

SCHEDULING AND DISPATCH CODE NO. 2

CONTROL SCHEDULING AND DISPATCH

[Note: ~~Please note that this~~ This SDC2 has been drafted on the assumption that Active and Reactive Power are dispatched at Generator Terminals. Consideration is currently being given as to whether to dispatch in exported terms in the future. Should this decision be taken, this SDC2 will be revised].

SDC2.1 INTRODUCTION

SDC2.1.1 **SEM** Provisions

- (a) This Scheduling and Dispatch Code No. 2 ("SDC2") forms part of the **Common Sections** of the **Grid Code**. ~~The Common Sections~~ are those parts of the **Grid Code** which are under common governance in both the **Grid Code** and the **Other Grid Code**.
- (b) The form of this SDC2 is the same as the SDC2 in ~~the the~~ **Other Grid Code** except for references to relevant power systems and related terms, and except for those provisions which appear in italic font. The provisions in italic font only apply in relation to this **Grid Code** and relate to matters which are not appropriate to include in both codes.
- (c) This SDC2 needs to work in conjunction with a number of other documents, including the **Trading and Settlement Code ("TSC")**. The provisions of the **Grid Code** and the **Other Grid Code** will take precedence over the **TSC**. The **TSC** is the document under which the principal elements of the market for electricity operate. Every **User** which trades in electricity must be a party to the **TSC**. The **Single Market Operator** is a party to the **TSC**, as is the **TSO** and the **Other TSO**.
- (d) The obligation to submit data in relation to some of the information required to be provided to the **TSO** by this SDC2 may be fulfilled by **Users** where such information submitted under the **TSC** and is then provided to the **TSO** by the **Single Market Operator** under the provisions of the **TSC**, as further provided in this SDC2. The **TSO** may require **Users** to verify or update data received by it via the **Single Market Operator** in that way.
- (e) Further provisions dealing with the **Common Sections** are contained in the **General Conditions**.

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

- (a) **Generators** in respect of their **CDGUs**;

[Note: Please note that unless otherwise specified in SDC2, CDGUs include CCGT Installations, Pumped Storage Generators in respect of

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their Pumped Storage generation (but not Demand) and Dispatchable WFPSs.]

[Note: Please note that Controllable WFPSs are not ~~currently~~ subject to Dispatch Instructions. ~~The treatment of Controllable WFPSs in the SDCs is still being considered.]~~

- (b) **Pumped Storage Generators** in respect of their **Pumped Storage Plant Demand**;
- (c) ~~[Interconnector Import Users]~~ in respect of their ~~[Interconnector Import Units/ electricity to be transferred onto the [Transmission] System]; and Units;~~ ***[Note: Please note that the issue of references to interconnectors generally is still being considered.]***
- (d) **Dispatchable Demand Customers** in respect of their **Demand Side Units**;
- (e) **Generator Aggregators** in respect of the **Generating Units** which they represent; and
- (f) **Demand Side Unit Aggregators** in respect of the **Demand Side Units** which they represent.

[Note: Aggregators are intended to have a different role to that of an Intermediary. As opposed to an Intermediary, which would often be used for convenience purposes, Aggregators are expected to play an active role in the SDCs by sending notices under SDC1 on behalf the units they represent and by receiving Dispatch Instructions under SDC2 on behalf of the units they represent.]

SDC2.2

OBJECTIVE

The procedure for the issue of **Dispatch Instructions** by the **TSO**, is intended to enable (as far as possible) the **TSO** to match continuously **CDGU, Demand Side Unit** ~~and/or [Interconnector Import Unit] output~~ Unit and/or the aggregated output of Generating Units represented by a Generator Aggregator to **[Transmission] System Demand**, by utilising the **Merit Order** derived pursuant to SDC1 and the factors to be taken into account listed there and by taking into account any non-**CGDU** output together with an appropriate margin of reserve, whilst maintaining (so far as possible) the integrity of the **[Transmission] System** together with the security and quality of supply.

SDC2.3

SCOPE

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

- (a) **Generators** with regard to their **CDGUs**;

[Note: As explained above, please note that unless otherwise specified in SDC2, CDGUs include CCGT Installations, Pumped

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Storage Generators in respect of their Pumped Storage generation (but not Demand) and Dispatchable WFPSs-]

- (b) **Pumped Storage Generators** with regard to their **Pumped Storage Plant Demand**;
- (c) ~~{Interconnector Import Users}~~ with regard to their ~~{Interconnector Import Units/electricity to be transferred onto the [Transmission] System}; and Units;~~ **Units;** ~~{Note: Please note that the manner in which exported electricity will be dealt with and how this will impact on SDC2 is currently being considered.}~~
- (d) **Dispatchable Demand Customers** in relation to their **Demand Side Units**;
- (e) **Generator Aggregators in respect of the Generating Units which they represent; and**
- (f) **Demand Side Unit Aggregator in respect of the Demand Side Units which they represent.**

SDC2.4 PROCEDURE

SDC2.4.1 Information Used

SDC2.4.1.1 The information which the TSO shall use in assessing which **CDGU, Demand Side Unit, ~~{Interconnector Import Unit} and/or, Pumped Storage Plant Demand, Generator Aggregator and/or Demand Side Unit Aggregator~~** to Dispatch, will be :

- (a) the **Availability Notices**;
- (b) the **Merit Order** as derived under SDC1 ~~and~~;
- (c) the other factors to be taken into account ~~which are submitted to the TSO under SDC1 (subject to any subsequent revisions to the data under SDC1 and SDC2) and which are used by the TSO to compile the Indicative Operations Schedule, which includes [Generation Scheduling and Dispatch Parameters/Operating Characteristics/Contracted Parameters];~~
- (d) **[Technical Parameters]**;
- (e) **Additional Grid Code Characteristics Notices**;
- (f) **Reserve Characteristics**; and
- (g) **Generation Other Relevant Data**

in respect of that **CDGU, Demand Side Unit, ~~{Interconnector Import Unit} and/or, Pumped Storage Plant Demand, Generator Aggregator and Demand~~**

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Side Unit Aggregator. ~~—[Note: Please note that further consideration is being given to the wording of the above paragraph.]~~

