ORCP-WM-21-04

Date Received: 23 March 2021

**REQUEST FOR MARKET RULES AND MANUALS AMENDMENTS**

Proposals made only under this prescribed form shall be accepted and considered as submitted.

This request for amendments are be submitted to:

**Rules Change Committee**

Attention: WESM Governance Committee Secretariat

Philippine Electricity Market Corporation

18/F Robinsons Equitable Tower

ADB Avenue, Ortigas Center

Pasig City, 1605 Philippines

Email addresses: [rcc@wesm.ph](mailto:rcc@wesm.ph) / [mag\_rrd@wesm.ph](mailto:mag_rrd@wesm.ph)

Contact No: (+632) 8631-8734

1. **Proponent’s Information**

|  |  |
| --- | --- |
| Name | **Richard J. Nethercott** |
| Designation | President and CEO |
| Company | Independent Electricity Market Operator of the Philippines, Inc. |
| Company Address | 19/F Robinsons Equitable Tower ADB Ave. Ortigas Center |
| Pasig City |
| Telephone No. | 02 5318 9376 |
| Fax. No. | 02 8636 0802 |
| Email Address | richard.nethercott@iemop.ph |

1. **Amendment Information**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **Proposed Amendments to the** (please tick the box): | | | WESM Rules  Retail Rules | | | Market Manual: | Market Network Model Development and Maintenance – Criteria and Procedures Issue 4.2  Registration, Suspension and De-Registration Criteria and Procedures Issue 5.3 | | Topic: | Improvements to Market Resource Modelling and Monitoring | | **Proposed Classification of Amendments** (please tick the box):  General  Minor  Urgent  If Urgent, reason for urgency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |

1. **SUMMARY OF THE PROPOSED RULES CHANGE**

The proposed amendments to the Market Manuals on (a) Registration and (b) Market Network Model aim to accomplish the following:

* 1. provide refinements and clarity in the modelling of market resources in the Market Network Model; and
  2. provide additional features in the modelling of generators.

1. **BACKGROUND**

Under Section 3.2.1 of the WESM Rules, the Market Operator is required to maintain and publish a market network model. The market network model represents the elements of the power system that is considered in the scheduling, pricing, and settlement of trading participants. The elements include generators, loads, battery energy storage systems, pumped-storage units, transmission lines, and transformers, among others.

In its maintenance of the market network model, the Market Operator has encountered cases that do not have clear procedures in the current WESM Manual as follows:

* whether a resource should be modelled gross or net of its station use;
* determination of the registered capacities (Pmax, Pmin) of aggregated generating units; and
* management of real-time monitoring facilities owned or managed by a Trading Participant instead of the System Operator.

Moreover, the Market Operator has observed that the increasing number of resource types in the WESM is resulting in the repetitive enumeration of those resource types in the WESM Manual, which negatively affects the ease of readability of the WESM Manual.

1. **THE PROPOSED RULES CHANGE**

The following table summarizes the proposed changes to the WESM Manuals on (a) Registration and (2) Market Network Model.

|  |  |  |
| --- | --- | --- |
| No. | Proposed Change | WESM Manual |
| 1 | Clarification on the Modelling of Aggregated Generating Resources | Registration |
| 2 | Establish requirements for real-time data from the System Operator | MNM Manual |
| 3 | Improve documentation and reporting | MNM Manual |
| 4 | Provide more clarity in the guidelines used for establishing the market model and the power system model | MNM Manual |
| 5 | Provide more clarity in the modeling of market resources | MNM Manual |

1. **BACKGROUND AND DESCRIPTION OF THE PROPONENT**

The proponent is the Independent Electricity Market Operator of the Philippines, Inc. IEMOP acts as the market operator of the WESM.

Top Officers:

Richard J. Nethercott – President and CEO

Robinson P. Descanzo – Chief Operating Officer and Trading Operations Head

Arthur P. Pintado – Internal Audit Head

Rachel Angela P. Anosan – Chief Legal Officer / Head of Legal Department

Isidro E. Cacho, Jr. – Head of Corporate Strategy and Communications Department

Salvador D. Subaran – Head of Information Systems and Technology Department

1. **CONCLUSIONS AND RECOMMENDATIONS**

The amendments to the WESM Manuals aim to enhance the guidelines and processes involved in market network modelling, most especially in view of the upcoming implementation of the 5-minute dispatch interval.

