ElectraNet

Inertia shortfall event 2022-23

Cost Pass Through Application

17 February 2022

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Executive Summary

This document sets out our cost pass through application under clause 6A.7.3 of the National Electricity Rules (the Rules) in relation to an inertia shortfall event which occurred on 5 November 2021 and which will materially increase our costs of providing prescribed transmission services for the 2022-23 regulatory year.

Inertia is a critical requirement for a secure power system. A minimum level of inertia, in conjunction with frequency control services, is needed for maintaining the power system frequency within limits, both during normal system operation and after disturbance events.

Under clauses 5.20.B.2(a) and (c) of the Rules, the Australian Energy Market Operator (AEMO) must determine and publish the inertia requirements for inertia sub-networks, such as South Australia. ElectraNet has the responsibility for providing inertia network services in South Australia to meet those requirements.

In AEMO's 2020 System Strength and Inertia Report, AEMO concluded that there is an inertia shortfall in South Australia, which requires ElectraNet to make inertia network services available under clause 5.20B.4 of the Rules. This constitutes an inertia shortfall event, which in turn is a cost pass through event under clause 6A.7.3(a1)(6) of the Rules.

This Application is focused on the cost impact of the inertia network services that AEMO requires ElectraNet to make available for the 2022-23 regulatory year.

Following a rigorous market tendering process involving two separate tender rounds to secure the required services at the lowest cost to electricity customers, ElectraNet has concluded that the estimated cost of making the required inertia network services available for 2022-23 is $4.15 million. This is an eligible pass through amount, as shown in the table below.

Table 1: Eligible pass through amount ($m nominal)

Component	2022-23
Estimated cost of inertia network services	4.15
Maximum allowed revenue (MAR)	347.8
Materiality threshold (1% of MAR)	3.48
Eligible pass through amount	**4.15**

This eligible pass through amount reflects our best estimate. The actual cost of making these services available in 2022-23 may be more or less than the estimated cost depending on the number and duration of events that occur that require the service to be dispatched.

Under the Rules, any variation between the estimated cost and actual cost incurred will subsequently be refunded to, or recovered from, customers as applicable through the network support pass through process. This ensures that customers pay no more than the actual costs of making available the required inertia network services each year.

ElectraNet seeks approval from the Australian Energy Regulator (AER) to pass through a positive pass through amount of $4.15 million prior to contracting the required inertia network services for the 2022-23 regulatory year.

To be recovered in 2022-23, these costs must be included in our transmission prices for 2022-23, which must be published by 15 March 2022. We therefore seek a decision on this Application from the AER by early March 2022 in order for this to be achieved.

Contents

1. Introduction

1.1 Inertia network services

Synchronous generators have historically been the predominant source of inertia in the National Electricity Market (NEM). Inertia is important to maintain stable frequency on the network, both during normal system operation and following disturbance events.

Inertia is transferable across interconnectors. With the Heywood interconnector intact, there is sufficient inertia available to South Australia. If South Australia is separated from, or at risk of separating from, the rest of the NEM, inertia must be provided from within South Australia. The risk of separation will reduce substantially when Project EnergyConnect is fully operational in mid-2025.

What is Inertia?

Inertia relates to the ability of a power system to withstand changes in generation output and load levels while maintaining stable system frequency.

In a power system with high levels of inertia, frequency changes less rapidly for a change in load or generation than in a system with low levels of inertia.

In a system with low levels of inertia:

- generators may be unable to remain connected during disturbances on the power system;
- limits (constraints) may be applied to ensure stable operation of the power system, for example reduced power flows between regions.

Inertia is generally provided by large rotating electrical machines that are synchronised to the frequency of the power system, including traditional synchronous generators, motors and synchronous condensers. Inertia can also be substituted to some extent by fast acting frequency control services.

Inertia is generally measured in megawatt seconds (MWs) or in megawatts (MW) of Fast Frequency Response (FFR).

