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# EirGrid GCRP Meeting

28 June 2023



# EirGrid GCRP Agenda

## 1. INTRODUCTION: 15 mins

- a. Welcome to Members;
- b. Minutes and Actions from [Previous Meeting](#) (10 May 2023).

## 2. PROPOSAL: 50 mins

- a. MPID 306 Revised Individual Demand Site Definition (version 2);
- b. MPID 309 PPM1.3.2 Exclusions from CC sections;
- c. MPID 310 Housekeeping modification;
- d. MPID 311 Housekeeping modification;
- e. MPID 312 Indicative Outage Programme.

## 1. UPDATES: 10 mins

- a. Registered Capacity Definition Review;
- b. CRU.

## 1. AOB. 5 mins



28/06/2023

# MPID 306 Individual Demand Site Agreements and associated definitions (revised).

Deirdre Hughes





# MPID 306

## Individual Demand Site Agreements and associated definitions (revised)

### Revised Modification

- At the GCRP Meeting held on 10<sup>th</sup> May 2023, panel members put forward a number of considerations for modification.
- EirGrid has discussed, reviewed and added minor changes.

Definition:

|   |   |
|---|---|
| Individual Demand Site  | A single premises of a <b>Demand Customer</b> connected to the <b>Transmission System</b> or a <b>DSO Demand Customer</b> connected to the <b>Distribution System</b> with a <b>Demand Side Unit MW Capacity</b> .<br>This includes where the <b>Individual Demand Site</b> forms a <b>Demand Side Unit</b> or is part of an <b>Aggregated Demand Site</b> for which <b>Demand Side Unit Operator</b> has entered into a <b>Demand Side Unit Operator System Operator Interface Agreement</b> with the <b>TSO</b> with respect to that premise. |
| Demand Side Unit Operator                                     | A person who <ol style="list-style-type: none"><li>1) operates a <b>Demand Side Unit</b>, with an aggregated <b>Demand Side Unit MW Capacity</b> not less than 4MW; and</li><li>2) Is in receipt of or has signed a <b>Demand Side Unit Operator System Operator Interface Agreement</b></li></ol>  |
| Demand Side Unit Operator System Operator Interface Agreement | The bilateral agreement between the <b>TSO</b> and the <b>Demand Side Unit Operator</b> , which contains the detail specific to the <b>Individual Demand Site(s)</b> within a <b>Demand Side Unit</b> or is part of an <b>Aggregated Demand Site</b> .  |



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# MPID 309 PPM1.3.2 Exclusions from CC sections;

Melissa Dunne



## MPID 309 PPM1.3.2 - Exclusions from Connection Conditions Section

### Proposed Modification

- *PPM1.3.2*, which outlines the Grid Code sections that PPMs are required to comply with, also contains a list of the Connection Condition clauses that PPMs are excluded from.
- At the GCRP Meeting on 09 November 2022, panel member Peter King (Non-Synchronous Renewable Generators) put forward a consideration for a future modification to this clause, as the list of exclusions appeared to omit certain Connection Condition clauses that PPMs are not required to comply with.
- EirGrid agreed to examine this list, and identified the following changes:

## MPID 309 PPM1.3.2 - Exclusions from Connection Conditions Section

### Proposed Modification

- ❖ *CC.7.3.1.1 (ee) and (ff)* will be added to the exclusion list, as all PPMs are excluded from the requirement to be capable of starting up on Secondary Fuel, and subsequently from the requirement to stock Secondary Fuel;
- ❖ *CC.7.3.1.3* will be added to the exclusion list, as the clause reads '*Users shall install Generation Unit governors that comply with OC.4.3.4.*', and PPMs are excluded from clause OC.4.3.4 on Frequency Response Systems;
- ❖ *CC.7.3.3* and *CC.7.3.4* will be added to the exclusion list, as PPMs are not required to provide Control Synchronising;
- ❖ *CC.7.4* and *CC.7.5* will be added to the exclusion list, as they refer to requirements specific to Demand Side Units and Interconnectors respectively, not PPMs.

## Table outlining the proposed changes:

| Clause   | Error   | Red Line Version Text<br><i>Deleted text in <del>strike-through-red font</del> and new text highlighted in blue font</i>  | Green Line Version Text   |
|----------|---|---|---|
| PPM1.3.2 | Clause PPM1.3.2 lists the sections of the Grid Code which PPMs must comply with. It has been identified that the list of exclusions within PPM1.3.2 was incomplete and the purpose of the modification proposal is to correct this error. | <p>In addition to PPM1, <b>Controllable PPMs</b> and <b>Energy Storage Power Station Demand</b> are required to comply with the following sections of the <b>Grid Code</b>:</p> <ul style="list-style-type: none"> <li>• GC - General Conditions</li> <li>• PC - Planning Code</li> <li>• PCA – Planning Code Appendix</li> <li>• CC- Connection Conditions excluding: <ul style="list-style-type: none"> <li>○ CC.7.2.5.1</li> <li>○ CC.7.2.5.2</li> <li>○ CC.7.3.1.1 (a) to (h), <del>and</del> (j) to (u), <del>and</del> (y) and (dd) to (ff)</li> <li>○ CC.7.3.1.2</li> <li>○ CC.7.3.1.3</li> <li>○ CC.7.3.3</li> <li>○ CC.7.3.4</li> <li>○ CC.7.3.5</li> <li>○ CC.7.3.6</li> <li>○ CC.7.3.7</li> <li>○ CC.7.3.8</li> <li>○ CC.7.4</li> <li>○ CC.7.5</li> <li>○ CC.12.2</li> <li>○ CC.12.3</li> </ul> </li> <li>• OC.1</li> <li>• OC.2</li> <li>• OC.4 excluding: <ul style="list-style-type: none"> <li>○ OC.4.3.4</li> <li>○ OC.4.4.5.3</li> <li>○ OC.4.4.5.4</li> <li>○ OC.4.4.5.5</li> </ul> </li> </ul> | <p>In addition to PPM1, <b>Controllable PPMs</b> and <b>Energy Storage Power Station Demand</b> are required to comply with the following sections of the <b>Grid Code</b>:</p> <ul style="list-style-type: none"> <li>• GC - General Conditions</li> <li>• PC - Planning Code</li> <li>• PCA – Planning Code Appendix</li> <li>• CC- Connection Conditions excluding: <ul style="list-style-type: none"> <li>○ CC.7.2.5.1</li> <li>○ CC.7.2.5.2</li> <li>○ CC.7.3.1.1 (a) to (h), (j) to (u), (y) and (dd) to (ff)</li> <li>○ CC.7.3.1.2</li> <li>○ CC.7.3.1.3</li> <li>○ CC.7.3.3</li> <li>○ CC.7.3.4</li> <li>○ CC.7.3.5</li> <li>○ CC.7.3.6</li> <li>○ CC.7.3.7</li> <li>○ CC.7.3.8</li> <li>○ CC.7.4</li> <li>○ CC.7.5</li> <li>○ CC.12.2</li> <li>○ CC.12.3</li> </ul> </li> <li>• OC.1</li> <li>• OC.2</li> <li>• OC.4 excluding: <ul style="list-style-type: none"> <li>○ OC.4.3.4</li> <li>○ OC.4.4.5.3</li> <li>○ OC.4.4.5.4</li> <li>○ OC.4.4.5.5</li> </ul> </li> </ul> |