SDC2.4.1.2 Additional factors which the TSO will, ~~however,~~ also take into account are :

- ~~(a) those Generators who have not complied [and/or no longer complying] with Dispatch Instructions or Special Actions, [requests which the TSO has (in its absolute discretion) granted for the early Synchronisation of a CDGU [Note: and others?]] to the [Transmission] System, requests which the TSO has made and to which the Generator has agreed for the early or late Synchronisation of a CDGU to the [Transmission] System and variation between forecast and actual Demand, as these will have an effect on Dispatch.] [Note: Please note that consideration is currently being given as to whether a reference to “~~
(a) those Generators who have not complied with Dispatch Instructions or Special Actions, requests which the TSO has made and to which the Generator has agreed for the early or late Synchronisation of a CDGU to the System and variation between forecast and actual Demand, as these will have an effect on Dispatch.] [Note: Please note that consideration is currently being given as to whether a reference to “
- ~~(b) real time variation requests” could replace the words in square brackets above.] The TSO will also take into account ; and~~
(b) real time variation requests” could replace the words in square brackets above.] The TSO will also take into account ; and
- ~~(c) the need to Dispatch CDGUs, Demand Side UnitUnits, [Interconnector Import Unit] and/or Units, Pumped Storage Plant Demand for Testing purposes.~~
(c) the need to Dispatch CDGUs, Demand Side UnitUnits, [Interconnector Import Unit] and/or Units, Pumped Storage Plant Demand for Testing purposes.

SDC2.4.1.3 Tie-Break Situations

~~[Note: Please note that further consideration is being given to the wording of this paragraph.]~~ In the event of two or more CDGUs, Demand Side Units, ~~[Interconnector Import Units] and/or~~ Pumped Storage Plant Demands, Generator Aggregators and/or Demand Side Unit Aggregators having the same ~~[Price Set/Indicative Price Bids]~~ and the TSO not being able to differentiate on the basis of the factors identified in SDC1.4.5.2, SDC1.4.5.3 and SDC1.4.5.4 (“~~Tie-Break Situation~~”), 1.4.5.4, then the TSO will ~~apply the following procedure when selecting which one to Dispatch:~~ select first for Dispatch the one which in the TSO’s reasonable judgment is most appropriate in all the circumstances.

- ~~(a) CDGUs, Demand Side Units, [Interconnector Import Units] and/or Pumped Storage Plant Demand with Priority Dispatch for their entire capacity shall take precedence over Units not so identified;~~
- ~~(b) within the set of CDGUs, Demand Side Units, [Interconnector Import Units] and/or Pumped Storage Plant Demand with Priority Dispatch for their entire capacity, the resolution of any Tie-Break Situation will be [random]; and~~
- ~~(c) within the remaining set of CDGUs, Demand Side Units, [Interconnector Import Units] and/or Pumped Storage Plant Demand without Priority Dispatch for their entire capacity, the resolution of any Tie-Break Situation will be [random].]~~

SDC2.4.1.4 *In this SDC2, where the provisions relating to CCGTs differ from the explicit requirements contained in a Generating Unit Agreement, a Power Station*

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Agreement and/or a System Support Services Agreement in Northern Ireland, the provisions of that agreement will prevail.

[Note: Please note that the above paragraph applies to Northern Ireland only.] ~~**[Note: Please note that the provisions dealing with the re-optimisation of schedule(s) are to be dealt with in SDC1.]**~~

SDC2.4.2 **Dispatch Instructions**

SDC2.4.2.1 **Introduction**

Dispatch Instructions relating to the **Trading Day** will normally be issued at any time during the period beginning immediately after the issue of the first **Indicative Operations Schedule** in respect of that **Trading Day**. The **TSO** may, however, at its discretion, issue **Dispatch Instructions** in relation to a **CDGU**, **Demand Side Unit**, ~~**[Interconnector Import Unit]**~~ and/or ~~**[Pumped Storage Plant Demand]**~~, **Generator Aggregator and/or Demand Side Unit Aggregator** prior to the issue of an **Indicative Operations Schedule** which includes that **CDGU**, **Demand Side Unit**, ~~**[Interconnector Import Unit]**~~ and/or ~~**[Pumped Storage Plant Demand]**~~, **Generator Aggregator and/or Demand Side Unit Aggregator**.

*[Note: This may occur, for example, where the unit has a long run-up time which exceeds the time remaining between when the **Indicative Operations Schedule** is issued and the time the ~~time~~ unit must be at full load.]*

SDC2.4.2.2 **Issue of Dispatch Instructions**

~~**[Note: Please note that this section, as the rest of the SDCs, has been drafted with the objectives of the All Island Market in mind. However, as each TSO will issue Dispatch Instructions in relation to their own jurisdiction, reference has only been made to "the TSO" in this SDC2.4.2.2.]**~~

- (a) The **TSO** will issue **Dispatch Instructions** direct to the **Generator** for the **Dispatch** of each **CDGU**.
- (b) The **TSO** will ~~also~~ **issue Dispatch Instructions direct to the Generator Aggregator for an aggregated Dispatch of its Generating Units.**
- (c) **The TSO will** issue **Dispatch Instructions** direct to **Demand Users** and **Pumped Storage Demand Users** in respect of their **Demand Side Units** and **Pumped Storage Plant Demand** respectively.
- (d) **The TSO will also issue Dispatch Instructions direct to the Demand Side Unit Aggregator in respect of its Demand Side Units, taken as an aggregation.**
- (e) The **TSO** may issue **Dispatch Instructions** for any **CDGU**, **Demand Side Unit**, ~~**[Interconnector Import Unit]**~~ and/or ~~**[Pumped Storage Plant Demand]**~~, **Generator Aggregator, and/or Demand Side Unit Aggregator** which has been declared **Available** in an **Availability Notice** even if that

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CDGU, Demand Side Unit, ~~[Interconnector Import Unit]~~ and/or, Pumped Storage Plant Demand, Generator Aggregator and/or Demand Side Unit Aggregator was not included in an Indicative Operations Schedule.

