



# United Energy Ring-fencing Waiver Application

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12.10.20





# 1. Overview

United Energy proposes to purchase 40 new pole-mounted battery energy storage system (**BESS**) units to install in the low voltage network, which will be used in addition to two existing pilot BESS units as part of a trial in respect of which it has sought funding from the Australian Renewable Energy Agency (**ARENA**).

The BESS units will form part of United Energy's distribution network and will be used by it to convey and control the conveyance of electricity and, in particular, to provide standard control services. The BESS units will be discharged by United Energy at times of peak demand, thus deferring or avoiding network augmentation. The BESS units will also support the network voltage by absorbing or supplying reactive power when it is outside the limit set by United Energy and provide phase balancing, increasing the safety, reliability and security of supply of the network and thus promoting the national electricity objective (**NEO**).

Given the load profile of United Energy's network demand, a significant amount of capacity on the network remains unutilised for the majority of the year. Accordingly, to maximise the market benefits from the installation of the BESS units, United Energy proposes to proceed with the trial in conjunction with a retailer partner, an unaffiliated entity selected following a competitive expression of interest process. The retailer will lease the storage capacity and be able to use it when not required by United Energy to provide standard control services, namely through the provision of network support at times of peak demand.

We understand that our retailer partner intends to use the BESS units to provide frequency control ancillary services (**FCAS**) and to trade on the energy market, buying at low prices (charging the BESS units) and selling at high prices (discharging the BESS units). **[Confidential: ]**

The installation and operation of the BESS units can be expected to promote the NEO. Given the proposed use of the units, the BESS units will charge overnight or during the midday solar peak and discharge during the periods of morning and/or evening peak demand. This pattern of operation, together with the technical network support that will be delivered by the BESS units (namely voltage support and phase balancing), maximises the opportunity for storing excess solar generation and solar PV export. This addresses a key concern for our customers identified through our regulatory reset engagement program. It also facilitates the transition to a low-carbon future by providing energy storage solutions to support intermittent renewable generation uptake. The operation of the units by the retailer will facilitate the increase in the supply of, and maximise the network market benefits arising from, renewable energy in the National Electricity Market (**NEM**) and reduce prices to consumers. The BESS units are also expected to reduce distribution losses (the energy losses that are incurred as power is transported along distribution wires), which can in turn also be expected to reduce prices to consumers.

The aim of the trial is to determine whether BESS units can defer or avoid network augmentation, and support the transition to renewable energy, using a model that is scalable through the stacking of network and market benefits to deliver the greatest benefit to consumers. The deferred capital value arising from installation of the BESS units is not sufficient to cover the full cost of the bespoke units at today's prices, even where the retailer's contribution is taken into account. Accordingly, United Energy has sought funding for the trial from ARENA.

**[Confidential: ]**



[REDACTED]

United Energy is optimistic that the trial will demonstrate that, when value stacking with retailers occurs and upon the costs decreasing following the trial, incorporating BESS units into the distribution network can be a cost effective means of allowing the increasing connection of renewable generation to the network without major augmentation, which will, in turn, benefit customers in terms of network performance and affordability.

United Energy considers the trial to be consistent with the current regulatory framework, including the Ring-fencing Guideline. However, as AER staff have raised potential concerns, [Confidential: [REDACTED]

[REDACTED] United Energy now applies for a waiver of the legal separation obligation under clause 3.1(b) of the Ring-fencing Guideline.

Granting the waiver sought in this application would promote the NEO, delivering benefits to consumers through avoided or deferred augmentation, and the maximisation of the opportunity for storing excess solar generation and solar PV export, as a consequence of the operation of the BESS units installed on the distribution network as part of the trial.

Granting the waiver is also likely to promote the long term interests of consumers beyond the trial as it will allow for a path to commercialisation of grid connected batteries, including potentially paving the way for mass production of BESS units which will decrease the cost associated with these units. The knowledge sharing obligations that are imposed by ARENA will ensure that the broader industry (and thus consumers beyond those connected to United Energy's network) also benefit from the trial.

