

SONI Report to Utility Regulator

SPID150216 – OUTTURN AVAILABILITY GRID CODE
MODIFICATION

27 May 2016



1. Summary

Following a Consultation the Grid Code modification for Outturn Availability (SPID150216), wording of the modification has been updated to reflect comments received. This modification proposes to change the Scheduling and Dispatch Code SDC1 which is common to both the SONI and EirGrid Grid Codes; as a result consideration has also been given to the comments received at both the EirGrid Grid Code Review Panel and at the Joint Grid Code Review Panel.

This report addresses the comments received from each of the respondents and details the SONI position and reasoning with regards to each of the issues. This report should facilitate a regulatory decision on the approval of SPID150216.

It should be noted that SPID150216 has been developed in coordination with EirGrid and is in line with MPID268, a proposed modification to the EirGrid Grid Code. SONI are of the view that SPID150216 is commensurate with the SEMC decision paper SEM-15-071 "Process for the Calculation of Outturn Availability" published by the SEMC in September 2015 and serves to define Outturn Availability in the SONI Grid Code.

2. Background

On 29 September 2015, the SEMC published Decision Paper SEM-15-071 "Process for the Calculation of Outturn Availability". In this decision paper, the SEMC note that Outturn Availability is not defined in the Grid Code and requires that the TSOs bring forward a modification commensurate with this decision paper. (Please note: A corresponding modification to the Trading and Settlement Code is also being progressed in parallel.)

Outturn Availability is the name assigned in SEM to the set of availability data for the relevant day received by the SEM systems from the TSO systems following the end of that day. This set of data is subsequently used to develop the availability profile of each generator in the SEM.

The SONI Grid Code does not currently refer to the term Outturn Availability, as the submission of data from the TSO systems to the SEM systems after the relevant day is not within scope of the SONI Grid Code.

The SONI Grid Code specifies in SDC1.4.3.2 that each generator should use reasonable endeavours to ensure that it does not at any time declare the availability at levels or values different to those that the generator could achieve at the relevant time, with a number of exceptions, which are listed in SDC1.4.3.3. The modification proposal develops this further to incorporate the SEMC decision on Outturn Availability.

3. Proposed Modification

1. This modification proposal adds the conditions set out in the SEMC decision paper as a further exception to clause SDC1.4.3.2 in clause SDC1.4.3.3A.
2. A similar approach for Demand Side units has been included, where a further exception to the relevant clause (SDC1.4.3.4) is added as SDC1.4.3.5A.
3. This modification proposal adds an additional clause, SDC1.4.3.9 under a heading Outturn Availability.
4. The modification proposal also adds four definitions to the Glossary and Definitions section for:
 - a. **Annual Maintenance Outage;**
 - b. **Meshed Transmission Station;**
 - c. **Outturn Availability;** and
 - d. **Outturn Availability Connection Asset.**

4. Consultation Process

This modification proposal was presented to the Joint Grid Code meeting on the 2 December 2015 for discussion with panel members. SONI then published the consultation on the 15 February 2016 with a closing date of 28 March 2016.

Documents were placed on the SONI website at:

<http://www.soni.ltd.uk/Operations/GridCodes/documentation/consultations/>

Appendix A contains the modification that was published for the 6 week consultation period. SONI believes it has met its obligations to consult on this Grid Code modification.

5. Responses to Consultation

There were two responses received to the consultation: (i) from AES Kilroot Power Ltd and AES Ballylumford Ltd which can be found in Appendix B-1; and (ii) from PPB PowerNI which can be found in Appendix B-2.

This section of the report groups similar responses together and addresses the issues raised with the SONI position for the regulators information.

5.1. Definition of Annual Maintenance

AES Comments

AES commented that the definition needs to reflect the fact that maintenance outages require effective outage planning, and further commented that “Outage planning is referred to under Grid Code as having been planned in advance of the year in which it is to be taken”,

SONI Response

SONI agree that the definition of Annual Maintenance should reflect the fact that outages are planned and have updated wording of the definition accordingly. SONI do not agree that this planning must take place in advance of the year. Reasons are discussed later in this paper in the section titled Alignment of Annual Maintenance Outages with Generator Outages.

AES commented that “the SEMC decision paper, SEM-15-071, makes reference to the HLD principles and the reality of providing for preventative maintenance” and requested that “the word preventative should be incorporated into the Grid Code Modification.

SONI Response

SEM-15-071 states that “for Northern Ireland generators connected at the “new” position, the SEMC have concluded that generators will be considered Outturn Available for all connection asset outages with the exception of annual maintenance outages lasting up to and including five calendar days.” Annual maintenance includes both corrective and routine maintenance as set out by NIE Networks (the TAO in the Northern Ireland) in its “Guide to Transmission Equipment Maintenance”, so inclusion of the word preventative is not appropriate for this Grid Code Modification.

PPB-Power NI Comments

PPB - Power NI commented that it is important that the definition states that outages are planned in accordance with Grid Code (OC2.8) to enable the Generator to organise alignment with annual maintenance outages.

