to contact other **Generators** and joint meetings of parties may be convened by the **TSO**. A **Generator** which notifies the **TSO** of its objections in accordance with (i) above may request that such a meeting be convened and the **TSO** will give due and reasonable consideration to such request. The need for further discussions, be they on the telephone or at meetings, can only be determined at the time.
- (iii) In the event of the above discussions not producing an agreed result, the **TSO** will determine the **Provisional Outage Programme**. With respect to an **Interconnector**, when determining the **Provisional Outage Programme**, the **TSO** shall take into account the arrangements it has in place under its Operating procedures with National Grid Electricity Transmission.
- (iv) This paragraph (d) does not override paragraph (c) above.

The provisions of this paragraph OC2.6.2(d) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.2(d) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.3 <u>Medium Term Operational Planning - Planning for Year 1</u>

The **Outage** programme for Year 2 forming part of the **Provisional Outage Programme** established under OC2.6.2 will become the Outage programme for Year 1 (until updated in accordance with this OC2.6.3) when, by effluxion of time, Year 2 becomes Year 1.

In each calendar year:

OC2.6.3 (a) By the End of March

Each Generator will provide the TSO in writing with its suggested Final Outage Programme for Year 1 (showing any updates to the outage programme for Year 2 which, by effluxion of time, has become that for Year 1), which will then, in accordance with this OC2, become the Final Outage Programme. For the avoidance of doubt, the suggested Final Outage Programme will contain the following information in relation to each proposed Planned Outage in the suggested Final Outage Programme:-

- (i) identity of the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPSs (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
- (ii) **MW** concerned (i.e. **MW** which will not be **Available** as a result of the **Outage** and that which will, notwithstanding the **Outage**, still be **Available** (if any));
- (iii) required duration of **Outage**;
- (iv) preferred **Start Date** and **Start Time** or range of **Start Dates** and **Start Times**;
- (v) whether the **Outage** is a **Flexible Planned Outage** or an **Inflexible Planned Outage**, provided that the **Generator** must not declare an **Outage** to be an **Inflexible Planned Outage** unless **Prudent Operating Practice** would not permit the **Outage** to be declared as a **Flexible Planned Outage**;
- (vi) if it is a **Flexible Planned Outage**,
 - (aa) the period for which the **Outage** could be deferred at the request of the **TSO**, which period shall be not less than 30 days in length;
 - (bb) the period for which the **Outage** could be advanced at the request of the **TSO**, which period shall be not less than 10 days in length; and
- (vii) where relevant, that the **Generator** wishes to take the **Outage** in order to enable it to comply with obligations relating to the operation and maintenance of **CDGUs** (or in the case of a **CCGT**OC2-11

Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment imposed upon the Generator by statute and, if so, the latest date by which the Outage must be taken.

In relation to sub-paragraph (v), the **Generator** must provide the **TSO** with such evidence as it may reasonably require in order to substantiate the declaration as an **Inflexible Planned Outage** and, if the **Generator** fails to establish to the **TSO** 's reasonable satisfaction that the **Outage** is required to be an **Inflexible Planned Outage**, the **Outage** shall be deemed to have been submitted as a **Flexible Planned Outage** with an attendant **Flexible Planned Outage Period** of 10 days for advancement and 30 days for deferment.

The updates to the programme for Year 2 when, by effluxion of time, Year 2 has become Year 1, may only reflect the **Generator's** reasonable response to changed circumstances and changes which, in the context of the **Provisional Outage Programme** as a whole, are minimal in their effect on the operation of the **NI System** and the **Other TSO's Transmission System**; otherwise it must reflect the **Provisional Outage Programme** for Year 2 issued the previous September.

The provisions of this paragraph OC2.6.3(a) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.3(a) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.3 (b) Between the End of March and the End of June

The **TSO** will be considering the suggested **Final Outage Programme** in the light of the factors set out in OC2.6.2(b) and the requirement for **Minimum Demand Regulation** and will be analysing whether the **Margin** for the period can be met. With respect to an **Interconnector**, when considering the **Final Outage Programme**, the **TSO** shall take into account the arrangements it has in place under its Operating procedures with National Grid Electricity Transmission.

OC2.6.3 (c) By the End of June

(i) The TSO will provide each Generator in writing with a draft Final Outage Programme showing the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment it may potentially withdraw from service during each week of Year 1 for a Planned Outage (including, for the avoidance of doubt, both Flexible Planned Outages and Inflexible Planned Outages) and showing the Flexible Planned Outage Periods, by way of amendment to, or confirmation of, the suggested Final Outage Programme OC2-12

submitted by the **Generator**. With respect to an **Interconnector**, when preparing the draft **Final Outage Programme**, the **TSO** shall take into account the arrangements it has in place under its Operating procedures with National Grid Electricity Transmission.

- (ii) The draft **Final Outage Programme** may differ from the suggested **Final Outage Programme** as follows:-
 - (aa) Flexible Planned Outages (and associated Flexible Planned Outage Periods) may have been moved to coordinate all Outage proposals received by the TSO or generally for reasons relating to the proper operation of the NI System and the Other TSO's Transmission System;
 - (bb) a **Flexible Planned Outage** may have been re-designated as an **Inflexible Planned Outage**;

provided that the TSO may not move a Planned Outage relating to which the **Generator** has informed the **TSO** under OC2.6.3(a)(vii) that it needs it to comply with statutory obligations, if to do so would result in the **Generator** being in breach of those statutory obligations. However, the TSO may discuss the Planned Outage with the **Generator** and may request the **Generator** to approach the relevant authorities for an extension of time in order to avoid the breach of those statutory obligations. The Generator must accede to that request and use reasonable endeavours to obtain such an extension. In the case of a Generator with PPA CDGUs, the provisions of GC13.2 shall be imported into (and, for the purposes of the the TSO Licence, regarded as forming part of) this OC2.6.3(c)(ii). The **Generator** must, in all cases, inform the **TSO** of the position. In the event that an extension is obtained the **TSO** may (subject to the other provisions of this paragraph (c)(ii)) move the **Planned Outage** accordingly.

- (iii) In addition, where in the opinion of the **TSO** the **Licence Standards** could not otherwise be met, the **TSO** may (by giving to the **Generator** a written notice designated as being under this OC2.6.3(c)(iii)) request:
 - (aa) that a **Flexible Planned Outage** or an **Inflexible Planned Outage** which was shown in the **Provisional Outage Programme** (prepared the previous September as the Year 2 programme) or is newly requested by the **Generator** (such request not reflecting a change in any **Outage** included in the **Provisional Outage Programme** prepared the previous September as the Year 2 programme) be excluded from the **Provisional Outage Programme**; or
 - (bb) that an Inflexible Planned Outage which was shown in the Provisional Outage Programme prepared the previous September as the Year 2 programme, be redesignated as a Flexible Planned Outage (with an OC2-13

attendant **Flexible Planned Outage Period** not exceeding 10 days for advancement and 30 days for deferment), or that the **Start Date** thereof (shown in the **Provisional Outage Programme** prepared the previous September) be moved.

In the case of a **Generator** with **PPA CDGUs**, the provisions of GC13.1 should be imported into (and, for the purposes of the **TSO Licence**, regarded as forming part of) this OC2.6.3(c)(iii).

(iv) Subject to sub-paragraph (iii) above, the amendments may be made by the **TSO** in relation to Year 1 even if the offered **Planned Outages** in the suggested **Provisional Outage Programme** reflect the **Provisional Outage Programme** for Year 2 issued the previous September to the extent necessary for the **TSO** to carry out its obligations in relation to **Operational Planning**.

The provisions of this paragraph OC2.6.3(c) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.3(c) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.3 (d) By the End of July

Where a **Generator**, an **Aggregator** or an **Interconnector Owner** objects to any changes to the suggested **Final Outage Programme**, equivalent provisions to those set out in OC2.6.2(d) will apply.

OC.2.6.3 (e) By the end of August

The **DNO** will provide the **TSO** in writing with details of **Outages** of **Independent Generating Plant** connected to the **Distribution System** with a **Registered Capacity** of 2 **MW** and greater.

OC2.6.3 (f) Between the End of June and the End of September

The **TSO** will be considering the draft **Final Outage Programme** in the light of the factors set out in OC2.6.2(b), any changes as a result of (d) above and the requirement for **Minimum Demand Regulation** and will be analysing whether the **Margin** for the period can be met. With respect to an **Interconnector**, when considering the draft **Final Outage Programme**, the **TSO** shall take into account the arrangements it has in place under its Operating procedures with National Grid Electricity Transmission.

OC2.6.3 (g) By the End of September

(i) The **TSO** will notify each **Generator** in writing of any further changes (if any) to the draft **Final Outage Programme** by the issue OC2-14

of a **Final Outage Programme** showing the **CDGUs** (or, in the case of a **CCGT Installation**, **CCGT Module(s)**), **Dispatchable WFPSs**, **Controllable WFPSs** (or **Generating Unit(s)** therein) and/or **Power Station Equipment** it may potentially withdraw from service during each week of Year 1 for a **Planned Outage** and showing the **Flexible Planned Outage Periods**.