The proposed trial does not give rise to the risk of discrimination or cross-subsidisation sought to be addressed by the Ring-fencing Guideline. This is because:

- Given:
  - the use of the BESS units to provide network support is not economic;
  - the waiver relates to a trial project and is thus limited in scope; and
  - the retailer is not an affiliate of United Energy,

there is no potential for any risk of discrimination to arise from the grant of the waiver sought.

- The trial will only proceed if ARENA funding is granted (which is in turn dependent on the AER granting a waiver from the Ring-fencing Guideline). The arrangements with the retailer will be entered into up front. The provision of services by United Energy to the retailer as a part of the trial occurs so as to render the provision of network support by means of the BESS units more economic – that is, to reduce the net cost of that network support. Against this background, there is no risk of cross-subsidisation arising from the grant of a waiver for the trial.

The purpose of the Ring-fencing Guideline is to support development of competitive markets for contestable services, provide clarity for new investment, provide a level playing field for all parties and accelerate innovation. The grant of the waiver will facilitate just this. It is important that the Guideline not operate to stifle innovation.

United Energy seeks an expedited consideration of its application by the AER. We have already invested considerable time and effort in preparing for the trial, including staff time and effort in preparing the ARENA application, running the expressions of interest for retailers and liaising with suppliers and retailers. Further work is required [Confidential: [REDACTED]



[REDACTED] to meet the program schedule and United Energy seeks confirmation that the trial can proceed before undertaking this work.

## 2. United Energy's BESS unit trial

Peak demand on United Energy's network is highly temperature dependent, particularly during hot weather. Peak demand on our network occurs between around 3 and 10 times per year (4 to 5 days on average). Capacity is added to our network to meet peak demand using long-established probabilistic planning techniques. Despite our augmentations being economic, a significant amount of capacity on the network remains unutilised for the majority of the year because of the shape of the load-duration curve.

As part of the trial for which ARENA funding has been sought, United Energy proposes to purchase 40 new innovative 30kW/75kWh pole-mounted BESS units and install them at capacity-constrained distribution substations and on low-voltage circuits. Together with two pilot units, the BESS units will form part of United Energy's distribution network and system, operated by a control system that will be integrated with our existing distribution management system so that the BESS units can be managed in real-time.

The BESS units will charge overnight or during the midday solar peak and discharge during the morning and/or evening peak load, assisting United Energy to meet or manage expected demand for standard control services and thus allowing augmentation of the network to be avoided or deferred.

The BESS units will also support the reliability, quality and security of the supply of standard control services by supporting the network voltage by absorbing or supplying reactive power when it is outside the limit set by United Energy and by providing phase balancing, whereby the BESS units will respond to network voltage and will operate to balance the load when charging or discharging.

As noted, the 40 new BESS units are additional to two 2019 pilot units which were installed, with United Energy funding the residual costs using demand management innovation allowance (DMIA). United Energy has, however, worked with [Confidential: [REDACTED]] retailers through the pilot to identify potential sources of market services revenue that may be achieved if retailers could access the storage capacity of the units.

The way in which the BESS units will be used by each of United Energy and our retailer partner is set out below and details of the proposed use and priority use are summarised in Appendix A. By way of summary:

- the priority use of the BESS units will be to support the network at times of peak demand, thereby deferring or avoiding network augmentation; and
- during the periods when the BESS units are not required to provide network support, the BESS units will be available for use by the retailer for the provision of FCAS and wholesale energy market arbitrage, as well as any other services the retailer seeks to provide ([Confidential: [REDACTED]]).