The Rules require that AEMO must periodically determine and publish the inertia requirements for inertia sub-networks, such as the South Australian region.[1] As the Inertia Service Provider in South Australia ElectraNet must provide, either itself or by contract, the level of inertia AEMO determines is necessary.[2]

If AEMO assesses that there is, or is likely to be, an inertia shortfall in South Australia, it must publish and give ElectraNet a notice of that assessment.[3]

1 Clause 5.20B.2(a) and (c).

2 Clause 5.20B.4(a).

3 Clause 5.20B.3(c).

For South Australia, an inertia shortfall was declared by AEMO in August 2020 and subsequently extended in December 2020. We are required to use reasonable endeavours to make the required inertia network services available within the timeframe specified by AEMO.[4]

Accordingly, ElectraNet has engaged extensively with market participants to secure the required services in accordance with AEMO's declaration and the Rules requirements. Based on market pricing from participants, it is evident that the provision of these services will materially increase our costs of providing prescribed transmission services for the period from 1 July 2022 to 30 June 2023 (the '2022-23 regulatory year'). Therefore, AEMO's decision to issue the notice triggers an inertia shortfall event.

Clause 6A.7.3(c) of the Rules sets out the information that a TNSP must provide to the AER in order to seek approval for the recovery of our increased costs in providing inertia services (referred to as the 'positive pass through amount').

In addition to providing the information required by that provision, this Application also provides background information to explain the steps that we have taken to meet our obligations under clause 5.20B4(f) of the Rules and minimise the costs of making the required inertia network services available.

ElectraNet is now seeking AER approval of the proposed pass through amount in this Application prior to contracting for these services for 2022-23.

1.2 Structure of this Application

The remainder of this Application is structured as follows:

- Chapter 2 provides important background information to this Application, including:
  - the details of AEMO's inertia shortfall declaration for the period to 30 June 2023;
  - the significant efforts made by ElectraNet to procure the required inertia network services for the period to 30 June 2023 at the lowest cost to customers; and
  - noting that AEMO has made a further inertia shortfall declaration for the period commencing 1 July 2023, which is outside the scope of this Application;
- Chapter 3 describes the regulatory requirements that apply in relation to this Application and how they relate to our particular circumstances;
- Chapter 4 addresses the specific information requirements of the Rules, including the eligible pass through amount; and
- Chapter 5 summarises why our inertia shortfall costs are prudent and efficient and, therefore, why the AER should approve the proposed positive pass through amount.

For completeness, a compliance checklist is included as Appendix A to this Application.

4 Several other conditions must also be addressed, as set out in clause 5.20B.4(c).

2. Background

2.1 Inertia shortfall declaration to 30 June 2023

On 27 August 2020, AEMO published updated inertia requirements in South Australia (AEMO August 2020 Report). This report constituted notice to ElectraNet of an assessment by AEMO that there is, or is likely to be, an inertia shortfall in the South Australia inertia sub-network for the purposes of clause 5.20B.3(c) of the Rules.

This original declaration was subsequently extended by AEMO in December 2020 in AEMO's 2020 System Strength and Inertia Report. In summary, AEMO:

- Increased the required secure operating level of inertia when South Australia is islanded from 6,000 MWs of synchronous inertia, to 7,605 MWs for 2020-21 and to 14,390 MWs for 2021-22 and 2022-23.
- Emphasised that this synchronous inertia requirement can be effectively addressed through the provision of active power injection from Fast Frequency Response (FFR) sources, estimated at 115 MW of raise service for 2020-21 and 200 MW of raise service for 2021-22.
- Noted that the changed requirements are due to increased projections for distributed PV in South Australia adding to the credible contingency for which the islanded system must be planned, and accommodating the reduced number of synchronous generators assumed to be online after the introduction of four synchronous condensers with flywheels in South Australia.
- Required that ElectraNet provide services to address the 2021-22 and 2022-23 shortfalls by 31 July 2021, consistent with clause 5.20B of the Rules.

For convenience, the inertia shortfall has been classified in two stages as described below:

Stage 1

Stage 1 was declared by AEMO from August 2020 until 31 July 2021.

Stage 1 was resolved on 30 September 2020, when Hornsdale Power Reserve (HPR) and the South Australian Government agreed to increase the capacity reservation for HPR to 130 MW (and 32.5 MWh of energy storage) during any South Australia islanding event. AEMO was satisfied that these changes were sufficient to address the Stage 1 South Australian region inertia shortfall for the secure operating level of inertia.

Stage 2

Stage 2 was declared by AEMO for the period from 1 August 2021 until 30 June 2023 and is the subject of this Application.

