

# Essential Energy Ring-fencing Waiver Application

## Sovereign Hills Battery

July 2022



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## 1. Overview

### 1.1 The purpose of the battery is to provide network support services

Essential Energy proposes to deploy its first network battery through a trial in the Sovereign Hills area of Port Macquarie. The primary purpose of the battery will be to provide common distribution services (network services), that is, standard control services that will provide price, reliability and security benefits to consumers from deferred augmentation expenditure (augex) and improved network performance. The battery was specified and sized to provide network services and deliver these benefits to customers.

The deployment of the battery is a prudent investment because the cost of the battery is less than the augex that would be required to facilitate the same network outcomes [REDACTED]

To maximise the network investment in the battery, a non-affiliated third party will be provided with access to the asset during periods of spare capacity when the battery is not needed for network services. The preferred third party (the respondent) was selected following a comprehensive testing of the market, which took the form of a competitive RFP process. [REDACTED] has been selected as the preferred third party and is referred to in the application hereafter as 'the respondent'.] The respondent will use the spare capacity to provide Frequency Control and Ancillary Services (FCAS) and arbitrage services and will lease the spare storage capacity for these services - but only when it is not required for standard control services by Essential Energy. Accordingly, this creates an efficient utilisation of a network asset by facilitating additional customer and market value streams.

Since this would be Essential Energy's first network battery, there are two important learning outcomes sought from this project:

- To refine forecasting and modelling approaches to understand how much of a battery could be used for network services and how much for other services over time, without compromising network services, to inform future cost allocation approaches.
- To develop an understanding of how to define the roles between Essential Energy and third parties in order to inform future contractual arrangements.

Knowledge gained from this project will identify the optimal operational model to enable network battery projects in other parts of the network – and by other Distribution Network Services Providers (DNSPs) – and validate the use of network batteries as prudent and efficient network options.

Details regarding the proposed operating model for the network battery, and the roles that Essential Energy and the respondent would play during its operation, are detailed in section 2 of this document. Details regarding the nature of the waiver being sought are set out in section 3.

### 1.2 The battery will meet the National Electricity Objective by promoting the long-term interests of consumers through efficient investment and operation of services

The National Electricity Objective (NEO) as stated in the National Electricity Law (NEL) 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.”*

The benefits of this project that promote the long-term interests of consumers are three-fold:

1. Deferral of capital investments that will bring price benefits to consumers.
2. Improved safety, reliability and security of supply in the network.
3. Support the development of the contestable third-party battery market.

Granting the waiver will provide network price benefits to customers from the deferral of augex, and improved network security and reliability benefits. By allowing a third party to use spare battery capacity for market services, it allows Essential Energy to gain greater utilisation of a network asset and brings down network costs for customers in the long-term. The battery will support with the management of minimum and maximum demand periods and provide network voltage support, thereby strengthening system security and the provision of ancillary services from the battery will facilitate maintaining system frequency. The network battery will improve reliability by supporting the area's backup feeder's load capacity constraints during unplanned outages.

The battery project will also provide long-term benefits to consumers across the national energy market as it will support the development of an evidence base to understand the value stacking benefits of network batteries as an efficient network management solution, compared to traditional network augmentation methods. The learnings from the project will facilitate a pathway to the commercialisation of network batteries that will support the maturity of the third-party battery industry. This in turn will create installation and operational efficiencies that will drive down costs and provide price benefits to consumers.

The evidence base that this trial will develop will support the use of network batteries at scale in the future. Using network batteries at scale will enable increased network hosting capacity that will allow networks across the national electricity market to integrate distributed energy resources (DER) more effectively, and to support customers to optimise the value of their DER investments. More effective integration of DER strengthens the security of the national electricity system and supports upcoming reforms related to DER pricing and access arrangements, and the development of a two-sided market that will be implemented through the Energy Security Board's (ESB) DER Implementation Plan, a cornerstone of the DER integration and flexible demand reforms pathway from the ESB's Post 2025 Market redesign.<sup>1</sup>

Each benefit is discussed in more detail in section 4.1.

