

Revised Final Plan
Attachment 7.5

**Response to Draft
Decision on Opex**

October 2020

1. Response to Draft Decision on Operating Expenditure

We incur opex to undertake activities that allow us to operate and maintain the DBNGP safely, reliably and efficiently. Opex also underpins our customer service.

1.1. Overview

This attachment sets out our response to the ERA's Draft Decision on operating expenditure (opex) for the DBNGP over the 2021 to 2025 Access Arrangement period (AA5). In particular we are responding to:

Required Amendment 9

DBP must amend forecast operating expenditure for AA5 to \$456.44 million (real as at 31 December 2019). The yearly values for each year of the access arrangement period are set out in Table 23 of this draft decision.

The revised Final Plan forecast opex for AA5 is \$441 million, which is \$20 million lower than the ERA's Draft Decision forecast opex on account of:

- Updating the 2019 opex base year for actuals (+\$7 million);
- System Use Gas (SUG) costs based on a lower forecast of throughput related to reference services in AA5 (-\$39 million);
- An updated real labour cost escalation of 0.57% (from 0.3%) reflecting actual information from the ABS available post the ERA's Draft Decision (+\$2 million);
- Reducing the productivity factor from 0.5% to zero (+\$6 million) as:
 - the ERA has already in its Draft Decision accepted our proposal to absorb \$9 million in increased IT opex forecast for AA5 resulting from the increased IT investment we are proposing, which equates to a 1.0% per annum productivity adjustment;¹
 - the ERA's reasoning is inconsistent with its reasoning in both the ATCO and Goldfields Gas Pipeline access arrangement decisions made in late 2019;
 - EMCA's econometric modelling and analysis does not provide a measure of productivity;
 - the ERA has overstated potential opex savings related to capex;
 - productivity analysis for gas distribution businesses is not necessarily reflective of productivity for gas pipelines, plus more recent data from the gas sector (which was not available for the AER's 2019 review relied on by the ERA) suggests that productivity cycles have turned, and 0.5% productivity per annum is no longer accurate; and
- Reducing the savings factor applied to overhauls to zero (+\$4 million) as this level of savings is not sustainable for ongoing maintenance activities (noting also that the ERA accepted both our volume and unit cost estimates are reasonable).

It is worth noting the combined effects of the ERA's productivity related decisions resulted in a reduction to our total opex forecast of \$17 million (or 1.8%); being the application of the 0.5%

¹ If applied to opex which is forecast using the base year method

productivity factor (\$6 million), acceptance of our proposal to absorb additional IT opex (\$9 million) and applying specific targets to our Turbine and GEA overhauls (\$4 million).

The following sections provide more detail to support our revised Final Plan forecast opex for AA5.

1.2. ERA Draft Decision

The ERA has not accepted our forecast operating expenditure for AA5, and considers that a value of \$465 million satisfies rules 74 and 91 of the NGR.

The increase to forecast opex for AA5 compared to our Final Plan related to:

- Increasing SUG as a result of its decision on throughput (+\$30 million) (see Attachment 11.3);
- Accepting our forecast of 2019 as the base year;
- Accepting our proposal to classify some capex projects as opex from the commencement of AA5, but making a small adjustment to the forecast costs for Asset Management and Process Safety;
- Varying the calculation of labour cost escalation (-\$2 million);
- Applying a productivity factor of 0.5% pa (-\$6 million);
- Applying a 13% savings target to Turbine and GEA Overhauls opex (-\$4 million); and
- Accepting our proposal to absorb additional IT opex of \$9 million rather than applying an opex step change.

We have provided a summary of the ERA’s Draft Decision on AA5 opex in Table 1.1 below.

Table 1.1: Summary of ERA’s Draft Decision on Operating Expenditure

	ERA Draft Decision	ERA Comment
2019 Base year	Accept	Accepted 2019 as the appropriate base year from which to forecast opex for the next AA period, but expects us to provide an explanation if our actual expenditure for 2019 significantly varies from the proposed expenditure submitted in our Final Plan. ²
Input cost escalation	Modify	Modified our equation to calculate labour cost escalation to reflect its revised equation used in the Goldfields Gas Pipeline and Mid-West and South West Gas Distribution Systems access arrangements final decisions, resulting in an escalation rate of 0.30 per cent. ³ Will update the labour escalation estimate in the final decision if the Treasury releases revised updates of the WPI and CPI data as part of the 2020/21 state budget.
Productivity factor	Reject	Applied a productivity growth factor of 0.5 per cent per year on the base components of the operating expenditure forecast based on: ⁴ <ul style="list-style-type: none"> • a study of AA4 productivity growth undertaken by EMCa which purports to show growth of 0.5% per annum;

² ERA Draft Decision [251] to [262]

³ ERA Draft Decision [263] to [274]

⁴ ERA Draft Decision [291]