28/06/2023

# MPID 310 and 311 Housekeeping Mods

Melissa Dunne



# MPID 310 Housekeeping Various Definitions

## Proposed Modification

- Several housekeeping style errors have come to our attention in Grid Code version 12.
- The TSO propose to fix those errors that span various definitions in the definitions table.

## Table outlining the proposed changes:

| Definition            | Error  | Red Line Version Text<br><i>Deleted text in <del>strike-through red font</del> and new text highlighted in blue font</i>   | Green Line Version Text  |
|-----------------------|--|--|--|
| AGC Control Range     | The term “loads” appears unbolded, but is a defined term.  | The range of <del>loads</del> <b>Loads</b> over which AGC may be applied.  | The range of <b>Loads</b> over which AGC may be applied.   |
| Commercial Offer Data | The term “commercial offer data” appears unbolded, but is a defined term.  | The <del>commercial offer data</del> <b>Commercial Offer Data</b> submitted to the <b>MO</b> pursuant to the TSC.  | The <b>Commercial Offer Data</b> submitted to the <b>MO</b> pursuant to the TSC.   |
| De-Synchronise        | The term “Synchronised” appears unbolded, but is a defined term.   | The act of taking a <b>Generation Unit</b> which is <b>Synchronised</b> to the <b>Transmission System</b> off the <b>Transmission System</b> to which it has been <del>Synchronised</del> <b>Synchronised</b> and the term “ <b>De-Synchronised</b> ”, and other like terms, shall be construed accordingly.   | The act of taking a <b>Generation Unit</b> which is <b>Synchronised</b> to the <b>Transmission System</b> off the <b>Transmission System</b> to which it has been <b>Synchronised</b> and the term “ <b>De-Synchronised</b> ”, and other like terms, shall be construed accordingly.   |
| Minor Test            | The term “active energy” appears unbolded, but is a defined term. Additionally, a typo has been corrected, changing “were” to “where”. | An <b>Operational Test</b> with a total duration of less than 6 hours in any <b>Trading Day</b> or <del>were</del> <b>when</b> the <del>active energy</del> <b>Active Energy</b> produced during the total duration of the test is less than:<br>(i) 3 times the <b>Active Energy</b> which would be produced by the <b>Test Proposer’s Plant</b> during 1 hour of operation at the <b>Plant’s Registered Capacity</b> ; and<br>(ii) 500 MWh | An <b>Operational Test</b> with a total duration of less than 6 hours in any <b>Trading Day</b> or when the <b>Active Energy</b> produced during the total duration of the test is less than:<br>(i) 3 times the <b>Active Energy</b> which would be produced by the <b>Test Proposer’s Plant</b> during 1 hour of operation at the <b>Plant’s Registered Capacity</b> ; and<br>(ii) 500 MWh |