- (ii) The **TSO** will provide the **DNO** in writing with an extract from the latest copy of the **Final Outage Programme** showing:
 - (aa) the identity of CDGUs, Controllable WFPSs, Dispatchable WFPSs (or Generating Unit(s) therein) and/or the Power Station Equipment connected to the Distribution System concerned;
 - (bb) MW concerned (i.e. MW which will not be available as a result of the **Outage**); and
 - (cc) the start date and duration of the **Outage**.
- (iii) The **Final Outage Programme** may differ from the draft **Final Outage Programme** as follows:-
 - (aa) Flexible Planned Outages (and associated Flexible Planned Outage Periods) may have been moved to coordinate all Outage proposals received by the TSO or generally for reasons relating to the proper operation of the NI System and the Other TSO's Transmission System;
 - (bb) a **Flexible Planned Outage** may have been re-designated as an **Inflexible Planned Outage**;

provided that the TSO may not move a Planned Outage relating to which the **Generator** has informed the **TSO** under OC2.6.3(a)(vii) that it needs it to comply with statutory obligations, if to do so would result in the Generator being in breach of those statutory obligations. However, the TSO may discuss the Planned Outage with the **Generator** and may request the **Generator** to approach the relevant authorities for an extension of time in order to avoid the breach of those statutory obligations. The Generator must accede to that request and use reasonable endeavours to obtain such an extension. In the case of a Generator with PPA CDGUs, the provisions of GC13.2 shall be imported into (and for the purposes of the TSO Licence, regarded as forming part of) this OC2.6.3(g)(iii). The **Generator** must, in all cases, inform the **TSO** of the position. In the event that an extension is obtained, the **TSO** may (subject to the other provisions of this paragraph (g)(iii)) move the Planned Outage accordingly.

(iv) In addition, where in the opinion of the **TSO** the **Licence Standards** could not otherwise be met, the **TSO** may (by giving the

Generator a written notice designated as being under this OC2.6.3(g)(iv) request:

- (aa) that a Flexible Planned Outage or an Inflexible Planned Outage which was shown in the draft Final Outage Programme be excluded from the Final Outage Programme; or
- (bb) that an Inflexible Planned Outage which was shown in the draft Final Outage Programme be re-designated as a Flexible Planned Outage (with an attendant Flexible Planned Outage Period not exceeding 10 days for advancement and 30 days for deferment) or that the Start Date thereof (shown in the draft Final Outage Programme) be moved;

In the case of a **Generator** with **PPA CDGUs**, the provisions of GC13.1 shall be imported into (and, for the purposes of the **TSO Licence**, regarded as forming part of) this OC2.6.3(g)(iv).

The provisions of this paragraph OC2.6.3(g) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.3(g) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.4 <u>Short Term Operational Planning - Planning for Year 0</u>

Throughout each calendar year and from 1st October of the preceding year:

- OC2.6.4 (a) The **TSO** will monitor the **Margin** continuously in the light of any movement of **Planned Outages**, the factors specified in OC2.6.2(b)(i), the incidence of **Outages** other than **Planned Outages** and the requirement for **Minimum Demand Regulation**.
- OC2.6.4 (b) The **DNO** will provide the **TSO** in writing with such information as the **TSO** may reasonably require relating to distribution connected **Independent Generating Plant** with a **Registered Capacity** of 2 **MW** and greater including information updates on planned **Outages**.
- OC2.6.4 (c) The **TSO** shall ensure the **DNO** is provided with any updated information regarding **Outages** of distribution connected **CDGUs**, **Controllable WFPSs** and **Dispatchable WFPSs**, and in particular:
 - (i) the identity of distribution connected CDGUs, Controllable WFPSs, Dispatchable WFPSs (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
 - (ii) MW concerned (i.e. MW which will not be Available as a result of the Outage); and

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(iii) the start date and duration of the **Outage**.

The provisions of this paragraph OC2.6.4(c) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.4 (d) Flexible Planned Outage Movements

In the case of a **Flexible Planned Outage**, the **TSO** may, upon giving a **Generator** written notice of not less than 7 days (in the case of advancement, before the advanced **Start Date** and in the case of deferral, before the original **Start Date**) require the **Start Date** or **Start Time** of the **Flexible Planned Outage** to be advanced or deferred within the **Flexible Planned Outage Period**, and the **Generator** will take that **Outage** in accordance with the revised timing set out in that notice. Such written notice may be given in the preceding year where the **TSO** could not otherwise give the **Generator** a sufficient period of notice. The provisions of this paragraph OC2.6.4(d) also apply to **Interconnector Owners** as if references to "**Generator**" were references to an "**Interconnector Owner**". The provisions of this paragraph OC2.6.4(d) also apply to **Aggregators** as if references to "**Generator**" were references to an "**Aggregator**".

OC2.6.4 (e) <u>Amendments to **Planned Outages**</u>

In the case of:-

- (i) a **Flexible Planned Outage** which the **TSO** would like to move outside the **Flexible Planned Outage Period**; or
- (ii) a **Flexible Planned Outage** which the **TSO** would like to move within the **Flexible Planned Outage Period** on less than seven days' notice (in the case of advancement, before the advanced **Start Date** and, in the case of deferral, before the original **Start Date**);
- (iii) an **Inflexible Planned Outage** which the **TSO** would like to move;

the **TSO** may, upon giving a **Generator** written notice, request that the **Start Date** or **Start Time** of a **Planned Outage** be advanced or deferred. If the **Generator** agrees to such advancement or deferral, or the **TSO** and the **Generator** agree to some other advancement or deferral, the **Generator** will take the **Outage** in accordance with that agreement. The provisions of this paragraph OC2.6.4(e) also apply to **Interconnector Owners** as if references to "**Generator**" were references to an "**Interconnector Owner**". The provisions of this paragraph OC2.6.4(e) also apply to **Aggregators** as if references to "**Generator**" were references to an "**Aggregator**".

OC2.6.4 (f) A **Generator** may, on reasonable grounds, by notice in writing submitted to the **TSO** at any time during Year 0, request that a **CDGU** (or in the case of a **CCGT Installation, CCGT Module(s)** therein) and/or **Generating Unit(s)**OC2-17

within a **Dispatchable WFPSs** or a **Controllable WFPS**, for which there is a Flexible Planned Outage or an Inflexible Planned Outage, as specified in the Final Outage Programme, remain in service and that one or more of the other CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein) and/or Generating Unit(s) within a Dispatchable WFPSs or a Controllable WFPS, as the case may be, at the same Power Station (having substantially the same Contracted Capacity / Registered Capacity (PPA plant / non-PPA plant respectively) and Contracted Technical Parameters, or equivalent parameters in the case of CCGT Modules, CDGUs other than PPA CDGUs, and/or Generating Unit(s) within a Dispatchable WFPSs or a Controllable WFPS) be permitted to be taken out of service during the period for which such Flexible Planned Outage or Inflexible Planned Outage has been planned. The TSO shall not unreasonably withhold its consent to such substitution and, if the TSO does consent, the Final Outage Programme shall be amended and the Generator shall be entitled to take the Outage accordingly. The provisions of this paragraph OC2.6.4(f) also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph OC2.6.4(f) also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generated Unit" or a "Demand Side Unit".

OC2.6.4 (g) Short Term Planned Maintenance Outage

- (i) A **Generator** may at any time in Year 0 request the **TSO**, by giving not less than 7 days' notice before the earliest **Start Date**, for a **Short Term Planned Maintenance Outage**. The request notice must contain the following information:-
 - (aa) identity of the CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPS(s) (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
 - (bb) **MW** concerned (i.e.**MW** which would not be **Available** as a result of the **Outage** and that which would, notwithstanding the **Outage**, still be **Available** (if any));
 - (cc) required duration of **Outage** (which must not exceed 72 hours); and
 - (dd) preferred **Start Date** and **Start Time** or range of **Start Dates** and **Start Times**.

The **Generator** may (if it is the case), in addition, state that the **Outage** is required for the purposes of maintaining the brush gear of a **CDGU** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), and/or a **Dispatchable WFPSs** or a

Controllable WFPS (or Generating Unit(s) therein), in accordance with (v) below.

- (ii) On receipt of a request notice under (i) above, the **TSO** shall consider the request and shall, having discussed the position with the **Generator**, reply within one **Business Day** in writing indicating:-
 - (aa) acceptance of the request, confirming the requested **Start Time** and duration of the **STPM Outage**;
 - (bb) proposals for the advancement or deferment of the **STPM Outage** if taken, indicating alternative **Start Time** and duration; or
 - (cc) rejection of the request.
- (iii) If the **TSO** has accepted the request, the **STPM Outage**, if taken, must be taken by the **Generator** in accordance with the request. If the **TSO** has indicated an alternative **Start Time** and/or duration, the **TSO** and the **Generator** must discuss the alternative and any other options which may arise during the discussions. If agreement is reached, then the **Outage**, if taken, must be taken by the **Generator** in accordance with the agreement. If the request is refused by the **TSO** or if agreement is not reached then, subject to (iv) below, the **Outage** may not be taken by the **Generator**.
- (iv) If, in respect of a particular CDGU, Dispatchable WFPS, Controllable WFPS or item of Power Station Equipment, the TSO has rejected requests made under (i) above on two successive occasions which were not less than 7 days apart, the TSO may not reject a third request. However, the TSO may require that such Outage, if it is to be during the three months of maximum winter Demand, be deferred if in the TSO's reasonable opinion (were the Outage not to be deferred):
 - (aa) the **Licence Standards** could not be met; or
 - (bb) there would otherwise be insufficient generating capacity to meet forecast **Demand** and the **Margin**;

such deferral to be for so long as those circumstances exist, but in any event not be beyond the end of the month following the end of the three months of maximum winter **Demand**. For the avoidance of doubt, such provision is without prejudice to the **TSO** 's rights under OC2.6.7.

(v) Where a **Generator** has requested an **STPM Outage** in respect of a **CDGU** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), and/or **Dispatchable WFPSs** and/or **Controllable WFPS** (or **Generating Unit(s)** therein), which the **Generator** identified in the notice served under (i) above as requiring such **Outage** for the OC2-19

purposes of routine brush gear maintenance, the **TSO** shall permit the **Generator** to take the **Outage** within 14 days after the date of service of the request at such time as the **TSO** shall, in its absolute discretion, determine.

