



**DRAFT DECISION**  
**Mount Barker Gas**  
**Network Extension**  
**Advance Determination**  
**under NGR r. 80**

October 2018



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AER Reference: 64192

#### Amendment Record

Version	Date	Pages
1	11 October 2018	24
2	25 October 2018	24

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## Shortened Forms

Shortened	Extended Form
AA	Access Arrangement
AER	Australian Energy Regulator
AGN	Australian Gas Networks
APA	APA Group
capex	capital expenditure
CCP	Consumer Challenge Panel
ELS	Environmental Land Services (Aust) Pty Ltd
FEED	Front End Engineering Design
GJ	Gigajoule
LPG	Liquefied Petroleum Gas
NGL	National Gas Law
NGR	National Gas Rules
NPV	Net Present Value
opex	operating expenditure
RAB	Regulatory Asset Base
PCA	Port Campbell to Adelaide pipeline
PV	Present Value
SEA Gas	South East Australia Gas Pty Ltd

# 1 Draft decision

Australian Gas Networks (AGN) is seeking an advance determination under r. 80 of the National Gas Rules (NGR) for its proposed Mount Barker extension and reticulation of the natural gas distribution network (from Murray Bridge through Monarto South and Kanmantoo to Mount Barker).

We approve proposed capital expenditure (capex) of \$33.0 million (\$2017-18) for the Mount Barker extension as conforming capex for 2016-21 under r. 79(1) of the NGRs.

Table 1-1 sets out our approved future capex in 2019-20 and 2020-21.

**Table 1-1 AER approved capital expenditure by category 2019-29 and 2020-21 (\$million, 2017-18)**

	2019–20	2020–21	Total
Pipeline	23.8	-	23.8
Offtakes	2.2	-	2.2
Trunk Reticulation (CBD & Glenlea)	-	4.4	4.4
Reticulation	-	0.6	0.6
Meters & Services	-	0.4	0.4
Overhead	1.4	0.3	1.6
<b>Total</b>	<b>27.4</b>	<b>5.7</b>	<b>33.0</b>

Source: AER calculations

AGN has estimated total capex of \$57.3 million (real 2017-18 \$) for the Mount Barker extension. AGN is seeking an advance determination of \$35.4 million (real 2017-18 \$) in the current 2016-2021 regulatory period, with the reminding \$21.9 million (real 2017-18 \$) to be the subject of the 2021-2026 Access Arrangement (AA) in 2020-21.<sup>1</sup>

The main difference between AGN's request of \$35.4 million (real 2017-18) and our alternative capex estimate of \$33.0 million (real 2017-18) is due to removal of the project contingency AGN has included for this project (\$2.4 million) in 2019-20.

At the commencement of the next regulatory reset, AGN will only include the actual amount of capex incurred in the regulatory asset base (RAB).

<sup>1</sup> AGN, *Mount Barker Natural Gas Extension: Business Case*, June 2018, p. 3.

## 2 Background

AGN is proposing to construct a high pressure extension and reticulation system to service Mount Barker, as well as industry in Monarto South and Kanmantoo (South Australia).<sup>2</sup>

From January to June 2018 AGN undertook pre-engagement with the AER with a view to submitting an application under r. 80, seeking an advance determination on conforming capex for the Mount Barker expansion. This rule provides that on application by a service provider, the AER is able to make an advance determination that proposed capital expenditure will meet the new capital expenditure criteria.<sup>3</sup> Capital expenditure that meets the criteria, which are set out in r. 79 of the NGR, is known as conforming capex.<sup>4</sup>

In June 2018 AGN submitted an application seeking an advance determination with regard to this capex which if approved will be undertaken in 2019-20 and 2020-21 (under r. 80 of the NGR). It is seeking a determination which confirms that the capex is conforming (under r. 79 of the NGR) so that it will be included in the RAB as part of its 2021-26 Access Arrangements. The AER previously considered and rejected the Mount Barker extension when AGN submitted its Access Arrangement for 2016 to 2021.

The application has been made within the current (2016-2021) access arrangement period

Proposed capex must meet the new capital expenditure criteria in order for it to be included in AGN's RAB. In particular:

(a) the capex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services;<sup>5</sup>

(b) the capex must also be justifiable, including by either having an overall positive economic value or by being expected to generate sufficient incremental revenue to cover the present value of the expenditure.<sup>6</sup>

### 2.1 Previous regulatory considerations

AGN's draft proposal for the 2016-2021 AA included a 'significant extension event' as a cost pass through to supply gas to the area of Mount Barker.<sup>7</sup> In our draft decision we were not satisfied that costs relating to significant extensions could be characterised as a pass through event.<sup>8</sup>

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<sup>2</sup> AGN, June 2018, p. 3.