SDC2.4.2.3 Scope of Dispatch Instructions for CDGUs

In addition to instructions relating to the Dispatch of Active Power, Dispatch Instructions to ~~[Generators]~~ (unless otherwise specified by the TSO at the time of giving the Dispatch Instruction) shall implicitly be deemed to include a requirement to provide an automatic instruction of Spinning Reserve Capacity, the level of which is to be provided in accordance with declared Spinning Reserve Availability under SDC1 and/or the Sustained Load Diagram set out in Schedule 8 of the relevant Generating Unit Agreement (or in the System Support Services Agreement, as the case may be), and submitted pursuant to the ~~Planning Code (PC)~~ in PC.

[Note: the above paragraph applies to Northern Ireland only.]

In addition to instructions relating to the Dispatch of Active Power, Dispatch Instructions (unless otherwise specified by the TSO at the time of giving the Dispatch Instructions) shall be deemed to include an automatic instruction of Operating Reserve, the level of which is to be provided in accordance with the Declared Operating Reserve Availability under SDC1 and the Ancillary Services Agreement.

[Note: Please note that the above paragraph applies to the Republic of Ireland only.]

SDC2.4.2.4 In addition to instructions relating to the Dispatch of Active Power, Dispatch Instructions in relation to CDGUs and, where appropriate, Demand Side Units and/or Pumped Storage Plant Demand may include:

- (a) [a Dispatch Instruction to provide a [System Support Service in Northern Ireland and Ancillary Service in the Republic of Ireland]];

~~[Note: Please note that the use of a common term to refer to both System Support Service in Northern Ireland and Ancillary Service in the Republic of Ireland is currently being considered.]~~

- (b) (i) **Mvars**: the individual Reactive Power output from CDGUs at the Generator Terminals or voltage levels (at instructed MW level) at the Connection Point which will be maintained by the CDGU.

~~[Note: Please note that further consideration is being given to the treatment of Mvars in relation to the sections of this SDC2 which relate to Dispatch Instructions for Mvars are being considered further and may be reorganised in future iterations.]~~

- (ii) The issue of Dispatch Instructions for Active Power at the Generator Terminals will be made with due regard to any resulting change in Reactive Power capability and may include instruction for

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reduction in **Active Power** generation to increase **Reactive Power** capability.

- (iii) In the event of a sudden change in ~~[Transmission]~~ **System Voltage** [Note: This refers to transmission and distribution system voltage], a **Generator** must not take any action in respect of any of its **CDGUs** to override automatic **Mvar** response unless instructed otherwise by the **TSO** or unless immediate action is necessary to comply with stability limits. A **Generator** may take such action as is in its reasonable opinion necessary to avoid an imminent risk of injury to persons or material damage to property (including the **CDGU**).

(iv) Further provisions in relation to Dispatch Instructions regarding Mvars in the Republic of Ireland are set out in Appendix B to this SDC2.

- (c) Fuels: ~~the [Declared Fuel]~~ **Fuels** to be used by the **Generator** in operating the **CDGU**. The **Generator** shall only be permitted to change ~~the [Declared Fuel]~~ **Fuels** with the **TSO's** prior consent.

[Note: ~~Please note that the~~ The wording of the above paragraph is subject to the resolution of ~~outstanding~~ the dual fuel issues ~~dispute~~ between NIE PPB and Ofreg.]

- (d) Intertripping: an instruction to switch into or out of service a "System to **CDGU**" Intertripping Scheme;
- (e) Time to Synchronise/react: a time to **Synchronise** or **de-Synchronise** **CDGUs** and, where appropriate **Demand Side Units** and **Pumped Storage Plants** ~~[in relation to Pumped Storage Plant Demand]~~ and time to react for Demand Side Units;
- (f) Tap Positions: an instruction for a change in **Generator Transformer** tap positions;
- (g) Synchronous Compensation: an instruction, where contracted, for a **CDGU** to operate in **Synchronous Compensation** mode;
- (h) Testing etc: an instruction in relation to the carrying out of **Testing, Monitoring** or **Investigations** as required under OC11 of the **SONI Grid Code** / OC10 of the **EirGrid Grid Code**, or testing at the request of a **User** under OC11.8 of the **SONI Grid Code** / OC8.5 of the **EirGrid Grid Code**, or **Commissioning/Acceptance Testing** under the CC;
- (i) [Transmission] System Tests: an instruction in relation to the carrying out of a ~~[Transmission]~~ **System Test** as required under OC10 of the **SONI Grid Code** / OC 8.4 of the **EirGrid Grid Code**;
- (j) Maximisation: in the case of a ~~[CDGU]~~ which has registered to provide **Maximisation** an instruction requiring it to generate at a level in excess of its **Availability** but not exceeding its **Maximisation Capability** which may

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only be given if, at the time of issue of the instruction, the ~~CDGU or CCGT Installation~~ is Dispatched to an output equal to its Availability and provided that the limit on the number of hours for which such instructions may be given in any year, as set out in any arrangement relating to the relevant agreement is not thereby exceeded. Such an instruction shall be identified as a ["Maximisation Instruction"]. When the TSO gives a Dispatch Instruction which is in excess of the Availability of the [CDGU] which is not designated a "Maximisation Instruction", the Generator must inform the TSO immediately that the Dispatch Instruction is so in excess in order that the TSO can so designate the Dispatch Instruction as a Maximisation Instruction or withdraw the instruction. The Generator shall not then be obliged to comply with the Dispatch Instruction unless and until the TSO notifies it that the instruction is designated a "Maximisation Instruction"; ~~[Note: Please note that further consideration is being given to the wording of paragraph (j) above and as to how this paragraph ties in with the TSC.]~~

- (k) **Cycle Operating Mode:** in the case of a CCGT Installation, an instruction specifying the Cycle Operating Mode. ~~[The TSO may also issue Dispatch Instructions to a Generator to change the Operating Mode of any CDGU and an instruction to Dispatch a CCGT Installation on Open Cycle Mode.~~ The Generator must then ensure that the ~~CDGU~~ CCGT Installation achieves the new Dispatched Operating Mode, without undue delay, in accordance with the ~~Centrally Dispatched Generating Units Declared~~ CCGT Installation's declared Availability and ~~Declared Operating Characteristics~~ declared [Technical Parameters]. Dispatch Instructions in relation to Operating Modes issued by the TSO shall reflect the applicable Availability Notice and ~~Operating Characteristics~~ [Technical Parameters]; ~~[Note: Please note that the treatment of Cycle Operating Mode in relation to Dispatch Instructions is to be considered further.]~~

- (l) **Pumped Storage:** mode changes for Pumped Storage Plants ~~-, where contracted,~~ in relation to Pumped Storage Plant Demand].