- (vi) In the event that an **STPM Outage** is scheduled pursuant to this OC2.6.4(g), the **TSO** shall by notice in writing confirm the details thereof within one **Business Day** after the details of the **STPM Outage** have been settled. Such notice shall contain the following information:-
 - (aa) the identity of the CDGU(s) (or in the case of a CCGT Installation(s), CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS(s) (or Generating Unit(s) therein) and/or the Power Station Equipment concerned;
 - (bb) **MW** concerned (i.e. **MW** which will not be **Available** as a result of the **Outage** and that which will, notwithstanding the **Outage**, still be **Available** (if any));
 - (cc) duration of the **Outage**; and
 - (dd) the **Start Date** and **Start Time**.

The provisions of this paragraph OC2.6.4(g) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.4(g) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.5 Notified Unplanned Outages

OC2.6.5 (a) A Generator must, if it considers that a CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or a Dispatchable WFPSs and/or a Controllable WFPS (or Generating Unit(s) therein) and/or an item of Power Station Equipment will require an Outage which cannot reasonably be deferred to become a Planned Outage or a Short Term Planned Maintenance Outage but of which it has some warning, give the **TSO** as much notice as is reasonably possible. Such **Outage** is known as an Notified Unplanned Outage and the Generator's notice as an Outage Notice. Such notice must include an identification of the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment, as the case may be, the expected Start Date and Start Time and duration of the Notified Unplanned Outage and the nature of the Outage together with the MW concerned (i.e. MW which will not be Available as a result of the Outage and that which will still be Available (if any)). The TSO must acknowledge such notification as soon as reasonably possible after the notification was

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received by the **TSO**. The provisions of this paragraph OC2.6.5(a) also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.6.5(a) also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generated Unit**" or a "**Demand Side Unit**".

OC2.6.5 (b) The **TSO** may request the **Generator** to advance or defer the **Outage** and if the **Generator** agrees to such a request, he shall send the **TSO** a written notice confirming this agreement, which the **TSO** will acknowledge, and the **Generator** must then (subject to any intervening **Outage**) take the **Outage** in accordance with that agreement. The provisions of this paragraph OC2.6.5(b) also apply to **Interconnector Owners** as if references to "**Generator**" were references to an "**Interconnector Owner**". The provisions of this paragraph OC2.6.5(b) also apply to **Aggregators** as if references to "**Generator**" were references to an "**Aggregators**".

OC2.6.5 (c) **24 Hour Recall**

In relation to an **Notified Unplanned Outage** notified to it pursuant to (a) above, the TSO may request the Generator to retain the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment on 24 Hour Recall, the period of which shall be the whole or part of the period identified by the Generator as the expected period of the Outage. If the Generator agrees to such a request to retain the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment on 24 Hour Recall, the Generator shall send to the TSO a notice confirming the period within which the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment will be on 24 Hour Recall. The TSO and the Generator may discuss amendments to the period suggested by the TSO, and any agreed amendment shall be reflected in the above notice. The **TSO** shall acknowledge the notice within 2 hours, such acknowledgement confirming that the Outage will be a 24 Hour Recall Outage. The provisions of this paragraph OC2.6.5(c) also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph OC2.6.5(c) also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generating Unit" or a "Demand Side Unit".

OC2.6.6 Forced Outages

OC2.6.6.1 In the event that a CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment suffers a Forced Outage, the OC2-21

relevant **Generator** shall, as soon as possible after the commencement of the **Outage** and in any event within 48 hours thereof, inform the TSO by written notice (in addition to the notifications required to be given by the Generator in such circumstances under SDC1.4.5, SDC2.4.2.10(b) and SDC2.4.2.15) of the Generator's best estimate of the date and time by which the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment is likely to have been repaired and restored to its full level of Availability. (It should be noted that a Forced Outage of an item of Power Station Equipment may result in a reduced level of Availability of the associated CDGU and/or Dispatchable WFPSs and/or **Controllable WFPS.)** If the **Generator** is unable for any reason to comply with this requirement, it shall not later than 48 hours after the commencement of the Forced Outage, provide to the TSO such information as is then known to the Generator regarding the date and time of return from such Outage and shall provide such updates thereafter as the **TSO** may reasonably require. The **Generator** shall then inform the TSO by written notice of the Generator's best estimate of the date and time by which the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of **Power Station Equipment** is likely to have been repaired and restored to its full level of Availability as soon as the Generator is able. The provisions of this paragraph OC2.6.6.1 also apply to **Interconnector Owners** as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph OC2.6.6.1 also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an 'Aggregated Generating Unit" or a "Demand Side Unit".

- OC2.6.6.2 Pursuant to and subject to SDC1.4.3, a Generator shall use all reasonable endeavours to ensure that, following a Forced Outage, the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) or item of Power Station Equipment (as the case may be) is repaired and restored to its full level of Availability as soon as possible and in accordance with Prudent Operating Practice. The provisions of this paragraph OC2.6.6.2 also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph OC2.6.6.2 also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generating Unit" or a "Demand Side Unit".
- OC2.6.7 Release of CDGUs, Dispatchable WFPSs, Controllable WFPSs and Power Station Equipment
- OC2.6.7.1 **Generators** may only undertake **Planned Outages** with the **TSO** 's agreement in accordance with **Outage** programmes produced pursuant to this OC2.
- OC2.6.7.2 In real time operation CDGUs (or in the case of a CCGT Installation, CCGT Module(s) therein), Dispatchable WFPSs, Controllable WFPSs (or Generating Unit(s) therein) and Power Station Equipment must not actually be withdrawn for a Planned Outage or a Short Term Planned Maintenance Outage without the TSO's express formal permission for such release according to the procedures set out in OC2.6.7.3, which permission shall be given except as described in OC2.6.7.4.

- OC2.6.7.3 The **TSO** 's express formal permission shall specify (consistent with the details resulting from the application of the foregoing procedures of this OC2):
- occ.6.7.3 (a) the identity of the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment and MW concerned (i.e. MW which will not be Available as a result of the Outage and that which will, notwithstanding the Outage, still be Available (if any));
- OC2.6.7.3 (b) the duration of the **Outage**; and
- OC2.6.7.3 (c) the **Start Date** and **Start Time**.
- OC2.6.7.4 (a) Notwithstanding anything else contained in this OC2, the **TSO** shall be entitled, on the basis set out in (b) below, to determine whether to release a **CDGU** (or in the case of a **CCGT Installation, CCGT Module(s)** therein), and/or a **Dispatchable WFPS** and/or a **Controllable WFPS** (or **Generating Unit(s)** therein) or an item of **Power Station Equipment** for a **Planned Outage** or a **Short Term Planned Maintenance Outage**.
- OC2.6.7.4 (b) Subject to (c) below the **TSO** may withhold its permission for the release of a **CDGU** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), and/or a **Dispatchable WFPS** and/or a **Controllable WFPS** (or **Generating Unit(s)** therein) or any item of **Power Station Equipment** for a **Planned Outage** or a **Short Term Planned Maintenance Outage** where such **Outage** has previously been planned in accordance with this OC2 where, in the **TSO** 's reasonable opinion (were such **Outage** not to be deferred):
 - (i) the **Licence Standards** could not be met; or
 - (ii) there would be insufficient generating capacity to meet forecast **Demand** and the **Margin**;

and may require the **Generator** to continue to defer such **Outage** for so long as those circumstances exist.

- OC2.6.7.4 (c) In the case of a **Generator** with **PPA CDGUs**, the provisions of GC13.3 shall be imported into (and, for the purposes of the **TSO Licence**, shall be regarded as forming part of) this OC2.6.7.4. Nothing in this OC2.6.7.4 shall limit any other power which the **TSO** has in this OC2 to grant or withhold absolutely its permission for an **Outage** under this OC2.
- OC2.6.7.5 The provisions of this OC2.6.7 also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this OC2.6.7 also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generating Unit" or a "Demand Side Unit".

OC2.6.8 Return to service and overruns

- In relation to a **Planned Outage**, not later than 7 days before the expiry of OC2.6.8.1 (a) the Flexible Planned Outage Period or the Inflexible Planned Outage Period (as the case may be), the Generator must inform the TSO by notice in writing, in such form as the TSO may reasonably require, (a "RTS Notice") either that its CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPS and/or Controllable WFPS (or Generating Unit(s) therein) or Power Station Equipment is returning to service earlier than expected, or at the time and date expected, or later than expected and if, upon return, it is expected to be Fully Available, the Generator shall so state. Where a CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPSs and/or Controllable WFPS (or Generating Unit(s) therein) is not expected to be **Fully Available** upon its return to service, the Generator shall state the MW level at which the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), and/or Dispatchable WFPS and/or Controllable WFPS (or Generating Unit(s) therein) is expected to be **Available**. In the case of a **CDGU** which is capable of firing both on coal and on oil, the Availability must be stated for each Designated Fuel.
- OC2.6.8.1 (b) In the case of a return from a **Planned Outage** earlier than expected, the **RTS Notice** must be given as far as possible in advance of return but in any event not later than required under (a) above.
- OC2.6.8.1 (c) In the case of a return from a **Planned Outage** later than expected, the **RTS**Notice must be given not later than required under (a) above and shall state the reason for the delay in the return of the **CDGU** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), the **TSO** and/or **Controllable WFPS** (or **Generating Unit(s)** therein) or **Power Station Equipment** to service and the **Generator's** best estimate of the date and time at which the **CDGU** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), and/or **Controllable WFPS** (or **Generating Unit(s)** therein) or **Power Station Equipment** will return to service.
- OC2.6.8.1 (d) If, after giving a **RTS Notice**, the **Generator** becomes aware that any details notified to the **TSO** in such notice are or have become inaccurate, the **Generator** shall give a revised **RTS Notice**.
- OC2.6.8.2 Without prejudice to the provisions of SDC1.4.3 (which, for the avoidance of doubt, are not applicable in respect of **Controllable WFPSs**), a **Generator** must use all reasonable endeavours to ensure that, in respect of each **Planned Outage** of the **Generator's CDGUs** (or in the case of a **CCGT Installation, CCGT Module(s)** therein), and/or **Dispatchable WFPSs** and/or **Controllable WFPSs** (or **Generating Unit(s)** therein) and **Power Station Equipment**, the **Outage** as included in the **Final Outage Programme** (or as moved in accordance with this OC2) is followed.
- OC2.6.8.3 Before returning from any **Outage** other than a **Planned Outage**, a **Generator** must inform the **TSO**, as far in advance as reasonably possible, by notice in writing in such form as the **TSO** may reasonably require, that its **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein), and/or **Dispatchable WFPSs** and/or OC2-24