United Energy seeks to undertake the trial to demonstrate that BESS units installed on the low-voltage network can successfully defer or avoid network augmentation and confirm that this business model is scalable. In particular, the trial has been designed to deliver the greatest benefit to consumers by stacking all of the available network and market benefits, offsetting the cost of the BESS units, and delivering lower cost outcomes for consumers. The deferred capital value arising from the BESS units is not sufficient to cover the cost of the units at today's prices, even taking into account the retailer contribution. Given that pole-mounted BESS units cannot be bought off the shelf, there is a substantial premium on prices. The cost of the BESS units is projected to decline once



they become mass manufactured. In the meantime, to pave the way for this innovation, United Energy has sought [Confidential: ] funding from ARENA to cover the remaining costs. [Confidential: ]

The installation of BESS units facilitates a transition to a low-carbon future. To date, residential behind-the-meter batteries have not been able to keep pace with solar PV installations in sufficient numbers to deliver customers with maximum value for their solar investment, nor deliver lower electricity charges for all other customers. This is because the lack of batteries relative to solar PV is contributing to network voltage-rise issues in many distribution networks and this is curtailing solar PV exports. Furthermore, in areas of the network where there are network capacity-constraints associated with residential peak air-conditioning demand, there are insufficient behind-the-meter batteries available to support the network during the early evening peak periods and avoid the need for network augmentation.

As recognised by the Australian Government in identifying energy storage in its recent *Technology Roadmap, First Low Emissions Technology Statement – 2020* (p. 19):<sup>1</sup>

*Grid-scale electricity storage will be a critical element of Australia's future electricity system. Broad deployment of storage will facilitate more low-cost solar and wind electricity in the grid. Storage will also provide system security services and be a source of reliable, dispatchable electricity. It can reduce pressure on electricity prices by meeting peaks in consumer demand.*

*Low-cost backup and storage will enable more solar and wind electricity in the grid and has the potential to reduce Australia's cumulative emissions by over 700 Mt CO<sub>2</sub>-e to 2040.*

For a successful transition to a low-carbon future, storage uptake needs to keep pace with intermittent renewable generation uptake. For so long as storage remains limited to behind-the-meter and transmission applications, this transition is likely to be difficult to achieve. United Energy's trial is intended to facilitate this transition, increasing the supply of, and maximising the market benefits arising from, renewable energy in the form of visible, reliable, dispatchable, aggregated storage capacity in the NEM.

If successful, this model can be applied by all distribution network service providers (DNSPs) across the NEM as an alternative to traditional network augmentation, and can be used by retailers and aggregators to drive competition in the market to reduce prices.

Such an outcome is facilitated by ARENA's knowledge sharing requirements. In order to be eligible for ARENA funding, United Energy (as well as the retailer partner) must agree to publicly share knowledge and information about the BESS unit trial pursuant to knowledge sharing plans. While the details of United Energy's knowledge sharing plan are yet to be finalised, the extent of the knowledge and information that are generally made available in respect of ARENA funded projects can be seen, by way of example, in respect of ElectraNet's ESCRI-SA Battery Energy Storage Project. ElectraNet has:<sup>2</sup>

- published knowledge sharing reports, including a project summary report ('The journey to financial close'), a commissioning report and three of four six monthly operational reports;
- given (and published) a number of knowledge sharing presentations;
- published event data; and
- facilitated regular 'Knowledge Sharing Reference Group' meetings and published the material from these meetings.

<sup>1</sup> Available at <https://www.industry.gov.au/sites/default/files/September%202020/document/first-low-emissions-technology-statement-2020.pdf>.

<sup>2</sup> See <https://www.escri-sa.com.au/knowledge-sharing/>.



As noted in ARENA's general funding strategy, the requirement to share knowledge 'increases the return on public investment by extending the impact of ARENA financial assistance beyond the proponent to the broader industry'.<sup>3</sup>

## 2.1. United Energy's use of the BESS

As noted above, the priority use of the BESS units will be to support the network at times of peak demand. That is, the batteries will be discharged by United Energy during network peak load times. The trial adds incremental capacity where it is needed on the network, rather than building capacity for 30 years in advance when it may not be needed. This will allow network augmentation to be deferred or avoided.

As detailed further in Appendix A, it is likely that the BESS units will also deliver additional benefits by being operated so as to:

- Support the network voltage by absorbing or supplying reactive power when it is outside the limit set by United Energy.
- Increase the distributed energy resources hosting capacity of the network, enabling greater customer solar export and preventing reverse power flow. Our customers have unequivocally told us they want to export solar electricity to lower bills, have greater energy independence and build a sustainable future.<sup>4</sup>
- Provide phase balancing, whereby the BESS units will respond to network voltage and will operate to balance the load when charging or discharging.

