

**Grid Code  
Modification Proposal Form**

Email to [gridcode@eirgrid.com](mailto:gridcode@eirgrid.com)



**Title of Modification Proposal:**

MPID 296 – Correction of wind-powered Controllable PPMs

**MPID (EirGrid Use Only): 296**

<b>Date:</b>	05 July 2021
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<b>Grid Code Version:</b>	9
<b>Grid Code Section(s) Impacted by Modification Proposal:</b>	PPM1.7.1.2.1; PPM1.7.1.2.2; PPM1.7.1.2.3; PPM1.7.1.2.4; PPM1.7.1.3.1; PPM1.7.1.3.2; PPM1.7.1.3.3; and PPM1.7.1.3.4

**Modification Proposal Justification:**

On the 12 March 2020, the CRU approved modification MPID [276d](#) - a general housekeeping modification. MPID 276d included several housekeeping modification proposals. One of these proposals was the replacement of “WFPS” with “PPM” that were missed in a previous modification, MPID [269](#). The intention was to align the terminology used in the Grid Code with that used in the European Connection Network Codes.

However, it has since been noted that replacement of “WFPS” with “PPM” has caused errors in a number of clauses in the Grid Code, where requirements for wind-powered PPMs are different from other types of PPMs.

The objective of this modification is to correct the identified errors in the following Grid Code clauses:

- PPM1.7.1.2.1;
- PPM1.7.1.2.2;
- PPM1.7.1.2.3;
- PPM1.7.1.2.4;
- PPM1.7.1.3.1;
- PPM1.7.1.3.2;
- PPM1.7.1.3.3; and
- PPM1.7.1.3.4

**Red-line Version of Impacted Grid Code Section(s) - show proposed changes to text:**

Deleted text in ~~strike-through~~ red font and new text highlighted in blue font

PPM1.7.1.2.1 **Wind-powered Controllable PPMs** with a **MEC** in excess of 10 MW shall make the following meteorological data signals available at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM**:

[Units, Range]

- (a) Wind speed (at hub height or as agreed with the **TSO**) - measurand signal; [m/s, 0-70]
- (b) Wind direction (at hub height or as agreed with the **TSO**) - measurand signal; [deg, 0-360]
- (c) Air temperature- measurand signal; [deg C, -40-70]
- (d) Air pressure- measurand signal. [mBar, 735-1060]

PPM1.7.1.2.2 The meteorological data signals shall be provided by a dedicated **Meteorological Mast** located at the **wind-powered Controllable PPMs** site or, where possible and preferable to do so, data from a means of the same or better accuracy. For **wind-powered Controllable PPMs** where the **WTG** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **wind-powered Controllable PPM**, the meteorological data shall be provided from a number of individual **Meteorological Masts**, or where possible and preferable to do so, data from a source of the same or better reliability for groups of **WTG** (e.g. 1 set of meteorological data for each group of XX **WTG** within the **wind-powered Controllable PPM**). It is expected that **WTG** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **wind-powered Controllable PPM's** scheduled **Operational Date**.

PPM1.7.1.2.3 **Controllable PPMs**, in excess of 5 MW, with the exception of **wind-powered Controllable PPMs**, shall make relevant meteorological data signals available, which may include but are not limited to solar irradiance and tidal streams, at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM** as agreed with the **TSO**.

The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **Controllable PPM's** scheduled **Operational Date**.

PPM1.7.1.2.4 The meteorological data signals shall be provided by a measurement device located at the **Controllable PPM** site, the exception of **wind-powered Controllable PPM** sites, as defined by the **TSO**. All meteorological data signals shall at a minimum meet accuracy levels defined by the **TSO**. For **Controllable PPMs**, with the exception of **wind-powered Controllable PPMs**, where the **Generation Units** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **Controllable PPM**, the meteorological data shall

be provided from a number of individual sources. It is expected that **Generation Units** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **Controllable PPM's** scheduled **Operational Date**.

PPM1.7.1.3.1 **Wind-powered Controllable PPMs** with a MEC in excess of 10 MW shall make the following signals available at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM**:

- a) **Wind-powered Controllable PPM Availability** (0-100 % signal);
- b) Percentage of **WTG** shutdown due to high wind-speed conditions (0-100 %);
- c) Percentage of **WTG** not generating due low wind-speed shutdown (0-100 %).

PPM1.7.1.3.2 For **wind-powered Controllable PPMs** with a MEC in excess of 10 MW, where the **WTG** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **wind-powered Controllable PPM**, the above data set (ref. PPM1.7.1.3.1) shall be provided for a number of groups of **WTG** (e.g. 1 signal for each group of XX **WTG** within the **wind-powered Controllable PPM**). It is expected that **WTG** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **wind-powered Controllable PPM's** scheduled **Operational Date**.

PPM1.7.1.3.3 **Controllable PPMs**, with a MEC in excess of 5 MW, with the exception of **wind-powered Controllable PPMs**, shall make the following signals available at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM**:

- a) **Controllable PPM Availability** (0-100 % signal);
- b) Percentage of **Generation Unit** shutdown due to high resource conditions (0-100 %);
- c) Percentage of **Generation Unit** not generating due to low resource conditions (0-100 %).

