



Decision

Contingent project application: ElectraNet

Munno Para reinforcement project

March 2011

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1 Introduction

In the 2008 ElectraNet revenue determination, the AER accepted the Munno Para reinforcement works as a contingent project based on the need for additional transmission supply on the northern fringe of the Adelaide metropolitan area at some time between 2013 and 2015.¹ The Munno Para reinforcement project involves the establishment of a new 275/66 kV transmission connection point to the sub-transmission network of ETSA Utilities, plus related transmission line upgrades and telecommunications works by 30 November 2014.

At the time of the 2008 determination the Munno Para project had an indicative cost of \$26 million (\$2007-08). The AER's 2008 transmission determination for ElectraNet stated that the trigger events for this project were the successful completion of the regulatory test and a DNSP application to connect in accordance with chapter 5 of the NER.²

ElectraNet's forecast capital expenditure for the project is \$39.3 million (\$2007-08), with \$8.3 million (\$2007-08) of the forecast capital expenditure for the project to be incurred in the current regulatory period. The project does not incur any operating expenditure in the current regulatory period, however ElectraNet have indicated that operating expenditure will be incurred from the commissioning date in the next regulatory control period.

2 Regulatory framework

2.1 National Electricity Rules

Under clause 6A.8.2 of the NER, ElectraNet must demonstrate to the AER's satisfaction that the relevant trigger event relating to a contingent project has occurred before an assessment of any adjustments to ElectraNet's maximum allowed revenue (MAR). Where a trigger event has occurred, the scope of the contingent project must not include any projects (or associated project scope) that were contained in ElectraNet's approved ex ante capex allowance.

If the AER is satisfied that the trigger event has occurred, and that the forecast of the total capital expenditure for the contingent project meets the threshold, under the 6A.8.2(e)(1) it must determine:

- the amount of capital and incremental operating expenditure, for each remaining regulatory year which the AER considers is reasonably required for the purpose of undertaking the contingent project;

¹ AER, Final Decision ElectraNet transmission determination 2008-09 to 2012-13, 11 April 2008, p.137.

² *ibid.*

- the total capital expenditure which the AER considers is reasonably required for the purpose of undertaking the contingent project;
- the likely commencement and completion dates for the contingent project; and
- the incremental revenue which is likely to be required by the Transmission Network Service Provider in each remaining regulatory year as a result of the contingent project being undertaken.

2.2 AER 2008–13 revenue determination

The contingent project requirements of the AER were set out in the 2008 revenue determination as follows:

Where ElectraNet makes a contingent project application, it is expected to comply with the contingent project guideline and accordingly, either before or during the pre-lodgement consultation it is expected to develop feasible options and costs that address the need for the project. The AER expects ElectraNet to provide best available supporting information with its contingent project application, which would generally include:

- the final regulatory test assessment
- tender submissions
- contracts
- other investment appraisals.³

3 AER considerations

3.1 Trigger events

The AER is satisfied that the trigger events for the Munno Para contingent project have occurred. ElectraNet together with ETSA Utilities successfully completed the regulatory test in October 2007, and on 29 February 2008 ElectraNet received a connection application by ETSA Utilities in accordance with Chapter 5 of the NER.⁴

³ AER, ElectraNet transmission determination 2008-09 to 2012-13, 11 April 2008, p. 134.

⁴ ElectraNet, ETSA Utilities Evaluation Report RFP-ER 008/06, On reinforcement options to address projected network constraints described in RFI/RFP 008/06, Electricity Supply to the Northern Suburbs 66kV Network, October 2007, and Appendix B in ElectraNet's Contingent Project Application.

3.2 Information provided

Based on an assessment by the AER and its consultant, Nuttall Consulting, the AER considers that ElectraNet has provided the AER with sufficient information to constitute a compliant application. Specifically, ElectraNet has provided the information required under clause 6A.8.2 of the NER.