SONI Response

As OC2 is not common to both the SONI and EirGrid Grid Codes, SONI do not propose referencing it in the definition of Annual Maintenance as the proposed definition will appear in both codes. The alignment of outages are discussed in Section 5.9 of this report.

Updated Modification Proposal

Annual Maintenance Outage

A transmission outage that is scheduled with reasonable notice to the relevant Generator(s) in advance of the start of the outage for planned maintenance of equipment that is part of an **Outturn Availability Connection Asset**.

5.2. Definition of Outturn Availability

AES Comments

AES commented that the new term “Outturn Availability” includes **Pumped Storage Plant Demand**, but does not include **Pumped Storage Plant**. Is this an oversight, or is there a reason for this?

SONI Response

The definition of CDGU in the SONI Grid Code is:

“**Centrally Dispatched Generating Unit (CDGU)** A **Generating Unit** within a **Power Station** subject to **Central Dispatch**, which comprises, unless specified otherwise in relation to a particular use of the term a **Thermal Plant** including a **CCGT Installation**, a **Dispatchable WFPS**, **Hydro Unit** and **Pumped Storage Plant** in respect of its **Pumped Storage Generation**.”

As such, the inclusion of CDGU means that Pumped Storage Plant does not need to be included explicitly as it is already part of the CDGU definition.

PPB – Power NI Comments

PPB - Power NI commented that the definition for Outturn Availability needs to provide more clarity as it refers back to the Availability definition already in Grid Code so should be amended as follows:

‘The set of Availability data for the relevant CDGU, Controllable WFPS, Aggregated Generating Unit, Pumped Storage Plant Demand or Demand Side Unit as declared pursuant to SDC1.4 and submitted by the TSO to SEM after the end of the Trading Day. For the avoidance of doubt, Outturn Availability will be equal to Availability except for circumstances as detailed in SDC1.4.3.3 and SDC1.4.3.3A.’

SONI Response

The purpose of the exception clauses, SDC1.4.3.3 and SDC 1.4.3.3A, is to outline when a generator is permitted to declare Outturn Availability different from Availability, so to say “except for the circumstances outlined in SDC1.4.3.3 and SDC1.4.3.3A” is incorrect.

5.3. Generator Units affected by this modification

AES comments

AES commented that clause SDC1.4.3.3 is an exclusion clause to the requirements of clause SDC1.4.3.2 and the proposed additional clause should reflect the requirements of the original clauses. These original clauses refer to the requirements on Generator and Generator Aggregator. The new clause should take the same approach.

The SEMC decision does not appear to differentiate between the various generator units. The proposed new clause only identifies CDGU or Controllable WFPS. Since the proposed Outturn Availability definition refers to Pumped Storage Plant Demand, Demand Side Unit, Aggregated Generating Unit, in addition to the CDGU and Controllable WFPS then there may be a query over equitable treatment if these are not included in the new clause.

SONI Response

The TSOs, SONI and EirGrid have reviewed the Grid Codes and proposed Modifications in relation to these comments and have made the following changes to the Modification Proposals:

- **Pumped Storage Plant Demand**: Pumped Storage Plant Demand is declared available or not through EDIL i.e. a yes/no declaration. As such, it is necessary to apply the relevant exclusion for Outturn Availability to Pumped Storage Plant Demand as well as other unit types. The text in clause SDC1.4.3.3A has been updated to add Pumped Storage Plant Demand to the exclusion.
- **Aggregated Generating Unit**: Outturn Availability could possibly apply for an AGU. As such, the text in clause SDC1.4.3.3A has been updated to add AGUs to the exclusion.
- **Demand Side Units**: On review of the Grid Code and the comments received, although there are no applicable DSUs at present, SONI has updated the Modification Proposal to specifically address DSUs. DSUs are not currently considered in SDC1.4.3.2 or SDC1.4.3.3, but rather have specific clauses SDC1.4.3.4 and SDC1.4.3.5. As such, a new proposed specific exclusion clause, SDC1.4.3.5A will be included for DSUs.

5.4. Clause SDC1.4.3.9 Outturn Availability

PPB-Power NI comment

SDC1.4.3.9 may not be required if the definition for **Outturn Availability** is amended as per PPB suggestion for the definition of Outturn Availability. However if it is decided to keep this section then the wording should be amended to include a reference to the exceptions in SDC1.4.3.3 and SDC1.4.3.3A as the existing wording refers the reader back to the definition of **Availability**. This **Availability** definition does not include the exceptions and so they could be missed by the reader. The wording should be amended to provide clarity.

SONI Response

SONI are of the view that a term is defined in the Glossary definitions needs to be should be in the main body of the Grid Code - hence the reason this is added as an additional clause SDC1.4.3.9. As discussed the proposed definition of Outturn Availability from PPB – Power NI is not valid.

AES comment

There is a new clause proposed to be added – SDC1.4.3.9 which appears to try and define the Outturn Availability. This is already defined in GD1 and does not need to be repeated. If the defined term is lacking, then it should incorporate the words of this proposed clause.

The term Availability does not have its own clause, but is incorporated within SDC1.1.2.

SONI Response

SONI are of the view that if a term is defined in the Glossary should be in the main body of the Grid Code - hence the reason this is added as an additional clause SDC1.4.3.9. Whilst Availability does not have its own clause, it can be found in the main body of the Grid Code in numerous places.