The trial thus gives the grid flexibility. The BESS units will give United Energy active control of the network by using dynamic operating envelopes. This is a unique function of a Distribution System Operator (DSO) that we can test in this trial, which aligns with the Energy Security Board and the Australian Energy Market Commission's market reforms (including moving to a two-sided market) currently on foot.<sup>5</sup>

## 2.2. Retailer use of the BESS

Under the trial, the BESS units will be owned and maintained by United Energy (and as noted in this section 2 above, form part of the distribution network and be used to provide regulated standard control services for peak load management during hot day events). Our retailer partner will lease the storage capacity of the BESS units pursuant to a long term leasing arrangement (possibly ten years, being the expected life of the BESS units) and have a right to use that capacity when it is not being used by United Energy for network support at times of peak demand.

Our retailer partner was selected after we ran a competitive expression of interest process with the [Confidential: ] retailers we worked with during the 2019 pilot. The retailers were asked to provide their best retail lease payment offer under a 10 year lease agreement. [Confidential: ]

The proposed legal arrangement involves United Energy entering into a leasing arrangement under which it grants the retailer a right to use the capacity of the BESS units when not required by United Energy for network support purposes. The retailer will also be required to use the BESS units having regard to local network operating constraints and

<sup>3</sup> ARENA General Funding Strategy 2019/20 – 2021/22, p. 6. Available at <https://arena.gov.au/assets/2019/09/2019-22-arena-general-funding-strategy.pdf>.

<sup>4</sup> See United Energy, *Solar Enablement business case*, January 2020, pp. 13 – 14.

<sup>5</sup> See Energy Security Board, *Moving to a Two-Sided Market*, April 2020.



[REDACTED]

the BESS performance warranties. Subject to these requirements, the retailer will be able to use the aggregated capacity of the BESS units for its own purposes as it sees fit.

We understand our retailer partner intends to use the BESS units for:

- providing FCAS;
- energy arbitrage, that is, storing electricity at low prices, and exporting electricity at a higher price. This should have the effect of reducing electricity retail prices for customers.

As described further in sections 2.3 and 2.5 below, the aggregated capacity of the BESS units will be registered in the NEM and dispatched according to the retailer's orchestration platforms to maximise market services revenues.

**[Confidential:** [REDACTED]

The payments from the retailer to United Energy will be commercially negotiated and set out in a contract. **[Confidential:** [REDACTED]

## 2.3. Control of the BESS units

United Energy is proposing to scope and implement a control system that allows use cases to be prioritised and also allows operation of the BESS units within the network's operating envelope. The system will allow the network use case that manages peak demand to be prioritised and "locked in" to ensure the BESS units dispatch during a network event to meet local demand. Outside of network events, the control system will enable the retailer to charge and discharge the BESS units within the individual distribution substation network operating envelope.

The control system will fulfil the role of a distributed energy resource management system (DERMS) and needs to be integrated with United Energy's existing distribution management system so that the BESS units can be managed in real-time. This includes forecasting network peak load events, ensuring the BESS units are appropriately charged prior to the event and discharging the batteries appropriately to meet local demand for the duration of the event.

**[Confidential:** [REDACTED]

The retailer will be able to manage the capacity available to them in real-time via their orchestration platform, which will optimise revenue from the different use cases based on market dynamics. United Energy and the retailer will work together to ensure the architecture and integration of the final solution enables seamless operation of the BESS units so as to optimise the use of the units' capacity.