ElectraNet has received tenders from potential providers of inertia network services to address the Stage 2 shortfall, and is negotiating contracts for the provision of the required services, subject to a positive decision on this Application by the AER.

At present, there are no inertia network services contracted to meet the shortfall. AEMO will continue to apply its existing operating procedure for situations when the South Australian region is islanded from the rest of the NEM.

Under certain conditions, this will require that AEMO direct market participants to ensure power system security. AEMO has highlighted that if the requisite plant were not available for direction, this would pose a security risk in managing a separation event.

2.2 Procuring inertia network services to 30 June 2023

ElectraNet has worked closely with AEMO to develop the agreed technical specifications of the inertia network services required to meet the declared Stage 2 shortfall.

We have also undertaken an extensive and comprehensive exercise to engage with market participants to secure these services at the lowest cost to electricity customers. Specifically, we have conducted two rounds of competitive tenders, with the second round adopting a different proposed price structure to drive a better price outcome for customers. The following summary outlines the overall tender process and outcomes, which concluded with the second tender round on 5 November 2021:

- With assistance from independent energy market advisory firm CQ Partners, ElectraNet undertook a competitive tender process in December 2020 seeking 200 MW of raise FFR and 110 MW of lower FFR services for the Stage 2 shortfall.
- ElectraNet sought both bounded pricing options for the inertia network services (for which tenderers were asked to provide fixed price offers for eight hours of activation over two events per annum) and unbounded pricing options (for which tenderers were asked to provide offers for an unlimited duration of service per annum) from a total of 27 potential suppliers.
- From these offers the lowest cost mix of service providers to meet the 200 FFR raise inertia requirement was found to have a fixed annual cost of $9.3 million to provide inertia network services for up to eight hours per year.
- On 1 April 2021, ElectraNet wrote to AEMO to communicate these outcomes and clarify several technical aspects of the proposed inertia network service arrangements.
- On 14 April 2021, AEMO clarified that inertia support service providers would not be able to participate in fast raise and lower Frequency Control Ancillary Services (FCAS) markets, given the interaction between these services and that the procurement of the full FFR inertia shortfall requirement would result in zero requirement for raise and lower fast (6 second) contingency FCAS. This new information required updated market pricing from participants.
- On 2 September 2021, ElectraNet and AEMO each provided a status update on the procurement process to the AER.
- In October 2021, ElectraNet launched a second tender process based on a revised inertia network service specification seeking a wider range of fixed and variable

pricing options from tenderers. In order to maximise competitive tension and yield the most efficient bids possible the tender was extended to include all registered FCAS providers in South Australia and potential new inertia network service providers (38 parties in total).

- From these second round offers the least cost option to secure the required 200 MW of raise and 110 MW of lower FFR inertia network services was found to yield an annual fixed cost of $[redacted] million with a variable cost of $[redacted]million per hour for the first hour and $[redacted] million for the second and subsequent hours, all in 15 minute increments. Therefore, the maximum expected annual cost, based on eight hours of service, is $[redacted] million (i.e. the maximum annual amount that would be payable under this service arrangement).

Throughout our engagement with market participants, we have maintained an ongoing dialogue with AEMO and the AER to explain the responses received and provide detailed information on the market pricing outcomes.

In following the above actions we have acted, and continue to act, in accordance with our obligations under clause 5.20B.4(c) of the Rules to secure the required inertia network services in response to the inertia shortfall notice from AEMO.

2.3 Inertia shortfall declaration from 1 July 2023

On 17 December 2021, AEMO published its 2021 System Security Reports in which it:

- Declared a new Stage 2 secure operating inertia shortfall in South Australia from 1 July 2023 until the expected completion of Project EnergyConnect in July 2025 of 28,800 MWs, equivalent to 360 MW of raise FFR; and
- Stated that AEMO would request ElectraNet to make inertia network services available from 1 July 2023 until 31 July 2025 for the newly declared inertia shortfall.

This Application does not relate to this further inertia shortfall declaration from 1 July 2023, which will be addressed subsequently.

3. Regulatory Requirements

The regulatory requirements for the AER's review and acceptance of a cost pass through application in relation to an inertia shortfall event are contained in clause 6A.7.3 of the Rules. This occurs on a forward-looking basis. In broad terms, the regulatory process involves the following steps:

- Establishing that a positive change event has occurred;[5]
- Quantifying the positive pass through amount;[6]
- Submitting a pass through application in accordance with the information requirements and timeframes specified in the Rules; and
- Determining the approved pass through amount.