## Table outlining the proposed changes:

|                                     |   |  |   |
|-------------------------------------|---|--|---|
| <b>Priority Customers</b>           | The term “rota load shedding scheme” is used but should be replaced with the defined term “Rota Load Shedding Plan”. Additionally, the terms “load”, “frequency” and “supply” appear unbolded, but are defined terms. | <p><b>Customers</b> which are either:</p> <ul style="list-style-type: none"> <li>• exempt from <del>load</del> <b>Load</b> shedding under the <del>rota-load shedding scheme</del> <b>Rota Load Shedding Plan</b> or</li> <li>• exempt from <del>load</del> <b>Load</b> shedding under the technical under-<del>frequency</del> <b>Frequency</b> <del>load</del> <b>Load</b> shedding scheme or</li> <li>• prioritised for <del>supply</del> <b>Supply</b> under the technical under-<del>frequency</del> <b>Frequency</b> <del>load</del> <b>Load</b> shedding scheme.</li> </ul> | <p><b>Customers</b> which are either:</p> <ul style="list-style-type: none"> <li>• exempt from <b>Load</b> shedding under the <b>Rota Load Shedding Plan</b> or</li> <li>• exempt from <b>Load</b> shedding under the technical under-<b>Frequency Load</b> shedding scheme or</li> <li>• prioritised for <b>Supply</b> under the technical under-<b>Frequency Load</b> shedding scheme.</li> </ul>   |
| <b>Operation</b>                    | The term “Embedded Independent Generating Plant” appears bolded, but is not a defined term.   | A scheduled or planned action relating to the operation of a <b>System</b> (including an <del>Embedded Independent Generating Plant</del> <b>embedded independent generating plant</b> ).  | A scheduled or planned action relating to the operation of a <b>System</b> (including an embedded independent generating plant).  |
| <b>Significant System Incident</b>  | The term “operational effect” appears unbolded, but is a defined term.  | <b>Events</b> which have had or might have had or might have an <del>operational-effect</del> <b>Operational Effect</b> on the <b>Transmission System</b> or a <b>User’s System</b> .  | <b>Events</b> which have had or might have had or might have an <b>Operational Effect</b> on the <b>Transmission System</b> or a <b>User’s System</b> .   |
| <b>Voltage Dip</b>                  | The definition should begin with “This is”, not “The is”. Also, the term “voltage” appears unbolded, but is a defined term.   | <del>The is</del> <b>This is</b> a short-duration reduction in <b>Voltage</b> on any or all phases due to a <b>Fault Disturbance</b> or other <b>Significant System Incident</b> , resulting in <b>Transmission System Voltages</b> outside the ranges as specified in CC.8.3.2, and more generally, bus <b>Voltages</b> or terminal <b>Voltages</b> of less than 90% of nominal <del>voltage</del> <b>Voltage</b> on any or all phases. Percentage <b>Voltage Dip</b> shall be calculated with respect to nominal <del>voltage</del> <b>Voltage</b> .                             | This is a short-duration reduction in <b>Voltage</b> on any or all phases due to a <b>Fault Disturbance</b> or other <b>Significant System Incident</b> , resulting in <b>Transmission System Voltages</b> outside the ranges as specified in CC.8.3.2, and more generally, bus <b>Voltages</b> or terminal <b>Voltages</b> of less than 90% of nominal <b>Voltage</b> on any or all phases. Percentage <b>Voltage Dip</b> shall be calculated with respect to nominal <b>Voltage</b> . |
| <b>Voltage Regulation Set-point</b> | The term “Wind Farms” appears bolded, but is not a defined term.  | The <b>Voltage</b> in kV that the <b>Voltage Regulation System</b> will act to regulate by continuous modulation of the <b>Interconnector’s</b> or <del>Wind Farms</del> <b>wind-powered Controllable PPMs</b> <b>Reactive Power</b> .   | The <b>Voltage</b> in kV that the <b>Voltage Regulation System</b> will act to regulate by continuous modulation of the <b>Interconnector’s</b> or wind-powered <b>Controllable PPMs</b> <b>Reactive Power</b> .  |

# MPID 311 Housekeeping Various Clauses

## Proposed Modification

- Several housekeeping style errors have come to our attention in Grid Code version 12.
- The TSO propose to fix these errors that span various clauses.



# Table outlining the proposed changes:

| Clause    | Error   | Red Line Version Text<br><i>Deleted text in <del>strike-through red font</del> and new text highlighted in blue font</i>   | Green Line Version Text  |
|-----------|---|--|--|
| PC.A3.3.2 | The terms 'load', 'embedded generation', and 'system' appear unbolded, but are defined terms. | <p>A coincident set of measurements of MW and Mvar values both at 12.30 and 18.00 hours on the second Thursday in December is required. If the second Thursday in December is the 8th, then the measurements should be taken on the following Tuesday, December 13th. The readings should be taken with both the transmission and distribution networks intact, and with normal sectionalising of the Distribution System, i.e. under normal feeding conditions. The <del>load</del> <b>Load</b> reading shall take account of <del>embedded-generation</del> <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A forecast of the expected MW and Mvar winter peak demand at the <b>Measurement Point</b> at 12.30 and 18.00 hours for the next ten (10) years is required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <del>load</del> <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <del>embedded-generation</del> <b>Embedded Generation</b>, description of forecast methodology, transformer reinforcements and permanent <del>load</del> <b>Load</b> transfer. The DSO, in preparing the forecast for winter peak <del>load</del> <b>Load</b>, shall bear in mind that the coincident <del>load</del> <b>Load</b> readings taken on the second Thursday in December may be lower than at <del>system</del> <b>System</b> peak.</p> | <p>A coincident set of measurements of MW and Mvar values both at 12.30 and 18.00 hours on the second Thursday in December is required. If the second Thursday in December is the 8th, then the measurements should be taken on the following Tuesday, December 13th. The readings should be taken with both the transmission and distribution networks intact, and with normal sectionalising of the Distribution System, i.e. under normal feeding conditions. The <b>Load</b> reading shall take account of <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A forecast of the expected MW and Mvar winter peak demand at the <b>Measurement Point</b> at 12.30 and 18.00 hours for the next ten (10) years is required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <b>Embedded Generation</b>, description of forecast methodology, transformer reinforcements and permanent <b>Load</b> transfer. The DSO, in preparing the forecast for winter peak <b>Load</b>, shall bear in mind that the coincident <b>Load</b> readings taken on the second Thursday in December may be lower than at <b>System</b> peak.</p> |
| PC.A3.3.3 | The terms 'load' and 'embedded generation' appear unbolded, but are defined terms.            | <p>A coincident set of measurements of MW and Mvar values at 12.30 hours on the fourth Thursday in June is required. The <del>load</del> <b>Load</b> reading shall take account of <del>embedded-generation</del> <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A corresponding 10-year forecast of the MW and Mvar demand at the <b>Measurement Point</b> in June at 12.30 hours for the next ten (10) years is also required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <del>load</del> <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <del>embedded-generation</del> <b>Embedded Generation</b>, description of forecast method, transformer reinforcements and permanent <del>load</del> <b>Load</b> transfer.</p>  | <p>A coincident set of measurements of MW and Mvar values at 12.30 hours on the fourth Thursday in June is required. The <b>Load</b> reading shall take account of <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A corresponding 10-year forecast of the MW and Mvar demand at the <b>Measurement Point</b> in June at 12.30 hours for the next ten (10) years is also required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <b>Embedded Generation</b>, description of forecast method, transformer reinforcements and permanent <b>Load</b> transfer.</p>  |