~~[Note: #Please note that it is being considered whether to put more detail in here.]~~ include detail on dispatch instructions to be issued to Pumped Storage Plant for auto fast load windown or on trips.]

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Form of Instruction

- SDC2.4.2.5 (a) ~~Instructions may normally be given via Electronic Interface and but can be given by telephone, by facsimile transmission or by radio telephone.~~ In the case of an **Intertripping Scheme** ~~or~~, a **Low Frequency Relay** or any other automatic Primary Frequency Control scheme (excluding governor response) initiated response from a **CDGU**, **Demand Side Unit**, and/or **Pumped Storage Plant** ~~in relation to Pumped Storage Plant Demand~~, the instruction will be given at the effective time which is consistent with the time at which the **Low Frequency Relay** operation occurred (this **Dispatch Instruction** will be issued retrospectively).

[Note: Radio telephones are used in Northern Ireland only.]

~~*[Note: Please note that further consideration is being given to the above paragraph.]*~~

- (b) ~~The reduction by a Generator of the output of one of its CDGUs under SDC3.6.1 [Note: Please note that further consideration is being given to references to SDC 3 of 3.6.1 in the SONI Grid Code.] / OC4.3 in the EirGrid Grid Code [shall be deemed to have followed a Dispatch Instruction issued by the TSO.] [Note: Please note that the issue above will be addressed once the issue regarding the need for an SDC3 section has been resolved.]~~

- (c) (i) In the event of a temporary loss of the TSO's Control Centre as described under ~~OC7 of the SONI Grid Code / OC9 of the EirGrid Grid Code~~, each **Generator** shall, subject to the provisions of SDC2.4.2.5(c)(ii), continue to operate its **CDGUs** in accordance with the last **Dispatch Instructions** to have been issued by the **TSO** but shall use all reasonable endeavours to maintain **[Transmission] System Frequency** at the ~~target Frequency~~ of [50Hz] plus or minus [0.05Hz] by monitoring **Frequency** and increasing/decreasing the output of its **CDGUs** as necessary until such time as new **Dispatch Instructions** are received from the **TSO**.

~~*[Note: Please note that the issue of target Frequency and how this is being utilised is to be considered further by the TSOs.]*~~

~~*[Note: Please note that frequency levels are being checked.]*~~

- (ii) When operating its **CDGUs** in the circumstances described under SDC2.4.2.5(c)(i), a **Generator** shall never be required to **Dispatch** these units in a manner in which the **TSO** would not be entitled to require such units to be **Dispatched** by means of a **Dispatch Instruction** issued in accordance with this SDC2.
- (iii) ~~The De-Synchronisation of a CDGU following the operation of an Intertripping Scheme selected by the TSO shall be deemed to have happened as a result of a Dispatch Instruction issued by the TSO. [Note: This paragraph is to be considered further.]~~

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[Note: Please note that the above paragraph has been worded to fit with the wording of OC7 of the SONI Grid Code, which deals with Dispatch Instructions following a temporary Control Centre loss.]

SDC2.4.2.6 (a) **Dispatch Instructions** given via **Electronic Interface**, ~~for~~ by telephone ~~or~~, by facsimile transmission or by radio telephone **[Note: radio telephones are only used in Northern Ireland.]** will generally indicate the target **MW** (at ~~target~~ **Frequency**) to be provided at the **Generator Terminals** (or where provided in the relevant **Connection Agreement**, on a sent out basis) to be achieved in accordance with the respective **CDGU's** **[GSDPs/Operating—Characteristics/Contracted Technical Parameters]** and/or **Additional Grid Code Characteristics Notices** provided under SDC1 or this SDC2, or such rate within those parameters as is specified by the **TSO** in the **Dispatch Instructions**. ~~[Note: Please note that the way in which to deal with Demand here is currently being considered.]~~

[Note: Please note that references to Demand are being considered further.]

(b) ~~Dispatch Instructions~~ which are given at the effective time which is consistent with the time at which a **Low Frequency Relay** operation occurred will be deemed to indicate the target **MW** (at ~~target~~ **Frequency**), which may either be at **Full Load** or at some lower output (as previously specified by the **TSO**), to be provided at the **Generator Terminals** which reflects and is in accordance with the **CDGU's** gas turbine's **[GSDPs/Operating Characteristics/Contracted Technical Parameters]** and/or **Additional Grid Code Characteristics Notice** data given under (or as revised in accordance with) SDC1 or this SDC2.]

~~[Note: Please note that the wording of the above paragraph is to be considered further.]~~

SDC2.4.2.7 ~~To ensure that there is no misunderstanding with respect to Dispatch Instruction given by the TSO to a Generator. To aid clarity, the form of and terms to be used by the TSO in issuing instructions together with their meanings are set out in the Appendices~~ Appendix A to this SDC2.

SDC2.4.2.8 (a) Subject only to SDC2.4.2.9 and as provided below in this SDC2.4.2.8, **Dispatch Instructions** will not be inconsistent with the **Availability** and/or **[GSDPs/Operating—Characteristics/Contracted Technical Parameters]** and/or **Additional Grid Code Characteristics Notice** data and **Generation Other Relevant Data** notified to the **TSO** under SDC1 (and any revisions under SDC1 or this SDC2 to that data).

(b) A new **Dispatch Instruction** may be subsequently given (including an instruction for a **Cancelled Start**) at any time.

(c) **Dispatch Instructions** may however be inconsistent with the **Availability** and/or **[GSDPs/Operating—Characteristics/Contracted Technical Parameters]** and/or **Additional Grid Code Characteristics Notice** data and/or **Generation Other Relevant Data** so notified to the **TSO** for the purposes of carrying out a test at the request of the relevant **Generator**

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under OC11.8 of the **SONI Grid Code** / OC8.5 of the **EirGrid Grid Code** or a ~~[Transmission]~~ **System Test** at the request of the relevant **Generator** under OC10.4 of the **SONI Grid Code**/ OC8.6 of the **EirGrid Grid Code**, to the extent that such **Dispatch Instructions** are consistent with the procedure agreed (or otherwise determined) for conducting the test or ~~[Transmission]~~ **System Test** (as the case may be).