### 1.3 Our approach to cost allocation addresses cross-subsidisation risks

The battery was sized for network support requirements and Essential Energy expects that there will be periods when the battery is used entirely for network services. The battery is effectively a lower-cost asset replacement to avoid the need to invest in a more expensive voltage regulator and zone substation option at this time. However, during periods of spare capacity, the respondent will have access to the battery to optimise the network investment while ensuring that it does not compromise our ability to provide network services. The commercial arrangements with the respondent are flexible and outcomes-based. The revenue from non-distribution services will depend on the markets in which the respondent participates (wholesale and ancillary services market). This means that it is difficult to quantify how often, and the precise extent to which, the battery will be used for network services compared to other services.

To avoid the risk of cross-subsidisation, we have utilised a value based split approach whereby we have split the capital expenditure of the battery into two distinct elements being: 1) the RAB and 2) unregulated. This distinction is made based on estimates of the network and market revenues discounted at the regulated and unregulated discount rates to net present value to calculate the relevant allocation proportion.

The detail of our approach to cost allocation is provided in section 4.2 of this document.

### 1.4 We tested the market

Essential Energy tested the market and ran a comprehensive and competitive process to engage third party suppliers. A request for proposal (RFP) was sent to 12 companies, including battery manufacturers, delivery partners specialising in Engineering, Procurement and Construction (EPC), market participants and gen-tailers. The RFP provided the market with the opportunity to propose their preferred delivery model and sizing from either an Essential Energy or third party owned business model.

Essential Energy received only one submission for a third party owned battery model. [REDACTED]

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<sup>1</sup> Energy Security Board, Post-2025 Market Design, Final advice to Energy Ministers – Part A, 27 July 2021.

[REDACTED]

To support further maturity in valuing network services for third parties, this trial project will facilitate a better understanding on how to value network services for the purpose of supporting third party owned batteries. This information will be used in future market testing to enable a more completed and concise tender for services to the private sector. For example, this could include new battery tariffs, dynamic operating envelopes and direct payments for network services.

The response that best met the requirements of Essential Energy was from a non-affiliated third party energy services provider, the respondent, which proposed the model set out in this application.

Further details regarding the approach we took to testing the market are provided in 4.3 of this document.

## 1.5 Assessing this application under the streamlined waiver process

The application should be assessed under the streamlined waiver process because it meets the AER's criteria as set out in the AER Electricity distribution, Ring-fencing Guideline: Explanatory Statement, Version 3 (Guideline Explanatory Statement)

To qualify for the streamlined process, the application must sufficiently address the risks of cross-subsidisation and also must sufficiently test the market in the first instance, through an adequate and established process for engaging non-affiliated third-party suppliers. Essential Energy considers that the Sovereign Hills project satisfies these criteria to qualify for a streamlined wavier application assessment for the following reasons:

- The cross-subsidisation risks are mitigated through Essential Energy's cost allocation method along with our commitment to update our audit procedures to validate its appropriate application.
- Essential Energy also undertook a comprehensive and competitive testing of the market in the first instance to engage non-affiliated third party suppliers to provide the non-network services.

The long-term benefits to consumers and the national electricity system as a result of this project, the mitigation of cross-subsidisation risks through the proposed cost allocation approach, and the comprehensive testing of the market that Essential Energy undertook satisfy the criteria for a streamlined waiver application assessment.

These reasons are more fully explored in section 4 of this document.

## 2. Description of the Sovereign Hills battery operation

The network area selected for the battery trial, Sovereign Hills, is expected to increase its load requirements over the next 10 years, primarily due to continued land development. Additionally, the network in this area has experienced some reliability issues in the past, driven from a singular long feeder supporting the area. To support the forecast load growth, a voltage regulator is planned for 2024, and a new zone substation is planned in 2028. Essential Energy considered the installation of the battery, at a lower cost than both planned investments, as the most prudent and efficient option to manage the network needs identified. The battery provides greater utilisation of a new asset and enables the deferral of the planned augmentation.

The network battery trial will provide a case study that will:

- Identify scenarios where network batteries are an efficient, and economically viable, solution to resolve network issues as the growth of DER on the low voltage network continues.
- Identify optimal operational models for a network battery to maximise customer and network benefits.
- Validate operational and technical benefits, feasibility such as real-time control, islanded operations, protection scheme, and safety.
- Build an understanding of the value-stack of batteries for networks and existing markets.
- Develop an evidence base on which to develop future commercial arrangements with third party battery and service providers and inform future cross-subsidisation approaches.