<sup>3</sup> NGR, r. 80(1).

<sup>4</sup> NGR, r.79(1).

<sup>5</sup> NGR, r.79(1)(a).

<sup>6</sup> NGR, r.79(2)(a)-(b).

<sup>7</sup> Australian Gas Networks - Access arrangement Information, page 266, July 2015.

<sup>8</sup> AGN, Draft Decision, 2016 to 2021, Attachment 11 - Reference tariff variation mechanism, page 11, November 2015  
AER, *AER – Final decision Australian Gas Networks Access Arrangement – Attachment 6 – Capital Expenditure – May 2016*, page 35-40, <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/australian-gas-networks-sa-access-arrangement-2016-21/final-decision>, 2016.



In response, post the draft decision, AGN included \$23.5 million (\$2014-15, unescalated) capex to expand its network by 36 kilometres to Mount Barker.<sup>9</sup> The AER in the Final Decision did not accept AGN's revised proposal for this new growth area capex to Mount Barker.

The Final Decision questioned whether the AGN penetration rate of 95 per cent was achievable and felt 65 per cent would be more reasonable. With lower penetration rates, the present value of incremental revenue projections did not exceed the present value of the capital that AGN proposed to invest.<sup>10</sup> Hence we were not satisfied that the Mount Barker Gas Network Extension project was conforming capex under r. 79 of the NGR on the basis that it is was likely that the expected incremental revenue would not exceed the present value of the capex.<sup>11</sup>

## 2.2 Mount Barker

Mount Barker is 36 km southeast of Adelaide. AGN states that it is the largest town in the Adelaide Hills with a population of approximately 14 000 people, and the Mount Barker region is one of the fastest growing areas in South Australia. The Mount Barker region includes Littlehampton, Nairne and Kanmantoo, which have manufacturing, food processing, logistics and mining businesses.

In 2010, the South Australian Government re-zoned surrounding rural land to residential, making available 1300 hectares of land to be developed. The South Australian Government also released its 30-year plan for Greater Adelaide in 2010, which identified the Mount Barker region as a key part of its Adelaide urban land supply. AGN indicated that multiple medium and large density estates are being developed in the east, south and west of Mount Barker and that independent forecasts indicate that 6 800 new homes will be built in the next 20 years.<sup>12</sup>

The Adelaide Hills has a cooler climate than metropolitan Adelaide. AGN believe that this makes it a logical area to extend the natural gas network due to the demand for space heating, as well as cooking and hot water. Comparing different areas Mount Barker has similar mean maximum and mean minimum temperatures to Mount Gambier, more rainfall and a significantly greater number of days with a minimum temperature less than 2°C. Adelaide and other regional centres in South Australia have milder climates. AGN's consultant Core Energy noted the climate in Mount Barker is cooler on average than the climate in Albury and Melbourne, although there are fewer days less than 2°C in Mount Barker than Albury.<sup>13</sup>

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<sup>9</sup> AGN, *Revised Access Arrangement Information for AGN's SA Natural Gas Distribution Network - January 2016 - Attachment 7.1A Business Cases for operating expenditure and capital expenditure*, Business Case - SA25, January 2016

<sup>10</sup> AER, *AER – Final decision Australian Gas Networks Access Arrangement – Overview – May 2016*, page 39, <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/australian-gas-networks-sa-access-arrangement-2016-21>, 2016.

<sup>11</sup> NGR, r. 79(1).

<sup>12</sup> Core Energy Group, *AGN Mount Barker | Report*, December 2017, p. 6, (Note this report is Attachment 4A to AGN Mount Barker Business Case).

<sup>13</sup> Core Energy Group, p. 8.

AGN's Business Case for the Mount Barker natural gas extension states Mount Barker has a larger average household size and significantly higher household income than Mount Gambier. Combined with weather data it is indicative that households in Mount Barker are more likely to have higher gas consumption than Mount Gambier.

Mount Barker is not currently serviced by natural gas but does have some liquefied petroleum gas (LPG) reticulation. AGN has not included the existing reticulated LPG customers in the Business Case for the Mount Barker Natural Gas Extension. However, Environmental Land Services (Aust) (ELS), a local LPG supplier, has indicated they would seek to work with AGN in the most efficient way to deliver gas to customers.<sup>14</sup>

Submissions made to the Australian Energy Regulator (AER) as part of the consultation process indicate that AGN's proposal has widespread community and stakeholder support.<sup>15</sup> Further, areas adjacent to the proposed pipeline route have requested that the pipeline be extended to them.<sup>16</sup>

Surveys of businesses have further indicated commercial interest in gas. For commercial customers state averages are used, for both forecast connections and consumption. These figures are considered conservative given the colder climate in Mount Barker and hence potential demand for gas for space heating. State averages are also used for forecast industrial usage.