5.5. “Legacy” Position Generation

PPB-Power NI Comment

SDC1.4.3.3A needs to be amended to exclude the Northern Ireland **Generating Units**, which are described as being at the legacy position; else this will create unnecessary debates in forthcoming years.

AES Comment

Throughout the Grid Code there are references to merchant and contracted units, with specific clauses applicable to PPA Generation. The SEMC decision specifically makes reference to the fact that –

No changes will be made to the current arrangements for the calculation of Outturn Availability for generators connected at the “legacy” position in Northern Ireland.

It is appropriate for the Grid Code to reflect this requirement and the TSOs should introduce a new, specific, clause to reflect the requirements of the SEMC. There should also be a specific defined term, to clarify this issue.

SONI Response

SONI understand that the following generators are currently connected the “legacy position in Northern Ireland:

- Ballylumford Power Station (BGT1, BGT2, B4 and B5)
- Coolkeeragh Power Station (CGT8)
- Kilroot Power Station (K1, K2, KGT1 and KGT2¹)

Rather than adding additional clauses to the Grid Code, SONI propose to reflect the SEMC decision with regards to legacy connected generation by supporting an application for derogation from this Grid Code modification by the generators in question.

¹ KGT1 and KGT2 are not directly connected to the NI System; the 275 kV connections listed in the Kilroot G1 and G2 connection agreement are used to transfer power between the Kilroot Gas Turbine generators and the Transmission System.

5.6. Generation Unit vs. Generating Unit

AES Comment

It should be noted that the proposed drafting includes (in bold) an undefined term – ‘Generation Unit’.

SONI Response

Clause SDC1.4.3.3A includes a reference to a Generation Unit. While both Generation Unit and Generating Unit are defined in the EirGrid Grid Code and have the same meaning, Generation Unit is not a defined term in the SONI Grid Code. To address this comment and to maintain consistency between the modification proposals, the text in SDC1.4.3.3A has been updated to replace Generation Unit with **Generating Unit**.

5.7. Clarification of Associated Capital Works

A comment was received at the JGCRP from Colin D’Arcy (CCGT) suggesting that more clarity be given to the proposed text in the clause SDC1.4.3.3A(b) and suggested changing the wording ‘related to’ to ‘driven by’. Following review, the SONI and EirGrid have updated the text to clarify that this exceptions relates to work to the Transmission System is being carried out that is driven by the relevant generator or driven by the works related to the Connection Agreement of the relevant generator.

5.8. Reference to the TSO Implementation Paper in the Grid Code

PPB – PowerNI Comment

This proposed modification does not reference the other document which explains the application of this **Outturn Availability** process; “Process for the Calculation of Outturn Availability” published on 10 February 2016. PPB believe there should be a reference in Grid code to this document and that the section on changes to the designated days should be included in Grid Code for consistency with the Outage Section and movement of planned outages (OC2.6.4).

SONI Response

SONI believe that the proposed Grid Code modification delivers the sufficient detail for implementation of the SEMC Decision of Outturn Availability, as it sets out clearly the relevant generator’s Outturn Availability during Annual Maintenance or other relevant transmission outages. It also defines which transmission assets the decision refers to, through the definition of Outturn Availability Connection Asset. As such, SONI do not believe that it is necessary or appropriate to reference an implementation paper in the Grid Code, as the implementation paper is a guideline with examples.

5.9. Alignment of Annual Maintenance Outages with Generator Outages

PPB – Power NI Comment

Requests for changes to outages must be treated in a fair and transparent manner. If the TSO/TAO request a change to the agreed date of an outage and the **Generating Unit** makes reasonable endeavours to realign his outage but is unable to do so, the designated days are moved to the new date anyway and the **Generating Unit** is set to lose availability during his already planned outage and now also for an additional 5 days due to no fault of his own. However if a **Generating Unit** requests a change to an agreed date the TSO/TAO will use reasonable endeavours to change the agreed **Annual Maintenance** but if a new date cannot be agreed then the original agreed date remains. These two movements should not follow a different process, if a **Generating Unit** has fully co-operated with the process, and through no fault of its own, the **Annual Maintenance** dates are changed the **Generating Unit** should not be financially affected. Any difference in the application of the movement, requested by either party, of already aligned outages is discriminatory. Once Final Outage Programmes have been published at the end of September the dates of the designated days cannot be amended unless both parties can agree a new date.

AES Comment

The SEMC decision makes reference to the 5 days of Outturn Availability providing an incentive on the generators to align outages.

For the generators to align and agree their “Planned Outages” with the TSO, they would need to have visibility of the Transmission System outages. Since a Planned Outage is an outage that must be planned in advance of the year in which it is to be taken under OC2, then the transmission System outage should also be set well in advance.

The SEMC also states in their decision paper, SEM-15-071 that

..generators will be considered Outturn Available for all connection asset outages with the exception of annual maintenance outages lasting up to and including five calendar days.

It is important to recognise the SEMC has differentiated the ongoing reactive maintenance to Transmission System issues and Annual Planned Preventative maintenance.