- (d) For the avoidance of doubt, any **Dispatch Instructions** issued by the **TSO** for the purposes of carrying out a test at the request of the relevant **Generator** under OC11.8 of the **SONI Grid Code** / OC8.5 of the **EirGrid Grid Code** or a ~~[Transmission]~~ **System Test** at the request of the relevant **Generator** under OC10.4 of the **SONI Grid Code** / OC8.6 of the **EirGrid Grid Code** shall not be deemed to be **Dispatch Instructions** given pursuant to SDC2.4.2.9.

[Note: Please note that SDC2.4.2.8 is currently subject to the consideration of the issue of Starts.]

SDC2.4.2.9 (a) To preserve ~~[Transmission]~~ **System** integrity under emergency circumstances where *Licence Standards in Northern Ireland or Planning Standards in PC.7 of the EirGrid Grid Code in the Republic of Ireland* cannot be met the **TSO** may, however, issue **Dispatch Instructions** to change **CDGU**, **Demand Side Unit**, ~~[Interconnector Import Unit]~~ and/or **Pumped Storage Plant Demand** output even when this is outside parameters so registered or so amended. This may, for example, be an instruction to trip a **CDGU** or to **Part Load** a **CDGU**. The instruction will be stated by the **TSO** to be one in relation to emergency circumstances under SDC2.4.2.9.

(b) In the case of a **Generator** with ~~existing~~ **Existing** **CDGUs**, a **Generator** may refuse to comply or continue to comply with instructions referred to in this **SDC2.4.2.9** but only:

- (i) in order to avoid, in the **Generator's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **CDGU**); or
- (ii) where in the **Generator's** reasonable opinion there is a significant risk that to comply with such instruction would result in damage or deterioration to **Plant** and/or **Apparatus** and/or costs, expenses or losses, in either case for which the **Generator** reasonably considers there to be no or an insufficient contractual commitment by the **TSO** to compensate the **Generator**.

SDC2.4.2.10 Communication with Users

- (a) **Dispatch Instructions** whether given via ~~Electronic Interface~~ ~~or~~ **Electronic Interface**, by telephone ~~or~~, **by** facsimile transmission or by radio telephone **[Note: radio telephones are only used in Northern Ireland.]** must be formally acknowledged immediately by the **User** at the ~~Generating Control Point~~ **Control Facility by Electronic Interface or, with the TSO's prior consent**, by telephone, ~~[by return facsimile transmission];~~ or by radio

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telephone given in the manner agreed between the **User** and the **TSO** or a reason must be given as soon as possible for non-acceptance, which may (subject to SDC2.4.2.9) only be to avoid, in the **User's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **CDGU**) or because they are not in accordance with the applicable **Availability Notice**, or [~~GSDPs/ Operating Characteristics/ Contracted~~**Technical Parameters**], or **Additional Grid Code Characteristics Notices** or do not reflect **Generation Other Relevant Data** submitted by the **User** pursuant to SDC1.

- (b) In the event that in carrying out the **Dispatch Instructions**, an unforeseen problem arises, giving rise, in the **User's** reasonable opinion, to an imminent risk of injury to persons or material damage to property (including the **CDGU**) the **TSO** must be notified as soon as possible by telephone. *[Note: Users should note that the provisions of SDC2.4.2.15 apply.]*

SDC2.4.2.11 Action Required from Users

(a) Each **User** will comply in accordance with SDC2.4.2.12 with all **Dispatch Instructions** given by the **TSO** unless the **User** has given notice to the **TSO** under the provisions of SDC2.4.2.10 regarding non-acceptance of **Dispatch Instructions**.

(b) When complying with **Dispatch Instructions** for a **CCGT Installation** a **Generator** will operate its **CCGT Modules** in accordance with the applicable **CCGT Installation Matrix**.

(c) *[Where the TSO issues a Synchronising time to a Generator for a specific CDGU and the Generator identifies that the CDGU will not be Synchronised within +/- 10 minutes of the instructed time, the Generator must immediately (at the time the discrepancy is identified) inform the TSO of the situation and estimate the new Synchronising time.]*

(d) *[If the Synchronising time of the CDGU is different from the instructed time by more than 15 minutes but less than 4 hours, this will constitute a Short Notice Re-declaration by the CDGU for that Generator.]*

(e) *[If the Synchronising time, of the CDGU, is different from the instructed time by more than 4 hours, this will constitute a Re-declaration for the CDGU by the Generator.]*

[Note: Please note that the above paragraphs in italics apply to the ROI only and that further consideration is being given to them.]

SDC2.4.2.12 Implementation of Instructions by Users

~~Users will respond~~ When a **User** has received a **Dispatch Instruction** given by the **TSO**, it will react by responding to that **Dispatch Instructions** ~~Instruction~~ given by the **TSO** without undue delay, and, in any event, within one minute in accordance with the instruction or in the case of Dispatch Instructions for Mvars in the Republic of Ireland within two minutes of the instruction,

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including those **Dispatch Instructions** issued pursuant to SDC 2.4.2.9. Instructions indicating a target **MW output** **Output** at the **target Frequency** will be complied with by **Users** notwithstanding any tolerance bands set out in any testing requirement or elsewhere in the **Grid Code**.

- 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 **Intertripping Schemes** or **Low Frequency Relay** operations.
 - (b) **De-Synchronisation** may otherwise only take place without the **TSO's** prior agreement if it is done to avoid, in the **Generator's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **CDGU**).
 - (c) If that happens the **TSO** must be informed that it has taken place as soon as possible.

[Note: Please note that consideration is ~~currently being given as to whether there is a need for an equivalent provision in relation to Demand Side Units and Pumped Storage Generating Plants.]~~ to adding a paragraph clarifying what is meant by 'achieving a Dispatch Instruction'.]