Overall AGN believe that there is justification for extending their natural gas network to Mount Barker.

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<sup>14</sup> Environmental Land Services (Aust) Pty Ltd (ELS), *Submission on proposed gas network extension to Mount Barker*, 7 September 2018.

<sup>15</sup> Department for Energy and Mining, *Submission on proposed gas network extension to Mount Barker*, 28 September 2018; Dan Cregan MP Member for Kavel, *Submission on proposed gas network extension to Mount Barker*, 3 September 2018; Regional Development Australia, *Submission on proposed gas network extension to Mount Barker*, 3 September 2018; South East Australia Gas Pty Ltd (SEA Gas), *Submission on proposed gas network extension to Mount Barker*, 3 September 2018; and Mount Baker District Council, *Submission on proposed gas network extension to Mount Barker*, 31 August 2018.

<sup>16</sup> Debs Buchman North Ward Councillor, Mount Baker District Council, *Submission on proposed gas network extension to Mount Barker*, 3 September 2018; Carol Bailey Councillor, Mount Baker District Council, *Submission on proposed gas network extension to Mount Barker*, 4 September 2018.

## 3 AER's assessment approach

### 3.1 NGR requirements for advance determination

NGR r. 80 addresses the AER's power to make an advance determination with regard to future capital expenditure. This rule states that:

1. The AER may, on application by a service provider, make a determination to the effect that, if capital expenditure is made in accordance with proposals made by the service provider and specified in the determination, the expenditure will meet the new capital expenditure criteria.<sup>17</sup>
2. The AER may (but is not required to) engage in public consultation before making a determination under subrule (1).<sup>18</sup>
3. A determination under subrule (1) is binding on the AER but a decision not to make such a determination creates no presumption that future expenditure will not meet the relevant criteria.<sup>19</sup>

### 3.2 NGR requirements for conforming capital expenditure

Capital expenditure is defined in the NGR as costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services.<sup>20</sup> It is based on a forecast or estimate which must be supported by a statement of the basis for the forecast or estimate.<sup>21</sup> Any forecast or estimate submitted must:

- be arrived at on a reasonable basis; and
- represent the best forecast or estimate possible in the circumstances.<sup>22</sup>

Capital expenditure is conforming capital expenditure if it conforms with both of the following criteria set out in r. 79(1) of the NGR:

- the capital expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services; and
- the expenditure must be justifiable on one of four grounds set out in r. 79(2) of the NGR.

In summary the four grounds set out for capex in r. 79(2) of the NGR are:

- have an overall economic value that is positive; or
- have an expected present value of the incremental revenue to be generated that exceeds the present value of the capex; or

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<sup>17</sup> NGR, r. 80(1).

<sup>18</sup> NGR, r. 80(2).

<sup>19</sup> NGR, r. 80(3).

<sup>20</sup> NGR, r. 69.

<sup>21</sup> NGR, r. 74(1).

<sup>22</sup> NGR, r. 74(2).

- be necessary to maintain and improve the safety of services, or maintain the integrity of services, or comply with a regulatory obligation or requirement, or maintain capacity to meet levels of demand existing at the time the capex is incurred; or
- be justifiable partly under the second point above, with the remainder being justifiable under the third dot point above.

Rule 79(3) of the NGR states that, in deciding whether the overall economic value of capital expenditure is positive, consideration is to be given only to economic value directly accruing to the service provider, gas providers, users and end users.

We currently have limited discretion when making decisions under r. 79 of the NGR.<sup>23</sup> We are therefore required to approve the capital expenditure if we are satisfied that it complies with the applicable requirements of the NGR and NGL and is consistent with the criteria set out in the NGR and NGL.<sup>24</sup>

### 3.3 AGN's current application

AGN argue that its proposed capital expenditure is conforming capital expenditure, and justifiable under r. 79 on the following grounds:

- The project cost is efficient (r. 79(1)(a)),
- The overall economic value of the expenditure is positive (r. 79(2)(a)), and
- The present value (PV) of the incremental revenue from the project exceeds the PV of the capital costs incurred in delivering the extension to Mount Barker (r. 79(2)(b)).<sup>25</sup>

AGN's application provides a business case and more detailed supporting information in the areas of concerns raised by us when the project was initially proposed in AGN's 2016-21 AA. The areas where additional information is provided include:

- Analysis, based only on new residential developments, substantiating the use of 95 per cent penetration rates with comparisons to new developments of comparable size to Mount Barker.
- Conservative commercial and industrial connection forecasts including a customer survey.
- Independent reports from Core Energy on forecast gas customers and gas demand, and Frontier Economics examining the costs and benefits of the Mount Baker extension.
- Modelling using a 20 year growth window instead of 30 years.