It is recommended that the proposed changes be adopted.

1. **REFERENCES**
2. WESM Manual on Market Network Model Development and Maintenance - Criteria and Procedures Issue 4.2
3. Registration, Suspension and De-Registration Criteria and Procedures Issue 5.3
4. **Proposed Amendment**
5. **WESM Manual on Registration, Suspension and De-Registration Criteria and Procedures Issue 5.3**

| **Title** | **Clause** | **Provision** | **Proposed Amendment** | **Rationale** | **Comments** | **Revised Wording based on Comments** | **Proponent’s Response** | **RCC Decision** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Other Considerations | 2.5.4.2. | Aggregation of Generating Units  A *Generation Company* that owns multiple *generating units* located in a single generating station shall, upon application, inform the *Market Operator* if it wishes to have an aggregated representation for such *generating units* in the *market network model*. The *Applicant*, the *Network Services Provider*, *Metering Services Provider*, *System Operator* and the *Market Operator* shall agree on the manner of aggregated representation in accordance with the procedures set forth in relevant *Market Manuals*.16 | Aggregation of Generating Units  A *Generation Company* that owns multiple *generating units* located in a single generating station shall, upon application, inform the *Market Operator* if it wishes to have an aggregated representation for such *generating units* in the *market network model*.  The *Applicant*, the *Network Services Provider*, *Metering Services Provider*, *System Operator* and the *Market Operator* shall agree on the manner of aggregated representation in accordance with the procedures set forth in relevant *Market Manuals*.16  **Should the technical information contained in the *Certificate of Compliance* issued by the *ERC* indicate details per *generating unit*, the following shall be observed when reflecting the aggregated facility’s *registered capacity*:**   1. ***Maximum Stable Load* (or *Pmax*) shall be based on the sum of the individual *generating unit*’s maximum capacity; and** 2. ***Minimum Stable Load* (or *Pmin*) shall be based on the smallest *Pmin* among the individual *generating units*.** | Clarify how Pmin and Pmax are determined for aggregated generating units |  |  |  |  |
| Other Considerations | 2.5.4.7 | (NEW) | **2.5.4.7 Real-Time Monitoring Location**  **During the registration of the *generating unit*, the *Generation Company* shall specify if its real-time monitoring will be at the gross MW output of the *generating unit* or at the same location as its *market trading node,* which is at its *connection point* and net of its station use, in accordance with the guidelines set forth in the *WESM Manual* on Market Network Model Development and Maintenance – Criteria and Procedures.** | Require the generation company to provide the Market Operator information on the location of its real-time monitoring facilities to more efficiently facilitate its accurate inclusion in the MNM |  |  |  |  |

1. **WESM Manual on Market Network Model Development and Maintenance - Criteria and Procedures Issue 4.2**