## Table outlining the proposed changes:

|           |  |  |  |
|-----------|--|--|--|
| PC.A3.3.4 | The terms 'load' and 'embedded generation' appear unbolded, but are defined terms.   | <p>A coincident set of measurements of MW and Mvar values at 06.00 hours on the Sunday preceding the early August Monday Public Holiday is required. The <del>load</del> <b>Load</b> readings shall take account of <del>embedded-generation</del> <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A corresponding 10-year forecast of the MW and Mvar minimum demand at the <b>Measurement Point</b> in August at 06.00 hours for the next ten (10) years is also required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <del>load</del> <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <del>embedded-generation</del> <b>Embedded Generation</b>, description of forecast method, transformer reinforcements and permanent <del>load</del> <b>Load</b> transfer.</p>   | <p>A coincident set of measurements of MW and Mvar values at 06.00 hours on the Sunday preceding the early August Monday Public Holiday is required. The <b>Load</b> readings shall take account of <b>Embedded Generation</b> as detailed in section PC.A3.3.6.</p> <p>A corresponding 10-year forecast of the MW and Mvar minimum demand at the <b>Measurement Point</b> in August at 06.00 hours for the next ten (10) years is also required. For example, the forecasts to be received by calendar week 9 of 2003 should cover years 2003 through 2012. The <b>Load</b> forecast shall take account of sections PC.A3.3.6 through PC.A3.3.9 dealing with <b>Embedded Generation</b>, description of forecast method, transformer reinforcements and permanent <b>Load</b> transfer.</p> |
| PC.A3.3.6 | The terms 'load', 'embedded generation', 'generator', 'system' and 'capacity' appear unbolded, but are defined terms.        | <p>All <del>load</del> <b>Load</b> readings shall specify, separately, the MW and Mvar contribution from significant <del>embedded-generation</del> <b>Embedded Generation</b>. The <del>User</del> should indicate whether the <del>generator</del> <b>Generator</b> is producing or absorbing Mvar from the <del>system</del> <b>System</b>. The type or types of significant <del>embedded-generation</del> <b>Embedded Generation</b> should be specified – hydro, wind, CHP, biomass, diesel or other. All <del>load</del> <b>Load</b> forecasts shall specify, separately, the installed <del>capacity</del> <b>Capacity</b> of existing and projected significant <del>embedded-generation</del> <b>Embedded Generation</b>. Both MW and Mvar capability should be given, indicating the Mvar limits both for production and absorption. The type or types of <del>embedded-generation</del> <b>Embedded Generation</b> should be specified – hydro, wind, CHP, biomass, diesel or other.</p> | <p>All <b>Load</b> readings shall specify, separately, the MW and Mvar contribution from significant <b>Embedded Generation</b>. The <del>User</del> should indicate whether the <b>Generator</b> is producing or absorbing Mvar from the <b>System</b>. The type or types of significant <b>Embedded Generation</b> should be specified – hydro, wind, CHP, biomass, diesel or other. All <b>Load</b> forecasts shall specify, separately, the installed <b>Capacity</b> of existing and projected significant <b>Embedded Generation</b>. Both MW and Mvar capability should be given, indicating the Mvar limits both for production and absorption. The type or types of <b>Embedded Generation</b> should be specified – hydro, wind, CHP, biomass, diesel or other.</p>                |
| PC.A4.8   | The terms 'generating unit', 'operating characteristics', 'system' and 'disturbance' appear unbolded, but are defined terms. | <p>Supply any additional Laplace domain control diagrams and associated parameters for any outstanding control devices including <b>Power System Stabiliser</b> or special protection relays in the <del>generating-unit</del> <b>Generating Unit</b>, which automatically impinge on its <del>operating-characteristics</del> <b>Operating Characteristics</b> within 30 seconds following a <del>system</del> <b>System disturbance</b> <b>Disturbance</b> and which have a minimum time constant of at least 0.02 seconds.</p>  | <p>Supply any additional Laplace domain control diagrams and associated parameters for any outstanding control devices including <b>Power System Stabiliser</b> or special protection relays in the <b>Generating Unit</b>, which automatically impinge on its <b>Operating Characteristics</b> within 30 seconds following a <b>System Disturbance</b> and which have a minimum time constant of at least 0.02 seconds.</p>   |