## 2.4. **[Confidential:** [REDACTED]

[REDACTED]



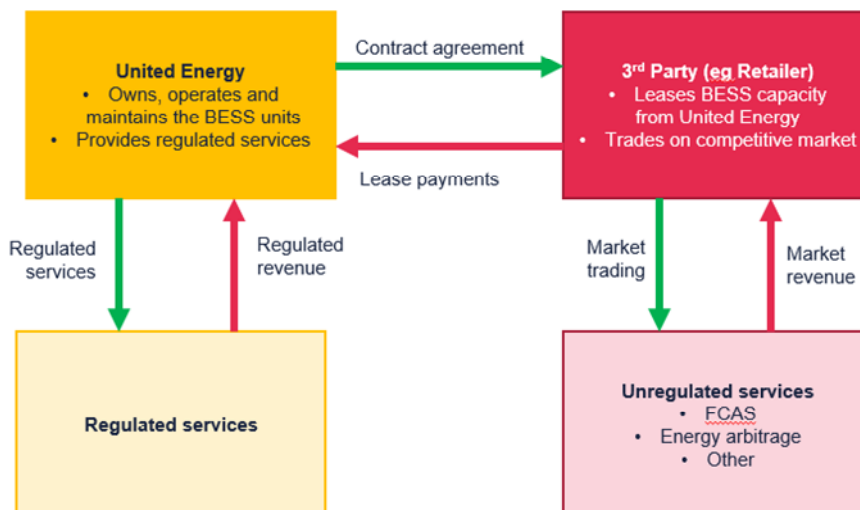


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## 2.5. Proposed regulatory treatment of the BESS

The proposed regulatory treatment under our proposal is summarised in the figure below:



**Figure 1: Proposed regulatory treatment**

Under the proposed arrangement, the BESS units will be owned and maintained by United Energy. They will be used to provide regulated services for peak load management during hot day events, and hence, the assets will be included in United Energy's regulated asset base (RAB). The capital expenditure included in the RAB in respect of the BESS units will



be the residual costs to United Energy of conducting the trial (i.e. the costs of the trial net of the ARENA funding and the retailer's contributions (including payments under the leasing arrangements)). This ensures that United Energy is not provided with a windfall gain, but merely recovers its net costs attributable to the provision of standard control services.

Our retailer partner will lease the storage capacity over a long term period such as 10 years and use the capacity for the remaining time to trade in competitive markets. That is, United Energy will grant the retailer a right to use the BESS units to provide services, but only in a way that does not prejudice the provision of direct control services by United Energy. This is expressly contemplated by clause 3.1(d)i. of the Ring-fencing Guideline as an activity that is consistent with the Guideline. Part of the work in this trial includes drafting a commercial agreement that could operate as a starting point for future long term arrangements with retailers to ensure that there is a means to recover the cost differential between the BESS units and the traditional augmentation cost.

## 3. Waiver being sought

### 3.1. Service and obligation the subject of the waiver

As described in section 2.2 above, under the trial, United Energy proposes to purchase and install BESS units on the low voltage network and enter into a leasing arrangement under which it grants a retailer the right to use the capacity of the BESS units when not required by United Energy for network support purposes.

United Energy does not consider its proposed trial contravenes the Ring-fencing Guideline. However, as AER staff have raised potential concerns, **[Confidential: [REDACTED]**

**[REDACTED]** United Energy now applies for a waiver of the legal separation obligation under clause 3.1(b) of the Ring-fencing Guideline for the purposes of undertaking the trial, including the purchase and installation on the network of the BESS units, the use of the capacity of those units to provide network support services and the grant to our retailer partner of a right to use the capacity of the BESS units.

### 3.2. Proposed waiver commencement and expiry date

We propose that the waiver commence on the date it is granted, and continue until 30 June 2026. That is, the proposed waiver period will thus commence in the 2016-2020 regulatory control period,<sup>6</sup> and cover the entirety of the next regulatory control period, being the 2021-2026 regulatory control period.

The waiver is required for this period given United Energy will use the BESS unit to provide standard control services for the life of those units (which is expected to be approximately 10 years), the arrangements with the retailer will necessarily be longer term arrangements (e.g. potentially up to 10 years to reflect the expected life of the units) and to allow the retailer to benefit from the investments they have made in the trial (including costs associated with integrating its orchestration platform, NEM registration, testing validation, market services revenue estimates, and knowledge sharing required by ARENA) so as to ensure the greatest contribution by the retailer to the cost of the BESS units and thus to reduce the costs to United Energy's standard control services customers

<sup>6</sup> The 2016-20 regulatory control period will include the period 1 January 2021 to 30 June 2021 pursuant to the amendments to the *National Electricity (Victoria) Act 2005 (Vic)* that will be introduced by the National Energy Legislation Amendment Bill 2020. That bill has passed and is awaiting royal assent.