Controllable WFPS (or Generating Unit(s) therein) or Power Station Equipment is returning to service. The Generator must, in addition, give an Availability Notice in accordance with SDC1 on the day prior to the Schedule Day on which the CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), or Power Station Equipment (other than Power Station Equipment used in the operation of a Controllable WFPS) is to return to service. The Generator must also give an updated Availability Notice amending or confirming the Availability Notice for the Controllable WFPS on the day prior to the day in the Schedule Week on which the Controllable WFPS (or Generating Unit(s) therein) or Power Station Equipment used in the operation of the Controllable WFPS is to return to service.

OC2.6.8.4 If at any time during an **Outage** (in the case of a **Planned Outage**, prior to giving a RTS Notice) the Generator becomes aware that its CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein), or item of Power Station Equipment (other than Power Station Equipment used in the operation of a Controllable WFPS) will not (or is unlikely to) have been maintained, repaired or restored to be Available in accordance with SDC1.4.3 by the expiry of the period specified for the duration of the Outage in the Final Outage Programme or as otherwise notified in the case of Outages other than Planned Outages, the Generator shall notify the TSO immediately in writing stating the reason for the delay and the **Generator's** best estimate of the date and time by which the **CDGU** (or in the case of a CCGT Installation, CCGT Module(s) therein), or item of Power Station Equipment (other than Power Station Equipment used in the operation of a Controllable WFPS) will actually have been maintained, repaired or restored to be Available in accordance with SDC1.4.3. If at any time during an Outage (in the case of a Planned Outage, prior to giving a RTS Notice) the Generator becomes aware that its **Dispatchable WFPS** or **Controllable WFPS** (or **Generating Unit(s)** therein) or item of Power Station Equipment used in the operation of the Dispatchable WFPS or the Controllable WFPS will not (or is unlikely to) have been maintained, repaired or restored to be Available by the expiry of the period specified for the duration of the Outage in the Final Outage Programme or as otherwise notified in the case of Outages other than Planned Outages, the Generator shall notify the TSO immediately in writing stating the reason for the delay and the Generator's best estimate of the date and time by which the **Dispatchable WFPS** or the **Controllable** WFPS (or Generating Unit(s) therein) or item of Power Station Equipment used in the operation of the **Dispatchable WFPS** or the **Controllable WFPS** will actually

OC2.6.8.5 The provisions of this OC2.6.8 also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this OC2.6.8.5 also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generating Unit**" or a "**Demand Side Unit**".

have been maintained, repaired or restored to be Available.

OC2.7 ASSESSMENT OF CAPACITY ADEQUACY

In assessing capacity Adequacy the **TSO** shall, in conjunction with the **Other TSO**, estimate **Demand** growth, formulate **Demand Forecasts** and consider **Outages** of **CDGUs** (or in the case of a **CCGT Installation**, **CCGT Module(s)** therein as provided in OC2), **Dispatchable WFPSs**, **Controllable WFPSs**, **Power Station**

Equipment, and Interconnectors, Aggregated Generating Units and Demand Side Units.

OC2.7.1 <u>Capacity Margin for Year 1</u>

If there is a deficit indicated in any week, the **TSO** and the **Other TSO** shall jointly issue a **System Capacity Shortfall Warning**.

OC2.7.2 <u>Capacity Margin for Year 0</u>

If there is a deficit indicated in any day, the **TSO** and the **Other TSO** shall jointly issue a **System Capacity Shortfall Warning**.

OC2.8 OUTAGE PLANNING PROCEDURES FOR SYSTEM OUTAGES

- OC2.8.1 This Section 8 sets out the data exchanges and planning procedures required to enable the **TSO** to prepare a plan of:
 - (a) **Outages** on the **Transmission System**;
 - (b) **Outages** of circuits on the **Distribution System** which operate at 33kV;
 - (c) Outages on the Distribution System which may affect CDGUs (and/or in the case of a CCGT Installation, CCGT Modules as provided in OC2), Dispatchable WFPSs, and Controllable WFPSs, Aggregated Generating Units and Demand Side Units connected to the Distribution System;
 - (d) Outages on the Distribution System which may affect Independent Generating Plant with a Registered Capacity of 2 MW and greater; and
 - (e) **Outages** on the **Distribution System** which may affect **Customers** with a **Demand** greater than 10 **MW** and which are connected to the **Distribution System**;

which shall be known as the "System Outage Plan".

OC2.8.2 Long Term **Operational Planning** - Planning for Years 2 and 3 ahead

The TSO shall develop the System Outage Plan for Years 2 and 3 taking due account of known requirements for construction and refurbishment works. This contrasts with the System Outage Plan in respect of Years 0 and 1 ahead when the TSO will, in addition, take into account Outages required as a result of maintenance. Transmission System Outages and CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein) and/or Dispatchable WFPS and/or Controllable WFPS (or Generating Unit(s) therein) and/or Power Station Equipment Outages shall, during Years 2 and 3 but not in Year 1 or later, be co-ordinated so that, in general, CDGU (or in the case of a CCGT Installation, CCGT Module(s) therein) and/or Dispatchable WFPS and/or Controllable WFPS (or Generating Unit(s) therein) and/or Power Station Equipment Outages shall take precedence over Transmission System Outages but subject always, in any particular case, to the TSO's discretion to determine otherwise on the basis of reasons relating to the proper operation of the Transmission System and the Other TSO's Transmission System. The provisions

of this paragraph OC2.8.2 also apply to **Interconnectors** as if references to a **Generator**'s units were references to "**Interconnectors**". The provisions of this paragraph OC2.8.2 also apply to **Aggregators** as if references to a **Generator**'s units were references to "**Aggregated Generating Units**" or "**Demand Side Units**".

OC2.8.3 In each calendar year:

(a) By the End of August

The **DNO** will provide the **TSO** in writing with known requirements for **Outages** on the **Distribution System** of the type set out in OC2.8.1 (b), (c), (d) and (e) which are related to construction or refurbishment works in Years 2 and 3 ahead, if any.

(b) <u>By the End of September</u>

The TSO will draw up a draft System Outage Plan covering the period Years 2 and 3 for the TSO's internal use. The TSO will notify each Generator in writing where Transmission System Outages may operationally affect such Generator's CDGUs (and/or in the case of a CCGT Installation, CCGT Modules, as provided under OC2), Controllable WFPSs, Dispatchable WFPSs including, in particular, proposed start dates and end dates of relevant Transmission System Outages. The TSO will indicate to a Generator where a need may exist to use **Intertripping** or other measures including restrictions on the **Dispatch** of CDGUs and/or Dispatchable WFPS and/or Controllable WFPSs to allow the security of the NI System to be maintained within the Licence Standards. The TSO will also inform each Large Demand Customer of the aspects of the plan which may affect it. The provisions of this paragraph OC2.8.3(b) also apply to Interconnector Owners as if references to "Generator" and to a Generator's units were references to an "Interconnector Owner" in respect of an "Interconnector". The provisions of this paragraph OC2.8.3(b) also apply to Aggregators as if references to "Generator" and to a Generator's units were references to an "Aggregator" in respect of an "Aggregated Generating Unit" or a "Demand Side Unit".

OC2.8.4 Medium Term **Operational Planning** - Planning for Year 1

OC2.8.4.1 The plan produced pursuant to OC2.8.2 will become the draft **System Outage Plan** for Year 1 when, by effluxion of time, Year 2 becomes Year 1. Each calendar year the **TSO** shall update the draft **System Outage Plan** and shall, in addition, take into account **Outages** required as a result of maintenance work.

In each calendar year:

OC2.8.4.2 (a) By the End of May

The **DNO** will provide the **TSO** in writing with known requirements for **Outages** on the **Distribution System** of the type set out in OC2.8.1 (b), (c), (d) and (e) which are related to construction, refurbishment or maintenance OC2-27

works in Year 1.

OC2.8.4.2 (b) By the End of June

The TSO will draw up the System Outage Plan and will inform each Generator in writing where Transmission System Outages may operationally affect in Year 1 such Generator's CDGUs (and/or in the case of a CCGT Installation, CCGT Modules, as provided under OC2), Controllable WFPSs, and Dispatchable WFPSs including, in particular, proposed start dates and end dates of relevant Transmission System Outages.

OC2.8.4.2 (c) By the end of July

Where a **Generator** objects to the proposed restrictions or impact notified to it under (b) above, equivalent provisions to those set out in OC2.6.2(d) will apply.

OC2.8.4.2 (d) Between the End of June and the end of September

The **TSO** will draw up a final **System Outage Plan** covering Year 1.