| **Title** | **Clause** | **Provision** | **Proposed Amendment** | **Rationale** | **Comments** | **Revised Wording based on Comments** | **Proponent’s Response** | **RCC Decision** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Definitions | 2.1.5 | (NEW) | **2.1.5 *Market Resource* refers to the objects defined in the *Market Network Model* to represent generators, battery energy storage systems, pumped-storage units, and loads.** | Provide general term used in MNM for all objects representing generators, BESS, pumped-storage units, and loads |  |  |  |  |
| Responsibilities | 3.2.2 | (NEW) | **3.2.2 The *System Operator* and the *Generation Companies* shall ensure that their facilities for real-time monitoring are available and that they accurately reflect the state of their generation (i.e., MW/MVAR output and generator breaker status).** | To include Generator Companies in the responsibility to maintain real-time facilities to cover cases when the Generation Company owns or manages its own real-time monitoring facilities |  |  |  |  |
| Criteria for The Market Network Model Development | 4.3.2 | Network data that accurately reflects the conditions prevailing on the network, including losses, constraints and contingencies, at any trading interval | Network data that accurately reflects the conditions prevailing on the network, including losses, constraints and contingencies, at any ~~trading~~ **dispatch** interval | Revise term of “trading” to “dispatch” interval for consistency with the use of dispatch intervals |  |  |  |  |
| MNM Components and Modeling | 4.4.2 | Generator plant/unit representations  These are numerical representations of generating units and its characteristics corresponding to power injection to the network. Generating units shall be modeled as the positive power injection with linear monotonically increasing cost function. | Generator plant/unit **resources** ~~representations~~  These are numerical representations of generating units and its characteristics corresponding to power injection to the network. Generating units shall be modeled as the positive power injection with linear monotonically increasing cost function. | Reflect proposed general term for representations of generators, battery energy storage systems, pumped-storage unit, and loads |  |  |  |  |
| MNM Components and Modeling | 4.4.3 | Load representations  These are numerical representations of the customer demand corresponding to power withdrawal from the network. Loads shall be modeled as constant power withdrawal points. | Load **resources** ~~representations~~  These are numerical representations of the customer demand corresponding to power withdrawal from the network. Loads shall be modeled as constant power withdrawal points. | Reflect proposed general term for representations of generators, battery energy storage systems, pumped-storage unit, and loads |  |  |  |  |
| MNM Components and Modeling | 4.4.4 | *Battery Energy Storage System* representation  This is the mathematical model of a *battery energy storage system* with its dual capability of injecting or withdrawing power through the network. | *Battery Energy Storage System* **resources**~~representation~~  This is the mathematical model of a *battery energy storage system* with its dual capability of injecting or withdrawing power through the network. | Reflect proposed general term for representations of generators, battery energy storage systems, pumped-storage unit, and loads |  |  |  |  |
| MNM Components and Modeling | 4.4.5 | *Pumped-Storage Unit* representation  This is the mathematical model of a *pumped-storage unit* with its dual capability of injecting or withdrawing power through the network. | *Pumped-Storage Unit* **resources**~~representation~~  This is the mathematical model of a *pumped-storage unit* with its dual capability of injecting or withdrawing power through the network. | Reflect proposed general term for representations of generators, battery energy storage systems, pumped-storage unit, and loads |  |  |  |  |
| MNM Components and Modeling | 4.4.7 | Transshipment Node  A node in the network model that has neither a generator nor customer associated to it. A transshipment node connects at least two equipments together. | Transshipment Node  A node in the network model that has neither a generator nor customer associated to it. A transshipment node connects at least two equipment~~s~~ together. | Clerical correction for equipment (i.e., remove ‘s’) |  |  |  |  |
| Market Impact Study | 4.6.3 | The Market Operator shall publish the results of the market impact study as may be required by the PEM Board. | The Market Operator shall publish the results of the market impact study as may be required by the ***DOE*, *ERC*, and the** PEM Board. | Propose to include DOE and ERC |  |  |  |  |
| MNM | 5 | ALTERATIONS TO THE MARKET NETWORK MODEL | ~~ALTERATIONS~~ **GUIDELINES IN THE UPDATING AND MAINTENANCE OF** ~~TO~~ THE MARKET NETWORK MODEL | Revised for clarity |  |  |  |  |