[REDACTED]

to the greatest extent possible. Given clause 5.3.4(b) of the Ring-fencing Guideline appears to limit the AER to granting a waiver to the end of the subsequent regulatory control period, this is the expiry date requested for the purposes of this application.

### 3.3. Request for an expedited assessment of application

Given its understanding that there were no Ring-fencing Guideline issues to be addressed (which understanding was in part informed by discussions with AER staff), United Energy has already invested considerable time and effort in preparing for the trial, including staff time and effort in preparing the ARENA application, running the expressions of interest for retailers, and liaising with suppliers and retailers. Further work is required **[Confidential:**

[REDACTED] to meet the program schedule. **[Confidential:** [REDACTED]

Given the delays associated with the COVID-19 pandemic, the program schedule is currently as follows: **[Confidential:**

- [REDACTED]
- [REDACTED]
- [REDACTED]

United Energy seeks confirmation that the trial can proceed before undertaking the work required to progress with the trial and to deliver the benefits to consumers offered by it.

## 4. Reasons the waiver should be granted

Clause 5.3.2(a) of the Ring-fencing Guideline provides that the AER, in assessing a waiver application and deciding whether to grant or refuse to grant a waiver, must have regard to:

- the NEO;
- the potential for cross-subsidisation and discrimination if the waiver is granted or refused; and
- whether the benefit, or likely benefit, to electricity consumers of the DNSP complying with the obligation (including any benefit, or likely benefit, from increased competition) would be outweighed by the cost to the DNSP of complying with that obligation.

These matters are addressed below. At the outset, however, United Energy observes that, at the time the legal separation obligation in the Ring-fencing Guideline was first introduced, the AER contemplated that a waiver might be sought for the purpose of trialling and developing new technologies.<sup>7</sup> The AER determined against a materiality threshold for the legal separation obligation on the basis it was going to allow applications for a waiver from the legal separation obligation.

<sup>7</sup> AER, *Electricity distribution Ring-fencing Guideline, Explanatory statement*, November 2016, p. 20.



## 4.1. The NEO and benefits to consumers

If it is accepted that United Energy's proposed arrangements under the trial are not compliant with the AER's Ring-fencing Guideline, and a waiver is refused, the trial could not proceed. Where the proposed arrangements with the retailer are accepted to be non-compliant with the Ring-Fencing Guideline, there would be a funding shortfall (through the loss of ARENA's funding and the contributions from the retailer). If the trial were not to proceed, United Energy would still incur costs in the form of network augmentation costs.

There are therefore no 'costs associated with the DNSP complying with the obligation'. Rather, if the application for waiver is rejected by the AER, the customer benefits identified in this application would not be realised, with customers ultimately facing higher energy charges and poorer network performance in terms of safety, reliability and security of supply in the longer term. Rejecting the application for waiver is thus not in the long term interests of customers or the market as a whole. By contrast, granting the application for waiver and allowing the trial to proceed promotes the NEO.

The National Electricity Law provides that:

*The National Electricity Objective is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:*

- *price, quality, safety and reliability and security of supply of electricity*
- *the reliability, safety and security of the national electricity system.*

Low voltage grid-connected batteries are a unique, and innovative, opportunity to provide additional storage uptake in the NEM to keep pace with the growth of intermittent renewable generation. They will complement transmission-connected and customer-connected systems to open up a new channel for storage to flourish in the NEM.

A network that can handle the increasing connection of renewable generation without major augmentation benefits customers in terms of network performance and affordability. Customers also benefit through enhanced export capacity, which as noted above, has been identified in our regulatory reset engagement program as a key concern for our customers.

