

SCHEDULING AND DISPATCH CODE NO. 2

CONTROL SCHEDULING AND DISPATCH

[Note: Please note that any paragraphs written in italics in the SDCs apply to one jurisdiction only. For the purposes of public consultation, all common text and text applying to each individual jurisdiction is presented here. In the final version of the EirGrid Grid Code, text relevant only to the Republic of Ireland will be included.]

[Note: Please note that the cross-referencing in this section to other sections of the Grid Code has not been updated since the date of the last GCRP meeting and will need to be updated following the consultation period.]

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

[Note: Please note that Controllable WFPSs are not currently subject to Dispatch Instructions.]

- (b) **Pumped Storage Generators** in respect of their **Pumped Storage Plant Demand**;
- (c) **Interconnector Owners** in respect of their **Interconnectors**;
- (d) **Dispatchable Demand Customers** in respect of their **Demand Side Units**;
- (e) **Generator Aggregators** in respect of their **Aggregated Generating Units**;
and
- (f) **Demand Side Unit Aggregators** in respect of their **Aggregated Demand Side Units**.

[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.]

[Note: Controllable WFPSs are not currently subject to Dispatch Instructions.]

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, Interconnector, Aggregated Generating Units** and/or **Aggregated Demand Side Units to 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 MW 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 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 Owners** with regard to their **Interconnectors**;
- (d) **Dispatchable Demand Customers** in relation to their **Demand Side Units**;

- (e) **Generator Aggregators** in respect of their **Aggregated Generating Units**; and
- (f) **Demand Side Unit Aggregators** in respect of their **Aggregated Demand Side Units**.

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, Pumped Storage Plant Demand, Aggregated Generating Units** and/or **Aggregated Demand Side Units** to Dispatch, will be:

- (a) the **Availability Notices**;
- (b) the **Merit Order** as derived under SDC1;
- (c) the other factors to be taken into account 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**;
- (d) **Technical Parameters**;
- (e) **Additional Grid Code Characteristics Notices**;
- (f) **Reserve Characteristics**; and
- (g) **Other Relevant Data**

in respect of that/those **CDGU, Demand Side Unit, Interconnector, Pumped Storage Plant Demand, Aggregated Generating Units** and **Aggregated Demand Side Units**.

SDC2.4.1.2 Additional factors which the **TSO** will also take into account are:

- (a) those **Generators** 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, Aggregated Demand Side Units, Interconnectors, Pumped Storage Plant Demand** for **Testing** purposes.

SDC2.4.1.3 In the event of two or more **CDGUs, Demand Side Units, Interconnectors, Pumped Storage Plant Demand, Aggregated Generating Units** and/or **Aggregated Demand Side Units** having the same **Price Set** 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, then the **TSO** will select first for **Dispatch** the one which in the **TSO's** reasonable judgment is most appropriate in all the circumstances.

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 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.]

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**, **Pumped Storage Plant Demand**, **Aggregated Generating Units** and/or **Aggregated Demand Side Units** prior to the issue of an **Indicative Operations Schedule** which includes that **CDGU**, **Demand Side Unit**, **Interconnector**, **Pumped Storage Plant Demand**, **Aggregated Generating Units** and/or **Aggregated Demand Side Units**.

[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 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 issue **Dispatch Instructions** direct to the **Generator Aggregator** for a **Dispatch** of its **Aggregated Generating Units**.
- (c) The **TSO** will issue **Dispatch Instructions** direct to **Dispatchable Demand Customers** 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 **Aggregated Demand Side Units**.
- (e) The **TSO** will issue **Dispatch Instructions** direct to the **Interconnector Owner** for the **Dispatch** of each **Interconnector**.
- (f) The **TSO** may issue **Dispatch Instructions** for any **CDGU**, **Demand Side Unit**, **Interconnector**, **Pumped Storage Plant Demand**, **Aggregated Generating Units**, and/or **Aggregated Demand Side Units** which has been declared **Available** in an **Availability Notice** even if that **CDGU**, **Demand Side Unit**, **Interconnector**, **Pumped Storage Plant Demand**, **Aggregated Generating Unit** and/or **Aggregated Demand Side Unit** 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** (unless otherwise specified by the **TSO** at the time of giving the **Dispatch Instructions**) shall be deemed to include an automatic instruction of **Spinning Reserve**, the level of which is to be provided in accordance with 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 **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 ROI 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;
- (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 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 **Connection Point** will be made with due regard to any resulting change in **Reactive Power** capability and may include instruction for reduction in **Active Power** generation to increase **Reactive Power** capability.
- (iii) In the event of a sudden change in **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:** **Fuels** to be used by the **Generator** in operating the **CDGU**. The **Generator** shall only be permitted to change **Fuels** with the **TSO's** prior consent. *Appendix C provides further detail on **Dispatch Instructions** for different fuels.*

[Note: Please note that the last sentence of paragraph (c) applies to Northern Ireland only.]