| Network Development | 5.2.2 | Changes in the MNM configuration as a result of network development or aggregation or disaggregation of Trading Nodes shall be published in accordance with MNM publication requirements set forth in Section 6.0 of this document. | **Updates** ~~Changes~~ in the MNM ~~configuration~~ as a result of **the** ~~network development or~~ aggregation or disaggregation of ***market resources*** ~~Trading Nodes~~ shall be **made** ~~published~~ in accordance with **the** ~~MNM publication~~ requirements set forth in Section ~~6.0~~ **7** of this ***Market Manual***~~document~~. | Revised for clarity. |  |  |  |  |
| Simplifications on the Market Network Model | 5.3.2 | The MNM may contain simplifications related to the representation of Generation and Customer Trading Nodes upon request of a Trading Participant and approved by the Market Operator, System Operator, and if necessary, the Network Service Provider. Such simplifications are listed, but not limited to the following conditions  a) Aggregated representation of multiple generating units;  b) Aggregated representation in the MNM may be applied to multiple generating units that are located in a single generating station;  c) Disaggregated representation of customer trading nodes; and  d) Single Customer Trading Nodes representing an aggregate of multiple customers maybe disaggregated into several Customer Trading Nodes corresponding to the customers represented in that Trading Node. It is provided, however, that such disaggregation shall be allowed only in cases where there are appropriate real-time monitoring points that can account for the real-time withdrawal of energy in each disaggregated individual customer trading node. | The MNM may contain simplifications related to the representation of ***market resources*** ~~Generation and Customer Trading Nodes~~ upon request of a *Trading Participant***. It should be** ~~and~~ ~~approved~~ **agreed upon** by the *Trading Participant*, *Market Operator*, *System Operator*, and if necessary, the *Network Service Provider*. Such simplifications are listed, but not limited to the following conditions.  a) Aggregated representation of multiple generating units~~;~~  ~~b)~~ **(note:** **a**ggregated representation in the MNM may be applied to multiple *generating units* that are located in a single generating station**)**;  ~~c~~**b**) Disaggregated representation of customer trading nodes; and  ~~d~~**c**) Single Customer Trading Nodes representing an aggregate of multiple customers ~~maybe disaggregated into several Customer Trading Nodes corresponding to the customers represented in that Trading Node. It is provided, however, that such disaggregation shall be allowed only in cases where there are appropriate real-time monitoring points that can account for the real-time withdrawal of energy in each disaggregated individual customer trading node.~~  **d) Representation of downstream *generating units* with limited real-time monitoring facilities such as in cases of embedded generators where there is limited availability of real-time monitoring facilities between the transmission system’s main substation and the generator, in which case, the *Market Operator* may model the *generating unit* at the nearest substation to which it is operationally connected. The following illustration shows an example of this case:**  ***[See Appendix A****.]*  **e) Representation of downstream *generating units* located in a *distribution network* that is not reflected in the *market network model*. The *Market Operator* may model the *generating unit* at the nearest substation to which it is operationally connected.** | Revised for clarity. Also included provision on the treatment of Generators (e.g. Embedded Generators) that are located far from the main substation of NGCP, and there is limited real-time monitoring facilities available, or when they are in distribution networks that are not modelled in the MNM. |  |  |  |  |
| MNM | -- | MARKET NETWORK MODEL MAINTENANCE AND PUBLICATION | ~~MARKET NETWORK MODEL MAINTENANCE AND PUBLICATION~~ | Not necessary. Clerical edit. |  |  |  |  |
| Continuing Obligations and Responsibilities | 5.10.2 | (NEW) | **5.10.2 The *System Operator*, in coordination with *Network Service Providers* and *Trading Participants* shall continuously ensure the completeness, availability, and accuracy of the required *real-time data* in the *market network model*.** | Proposed revision to highlight responsibility of SO in ensuring reliability of real-time data. |  |  |  |  |
| Continuing Obligations and Responsibilities | 5.10.3 | (NEW) | **5.10.3 The *System Operator* shall report real-time monitoring facilities owned or managed by the *Trading Participants* that have been persistently erroneous or non-updating for at least two (2) *business days* to the *Market Operator* and *Enforcement and Compliance Office*. The *Trading Participant* shall endeavor to resolve the issue within one (1) month from the time it was reported.** | Provide Trading Participants that own or manage their real-time monitoring facilities the responsibility to correct real-time data errors in a timely manner |  |  |  |  |