The benefits to consumers from the trial are outlined in section 2 above. By way of summary, granting the waiver will promote the NEO because the proposed use of the BESS units:

- may avoid or defer augmentation in constrained parts of the network and, if successful, in future could reduce the costs to consumers associated with addressing network constraints;
- will reduce export curtailment and increase customers' ability to export their excess energy;
- will provide an opportunity to trial dynamic operating envelopes across parts of our network, again increasing the potential export capacity of our customers; and
- will provide an opportunity to demonstrate value stacking of BESS units in order to deliver the greatest benefit to consumers by stacking all of the available network and market benefits, offsetting the cost of the BESS units, and delivering lower cost outcomes for consumers.

Granting the waiver is also likely to promote the long term interests of consumers beyond the trial as it will allow for a path to commercialisation of grid connected batteries, including potentially paving the way for mass production of BESS units which will decrease the cost associated with these units. The knowledge sharing obligations that are



imposed by ARENA will ensure that the broader industry (and consumers beyond those connected to United Energy's network) also benefit from the trial.

## 4.2. No potential for discrimination or cross-subsidisation

The discrimination risk that the Ring-fencing Guideline is intended to address is the risk that the DNSP confers a competitive advantage on its related electricity service providers that provide contestable electricity services. Given the use of the BESS units to provide network support is not economic, the waiver relates to a trial project and is thus limited in scope and the retailer is not an affiliate of United Energy, there is no potential for any risk of discrimination to arise from the grant of the waiver sought.

The cross-subsidisation risk that the Ring-fencing Guideline is intended to address is the risk of DNSPs cross-subsiding its provision of other services by allocating the costs of doing so to the provision of distribution services. The trial is intended to provide an opportunity to investigate value stacking of BESS units to deliver the greatest benefit to consumers by stacking all of the available network and market benefits, offsetting the cost of the BESS units, and delivering lower cost outcomes for consumers. It will only proceed if ARENA funding is granted (which is in turn dependent on the AER granting a waiver from the Ring-fencing Guideline). The arrangements with the retailer will be entered into up front. The provision of services by United Energy to the retailer as a part of the trial occurs so as to render the provision of network support by means of the BESS units more economic – that is, to reduce the net cost of that network support. Put another way, the provision of services to the retailer occurs to subsidise the cost of network support and thus the provision of standard control services. Against this background, there is no risk of cross-subsidisation arising from the grant of a waiver for the trial.

If the trial is successful, any proposed future installation of BESS units on United Energy's network would be subject to consideration under the regulatory regime applicable at that time. However, it is, again, anticipated that the provision of services by United Energy to the retailer would operate to subsidise the cost of utilising network support to avoid or defer network augmentation costs and ultimately contribute to lower costs of providing standard control services. Again, a risk of cross-subsidisation would not arise.

The purpose of the Ring-fencing Guideline is to support development of competitive markets for contestable services, provide clarity for new investment, provide a level playing field for all parties and accelerate innovation.<sup>8</sup> The grant of the waiver will facilitate just this. It is important that the Guideline not operate to stifle innovation.

Given the above, United Energy does not consider any conditions on the waiver are required.

## 4.3. Stakeholder engagement

United Energy observes for completeness that it undertook extensive stakeholder engagement for the purposes of its 2019 pilot installation of two batteries, to ensure the community was comfortable with and supportive of the initiative. The consumer consultation for the proposed BESS trial will be even more extensive than for the pilot, and will draw on the learnings from that process.

For the 2019 pilot project of two BESS units:

- There was a dedicated stakeholder engagement lead to manage customer queries and expectations.

<sup>8</sup> AER, *Electricity distribution Ring-fencing Guideline, Explanatory statement*, November 2016, p. 9.