SONI Response

The first five days of annual maintenance are the days where the Generating Unit is required to declare zero Outturn Availability. SONI are committed to aligning the dates of Annual Maintenance Outages with the Generator’s own outage.

The scheduling of transmission outages is a process that requires Generator Outage dates as a starting point. SONI and NIEN will work together to identify any Annual Maintenance Outages required in advance of the year the outage; dates published in September of the preceding year are indicative and subject to change. When outages have to be moved and where alignment is not possible, the details will be recorded in an ex-post report that will be circulated to the generator and the Regulatory Authority at the end of the year. These changes and moves will be up for discussion at the ex-post forum.

While the Generating Unit could potentially be penalised financially should the SONI move the maintenance, it should be noted that this situation is not beneficial for either party, as system capacity margin and availability are reduced. In addition, SONI have clearly stated the principle

that each maintenance outage will overlap with the generator's own outage wherever possible. For times when annual maintenance and the generator's own outage do not overlap, it is the view of SONI that the TUOS customer should not be asked to compensate a Generating Unit (before the end of the fifth day) which is disconnected for the maintenance of an asset which exists solely to facilitate export from that generator.

The SEMC decision paper does not give the SONI the authority to wave designated days, clearly stating that the generation units should not be available for outages due to annual maintenance lasting up to and including five calendar days. Designated days are those days when maintenance is scheduled. If Annual Maintenance has to be moved, SONI propose that the designated days will apply for the planned maintenance.

5.10. Implementation Outturn Availability from 1st January 2016

PPB – Power NI comment

It has been briefed that this process will be active from 1st January 2016. Considering the decision on this "Process for the Calculation of Outturn Availability" was only published on 29th September 2015 and the period of Generating Unit programming complete at the end of September 2015 for Year 1 (2016), it is impossible for Generating Units to actively try and match their outages with the Annual Maintenance of Transmission/Distribution Outages. Therefore it is unfair that this should come into play for Calendar year 2016. The earliest time of application of this change is Calendar year 2017 where all parties have the ability to arrange the best possible outcome for the system.

In addition; Availability declarations are required under Grid Code and this Grid Code Modification has not been approved and so cannot reasonably be applied until such a time as it is included in Grid Code. It is important that the normal Grid Code rules are followed to ensure proper governance around Grid Code changes applies.

SONI Response

Although this response has no bearing on the wording of the Grid Code modification SONI would like to comment that they are working on the basis of this SEMC clarification published on 22 December 2015 which states:

"The new provisions will take effect from 1st January 2016 in line with the new outage year. To the extent that the respective Grid Codes in RoI and NI are not modified in time, the arrangements will be deemed commercially effective from this date, regardless of the date that the Grid Code modifications are actually finalised."

6. Changes to Previous Modification

Following the consultation process SONI have taken on board the responses and have updated the wording of the Grid Code modification as described in Section 5 of this report, for clarity changes to the previous Grid Code modification can be seen below in [blue](#). A redline version of the updated Grid Code modification can be found in Appendix A.2.

Annual Maintenance Outage

A transmission outage [that is scheduled with reasonable notice to the relevant Generator\(s\) in advance of the start of the outage](#) for [planned](#) maintenance of equipment that is part of an **Outturn Availability Connection Asset**.

SDC1.4.3.3A SDC1.4.3.2 shall not apply for a **CDGU**, a **Controllable WFPS**, an [Aggregated Generating Unit or Pumped Storage Plant Demand](#) that is disconnected during any one or more of the following:

- (a) any **TSO** scheduled **Annual Maintenance Outage** or portion thereof on the **Outturn Availability Connection Asset** lasting up to and including a maximum of five days in total in a calendar year; or
- (b) where work to the **Transmission System** is being carried out that is [driven by](#) the relevant **CDGU**, **Controllable WFPS**, [Aggregated Generating Unit or Pumped Storage Plant Demand](#) or [driven by works related to the Connection Agreement of the relevant CDGU, Controllable WFPS, Aggregated Generating Unit or Pumped Storage Plant Demand](#). This does not include work carried out related to another **Generating Unit** with a different **Connection Point** but a shared asset.

The relevant **CDGU**, **Controllable WFPS**, [Aggregated Generating Unit or Pumped Storage Plant Demand](#) shall declare **Availability** at a value of zero during any one or more of (a) or (b) above, as advised by the **TSO**.

SDC1.4.3.4 Availability of Demand Side Units

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

[SDC1.4.3.5A](#) [SDC1.4.3.4 shall not apply for a Demand Side Unit that is disconnected during any one or more of the following:](#)

- (a) [any TSO scheduled Annual Maintenance Outage or portion thereof on the Outturn Availability Connection Asset lasting up to and including a maximum of five days in total in a calendar year; or](#)

- (b) where work to the **Transmission System** is being carried out that is driven by the relevant **Demand Side Unit** or driven by works related to **Connection Agreement** of the relevant **Demand Side Unit**. This does not include work carried out related to another **Generating Unit** with a different **Connection Point** but a shared asset.

The relevant **Demand Side Unit** shall declare **Availability** at a value of zero during any one or more of (a) or (b) above, as advised by the **TSO**.