SDC2.4.2.14 The **TSO** may suspend the issue of **Dispatch Instructions** to **Generating Plant** in accordance with the **Merit Order** (having taken account of and applied the factors referred to in SDC1.4.5.4) to the extent that the conditions in SDC1.4.5.6 arise. When necessary the **TSO** will issue **Dispatch Instructions** for a **Black Start**.

SDC2.4.2.15 Generating Plant Changes *[Note: Please note that consideration is ~~currently being given as to whether there is a need for an equivalent provision in relation to Demand Side Units and Pumped Storage Generating Plants.]~~*

Each **Generator** at its **Generating Plant** will without delay notify the **TSO** by Electronic Interface, telephone ~~[or by facsimile transmission]~~ of any change or loss (temporary or otherwise) to the operational capability of the **Generating Plant** including any changes to the ~~[GSDPs/Operating Characteristics/Contracted~~ Technical Parameters] and/or **Additional Grid Code Characteristics Notice** data of each **CDGU** (in the case of ~~[GSDPs/Operating Characteristics/Contracted~~ Technical Parameters], by the submission of a ~~GSDP~~ Technical Parameters **Revision Notice**) indicating (where possible) the magnitude and the duration of the change. In the case of **CDGUs** already **Synchronised** to the ~~[Transmission]~~ System as the case may be, the **Generator** at its **Generating Plant** must also state whether or not the loss was instantaneous.

SDC2.4.2.16 Each **Generator** at its **Generating Plant** will operate its **Synchronised CDGUs** with **AVRs** and **var** limiters in service at all times (where required pursuant to CC.S1.5 of the **SONI Grid Code** / CC7.3 of the **EirGrid Grid Code**) unless released from this obligation in respect of a particular **CDGU** by the **TSO**.

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SDC2.4.2.17 A **Generator** at its **Generating Plant** may request the **TSO's** agreement for one of its **CDGUs** at that **Generating Plant** to be operated without the **AVR** or **var** limiter in service. The **TSO's** agreement will be dependent on the risk that would be imposed on the **[Transmission] System** provided that in any event a **Generator** may take such action in relation to that **CDGU** as is reasonably necessary to avoid, in the **Generator's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **CDGU**).

SDC2.4.2.18 **Minimum Demand Regulation ("MDR")**

Synchronised CDGUs must at all times be capable of reducing output sufficient to allow a sufficient **Regulating Margin** for adequate **Frequency Control**. The **TSO** will monitor the output data of the **Indicative Operations Schedule** against forecast the **[Demand]** to see whether the level of **MDR** for any period is insufficient, and may take any shortfall into account in **Dispatch**.

[Note: Reference to Demand in the above paragraph is being considered further.]

SDC2.4.3 **Special Actions**

The **TSO** may as part of the issue of **Dispatch Instructions** issue instructions for **Special Actions** (either pre- or post-fault) to a **Generator** in respect of any of its **CDGUs** in the event that the **TSO** in its reasonable opinion believes that such instructions are necessary in order to ensure that the **Licence Standards** are met. **Special Actions** will generally involve a **Load** change or a change in required **Notice to Synchronise** in a specific timescale on individual or groups of **CDGUs**. They may also include selection of "**System to CDGU**" **intertrip schemes** **Intertipping Scheme** for stability or thermal reasons. Instructions for **Special Actions** will always be within **[GSDPs/Operating Characteristics/Contracted Technical Parameters]**.

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SDC2 - APPENDIX A

[Note: Please note that further consideration is being given to the wording of Appendix A.]

Dispatch Instructions for CDGUs

SDC2.A.1 General

In this **SDC2**, where the provisions relating to **CCGT Modules** and **CCGT Installations** differ from the explicit requirements contained in a **Generating Unit Agreement**, a **Power Station Agreement** and/or ~~ana~~ **[System Support Services Agreement** in Northern Ireland and **Ancillary Services Agreement** in the Republic of Ireland], the provisions of that agreement will prevail.

SDC2.A.2 Form of Dispatch Instruction

SDC2.A.2.1 All **Loading/deDe-Loading rates**~~rates~~ **Rates** will be assumed to be in accordance with **[GSDPs/Operating Characteristics/Contracted Technical Parameters]** and **Additional Grid Code Characteristics Notice** data. Each **Dispatch Instruction** will, wherever possible, be kept simple, drawing as necessary from the following forms and SDC2.4.2.

SDC2.A.2.2 The **Dispatch Instruction** given by **Electronic Interface**, telephone, or facsimile transmission will normally follow the form:

- (a) where appropriate, the specific **CDGU** to which the instruction applies;
- (b) the output to which it is instructed;
- (c) if the start time is different from the time the instruction is issued, the start time will be included;
- (d) where specific **Loading/deDe-Loading rates**~~rates~~ **Rates** are concerned, a specific target time;
- (e) the issue time of the instruction;
- (f) the ~~[Designated Fuel] and/or [Declared Fuel] (or fuel), as the case may be~~ fuel;
- (g) in the case of a **CDGU** which is an **Open Cycle Gas Turbine** or **CCGT Installation**, if the instruction is designated as a "**Maximisation Instruction**", this will be stated; and
- (h) in the case of a **CCGT Installation**, the **Operating Mode** to which it is instructed.