OC2.8.4.2 (e) By the End of September

- (i) The **TSO** will publish the final **System Outage Plan** for Year 1.
- (ii) The TSO will notify each Generator in writing where Transmission System Outages may operationally affect such Generator's CDGUs (and/or in the case of a CCGT Installation, CCGT Modules, as provided under OC2), Controllable WFPSs, and Dispatchable WFPSs including, in particular, proposed start dates and end dates of relevant Transmission System Outages including, in particular, proposed start dates and end dates of relevant Transmission System Outages. The TSO will also indicate where a need exists to use Intertripping, emergency switching, emergency load management or other measures including restrictions on the Dispatch of CDGUs and/or Dispatchable WFPS and/or Controllable WFPSs to allow the security of the NI System to be maintained within the Licence Standards. The TSO will also inform the DNO and each Large **Demand Customers** of the aspects of the plan which may affect it.

The provisions of this paragraph OC2.8.4 also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.8.4 also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generating Unit**" or a "**Demand Side Unit**".

OC2.8.5 Short Term Operational Planning - Planning in Year 0 Down to the Programming Phase

The **System Outage Plan** for Year 1 issued under OC2.8.4.2(e) shall become the final plan for Year 0 when by effluxion of time Year 1 becomes Year 0.

OC2.8.5 **Programming Phase**

OC2.8.5 (a) By 10.00 hours on Wednesday of each week

The **DNO** shall provide the **TSO** in writing with known requirements for **Outages** on the **Distribution System** of the type set out in OC2.8.1 (b), (c), (d) and (e) which are related to construction, refurbishment or maintenance works in the following one week period beginning on the Friday.

(b) By 11.00 hours Each Thursday

- (i) The **TSO** shall update the **System Outage Plan** for the following one week period beginning on the Friday.
- Transmission System Outages may operationally affect such Generator's CDGUs (and/or in the case of a CCGT Installation, CCGT Modules, as provided under OC2), Controllable WFPSs, and Dispatchable WFPSs including, in particular, proposed start dates and end dates of relevant Transmission System Outages. The TSO will also indicate where a need exists to use Intertripping, emergency switching, emergency load management or other measures including restrictions on the Dispatch of CDGUs and/or Dispatchable WFPS and/or Controllable WFPSs to allow the security of the NI System to be maintained within the Licence Standards. The TSO will also inform the DNO and each Large Demand Customers of the aspects of the plan which may affect it.

OC2.8.5 (c) <u>During the **Programming Phase**</u>

Each **Generator** and the **TSO** will inform each other immediately if there is any unavoidable requirement to depart from the **Outages** and actions determined and notified under paragraph OC2.8.5(b) above. In addition, the **TSO** shall notify each **Large Demand Customers** to whom it notified details of the updated **Transmission System Outage** plan pursuant to OC2.8.5(b) of any changes to such details.

The provisions of this paragraph OC2.8.5 also apply to **Interconnector Owners** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Interconnector Owner**" in respect of an "**Interconnector**". The provisions of this paragraph OC2.8.5 also apply to **Aggregators** as if references to "**Generator**" and to a **Generator**'s units were references to an "**Aggregator**" in respect of an "**Aggregated Generating Unit**" or a "**Demand Side Unit**".

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-OC11.3 SCOPE

OC11 applies to the TSO and to Users which in this OC11 means Generators (in respect of their Black Start Stations, all other Generating Units connected to the Transmission System and in respect of CDGUs and Controllable WFPSs connected to the Distribution System), Generator Aggregators, Interconnector Owners, Dispatchable Demand Customers Demand Side Units and Large Demand Customers.

PART B – All User's Equipment other than PPA CDGUs

OC11.10 MONITORING

OC11.10.1 <u>Procedure for **Monitoring**</u>

OC11.10.1.1 **Monitoring** of **User's Equipment** is normally continuous or continuous for periods of time, and involves the analysis of the output of **Monitoring** equipment (as required or permitted under the CC and/or relevant **Connection Agreements** and/or **SSS Agreements** and/or the **MC**), **Generator Aggregator System Operator Agreement** or by such other methods as the **TSO** shall reasonably determine are appropriate in the circumstances. It does not require advance notification from the **TSO** to **Users**.

OC11.10.2 <u>Compliance with **Dispatch Instructions**</u>

OC11.10.2.1 The **TSO** will **Monitor CDGUs, Aggregated Generating Units, Demand Side Units** and **Interconnectors** (referred to in the following paragraphs of this OC11.10 as "**Relevant Plant**") in accordance with the following provisions of this OC11.10.2 when it wishes to determine whether they are being operated in compliance with **Dispatch Instructions**.

If the average value of the **Dispatch Characteristic**(s) in any 5 minute period during the period of **Monitoring** falls outside the relevant **Tolerance Band** the **TSO** may by submitting a **Post Event Notice** to the **Generator or Demand Side Unit Operator**, re-register the value of **Availability** or the value of the relevant **Technical Parameter** corresponding to that **Dispatch Characteristic** to the most inferior value outside the **Tolerance Band** for any 5 minute period during the period of **Monitoring** (with effect from the **Trading Period** in which the **Monitoring Notice** was issued) and the **TSO** may also notify the **Generator or Demand Side Unit Operator**, not later than 10 minutes before the end of the period of **Monitoring** that it will continue to **Monitor** the **Relevant Plant** for a further period not exceeding that shown in the relevant Table in the Appendix to this OC11 Part B in respect of the particular **Dispatch Characteristic** and with reference to the relevant or selected **Tolerance Band**.

OC11.10.2.5

OC11.10.3 Demand Side Units

- OC11.10.3.1 Monitoring of Demand Side Units will be undertaken by the TSO in accordance with the applicable Agreed Testing and Monitoring Procedure.
- OC11.10.3.2 If a **Demand Side Unit** is found by the **TSO** to be non-compliant pursuant to OC11.10.3.1 the **TSO** may re-register the value of the **User's** declared **Demand Side Unit MW Availability** in accordance with the provisions of the applicable **Agreed Testing and Monitoring Procedure**.

OC11.10.34 Operating Reserve capability

- OC11.10.34.1 Monitoring to determine whether a Relevant Plant is able to achieve its Primary Operating Reserve, Secondary Operating Reserve and/or Tertiary Operating Reserve band 1 (for the purposes of this OC11 Part B, "Relevant Operating Reserve") capability will be undertaken by the TSO in accordance with the applicable Agreed Testing and Monitoring Procedure.
- OC11.10.34.2 If a **Relevant Plant** is found by the **TSO** to be non-compliant pursuant to OC11.10.4.1 the **TSO** may re-register the value of the **Generator's** declared **Relevant Operating Reserve** in accordance with the provisions of the applicable **Agreed Testing and Monitoring Procedure**.

OC11.11 **TESTING**

OC11.11.1 Procedure for **Testing**

- OC11.11.1.1 In circumstances where the TSO reasonably considers that, in relation to a CDGU, Controllable WFPS, Demand Side Unit or item of User's Equipment, a User might be failing to comply or might in the foreseeable future fail to comply with the relevant **Design and Operating Requirements** (or the requirements of the SSS Agreement, as the case may be), the **TSO** may, upon giving reasonable notice identifying the **Design** and Operating Requirement concerned, send representatives to the relevant Power Station or User Site in order to verify by Testing or inspection (in the case of Testing conducted by the User) whether in relation to the CDGU, Controllable WFPS, Demand Side Unit or item of User's Equipment, as the case may be, the **Design and Operating Requirement** (or SSS Agreement requirement, and the case may be) is being complied with. The **Test** or inspection may involve the giving of specific **Dispatch Instructions** within the provisions of SDC2, including instructions in connection with Black Starts and Dispatched Fuel Notices. The period of notice which is reasonable will depend upon all the circumstances, including the **Design and** Operating Requirement (or SSS Agreement requirement, as the case may be) in question.
- OC11.11.1.2 A **Generator**, <u>Demand Side Unit Operator</u> or other **User**, as the case may be, must allow the **TSO** representatives access to all relevant parts of its **Power Station** or **User Site** for the purposes of this OC11.11.
 - OC11.11.1.3 In the case of a **Test** of **Relevant Operating Reserve** capability or any other **Test** that falls within the scope of an **Agreed Testing and Monitoring Procedure**, the OC11-31

procedure for conducting the **Test** and the criteria for passing the **Test** will be as set out in the applicable **Agreed Testing and Monitoring Procedure.** If a **Test** falls outside the scope of the **Agreed Testing and Monitoring Procedures**, the procedure for the **Test**, and the criteria for passing the **Test** will, if not agreed between the **TSO** and the **Generator**, **Demand Side Unit Operator** or other **User**, be as determined by the **TSO** acting reasonably and as notified to the **Generator**, **Demand Side Unit Operator** or other **User**, as the case may be, at the time and the **Generator**, **Demand Side Unit Operator** or other **User**, as the case may be, will comply with all reasonable instructions of the **TSO** in carrying out the **Test**.