| Continuing Obligations and Responsibilities | 5.10.4 | (NEW) | **5.10.4 The *System Operator* shall be responsible for estimating *real-time data* that was reported to be erroneous or non-updating.** | To ensure accuracy of scheduling and pricing, it is proposed that the System Operator submit estimated real-time data when there are erroneous or non-updated information |  |  |  |  |
| MNM | 6 | MARKET TRADING NODE | ~~MARKET TRADING NODE~~ **MODELLING OF MARKET RESOURCES** | Reflect proposed general term for representations of generators, battery energy storage systems, pumped-storage unit, and loads |  |  |  |  |
| Market Trading Node | 6.1.1 | The Market Trading Node in the MNM, in physical terms, represents a power substation onto which energy is injected or withdrawn through power transformers or switching equipment. The transformers and switching equipment connect the transmission network operated by the System Operator and generating equipment, distribution network operated by Network Service Provider and load customers. | ~~The Market Trading Node in the MNM, in physical terms, represents a power substation onto which energy is injected or withdrawn through power transformers or switching equipment. The transformers and switching equipment connect the transmission network operated by the System Operator and generating equipment, distribution network operated by Network Service Provider and load customers.~~  ***Market Resources* shall be modelled in the *market network model* to represent a generator, *battery energy storage system*, *pumped-storage unit*, or *load*. Subject to Section 6.1.2, each *market resource* shall be classified as either a *scheduling point* or a *market trading node* of the generator, *battery energy storage system*, *pumped-storage unit*, or *load*.** | Revised for clarity |  |  |  |  |
| Market Trading Node | 6.1.2 | (NEW) | **It is possible to define only one *market resource* to represent both the *scheduling point* and the *market trading node*.** | Added to clarify that some market resources can represent both scheduling point and market trading node. |  |  |  |  |
| Market Trading Nodes | 6.3 | CLASSIFICATION OF MARKET TRADING NODES | ~~CLASSIFICATION~~ **TYPES** OF MARKET ~~TRADING NODES~~ **RESOURCES** | Revised to use Market Resources. |  |  |  |  |
| Classification of Market Trading Nodes | 6.3.1 | MTN’s can be classified as:  a) Generator nodes – nodes that represent a registered generating unit or generating system directly connected to a network operated by the System Operator. It is a node where power is injected into the transmission network.  b) Customer nodes – nodes that represent where power is withdrawn by Trading Participants from the grid.  c) Battery Energy Storage System nodes – nodes that represent a registered battery energy storage system directly connected to a network operated by the System Operator. It is a node where power is injected or withdrawn through the transmission network.  d) Pumped-Storage Unit nodes – nodes that represent a registered pumped-storage unit directly connected to a network operated by the System Operator. It is a node where power is injected or withdrawn through the transmission network. | ~~MTN’s~~ **Market Resources** can be classified as:  a) Generator ~~nodes~~ **resources** – ~~nodes~~ **resources** that represent a registered generating unit or generating system directly connected to a network operated by the System Operator. It is a ~~node~~ **resource** where power is injected into the transmission network.  b) Customer ~~nodes~~ **resources** – ~~nodes~~ **resources** that represent where power is withdrawn by Trading Participants from the grid.  c) Battery Energy Storage System ~~nodes~~ **resources** – ~~nodes~~ **resources** that represent a registered battery energy storage system directly connected to a network operated by the System Operator. It is a ~~node~~ **resource** where power is injected or withdrawn through the transmission network.  d) Pumped-Storage Unit ~~nodes~~ **resources** – ~~nodes~~ **resources** that represent a registered pumped-storage unit directly connected to a network operated by the System Operator. It is a ~~node~~ **resource** where power is injected or withdrawn through the transmission network. | Replaced nodes with resources. |  |  |  |  |
| Classification of Market Trading Nodes | 6.3.2 | Where available remote telemetering facilities are situated at a location net of the station service, the Trading Participant shall have a generator and a customer MTN registered in the WESM to accurately reflect the direction of power flow. | **For *generating units* registered and modelled net of its station use** ~~Where available remote telemetering facilities are situated at a location net of the station service~~, the *Trading Participant* shall have a generator and a customer ~~MTN~~ **resource** registered in the WESM to accurately reflect the direction of power flow. | Revised for clarity |  |  |  |  |
| Market Trading Node | 6.4 | CRITERIA FOR THE DEFINITION OF MTN  The following are the general criteria for the definition of MTN: | ~~CRITERIA FOR THE DEFINITION OF MTN~~ **GUIDELINES FOR MODELLING A MARKET RESOURCE**  The following are the general ~~criteria for the definition of MTN~~ **guidelines in modelling the different *market resources***: | Replace MTN with Market Resource |  |  |  |  |