### **Overview of the operating model**

The purpose of the battery will be to provide network services. However, in order to maximise the value of the asset, Essential Energy is partnering with the respondent to provide it with access to the battery when it is not required for network purposes. During periods of spare capacity when the battery is not needed for network services, the respondent will be provided with access to the asset and use the spare capacity to provide FCAS and arbitrage services. The respondent will utilise the spare storage capacity for these services but only when it is not required for standard control services by Essential Energy. Accordingly, this creates an efficient utilisation of a network asset by facilitating customer and market value streams.

The battery will be charged and discharged by the respondent to manage network constraints identified by Essential Energy. The battery will also provide frequency and voltage support services as required (i.e., when they fall outside the limits set by Essential Energy), which will increase the safety, reliability, and security of supply in the network. Figure 1 illustrates the business model for the battery and the high-level view of the arrangement between Essential Energy and the respondent.

As shown in Figure 1 below, Essential Energy will own the battery and will use it to provide network services, including voltage support, and provide access to the respondent for market services (arbitrage and ancillary services).

Figure 1: Essential Energy Sovereign Hills battery business model

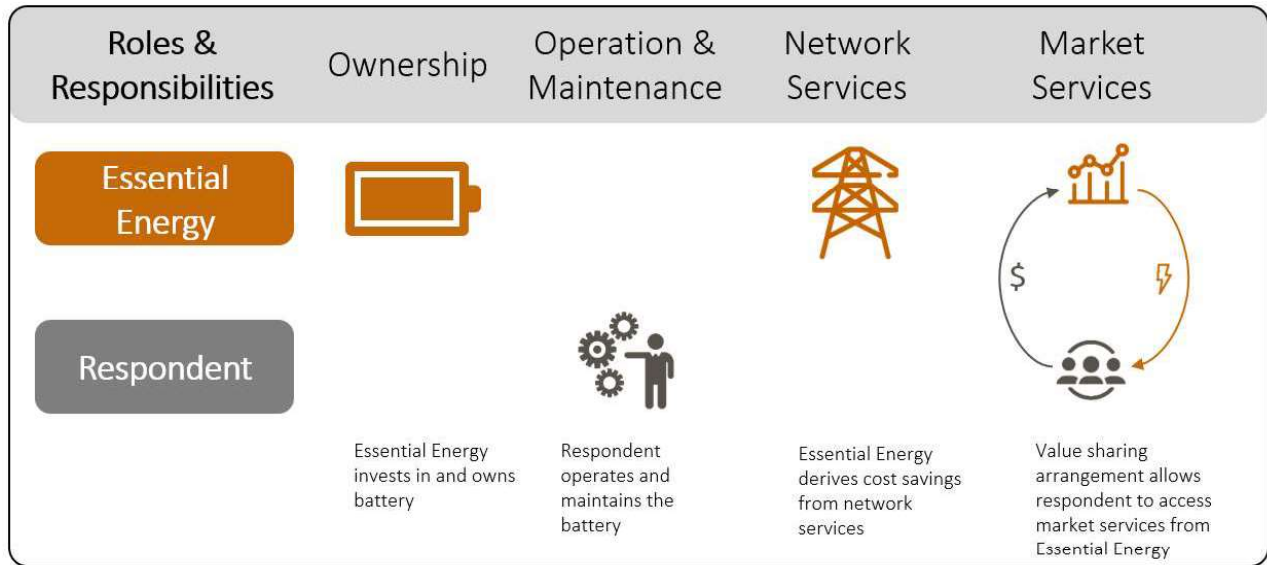


Figure 2 below shows the value across market and network services that the network battery will capture under our agreement with the respondent.

Figure 2: The value stack of market and network services provided by the battery



The respondent will be responsible for the technical operation of the battery. That is, charging and discharging commands and connecting with AEMO for market facing services. This effectively means the network battery agreement is for a single party 'shared use' contract for the asset – Essential Energy will use the battery for network services, and in periods where we do not require the battery to provide network services, the respondent will have access to it to provide other services. The operating model does not comprise of an 'open access' retail battery-service offering.