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<sup>23</sup> NGR, r. 79(6).

<sup>24</sup> NGR, r. 40(2).

<sup>25</sup> AGN, June 2018, p. 2.

## 4 Process for assessment

After our decision on its 2016-21 AA, AGN has taken a number of steps to demonstrate the Mount Barker project meets the NGR criteria. These have included:

- Engagement with the AER over a 6 month period prior to the lodgement of the application under r. 80,
- Production of a well-documented business case, demonstrating how the proposed expenditure meets the requirements of conforming capex,
- Procurement of professional reports (Core Energy and Frontier Economics) substantiating claims made in the business case,
- Liaison with the Mount Barker community.

We welcome the fact that AGN has taken these further steps.

We published AGN's application and sought submissions to inform this draft determination. Since this process is outside the AA period, we specifically wrote to select stakeholders notifying them of the process. Stakeholders we wrote to were identified largely from the parties who made submissions to the 2016-21 AA, additionally the local Councils of Murray Bridge and Mount Barker were identified as having an interest in the pipeline, as were three LPG suppliers in the Mount Barker region. We received ten submissions on AGN's application.<sup>26</sup> A summary of submissions is at Appendix 1.

We reinstated Consumer Challenge Panel eight (CCP8) to provide comment on the proposal as they had specifically commented on the Mount Barker extension proposal in their submission on AGN's 2016-21 AA proposal.

To assist us, we also engaged an independent engineering consultant Zincara to undertake a review of the key assumptions that underpin AGN's analysis as well as project costing and staging.

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<sup>26</sup> <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/australian-gas-networks-future-capital-expenditure-determination-mount-barker-gas-network-extension/initiation>

## 5 Assessment of proposed capex

We assessed the proposed capital expenditure to determine whether it would be incurred by a prudent operator acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.<sup>27</sup> We also assessed whether the proposed capital expenditure is justified on the grounds specified in r. 79(2) of the NGR.

### 5.1 Key assumptions supporting the proposal

The majority of revenue earned by this project is forecast to be recovered from residential customers (residential \$44.1 million, commercial \$11.9 million, and industrial \$4.9 million, total revenue NPV \$2019-20).

The economic and NPV analysis undertaken by AGN (discussed in section 5.2) is dependent on the following assumptions for residential customers:

- Penetration rate
- Forecast average usage of gas
- Growth rates for residential development.

Each of these assumptions is examined below. They are each relevant inputs to our assessment of whether the capital expenditure is conforming capital expenditure under r. 79 of the NGR.

#### 5.1.1 Penetration rate for residential customers

AGN has assumed a penetration rate of 95 per cent for residential gas connections in Mount Barker. Where gas is present AGN has an average penetration rate of 74 per cent across South Australia. To justify its' significantly higher penetration rate for Mount Baker, AGN demonstrate observed higher penetration rates in new suburbs compared to the overall networks penetration rates. AGN has presented data for new subdivisions of comparable size and development type to those in Mount Barker (2011-12 to 2016-17), and the average penetration rates across these suburbs is 95 per cent.<sup>28</sup>

The penetration rate is applied to the dwelling forecast growth to derive connections forecasts.

#### 5.1.2 Forecast average usage by residential customers

AGN has adopted the average consumption per customer of Mount Gambier (27.3 GJ/annum) for Mount Barker for the period 2021 to 2035, and a one per cent reduction in energy consumption from 2036 onwards to reflect appliance efficiency.

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<sup>27</sup> NGR, r. 79(1)(a).

<sup>28</sup> AGN, June 2018, pp. 16-17.

Zincara notes AGN's forecast usage assumption is considerably higher than the SA state average of 15.5 GJ/annum, which is also trending downwards. This downward trend in consumption is also present in Mount Gambier (average consumption has declined from 30.2 GJ/annum to 25.3 GJ/annum over the 2012 to 2016 period).

AGN believes that use of the Mount Gambier forecast usage is conservative given higher average household sizes and median income, along with Mount Barker's colder climate suggesting higher average gas usage is possible in Mount Barker. With heating requirements a major driver of gas consumption, the cooler climate of Mount Barker may drive higher average gas consumption than what is observed in other areas of South Australia. A comparison is also made with Albury and Melbourne, where consumption is 45 GJ/annum and 49 GJ/annum respectively to indicate that AGN's assumption is conservative.<sup>29</sup>

### 5.1.3 Growth potential of Mount Barker

AGN's consultant, Core Energy, used independent forecasts for residential dwellings growth. We accept these forecasts.