## Table outlining the proposed changes:

|            |  |   |   |
|------------|--|---|---|
| PC.A8.2.1  | The terms 'operation' and 'collector network' appear unbolded, but are defined terms.  | The TSO requires the <b>Model</b> to represent the <del>operation</del> <b>Operation</b> of the <b>User's Plant</b> at the <b>Connection Point</b> and therefore it is essential that the <b>Models</b> of individual <b>Generation Units</b> can be aggregated into a smaller number of <b>Models</b> , each representing a number of <b>Generation Units</b> at the same <b>Site</b> . If all <b>Generation Units</b> in the <b>User Site</b> are not identical, the <b>Model</b> shall account for this by accurately representing the overall performance of the <b>User's Plant</b> at the <b>Connection Point</b> . A representation of the <del>collector network</del> <b>Collector Network</b> and any additional equipment such as <b>Reactive Power</b> compensation may be included in the aggregate <b>Model</b> of the <b>User's Plant</b> . <b>Models</b> for the simulation studies must be single lumped <b>Models</b> , scalable for different <b>Active Power</b> outputs as seen at the <b>Connection Point</b> . | The TSO requires the <b>Model</b> to represent the <b>Operation</b> of the <b>User's Plant</b> at the <b>Connection Point</b> and therefore it is essential that the <b>Models</b> of individual <b>Generation Units</b> can be aggregated into a smaller number of <b>Models</b> , each representing a number of <b>Generation Units</b> at the same <b>Site</b> . If all <b>Generation Units</b> in the <b>User Site</b> are not identical, the <b>Model</b> shall account for this by accurately representing the overall performance of the <b>User's Plant</b> at the <b>Connection Point</b> . A representation of the <b>Collector Network</b> and any additional equipment such as <b>Reactive Power</b> compensation may be included in the aggregate <b>Model</b> of the <b>User's Plant</b> . <b>Models</b> for the simulation studies must be single lumped <b>Models</b> , scalable for different <b>Active Power</b> outputs as seen at the <b>Connection Point</b> . |
| OC.4.4.5.2 | The terms 'generation', 'control actions' and the word 'output' in the term 'MW output' appear unbolded, but are defined terms/part of a defined term. | The TSO shall adjust <b>System Voltages</b> , using control facilities that are available so as to achieve the Mvar capacity necessary in order to operate <b>Transmission System Voltages</b> at <b>Connection Points</b> within the levels specified in CC.8.3 and retain a dynamic Mvar capability to deal with changing <b>System</b> conditions which result from changes in <b>Demand</b> or changes in transmission or <del>generation</del> <b>Generation</b> configuration, whether as a result of <del>control-actions</del> <b>Control Actions</b> or faults. This may necessitate the modification of <b>Generation Unit MW</b> <del>output</del> <b>Output</b> or <b>Interconnector(s) Active Power</b> transfer from an <b>External System</b> or <b>Active Power</b> transfer to the <b>Transmission System</b> .  | The TSO shall adjust <b>System Voltages</b> , using control facilities that are available so as to achieve the Mvar capacity necessary in order to operate <b>Transmission System Voltages</b> at <b>Connection Points</b> within the levels specified in CC.8.3 and retain a dynamic Mvar capability to deal with changing <b>System</b> conditions which result from changes in <b>Demand</b> or changes in transmission or <b>Generation</b> configuration, whether as a result of <b>Control Actions</b> or faults. This may necessitate the modification of <b>Generation Unit MW Output</b> or <b>Interconnector(s) Active Power</b> transfer from an <b>External System</b> or <b>Active Power</b> transfer to the <b>Transmission System</b> .  |

## Table outlining the proposed changes:

|            |                                     |   |   |
|------------|-------------------------------------|---|---|
| OC.4.5.5.4 | The text in a) and b) is identical. | <p><b>Emergency Assistance to and from External Systems</b> will be detailed in the <b>Interconnector Operating Protocol</b> agreed between the <b>Interconnector Operator</b>, the <b>TSO</b> and the <b>External System Operator</b>, and shall include the following actions:</p> <p>(a) An <b>External System Operator</b> may request that the <b>TSO</b> take any available action to increase the <b>Active Power</b> transferred into its <b>External System</b>, or reduce the <b>Active Power</b> transferred into the <b>Transmission System</b>. Such request must be met by the <b>TSO</b> providing this does not require a reduction of Demand on the <b>Transmission System</b>, or lead to a reduction in security on the <b>Transmission System</b>.</p> <p>(b) <del>An <b>External System Operator</b> may request that the <b>TSO</b> take any available action to increase the <b>Active Power</b> transferred into its <b>External System</b>, or reduce the <b>Active Power</b> transferred into the <b>Transmission System</b>. Such request must be met by the <b>TSO</b> providing this does not require a reduction of Demand on the <b>Transmission System</b>, or lead to a reduction in security on the <b>Transmission System</b>.</del><br/>Not used.</p> | <p><b>Emergency Assistance to and from External Systems</b> will be detailed in the <b>Interconnector Operating Protocol</b> agreed between the <b>Interconnector Operator</b>, the <b>TSO</b> and the <b>External System Operator</b>, and shall include the following actions:</p> <p>(a) An <b>External System Operator</b> may request that the <b>TSO</b> take any available action to increase the <b>Active Power</b> transferred into its <b>External System</b>, or reduce the <b>Active Power</b> transferred into the <b>Transmission System</b>. Such request must be met by the <b>TSO</b> providing this does not require a reduction of Demand on the <b>Transmission System</b>, or lead to a reduction in security on the <b>Transmission System</b>.</p> <p>(b) Not used.</p> |
|------------|-------------------------------------|---|---|



## Table outlining the proposed changes:

|              |   |  |   |
|--------------|---|--|---|
| OC.4.6.5.2.1 | <p>The term 'Trading and Settlement Rules' is bolded but is not a defined term. It should be replaced with the defined term 'Trading and Settlement Code'. Also, the terms 'disconnection' and 'generation' appear unbolded, but are defined terms.</p> | <p>The TSO shall determine the amount of <b>Primary Operating Reserve, Secondary Operating Reserve, Tertiary Operating Reserve</b> and <b>Replacement Reserve</b> to be carried at any time to ensure system security. This will not be constrained by the <del>Trading and Settlement Rules</del> <b>Trading and Settlement Code</b>. Due consideration will be taken of relevant factors, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>(a) the relevant TSO operating policy in existence at that time;</li> <li>(b) the extent to which <del>Customer disconnections</del> <b>Customer Disconnections</b> allowed under the relevant standard have already occurred within the then relevant period;</li> <li>(c) the elapsed time since the last <del>Customer disconnection</del> <b>Customer Disconnection</b> incident;</li> <li>(d) particular events of national or widespread significance, which may justify provision of additional <b>Operating Reserve</b>;</li> <li>(e) the cost of providing <b>Operating Reserve</b> at any point in time;</li> <li>(f) the magnitude and number of the largest <del>generation</del> <b>Generation</b> infeeds to the <b>Transmission System</b> at that time, including infeeds over <b>External Interconnections</b> and also over single transmission feeders within the <b>Transmission System</b> and also the amount of <b>Generation</b> that could be lost following a single <b>Contingency</b>;</li> <li>(g) ambient weather conditions, insofar as they may affect (directly or indirectly) <b>Generation Unit</b> and/or <b>Transmission System</b> reliability;</li> <li>(h) the predicted <b>Frequency</b> drop on loss of the largest infeed as may be determined through simulation using a dynamic model of the <b>Power System</b>;</li> <li>(i) constraints imposed by agreements in place with <b>Externally Interconnected Parties</b>;</li> <li>(j) uncertainty in future <b>Generation</b> output.</li> </ul> | <p>The TSO shall determine the amount of <b>Primary Operating Reserve, Secondary Operating Reserve, Tertiary Operating Reserve</b> and <b>Replacement Reserve</b> to be carried at any time to ensure system security. This will not be constrained by the <b>Trading and Settlement Code</b>. Due consideration will be taken of relevant factors, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>(a) the relevant TSO operating policy in existence at that time;</li> <li>(b) the extent to which <b>Customer Disconnections</b> allowed under the relevant standard have already occurred within the then relevant period;</li> <li>(c) the elapsed time since the last <b>Customer Disconnection</b> incident;</li> <li>(d) particular events of national or widespread significance, which may justify provision of additional <b>Operating Reserve</b>;</li> <li>(e) the cost of providing <b>Operating Reserve</b> at any point in time;</li> <li>(f) the magnitude and number of the largest <b>Generation</b> infeeds to the <b>Transmission System</b> at that time, including infeeds over <b>External Interconnections</b> and also over single transmission feeders within the <b>Transmission System</b> and also the amount of <b>Generation</b> that could be lost following a single <b>Contingency</b>;</li> <li>(g) ambient weather conditions, insofar as they may affect (directly or indirectly) <b>Generation Unit</b> and/or <b>Transmission System</b> reliability;</li> <li>(h) the predicted <b>Frequency</b> drop on loss of the largest infeed as may be determined through simulation using a dynamic model of the <b>Power System</b>;</li> <li>(i) constraints imposed by agreements in place with <b>Externally Interconnected Parties</b>;</li> <li>(j) uncertainty in future <b>Generation</b> output.</li> </ul> |
|--------------|---|--|---|



