Excluded service determination for services provided by batteries owned by Western Power

Consultation paper

10 September 2021

Economic Regulation Authority
WESTERN AUSTRALIA

D238355

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Invitation to make submissions

Submissions are due by 4:00 pm WST, Monday, 4 October 2021.

The ERA invites comment on this paper and encourages all interested parties to provide comment on the matters discussed in this paper and any other issues or concerns not already raised in this paper.

We would prefer to receive your comments via our online submission form https://www.erawa.com.au/consultation

You can also send comments through:

Email: publicsubmissions@erawa.com.au
Post: Level 4, Albert Facey House, 469 Wellington Street, Perth WA 6000

Please note that submissions provided electronically do not need to be provided separately in hard copy.

All submissions will be made available on our website unless arrangements are made in advance between the author and the ERA. This is because it is preferable that all submissions be publicly available to facilitate an informed and transparent consultative process. Parties wishing to submit confidential information are requested to contact us at info@erawa.com.au.

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1. Introduction

Western Power's transmission and distribution network is a covered network under the *Electricity Networks Access Code 2004*. Western Power is required to have an approved access arrangement that sets out the terms and conditions, including prices, for third parties seeking access to the network.

Western Power is required to submit its proposal for the fifth access arrangement period on 1 February 2022.

On 9 August 2021, the Economic Regulation Authority published its final decision on the framework and approach for Western Power's fifth access arrangement review. The framework and approach is a new process required under the amendments to the Access Code to support the delivery of the State Government's Energy Transformation Strategy.[1]

One of the matters required to be considered in the framework and approach was the classification of services.[2] The classification of services is important as it identifies which services are regulated and how Western Power can recover the cost of providing those services.

As indicated in the framework and approach, the ERA is considering how storage services provided by batteries owned by Western Power should be classified under the access arrangement; and, specifically, whether they should not be regulated and treated as an excluded service.

If this approach was to be adopted, the capital cost of the battery would essentially sit outside the regulated business and not be included in Western Power's regulated asset base. Rather, the efficient costs of any network support service provided to the regulated network business by a Western Power owned battery would be charged to the regulated business and this operational expenditure would be assessed by the ERA as part of its determination of the efficient costs of providing covered services.

Fundamentally, network support services provided by battery storage appear to be contestable with an increasing number of suppliers able to offer this service to Western Power. The Access Code is premised on regulation of natural monopoly network services and not services that can be provided by a competitive market. The ERA considers that if network support services provided by storage assets are contestable then they should not be

[1] On 6 March 2019, the Minister for Energy announced the Energy Transformation Strategy, which is the State Government's plan to respond to the technological change and evolving consumer preferences that are rapidly transforming the energy sector and to plan for the future of the power system. The delivery of the Strategy was overseen by the Energy Transformation Taskforce, supported by the Energy Transformation Implementation Unit, a dedicated unit within Energy Policy WA.

[2] Other matters required to be considered were:

- reference services
- method for setting service standard benchmarks
- form of price control
- investment adjustment mechanism
- gain sharing mechanism
- service standards adjustment mechanism
- demand management innovation allowance mechanism.

Western Power's access arrangement proposal must be consistent with the elements that the ERA has determined in the framework and approach unless there has been a material change in circumstance in which case Western Power must provide reasons for the departure.

regulated. The treatment of these services as an excluded service will, in the ERA's view, promote investment in these technologies and provide a more transparent identification of the efficient cost of the relevant network services.

The ERA considers that treatment of battery storage as an excluded service under the Access Code is in the long-term interest of consumers and best meets the Code objective to promote efficient investment in, and efficient operation and use of, services of networks.

This Consultation Paper outlines the ERA's views on this matter and seeks comment from stakeholders as input to a final determination.

2. Regulatory requirements

Western Power's electricity network is a natural monopoly. The economies of scale of the network of poles and wires means that network services are most efficiently provided by a single supplier. To protect consumers from the potential risks of monopoly rent seeking behaviour, such as overcharging or poor service, Western Power's network is regulated under the Access Code.

Essentially, Western Power's network provides a transportation service by conveying electricity from electricity producers to electricity consumers. This includes entry, exit and bi-directional services together with the connection, use of system, common and ancillary services to support them. Collectively, these are regarded as covered services (or regulated services) and are regulated under the access arrangement.

Section 1.3 of the Access Code, defines a "covered service" as a service provided by means of a covered network including:[3]

- a connection service[4]
- an entry, exit or bi-directional service[5]
- a network use of system service
- a common service[6]
- a service ancillary to any of the above services.

In contrast, the generation and retail elements of the electricity supply chain are not a natural monopoly. They are not subject to economic regulation on the basis that competition between different suppliers should deliver efficient outcomes to consumers.