AGN modelling assumes only reticulating gas to new greenfield connections. This is a conservative assumption given the forecast growth in the Mount Barker area.<sup>30</sup> The area already has around 640 homes connected to reticulated LPG which may convert to natural gas in the future, as well existing customers using other fuels for domestic purposes (wood and electricity).<sup>31</sup> ELS (the operator of reticulated LPG in Mount Barker) has indicated they would seek to work with AGN in the most efficient way to deliver gas to customers.<sup>32</sup>

Residential growth will also support growth in commercial and industrial activities and potentially further the use of gas.<sup>33</sup> The assumptions for commercial and industrial gas usage are conservative, and are not the driver of revenue for the project.

### 5.1.4 Period of analysis

The analysis of returns has been undertaken over a 30 year period, with new connections not going beyond 20 years.<sup>34</sup> This is despite expected growth over the life of the pipeline (60 years).

### 5.1.5 Our assessment of the assumptions

While we accept each of AGN's static assumptions, we are conscious that the economics of residential gas are changing. Gas has typically been a low cost alternative for households

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<sup>29</sup> Core Energy Group, p. 8.

<sup>30</sup> SEA Gas, 3 September 2018.

<sup>31</sup> AGN, June 2018, p. 11.

<sup>32</sup> ELS, 7 September 2018.

<sup>33</sup> Mount Baker District Council, 3 September 2018.

<sup>34</sup> AGN, June 2018, p. 7.

for electricity for space heating, cooking and hot water. This is no longer necessarily the case due to rapidly developing technologies and the fact that gas prices are now linked to an international market. Supply is also being impacted by depleting older basins and moratoriums on exploration in some states.

We asked Zincara to examine the key assumptions that go into the economic and present value models including the forecast number of gas customers and gas demand. Zincara has concerns with the relationship between gas consumption per customer and the gas penetration rate for new subdivisions given the decline in residential gas consumption in recent years. Notably, Zincara does not consider it reasonable to use the penetration rate of new subdivisions of similar size without considering the gas consumption per customer in these subdivisions.<sup>35</sup>

CCP8 also expressed concern with the high static penetration rate adopted by AGN.

Given these concerns we have undertaken our own sensitivity analysis of the assumptions, and this is set out in the next section.<sup>36</sup>

## 5.2 NGR justifications for the expenditure

AGN has justified its capital expenditure as conforming capital expenditure under r. 79 of the NGR based on:

- the overall economic value of the expenditure is positive (r. 79(2)(a)); and
- the present value (PV) of the incremental revenue from the project exceeds the PV of the capital costs incurred in delivering the extension (r. 79(2)(b)).

We have examined the impacts that each of the key assumptions of the proposal (as set out in section 5.1) has on the models provided by AGN.

### 5.2.1 Economic model

AGN engaged Frontier Economics to undertake an analysis to assess if this project is justified under r. 79(2)(a) on the basis that the overall economic value of the expenditure is positive. Frontier Economics concluded that the quantifiable benefits of the Mount Barker extension materially exceed the economic costs. The NPV of the quantifiable benefits over the period 2019-20 to 2049-50 are approximately \$70 million, and the NPV of the economic costs of the Mount Barker extension over the same period is approximately \$40 million. The result is a quantified net economic benefit of approximately \$30 million.<sup>37</sup>

The Frontier Economics assessment approach is based on the direct benefits to consumers of the Mount Barker extension proceeding. This analysis derives its benefits by comparing

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<sup>35</sup> Zincara points out that the penetration rate in Mount Gambier is only 71 per cent and gas usage is declining. AGN though is taking the gas usage in Mount Gambier and assuming it is applicable to its Mount Barker modelling, while not providing any usage rates for new subdivisions that might substantiate this assumption.

<sup>36</sup> We acknowledge future uncertainty and note the matters raised by the Alternative Technology Association in their submission to us. The choice of fuel is for consumers to make.

<sup>37</sup> Frontier Economics, December 2017, Executive summary.



the difference in fuel costs between LPG, natural gas and electricity which are then compared to the project costs.

While we accept that the modelling methodology is fit for purpose, we have carried out a sensitivity analysis on the key assumptions. The results are shown in Table 5-1 Economic value model sensitivity analysis.

Using the Frontier Economics' model we examined the impact of 15, 30 and 45 per cent reductions in demand to test the model's robustness to lower residential customer penetration rate and average gas usage. We also shorten the NPV period from 30 years, to 20 years and 15 years to test a shorter recovery period given the uncertainties regarding the future of gas.

**Table 5-1 Economic value model sensitivity analysis**

Net Economic Benefit (\$'million)	Reduction in residential gas demand*			
	0%	-15%	-30%	-45%
NPV Period				
30 years	30	23.1	16.2	9.4
20 years	13.8	9.6	5.4	1.2
15 years	4.9	2.3	-0.4	-3.0

\* Demand is defined as the product of gas consumption per customer and the forecast number of customers. The forecast number of customers is determined by calculating the forecast number of new homes multiplied by the residential gas penetration rate.