## Table outlining the proposed changes:

|            |   |   |   |
|------------|---|---|---|
| OC.4.7.1.1 | The term 'energise' appears unbolded, but is a defined term. Also, the word 'Total' in the term 'Total System' appears bolded, but is not a defined term itself or part of a defined term.  | In order to recover the <b>Transmission System</b> from a <b>Partial Shutdown</b> or <b>Total Shutdown</b> , it is necessary to have certain <b>Power Stations</b> (" <b>Black Start Stations</b> ") available which have the ability for at least one of its <b>Generation Units</b> to <b>Start-Up</b> from <b>Shutdown</b> and to <del>energise</del> <b>Energise</b> a part of the <del>Total</del> <b>total System</b> , or be <b>Synchronised</b> to the <b>System</b> , upon instruction from the <b>TSO</b> , without an external electrical power supply as detailed in the <b>Interconnector Operating Protocol</b> agreed between the <b>Interconnector Operator</b> , the <b>TSO</b> and the <b>External System Operator</b> .  | In order to recover the <b>Transmission System</b> from a <b>Partial Shutdown</b> or <b>Total Shutdown</b> , it is necessary to have certain <b>Power Stations</b> (" <b>Black Start Stations</b> ") available which have the ability for at least one of its <b>Generation Units</b> to <b>Start-Up</b> from <b>Shutdown</b> and to <b>Energise</b> a part of the <b>total System</b> , or be <b>Synchronised</b> to the <b>System</b> , upon instruction from the <b>TSO</b> , without an external electrical power supply as detailed in the <b>Interconnector Operating Protocol</b> agreed between the <b>Interconnector Operator</b> , the <b>TSO</b> and the <b>External System Operator</b> .   |
| OC.4.7.3.3 | The term 'Unit' appears bolded but is not a defined term in isolation, and as such has been replaced with the phrase 'Generation Unit or Interconnector' here. Also, 'generation' appears unbolded but is a defined term, and a typo in which 'or' appears bolded has been corrected. | If during the <b>Demand</b> restoration process any <b>Generation Unit</b> or <b>Interconnector</b> that is part of a <b>Black Start Station</b> cannot, because of the <b>Demand</b> being experienced, keep within its safe operating parameters, the <b>Generator</b> or <b>Interconnector Operator</b> shall inform the <b>TSO</b> . The <b>TSO</b> will, where possible, either instruct <b>Demand</b> to be altered or will re-configure the <b>Transmission System</b> or will instruct a <b>User</b> to re-configure its <b>System</b> in order to alleviate the problem being experienced by the <b>Generator</b> or <b>Interconnector Operator</b> . However, the <b>TSO</b> accepts that any decision to keep a <b>Generation Unit or Interconnector</b> operating, if outside its safe operating parameters, is one for the <b>Generator</b> or <b>Interconnector Operator</b> concerned alone and accepts that the <b>Generator</b> or <b>Interconnector Operator</b> may change <del>generation</del> <b>Generation</b> on that <b>Generation Unit or Interconnector</b> if it believes it is necessary for safety reasons (whether relating to personnel or <b>Plant</b> and/or <b>Apparatus</b> ). If such a change is made without prior notice, then the <b>Generator</b> <del>or</del> <b>Interconnector Operator</b> shall inform the <b>TSO</b> as soon as reasonably practical. | If during the <b>Demand</b> restoration process any <b>Generation Unit</b> or <b>Interconnector</b> that is part of a <b>Black Start Station</b> cannot, because of the <b>Demand</b> being experienced, keep within its safe operating parameters, the <b>Generator</b> or <b>Interconnector Operator</b> shall inform the <b>TSO</b> . The <b>TSO</b> will, where possible, either instruct <b>Demand</b> to be altered or will re-configure the <b>Transmission System</b> or will instruct a <b>User</b> to re-configure its <b>System</b> in order to alleviate the problem being experienced by the <b>Generator</b> or <b>Interconnector Operator</b> . However, the <b>TSO</b> accepts that any decision to keep a <b>Generation Unit</b> or <b>Interconnector</b> operating, if outside its safe operating parameters, is one for the <b>Generator</b> or <b>Interconnector Operator</b> concerned alone and accepts that the <b>Generator</b> or <b>Interconnector Operator</b> may change <b>Generation</b> on that <b>Generation Unit or Interconnector</b> if it believes it is necessary for safety reasons (whether relating to personnel or <b>Plant</b> and/or <b>Apparatus</b> ). If such a change is made without prior notice, then the <b>Generator</b> or <b>Interconnector Operator</b> shall inform the <b>TSO</b> as soon as reasonably practical. |