	ERA Draft Decision	ERA Comment
		<ul style="list-style-type: none"> the AER’s 2019 review of electricity networks which, partially on the basis of information from gas networks, proposed a productivity growth factor of 0.5% per annum; and a desire to pass on to shippers the efficiency gains associated with capex spending which was designed to improve opex efficiency.
System Use Gas	Modify	<p>Used our SUG quantity calculation method with its draft decision on throughput to calculate an increased daily average SUG requirement for AA5 compared to our proposal.⁵</p> <p>Calculated the weighted average price of SUG in AA5 based on a SUG supply mix resulting in the lowest average cost.⁶</p>
Turbine and GEA Overhauls	Modify	<p>For GEA overhauls, the ERA considered that:⁷</p> <p><i>“this approach for managing GEA overhauls is consistent with the operation of a prudent service provider” and “unit costs is efficient.”</i></p> <p>For Gas turbine overhauls, the ERA’s technical consultant EMCa found that:</p> <p><i>“DBP’s approach to managing its gas turbine fleet is reasonable and in line with sound industry practice”⁸</i></p> <p>However, EMCa considered that we will find expenditure optimisation opportunities and proposed adjusting this component of DBP’s forecast on the assumption that we will achieve 50% of the proportionate savings achieved in AA4. This equates to a 13.2% reduction to its proposed forecast.⁹</p> <p>Therefore, the ERA has reduced our proposed expenditure to \$26.20 million (real unescalated dollars of December 2019) based on:¹⁰</p> <ul style="list-style-type: none"> its assumption that there is scope for savings to be made in AA5 as occurred in previous access arrangement periods including AA4 (\$3.98 million); and using ERA’s draft decision forecast inflation and labour cost escalation (\$0.16 million).
Change in capitalisation	Modify	<p>Is satisfied that the nature of the work outlined for Health, safety and environment, Station inspections, Asset management, Pipeline and mainline valve inspections, Process safety and Decommissioning is consistent with the accounting standards criteria to be classified as operating expenditure and is included as part of our AA5 operating expenditure.¹¹</p>

⁵ ERA, Draft Decision [398] to [402]

⁶ ERA, Draft Decision [403] to [420]

⁷ ERA, Draft Decision [298] to [299]

⁸ EMCa Technical Review, p.84

⁹ EMCa Technical Review, p.84

¹⁰ ERA Draft Decision, [309] to [316]

¹¹ ERA Draft Decision, [320] to [321]

ERA Draft Decision	ERA Comment
	<p>Accepted our change in capitalisation forecast operating expenditure for:</p> <ul style="list-style-type: none"> health, safety and environment as the ERA is satisfied that the proposed expenditure is reasonable and consistent with rule 91(1) of the NGR¹² station inspections as the ERA considered the expenditure is <i>"prudent to minimise the risk of failure to components and avoid disruption to the pipeline operations"</i>¹³ pipeline and mainline valve inspections as the ERA considered that our proposed option <i>"prudently considers the risk associated with the program of works and the costs, while ensuring that it meets the Australian Standards for its inspections"</i>¹⁴ <p>Modified our change in capitalisation forecast operating expenditure for:</p> <ul style="list-style-type: none"> asset management as the ERA considered inclusion of a provision for EOP and MoC projects based on an average of expenditure incurred in AA4 would be incurred by a prudent service provider.¹⁵ <p>EMCa considered that <i>"asset management is effectively a BAU activity and, while the increase that DBP proposes is relatively small, we consider that DBP has not justified the need for the proposed increase"</i>.¹⁶</p> <ul style="list-style-type: none"> process safety as we had <i>"failed to describe the activities for the higher expenditure in AA5 for 'process safety'"</i>¹⁷ <p>EMCa found that our description of the activities <i>"essentially describes 'business-as-usual activities for which we can see no compelling reason for an increase of the magnitude that DBP has sought'"</i>¹⁸</p>

Note: In this 'traffic light' table, green shading represents the ERA's acceptance of our Final Plan, orange represents the ERA's modification of our Final Plan and red shading represents the ERA's rejection of our Final Plan.

1.3. Our Response to the Draft Decision

Our revised Final Plan opex forecast for AA5 is \$441 million, which is \$20 million lower than the ERA's Draft Decision forecast opex on account of:

- Updating the 2019 opex base year for actuals (+\$7 million);
- System Use Gas (SUG) costs based on a lower forecast of throughput related to reference services in AA5 (-\$39 million).
- An updated real labour cost escalation of 0.57% (from 0.3%) reflecting actual information from the ABS available post the ERA's Draft Decision (+\$2 million);
- Reducing the productivity factor from 0.5% to zero (+\$6 million) as:

¹² ERA Draft Decision, [322] to [326]

¹³ ERA Draft Decision [327] to [339]

¹⁴ ERA Draft Decision [359] to [370]