Source: AER calculations

The results show that the economic model, with a base case of \$30 million, is resilient to both reductions in residential gas demand and payback period resulting in economic values that are positive in most cases.

Where the scenarios result in economic value that are negative, we note that the values are small. Further given the assumptions underpinning both AGN's economic model and its present value model are conservative (see section 5.2.2 for the gas demand factors excluded from the analysis in both models), we consider that the negative economic value scenarios are much less probable than the other scenarios modelled.

On this basis, we find that AGN proposed capital expenditure for the Mount Barker extension is justifiable on the grounds set out in r. 79(2)(a) - namely, that the overall economic value of the expenditure is positive.

## 5.2.2 Present value model

AGN carried out an incremental revenue test which compares the incremental revenue less operation costs to the capital cost of this project on a cash flow basis. This model showed a positive NPV outcome of \$5 million over 30 years based on AGN's assumptions.

While we accept that the modelling methodology is fit for purpose (the assumptions met the requirements of r. 70(4)), we have undertaken our own sensitivity analysis. Our findings are that a 10-15 per cent reduction in either the penetration rate, average residential gas usage, residential dwelling numbers or a combination of the three would result in a negative NPV outcome. In addition, a slightly shorter NPV period would also result in a negative NPV outcome.

We would expect the NPV to be more robust when subject to a sensitivity analysis. Given the input sensitivity and our concerns over the sustainability of a 95 per cent penetration rate, and stable average residential gas usage, we do not believe this model represents a reasonable base case. We do not accept that the outcome of this model demonstrates that the capital expenditure is justifiable on a ground set out in r. 79(2).

However, we observe the following gas demand factors are excluded from the analysis (both in AGN's present value model and its economic model):

- Possible conversion of existing residential customers with reticulated LPG in the Mount Barker area to natural gas in the future.<sup>38</sup>
- Potential incremental revenue in extending natural gas to adjacent areas.<sup>39</sup>
- Additional parties looking to connect new gas loads in the vicinity of Murray Bridge and Monarto as well as improvement to the security of supply in the region.<sup>40</sup>
- Positive impacts residential growth might have in supporting commercial and industrial activities and its usage of gas.<sup>41</sup>
- Positive impacts gas infrastructure might have in supporting economic growth in the region.<sup>42</sup>

This lends support to the position that the modelling is conservative.

## 5.3 Efficiency of project costs

We asked Zincara to review the project costs including:

- Transmission pipeline planning and cost
- Trunk reticulation cost

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<sup>38</sup> ELS, 7 September 2018.

<sup>39</sup> Debs Buchman, 3 September 2018; Carol Bailey, 4 September 2018.

<sup>40</sup> SEA Gas, 3 September 2018.

<sup>41</sup> Mount Baker District Council, 3 September 2018.

<sup>42</sup> Department for Energy and Mining, 28 September 2018.

- Reticulation, services and meter costs
- Operation costs

### **5.3.1 Transmission route selection and cost**

APA (APA Group) on behalf of AGN went through three stages of route development, concept route options study, pre Front End Engineering Design (FEED) study and FEED study. Zincara considers that the planning adopted by AGN aligns with industry practice and a prudent service provider.

The transmission costs have been developed following a detailed assessment of the construction methodology, estimated contractors cost and cost estimates for rock from a specialist. Zincara considers the transmission route selection and the project cost to be reasonable. We accept that this part of AGN's proposal conforms with r. 79(1)(a).

### **5.3.2 Trunk reticulation and costs**

The FEED study also identified the trunk reticulation mains and design of the route. The cost estimates are based on unit rates approved by the AER from the current AA.

Zincara considers the route and cost to be reasonable. We accept that this part of AGN's proposal conforms with r. 79(1)(a).

### **5.3.3 Reticulation, services and meter costs**

AGN uses an approach that calculates an average length of reticulation mains that it has to lay per customer based on their experience in Gawler East and Buckland Park. This is multiplied by the number of customers for the total length of mains. The connection cost per customer is based on AER approved benchmark unit rates for reticulation, meters and services from the current AA for residential customers. Zincara considers the approach and costs to be reasonable.

Zincara has also assessed the assumptions for commercial and industrial customers and considers the costs to be reasonable. We accept this part of AGN's proposal conforms with r. 79(1)(a).

### **5.3.4 Operating costs**

The operating cost (opex) of this project is comprised of transmission pipeline and incremental opex.

Transmission pipeline opex covers general operating and maintenance cost of the transmission pipeline including pigging and replacement of meters, valves and regulators every 10 years.