The value sharing arrangement with the respondent means that revenues and costs created by the operation of the battery are shared. The value-share arrangement includes a minimum payment amount for the respondent of [REDACTED] to cover some of the respondent's costs for registering and administering the operations of the battery (excluding AEMO application fees or additional metering costs incurred by the respondent in registering the battery, which would be passed through to Essential Energy). The return from the respondent's trading activities is uncertain. Accordingly, the 'lease consideration' received by Essential Energy from the respondent's use of the battery will be [REDACTED]



The revenue shared will include the revenue of the battery in the wholesale electricity spot market minus the cost of charging the battery, along with revenue created by the battery participating in the six contingency FCAS (“Frequency Control Ancillary Services”) markets.

To ensure appropriate protocols exist to avoid any potential discrimination concerns in the operation of the battery, Essential Energy will implement a control scheme. This will consist of the following hierarchy of control to take precedence in the operation of the system.

1. Do no harm to the network
2. Network Services
3. Ancillary services
4. Energy services

The amounts subject to the value share arrangement outside of the minimum value amount will likely fluctuate from year to year because they depend on the way in which the FCAS services offered by the battery are recognised by AEMO. The trial is intended to provide learnings and an evidence base that will inform future third-party commercial agreements.

### **2.1.1 Essential Energy’s role – how we will use the battery**

Once the battery and systems are energised and fully commissioned by the respondent, Essential Energy personnel will operate and maintain the safe operation of the system, though the respondent will be responsible for the technical operation of the battery (the orchestration activities).

Essential Energy will use the battery to provide congestion relief and voltage support.

### **2.1.2 The respondent’s role – how the respondent will use the battery**

The respondent, in partnership with [REDACTED] a leading systems integration engineering company specialising in systems integration for energy management and renewable energy transformation, will supply, install and commission the battery. The respondent will act as the third party to develop the optimal operating protocols and orchestrate the battery to co-optimize across network, wholesale market and FCAS markets value streams. The respondent will enrol the battery into its NSW FCAS registration for aggregated assets in the state.

The respondent’s Virtual Power Plant (VPP) platform will integrate with Essential Energy’s SCADA system and connects with AEMO and the respondent’s trading desk and provides an end-to-end solution for orchestrating the battery for network and market services.

### **2.1.3 How the trial will be conducted**

The first three years of the battery’s operation will be a discovery phase to test optimal charging schedules (referred to as a trial phase in our agreement with the respondent, noting the overall battery project trial will be for the life of the battery). This staged plan for developing capabilities for the battery dispatch and commercial arrangements will enable Essential Energy to progressively gain an understanding of the nature of the network services required by the battery and share new knowledge about battery operation and value stacking with the respondent. The staged approach is illustrated in Figure 3 below.



### Stage 1 – Fixed charging schedule

Stage 1 of the trial phase - an initial period of 6 months – will consist of a fixed charging schedule. The battery will be operated under a fixed daily charge and discharge cycle varied for summer and winter operation. The battery would charge in period of low network demand and discharge in periods of high network demand. The battery would undergo one full cycle of charging and discharging per day. In the event of an outage, this operating cycle should provide some support to backup feeders as the battery would discharge during periods of elevated demand. This schedule will result in a more favourable demand profile on average which may have voltage benefits on the network. The schedule also provides a reasonable overlap between high electricity spot market prices on discharge while retaining some battery capacity for FCAS throughout the day. We anticipate this stage will allow Essential Energy and the respondent to develop an understanding of the implications for network demand from operation in this way.

### Stage 2 – Day ahead fixed schedule

Stage 2 will transition to a day ahead fixed schedule. The operation will be changed to a day ahead basis allowing the battery to better respond to events on the network and events in the wholesale electricity spot market. This would cover 6 to 12 months of the battery operation. As understanding of the nature of the network services required by the battery improves, we will establish protocols with the respondent on the desired battery operation that optimises network benefits. For example, we may provide day ahead feeder demand forecasts, indicate periods where additional voltage injections may be required, and provide instructions on keeping charge in the battery to provide backup in the event of an outage during high-risk weather events such as forecast high wind speeds or lightning and storms.