7. Conclusion from the Consultation Process

Having considered the two responses from the consultation process, SONI have updated the wording of this modification accordingly. SONI recommends that the Utility Regulator approve this updated Grid Code Modification in its entirety with no changes.

SONI believe that the approval of this modification will ensure that Outturn Availability is defined in the SONI Grid Code.

Appendix A.1 – Original Modification Proposal (Redline)

GLOSSARY AND DEFINITIONS (GD)

GDI. DEFINED TERMS

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

<u>Annual Maintenance</u>	<u>A transmission outage for maintenance of equipment that is part of an Outturn Availability Connection Asset.</u>
<u>Meshed Transmission Station</u>	<u>A Substation which is looped into the Transmission System.</u>
<u>Outturn Availability</u>	<u>The set of Availability data for the relevant CDGU, Controllable WFPS, Aggregated Generating Unit, Pumped Storage Plant Demand or Demand Side Unit as declared pursuant to SDC1.4 and submitted by the TSO to SEM after the end of the Trading Day.</u>
<u>Outturn Availability Connection Asset</u>	<u>Any equipment that is part of the Transmission System between and including the Connection Point and the busbar clamps at the Meshed Transmission Station for which the TSO schedules outages.</u>

SDC1.4.3.1 Availability of Generating Units

Each Generator and Generator Aggregator shall in relation to its CDGUs, Controllable WFPSs or Aggregated Generating Units maintain, repair, operate and fuel the CDGU and/or Controllable WFPS and/or Aggregated Generating Unit as required by Prudent Operating Practice and any legal requirements applicable to its jurisdiction, with a view to providing the required System Support Services as provided for in a System Support Services Agreement.

SDC1.4.3.2 Each Generator, and where relevant each Generator Aggregator, shall, subject to the exceptions in SDC1.4.3.3 and SDC1.4.3.3A, use reasonable endeavours to ensure that it does not at any time declare in the case of its CDGU, Controllable WFPS, or Aggregated Generating Unit, the Availability or Technical Parameters at levels or values different from those that the CDGU, Controllable WFPS, and/or an Aggregated Generating Unit could achieve at the relevant time.

The TSO can reject declarations to the extent that they do not meet these requirements.

SDC1.4.3.3 SDC1.4.3.2 shall not apply to the extent:

- (a) it would require the **Generator** or, where relevant, the **Generator Aggregator** to declare levels or values better than the **Registered Capacity and Technical Parameters** as submitted under the **Planning Code** in respect of a **CDGU**, a **Controllable WFPS** and/or an **Aggregated Generating Unit**;
- (b) necessary during periods of **Planned Outage** or **Planned Maintenance Outage** or otherwise with the consent of the TSO;
- (c) necessary while repairing or maintaining the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit** or equipment necessary to the operation of the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit** where such repair or maintenance cannot reasonably, in accordance with **Prudent Operating Practice** be deferred to a period of **Planned Outage** or **Planned Maintenance Outage**;
- (d) necessary to avoid an imminent risk of injury to persons or material damage to property (including the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit**); or
- (e) it is not lawful for the **Generator** to operate the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Units**.

SDC1.4.3.3A SDC1.4.3.2 shall not apply for a CDGU or Controllable WFPS that is disconnected during any one or more of the following:

- (a) any TSO scheduled Annual Maintenance outage or portion thereof on the Outturn Availability Connection Assets lasting up to and including a maximum of five days in total in a calendar year, or
- (b) where work to the Transmission System is being carried out that is related to the relevant CDGU or Controllable WFPS. This does not include work carried out related to another Generation Unit with a different Connection Point but a shared asset.

The relevant CDGU or Controllable WFPS shall declare Availability at a value of zero during any one or more of (a) or (b) above, as advised by the TSO.

SDC1.4.3.4 Availability of Demand Side Units

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

- SDC1.4.3.5 SDC1.4.3.4 shall not apply to the extent:
- (a) it would require the **Demand Side Unit Operator** to declare levels or values better than **Demand Side Unit MW Capacity** and **Technical Parameters** as submitted under the Planning Code in respect of a **Demand Side Unit**;
 - (b) necessary during periods of **Planned Outage** or **Planned Maintenance Outage** or otherwise with the consent of the TSO;
 - (c) necessary while repairing or maintaining the **Demand Side Unit** or equipment necessary to the operation of the **Demand Side Unit** where such repair or maintenance cannot reasonably, in accordance with **Prudent Operating Practice**, be deferred to a period of **Planned Outage** or **Planned Maintenance Outage**;
 - (d) necessary to avoid an imminent risk of injury to persons or material damage to property (including the **Demand Side Unit**);
 - (e) it is not lawful for the **Demand Side Unit Operator** to change its **Demand Side Unit MW Response** or to operate its **Demand Side Unit**.

SDC1.4.3.6 Changes in Availability:

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

SDC1.4.3.7 Decreasing: When a **CDGU** and/or **Controllable WFPS** is **Synchronised** to the **System** the **Generator** may have occasion to issue an **Availability Notice** or a **Re-**

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

SDC1.4.3.8 If an **Interconnector Owner** in respect of an **Interconnector** issues an **Availability Notice** or a **Re-declaration** increasing (from zero or otherwise) or decreasing the level of available transfer capacity on the **Interconnector** as a whole from a specified time, such notice shall, subject to SDC1.4.5.1(a), be effective immediately following the specified time.