- We used a number of avenues to communicate with affected communities about the project, such as releasing a factsheet, media releases to local media outlets, a media interview with Neil Mitchell, briefing the local Member of Parliament, briefing the local Council, posting on Facebook, preparing a local Council newspaper article and preparing an article for an industry publication.
- There was a positive reaction from the community to the 'green' focus of the program.
- Stakeholders had some concern around a perception that batteries may emit electromagnetic field (EMF). We will address this in the upcoming trial through an education and awareness campaign.
- There was some concern from stakeholders that their bills would increase to fund the installation of the two pilot batteries. We addressed this by explaining that this is not the case in our online FAQ.
- We notified customers early about the pilot project. Customers directly adjacent to the worksite were door knocked to ensure they understood what the impact may be on them.

For the upcoming installation of 40 additional BESS units as part of the trial:

- We will utilise a larger stakeholder engagement team and a more comprehensive stakeholder engagement plan, as is appropriate due to the trial involving significantly more BESS units than the pilot.
- We will address community concerns around EMF through an education campaign which will include a brochure and a letter to stakeholders.
- We will provide outage information to affected customers in line with normal planned outage notification procedures. We will attempt to minimise the number of customers off supply at any given time by back-feeding customers from adjacent distribution transformers.
- We will take learnings from the pilot project to ensure better traffic management during the installation of the 40 BESS units. We will undertake a site survey prior to installation to take into account the presence of a tree, blocking a driveway while installing, schools or other sensitive areas before finalising the location. In light of our site survey, we will try to minimise these impacts.

As noted in section 2.2 above, the [Confidential: ] retailers that we have worked with during the pilot were approached regarding the trial. None of the retailers raised concerns regarding the trial proceeding with a single retailer.



## Appendix A – BESS use case prioritisation

Priority Level	Use Case	Control by	Description	Frequency	Typical time of use	Conditions of Use Case Application
1	Network Peak Demand Management	Network	Discharge BESS during network peak load times	Between 3 and 10 times per year on hottest days of summer (4-5 days on average). This based on UE's experience operating the UE residential solar storage VPP program.	Evening (typically between 5:00p.m-9:00p.m)	Prevent overload of distribution transformers and circuits. As electricity price are high during high demand period, UE expects retailers to get some benefit from this use case operation.
2	FCAS	Retailer	Discharge BESS during high priced FCAS events	As per market conditions	As per market conditions	This is dependent on retailer bidding strategy. Expected to bid when FCAS prices are high.
3	Energy Arbitrage	Retailer	Charge BESS during low energy price times and discharge for morning and evening peak price times	Twice daily	As per market conditions	This is dependent on retailer bidding strategy. Expected to participate in energy arbitrage twice daily.
4	Voltage Support	Network	BESS to absorb or supply reactive power to manage the voltage on the network	To be used if the LV circuit voltage goes outside the operating envelope specified by UE for each site for e.g. >253V or <216V.  This function will most likely be used as an operating mode in the BESS unit. Enabling this mode will improve the availability of BESS	Continuous – This will be enabled during both network and retail operation	It is intended this will be a mode of operation in the BESS. When the voltage on the network goes outside the operating envelope, the BESS will reduce the active power and provide more reactive power to raise or lower the network voltage. This will enable the BESS to continue its operation. So for example, if the retailer is discharging the BESS at 30kW, the BESS will continue to provide 30kW as long as the voltage on the network is within the network



				units for retail operation. In this mode of operation the BESS will support the network voltage by absorbing or supplying reactive power when it is outside the utility set limit. The set limit will be site specific.		operating limit. As soon as it goes outside the operating limit (for e.g. >253V) then active power will be reduced to supply reactive power and hence lower the voltage on the network. In this way it will improve the availability of the BESS unit for retail operation and avoid taking the unit out of service due to a breach of the network operating condition.
5	Increase Hosting Capacity	Network	Charge batteries during excess solar generation to enable greater customer solar export and prevent reverse power flow	As above. By enabling voltage support UE can avoid unnecessary tripping of solar systems and hence increase the hosting capacity.	Continuous – This will be enabled during both network and retail operation	Low demand periods with high solar generation.
6	Phase Balancing	Network	Charge or discharge the BESS to balance the load on the phases	When system is in use	Continuous – when system is exporting/importing power	The inverter responds to the network voltage and operates to balance the load when charging or discharging.