### Stage 3 – Continuous optimisation

By the end of the trial period, Stage 3, there would be continuous optimisation through established continuous data exchange between Essential Energy and the respondent. Essential Energy will nominate the network services required on a continuous basis and would feed into the respondent's trading systems. The trading system would optimise the battery dispatch in the energy market while keeping within the constraints provided by Essential Energy. Continuous optimisation of the battery is expected to provide further value compared to fixed and day ahead schedules because it more closely aligns with the dynamic nature of the electricity market. It also has the potential to provide valuable learnings to develop optimal operational models for future battery projects.

### 3. The application – the waiver being sought by Essential Energy

#### 3.1 The obligations for which Essential Energy is applying for a waiver

Essential Energy is applying for a waiver of its obligations under clause 3.1(b) of the AER's Ring-fencing Guideline (electricity distribution) 2021, Version 3 (Guideline)<sup>2</sup>, to allow Essential Energy to provide services other than transmission and distribution services (other services). This clause states that:

- b) Subject to this clause 3.1, a DNSP may provide distribution services and transmission services, but must not provide other services.*

Essential Energy is seeking the waiver for the purposes of undertaking a network battery trial. This includes the purchase of the battery and its installation to our network, the use of the battery's capacity to provide network support services and grant our non-affiliated third party partner, the respondent, the right to use the capacity of the battery units to provide energy and ancillary services.

#### 3.2 The reasons we are applying for the waiver

Essential Energy is seeking a waiver to implement a network battery trial at Sovereign Hills because it is the most prudent and efficient option to manage identified network needs. DNSP-owned batteries are not allowed under the Guideline without a waiver, and therefore Essential Energy requires a waiver to undertake the battery project.

#### 3.3 The services for which Essential Energy is applying for the waiver

The battery will provide three types of services: network services, energy services and ancillary services. Essential Energy is applying for the waiver for the provision of non-distribution services (other services), namely the energy services (arbitrage - trading in the electricity spot market) and the ancillary services (FCAS markets – frequency reserves and maintaining system frequency) the battery will provide via the respondent.

The Guideline prevents Essential Energy from providing non-distribution services such as the energy and ancillary services the battery will provide. The Guideline also prevents Essential Energy from granting another legal entity the right to use new energy storage devices in providing other services if that asset is also used by Essential Energy to provide distribution services. For Essential Energy to provide the respondent access to use the spare capacity from the battery to provide energy and ancillary services, Essential Energy requires a waiver.

#### 3.4 Waiver dates and regulatory control periods that would be covered by the waiver

Essential Energy is applying for a waiver for a period of 15 years from the date it is granted to align with the battery life expectancy. That is, the proposed waiver will begin in the current regulatory control period 2019-24, and continue for the next three regulatory control periods:

- 2024-29,
- 2029-34, and
- 2034-39.

This request is consistent with clause 5.3.4(c) of the Guideline which allows battery waivers to be approved for the life of the battery (by allowing the AER to grant a waiver for batteries for a length of time unrelated to the length of a DNSP's regulatory control periods).

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<sup>2</sup> Australian Energy Regulator, Ring-fencing Guideline (Electricity Distribution), Version 3, November 2021.

### 3.5 Measures Essential Energy will need to undertake if the waiver is granted

The Guideline Explanatory Statement notes that in issuing a streamlined waiver, there will be a number of conditions that all projects will need to comply with. The conditions being considered by the AER are:

- DNSP will need to provide information to the public about the battery project and any useful findings that will support the battery market, particularly for community-scale batteries.
- DNSP's ring-fencing auditor will need to verify the use of the battery each year, as part of the annual ring-fencing compliance process. This will involve a comparison of the extent to which volume and frequency that the battery was used for distribution services and other services (including the volume and frequency of such uses), against the way in which the DNSP has used other batteries, and an explanation of any differences between the two.
- Where regulated revenue is used to fund the battery, the auditor will need to evaluate the use of the battery to confirm the appropriate cost allocation was applied between the regulated and un-regulated uses of the battery.<sup>3</sup>

Essential Energy recognises it is important to sufficiently address and prevent cross-subsidisation and discrimination risks from network batteries. Accordingly, we are committed to complying with such additional measures to sufficiently address those concerns if the waiver is granted. Namely, we will update our audit process and we will make insights from the project publicly available to support the development of the battery market.