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- SDC2.A.3 **Dispatching a Synchronised CDGU to increase or decrease output**
- SDC2.A.3.1 If the time of the **Dispatch Instruction** is 1400 hours, the Unit is Unit 1 and the output to be achieved is 205 **MW**, the relevant part of the instruction would be, for example:
"Time 1400 hours. Unit 1 to 205 **MW**"
- SDC2.A.3.2 If the start time is 1415 hours, it would be, for example:
"Time 1400 hours. Unit 1 to 205 **MW**, start at 1415 hours"
- SDC2.A.3.3 **Loading** and ~~de~~**De-Loading Rates** ~~rates~~ are assumed to be in accordance with [~~GSDPs/Operating Characteristics/Contracted~~**Technical Parameters**] and **Additional Grid Code Characteristics Notice** data unless otherwise stated. If different **Loading** or ~~de~~**De-Loading rates** ~~Rates~~ are required, the time to be achieved will be stated, for example:
"Time 1400 hours. Unit 1 to 205 **MW** by 1420 hours"
- SDC2.A.4 **Dispatching a CDGU to Synchronise/de-Synchronise**
- SDC2.A.4.1 **CDGU Synchronising**
- SDC2.A.4.1.1 In this instance, for **CDGUs**, the **Dispatch Instruction** issue time will always have due regard for the **Synchronising** time declared to the **TSO** by the **Generator** as a [~~GSDPs/Operating Characteristics/Contracted~~**Technical Parameters**] or as part of **Additional Grid Code Characteristics Notice** data.
The instruction will follow the form, for example:
"Time 1300 hours. Unit 1, **Synchronise** at 1600 hours"
In relation to an instruction to **Synchronise**, the start time referred to in SDC2.A.2.2 will be deemed to be the time at which **Synchronisation** is to take place.
- SDC2.A.4.1.2 Unless a **Loading** programme is also given at the same time it will be assumed that the **CDGU(s)** are to be brought to **Minimum Generation** and on the **Generator** reporting that the unit has **Synchronised** a further **Dispatch Instruction** will be issued.
- SDC2.A.4.1.3 When a **Dispatch Instruction** for a **CDGU to Synchronise** is cancelled (ie. a **Cancelled Start**) before the unit is **Synchronised**, the instruction will follow the form, for example:
"Time 1400 hours. Unit 1, cancel **Synchronising** instruction"
- SDC2.A.4.2 **CDGUs De-Synchronising**
- SDC2.A.4.2.1 The **Dispatch Instruction** will normally follow the form, for example:
"Time 1300 hours. Unit 1, **Shutdown**"

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If the instruction start time is for 1400 hours the form will be, for example:

"Time 1300 hours. Unit 1, **Shutdown**, start at 1400 hours"

Both the above assume **De-Loading rate** ~~Rate~~ at declared [**GSDPS/Operating Characteristics/Contracted** Technical Parameters]. Otherwise the message will conclude with, for example:

"... and **De-Synchronise** at 1500 hours"

SDC2.A.5 **Frequency Control**

SDC2.A.5.1 All the above **Dispatch Instructions** will be deemed to be at the instructed "target [**Transmission**] **System Frequency**", i.e. where a **CDGU** is in the **Frequency Sensitive Mode** instructions refer to target output at target [**Transmission**] **System Frequency**. Target [**Transmission**] **System Frequency** changes will always be given to the **Generator** by telephone and will normally only be 49.95, 50.00, 50.05Hz.

The adjustment of MW Output of a CDGU for Transmission System Frequency other than an average of 50 Hz, shall be made in accordance with the current Declared value of Governor Droop for the CDGU.

[Note: Please note that this clause is applicable in the Republic of Ireland only.]

SDC2.A.5.2 **CDGUs** required to be **Frequency** insensitive will be specifically instructed as such. The **Dispatch Instruction** will be of the form for example:

"Time 2100 hours. Unit 1, to **Frequency** insensitive mode"

SDC2.A.5.3 **Frequency Control** instructions may be issued in conjunction with, or separate from, a **Dispatch Instruction** relating to output.

SDC2.A.6 **Emergency Load Drop**

The **Dispatch Instruction** will be in a pre-arranged format and normally follow the form, for example:

"Time 2000 hours. Emergency **Load** drop of "X"**MW** in "Y" minutes"

SDC2.A.7 **Voltage Control Instruction**

In order that adequate [**Transmission**] **System** voltage profiles are maintained under normal and fault conditions a range of voltage control instructions will be utilised from time to time, for example:

- (a) Operate to target voltage of ~~282kv;~~ 117 kV;
- (b) Maximum ~~generation~~ production or absorption of **Reactive Power** (at current instructed **MW** output);

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(c) Increase reactive output by 10 **Mvar** (at current instructed **MW** output);

(d) *Change Reactive Power to 100 Mvar production or absorption;*

(e) *Increase CDGU generator step-up transformer tap position by [one] tap or go to tap position [x];*

(f) *For a Simultaneous Tap Change, change CDGU generator step-up transformer tap position by one [two] taps to raise or lower (as relevant) System voltage, to be executed at time of telegraph (or other) Dispatch Instruction.*

(g) *Achieve a target Voltage of 210 kV and then allow to vary with System conditions; and*

(h) *Maintain a target Voltage of 210 kV until otherwise instructed. Tap change as necessary.*

In relation to Mvar Dispatch matters, Mvar production is an export onto the System and is referred to as "lagging Mvar", and Mvar absorption is an import from the System and is referred to as "leading Mvar".

It should be noted that the excitation control system constant Reactive Power level control mode or constant Power Factor output control mode will always be disabled, unless agreed otherwise with the TSO.

[Note: Please note that the provisions in italics above apply to the Republic of Ireland only.]

SDC2.A.8

Instruction to change **Dispatched Fuel**

When the **TSO** wishes to instruct a **Generator** to change the fuel being burned in the operation of one of its **CDGUs** from one **Dispatched Fuel** (or fuel) to another (for example from 1% sulphur oil to 3% sulphur oil), the **Dispatch Instruction** will follow the form, for example:

"Time 1500 hours. Unit 2 change to 3% Fuel at 1700 hours".

SDC2.A.9

Instruction to change **Designated Fuel** for a dual firing **CDGU**

When the **TSO** wishes to instruct a **Generator** to change the fuel being burned in the operation of one of its **CDGUs** which is capable of firing on two different fuels (for example, coal or oil), from one **Designated Fuel** (or fuel) to another (for example, from coal to oil), the instruction will follow the form, for example:

"Time 1500 hours. Unit 1 generate using oil at 1800 hours".

SDC2.A.10

[**Maximisation Instruction** to **CDGUs** which are **Open Cycle Gas Turbines**

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When the **TSO** wishes to instruct a **Generator** to operate a **CDGU** which is an **Open Cycle Gas Turbine** at a level in excess of its **Availability** in accordance with SDC2.4.2.4(k), the instruction will follow the form, for example:

"**Maximisation Instruction**. Time 1800 hours. Unit GT2 to 58MW."]