The regulatory requirements for the AER's review and acceptance of a subsequent network support pass through application in relation to inertia services payments are contained in clause 6A.7.2 of the Rules. This occurs on a backward-looking basis, and allows for any over-recovery or under-recovery of costs to be passed through, ensuring that customers only pay the actual service costs incurred.

We discuss each of these elements in turn, highlighting how each step should be applied in relation to this Application.

3.1 Positive change event

A positive change event is defined in the Rules as:

> A pass through event which entails the *Transmission Network Service Provider* incurring *materially* higher costs in providing *prescribed transmission services* than it would have incurred but for that event, but does not include a *contingent project* or an associated *trigger event*.

An 'inertia shortfall event' is one of seven transmission cost pass through events specified in the Rules and is defined as follows:

> A *Transmission Network Service Provider* is required to make *inertia network services* available under clause 5.20B.4 as a consequence of an assessment by *AEMO* under clause 5.20B.3(c) that there is an *inertia shortfall* in an *inertia subnetwork* for which the *Transmission Network Service Provider* is the *Inertia Service Provider* or to cease making *inertia network services* available under clause 5.20B.4 as a consequence of an assessment by *AEMO* under clause 5.20B.3(d) that an inertia shortfall in the *inertia sub-network* has ceased and:
>
> (a) the *Transmission Network Service Provider* is required to provide, or cease providing, *inertia network services* during the course of a *regulatory control period*; and

[5] Clause 6A.7.3(c)(1)

[6] Clause 6A.7.3(c)(3)

(b) making *inertia network services* available or ceasing to make *inertia network services* available materially increases or materially decreases the *Transmission Network Service Provider's* costs of providing *prescribed transmission services*.

As explained in section 2.1 of this Application, AEMO has declared an inertia shortfall in relation to the period to 30 June 2023, which places an obligation on ElectraNet to make inertia network services available for that period. In section 4.3 of this Application, we demonstrate that making these services available materially increases our costs of providing prescribed transmission services.

3.2 Pass through amount

A 'positive pass through amount' is defined in the Rules as:

> For a *Transmission Network Service Provider*, an amount (not exceeding the *eligible pass through amount*) proposed by the provider under clause 6A.7.3(c).

An 'eligible pass through amount' is defined in the Rules as:

> In respect of a *positive change event* for a *Transmission Network Service Provider*, the increase in costs in the provision of prescribed transmission services that, as a result of that *positive change event*, the *Transmission Network Service Provider* has incurred and is likely to incur (as opposed to the revenue impact of that event) until:
>
> (a) unless paragraph (b) applies – the end of the *regulatory control period* in which the *positive change event* occurred; or
>
> (b) if the *transmission determination* for the *regulatory control period* following that in which the *positive change event* occurred does not make any allowance for the recovery of that increase in costs (whether or not in the forecast *operating expenditure* or forecast *capital expenditure* accepted or substituted by the AER for that *regulatory control period*) – the end of the *regulatory control period* following that in which the *positive change event* occurred.

In principle, it is evident from the above provision that an eligible pass through amount may include costs to the end of the next regulatory control period. However, this Application deals only with the costs associated with the services required to be provided in 2022-23.

3.3 Information requirements for a pass through application

Clause 6A.7.3(c) of the Rules sets out the information that a Transmission Network Service Provider (TNSP) must provide to the AER in order to seek approval for the recovery of its increased costs (referred to as the 'positive pass through amount'). The relevant provisions are set out below:

> To seek the approval of the *AER* to pass through a *positive pass through amount*, a *Transmission Network Service Provider* must submit to the *AER*, within 90 *business days* of the relevant *positive change event* occurring, a written statement which specifies:
>
> (1) the details of the *positive change event*;

(2) the date on which the *positive change event occurred*;

(3) the *eligible pass through amount* in respect of that *positive change event*;

(4) the *positive pass through amount* the *Transmission Network Service Provider* proposes in relation to the *positive change event*;

(5) the amount of the *positive pass through amount* that the *Transmission Network Service Provider* proposes should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *positive change event* occurred;

(6) evidence:

(i) of the actual and likely increase in costs referred to in subparagraph (3); and

(ii) that such costs occur solely as a consequence of the *positive change event*; and

(7) such other information as may be required pursuant to any relevant *regulatory information instrument*.