#### 3.5.1 Insights will be made publicly available to support the development of the battery market

As stated previously, the intended learning outcomes from the project are to:

- Identify scenarios where network batteries are an efficient, and economically viable, solution to resolve network issues as the growth of DER on the low voltage network continues.
- Identify optimal operational models for a network battery to maximise customer and network benefits.
- Validate operational and technical benefits, feasibility such as real-time control, islanded operations, protection scheme, and safety.
- Build an understanding of the value-stack of batteries for networks and existing markets.
- Develop an evidence base on which to develop future commercial arrangements with third party battery and service providers and inform future cross-subsidisation approaches.

To the extent that they are not commercially sensitive, these learnings will be shared publicly to ensure the broader industry and community will also benefit from the battery project. Network and technical learnings, including insights on how network battery operation can facilitate the optimisation of consumer solar PV export hosting capacity, will be published in publicly available material such as the Distribution Annual Planning Report and our regulatory submission.

#### 3.5.2 Essential Energy's audit approach

To sufficiently address cross-subsidisation and discrimination concerns, Essential Energy will update its audit process to validate how the battery is used. As part of our annual ring-fencing compliance process, Essential Energy's appointed auditor will verify the use of the battery each year. Essential Energy does not dictate how the ring-fencing audit is to be undertaken, however we understand that in compliance with the Guideline, this will involve a comparison of the extent to which the battery was used for distribution services and other services against the way in which the DNSP has used other batteries, and an explanation of any differences between the two. As per the normal audit process, Essential Energy will comply and assist the appointed auditor undertake and complete these future audit functions.

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<sup>3</sup> Electricity distribution ring-fencing guideline (version 3), Explanatory statement, AER November 202, p40

## 4. Reasons the waiver should be granted

Clause 5.3.2(a) of the Guideline provides that the AER must have regard to certain matters when assessing a waiver application and deciding whether to grant or refuse to grant a waiver. Specifically, the AER must have regard to:

- The National Electricity Objective
- The potential for cross-subsidisation and discrimination if the waiver is granted or refused
- 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.

The following sections outline how Essential Energy's network battery project will sufficiently address each of these matters.

### 4.1 The project will be consistent with the National Electricity Objective

The NEO as stated in the National Electricity Law (NEL) 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."*

The benefits of this project that promote the long-term interests of consumers are three-fold:

1. Deferral of capital investments that will bring price benefits to consumers.
2. Improved safety, reliability and security of supply in the network.
3. Support the development of the contestable third-party battery market.

Each of these benefits is discussed in more detail below.

#### **4.1.1 Consumers will receive price benefits through deferred augmentation expenditure and maximised utilisation of a network asset**

The battery will promote the NEO by providing consumers with price benefits through deferred augex. The selection of the local network area in which to deploy the battery was based on an identified network need. The network area selected for the battery trial is expected to grow in load over the next 10 years and has some reliability issues driven from a singular long feeder supporting the area. To support load growth, a voltage regulator is planned for 2024, and a new zone substation is planned in 2028. The battery will effectively be an asset replacement to act as a voltage regulator and zone substation. While the installation of a network battery does not remove the need for either the voltage regulator or zone substation in time, it will allow the deferral of these investments to 2028 and 2033 respectively. When the deferred replacements of the voltage regulator and zone substation are required and implemented, the network battery would still be operational within its life expectancy. To optimise its value in providing network support services, Essential Energy would consider relocating the battery to a new location with a similar identified network need. In such a scenario, the relocated battery would be installed and operated under the same conditions specified in the ring-fencing waiver.

Allowing a third party to use spare battery capacity for non-distribution services would also enable greater utilisation of a network asset. Maximising utilisation provides consumers with benefits of reduced network costs in the long-term.