SDC1.4.3.9 **Outturn Availability**

Outturn Availability shall be set equal to the declared value of Availability.

Appendix A.2 – Updated Modification Proposal (Redline)

GDL. DEFINED TERMS

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

<u>Annual Maintenance Outage</u>	<u>A transmission outage that is scheduled with reasonable notice to the relevant Generator(s) in advance of the start of the outage for planned maintenance of equipment that is part of an Outturn Availability Connection Asset.</u>
<u>Meshed Transmission Station</u>	<u>A Substation which is looped into the Transmission System.</u>
<u>Outturn Availability</u>	<u>The set of Availability data for the relevant CDGU, Controllable WFPS, Aggregated Generating Unit, Pumped Storage Plant Demand or Demand Side Unit as declared pursuant to SDC1.4 and submitted by the TSO to SEM after the end of the Trading Day.</u>
<u>Outturn Availability Connection Asset</u>	<u>Any equipment that is part of the Transmission System between and including the Connection Point and the busbar clamps at the Meshed Transmission Station for which the TSO schedules outages.</u>

SDC1.4.3.1 Availability of Generating Units

Each Generator and Generator Aggregator shall in relation to its CDGUs, Controllable WFPSs or Aggregated Generating Units maintain, repair, operate and fuel the CDGU and/or Controllable WFPS and/or Aggregated Generating Unit as required by Prudent Operating Practice and any legal requirements applicable to its jurisdiction, with a view to providing the required System Support Services as provided for in a System Support Services Agreement.

SDC1.4.3.2 Each Generator, and where relevant each Generator Aggregator, shall, subject to the exceptions in SDC1.4.3.3 and SDC1.4.3.3A, use reasonable endeavours to ensure that it does not at any time declare in the case of its CDGU, Controllable WFPS, or Aggregated Generating Unit, the Availability or Technical Parameters at levels or values different from those that the CDGU, Controllable

WFPS, and/or an **Aggregated Generating Unit** could achieve at the relevant time. The TSO can reject declarations to the extent that they do not meet these requirements.

SDC1.4.3.3 SDC1.4.3.2 shall not apply to the extent:

- (a) it would require the **Generator** or, where relevant, the **Generator Aggregator** to declare levels or values better than the **Registered Capacity and Technical Parameters** as submitted under the **Planning Code** in respect of a **CDGU**, a **Controllable WFPS** and/or an **Aggregated Generating Unit**;
- (b) necessary during periods of **Planned Outage** or **Planned Maintenance Outage** or otherwise with the consent of the TSO;
- (c) necessary while repairing or maintaining the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit** or equipment necessary to the operation of the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit** where such repair or maintenance cannot reasonably, in accordance with **Prudent Operating Practice** be deferred to a period of **Planned Outage** or **Planned Maintenance Outage**;
- (d) necessary to avoid an imminent risk of injury to persons or material damage to property (including the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Unit**); or
- (e) it is not lawful for the **Generator** to operate the **CDGU**, the **Controllable WFPS** and/or the **Aggregated Generating Units**.

SDC1.4.3.3A SDC1.4.3.2 shall not apply for a CDGU, a Controllable WFPS, an Aggregated Generating Unit or Pumped Storage Plant Demand that is disconnected during any one or more of the following:

- (a) any TSO scheduled Annual Maintenance Outage or portion thereof on the Outturn Availability Connection Asset lasting up to and including a maximum of five days in total in a calendar year; or
- (b) where work to the Transmission System is being carried out that is driven by the relevant CDGU, Controllable WFPS, Aggregated Generating Unit or Pumped Storage Plant Demand or driven by works related to the Connection Agreement of the relevant CDGU, Controllable WFPS, Aggregated Generating Unit or Pumped Storage Plant Demand. This does not include work carried out related to another Generating Unit with a different Connection Point but a shared asset.

The relevant CDGU, Controllable WFPS, Aggregated Generating Unit or Pumped Storage Plant Demand shall declare Availability at a value of zero during any one or more of (a) or (b) above, as advised by the TSO.

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

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

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

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

SDC1.4.3.5A **SDC1.4.3.4 shall not apply for a Demand Side Unit that is disconnected during any one or more of the following:**

- (a) any TSO scheduled Annual Maintenance Outage or portion thereof on the Outturn Availability Connection Asset lasting up to and including a maximum of five days in total in a calendar year; or**
- (b) where work to the Transmission System is being carried out that is driven by the relevant Demand Side Unit or driven by works related to Connection Agreement of the relevant Demand Side Unit. This does not include work carried out related to another Generating Unit with a different Connection Point but a shared asset.**

The relevant Demand Side Unit shall declare Availability at a value of zero during any one or more of (a) or (b) above, as advised by the TSO.

