



## Distribution Market Model – Draft report

The AEMC has published a draft report on its Distribution Market Model project, which seeks to explore how the operation and regulation of distribution networks may need to change in future to accommodate an increased uptake of distributed energy resources.

### Context for the project

The uptake of rooftop solar photovoltaic systems, battery storage, electric vehicles, smart energy appliances and other technologies at the distribution level in Australia's electricity sector is having a significant impact on the way that consumers use electricity.

These resources can provide services to different parts of the electricity system, including network businesses, the wholesale market and consumers themselves. The AEMC considers that there is a need for a way to buy and sell these services at the distribution level in a more dynamic way, in response to price signals.

Historically, the development of distribution networks, and the regulatory arrangements that underpin them, have been focused on distribution network businesses providing sufficient network capacity to meet increasing consumer demand while maintaining the safety, reliability and security of electricity supply.

However, in light of the increasing uptake of distributed energy resources and the range of services they are capable of providing, distribution system operations and associated regulatory arrangements are likely to require greater consideration of two other issues:

1. The value of **optimising** investment in and operation of distributed energy resources. Distributed energy resources can provide a range of services to a number of parties that cannot all be provided by the same asset at the same time. Optimisation occurs when whoever has control (either the consumer or their chosen energy service provider) of a distributed energy resource responds to price signals to provide the service that will deliver the most value at that point in time.
2. The value of **coordinating** the operation of distributed energy resources with the wholesale market. That is, consideration of how distribution networks can, in both a technical and regulatory sense, enable the efficient use of distributed energy resources in distribution markets and effective access for distributed energy resources to participate in transmission-level markets.

### The draft report

The draft report presents a view of what future distribution network operation might look like, guided most strongly by the principles of competitive neutrality and consumer choice.

Specifically, the draft report:

- clarifies the project scope, key definitions and market design principles in response to stakeholder submissions on the approach paper
- sets out the key characteristics and enablers for a future where investment in and operation of distributed energy resources is optimised to the greatest extent possible
- identifies and assesses the barriers (if any) to these enablers
- seeks feedback from stakeholders on the materiality of any barriers, and possible ways to address them.

The draft report is not intended to be a prediction of, or pathway, for future regulatory reform, but rather an exploration of the key characteristics of a potential evolution to a future where investment in and operation of distribution energy resources is optimised to the greatest extent possible and where there is greater coordination of the operation of distributed energy resources with other markets.

## A competitive market for distributed energy resources

The AEMC considers that promoting the development of a competitive 'distribution' market for the provision of services enabled by distributed energy resources means that markets, in response to consumer decision-making, determine the most efficient outcome.

In the AEMC's view, such a market can develop where there is a level playing field for the provision of 'optimisation' services. A level playing field means that any party taking on the optimising function is **independent** and **exposed to financial incentives**. This means that regulated network businesses should not take on an optimising function because they are not independent of the provision of certain services, i.e. network services.

The AEMC has also considered what the enablers of such a future are, which include:

- the successful implementation of cost-reflective network tariffs, which are due to roll out later this year, providing consumers with more accurate price signals on investing in, and using distributed energy resources
- access to information that enables network businesses to better assess the technical impacts of distributed energy resources on their networks, and other market participants to make better decisions on how to invest in, and operate, distributed energy resources
- consideration of the appropriate access model for distributed energy resources to use the network, if networks become congested as more distributed energy resources connect
- connection charges that reflect the costs and value of distributed energy resources
- more transparent and standardised technical assessments for connecting distributed energy resources, to avoid onerous requirements which can increase costs, or loose requirements which can create technical issues
- evolving Australian standards for distributed energy resources so they remain fit-for purpose.

## Background

The Distribution Market Model project is intended to be a forward-thinking, strategic piece to help inform the AEMC's analysis of rule change requests submitted by stakeholders in response to emerging issues, and its advice to governments. It is intended to complement the range of work being undertaken by the AEMC and other parties regarding distributed energy resources, distribution networks and interactions with the electricity regulatory framework.

It forms part of the AEMC's technology work program, which seeks to explore whether energy market arrangements are flexible and resilient enough to respond to changes in technology. Energy policy and the associated regulatory frameworks need to be flexible and resilient enough to respond to these changes to allow a dynamic market response.

As summarised in Figure 1, the AEMC's reform program has already established a solid foundation for the uptake and use of distributed energy resources.

## Consultation process and next steps

The draft report, and a summary of the draft report in the form of a pre-recorded webcast, is available on the [AEMC website](#).

The AEMC welcomes written submissions from stakeholders on any aspect of the draft report by 4 July, as well as individual meetings with interested stakeholders.

A final report, to be published in August 2017, will draw on stakeholder input received on this report and, where relevant, set out recommendations on possible ways to address any identified barriers to the development of a market-based approach to the optimisation of distributed energy resources.

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Figure 1

The AEMC's reform program has established a solid foundation for the uptake and use of distributed energy resources.

## The AEMC's reform program has already established a solid foundation for the adoption of distributed energy technologies.

Our rules have made it easier for consumers to:



choose and switch retailers



access and understand their consumption data



receive and respond to price signals so they can better manage their bill



access a wider range of technologies, products and services

On the supply and operations side of the market, the AEMC has made rules that:



make it easier to connect new generation to both the transmission and distribution networks



provide the market and system operator with more tools to manage the system as it changes