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

- (d) **Special Protection Scheme:** an instruction to switch into or out of service an **Special Protection 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) **Synchronous Compensation:** an instruction, where contracted, for a **CDGU** to operate in **Synchronous Compensation** mode;
- (g) **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;

[Note: Please note that the word "Acceptance" applies to the SONI Grid Code only.]

[Note: Please note that once the amendments to the Grid Codes are finalised, each Grid Code will only make cross-references to its own sections.]

- (h) **System Tests:** an instruction in relation to the carrying out of a **System Test** as required under *OC10 of the **SONI Grid Code**/OC 8.4 of the **EirGrid Grid Code***;
- (i) **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 only be given if, at the time of issue of the instruction, the **CDGU** is **Dispatched** to a **MW 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**";

- (j) **Cycle Operating Mode:** in the case of a **CCGT Installation**, an instruction specifying the **Cycle Operating Mode** and an instruction to **Dispatch** a **CCGT Installation on Open Cycle Mode**. The **Generator** must then ensure that the **CCGT Installation** achieves the new **Dispatched Operating Mode**, without undue delay, in accordance with the **CCGT Installation's** declared **Availability** and declared **Technical Parameters**. **Dispatch Instructions** in relation to **Operating Modes** issued by the **TSO** shall reflect the applicable **Availability Notice** and **Technical Parameters**;
- (k) **Pumped Storage:** mode changes for **Pumped Storage Plants**, where contracted, in relation to **Pumped Storage Plant Demand**;
- (l) **Under Test Flags:** **Dispatch Instructions** will, where appropriate, contain a flag to indicate that a unit is under test.
- (m) **Gas Supply Emergencies:** *[Please note that the TSOs are currently giving consideration to their rights to re-dispatch Generating Units following a gas supply emergency. This may also have a consequential impact upon SDC1 and SDC2].*
- (n) **Tap Positions:** *an instruction for a change in Generator Transformer tap positions. [Note: This applies to SONI only].*

Form of Instruction

SDC2.4.2.5

- (a) Instructions may normally be given via **Electronic Interface** but can be given by telephone, by facsimile transmission *or by radio telephone*. In the case of an **Special Protection Scheme**, 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: Please note that the words in italic above apply to the EirGrid Grid Code only.]

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

- (b) The reduction by a **Generator** of the **MW Output** of one of its **CDGUs** under *SDC3.6.1 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**.
- (c) (i) In the event of a temporary loss of the **NI Control Centre/National 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 **System Frequency** at the **Target Frequency** of 50Hz plus or minus 0.05Hz by monitoring **Frequency** and increasing/decreasing the **MW Output** of its **CDGUs** as necessary

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until such time as new **Dispatch Instructions** are received from the **TSO**.

- (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 **Special Protection Scheme** selected by the **TSO** shall be deemed to have happened as a result of a **Dispatch Instruction** issued by the **TSO**.

[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** for **Generators** will generally indicate the target **MW** (at **Target Frequency**) to be provided at the **Connection Point** (or where provided in the relevant **Connection Agreement**, on a sent out basis) to be achieved in accordance with the respective **CDGU's 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 change above was made to reflect the decision to dispatch in exported terms rather than at the Generator Terminals.]

- (b) **Dispatch Instructions** for **Generators** 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 maximum **MW Output** or at some lower **MW Output** (as previously specified by the **TSO**), to be provided at the **Connection Point** which reflects and is in accordance with the **CDGU's gas turbine's Technical Parameters** and/or **Additional Grid Code Characteristics Notice** data given under (or as revised in accordance with) SDC1 or this SDC2.

SDC2.4.2.7 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 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 **Technical Parameters** and/or **Additional Grid Code Characteristics Notice** data and **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 **Technical Parameters** and/or **Additional Grid Code Characteristics Notice** data and/or **Other Relevant Data** so notified to 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 **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 **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 **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.