Incremental opex covers activities such as billing, meter reading and customer service attributed to new connections. It is calculated by the annual number of customer multiplied by the operating cost per customer. AGN uses an average incremental operating cost of \$23

per customer based on the Victorian Gas Distribution System Code which is higher than AGN estimated value in their 2016 AA proposal. Zincara considers the operating costs used to be reasonable.

Although operating cost is relevant for the purpose of justifying the investment, it is not the subject of this decision. Nor is AGN seeking an additional opex allowance this period.

### 5.3.5 Project contingency

AGN has estimated a total capital expenditure of \$57.3 million (real 2017-18 \$) for the extension and reticulation of the natural gas distribution network from Murray Bridge through Monarto South and Kanmantoo to Mount Barker. AGN intend to undertake \$35.4 million (real 2017-18 \$) of this work within their existing 2016-2021 capital allowance inclusive of \$2.4 million (real 2017-18 \$) in project contingency and is not seeking additional funding this period. The reminding \$21.9 million (real 2017-18 \$) will be the subject of the 2021-2026 AA in 2020-21.

While we accept the approach, for this advance determination, of only assessing capital expenditure that is expected to be incurred within the 2016-2021 period, we do not accept the inclusion of a project contingency in this advance determination. We consider that project contingency should be assessed in the context of AGN's overall capital portfolio, as the sum of individual project contingencies tends to overestimate overall project contingency requirements. In keeping with this principle, we propose to assess all project contingencies incurred in the 2016-2021 period as part of our conforming capital assessment in the 2021-2026 AA process.

## 5.4 Cost Recovery

We share stakeholder concerns that the recovery for this project be cost reflective, in that existing consumers in the gas network are not disadvantaged as a result of this investment.<sup>43</sup> However, the rules do not specifically require a gas extension must deliver a net benefit to existing gas consumers.

For the case of Mount Barker, we expect that existing gas consumers will not be made worse off in the long term given the conservative assumptions modelled - that is, if the potential unmodelled demand emerges.

Due to the way revenues are recovered by gas network businesses from year to year, there will be some smoothing of costs between existing and new consumers from new network extensions over the lifetime of the network. We expect the impact to be minimal given this investment is small compared to AGN's current regulatory asset base.

We urge AGN to provide commentary, on its current and future tariff strategies, to mitigate concerns raised by stakeholders.

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<sup>43</sup> ECCSA MEU, *Joint submission on proposed gas network extension to Mount Barker*, 2 September 2018

## 6 Draft decision

Our draft decision under r.80 of the NGR, is that capital expenditure by AGN of \$33.0 million (\$2017-18) for the Mount Barker extension will meet the new capital expenditure criteria set out in r. 79 of the NGR. We do not accept that AGN's project contingency of \$2.4 million in 2019-20 will meet these criteria, and will assess this separately in our consideration of AGNs 2021-26 Access Arrangement in due course.

## Appendix 1 - Stakeholder Submissions

Respondent	Key Summary/Extract
Dan Cregan MP, Member for Kavel	<p>"Significant economic and social benefits would likely accrue to the district following the construction of a high-pressure gas pipeline and the supply of reticulated natural gas."</p> <p>"...supports application subject to AER finding the capital expenditure prudent, efficient, consistent with good industry practice and achieves the lowest sustainable cost of delivering pipeline services."</p>
Regional Development Australia	"This proposal has widespread support throughout the community and we wish it every success."
Mount Barker District Council	<p>"The Mount Barker District Council strongly supports the need for the provision of a natural gas network to service Mount Barker and the surrounding region."</p> <p>"The provision of access to reticulated natural gas is important to the expansion of the existing industry and the attraction of new industry to the region."</p> <p>"The provision of this gas infrastructure would deliver significant social, economic and environmental community benefits for both residents and businesses."</p>
SEA Gas, South East Australia Gas Pty Ltd	<p>"Having reviewed AGN's business case, SEA Gas has concluded that the assumptions appear to be reasonable. In fact, the business case appears to be quite conservative in a number of areas..."</p> <p>"In SEA Gas' experience, there is strong demand for natural gas in the subject region. We have recently fielded several enquiries from parties looking to connect to our Port Campbell to Adelaide (PCA) transmission pipeline to supply potential new gas loads in the vicinity of Murray Bridge and Monarto. Unfortunately, the relatively high cost of developing dedicated off-takes from the SEA Gas PCA pipeline has thus far prohibited such proposals coming to fruition. However, AGN's proposal to extend gas to Mount Barker via Monarto would establish an alternative supply source with economies of scale that would facilitate the establishment of new loads in the region."</p> <p>"AGN's proposed trunk line to Mount Barker would cross the SEA Gas PCA pipeline near Murray Bridge. It would be SEA Gas' intention to pursue a tie-in between the PCA and the new AGN trunk line to Mount Barker. Doing so would improve security of supply, not only to customers supplied by the Riverland and Mildura pipelines. In addition, such interconnection would yield potential competition benefits for all such customers."</p>
Debs Buchman, North Ward	"On behalf of myself and my constituents I implore you ensure that Nairne is serviced as part of this extension."

