AEMC

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Application of dual marginal loss factors: Draft Rule Determination

The AEMC's Draft Rule and Draft Rule Determination

On 14 April 2011, the Australian Energy Market Commission (the Commission) published a Draft Rule and a Draft Rule Determination for the Application of Dual Marginal Loss Factors Rule change.

The Draft Rule amends clause 3.6.2 of the national electricity rules (the Rules). This amendment will allow the Australian Energy Market Operator (AEMO) to apply two volume weighted marginal loss factors (MLFs), at those connection points where application of a single volume weighted MLF would not accurately represent losses for energy generated and consumed at that connection point.

In doing so, the Draft Rule is likely to reduce the likelihood of inaccurate MLF values being applied in the national electricity market (NEM). The Commission considers that this is likely to facilitate effective dispatch, pricing and settlement, which is in turn likely to encourage more efficient usage, operation of and investment in electricity services.

Background: Intra-regional losses in the NEM

When electricity is transported across a transmission network, a portion of this energy is lost, usually in the form of waste heat. This Rule change relates to how those losses are accounted for in relation to participants at specific connection points in the transmission network.

Losses are represented and accounted for through the use of a single value, known as a static MLF. Static MLFs represent the average of the losses that are incurred by a participant at a connection point, when that participant transmits or receives one additional (marginal) unit of energy.

AEMO calculates these values based on the anticipated energy generated or consumed at a connection point in a given year. These figures are averaged by AEMO to give a single static MLF. This single static MLF value is then used in the following year.

Static MLFs are used by AEMO in dispatching the market. Dispatch is the process whereby AEMO determines the cheapest possible mix of generation to meet demand at any given time. Accordingly, a Generator's offers are adjusted by their MLF, so that the extent of the losses incurred in transporting their power together with their offer price determines the dispatch outcome.

Static MLFs are also used in settlement of the market. Settlement is the process whereby AEMO determines what revenue is to be paid by load, or paid to generators, for the quantities of energy they have consumed or generated. AEMO multiplies the market price by a participant's MLF to adjust the price that participant receives, in order to account for the losses attributed to them.

Problem identified in the Rule change request

The arrangements outlined above normally deliver effective and accurate MLFs. However, this may not occur in certain circumstances. Specifically, AEMO stated that where annual levels of energy consumption and generation at a connection point are close, inaccurate MLF values may be calculated.

Inaccurate MLF values may distort the effectiveness of the dispatch process, as Generator offers may not be adjusted to accurately reflect the extent of their losses. Similarly, settlement processes may be affected, as the amount that affected participants are paid in settlement may be inappropriately reduced or increased.

These effects may have a material impact on the effective function of the market, particularly in relation to the setting of efficient prices. This may in turn effect the prices paid by end use customers and investment in electricity services.

Commission's Determination

In their Rule change proposal, AEMO suggested that an appropriate solution to the identified problem was the calculation and application of two separate MLFs at affected connection points. In these cases, one MLF would be used when energy is generated at the connection point, while another MLF would be used when energy is consumed.

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The Commission considers that AEMO's proposal represents an effective solution. Accordingly, the Commission has made a Draft Rule which incorporates AEMO's proposed change. In making this decision, the Commission has considered a number of issues, including:

- The materiality of the identified problem: the Commission has decided that the Draft Rule is likely to provide a solution which will effectively address the material consequences of the identified problem.
- The optimal approach to be taken to address the identified problem: the Commission has decided that application of dual volume weighted MLFs, at those connection points affected by the identified problem, provides a proportionate solution that minimises the extent of unnecessary market interference and participant uncertainty.
- Specificity in the Rules: the Commission has decided that the Rules should provide some level of detail describing the principles of when two MLFs may be applied. However, the Commission considers that AEMO should consult on the specific criteria it will use to determine when to apply dual MLFs.

Steven Graham, Chief Executive