SDC2.A.11 Emergency Instruction

If a Dispatch Instruction is an Emergency Instruction the Dispatch Instruction will be prefixed with the words This is an Emergency Instruction. It may be in a pre-arranged format and normally follow the form, for example:

This is an Emergency Instruction. Reduce output to "X"MW in "Y" minutes. Dispatch Instruction timed at 2000 hours.
[Note: Please note that the above paragraph applies to the Republic of Ireland only.]

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SDC2 - APPENDIX B

Dispatch Instructions for Mvars in the Republic of Ireland

- SDC2.B.1 The Mvar Output of any CDGU in respect of which a Dispatch Instruction is given under SDC2.4.2.4(b) must, in accordance with its declared [Technical Parameters], be adjusted to the new target Mvar level so Instructed, within, a tolerance of +/- 2% of the target or +/- 2 Mvar, whichever is greater. The Reactive Power output of a CDGU shall not be adjusted (other than under AVR action) except in response to a Dispatch Instruction from the TSO.
- SDC2.B.2 Generators having achieved the new target Mvar Output, should not attempt to sustain this level of Mvar Output as the System voltage varies but should, rather, allow the Reactive Power output to vary under AVR control in accordance with the then applicable Declarations of Ancillary Service capabilities and [Technical Parameters].
- SDC2.B.3 While a Reactive Power Dispatch Instruction shall normally specify a new Mvar target for a CDGU, the TSO may also from time to time Instruct Generators to perform one or more tap changes on the generator step-up transformer of a CDGU. The Dispatch Instructions for tap changes may be a Simultaneous Tap Change Instruction whereby the tap change must be effected by the Generator in response to a Dispatch Instruction from the TSO issued simultaneously to relevant Power Stations. The Dispatch Instruction, which is normally preceded by advance warning, must be effected within 1 minute of receipt from the TSO of the Dispatch Instruction.
- SDC2.B.4 Dispatch Instructions in relation to Reactive Power may include target voltage levels to be achieved by the CDGU on the Transmission System at Grid Connection Point (or on the User System at the User System Entry Point in the case of an Embedded Generator, namely on the higher voltage side of the Generator step-up transformer). Where a CDGU is Instructed to a specified target voltage, the Generator must achieve that target within a tolerance of 1 kV by tap changing on the Generator step-up transformer unless otherwise agreed with the TSO. Under normal operating conditions, once this target voltage level has been achieved, the Generator shall not tap change again without prior consultation with and agreement of the TSO.
- SDC2.B.5 Under certain conditions such as low System voltage, a Dispatch Instruction to maximum Mvar production at Instructed MW Output may be given and the Generator shall take appropriate action to maximise Mvar production unless constrained by plant operational limits or safety grounds relating to personnel or plant.
- SDC2.B.6 Under certain conditions such as high System voltage, a Dispatch Instruction to maximum Mvar absorption at Instructed MW Output may be given and the Generator shall take appropriate action to maximise Mvar

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absorption unless constrained by plant operational limits or safety grounds relating to personnel or plant.

SDC2.B.7 The excitation system, unless otherwise agreed with the TSO, must be operated only in its constant terminal voltage mode of operation with var limiters in service, with any constant Reactive Power output control mode or constant Power Factor output control mode always disabled, unless agreed otherwise with the TSO.

SDC2.B.8 A Dispatch Instruction relating to Reactive Power will be implemented without delay and, notwithstanding the provisions of SDC2.4.2.12 and subject as provided in this Appendix B will be achieved not later than 2 minutes after the Dispatch Instruction time, or such longer period as the TSO may Instruct.

SDC2.B.9 Where Dispatch Instructions relating to Active Power and Reactive Power are given together, and to achieve the Reactive Power output would cause the CDGU to operate outside [Technical Parameters] as a result of the Active Power Dispatch Instruction being met at the same time, then the adjustment of the Reactive Power output may be delayed until the operating limits no longer prevent the change. In any case the Active and Reactive Power Dispatch Instruction must be followed without undue delay.

SDC2.B.10 In circumstances where the TSO issues new Dispatch Instructions in relation to more than one CDGU at the same Power Station at the same time tapping will be carried out by the Generator one tap at a time either alternately between (or in sequential order, if more than two), or at the same time on, each CDGU, as the case may be.

SDC2.B.11 Where the Dispatch Instructions require more than two taps per CDGU and that means that the Dispatch Instructions cannot be achieved within 2 minutes of the time of the Dispatch Instructions (or such longer period at the TSO may have Instructed), the Dispatch Instructions must each be achieved with the minimum of delay after the expiry of that period;

SDC2.B.12 On receiving a new MW Dispatch Instruction, no tap changing shall be carried out to change the Mvar Output unless there is a new Mvar Dispatch Instruction.

SDC2.B.13 Where a Dispatch Instructions to Synchronise is given, or where a CDGU is Synchronised and a MW Dispatch Instruction is given, a Mvar Dispatch Instruction consistent with the CDGU's relevant parameters may be given. In the absence of a Mvar Dispatch Instruction with an instruction to Synchronise, the Mvar Output should be 0 Mvar.

SDC2.B.14 Where a Dispatch Instructions to De-Synchronise is given, a Mvar Dispatch Instruction, compatible with shutdown, may be given prior to De-Synchronisation being achieved. In the absence of a separate Mvar Dispatch Instruction, it is implicit in the Dispatch Instructions to De-Synchronise that Mvar output should at the point of synchronism be 0 Mvar at De-Synchronisation.

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SDC2.B.15 *A Dispatch Instruction relating to Reactive Power may be given in respect of CCGT Units within a CCGT Module where running arrangements and/or System conditions require, in both cases where connection arrangements permit.*

SDC2.B.16 *On receipt of a Dispatch Instruction relating to Reactive Power, the Generator may take such action as is necessary to maintain the integrity of the CDGU (including, without limitation, requesting a revised Dispatch Instruction), and must contact the TSO without delay.*

SDC2.B.17 *Under System fault conditions it is possible for AVR action to drive Reactive Power output for a CDGU outside of its Declared Operating Characteristic limits. The Generator must immediately inform the TSO of the situation. However if the Generator reasonably believes that the situation may be dangerous to personnel or Plant, then limited action may be taken to improve the situation.*