| Criteria for the Definition of MTN | 6.4.5 | If the Trading Participant is a dispatchable generator connected to a distribution system (embedded facility), then its MTN and scheduling point shall be assigned to the nearest scheduling point represented in the MNM. Adjustments to the real-time monitoring of the Customer scheduling point shall be made accordingly to reflect the total power consumed by that Customer scheduling point accounting for the power generated by the dispatchable generator situated downstream. | If the Trading Participant is a dispatchable generator connected to a distribution system (embedded facility), then its MTN and *scheduling point* shall be assigned to the nearest ~~scheduling point represented in the~~ MNM **substation to which it is operationally connected**. Adjustments to the real-time monitoring of the Customer *scheduling point* shall be made accordingly to reflect the total power consumed by that Customer *scheduling point* accounting for the power generated by the dispatchable generator situated downstream **consistent with the provisions in clause 5.3.2 (d)**. | Revised for clarity and consistency on provisions relating to simplifications in the MNM. |  |  |  |  |
| Criteria for the Definition of MTN | 6.4.6 | A generating facility shall be modelled as a scheduling point. | ~~A generating facility shall be modelled as a scheduling point.~~ | Suggest to delete since generating resources can have both MTNs and scheduling points |  |  |  |  |
| MNM | 6.5 | GENERATOR MTN | GENERATOR ~~MTN~~ **RESOURCE** | Replace MTN with resource |  |  |  |  |
| Generator MTN | 6.5.1 | A MTN is considered a generator node if energy is supplied into that node and the direction of the power flow is from the apparatus or equipment (i.e. generator) operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator. | ~~A MTN is considered a generator node if energy is supplied into that node and the direction of the power flow is from the apparatus or equipment (i.e. generator) operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator.~~ | Propose to delete since definition is already indicated in section 6.3.1 |  |  |  |  |
| Generator MTN | 6.5.2 | 6.5.2 During the submission of offers to supply electricity, the participant generator shall specify the location of the connection point and the relevant market network node. | ~~6.5.2~~ ~~During the submission of offers to supply electricity, the participant generator shall specify the location of the connection point and the relevant market network node.~~ **6.5.1 During the registration of the generator resource, the *Trading Participant* shall specify if the *scheduling point* should represent the gross MW output of the generator or at the same location as the *market trading node*, which is at the connection point and net of its station use. The location of the *scheduling point* shall be the reference point for the *registered capacity*, submission of *generation offers* and self-scheduled nominations, scheduling, dispatch, and dispatch compliance monitoring.** | Re-numbered.  Revised for clarity where the scheduling point shall be the reckoning/reference point capacity registration until dispatch compliance monitoring. Settlement is reckoned at the market trading node. |  |  |  |  |
| Generator MTN | 6.5.3 | 6.5.3 xxx | ~~6.5.3~~ **6.5.2** xxx | Re-numbered. |  |  |  |  |
| MNM | 6.6 | CUSTOMER MTN | CUSTOMER ~~MTN~~ **RESOURCE** | Replace MTN with resource |  |  |  |  |
| Customer MTN | 6.6.1 | A customer node is the point where energy is withdrawn by the WESM participant and the direction of the power flow is from the network operated by the Network Service Providers, including the System Operator, to the energy consuming apparatus or equipment (i.e. load) owned by or connected to the customer trading participant. | ~~A customer node is the point where energy is withdrawn by the WESM participant and the direction of the power flow is from the network operated by the Network Service Providers, including the System Operator, to the energy consuming apparatus or equipment (i.e. load) owned by or connected to the customer trading participant.~~  **Should there be limitations for a customer resource to be modelled at the *connection point* (e.g. availability of real-time monitoring facilities), the *Market Operator* may implement simplifications and approximations to its representation in the *market network model* while still ensuring its consistency and accuracy with its actual connection to the grid.** | Propose to delete original provision since definition is already indicated in section 6.3.1.  Replaced instead with current modelling practice for customer resources. |  |  |  |  |
| MNM | 6.7 | BATTERY ENERGY STORAGE SYSTEM MTN | BATTERY ENERGY STORAGE SYSTEM ~~MTN~~ **RESOURCE** | Replace MTN with resource |  |  |  |  |
