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Nicola Cusworth
Chair
Economic Regulation Authority
Level 4, Albert Facey House
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Dear Ms Cusworth

DRAFT DECISION ON PROPOSED REVISIONS TO THE ACCESS ARRANGEMENT FOR THE WESTERN POWER NETWORK

Power systems and energy markets in Australia and overseas are undergoing rapid transformational change. The Wholesale Electricity Market, like the National Electricity Market, is going from one dominated by central large-scale, synchronous power plants, and passive consumption, to the current environment with rapid increase of both distributed energy resources[1] and large scale wind and solar energy, coupled with retirement, or impending retirement, of conventional plant. The immediate future is expected to see growth in battery storage, connected and standalone micro grids and micro markets. As these changes continue to pick up pace, the challenge of maintaining the security and reliability of the power grid will grow.

Since our November 2017 submission on Western Power's Access Arrangement, we have undertaken more work on some of the challenges and opportunities of the present transition of the electricity system from centralised, dispatchable, synchronous generation to distributed, intermittent, non-synchronous generation. Some of this work has been a result of the Economic and Industry Standing Committee's inquiry into MicroGrids and Associated Technology[2].

Further to AEMO's inquiry submissions and discussions, AMI if specified appropriately (including its remote connectivity) can assist with:

1. Coordination of Distributed Energy Resources:
    a. Continued uptake in uncontrollable roof top PV will result in challenges to system operations such as:
        i. scheduled generation dispatch inefficiencies (e.g. cycling, ramping),
        ii. market inefficiencies due to system operator out of merit dispatch to ensure sufficient generation to provide ancillary services,
        iii. ultimately system security risks as insufficient system demand to enable dispatch of generation to provide required levels of ancillary services.

[1] AEMO defines distributed energy resources to include resources located on the distribution system that can supply or help manage energy on the system, including distributed and rooftop solar, storage, load management, and other forms of supply, including connected micro grids.

[2] http://www.parliament.wa.gov.au/parliament/commit.nsf/($all)/8C9FB0B8AA10E88D4825823B0019BAA3

b. Provision of system information or pricing signals that more closely represent cost to supply as they can be dynamically updated to reflect power system conditions.
c. Provision of real time power system data on customer load, generation and storage capacity to assist with system control and data to fine-tune power system demand and supply forecasting models.

2. If other measures aren't sufficient and as a last resort to keep the system secure, control of Distributed Energy Resources:
    a. In the event of insufficient supply, could allow more targeted load shedding for example through the tripping of only non-essential parts of customer loads (or the temporary discharging of batteries or electric vehicles) rather than complete loss of supply which is the case with present Underfrequency Load Shedding Schemes.
    b. In the event of excess supply, could allow for batteries and electric vehicles to be temporarily turned to charging (or at least not discharge) or PV output to be temporarily reduced.

Whilst there is likely to be a need to change other constructs such as the Metering Code and Wholesale Market Rules to facilitate some of these benefits, AMI can provide the technical foundation.

Not being a metering agent, AEMO is unable to provide figures around AMI installation costs. It is important to note that it is AEMO's position that with customers (through DER) becoming the major generator on the power system, it is critical that improved visibility, predictability and coordination is provided of these resources for the benefit of all consumers. While AEMO is unable to put a value on these benefits as they are more qualitative in nature, the present challenge of increased distributed energy resources can instead become a solution through the use of AMI.

Yours sincerely

[redacted]

Cameron Parrotte
Executive General Manager, Western Australia
Australian Energy Market Operator