SDC2.4.2.9 (a) To preserve **System** integrity under emergency circumstances where, for example, **Licence Standards** cannot be met the **TSO** may, however, issue **Dispatch Instructions** to change **CDGU**, **Aggregated Generating Units**, **Demand Side Unit**, **Aggregated Demand Side Units**, **Interconnector** and/or **Pumped Storage Plant Demand MW Output** or Demand Reduction even when this is outside parameters so registered or so amended. This may, for example, be an instruction to trip or partially 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) A **User** 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 in the case of a **Generator**, the **CDGU**); or
 - (ii) where in the **User'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 **User** reasonably considers there to be no or an insufficient contractual commitment by the **TSO** to compensate the **User**.

SDC2.4.2.10 Communication with Users

- (a) **Dispatch Instructions** whether given via **Electronic Interface**, by telephone, 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 **Control Facility** by **Electronic Interface** or, with the **TSO's** prior consent, by telephone, by return facsimile transmission or by radio 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 **Technical Parameters**, or **Additional Grid Code Characteristics Notices** or do not reflect **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/CCGT Units** in accordance with the applicable **CCGT Installation Matrix**.

[Note: The term "CCGT Module" applies to the SONI Grid Code and the term "CCGT Unit" will apply to the EirGrid Grid Code.]

- (c) Where the **TSO** issues a **Synchronising** time to a **Generator** for a specific **CDGU** (other than an **Open Cycle Gas Turbine**) and the **Generator** identifies that such **CDGU** will not be **Synchronised** within *+/- 10 minutes/+15/-5 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.

[Note: Please note that "+/- 10 minutes" will apply to the EirGrid Grid Code and "+15 / -5 minutes" will apply to the SONI Grid Code.]

- (d) If the **Synchronising** time of the **CDGU** (other than an **Open Cycle Gas Turbine**) is different from the instructed time by more than 15 minutes but less than *4 hours / 1 hour*, this will constitute a **Short Notice Re-declaration** by the **CDGU** for that **Generator**.

[Note: Please note that "4 hours" applies to the EirGrid Grid Code and "1 hour" applies to the SONI Grid Code.]

- (e) If the **Synchronising** time of the **CDGU** (other than an **Open Cycle Gas Turbine**) is different from the instructed time by more than *4 hours/1 hour*, this will constitute a **Re-declaration** for the **CDGU** by the **Generator**.

[Note: Please note that "4 hours" applies to the EirGrid Grid Code and "1 hour" applies to the SONI Grid Code.]

SDC2.4.2.12 Implementation of Instructions by Users

When a **User** has received a **Dispatch Instruction** given by the **TSO**, it will react by responding to that **Dispatch 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*, including those **Dispatch Instructions** issued pursuant to SDC2.4.2.9. Instructions indicating a target **MW 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 **Special Protection Schemes** or **Low Frequency Relay** operations. Subject to the exception set out below in this SDC2.4.2.13, **Dispatchable Demand Customers** will only reduce or increase their **Demand Reduction** 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 done 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 Reduction**, may otherwise only take place without the **TSO's** prior agreement if it is done to avoid, in the **Dispatchable Demand Customer's** reasonable opinion, an imminent risk of injury to persons or material damage to property (including the **Demand Side Unit**).
- (c) If one of these exceptions occur, then the **TSO** must be informed that it has taken place as soon as possible.
- SDC2.4.2.14 The **TSO** may suspend the issue of **Dispatch Instructions** to **User's 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 **User Plant Changes**
- Each **User** at its **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 its **Plant** including any changes to the **Technical Parameters** and/or **Additional Grid Code Characteristics Notice** data of each of the **User's Plant** (in the case of **Technical Parameters**, by the submission of a **Technical Parameters Revision Notice**) indicating (where possible) the magnitude and the duration of the change. In the case of **CDGUs** already **Synchronised** to the **System**, each **Generator**, in respect of its **Generating Units**, must also state whether or not the loss was instantaneous.
- SDC2.4.2.16 Each **Generator**, in respect of its **Generating Units**, 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**.
- SDC2.4.2.17 Each **Generator**, in respect of its **Generating Units**, shall 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 **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")**

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Synchronised CDGUs must at all times be capable of reducing **MW Output** sufficient to allow a sufficient **Regulating Margin** for adequate **Frequency Control**. The **TSO** will monitor the **MW 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**.