OC11.11.1.5

- (a) In determining whether the CDGU, Controllable WFPS, Demand Side Units or item of User's Equipment, as the case may be, has passed a Test, due regard will be given by the TSO to operating conditions on the NI System and (where applicable) the relevant Tolerance Bands will be applied to the relevant matters being Tested as set out in the Appendix to this OC11 Part B and the Conversion Factors and the Additional Conversion Factors shall also be applied where appropriate.
- (b) If, within 48 hours after completion of the **Test**, the **User** notifies the **TSO** in writing that it disagrees that the results show that the **CDGU**, **Controllable WFPS**, **Demand Side unit** or item of **User's Equipment** has failed the **Test**, then the question of whether the **Test** has been passed or failed shall:-
 - (i) in the case of a **Design and Operating Requirement** contained in the **Grid Code**, be decided in accordance with the relevant dispute resolution procedure set out in the **User's** relevant **Connection Agreement**, **Transmission Use of System Agreement** or **Grid Code Compliance Agreement**; or
 - (ii) in the case of a **Design and Operating Requirement** contained in the **User's** relevant **Connection Agreement**, **Transmission Use of System Agreement** or **Grid Code Compliance Agreement**, be decided in accordance with the relevant dispute resolution procedure set out in the **User's** relevant **Connection Agreement**, **Transmission Use of System Agreement** or **Grid Code Compliance Agreement**; or
 - (iii) in the case of a requirement contained in the **Users** relevant **SSS Agreement**, be decided in accordance with the relevant dispute resolution procedure set out in the **User's** relevant **SSS Agreement**,

and, in any such event, the effects of the **Test** shall be suspended until such time as it has been determined that the **CDGU**, **Demand Side Unit** or item of **User's Equipment** has failed the **Test**.

OC11.11.2 <u>Consequences of failing a **Test**</u>

OC11.11.2.1 If in relation to the **CDGU, <u>Demand Side Unit</u>** or item of **User's Equipment**, as the case may be, the **Generator or Demand Side Unit** fails the **Test** then:

- (a) if the **Design and Operating Requirement** is one under the **Grid Code**, the **TSO** may, in the case of those **Design and Operating Requirements** where a parameter or other data item is registrable (that is, those other than CC parameters), re-register the value of the relevant **Design and Operating Requirement** to reflect the lower level of compliance shown by the **Test**;
- (b) the User will, if the Design and Operating Requirement is one under a Connection Agreement, Transmission Use of System Agreement or Grid Code Compliance Agreement to which it is a party, be subject to such consequences (if any) as may arise under that agreement; and
- (c) the **User** will, if it is a **SSS Agreement** requirement, be subject to such consequences as may arise under that agreement.

OC11.12 **INVESTIGATION**

OC11.12.1 The **TSO** may, if it reasonably considers that there may be an issue of non-compliance by the **User**, carry out an **Investigation** to acquire or verify information relevant to **User's Equipment** design, operation or connection requirements under the **Grid Code**, **Connection Agreements**, **Generator Aggregator System Operator Agreement** and **System Support Service Agreements** between **Users** and the **TSO**.

OC11.13 TESTING AT THE REQUEST OF A GENERATOR OR USER

OC11.13.1 A Generator, Demand Side Unit Operator or other User, as the case may be, shall, subject to OC11.13.2, be entitled, by notice in writing setting out the desired procedure (or, if the TSO acting reasonably so agrees, taking into account the nature of the test being requested, by oral request specifying the desired procedure, such oral request to be confirmed in writing as soon as reasonably practicable thereafter), to request the TSO to assist it (by **Dispatch**) in carrying out a test on any of its CDGUs, **Demand** Side Unit or User's Equipment, as the case may be, as such Generator, Demand Side Unit Operator or other User, acting reasonably in accordance with Prudent Operating Practice, may request. In the case of a test (other than an on-Load valve test) on a CDGU or Demand Side Unit, the procedure set out in the notice or specified in the oral request (as the case may be) shall include the level of Availability and the values for Technical Parameters which will be declared for the CDGU, Demand Side Unit, Aggregated Generating Unit or Interconnector for the period of the test in accordance with SDC1 and shall also include details of the Dispatch Instructions which the Generator or Demand Side Unit Operator wishes the TSO to issue to it for the purposes of the test which may be outside the Availability and Technical **Parameters** to be so declared.

OC11.13.3 (a) If the **TSO** refuses to conduct the test, either at all or in accordance with the procedure or at the time requested, the **TSO** and the **Generator**, **Demand Side**<u>Unit Operator</u> or other **User**, as the case may be, may discuss an alternative form of test or procedure for conducting the test or timing of the test to see whether agreement can be reached.

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- (b) If the **TSO** agrees to the test taking place, to the procedure for conducting the test and to the time of the test, either in response to the original request or following the discussion referred to in (a) above, it will notify the **Generator**, **Demand Side Unit Operator** or other **User**, as the case may be, accordingly.
- OC11.13.4 (a) The **TSO** may then, in accordance with the agreed (or otherwise settled) procedure and timing and if agreed by the **User**, send representatives to the **Power Station** or **User Site**, as the case may be, in order to witness the test.
 - (b) The **Generator**, **Demand Side Unit Operator** or other **User**, as the case may be, must, if agreed under (a) above, allow the **TSO** witnesses access to all relevant parts of its **Power Station** or **User Site** in order to witness such a test.
 - (c) The **TSO** shall take all reasonable steps to ensure that any representatives that it sends to the **Power Station** or **User Site** pursuant to (a) above comply at all times with all relevant safety requirements of the **Generator**, **Demand Side Unit Operator** or other **User** (as the case may be) of which they are made aware and with all reasonable directions of the **Generator** or **Demand Side Unit Operator** and (but subject to (b) above) any reasonable restrictions on access whilst at the **Power Station** or **User Site** in question.

OC11 PART B – APPENDIX

TABLE C

TABLE OF TOLERANCE BANDS FOR DISPATCH INSTRUCTIONS: DEMAND SIDE UNITS

DISPATCH CHARACTERISTIC	Tolerance Band
Real Time Validation	
Active Power (MW)	±5% of the Dispatch Instruction
Post event validation	
Demand Side Unit Energy Profile – (metered DemandMetered data + Demand Side Unit MW Response)	<pre> < ±5% of the Demand Side Unit Energy Profile</pre>
Demand Side Units not Dispatched but declared Available in an Availability Notice	
<u>Demand Side Unit Energy Profile</u> – metered <u>Demand</u>	\(\pm \) \text{5\% of the} \\ \(\text{Demand Side Unit} \) \(\text{Energy Profile} \)

SCHEDULING AND DISPATCH CODE NO.1

UNIT SCHEDULING

SDC1.3 <u>SCOPE</u>

SDC1.3.1 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) <u>Demand Side Unit Operators Dispatchable Demand Customers</u> in relation to their <u>Individual Demand Site Demand Side Units</u>; <u>and</u>
- (f) Dispatchable Demand Customers in relation to their 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.

SDC1.4.2 Additional Grid Code Availability Notice

The following items are required to be submitted by each **User** by no later than the EA1 **Gate Window Closure** each day, with the exception of **Aggregators** and **Dispatchable Demand CustomersDemand Side Unit Operators**, direct to the **TSO**, regardless of whether these have to be submitted under the **TSC**. The requirements in SDC1.4.1 in relation to data apply to this SDC1.4.2 as if repeated here.

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

Each <u>Demand Side Unit Operator Dispatchable Demand Customer</u> shall, subject to the exceptions in SDC1.4.3.5, use reasonable endeavours to ensure that it does not at any time declare the <u>Demand Side Unit MW Availability</u> and the <u>Demand Side Unit</u> characteristics of its <u>Demand Side Unit</u> at levels or values different from those that the <u>Demand Side Unit</u> could achieve at the relevant time. The <u>TSO</u> 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 <u>Demand Side Unit Operator Dispatchable Demand</u>

 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 **Planned Outage** or **Planned Maintenance 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 Operating Practice**, be deferred to a period of **Planned Outage** or **Planned Maintenance 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 <u>Demand Side Unit Operator Dispatchable</u>

 <u>Demand Customer</u> 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 or a Re-declaration 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) <u>Controllable WFPS:</u> If a Generator or, where relevant a Generator Aggregator, in respect of a Controllable WFPS, issues an Availability Notice or a Re-declaration increasing (from zero or otherwise) or decreasing the level of Availability from a specified time, such notice

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 or a Redeclaration 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 or a Re-declaration. 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 or a Redeclaration 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 or a Redeclaration.

SDC1.4.4.2 Additional Grid Code Characteristics Notice

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

- (a) Individual **CCGT Module** 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 Modules** within it.
- (b) <u>Different Fuels:</u> 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) [Not used]
- (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 **System Support Services Agreement** in place, the **System Support Services** which are **Available**.
- (g) The parameters listed in Appendix A Part 2 of SDC1.
- (h) [Not used]
- (i) In the case of Kilroot **Power Station**, Ballylumford **Power Station** and Coolkeeragh **Power Station**, which configuration referred to in PC.A3.3.12 the **Power Station** is operating at for each **Trading Period**.

Data submitted under SDC1.4.4.2 shall, in respect of two shifting limitations, **Governor Droop**, reserve capability and MVAr capability, be submitted to the **TSO** in such form as the **TSO** may reasonably notify to each User or in the form published on the **TSO** website from time to time.

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

Any changes to the MVAr capability shall be expressed as the maximum MVAr capability, for both leading and lagging MVAr, at the **Registered Capacity**.

SDC1.4.4.5 Commercial Offer Data

- (a) Each:
 - Generator:
 - Pumped Storage Generator;
 - Interconnector User;
 - <u>Demand Side Unit Operator</u> <u>Dispatchable Demand</u> <u>Customer</u>; 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 the **Gate Window Closures** for the corresponding **Trading Windows** in accordance with the **TSC**. If no

new Commercial Offer Data is submitted, the last accepted data will be used.

- (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 Window Closure for the corresponding Trading Window.
- (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**. If no new data is submitted, the last accepted data will be used.