These items are addressed in section 4 of this Application. As explained in section 1.2, a compliance checklist is also included in the Appendix to this Application to verify that each information requirement has been addressed.

3.4 Framework for AER's assessment

If the AER concludes that a positive change event has occurred, it must then determine:

- the approved pass through amount, and
- the timing of the recovery of that approved pass through amount in the TNSP's network charges (noting that recovery may occur in regulatory year(s) subsequent to the year in which the pass through event occurred).[7]

In making its determination, the AER must take into account the factors listed in clause 6A.7.3(j) of the Rules. For a positive change event such as that covered in this Application, these include:

- the matters and proposals set out in any statement given to the AER by the TNSP;
- the increase in costs in the provision of prescribed transmission services that, as a result of the positive change event, the TNSP has incurred and is likely to incur;
- the efficiency of the provider's decisions and actions in relation to the risk of the positive change event, including whether the provider has failed to take any action that could reasonably be taken to reduce the magnitude of the eligible pass through amount in respect of that positive change event and whether the provider has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that positive change event;

7 Clause 6A.7.3(d)

- the time cost of money based on the allowed rate of return for the TNSP for the regulatory control period in which the pass through event occurred;
- the need to ensure that the TNSP only recovers any actual or likely increment in costs to the extent that such increment is solely as a consequence of a pass through event;
- whether the costs of the pass through event have already been factored into the calculation of the provider's maximum allowed revenues for the regulatory control period in which the pass through event occurred or will be factored into the calculation of the provider's maximum allowed revenues for a subsequent regulatory control period;
- the extent to which the costs that the TNSP has incurred and is likely to incur are the subject of a previous cost pass through determination made by the AER, and
- any other factors the AER considers relevant.

While the factors listed in clause 6A.7.3(j) are matters for the AER to consider in assessing this Application, we have sought to address these factors, where relevant, in this Application to assist the AER with its assessment.

Specifically, the information presented in section 2.2 of this Application demonstrates that ElectraNet has adopted a prudent and efficient approach to procuring the required inertia network services.

3.5 Network support pass through

If the AER approves a pass through amount for an inertia shortfall event under clause 6A.7.3 that relates to inertia network service payments, a TNSP may recover (or refund) any differences between that pass through amount and the actual amount of network services payments as a network support pass through in the following regulatory years under clause 6A.7.2. For this purpose, a *network support payment* is defined to include an *inertia service payment*.

In this way, a TNSP can use a combination of the forward-looking cost pass through inertia shortfall provisions under clause 6A.7.3 of the Rules and the backward-looking network support pass provisions under clause 6A.7.2 to recover in a timely manner the actual costs incurred in each regulatory year to meet an inertia shortfall. As explained by the AEMC:

> Under the final rule, payments made to third parties under inertia services agreements (inertia services payments) are a type of network support payment and differences in the forecast amount of network support payments for a regulatory year and the actual network support payments in that regulatory year can be passed through to transmission network users under the network support pass through in clause 6A.7.2 of the rules.[8]

[8] AEMC, *Rule Determination, National Electricity Amendment (Managing the rate of change of power system frequency) Rule 2017*, 19 September 2017, p.49.

Most importantly, these provisions ensure that customers pay no more than the actual costs incurred each year in providing the inertia network service.

Under these arrangements, irrespective of the cost pass through amount approved in the present Application by the AER for 2022-23:

- only actual service payments incurred will be paid to inertia network service providers by ElectraNet;
- actual service payments incurred will be determined by the number and duration of events requiring the service to be dispatched by AEMO during the year; and
- any surplus or shortfall incurred by ElectraNet will subsequently be refunded to or recovered from customers, respectively.

Amongst the relevant factors the AER is required to take into account under the Rules in making a network support pass through determination is the efficiency of the TNSP's decisions and actions in relation to the risk of the event, including whether the TNSP has failed to take any action that could reasonably be taken to reduce the magnitude of the positive network support event.