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 **User** in respect of any of its **Plant** 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, a **Load** reduction change or a change in required **Notice to Synchronise** (or, in the case of a **Demand Side Unit** or **Pumped Storage Plant Demand**, a change in the relevant effective time) in a specific timescale on individual or groups of **CDGUs**. They may also include selection of **Special Protection Scheme** for stability or thermal reasons. Instructions for **Special Actions** will always be within **Technical Parameters**.

SDC2 - APPENDIX A

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

Dispatch Instructions for CDGUs and Demand Side Units

SDC2.A.1

General

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

[Note: The term "CCGT Module" applies to the SONI Grid Code and the term "CCGT Unit" will apply to the EirGrid Grid Code.]

SDC2.A.2

Form of Dispatch Instruction

SDC2.A.2.1

All **Loading/De-Loading Rates** will be assumed to be in accordance with **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 **MW 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/De-Loading Rates** are concerned, a specific target time;
- (e) the issue time of the instruction;
- (f) the **Designated Fuel, Declared Fuel** or fuel as the case may be; ***[Note: The words in italics apply to the SONI Grid Code only]***
- (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.

SDC2.A.3

Dispatching a Synchronised CDGU to increase or decrease MW Output

SDC2.A.3.1

If the time of the **Dispatch Instruction** is 1400 hours, the Unit is Unit 1 and the **MW Output** to be achieved is 205 **MW**, the relevant part of the instruction would be, for example:

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"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-Loading Rates** are assumed to be in accordance with **Technical Parameters** and **Additional Grid Code Characteristics Notice** data unless otherwise stated. If different **Loading** or **De-Loading 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 **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**"

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** at declared **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 Frequency**, i.e. where a **CDGU** is in the **Frequency Sensitive Mode** instructions refer to target **MW Output** at **Target Frequency**. **Target 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 **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 the clause in italics 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 **MW 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 **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 117 kV;
- (b) Maximum production or absorption of **Reactive Power** (at current instructed **MW Output**)
- (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 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 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 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 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****

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 **MW 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.]

SDC2.A.12 **Dispatching a Demand Side Unit or Aggregated Demand Side Units to increase or decrease Demand Reduction**

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

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

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

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

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

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

SDC2.A.13 **Dispatching a Demand Side Unit or Aggregated Demand Side Units to an Initial Demand Reduction**

SDC2.A.13.1 In this instance, for **Demand Side Units** or **Aggregated Demand Side Units**, the **Dispatch Instruction** issue time will always have due regard for the **Initial Demand Reduction Time** declared to the **TSO** by the **Dispatchable Demand Customer** or **Demand Side Unit Aggregator** 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 Reduction** at 1600 hours"

In relation to an instruction to the **Initial Demand Reduction**, the start time referred to in SDC2.A.12.1 will be deemed to be the time at which **Initial Demand Reduction** is to take place.

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** 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,*

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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**.
- SDC2.B.15 A **Dispatch Instruction** relating to **Reactive Power** may be given in respect of **CCGT Units** within a **CCGT Installation** 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

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*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.*

SDC2 - APPENDIX C

Dispatch Instructions for different fuels in Northern Ireland

[Note: Please note that this appendix applies to Northern Ireland only.]

SDC2.C.1

*In addition to instructions relating to the **Dispatch of Active Power, Dispatch Instructions** in relation to **CDGUs** may include:*

- (a) the fuel to be used by the **Generator** in operating the **CDGU**. In the case of a **CDGU** capable of firing on different fuels, the **Dispatch Instruction** may also specify the fuel to be used by the **Generator**. If no **Declared Fuel** and/or, where relevant, fuel is contained in the **Dispatch Instruction**, then the most recently instructed fuel will apply. The part of a **Dispatch Instruction** which specifies a change in the fuel to be burned by the **Generator** shall be known as a "**Dispatched fuel Notice**". The **TSO** may, however, use a separate **Dispatched fuel Notice** and which may be issued separately from any **Dispatch Instruction**, containing the above information. If a fuel has been notified for a **CDGU** other than a **PPA CDGU**, the fuel may be specified;*
- (b) in the case of a **PPA CDGU** only, the **Generator** may (subject to the following provisions of this paragraph (b)), in complying with a **Dispatch Instruction** burn a fuel other than the fuel specified in the **Dispatch Instruction**.*