3.3 Total capital expenditure

The AER considerations in relation to the contingent project application are informed by ElectraNet's application and supporting documents, expert advice by the AER's consultant Nuttall Consulting and the AER's own analysis.

3.3.1 Public consultation

On 18 February 2011, the AER published ElectraNet's contingent project application, calling for submissions from interested parties by 1 March 2011. The AER did not receive any submissions on the contingent project application.

3.3.2 Justification of project selection (regulatory test)

The contingent project is driven by the need to comply with existing state-based reliability standards, defined in the South Australian Electricity Transmission Code⁵ and a larger group of projects that have been assessed by ETSA Utilities to address a number of existing and emerging constraints, both within ETSA Utilities' sub-transmission system and the transmission connection points of the Para system.

In October 2007, ETSA Utilities and ElectraNet published an Evaluation Report outlining the results of the Regulatory Test and recommended the construction of a second 66kV line from ETSA Utilities substations at Parafield Gardens West to Parafield Gardens and the establishment of a new 275/66kV connection point at Munno Para.

The Regulatory Test undertaken jointly by ETSA Utilities and ElectraNet, described multiple network limitations that were forecast to occur in the northern metropolitan region of Adelaide. The limitations related to the overloading of the ETSA Utilities 66 kV sub-transmission network at peak load, following a single contingency and the inadequacy of the transmission connection point capacity supplying the Para System.

Three network options were evaluated via the Regulatory Test. They all involved a group of augmentations to address the various constraints. All options involved a major 66 kV line project in 2009-10 to address the critical 66 kV limitation. The two main alternatives to the Para transformer limitation involved:

⁵ This relates to the "Category 4" reliability standards defined in the Electricity Transmission Code.

1. The development of the Munno Para new connection point and associated works to cut into the existing 275 kV lines (i.e. this contingent project) plus some more minor 66 kV line augmentations.
2. The upgrade of the existing Para transformers with units of a higher rating plus additional major 66 kV line augmentations.

The main difference between the above options was that the Munno Para option had high transmission costs but low 66 kV line costs, where the alternative had lower transmission costs, but much higher 66 kV line costs.

No non-network alternatives were formally evaluated as the consultation did not lead to any submissions from non-network proponents and ETSA Utilities did not consider that the likely feasibility of a generation option would merit detailed evaluation.

3.3.3 AER review

The AER engaged Nuttall Consulting to assist in reviewing the contingent project application.

3.3.3.1 Consideration of the regulatory test

Nuttall Consulting's review involved a primary engineering assessment and cost review to address technical matters associated with the prudence and efficiency of the capital and operating expenditure forecasts associated with the Munno Para contingent project application. Nuttall Consulting's review considered the:

- need, timing and options considered by ElectraNet/ETSA Utilities,
- the selection of the preferred option and
- costs of the preferred option.

Based upon its review, Nuttall Consulting has advised the AER that the need for the project has been established, an appropriate network option and timing was selected and ElectraNet's preferred solution is reasonable. These issues are discussed in turn below.

Need and timing of the project

Nuttall Consulting have advised that they were satisfied that ElectraNet has reasonably demonstrated that a need exists to undertake some action by 2014-15. This need is due to the forecast non-compliance with the relevant Electricity Transmission Code standard in 2014-15 associated with the existing connection points supplying the Para system. Nuttall Consulting are also satisfied that it is reasonably likely that it would not be prudent to increase the cyclic rating of the Para transformer further in order to defer this compliance issue.

Range of options considered

Nuttall Consulting are satisfied that ElectraNet has reasonably demonstrated that the range of network options considered is appropriate and based upon the information provided, cannot see any obvious alternatives.

The regulatory test process was conducted in 2007 and on the basis of a need to supply a forecast demand of 19MW. Non-network options were sought on this basis. Subsequently, the forecast demand requirement has increased substantially to 40MW. Nuttall Consulting considered that had non-network proponents known of the higher demand at the time of the Regulatory Test this may have led to a non-network proponent proposing a possible alternative solution.