The AER has also established a *Procedural guideline for preparing a transmission network support pass through application* to provide further direction on this process. This establishes several specific information requirements, including in some cases, details of contractual arrangements.

For new network support arrangements not previously reviewed by the AER as part of a revenue determination process this includes:

- details of the provider(s) of the network support services (including name, relationship to TNSP, nature of services to be provided, length of contract);
- the consultation processes undertaken by the TNSP and processes undertaken for awarding the contract to the network support provider; and
- details of whether the Regulatory Investment Test for Transmission (RIT-T) criteria have been met.[9]

9 The RIT-T is not relevant in this instance, as under clause 5.16.3(a)(9) of the Rules the RIT-T does not apply where proposed expenditure is an inertia services payment.

4. Addressing the Rules requirements

This section addresses the information requirements specified in the Rules in relation to a pass though application.

4.1 Details of the Positive change event

A positive change event, being an inertia shortfall event, has occurred in relation to the regulatory year 1 July 2022 to 30 June 2023 because:

- ElectraNet is required to make inertia network services available under clause 5.20B.4 as a consequence of an assessment by AEMO under clause 5.20B.3(c) that there is an inertia shortfall in South Australia to 30 June 2023, as explained in section 2.1 of this Application;
- ElectraNet is required to provide inertia network services during the current regulatory control period, which covers the period 1 July 2018 to 30 June 2023; and
- As explained in section 4.3 of this Application, the costs of making inertia network services available materially increases our costs of providing prescribed transmission services.

4.2 Date on which the positive change event occurred

As explained in section 2.2, the second tender round closed on 5 November 2021. At that date, the costs of making inertia network services available for the period 1 July 2022 to 30 June 2023 were confirmed. Therefore, the date on which the positive change event occurred was 5 November 2021.

This Application has been submitted within 90 business days of this event as required by clause 6A.7.3(c) of the Rules.

4.3 Eligible pass through amount in respect of the positive change event

As explained in the previous section, the likely costs of making inertia network services available have been determined through a comprehensive tender process involving two tender rounds.

As explained in section 2.2, the least cost option to secure the required 200 MW of raise and 110 MW of lower FFR inertia network services was found to yield an annual fixed cost of $[redacted] million with a variable cost of $[redacted] million for the first hour and $[redacted] million for the second and subsequent hours, all in 15 minute increments. Therefore, the maximum expected annual cost, based on eight hours of service, is $[redacted] million (i.e. the maximum annual amount that could be payable under this service arrangement).

The fixed and variable structure of those tender responses requires us to make an estimate of the variable component to estimate the likely impact on our costs of providing prescribed transmission services for the 2022-23 regulatory year.

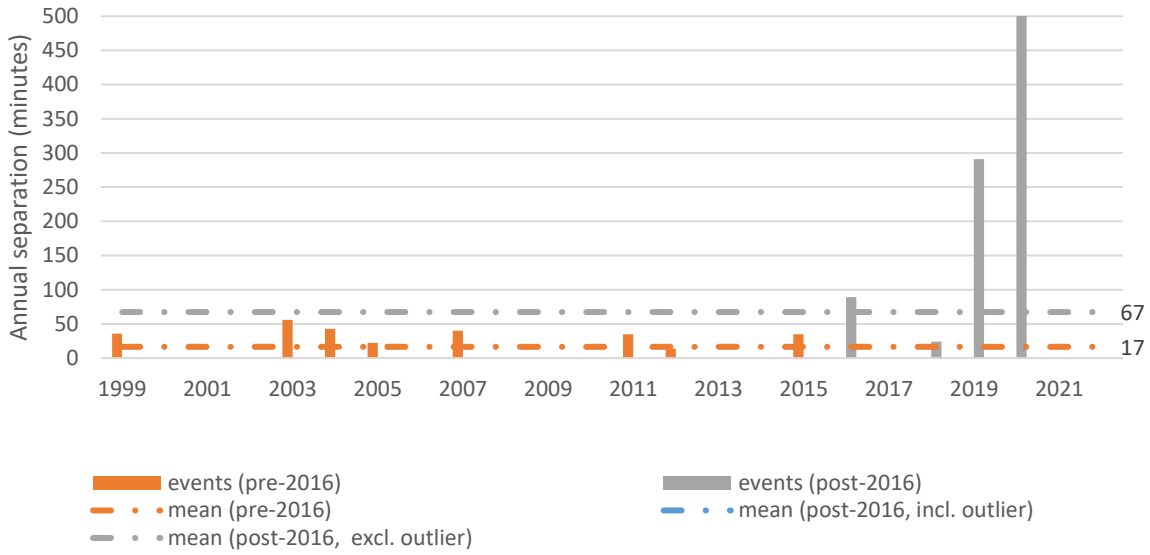
We have done this by analysing historical islanding events.