PPM1.7.1.3.4 For **Controllable PPMs**, with an MEC in excess of 5 MW, with the exception of **wind-powered Controllable PPMs**, where the **Generation Units** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **Controllable PPM**, the above data set (ref. PPM 1.7.1.3.3) shall be provided for a number of groups of **Generation Units** (e.g. 1 signal for each group of XX **Generation Units** within the **Controllable PPM**). It is expected that **Generation Units** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **Controllable PPM's** scheduled **Operational Date**.

**Green-line Version of Impacted Grid Code Section(s) - show proposed final text:**

PPM1.7.1.2.1 Wind-powered **Controllable PPMs** with a **MEC** in excess of 10 MW shall make the following meteorological data signals available at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM**:

- |  | <u>[Units, Range]</u> |
|--|-----------------------|
| (e) Wind speed (at hub height or as agreed with the <b>TSO</b> ) - measurand signal;     | [m/s, 0-70]           |
| (f) Wind direction (at hub height or as agreed with the <b>TSO</b> ) - measurand signal; | [deg, 0-360]          |
| (g) Air temperature- measurand signal;   | [deg C, -40-70]       |
| (h) Air pressure- measurand signal.  | [mBar, 735-1060]      |

PPM1.7.1.2.2 The meteorological data signals shall be provided by a dedicated **Meteorological Mast** located at the wind-powered **Controllable PPMs** site or, where possible and preferable to do so, data from a means of the same or better accuracy. For wind-powered **Controllable PPMs** where the **WTG** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the wind-powered **Controllable PPM**, the meteorological data shall be provided from a number of individual **Meteorological Masts**, or where possible and preferable to do so, data from a source of the same or better reliability for groups of **WTG** (e.g. 1 set of meteorological data for each group of XX **WTG** within the wind-powered **Controllable PPM**). It is expected that **WTG** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the wind-powered **Controllable PPM**'s scheduled **Operational Date**.

PPM1.7.1.2.3 **Controllable PPMs**, in excess of 5 MW, with the exception of wind-powered **Controllable PPMs**, shall make relevant meteorological data signals available, which may include but are not limited to solar irradiance and tidal streams, at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM** as agreed with the **TSO**.  
The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **Controllable PPM**'s scheduled **Operational Date**.

PPM1.7.1.2.4 The meteorological data signals shall be provided by a measurement device located at the **Controllable PPM** site, the exception of wind-powered **Controllable PPM** sites, as defined by the **TSO**. All meteorological data signals shall at a minimum meet accuracy levels defined by the **TSO**. For **Controllable PPMs**, with the exception of wind-powered **Controllable PPMs**, where the **Generation Units** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **Controllable PPM**, the meteorological data shall be provided from a number of individual sources. It is expected that **Generation Units** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the

**Controllable PPM's scheduled Operational Date.**

PPM1.7.1.3.1 Wind-powered **Controllable PPMs** with a MEC in excess of 10 MW shall make the following signals available at the designated TSO Telecommunication Interface Cabinet for that **Controllable PPM**:

- a) Wind-powered **Controllable PPM** Availability (0-100 % signal);
- b) Percentage of **WTG** shutdown due to high wind-speed conditions (0-100 %);
- c) Percentage of **WTG** not generating due low wind-speed shutdown (0-100 %).

PPM1.7.1.3.2 For wind-powered **Controllable PPMs** with a MEC in excess of 10 MW, where the **WTG** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the wind-powered **Controllable PPM**, the above data set (ref. PPM1.7.1.3.1) shall be provided for a number of groups of **WTG** (e.g. 1 signal for each group of XX **WTG** within the wind-powered **Controllable PPM**). It is expected that **WTG** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the wind-powered **Controllable PPM's** scheduled **Operational Date**.

PPM1.7.1.3.3 **Controllable PPMs**, with a MEC in excess of 5 MW, with the exception of wind-powered **Controllable PPMs**, shall make the following signals available at the designated **TSO Telecommunication Interface Cabinet** for that **Controllable PPM**:

- a. **Controllable PPM Availability** (0-100 % signal);
- b. Percentage of **Generation Unit** shutdown due to high resource conditions (0-100 %);
- c. Percentage of **Generation Unit** not generating due to low resource conditions (0-100 %).

PPM1.7.1.3.4 For **Controllable PPMs**, with an MEC in excess of 5 MW, with the exception of wind-powered **Controllable PPMs**, where the **Generation Units** are widely dispersed over a large geographical area and rather different weather patterns are expected for different sections of the **Controllable PPM**, the above data set (ref. PPM 1.7.1.3.3) shall be provided for a number of groups of **Generation Units** (e.g. 1 signal for each group of XX **Generation Units** within the **Controllable PPM**). It is expected that **Generation Units** within an individual group shall demonstrate a high degree of correlation in **Active Power** output at any given time. The actual signals required shall be specified by the **TSO** at least 120 **Business Days** prior to the **Controllable PPM's** scheduled **Operational Date**.