The AER considered this point in consultation with Nuttall Consulting. It was noted that the project is located in a predominantly residential area. Consequently, it would be unlikely that a proponent for a non-network solution such as large gas turbine projects would emerge in such an area. Although the Regulatory Test should ideally be conducted as close as practicable to the date of the project commencing to avoid or minimise the problems which arise from a change of circumstances, there is not a specific limitation on timing in the NER. The AER consider it unlikely that re-consultation to address the change in demand would have lead to an alternative project being proposed.

The preferred option

Nuttall Consulting advised the AER that they were satisfied that the selection of the preferred set of projects (including the contingent project) via Regulatory Test analysis was appropriate. Furthermore, based upon our review of the analysis spreadsheet, we are satisfied that the selection would not change based upon the revised cost estimates.

In this regard, the AER consider that the network option reasonably represents the prudent option to meet the capex objectives as defined in the NER.

3.3.3.2 Consideration of the cost estimates

Table 1 summarises the capital cost components for the Munno Para project. The five main components are:

- **substation** component, which covers costs associated with the establishment, construction and commissioning of the Munno Para substation
- **transmission line** component, which covers the cost associated with connecting from the substation to the existing transmission lines
- **telecommunication** component, which covers costs associated with providing an additional OPGW telecommunication back to the existing Para substation
- **project risk** component, which covers risks (and opportunities) due to potential variations in the project scope that may occur during the delivery of the project

- **project delivery** component, which covers the costs associated with the management and delivery of the project.

Table 1: Munno Para capital cost estimate (\$m, 2007-08)

Cost Item	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Substation	0.2	0.6	5.3	17.2	3.3	26.5
Transmission line	0.1	0.1	0.0	0.5	2.1	2.8
Telecommunication	0.0	0.1	0.0	3.1	0.1	3.3
Project risk	0.0	0.0	0.0	3.3	0.6	3.8
Project delivery costs	0.8	0.9	0.8	1.1	0.9	4.4
Subtotal (\$2010-11)	1.1	1.6	6.0	25.1	7.0	40.8
Cumulative cost escalation (real)	1.0	1.0	1.1	1.1	1.1	
Cost escalation factor (real)	1.0	1.0	1.0	1.0	1.1	
Total (\$2010-11)	1.1	1.6	6.3	26.2	7.4	42.6
De-escalation factor	0.9	0.9	0.9	0.9	0.9	
Subtotal (\$2007-08)	1.0	1.5	5.8	24.2	6.9	39.3

Nuttall Consulting has concluded that the expenditure estimates provided in the contingent project application reasonably represent prudent and efficient costs. Nuttall Consulting considered benchmark costs and the detailed methodology applied by ElectraNet to develop its cost estimate.

In relation to ElectraNet's overall capital expenditure estimate Nuttall Consulting recommended an adjustment to the expenditure profile proposed by ElectraNet, by transferring \$4.35 million (\$2009-10) of the substation transformer costs from 2012-13 to 2013-14. This adjustment reflected Nuttall Consulting's view that ElectraNet had not adequately justified the substation transformer costs in 2012-13 when delivery would be in 2013-14.

The AER further investigated why the costs of the substation transformer would be incurred during 2012-13 rather than 2013-14. ElectraNet advised the AER the substation transformer order lead times are 104 weeks and their procurement contract required payment prior to commencement of the delivery of the substation transformer. Nuttall Consulting advised in follow up discussion that local manufacturers were no longer insisting on pre-payment but overseas suppliers had declined to discuss their payment terms as these were confidential. The AER consider that it is likely that ElectraNet's procurement practices are constrained by contractual arrangements entered into during a period when forward ordering was a necessity. As

economic circumstances have changed, the AER would expect ElectraNet to seek to avoid similar payment terms in future.