SDC1.4.3.6

Changes in Availability:

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

SDC1.4.3.7

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

SDC1.4.3.8

If an **Interconnector Owner** in respect of an **Interconnector** issues an **Availability Notice** or a **Re-declaration** increasing (from zero or otherwise) or decreasing the level of available transfer capacity on the **Interconnector** as a whole from a specified time, such notice shall, subject to SDC1.4.5.1(a), be effective immediately following the specified time.

SDC1.4.3.9

Outturn Availability

Outturn Availability shall be set equal to the declared value of Availability.

Appendix B – Consultation Responses
B-1 AES Response



***Response to SONI Consultation on
Outturn Availability Grid Code Modification***

***SONI Grid Code Modification Proposal
SPID 150216***

**On behalf of
AES Kilroot Power Ltd and AES Ballylumford Ltd**

24th March 2016

Outturn Availability Grid Code Modification

Introduction

AES notes the publication of the SONI consultation cover letter referencing proposed amended texts of the Grid Code in relation to Outturn Availability and we welcome the opportunity to provide comments on the issues raised. AES would like to submit the following response to the SONI request for comments.

AES is a global energy company with assets in the all island market consisting of coal and gas fired conventional and CCGT plant with additional distillate fired peaking gas turbine plant. AES is a non-vertically integrated independent generator which owns and operates Kilroot and Ballylumford power stations in Northern Ireland with a combination of merchant and contracted base load, mid merit and peaking plant. The responses to this consultation are therefore conditioned by the nature of our current position and portfolio of assets operating in the SEM.

This response is submitted with reference to the level of detail that is currently available on the changes to the electricity industry on the Island, including iSEM, Capacity Remuneration Mechanism (CRM), Capacity Auctions, and other Regulator decisions.

It is noted that the proposed modification wording is intended to reflect the requirement by the SEMC decision (SEM-15-071) and the Addendum (SEM-15-106)

Defined Terms

The new term “Annual Maintenance” definition should reflect the SEMC decision regarding ‘Annual Maintenance Outages’ and the fact that they require effective outage planning. Outage planning is referred to under Grid Code as having been planned in advance of the year in which it is to be taken.

Suggest that the term is rewritten as

“Planned Annual Maintenance Outage” – A transmission outage for planned preventative maintenance of equipment that is part of an Outturn Available Connection Asset.

The SEMC decision paper, SEM-15-071, makes reference to the HLD principles and the reality of providing for preventative maintenance. The word ‘preventative’ should therefore be incorporated in Grid Code.

The new term “Outturn Availability” includes Pumped Storage Plant Demand, but does not include Pumped Storage Plant. Is this an oversight, or is there a reason for this?

Changes to SDC1.4.3

There is an additional clause proposed to be added in clause SDC1.4.3.3

Clause SDC1.4.3.3 is an exclusion clause to the requirements of clause SDC1.4.3.2 and the proposed additional clause should reflect the requirements of the original clauses. These original clauses refer to the requirements on Generator and Generator Aggregator. The new clause should take the same approach.

The SEMC decision does not appear to differentiate between the various generator units. The proposed new clause only identifies CDGU or Controllable WFPS. Since the proposed Outturn Availability definition refers to Pumped Storage Plant Demand, Demand Side Unit, Aggregated Generating Unit, in addition to the CDGU and Controllable WFPS then there may be a query over equitable treatment if these are not included in the new clause.

It should be noted that the proposed drafting includes (in bold) an undefined term – ‘Generation Unit’.

Suggest that the clause is rewritten as

SDC1.4.3.3A SDC1.4.3.2 shall not apply to the extent:

- (a) necessary during periods of TSO scheduled Planned Annual Maintenance Outage or portion thereof on the Outturn Availability Connection Assets, lasting up to and including a maximum of five days, in total, in a calendar year; or
- (b) necessary during periods where work to the Transmission System is being carried out that is related to the relevant CDGU, Controllable WFPS, Pumped Storage Plant Demand, Pumped Storage Plant, Demand Side Unit, or Aggregated Generating Unit. This does not include work carried out related to another CDGU, Controllable WFPS, Pumped Storage Plant Demand, Pumped Storage Plant, Demand Side Unit, or Aggregated Generating Unit with a different Connection Point but a shared asset.

The relevant CDGU, Controllable WFPS, Pumped Storage Plant Demand, Pumped Storage Plant, Demand Side Unit, or Aggregated Generating Unit shall declare Availability at a value of zero during any one or more of (a) or (b) above, as advised by the TSO.

Addition to SDC1.4.3

There is a new clause proposed to be added – SDC1.4.3.9 which appears to try and define the Outturn Availability. This is already defined in GD1 and does not need to be repeated. If the defined term is lacking, then it should incorporate the words of this proposed clause.

The term Availability does not have its own clause, but is incorporated within SDC1.1.2.

Adherence to the SEMC decision (Legacy)

Throughout the Grid Code there are references to merchant and contracted units, with specific clauses applicable to PPA Generation. The SEMC decision specifically makes reference to the fact that –

No changes will be made to the current arrangements for the calculation of Outturn Availability for generators connected at the “legacy” position in Northern Ireland.