The emergence of technology that enables electricity to be stored creates a new dimension to the energy supply chain. Storage can provide an alternative to conventional network investments such as new feeders, voltage regulators or capacitor banks to support exit, entry and bi-directional network services. Storage can also enable users to manage their energy demand and costs and to provide energy and essential services to the Wholesale Electricity Market.

Storage devices can provide different services simultaneously or switch the service provided very quickly. Realising full value from energy storage devices requires their deployment to

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3 "Services" are defined as the conveyance of electricity and other services provided by means of network infrastructure facilities and services ancillary to such services. Network infrastructure facilities are defined in the Electricity Industry Act 2004 as electricity infrastructure used, or to be used, for the purpose of transporting electricity from generators of electricity to other electricity infrastructure or to end users of electricity. It includes stand-alone power systems, or storage works, used, or to be used, as an adjunct to electricity infrastructure. In Western Power's case, the covered network is the portions of the South-West interconnected system which are owned by Western Power.

4 A connection service is the right to connect facilities and equipment at a connection point. This refers to the physical connection, not the right to transfer electricity.

5 An entry service is a covered service provided at an entry point under which the user may transfer electricity into the network at the entry point. An exit service is a covered service provided at an exit point under which the user may transfer electricity out of the network at the exit point. A bi-directional service is a covered service provided at a bi-directional point under which the user may transfer electricity into and out of the network at the bidirectional point.

6 A common service is a covered service that is ancillary to the provision of one or more of entry services, exit services and network use of system services that ensures the reliability of a network or otherwise provides benefits to users of the network, the costs of which cannot be reasonably allocated to one or more particular users and so needs to be allocated across all users.

provide multiple energy services across the energy supply chain. This is commonly referred to as "value stacking". Consequently, storage does not fit neatly within the current boundaries of the regulated monopoly network and competitive generation and retail components of the energy supply chain. The commercial viability of storage assets to provide network support services also requires that they earn revenue from service provision across the power system.

With regard to network support services, a network service provider could provide these services from its own fleet of batteries or by seeking services from batteries owned by third party providers.

Under the Access Code, storage used to provide network support services can be treated as common or ancillary covered services. Storage services other than network support (including leasing out spare capacity or offering customers access to a shared storage service) are not covered services.

The Access Code does not restrict Western Power from providing non-covered storage services.[7] However, only the efficient costs for the provision of covered services can be recovered through regulated network charges. If a battery is not justifiable solely for network support services the capital cost would be allocated between covered and non-covered services.

However, as the Access Code is premised on regulation of natural monopoly network services and not services that can be provided by a competitive market, it includes provisions for making a covered service that is contestable an "excluded service".[8]

Under an excluded service approach, none of the cost of a battery owned by Western Power would be included in the regulated asset base. The efficient costs of any network support service provided by a battery owned by Western Power to the regulated business would be charged to the regulated business as a non-capital cost.

The storage market is still developing. At this stage it does not appear to have economic barriers to entry and is best left unregulated to allow the market to evolve. It may be over time, as storage services become, as predicted, significant components of network infrastructure, that economies of scope develop in the provision of network services from battery storage – in which case, there may be an efficiency argument for a component of the capital cost of a battery to be included in Western Power's regulated asset base. However, currently no such economy of scope is apparent.

Accordingly, the ERA considers that the better approach is to promote the contestable market for storage services by utilising the excluded service classification in the Code.

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7 In the National Electricity Market (NEM), ringfencing requirements restrict distribution network service providers to only providing distribution services. Distribution network service providers cannot provide non-distribution services (including both the supply of excess storage capacity to third parties and the provision of storage services directly to consumers) unless they obtain a ringfencing waiver from the Australian Energy Regulator. The ringfencing provisions in the Access Code do not restrict Western Power from providing non-covered storage services.

8 The ability for the ERA to determine an excluded service is set out in section 6.33 of the Access Code:

> 6.33 The Authority may from time to time make and publish a determination (which subject to section 6.37 has effect for a specified covered network) of which services being provided by means of the covered network are excluded services.

Before making a determination under section 6.33, the ERA must consult the public in accordance with Appendix 7 of the Access Code.

To be classified as an excluded service, storage services provided by batteries owned by Western Power must meet the following criteria:

- The supply of services from batteries must be subject to effective competition.
- The revenue from services provided by and the cost of batteries must be easily identifiable and able to be excluded from Western Power's price control.

Each of these matters is considered below.

3. Effective competition

Effective competition is not defined in the Act or Access Code but is generally understood to mean a level of workable competition in a market. Factors for consideration include:[9]

- Are there competitors active in the market, holding a reasonably sustainable market position?
- Are barriers to entry sufficiently low and will the use of market power be competed away in the long run, so that any degree of market power is only transitory?
- Over the long run, are prices determined by underlying costs rather than the existence of market power (noting that a party may hold a degree of market power from time to time)?