#### **4.1.2 Consumers will benefit from improved reliability and system security and stability**

The battery will also promote the NEO by providing consumers in our network safety, reliability and security benefits through frequency and voltage support. The local network area where the battery will be installed has a

history of reliability issues. Data of planned and unplanned outages in the local network from 2016 to 2020 shows a total of 195 interruptions on the feeder, with an average duration of 257 minutes. The network battery is expected to support the unplanned outages experienced on this feeder by supporting the backup feeder's load capacity constraints.

In addition, the energy services provided by the battery will support generation capacity to meet maximum demand, thereby strengthening system security. Frequency and voltage services will also facilitate maintaining system stability. The battery will also facilitate increased connection of consumer DER, without the need for major augmentation. This not only benefits consumers through improved network performance and reliability but also drives down network costs in the long-term.

#### **4.1.3 There will be long-term benefits for the national electricity system gained through an evidence base to support the deployment of network batteries and the development of the contestable market**

The battery will promote the long-term interests of the national electricity system by providing a case study that will:

- Identify scenarios where network batteries are an efficient, and economically viable, solution to resolve network issues as the growth of DER on the low voltage network continues.
- Identify optimal operational models for a network battery to maximise customer and network benefits.
- Validate operational and technical benefits, feasibility such as real-time control, islanded operations, protection scheme, and safety.
- Build an understanding of the value-stack of batteries for network and existing markets.
- Develop an evidence base on which to develop future commercial arrangements with third party battery and service providers and inform future cross-subsidisation approaches.

Demonstrating the optimal technical, operational, and commercial models for the deployment of network batteries will provide valuable insights to progress the maturity of the third-party battery market. A mature and competitive third-party battery market will result in efficiencies that will decrease associated costs for consumers across the national electricity system and make the use of batteries a cost-effective network solution to manage the network and the growth of DER.

## 4.2 The cost allocation method addresses cross-subsidisation risks

The battery was sized for network support requirements and Essential Energy expects that there will be periods when the battery is used entirely for network services. The battery is effectively a lower-cost asset replacement to avoid the need to invest in a more expensive voltage regulator and zone substation option at this time. However, during periods of spare capacity, the respondent will have access to the battery to optimise the network investment while ensuring that it does not compromise our ability to provide network services. The commercial arrangements with the respondent are flexible and outcomes-based. The revenue from non-distribution services will depend on the markets in which the respondent participates (wholesale and ancillary services market). This means that it is difficult to quantify how often, and the precise extent to which, the battery will be used for network services compared to other services. Nonetheless, an estimate of its relative use has been determined based on modelling of historical patterns.

To avoid the risk of cross-subsidisation, we have utilised a value based split approach whereby we have split the capital expenditure of the battery into two distinct elements being: 1) the RAB and 2) unregulated. This distinction is made based on estimates of the network and market revenues discounted at the regulated and unregulated discount rates to net present value to calculate the relevant allocation proportion. The outcome of this value based allocation approach results in the following split:

- RAB: 57%
- Unregulated: 43%

The ongoing operation of the battery will attract a network tariff, so there is also no risk of cross-subsidisation of operational costs. Essential Energy will also align its processes to the anticipated waiver condition, requiring the battery not to be used in a discriminatory way. This will be validated through an independent audit. As part of the annual ring-fencing compliance process, the ring-fencing auditor will confirm that the cost allocation method in the approved waiver has been applied.



### 4.3 The market was tested

Essential Energy tested the market and ran a comprehensive and competitive process to engage third party suppliers. To ensure a large sample of potential products and business models, we contacted a short list of suppliers to test interest in the battery trial. This resulted in an Request For Proposal (“RFP”) which was sent to 12 companies, including battery manufacturers, delivery partners specialising in Engineering, Procurement and Construction (“EPC”), market participants and gen-tailers. The RFP was for the installation of a 1MW/2MWh battery and provided the market with the opportunity to propose their preferred delivery model and sizing from either an Essential Energy or third party owned business model.

While the RFP included minimum requirements relating to the installation location, direct integration with Essential Energy’s SCADA communications system, full access to asset data and cyber security conditions, and an expectation on the sizing specification, it also provided the market with the opportunity to propose deviations on second-tier battery requirements related to the battery characteristics. Deviations were considered for technical-commercial efficiencies or other value-add reasons.