## Table outlining the proposed changes:

|          |   |  |   |
|----------|---|--|---|
| OC.5.4.4 | A typo in which 'the' appears bolded has been corrected.  | In the event of <b>Demand Control</b> being exercised other than in accordance with the <b>Rota Load Shedding Plan</b> (due to reasons of short notice or otherwise), and if the <b>Demand Control</b> is expected to be sustained, then the TSO will arrange for the <b>Rota Load Shedding Plan</b> to be implemented as soon as practicable. The TSO may instruct certain modifications in the application of <del>the</del> <b>the Rota Load Shedding Plan</b> to provide for those <b>Customers</b> which have been subject to shedding in the initial phase prior to the initiation of <b>Planned Rota Load Shedding</b> .  | In the event of <b>Demand Control</b> being exercised other than in accordance with the <b>Rota Load Shedding Plan</b> (due to reasons of short notice or otherwise), and if the <b>Demand Control</b> is expected to be sustained, then the TSO will arrange for the <b>Rota Load Shedding Plan</b> to be implemented as soon as practicable. The TSO may instruct certain modifications in the application of the <b>Rota Load Shedding Plan</b> to provide for those <b>Customers</b> which have been subject to shedding in the initial phase prior to the initiation of <b>Planned Rota Load Shedding</b> .  |
| OC.5.5.1 | The term 'Frequency Disconnection' has been replaced with the defined term 'Frequency Demand Disconnection'. Also, the terms 'event', 'system' and 'start-up' appear unbolded, but are defined terms.   | The DSO shall make arrangements that will enable automatic low <b>Frequency Demand Disconnection</b> of a percentage of its total peak <b>Customer Demand</b> (based on <b>Annual SLR Conditions</b> ) as specified by the TSO, in order to seek to limit the consequences of a major loss of <b>Generation</b> or an <del>event</del> <b>Event</b> on the total <del>system</del> <b>System</b> which leaves part of the total <del>system</del> <b>System</b> with a <b>Generation</b> deficit, provided that, so far as possible, <b>Demand</b> of <b>Generation Units</b> which is required to enable the <b>Generation Units</b> to <del>start-up</del> <b>Start-Up</b> shall not be subject to automatic low <b>Frequency Demand Disconnection</b> . The TSO retains the right to specify the <b>Frequency</b> settings on percentages of <b>Demand</b> subject to automatic low <b>Frequency Demand Disconnection</b> . | The DSO shall make arrangements that will enable automatic low <b>Frequency Demand Disconnection</b> of a percentage of its total peak <b>Customer Demand</b> (based on <b>Annual SLR Conditions</b> ) as specified by the TSO, in order to seek to limit the consequences of a major loss of <b>Generation</b> or an <b>Event</b> on the total <b>System</b> which leaves part of the total <b>System</b> with a <b>Generation</b> deficit, provided that, so far as possible, <b>Demand</b> of <b>Generation Units</b> which is required to enable the <b>Generation Units</b> to <b>Start-Up</b> shall not be subject to automatic low <b>Frequency Demand Disconnection</b> . The TSO retains the right to specify the <b>Frequency</b> settings on percentages of <b>Demand</b> subject to automatic low <b>Frequency Demand Disconnection</b> . |
| OC.6.4.2 | The term 'plant' appears unbolded but is a defined term, the term 'Available' appears bolded but is not a defined term and the term 'Unit' appears bolded but is not a defined term in isolation, and as such has been replaced with the phrase 'Generation Unit' here. | By the end of March in year 0, <b>Small Scale Generators</b> shall submit to the TSO, for each <b>Generation Site</b> , <del>plant</del> <b>Plant Capacity Available</b> available for each week for year 1 for inclusion in the <b>Committed Outage Programme (COP)</b> for year 1 and estimated weekly <b>Load Factors</b> for year 1. <b>Generators</b> shall specify the start date and time and the duration of each <b>Outage</b> . This information shall be supplied on a <b>Generation Unit</b> basis if so requested by the TSO.   | By the end of March in year 0, <b>Small Scale Generators</b> shall submit to the TSO, for each <b>Generation Site</b> , <b>Plant Capacity</b> available for each week for year 1 for inclusion in the <b>Committed Outage Programme (COP)</b> for year 1 and estimated weekly <b>Load Factors</b> for year 1. <b>Generators</b> shall specify the start date and time and the duration of each <b>Outage</b> . This information shall be supplied on a <b>Generation Unit</b> basis if so requested by the TSO.   |

