



INTEGRATION OF DISTRIBUTED ENERGY RESOURCES

A package of reforms to better integrate distributed energy resources

The Australian Energy Market Commission has made more preferable draft electricity and retail rules to integrate distributed energy resources, such as small-scale solar and batteries, more efficiently into the electricity grid.

The draft rules represent a package of reforms that:

- acknowledge the important role that distribution networks play in harnessing the benefits of distributed energy
- enable these benefits to accrue to all electricity system users
- support the decarbonisation of the electricity sector
- clarify networks' role in providing two-way services
- realign networks' incentives to efficiently provide export services
- enable more advanced pricing approaches so as to make the best use of the grid.

Rule change request

The rule change request was submitted by SA Power Networks, the St Vincent de Paul Society Victoria, and the Total Environment Centre together with the Australian Council of Social Service. These proponents requested that amendments be made to the National Electricity Rules to integrate distributed energy resources more efficiently into the electricity grid. The draft rules incorporate many of the proposed rule changes they put forward, as well as opportunities the Commission identified to improve the regulatory framework, and consequential rule changes.

Overview of the draft rule

The Commission's draft determination represents a major set of reforms. It recognises that consumers expect the electricity grid to support both the use and export of energy and participate in the growing range of markets, now and into the future. Key aspects of the draft rules include:

1. **Updating the regulatory framework to clarify that distribution services are two-way and include export services.** This officially recognises energy export as a service provided by distribution networks and gives consumers more influence over what export services networks deliver and how efficiently they deliver them.
2. **Promoting incentives to efficiently invest in, operate and use export services.** This will encourage distribution networks to deliver export services that customers value. Currently there are no financial penalties for poor network export service and no rewards for improvements.
3. **Enabling distribution networks to offer two-way pricing for export services,** allowing them to develop options that reward owners of distributed energy resources for sending power to the grid when it is needed and charging them for sending power when it is not. This is designed to reward customers for actions that better use the network or improve its operations, and helps allocate costs in a more equitable and efficient way.
4. **Allowing flexible pricing solutions at the network level,** enabling distribution networks to develop pricing options to suit their capability, customer preferences and jurisdictional policies.

Extra safeguards will ensure existing and new solar customers – and non-solar customers – are protected. The draft determination does not mandate default charges for exporting power. If a network wanted to introduce export charging, it would need to consult extensively with customers and have a transition plan, approved by the Australian Energy Regulator, detailing how this would be done.

Why change is needed

Australian consumers have led the decentralisation charge by enthusiastically embracing distributed energy resources. Around 20 per cent of all customers in the National Electricity Market (NEM) now partly meet their electricity needs through rooftop solar PV generation, and sell excess electricity back into the grid. According to AEMO's forecasts, rooftop-solar-installed capacity across the market is set to far exceed that of the market's largest remaining coal generator in the near-future and will double or even triple by 2040.

Distributed energy resources are transforming the way consumers interact with the electricity system. They are enabling customers to make decisions about how and when they use and export electricity, and are providing a means for customers to participate in the broader electricity system through buying and selling energy services. For some, distributed energy resources are providing an additional source of revenue that, in many cases, more than offset electricity bills.

All consumers would benefit significantly if distributed energy resources become an integrated part of the electricity system. Successful integration will see more distributed renewable generation connecting to the grid – and it will do so in a way that not only makes the best use of the 'network platform'.

For owners of distributed energy resources, efficient integration would provide the opportunity to maximise the return on their investment. This could range from using their exported electricity to reduce their bills, to accessing and participating in the growing number of new energy services markets – or a combination of both. Efficient integration could also significantly benefit non-owners through lower total system costs. Generation assets (such as solar PV and batteries) could drive down energy costs by providing low-cost energy, as well as ancillary services in competition with traditional providers.

While there is no doubt that distributed energy resources provide many benefits to consumers and the energy system, without a change to the regulatory framework, consumers will face growing limitations to the amount of energy they can export.

This is because all networks have a base level of hosting capacity for distributed energy resources. But networks were built when energy only flowed one way. Now, they are increasingly being used to export energy from customers and approaching the limit of their 'intrinsic hosting capacity'. As a result of these two-way flows, the ability of networks to transport electricity safely, securely and reliably is being challenged. These challenges raise medium- to long-term planning and investment issues.

The regulatory framework has an important role to play – it sets expectations on behaviour, it uses incentives to drive better outcomes, and very importantly, it provides safeguards to protect consumers against monopolistic behaviours.

In addition, it must also support the security of the power system and the people who own renewable technology as well as those who don't. It must provide flexibility for changing customer and jurisdictional preferences, different network circumstances, and technology and market developments as they emerge.

This means re-thinking and updating how market incentives and services are priced.

The Commission's draft determination creates a framework that does just this. If implemented, it allows as many consumers as possible to connect their renewable technology to the grid. It protects those who cannot, or choose not to, invest in it from higher network costs. It also helps the power system run securely.

A 'do nothing' approach is likely to lead to a worse outcome for all. Distribution network constraints could become a bottleneck to more low cost, renewable energy connecting to the grid. There will be increasing instances where customers are limited in their level of exports or not be allowed to export at all.

The access and pricing reforms proposed in the draft determination are foundational to a future grid.

The grid of the future will need to strike the right balance between hosting as many distributed energy resources as possible, while at the same time maintaining distribution security and minimising cost for all users.

Further, as more and more distribution energy resources connect, networks will play an even greater role in facilitating distributed energy resources (and their owners' desire) to participate in the systems and markets available.

Consultation

Implementing distribution access and pricing reforms that affect the way distributed energy services are provided is a major change management exercise, especially given renewable energy generation is a big part of Australia's commitment to reduce emissions. Building trust through ongoing consultation to understand and address stakeholder concerns is key to long-term success.

The Commission has consulted widely through the rule change process, and is aware that some stakeholders are opposed to the changes proposed under this draft rule. However, the reality is that rooftop solar owners are already paying a financial penalty from being constrained off the network at times, and this problem will become worse. We consider that everyone can benefit – regardless of whether they have solar or not – by sharing the cost of upgrading distribution networks to enable two-way flows of energy.

This package of reforms has not been considered in isolation. Rather, it is part of a program of work being undertaken by the energy market bodies and the Energy Security Board (ESB) and follows a nine-month process of working with consumer representatives, industry associations and energy market bodies as part of ARENA's Distributed Energy Integration Program. Importantly, its aim is to support the consumer-driven transition to decentralisation that is currently underway.

The Commission is seeking stakeholder feedback on the draft determination and the more preferable draft rule by **13 May 2021**.

For information contact:

Director, **Ed Chan** 02 8296 7839

Advisor, **Jashan Singh** 02 8296 7853

Media: Media and Content Manager, Kellie Bisset 0438 490 041

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