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**Wholesale Electricity Market  
Rule Change Proposal Submission Form****RC\_2012\_07 Loss Factor Determination**

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**Submitted by**

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**Submission**

- 1. Please provide your views on the proposal, including any objections or suggested revisions.**

**Background**

Clause 2.27 of the Market Rules outlines the principles for calculating and utilising loss factors in the Wholesale Energy Market (WEM). Some of the detail of the procedure for calculating and publishing loss factors is contained in a Market Procedure.

In the WEM the Muja Power Station is the system reference node and all loss factors are calculated relative to the system reference node. Loss factors are made up of:

- The relevant transmission loss factor only for transmission connected customers and generators, or
- The relevant transmission loss factor multiplied by the relevant distribution loss factor for distribution connected customers and generators.

All metered schedules that are used in settling transactions in the WEM are loss factor corrected by multiplying the metered schedule with the relevant loss factor. This adjustment

of the metered schedule ensures that energy that is lost in transmission<sup>1</sup> is also accounted for when settling the WEM.

Western Power, as the Network Operator, is responsible for calculating and publishing transmission and distribution loss factors for the WEM.

The Independent Market Operator (IMO) has identified a number of issues related to the current treatment of loss factors in the WEM as follows:

1. Clause 2.27.1 of the Market Rules requires the Network Operator to calculate a loss factor for each connection point on its system. The current practice is that individual loss factors are only calculated for significant loads and generators. Smaller loads are grouped and loss factors are calculated and applied to the group.
2. The Market Rules do not specifically allow for updating a loss factor other than via an annual recalculation of all loss factors in the WEM (the result may be challenged and a reassessed loss factor issued following an audit of the original calculations). The current practice is to allow for an update of individual loss factors throughout the year, for example as a result of a load moving from one network tariff to another.
3. Clause 2.27.2(e)(vi) requires a specific loss factor to be calculated for all Non-Dispatchable Loads with peak consumption above 1,000kVA. However, current practice, as reflected in the Market Procedure for loss factors, is that specific loss factor calculations are only performed for:
  - a. Transmission connected loads,
  - b. Distribution connected loads with peak consumption above 7,000kVA,
  - c. Distribution connected loads with peak consumption above 1,000kVA that are located at least 10km from the associated substation, and
  - d. Distribution connected loads with peak consumption above 1,000kVA that are located less than 10km from the associated substation upon request from the Market Participant with the load and provided the Market Participant pays for the calculation.
4. Clause 2.27.2(f) requires a uniform loss factor to apply to all Non-Dispatchable Loads with less than 1,000kVA peak consumption. However, current practice, as reflected in the Market Procedure for loss factors, is that different loss factors apply to connections within this group depending on factors such as the network tariff that applies to the load at the connection point.
5. The loss factor for the Notional Wholesale Meter<sup>2</sup> must according to clause 2.27.2A of the Market Rules be the same as the loss factor applying to Non-Dispatchable loads with peak consumption less than 1,000kVA. As described above, under current practice there

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<sup>1</sup> Losses occur in transmission and distribution lines as well as transformers by way of energy being converted to heat due to the resistance of the wires.

<sup>2</sup> The Notional Wholesale Meter “measures” the load of all of Synergy’s basic metered Non-Dispatchable Loads. These loads are typically residential and small business customers.

are multiple loss factors applied to various loads with peak consumption less than 1,000kVA. The current market procedure for loss factors prescribe that the loss factor for the Notional Wholesale Meter be calculated as the product of the average transmission system wide loss factor and the average distribution system wide loss factor. The average distribution system wide loss factor is not generally representative of the distribution losses for the connections that reside within the Notional Wholesale Meter. This is because the average distribution loss factor would also reflect contributions of higher voltage distribution connected loads that do not form part of the Notional Wholesale Meter.

6. The IMO also identified various minor issues such as making a clearer distinction between transmission and distribution loss factors and making it clear that there is only one Notional Wholesale Meter in the WEM, belonging to Synergy.

### **Change Proposal**

In relation to issues 1 – 4 identified above where current practice differs from the practice prescribed in the Market Rules, the IMO has proposed to amend the Market Rules to align with current practice. Some amendments will also be proposed for the loss factor market procedure to ensure consistency with the Market Rules.

In relation to issue 5 the IMO has proposed to amend the Market Rules so that the loss factor applying to the Notional Wholesale Meter is a product of the average system wide transmission loss factor and the average distribution loss factor for all Non-Dispatchable Loads not equipped with an interval meter (i.e. only those loads that make up the Notional Wholesale Meter).

In relation to issue 6 the IMO has proposed minor clarifying amendments to the Market Rules to address the inaccuracies identified above.

### **Perth Energy's Views**

Perth Energy supports the IMO's rule change proposal.

Perth Energy considers that the current practices in relation to calculating and applying loss factors represent a reasonable balance between providing accuracy (increasing by calculating more individual loss factors) and keeping the administrative cost of the calculation at a reasonable level (costs also increasing with the number of individual loss factor calculations). Perth Energy therefore supports the proposal to formally reflect in the Market Rules the cut-off points described in issue 3 above as criteria for calculating individual loss factors rather than the current requirement in the Market Rules of individual calculations for all loads above 1,000kVA.

The current practice of grouping connections with similar characteristics, for example via the network tariff, and applying a single loss factor to the group provides increased accuracy in the loss factor application at a reasonable cost compared to calculating and applying individual loss factors for each single connection in the WEM. Perth Energy therefore supports retention of this principle which will aid in providing better cost reflection to end users in the WEM.

Perth Energy also agrees with the proposed changes for calculating the loss factor applying to the Notional Wholesale Meter. The Notional Wholesale Meter represents a significant portion of the WEM load and improving the accuracy of the loss factor for the Notional Wholesale Meter is likely to improve the accuracy of settlements in the WEM. In Perth Energy's view, the current practice of utilising the average system wide distribution factor in the calculation will lead to an inaccurate estimate of the loss factor for the Notional Wholesale Meter as it would include the impact on distribution losses from higher voltage, interval metered customers as well. Higher voltage connections tend to in general have a lower level of losses compared to lower voltage connections. The current loss factor for the Notional Wholesale Meter is therefore likely to underestimate the amount of losses caused by Synergy's basic meter customers.

On this occasion Perth Energy fully supports the proposed changes to the Market Rules to align them with current practice. However, where discrepancies exist between the Market Rules and Market Procedures and any other procedures that the IMO, System Management, the Network Operator or any other Market Participant has developed, Perth Energy would expect that the Market Rules would take precedence. Perth Energy would welcome a page turn review of the Market Rules to identify any other remaining discrepancies between the Market Rules and the Market Procedures and indeed any "common practice" that may be applied by various Market Participants.

**2. Please provide an assessment whether the change will better facilitate the achievement of the Market Objectives.**

Perth Energy considers that the proposed changes to the calculation and application of various loss factors will provide a good balance between accuracy and cost. The improved accuracy of loss factors should lead to better cost reflection to end consumers which will have a positive impact on facilitating achievement of the economic efficiency component of Market Objective (a)<sup>3</sup>.

Perth Energy has not identified any impacts on the other Market Objectives.

**3. Please indicate if the proposed change will have any implications for your organisation (for example changes to your IT or business systems) and any costs involved in implementing these changes.**

Perth Energy has not identified any impacts on our IT or other business systems.

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<sup>3</sup> The objectives of the market are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

**4. Please indicate the time required for your organisation to implement the change, should it be accepted as proposed.**

Perth Energy will not require any lead time to implement the proposed changes.