## Table outlining the proposed changes:

|            |  |   |  |
|------------|--|---|--|
| OC.6.7.2.2 | The term 'Connection Agreements' appears unbolded but is a defined term.   | Where it is identified and agreed, in accordance with the terms of the <del>Connection Agreements</del> <b>Connection Agreements</b> and/ or Operating Agreements, between the TSO and a User that a specific <b>Control Action</b> (usually an action affecting the <b>Transmission System</b> configuration) has an <b>Operational Effect</b> on a User and that there is merit in notifying the User in advance of the <b>Control Action</b> , then the TSO will notify the User of the <b>Control Action</b> (if planned and where time permits), in accordance with any standing agreement that may be agreed with the User. | Where it is identified and agreed, in accordance with the terms of the <b>Connection Agreements</b> and/ or Operating Agreements, between the TSO and a User that a specific <b>Control Action</b> (usually an action affecting the <b>Transmission System</b> configuration) has an <b>Operational Effect</b> on a User and that there is merit in notifying the User in advance of the <b>Control Action</b> , then the TSO will notify the User of the <b>Control Action</b> (if planned and where time permits), in accordance with any standing agreement that may be agreed with the User. |
| OC.7.1.5.3 | The term 'operation' appears unbolded but is a defined term.   | The User will notify the TSO of <b>Operations</b> on the User's <b>System</b> which will have (or may have) an <b>Operational Effect</b> on the <b>Transmission System</b> . The TSO may use this information in notifying any other User(s) on whose <b>System(s)</b> the <del>operation</del> <b>Operation</b> will have, or may have, in the reasonable opinion of the TSO, an <b>Operational Effect</b> , in accordance with this OC.7.1.   | The User will notify the TSO of <b>Operations</b> on the User's <b>System</b> which will have (or may have) an <b>Operational Effect</b> on the <b>Transmission System</b> . The TSO may use this information in notifying any other User(s) on whose <b>System(s)</b> the <b>Operation</b> will have, or may have, in the reasonable opinion of the TSO, an <b>Operational Effect</b> , in accordance with this OC.7.1.   |
| OC.7.1.9.2 | The undefined term 'Significant System Event' has been replaced with the defined term 'Significant System Incident'. | The User will notify the TSO of <b>Events</b> which may be <b>Significant System Incidents</b> affecting the <b>Transmission System</b> . The TSO may use this information in notifying any other Users on whose <b>System(s)</b> the <b>Significant System Event</b> <del>Incident</del> will have, or may have, in the reasonable opinion of the TSO, an <b>Operational Effect</b> .  | The User will notify the TSO of <b>Events</b> which may be <b>Significant System Incidents</b> affecting the <b>Transmission System</b> . The TSO may use this information in notifying any other Users on whose <b>System(s)</b> the <b>Significant System Incident</b> will have, or may have, in the reasonable opinion of the TSO, an <b>Operational Effect</b> .  |
| OC.7.2.8.1 | Addition of 'or' to correct format of clause.  | <b>Operational Data</b> is all data required to be supplied by either the TSO or Users under the <b>Grid Code</b> <del>or</del> any other data expressly provided to be <b>Operational Data</b> under the <b>Grid Code</b> . <b>Operational Data</b> to be supplied by the User must be submitted to the department or address as the TSO may from time to time advise.   | <b>Operational Data</b> is all data required to be supplied by either the TSO or Users under the <b>Grid Code</b> or any other data expressly provided to be <b>Operational Data</b> under the <b>Grid Code</b> . <b>Operational Data</b> to be supplied by the User must be submitted to the department or address as the TSO may from time to time advise.   |

## Table outlining the proposed changes:

|          |  |  |  |
|----------|--|--|--|
| OC.8.2.3 | A typo in which 'or' appears bolded has been corrected.  | OC.8 is not intended to deal with tests which may be called routinely by the TSO in order to assess compliance of <b>Users</b> with their design, operating and connection requirements as specified in the <b>Grid Code</b> and in each <b>User's Connection Agreement, Ancillary Services Agreements and System Support Agreement</b> , or to assess that <b>Generators</b> <del>or</del> <b>or Interconnector Operators</b> are in compliance with their <b>Registered Data</b> as notified by <b>Declarations</b> , where appropriate, or to determine that <b>Generation Units</b> or <b>Interconnectors</b> are in compliance with <b>Dispatch Instructions</b> . These issues are covered under OC.10 ( <b>Monitoring, Testing and Investigation</b> ). | OC.8 is not intended to deal with tests which may be called routinely by the TSO in order to assess compliance of <b>Users</b> with their design, operating and connection requirements as specified in the <b>Grid Code</b> and in each <b>User's Connection Agreement, Ancillary Services Agreements and System Support Agreement</b> , or to assess that <b>Generators</b> or <b>Interconnector Operators</b> are in compliance with their <b>Registered Data</b> as notified by <b>Declarations</b> , where appropriate, or to determine that <b>Generation Units</b> or <b>Interconnectors</b> are in compliance with <b>Dispatch Instructions</b> . These issues are covered under OC.10 ( <b>Monitoring, Testing and Investigation</b> ). |
| Units    | We have identified a number of uses of unit symbols within the Grid Code where the symbols are bolded, but should be unbolded. We propose fixing this inconsistency by unbolding all unit symbols where they do not form part of the name of a defined term. Unit symbols are not defined terms. | We will ensure that all references to unit symbols, where they do not form part of the name of a defined term, are not bolded in the next version of the Grid Code.  |  |



28 June 2023

# MPID 312 Outage Programme

Séamus Power





# Main changes

- Removal of Indicative Outage Programme
  - no requirement for Generators to submit outage information beyond Year 3 so there is no useful analysis that the TSO can do
- Removal of requirement for Generators, DSUs and AGUs to submit estimates of the Forced Outage Probabilities for their units
  - The TSO makes estimates for units based on historical data
- Carry out security analysis for Year 1 only
  - Little to no benefit in completing security analysis beyond Year 1 given the volume of change to outage requests
  - Only 21% of large units requested the same outages for 2024 in 2022 (POP) and 2023 (COP)
  - Continue to publish the Provisional Outage Programme (POP) for Years 2 and 3 with the requested dates from Generators



# Main changes

- Removal of requirement for TSO to inform all parties if particular outage requests have a detrimental effect
  - Initial requested outages prior to any discussions. Believe it is only necessary or appropriate to inform the relevant
- Allow TSO to raise concerns with generators before the end of June
- Remove the requirement to issue a System Capacity Shortfall Warning
  - Extremely difficult to predict with any level of accuracy a year in advance
  - Other more appropriate channels and engagements on capacity adequacy
- Publishing the Generation Outage Programme rather than only sending outage information related to each party



# Registered Capacity Review Update





# CRU Update



# AOB

Meeting Minutes will be issued by COB 12 July 2023