In doing this, we note that:

- ElectraNet's likely cost of providing the services under consideration depends on the likely duration of any islanding event that might occur in 2022-23.
- The likely duration of future islanding events is uncertain, and is estimated using recent historical data.
- South Australia has been islanded from the rest of the NEM on 14 occasions since market start in late 1998. A summary of these events is provided in Figure 1 below.
- The average duration of those 14 events was 1,808 minutes per event, slightly more than 30 hours. However:
  - The annual average duration of outages, accounting for years in which no outage occurred, was about 82 minutes per annum;
  - One event in 2020 lasted for 17 days; and
  - The system black event of 2016 should be disregarded because the system never operated as an island, so the services under consideration would not have been required.
- If the system black event of 2016 and the 17-day event of 2020 are excluded, the average annual duration of islanding events is 29 minutes per annum.
- Since 2016, the South Australian power system has fundamentally changed with the retirement of Northern Power Station (a major source of inertia) and significant growth in Distributed Energy Resources (DER) from 620 MW to 1,710 MW as of December 2021.
- Events that have occurred since 2016 are therefore the best indicator of the likely frequency and duration of an event over the coming financial year.
- The average annual duration of islanding events before 2016 was 17 minutes per annum.
- The average annual duration of outages after 2016, excluding the 17-day outage in 2020, was 67 minutes per annum. The difference in the mean before and after 2016 can be shown to be statistically significant.

The figure below shows how the duration of separation events in South Australia has increased markedly since 2016 compared to the earlier period.

Figure 1: South Australia region islanding events



Based on the data in Figure 1 above, ElectraNet considers that 67 minutes, being the annual average duration of islanding events since 2016, disregarding the 17-day event in 2020, is the best available estimate of the likely duration of islanding events in 2022-23.

Therefore, we have estimated the cost impact of making inertia network services available in the 2022-23 regulatory year on this basis.

Our estimate of the likely cost we will incur in providing inertia network services for 2022-23 is $4.15 million. This estimate is calculated based on fixed costs of $[redacted] million in 2022-23 and variable costs of $[redacted] million based on market pricing outcomes and the likely duration of islanding events discussed above.[10]

This cost exceeds the applicable materiality threshold of $3.48 million, as shown in Table 2 below.

Table 2: Eligible pass through amount ($m nominal)

Component	2022-23
Estimated costs of inertia network services	4.15
Maximum allowed revenue (MAR)	347.8
Materiality threshold (1% of MAR)	3.48
Eligible pass through amount	**4.15**

The eligible pass through amount sought is therefore $4,159,525.

10 The estimated variable cost is calculated as 1 hour at $[redacted]m and 15 minutes at $[redacted]m per hour, based on minimum 15-minute pricing blocks.

For the avoidance of doubt, our current revenue determination does not include any allowance in respect of inertia shortfalls.

4.4 Proposed positive pass through amount

The positive pass through amount that ElectraNet proposes should be passed through to customers for the 2022-23 regulatory year is the eligible pass through amount set out in Table 2, which is $4.15 million ($nominal).

We are applying for the positive pass through amount to be recovered during the 2022-23 regulatory year when the service costs will be incurred. This relies on the AER making its determination by early March 2022, as our transmission charges for the 2022-23 regulatory year must be published by 15 March 2022.

As explained in section 3.5, a true up mechanism will also apply in relation to the approved pass through amount for the 2022-23 regulatory year. Specifically, the 'network support pass through amount' will adjust for any difference between the approved amount for the inertia shortfall for 2022-23 and the actual inertia network service costs incurred in that year. As noted above, the actual costs we incur will depend on the number and duration of any islanding events and will range from $[redacted]m to $[redacted]m.