It is appropriate for the Grid Code to reflect this requirement and the TSOs should introduce a new, specific, clause to reflect the requirements of the SEMC. There should also be a specific defined term, to clarify this issue.

Implementation / Application reasons

The SEMC decision makes reference to the 5 days of Outturn Availability providing an incentive on the generators to align outages.

For the generators to align and agree their “Planned Outages” with the TSO, they would need to have visibility of the Transmission System outages. Since a Planned Outage is an outage that must be planned in advance of the year in which it is to be taken under OC2, then the transmission System outage should also be set well in advance.

The SEMC also states in their decision paper, SEM-15-071 that

..generators will be considered Outturn Available for all connection asset outages with the exception of annual maintenance outages lasting up to and including five calendar days.

It is important to recognise the SEMC has differentiated the ongoing reactive maintenance to Transmission System issues and Annual Planned Preventative maintenance.

B-1 PPB – PowerNI Response

PPB Response to SONI Consultation Paper on Grid Code

Outturn Availability

23 March 2016

This is the PPB response to the “SONI Consultation on Outturn Availability Grid Code Modification” dated 15 February 2016.

Defined Terms

The definition for *Annual Maintenance* should be amended as follows:

‘A transmission outage, planned in accordance with OC2.8, for maintenance of equipment that is part of an Outturn Availability Connection Asset.’

It is important that these *Annual Maintenance* outages are planned in accordance with Grid Code (OC2.8) and follow the time scales as required for the *Generating Units* in order to give the appropriate notice to allow the generator to organise alignment. It would be totally unfair to expect a generator to be penalised by loss of availability for an outage on the transmission or distribution system which has been slotted in after all other generation outages where agreed. If the *Final Outage Programme* and *Final System Outage Plan* has been issued then any transmission or distribution outages which are required within the following year, must not be included as *Annual Maintenance*, for the purposes of *Outturn Availability*, and so do not count towards the 5 days of Outturn Availability equal to zero.

The definition for *Outturn Availability* needs to provide more clarity as it refers back to the *Availability* definition already in Grid Code so should be amended as follows:

‘The set of *Availability* data for the relevant *CDGU*, *Controllable WFPS*, *Aggregated Generating Unit*, *Pumped Storage Plant Demand* or *Demand Side Unit* as declared pursuant to SDC1.4 and submitted by the *TSO* to *SEM* after the end of the *Trading Day*. For the avoidance of doubt, *Outturn Availability* will be equal to *Availability* except for circumstances as detailed in SDC1.4.3.3 and SDC1.4.3.3A.’

Availability of Generating Units

SDC1.4.3.3A needs to be amended to exclude the Northern Ireland *Generating Units*, which are described as being at the legacy position; else this will create unnecessary debates in forthcoming years.

This proposed modification does not reference the other document which explains the application of this *Outturn Availability* process; “Process for the Calculation of Outturn Availability” published on 10 February 2016. PPB believe there should be a reference in Grid code to this document and that the section on changes to the designated days should be included in Grid Code for consistency with the Outage Section and movement of planned outages (OC2.6.4).

Requests for changes to outages must be treated in a fair and transparent manner. If the TSO/TAO request a change to the agreed date of an outage and the *Generating Unit* makes reasonable endeavours to realign his outage but is unable to do so, the designated days are moved to the new date anyway and the *Generating Unit* is set to lose availability during his already planned outage and now also for an additional 5 days due to no fault of his own. However if a *Generating Unit* requests a change to an agreed date the TSO/TAO will use reasonable endeavours to change the agreed *Annual Maintenance* but if a new date cannot be agreed then the original agreed date remains. These two movements should not follow a

different process, if a *Generating Unit* has fully co-operated with the process, and through no fault of its own, the *Annual Maintenance* dates are changed the *Generating Unit* should not be financially affected. Any difference in the application of the movement, requested by either party, of already aligned outages is discriminatory. Once Final Outage Programmes have been published at the end of September the dates of the designated days cannot be amended unless both parties can agree a new date.

Outturn Availability

SDC1.4.3.9 may not be required if the definition for *Outturn Availability* is amended as suggested above. However if it is decided to keep this section then the wording should be amended to include a reference to the exceptions in SDC1.4.3.3 and SDC1.4.3.3A as the existing wording refers the reader back to the definition of *Availability*. This *Availability* definition does not include the exceptions and so they could be missed by the reader. The wording should be amended to provide clarity.

Additional Comment

It has been briefed that this process will be active from 1st January 2016. Considering the decision on this “Process for the Calculation of *Outturn Availability*” was only published on 29th September 2015 and the period of *Generating Unit* programming complete at the end of September 2015 for Year 1 (2016), it is impossible for *Generating Units* to actively try and match their outages with the *Annual Maintenance* of Transmission/Distribution Outages. Therefore it is unfair that this should come into play for Calendar year 2016. The earliest time of application of this change is Calendar year 2017 where all parties have the ability to arrange the best possible outcome for the system.

In addition; *Availability* declarations are required under Grid Code and this Grid Code Modification has not been approved and so cannot reasonably be applied until such a time as it is included in Grid Code. It is important that the normal Grid Code rules are followed to ensure proper governance around Grid Code changes applies.

PPB - Power NI