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 (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

Part 1. Technical Parameters

Technical Parameter	CDGU				Control WFPS	DSU	DSU		Pump Storage Demand
	Thermal	Hydr/ En Ltd	Disp. WFPS	Pump S Gen	-	Individual Demand Site	Aggregate d Demand Sites		-
Block Load Cold	✓	✓	✓	✓	✓				
Block Load Hot	✓								
Block Load Warm	✓								
Demand Side Unit						✓	√		
Energy Profile									
Deload Break Point	√	√	✓	✓	✓				
Demand Side Unit MW						✓	✓		
Availability						_	_		
Demand Side Unit MW						✓	√		
Response Time						_	_		
De-Loading Rate 1	✓	✓	✓	✓	✓			1 1	
De-Loading Rate 2	✓	√	√	√	√				
Dwell Time Up 1	✓	✓	✓	✓	✓			1 1	
Dwell Time Up 2	√	√	✓	√	✓				
Dwell Time Up 3	√	√	√	√	√				
Dwell Time Down 1	√	√	√	√	√				
Dwell Time Down 2	· ✓	√	· ✓	✓	· ✓				
Dwell Time Down 3	· ✓	· /	· ✓	✓ ·	·			1	
Dwell Time Up Trigger	· /	· ·	· /	· /	· /				
Point 1	ľ	•	•	•	,				
Dwell Time Up Trigger	√	√	✓	√	√				
Point 2	ľ	•	•	•	,				
Dwell Time Up Trigger	✓	✓	✓	√	√				
Point 3	ľ	•	•	•	•				
Dwell Time Down	 	✓	✓	✓	√				
Trigger Point 1		•	•	•					
Dwell Time Down	 	√	✓	√	√				
Trigger Point 2	ľ	•	•	•	•				
Dwell Time Down	 	✓	✓	√	√				
Trigger Point 3	ľ	•	•	•	•				
00	 	/	✓	√	✓			1	
End Point of Start Up Period	*	•	"	•	•				
Energy Limit	1	✓	 					1 1	
Energy Limit Factor	1	V	 					1	
	+	V ✓	-					 	
Energy Limit Start	<u> </u>	V /						 	
Energy Limit Stop	1	•	1	√					√
Forecast Minimum				•					'
Output Profile	1		 			./		1	
Demand Side Unit MW			1			<u>≠</u>	<u>≠</u>		
Availability	-	-	✓	√		≠	≠	1	
Forecast Minimum		•	"	•		_	_		
Generation Profile	1		-			/	≠	1 1	
Initial Demand Side Unit			1			←	→		
MW Response Time									
Load Up Break Point Cold (1)	√	√	√	√	√				
Load Up Break Point	✓	✓	✓	✓	✓				

Technical Parameter	chnical Parameter CDGU				Control	DSU		Agg.	Pump	
Teemical Latameter					WFPS			Gen	Storage Demand	
	Thermal	Hydr/ En Ltd	Disp. WFPS	Pump S Gen	-	Individual Demand Site	Aggregate d Demand Sites		-	
Cold (2)						- SAUC	Sites			
Load Up Break Point Hot (1)	√									
Load Up Break Point Hot (2)	✓									
Load Up Break Point	√									
Warm (1) Load Up Break Point	√									
Warm (2)										
Loading Rate Cold (1)	✓	✓	✓	✓	✓					
Loading Rate Cold (2)	✓	✓	✓	✓	✓					
Loading Rate Cold (3)	✓	✓	✓	✓	✓					
Loading Rate Hot (1)	✓									
Loading Rate Hot (2)	√									
Loading Rate Hot (3)	√									
Loading Rate Warm (1)	✓									
Loading Rate Warm (2)	√									
Loading Rate Warm (3)	✓									
Max Ramp Down Rate						✓	✓			
(shall be a number										
greater than zero)						1				
Max Ramp Up Rate						✓	✓			
(shall be a number										
greater than zero)								1		
Maximum Down Time	✓	✓	√	✓	✓	√	✓			
Maximum Generation /	 	'	'	Y	*					
Registered Capacity	✓	✓	√	✓	✓	1				
Maximum On Time	· ·	· ·	•	✓	· ·			1		
Maximum Storage				•						
Capacity Minimum Down Time				-	-	√	√	 		
	√	✓	✓	✓	✓	· ·	•	 		
Minimum Generation	✓	1	V ✓	✓	V ✓	√		1		
Minimum off time Minimum on time	∨ ✓	✓ ✓	∨	✓	✓	<u> </u>	<u>*</u>	 		
Minimum Storage	 	+	_	✓	 	1			√√	
Capacity										
(Other relevant technical	√	✓	✓	✓	✓	1		✓		
parameters)										
Pumping capacity				√	1			1	✓	
Ramp Down Break Point	√	✓	✓	√	√			✓		
Ramp Down Break Point	√	✓	✓	√	√			✓		
Ramp Down Break Point 3	✓	✓	√	√	√			✓		
Ramp Down Break Point	√	√	√	√	√			√		
Ramp Down Rate 1	√	✓	√	✓	√	 		✓		
Ramp Down Rate 1 Ramp Down Rate 2	· ✓	· /	· ✓	✓	<i>'</i>	1		· /		
Ramp Down Rate 3	<u> </u>	▼	✓	✓	✓	1		→		
Ramp Down Rate 4	√	→	✓	✓	→	 		\ \ \		
Ramp Down Rate 5	→	· /	→	✓	→	 		\ \ \		
Kamp Down Kate 3	<u> </u>	•	· ·	<u> </u>	1 ,	I	1	1 '		

Technical Parameter	CDGU				Control WFPS	DSU	Agg. Gen	Pump Storage Demand	
	Thermal	Hydr/ En Ltd	Disp. WFPS	Pump S Gen	-	Individual Demand Site	Aggregate d Demand Sites		-
Ramp Up Break Point 1	✓	✓	✓	✓	✓			✓	
Ramp Up Break Point 2	✓	✓	✓	✓	✓			✓	
Ramp Up Break Point 3	✓	✓	✓	✓	✓			✓	
Ramp Up Break Point 4	✓	✓	✓	✓	✓			✓	
Ramp Up Rate 1	✓	✓	✓	✓	✓			✓	
Ramp Up Rate 2	✓	✓	✓	✓	✓			✓	
Ramp Up Rate 3	✓	✓	✓	✓	✓			✓	
Ramp Up Rate 4	✓	✓	✓	✓	✓			✓	
Ramp Up Rate 5	✓	✓	✓	✓	✓			✓	
Short Term	✓	✓	✓	✓	✓				
Maximisation Capability						ļ			
Soak Time Cold (1)	✓	✓	✓	✓	✓	ļ			
Soak Time Cold (2)	✓	✓	✓	✓	✓	ļ			
Soak Time Hot (1)	✓								
Soak Time Hot (2)	✓								
Soak Time Trigger Point	✓	✓	✓	✓	✓				
Cold (1) Soak Time Trigger Point	✓	✓	√	√	√				
Cold (2) Soak Time Trigger Point	√								
Hot (1)	·								
Soak Time Trigger Point Hot (2)	√								
Soak Time Trigger Point Warm (1)	√								
Soak Time Trigger Point Warm (2)	√								
Soak Time Warm (1)	✓								
Soak Time Warm (2)	✓								
Synchronous Start-Up Time Cold	√	√	√	√	✓				
Synchronous Start-Up Time Hot	√	√	✓	√	√				
Synchronous Start-Up Time Warm	√								
Target Reservoir Level Percentage				√					✓
Start of Restricted Range	✓	√	√	✓	√				
End of Restricted Range	✓	√	√	√	√				
Start of Restricted Range 2	✓	√	✓	✓	√				
End of Restricted Range 2	√	√	√	√	√				

SCHEDULING AND DISPATCH CODE NO. 2

CONTROL SCHEDULING AND DISPATCH

- 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 (but not Pumped Storage Demand) 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 Demand Side Unit Operators in respect of their Individual Demand Sites Demand Side Units; and
 - (e) Dispatchable Demand Customers in respect of their 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 <u>SCOPE</u>

- SDC2.3.1 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) <u>Demand Side Unit Operators Dispatchable Demand Customers</u> in relation to their <u>Aggregated Demand Sites Demand Side Units</u>; 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 Units 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 <u>Demand Side Unit Operator Dispatchable Demand Customer</u> and the <u>Pumped Storage Demand User</u> in respect of each of their <u>Demand Side Units</u> and <u>Pumped Storage Plant Demand</u> 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 Dispatchable Demand

<u>CustomerDemand Side Unit Operator</u>'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 Dispatching a Demand Side Unit to change Demand Side Unit MW Response 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 10 MW, the relevant part of the instruction would be, for example: "Time 1400 hours. Unit 1 to 10 MW" If the start time is 1415 hours, it would be, for example: SDC2.A.12.2 "Time 1400 hours. Unit 1 to 10 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.123 <u>Dispatching a Demand Side Unit to an Initial Demand Side Unit MW</u>
Response

SDC2.A.123.1 In this instance, fFor 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 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 Response** is to take place.

DATA REGISTRATION CODE

DRC3 SCOPE

The Users to which the DRC applies are:-

- (a) **Generators**;
- (b) **Pumped Storage Generators** in respect of **Pumped Storage Plant Demand**;
- (c) **Interconnector Users**;
- (d) **Interconnector Owners**;
- (e) Dispatchable Demand Customers Demand Side Unit Operators;
- (f) Generator Aggregators;
- (g) **Suppliers**; and
- (h) Large Demand Customers.