4.5 Evidence of increase in costs

Section 4.3 of this Application, and specifically Table 2 in that section, provides evidence of the likely increase in costs which comprise the eligible pass through amount. ElectraNet confirms that the eligible pass through amount, as presented in Table 2, reflects our best estimate of those likely increased costs.

The likely increase in costs that comprise the eligible pass through amount occurs solely as a consequence of the positive change event referred to in section 4.1 of this Application.

But for AEMO declaring an inertia shortfall event which is also a positive change event, as explained in sections 2.1 and 4.1 of this Application, the likely increase in costs of making inertia network services available would not occur. Further, those likely increased costs cannot be attributed to any other event or circumstance beyond the positive change event explained in section 4.1 of this Application.

4.6 Network support pass through requirements

The competitive procurement process undertaken to secure the inertia support services and negotiate the relevant contracts is set out in detail in section 2.2, including the pricing arrangements and range of potential annual costs. This fully addresses the information requirements of the AER that apply at the present time in relation to network support pass through.

The remaining information requirements largely relate to verification of actual amounts incurred, and will be addressed at the time of a network support pass through.

4.7 Customer bill impact

While it is not a regulatory requirement in the Rules to explain how the approval of the cost pass through amount will affect transmission network charges, we consider it appropriate to include this information in the interests of transparency for customers.

We have calculated that the impact on customers of the eligible pass through amount for 2022-23 is to add approximately $1.70 or 0.1% pa to a typical household electricity bill.

5. Efficiency of ElectraNet's decisions and actions

Section 4 of this Application has addressed the information requirements of clause 6A.7.3(c) of the Rules that apply to the pass through of the costs likely to be incurred in 2022-23 in relation to the current inertia shortfall event. In addition to meeting these information requirements, where relevant, this Application has had regard to the factors that the AER is required to consider in determining the approved pass through amount, in accordance with clause 6A.7.3(j) of the Rules.

For the purposes of the network support pass through process, which would occur subsequently as set out in section 3.5, section 4 of this Application addresses the applicable requirements under 6A.7.2 and the associated guideline published by the AER that must be satisfied at the present time in relation to the procurement of the inertia service.

The information presented in section 2.2 explains the range of actions we have taken to minimise the costs of inertia network services for the 2022-23 regulatory year. As explained in that section, we conducted two competitive tender processes in an attempt to reduce the magnitude of the eligible pass through amount in respect of the relevant positive change event. We have not taken, nor omitted to take, any actions which have increased the magnitude of the amount in respect of the relevant positive change event.

The actual cost of the inertia services in 2022-23 may be more or less than the estimated cost depending on the number and duration of events that occur that require the service to be dispatched by AEMO. The combination of the forward-looking inertia cost pass through process (the subject of this Application) and the backward-looking network support pass through process (the subject of a future application) will ensure that customers pay no more than the actual costs of making the required inertia network services available in 2022-23.

APPENDICES

Appendix A Requirements Checklist

The purpose of this table is to demonstrate compliance with the cost pass through information requirements specified in clause 6A.7.3(c)(1) to (7) and 6A.7.2(c) of the Rules.

Table 3: Compliance checklist

Rules clause	Requirement of Rules provision	Relevant Section of this Application
6A.7.3(c)(1)	the details of the *positive change event*;	Section 4.1
6A.7.3(c)(2)	the date on which the *positive change event occurred*;	Section 4.2
6A.7.3(c)(3)	the *eligible pass through amount* in respect of that *positive change event*;	Section 4.3
6A.7.3(c)(4)	the *positive pass through amount* the *Transmission Network Service Provider* proposes in relation to the *positive change event*;	Section 4.4
6A.7.3(c)(5)	the amount of the *positive pass through amount* that the *Transmission Network Service Provider* proposes should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *positive change event* occurred;	Section 4.4
6A.7.3(c)(6)	evidence: (i) of the actual and likely increase in costs referred to in subparagraph (3); and	Section 4.4
	(ii) that such costs occur solely as a consequence of the *positive change event*	Section 4.5
6A.7.3(c)(7)	such other information as may be required pursuant to any relevant *regulatory information instrument.*	Not applicable
6A.7.2(c)	such other information as may be required pursuant to any relevant *regulatory information instrument.*[11]	Section 4.6

11 Namely, the AER's *Procedural guideline for preparing a transmission network support pass through application.*

ElectraNet