| Battery Energy Storage System | 6.7.1 | A MTN is considered a battery energy storage system node if energy is injected or withdrawn through that node and the direction of the power flow is from the apparatus or equipment operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator. | ~~A MTN is considered a battery energy storage system node if energy is injected or withdrawn through that node and the direction of the power flow is from the apparatus or equipment operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator.~~ | Propose to delete original provision since definition is already indicated in section 6.3.1. |  |  |  |  |
| Battery Energy Storage System | 6.7.2 | 6.7.2 During the submission of offers to supply or consume electricity, the participant battery energy storage system shall specify the location of the connection point and the relevant market network node. | ~~6.7.2 During the submission of offers to supply or consume electricity, the participant battery energy storage system shall specify the location of the connection point and the relevant market network node.~~  **6.7.1 During the registration of the *battery energy storage system resource*, the *Trading Participant* shall specify if the *scheduling point* should represent the gross MW output of the generator or at the same location as the *market trading node*, which is at the connection point and net of its station use. The location of the *scheduling point* shall be the reference point for the *registered capacity*, submission of *generation offers* and self-scheduled nominations, scheduling, dispatch, and dispatch compliance monitoring.** | Re-numbered.  Revised for clarity where the scheduling point shall be the reckoning/reference point capacity registration until dispatch compliance monitoring. Settlement is reckoned at the market trading node. |  |  |  |  |
| Battery Energy Storage System | 6.7.3 | 6.7.3 xxx | ~~6.7.3~~ **6.7.2** xxx | Re-numbered. |  |  |  |  |
| MNM | 6.8 | PUMPED-STORAGE UNIT MTN | PUMPED-STORAGE UNIT ~~MTN~~ **RESOURCE** | Replace MTN with resource |  |  |  |  |
| Pumped-Storage Unit | 6.8.1 | A MTN is considered a pumped-storage unit node if the facility is a pumped-storage plant where energy can either be injected or withdrawn through that node and the direction of the power flow is from the apparatus or equipment operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator. | ~~A MTN is considered a pumped-storage unit node if the facility is a pumped-storage plant where energy can either be injected or withdrawn through that node and the direction of the power flow is from the apparatus or equipment operated by the Trading Participant to the network operated by the Network Service Providers, including the System Operator.~~ | Propose to delete original provision since definition is already indicated in section 6.3.1. |  |  |  |  |
| Pumped-Storage Unit | 6.8.2 | 6.8.2 During the submission of offers to supply or consume electricity, the participant battery energy storage system shall specify the location of the connection point and the relevant market network node. | ~~6.8.2 During the submission of offers during generation mode, the participant pumped-storage unit shall specify the location of the connection point and the relevant market network node~~  **6.8.1 During the registration of the *pumped-storage unit* resource, the *Trading Participant* shall specify if the *scheduling point* should represent the gross MW output of the generator or at the same location as the *market trading node* (i.e. at the *connection point*, which is at the connection point and net of its station use. The location of the *scheduling point* shall be the reference point for the *registered capacity*, submission of *generation offers* and self-scheduled nominations, scheduling, dispatch, and dispatch compliance monitoring.** | Re-numbered.  Revised for clarity where the scheduling point shall be the reckoning/reference point capacity registration until dispatch compliance monitoring. Settlement is reckoned at the market trading node. |  |  |  |  |
| Pumped-Storage Unit | 6.8.3 | 6.8.3 xxx | ~~6.8.3~~ **6.8.2** xxx | Re-numbered. |  |  |  |  |
| MNM | 6.9 | PROCEDURE FOR MTN IDENTIFICATION | PROCEDURE FOR ~~MTN IDENTIFICATION~~ **REGISTRATION OF MARKET RESOURCES** | Revised to better describe the section. |  |  |  |  |
| Procedure for MTN Identification | 6.9.2 | The Market Operator and the System Operator, in coordination with the Trading Participant, shall determine the MTN based on the criteria set out in Section 6.4 - Criteria For Definition of MTN of this document. | The Market Operator and the System Operator, in coordination with the Trading Participant, shall determine the ~~MTN~~ ***market resource* model** based on the ~~criteria~~ **guidelines** ~~set out in~~ of Section 6~~.4 - Criteria For Definition of MTN~~ of this document. **The agreed *market resource* model shall be determined in accordance with the procedures under the *WESM* *Market Manual* on Registration, Suspension, and De-Registration Criteria and Procedures.** | Revised for clarity. |  |  |  |  |

*Note: Please underline and put in bold letters the proposed changes to the Market Rules or Manual.*

Appendix A. Illustration of Simplified Model for Embedded Generators