DRC6.2 The **Schedules** applicable to the following categories of **User** are as follows:

Generators with **Generating Plant**: Sched 1,2,3,5,7 & 8

Generators with **Independent**

Generating Plant: Sched 1,3,4,5,7 & 8

Generators with **Controllable WFPSs**

or **Dispatchable WFPSs**: Sched 1, 2, 3, 5, 7 & 8

All **Users** connected directly

to the **NI System**: Sched 5,7 & 8

All **Users** connected directly to the **NI System** with **Demand** (including **Generators** with respect to **Demand** at directly connected **Power Stations** and

Dispatchable Demand Customers Demand Side Unit Operators

in respect of **Demand Side Units**): Sched 2,5,6,7 & 8 **Suppliers:** Sched 4 & 7 **Interconnector Owners:** Sched 2 & 3

Interconnector Users: Sched 2 (Para 6 only)

SCHEDULE 2

DATA REGISTRATION CODE

GENERATION PLANNING PARAMETERS, RESPONSE CAPABILITY DATA AND SDC1 DATA

Part 1 of this schedule contains the **CDGU** and **Controllable WFPS** or **Dispatchable WFPS** Generation **Planning Parameters** required by the **TSO** to facilitate studies in **Operational Planning** timescales. It also contains the response capability data for **CDGUs**.

Part 2 of this schedule contains the data required with respect to **CDGUs**, **Pumped Storage Plant Demand**, **Interconnectors**, **Interconnector Units**, **Demand Side Units**, **Aggregated Generating Units** and/or **Controllable WFPS** to be supplied by **Users** by **Gate Closure** pursuant to SDC1. Many of these parameters are the same as those required in Part 1, but the data supplied under Part 1 will not be used for real time operation.

Power Station:	
	
Part 1 - Generation Planning Parameters	

DATA DESCRIPTION	UNITS	DATA CAT.	GENERATING UNIT OR POWER STATION DAT						ON DAT	A
			G1	G2	G3	G4	G5	G6	G7	STN
Generation Planning Parameters for CDGUs										
The minimum notice required to Synchronise a Generating Unit from De-synchronisation	Mins	OC2								-
The minimum time between Synchronising different Generating Units in a Power Station	Mins	OC2								
The minimum block Load requirements on Synchronising		OC2								
Maximum Generating Unit Loading rates from Synchronising for the following conditions:-										
hot	MW/ min	OC2								-
Warm	MW/ min	OC2								-
cold	MW/ min	OC2								-
Minimum time off Load		OC2								
Maximum Generating Unit Deloading rates for the following conditions:-										
Hot	MW/ min	OC2								-
warm	MW/ min	OC2								-
cold	MW/ min	OC2								-
Maximum allowable starts per year:-										
hot		OC2								-
warm		OC2								-
cold		OC2								
Generation Planning Parameters for Controllable WFPSs or Dispatchable WFPSs		14								

DATA DESCRIPTION	UNITS	DATA CAT.	GENERATING UNIT OR POWER STATION DATA					A		
			G1	G2	G3	G4	G5	G6	G7	STN
The minimum time to connect/reconnect the Controllable WFPS or Dispatchable WFPS (or part thereof) to the NI System following a Dispatch instruction		OC2								
The minimum time to connect/reconnect the Controllable WFPS or Dispatchable WFPS (or part thereof) to the NI System automatically following a trip of the Controllable WFPS or Dispatchable WFPS (or part thereof) that does not cause damage to the Controllable WFPS or Dispatchable WFPS (or part thereof)		OC2								
The maximum rate at which Load can be increased following connection of the Controllable WFPS or Dispatchable WFPS (or part thereof) to the NI System		OC2								
The minimum fault level or voltage at the Connection Point below which the Controllable WFPS or Dispatchable WFPS cannot be connected		OC2								
Operating Reserve to Frequency change										-
Operating Reserve to Frequency change to be given in a tabular form, describing Primary Operating Reserve, Secondary Operating Reserve, Tertiary Operating Reserve band 1, Tertiary Operating Reserve band 2 at different levels of Load, ranging from Minimum Generation to Registered Capacity	Table	OC3								
Governor Droop Characteristics										
Governor Droop										
<u>Unit Control Options</u>	%	OC3								
Maximum Droop										
Normal Droop	%	OC3								
Minimum Droop	%	OC3								
	%	OC3								

Part 2: Availability, Technical Parameters Data and other data required under SDC1

The following information is required daily by not later than **Gate Closure** to cover the next following **Trading Day** in relation to each **CDGU**, **Pumped Storage Plant Demand**, **Interconnector**, **Interconnector Units** (only in relation to paragraph 6 below), **Demand Side Unit**, **Aggregated Generating Unit** and/or **Controllable WFPS**. In so far as the **Availability** data is not so submitted, the data to have been submitted in respect of the last **Trading Period** of the current **Trading Day** will be deemed to have been resubmitted. Any further revisions to this data are required to be notified to the **TSO** when they become known.

1 Availability

Each User must notify the TSO by means of an Availability Notice of the Availability of each of its CDGUs (and in the case of a CCGT Installation, the CCGT Modules within it), Pumped Storage Plant Demand, Interconnectors, Demand Side Units, Aggregated Generating Units and/or Controllable WFPS.

The **Availability Notice** shall state the **Availability** of the relevant **CDGU** for each **Trading Period** in the following **Trading Day** (subject to revision under SDC1.4.5.1 (a)).

In addition, Users other than Aggregators and Dispatchable Demand Customers Demand Side Unit Operators must submit an Additional Grid Code Availability Notice under SDC1.4.2 by no later than Gate Closure each day. The information contained in an Additional Grid Code Availability Notice broadly relates to a CDGU's different Availabilities depending on which fuel a CDGU is firing on (for a CDGU that is capable of firing on different fuels), the Availability of each CCGT Module within a CCGT Installation and to the various long-term constraints (such as fuel and emissions constraints) which can affect the Availability of a CDGU.

6. Commercial Offer Data

Each Generator, Pumped Storage Generator (in respect of Pumped Storage Plant Demand), Interconnector User (in respect of an Interconnector Unit), Dispatchable Demand CustomerDemand Side Unit Operator and Generator Aggregator shall submit Commercial Offer Data to the TSO (either directly or by means of an Intermediary) by Gate Closure for the following Trading Day in accordance with the TSC. Specific requirements for Energy Limited Generating Units and Pumped Storage Plants are listed in SDC1.4.4.5.

SCHEDULE 8

DATA REGISTRATION CODE

DATA SUPPLIED BY THE TSO TO USERS

GRID CODE PROVISION	DATA DESCRIPTION
	Site Responsibility Schedules/Ownership Diagrams
CC9.1.3/CC9.1.4	The TSO shall, in respect of each connection to the NI System for which a Connection Agreement is required and those covered by Regulation 26 and Parts 1 and 2 of Schedule 3 of the Electricity Supply Regulations (NI) 1991, prepare:-
	(i) a Site Responsibility Schedule; and
	(ii) an Ownership Diagram.
	Operational Planning
OC2.6.2(c)(i)	The TSO shall, by the end of September in each calendar year, provide each Generator in writing with a Provisional Outage Programme showing the CDGUs, Controllable WFPSs or Dispatchable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment it may potentially withdraw from service during each week of Years 2 and 3 for a Planned Outage.
OC2.6.3(c)(i)/ OC2.6.3(f)(i)	The TSO shall, by the end of June in Year 1, provide each Generator in writing with a draft Final Outage Programme showing the CDGUs, Controllable WFPSs or Dispatchable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment it may potentially withdraw from service during each week of Year 1 for a Planned Outage and shall, by the end of September, notify any further changes by the issue of a Final Outage Programme.
OC2.6.7.3	The TSO's express formal permission must be obtained by a Generator prior to withdrawing a CDGU, Controllable WFPSs or Dispatchable WFPSs (or Generating Unit(s) therein) or item of Power Station Equipment for a Planned Outage, which permission shall specify:-
	(i) the identity of the CDGU, Controllable WFPSs or Dispatchable WFPSs (or Generating Unit(s) therein) and/or Power Station Equipment and MW concerned;
	(ii) the duration of the Outage ; and
	(iii) the Start Date and Start Time.
0C2.7.1	If there is a deficit indicated in any week, the TSO and the Other TSO shall jointly issue a System Capacity Shortfall Warning.
OC2.7.2	If there is a deficit indicated in any day, the TSO and the Other TSO shall jointly issue a System Capacity Shortfall Warning.
OC2.8.2	The TSO will, by the end of September in each calendar year, notify each Generator in writing of those aspects of the draft NI System Outage plan which may affect such Generator operationally, including proposed start dates and end dates of relevant NI System Outages . The TSO will also inform each Large Demand Customer with a Demand greater than 10MW of the aspects of the plan which may affect it.
OC2.8.5(a)(ii)	The TSO will, by 11.00 hours each Thursday during the Programming Phase, notify each Generator in writing of those aspects of the NI System Outage plan which may affect it operationally, including proposed start dates and end dates of relevant NI System Outages. The TSO will also inform each Large Demand Customer with a Demand greater than 10MW of the aspects of the plan which may affect it.
	Indicative Operations Schedule
SDC1.4.8.9	The TSO will issue the Indicative Operation Schedule each day to each Generator with CDGUs, Controllable WFPSs or Dispatchable WFPSs, each Pumped Storage Generator with respect to their Pumped Storage Plant Demand, each Interconnector Owner with regard to their Interconnectors, each Dispatchable Demand Customer Demand Side Unit Operator in relation to their Demand Side Units, provided that all the necessary information from these Users was made available by not later than Gate Closure.
	Initial Planning Data
PC6.4.1	Initial planning data to be submitted on the TSO website including the following information: (i) User's name (legal and project name);

GRID CODE PROVISION	DATA DESCRIPTION
	(ii) User's contact details;
	(iii) User's date of completed application;
	(iv) Status of application, for example in progress or issued;
	(v) Specific location, including grid co-ordinates; and
	(vi) The capacity applied for the project; and
	(vii) Interacting group where applicable.