Councillor,  
Mount Barker District  
Council

"Nairne has seen substantial growth over the past 10 years...This amount could increase if the land divisions include high density housing."

Carol Bailey,  
Central Ward  
Councillor,  
Mount Barker District  
Council

"Nairne has already doubled in size in recent years...Such is the growth in Nairne that public meeting have been held to try to ensure a green buffer to prevent Nairne residential areas merging with those of Mount Barker and Blakiston."

"...the communities of our district will be very excited at the opportunity to access natural gas."

Brett Gallagher,  
Managing Director,  
Environmental Land  
Services (AUST) Pty.  
Ltd.

"ELS have been reticulating LPG in Mount Barker under our Gas Distribution License for approximately 10 years. In that time, we have observed a significant increase in the rate of urban development in the region of Mount Barker."

"We would support natural gas being available in Mount Barker and would seek to work with AGN in the most efficient way to deliver the gas to customers. We would caution that as part of any such capital works being considered by the AER for recovery via the current and future access arrangements that ELS is not placed at a commercial disadvantage as a consequence."

Energy Consumers  
Coalition of SA  
(ECCSA), and  
Major Energy Users  
(MEU)

"The MEU and ECCSA are concerned at the proposal to increase the AGNSA network in South Australia. This concern is based on the requirement that any extension to a gas network must deliver a net benefit to existing consumers of gas in the network so they see a reduction in prices as a result of the extension rather than lead to an increase. While the costs of an extension are relatively straight forward to assess, the revenue from new connections is less so. An assessment of the revenue is directly related to the numbers and types of new connections that drive the volumes of gas that will be transported as a result of the extension over its economic life."

"The ECCSA/MEU is concerned about a number of aspects of the forecast usage developed by CE."

"The ECCSA/MEU does not oppose the proposed extension per se, but is very concerned that its implementation should not impose any additional cost to existing consumers connected to the AGNSA network. The ECCSA/MEU has observed over the years that gas networks have been extended where the commercial assessments have been not properly executed with the result that existing consumers have incurred additional costs for their gas transport as a result of such network extensions."

Alternative  
Technology  
Association

"The ATA recognises that there is value for many commercial and industrial sites in having access to mains gas, and that many households value gas as a household fuel for non-economic reasons. However our research clearly shows that electricity is increasingly the most valuable fuel economically for Australian households, especially when the fixed cost of a second utility connection is avoided. We

urge the AER to consider our findings when evaluating the business case..."

Government of South Australia,  
Department for Energy and Mining

"...the Department supports the provision of natural gas to the Mount Barker region. The area has been seen substantial growth over recent years and is expected to continue to develop. Provision of natural gas will offer Mount Barker residents an alternative source of energy for applications such as cooking, heating and hot water..."

"...It is important that this project commences as soon as possible...the 30 Year Plan for Greater Adelaide identifies land at Mount Barker as part of Adelaide's urban land supply to accommodate population growth."

CCP8

"We question why the average penetration rate that AGN is proposing (at 95%) is so much higher than the overall average of 74%...we find it key that AGN has selected those suburbs whose growth in gas customers over 2011/12 to 2016/17 falls within the top 10% of all suburbs...This we feel may have biased the results upwards, as against selecting those suburbs with the highest number of new dwellings in the period."

"No analysis of the penetration rate for the existing LPG gas supply service in newer Mount Barker developments has been provided. Examination of this data may also provide guidance on the appropriate penetration rate to be used for the proposed network extension."

"We believe that penetration rates may start to reduce...we would expect AGN to have made some acknowledgement that the above factors could affect the penetration rate, and make some attempt at justifying a slower take-up rate at a point in time, and that it would be reasonable for AGN to comment on the changing energy environment and reflect that in its analysis."

"We question where the number of gas customers is counted properly...Might it be possible that a MIRN gas been generated in the development stage but gas is not actually being used at the premises? That might also overstate the number of customer using gas?"

"...AGN's business case is supported by Attachment 10 from Frontier Economics which suggests savings to customer from using gas rather than electricity...It may be worthwhile for AGN or the AER to revisit the economic analysis with 'electricity and solar' as a counter factor to gas, to test the economic basis for gas for residential customers."

"We concur with Zincara's view...a figure declining annually from 2016 from 15.5 GJ/annum (the state-wide average in 2016) or from 25.3 GJ/annum (the Mount Gambier average in 2016) may be a more realistic estimate of annual gas usage per customer in Mount Barker."