Western Power published a Distribution Storage Opportunities Information Paper in December 2020 indicating that it was likely to seek approximately 10 to 15 small storage systems (between 100kW/400kWh and 300kW/1,200 kWh) each year.[10] The paper also identified six locations that Western Power considered might require larger storage systems (ranging between 5MW/15 MWh and 21MW/63MWh) by 2023. Western Power received a significant number of registrations of interest.

From 1 October 2021, Western Power is required to publish an annual Alternative Options Strategy and Network Opportunities Map setting out, among other things, any network constraints forecast over the next five years.[11] The Network Opportunity Map and Alternative Options Strategy will provide greater information about Western Power's future network requirements on an annual basis and increase the opportunity for third parties to provide storage services to Western Power.

The ERA considers that sufficient third-party suppliers are available to ensure there is a competitive market for the supply of storage services. Battery storage systems have already been deployed or are planned in Western Australia and across Australia by a range of parties including Synergy and Alinta. As noted above, Western Power received a significant number of registrations of interest to supply storage services.

The requirement in the framework and approach for Western Power to include reference services for network connected batteries in its access arrangement will further facilitate competition in the market for storage services as it better ensures third-party suppliers can connect batteries to the network.

Rivalry between storage service suppliers will enable the lowest cost to be discovered by the market. This is further enhanced by the processes under the Access Code to ensure Western Power can only recover efficient costs and the market power mitigation measures in the Wholesale Electricity Market to ensure that, over the long run, prices for services provided by batteries are determined by underlying costs.

The ERA is seeking stakeholder feedback on its view that the supply of services from batteries is subject to effective competition.

9 Application by Chime Communications Pty Ltd (No 2) {2009]

10 A copy of the paper can be found here.

11 Alternative options are defined in the Access Code as alternatives to part or all of a major augmentation or new facilities investment, including stand-alone power systems, storage works, demand-side management and generation solutions (such as distributed generation), either instead of or in combination with network augmentation.

4. Exclusion from price control

To meet the requirements for an excluded service, the revenue from services provided by, and the cost of, a battery must be able to be easily identified and excluded from Western Power's price control without departing from the Code objective.

The cost of batteries owned by Western Power and revenue earned for any services provided by them can be easily identified and separated from Western Power's other costs and revenues.

As discussed above, realising full value from energy storage devices requires their deployment to provide multiple energy services.

If an excluded service approach is not adopted, Western Power would need to allocate the initial capital cost between covered and non-covered services. As batteries can provide different services simultaneously or switch the service they provide very quickly, there may be no obvious or straightforward method to allocate the capital cost of the battery between covered and non-covered services. It is also likely that the proportion of the battery used to provide network support services would change from year to year reflecting changing network requirements.

This approach could result in future cost allocation issues between covered and non-covered services and perceptions that the network service provider has an unfair advantage due to the capital costs being included in its regulated asset base.

Under an excluded service approach, it would not be necessary to determine a capital value based on an initial estimated apportionment of the use of the battery between covered and non-covered services. The costs of any network support service provided to the regulated business would be charged to the regulated business as an annual non-capital cost. This would better enable the charge to be adjusted to reflect changes in use of the battery to provide network support services.

The cost of any network support service charged to the regulated business would be assessed by the ERA as part of its determination of the efficient costs of providing covered services.

The ERA considers that adopting an excluded service approach will provide a more transparent process to identify the efficient costs of network support services and promote efficient investment in, and efficient operation and use of, services of networks.

The ERA is seeking stakeholder feedback on its view that the revenue from services provided by, and the cost of a battery can be easily identified and excluded from Western Power's price control without departing from the Code objective.

5. Proposed determination

At this early stage in the deployment of battery storage technology it is uncertain how value stacking and ownership models might best be configured. The regulatory framework needs to be flexible enough to let the best option develop.

The ERA considers there is already evidence of effective competition in the supply of battery services. The new requirements in the Access Code for Western Power to produce an annual network opportunities map and associated information will facilitate co-optimisation between the multiple value streams that can be met through energy storage.

An excluded service approach better ensures a level playing field for all potential storage service providers to provide network support services and enable the industry to develop the best configuration of value stacking and ownership models.

This should lead to greater availability and lower costs for network support services, which is consistent with the Code objective to promote the efficient investment in, and efficient operation and use of, services of networks for the long-term interests of consumers.

It will be necessary to monitor how the storage market develops but, at this point, the ERA considers that services provided by Western Power owned batteries should be classified as excluded services.

The ERA is seeking stakeholder feedback on its view that storage services provided by batteries owned by Western Power should be an excluded service.