The AER is satisfied that given the required lead time, the bulk of the required expenditure for the substation transformer would be incurred in 2012-13 and accordingly have not made an adjustment to ElectraNet’s proposed capital expenditure profile.

3.4 Capital expenditure and operating expenditure for each remaining regulatory year

The AER is satisfied that ElectraNet’s forecast capital expenditure of \$39.3 million (\$2007-08) reflects the efficient costs a prudent operator would incur and a ‘realistic expectation’ of demand forecasts and cost inputs. The AER has approved total expenditure for the Munno Para project of \$8.3 million (\$2007-08) in the current regulatory period. Table 2 sets out the incremental capex the AER considers necessary in each of the remaining years.

The project does not incur any operating expenditure in the current regulatory period, however ElectraNet have indicated that operating expenditure will be incurred from the commissioning date in the next regulatory control period.

Table 2: Incremental capex, 2007-08 (\$m)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Capex			1.0	1.5	5.8	8.3

3.5 Commencement and completion dates

ElectraNet has informed the AER it commenced the Munno Para project on 1 August 2010 and it will be completed by 30 November 2014.

The Munno Para project therefore commences in the current regulatory control period of 2008-13, and extends into the following regulatory control period. As such, the project will be bound by the provisions of NER 6A.6.7 for projects spanning regulatory control periods.

3.6 Incremental revenue required for each remaining regulatory year

The AER has approved a \$0.49 million (\$2007-08) increase to ElectraNet’s revenue cap. Table 2 demonstrates the change in the revenue requirement resulting from the changed expenditure.

Table 3: Change in the revenue requirement (\$m nominal)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
AER annual building block revenue requirement	229.99	245.26	269.29	288.59	306.43	1339.57
ACR line component contingent project		0.44	1.71	10.65	17.31	30.11
Munno Para Reinforcement Project Incremental revenue requirement				0.14	0.35	0.49
Amended annual revenue requirement (unsmoothed)	229.99	245.70	271.00	299.39	324.09	1370.17

The AER has also assessed the incremental revenue associated with the contingent project and confirms that it is consistent with the requirements of the PTRM used by the AER in the 2008 revenue determination.

3.7 The MAR for each remaining regulatory year

The AER has also verified that the appropriate net capital expenditure allowance and incremental operating expenditure for the project has been correctly applied in the PTRM.

4 AER decision

The AER has considered ElectraNet's contingent project application relating to the Munno Para reinforcement project in accordance with the 2008 revenue determination and the National Electricity Rules.

The AER notes that the regulatory test was finalised in October 2007 and the proposed option was endorsed without amendment. The AER also note that in accordance with Chapter 5 of the Rules that ETSA Utilities lodged a connection application on 29 February 2008. The AER is satisfied that the trigger events for this project have been satisfied.

The AER is satisfied that the proposed expenditure of \$8.3 million (\$2007-08) in the current regulatory period reflects:

- efficient costs
- the costs a prudent operator would incur

- a ‘realistic expectation’ of demand forecasts and cost inputs.

Accordingly, the AER has:

- determined that the amounts specified in ElectraNet’s application meet the requirements in the 2008 revenue determination and the NER
- approved amending ElectraNet’s 2008-13 revenue cap to allow for the increase in costs attributable to commencing the project. The amended MAR of \$0.49 million is based on a revised X factor of –5.95 per cent (revised from -5.97 per cent in the 2008 revenue determination and -5.93 per cent in the 2009 Adelaide central reinforcement decision)
- determined ElectraNet’s total forecast capital expenditure of \$39.3 million (\$2007-08) reflects the efficient costs a prudent operator would incur and a ‘realistic expectation’ of demand forecasts and cost inputs.

Table 4: Amended maximum allowed revenue, (\$m nominal)

	2008-09	2009-10	2010-11	2011-12	2012-13	Total
MAR (smoothed)	229.99	250.01	271.85	295.59	321.41	1368.86
X factor	–	–	-5.95%	-5.95%	-5.95%	