We only received one submission for a third party owned battery model. [REDACTED]

Considering that Essential Energy only received one response for a third party owned battery model from 12 RFPs, this indicates that the maturity of the third party battery market is still developing. It also means that Essential Energy will need to own the battery itself on this occasion in order to achieve the benefits discussed in section 1.2 of this document.

It is Essential Energy’s practice to test the market for a network solution to ensure that only the most prudent and efficient investments are made. We note the Guideline Explanatory Statement includes the requirement for an established process to engage third party suppliers as a criterion for an application to be considered low risk, and therefore be eligible for the streamlined waiver process.

### 4.4 The benefits to consumers from the waiver being granted outweigh any costs

#### 4.4.1 Details of the costs associated with the DNSP complying with the obligation if the waiver of the obligation were refused

If the waiver is refused, Essential Energy would nonetheless proceed with the installation of the battery as it is the lowest cost option to address an identified network need. However, if the waiver is refused, consumers would not benefit from the additional value potential of the asset that would be unlocked by allowing a third party to utilise the battery when it’s not being used for network purposes.

#### 4.4.2 The benefit to consumers of the waiver being granted outweigh the costs of the waiver being refused

If the waiver is refused, the various benefits outlined in this application would not be realised, specifically:

- Customer benefits related to price (meaning customers would face higher charges from the network augmentation costs).
- Customer benefits related to system security and reliability.
- Price and system strength benefits that effective integration of DER provides.
- Consumer price benefits through increased hosting capacity that maximises consumers’ rooftop solar investments.

- Benefits to the national electricity system from the maturity of the third-party battery industry and associated cost-efficiencies, and system strength that the deployment of network batteries at scale can provide.

As such, consumers would avail of greater benefits if the waiver is granted. Additionally, if the waiver is not granted, Essential Energy could invest in the battery as a network asset only and allocate all costs to the RAB. In doing so though, the additional benefits of value-stacking would not be realised.

#### **4.4.3 Community engagement**

In collaboration with Ausgrid, Endeavour Energy, EvoEnergy, TasNetworks and PowerWater Corporation, Essential Energy conducted joint stakeholder engagement exercise following feedback that collaborative network engagement makes it easier for stakeholders to engage in one process rather than several. This is particularly important to community organisations. Since we share the same regulatory control period cycle with these DNSPs, the objective of the joint consultation was to reduce the need for stakeholders to attend multiple consultation forums on similar issues over similar timeframes. In our joint consultation we sought to understand customer and community views on the role that DNSPs should play in providing emerging energy services, including leasing battery capacity.

Consumer advocates, including the Public Interest Advocacy Group (PIAC) support allowing DNSPs to lease battery capacity to a legally separate third party. In its submission to the joint consultation paper, PIAC expressed the view that network batteries can facilitate the transition to a more distributed energy system and decarbonisation, which can help lower the overall costs of the supply chain.<sup>4</sup>

#### **4.4.4 The waiver should be subject to the streamlined approval process**

The Guideline Explanatory Statement sets out that an application may be considered lower risk if it meets certain criteria. In which case, it may qualify for a streamlined waiver assessment process. To qualify for the streamlined process, the application needs to sufficiently address the risks of cross-subsidisation. If a DNSP chooses to allocate any cost of the battery to the RAB, the AER has indicated that the application needs to demonstrate that only the portion of the battery that provides standard network control services will be allocated to the RAB. The AER also considers whether the DNSP sufficiently tested the market in the first instance, through an adequate and established process for engaging non-affiliated third-party suppliers.

If the application is considered by the AER to meet these criteria, the streamlined waiver process will apply.

As alluded to throughout section 4 of this application, Essential Energy considers that the Sovereign Hills project satisfies these criteria to qualify for a streamlined waiver application assessment for the following reasons:

- The cross-subsidisation risks are mitigated through Essential Energy's cost allocation method that will ensure only the portion of the battery providing standard network control services is allocated to the RAB along with our commitment to update our audit procedures to validate its appropriate application.
- Essential Energy also undertook a comprehensive and competitive testing of the market in the first instance to engage non-affiliated third party suppliers to provide the non-network services.

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<sup>4</sup> Public Interest Advocacy Group submission to the Joint Consultation Paper, Paper One: Service Classification, September 2021.