¹⁵ ERA Draft Decision [340] to [358]

¹⁶ EMCa Technical Review, pp.86-87

¹⁷ ERA Draft Decision [371] to [383]

¹⁸ EMCa Technical Review, p.88

- the ERA has already in its Draft Decision accepted our proposal to absorb \$9 million in increased IT opex forecast for AA5 resulting from the increased IT investment we are proposing, which equates to a 1.0% per annum productivity adjustment;¹⁹
- the ERA’s reasoning is inconsistent with its reasoning in both the ATCO and Goldfields Gas Pipeline access arrangement decisions made in late 2019;
- EMCa’s econometric modelling and analysis does not provide a measure of productivity;
- the ERA has overstated potential opex savings related to capex;
- productivity analysis for gas distribution businesses is not necessarily reflective of productivity for gas pipelines, plus more recent data from the gas sector (which was not available for the AER’s 2019 review relied on by the ERA) suggests that productivity cycles have turned, and 0.5% productivity per annum is no longer accurate; and
- Reducing the savings factor applied to overhauls to zero (+\$4 million) as this level of savings is not sustainable for ongoing maintenance activities, noting also that the ERA accepted both our volume and unit cost estimates are reasonable;

It is worth noting the combined effects of the ERA’s productivity related decisions resulted in a reduction to our total opex forecast of \$17 million (or 1.8%); being the application of the 0.5% productivity factor (\$6 million), acceptance of our proposal to absorb additional IT opex (\$9 million) and applying specific targets to our Turbine and GEA overhauls (\$4 million). A summary of our response to the ERA’s Draft Decision is provided in Table 1.2 below.

Table 1.2: Summary of our response to the ERA’s Draft Decision on Operating Expenditure

	ERA Draft Decision	Our Response	Our Comment
2019 Base year	Accept	Accept	<p>We have accepted the ERA’s Draft Decision and have updated our base year to reflect actual 2019 opex of \$62.4 million.</p> <p>The updated 2019 base year, and explanation for the variance between the forecast and actual costs by category is provided in Attachment 7.1A Opex Forecast Model.</p>
System Use Gas	Modify	Modify	<p>We have modified the ERA’s Draft Decision approach on the forecast SUG price and have reduced the forecast volume of SUG required on account of the lower forecast throughput for reference services in our revised Final Plan. Further information can be found in Attachment 13.1A Tariff Model.</p>
Input cost escalation	Modify	Accept	<p>We have accepted the ERA’s Draft Decision and have updated input cost escalation to reflect the latest actual data of the wage price index (WPI) and consumer price index (CPI) for 2019/20.</p> <p>We have not applied a WPI premium for the electricity, gas, water and wastewater services (EGWWS) industry, on the basis that the ERA does not apply a productivity factor. However, if the ERA continues to apply a productivity factor, we propose for a premium to apply to real wage growth.</p>

¹⁹ If applied to opex which is forecast using the base year method

	ERA Draft Decision	Our Response	Our Comment
			We have applied 0% real cost escalation per annum to our material costs.
Output growth	Accept	Accept	We have applied output growth of zero consistent with our Final Plan and the ERA’s Draft Decision.
Productivity Factor	Reject	Reject	We do not accept the ERA’s Draft Decision to apply annual productivity of 0.5% pa reducing our forecast opex in AA5 by \$6.0 million. Further information on our position is provided in section 1.3.7 below.
Turbine and GEA Overhauls	Modify	Reject	We do not accept the ERA’s Draft Decision to apply a 13% savings factor to our forecast costs for turbine and GEA overhauls, which reduces the total cost by \$4.0 million. This level of savings is not achievable for ongoing maintenance costs (noting that the ERA has accepted that our forecast volumes and forecast unit costs in AA5 are both reasonable). More detail can be found in the Addendum to the Turbine and GEA Overhauls Business Case DBP05 at Attachment 7.2A.
Change in capitalisation	Accept	Accept	We accept the ERA’s Draft Decision that the best forecast for Asset Management (Business Case DBP14) and Process Safety (Business Case DBP24) costs in AA5, is the costs that have been incurred for these activities in AA4 and have updated the forecast accordingly. More detail can be found in section 1.3.9 below, Attachment 7.1A Opex Forecast Model and Attachment 8.6A Capex Forecast Model.

Note: In this ‘traffic light’ table, green shading represents the acceptance, orange represents a modification and red shading represents a rejection.

The following sections outline the reasons for our response to the ERA’s Draft Decision in this revised Final Plan.

1.3.1. 2019 base year

As noted in Table 1.2 above, we have updated our 2019 base year to reflect a full 12 months of actual costs incurred in that year. Our actual 2019 base year opex is \$1.5 million (or 2.5%) above our forecast base year costs presented in our Final Plan. The change from our Final Plan is not material and is driven by slightly higher labour costs and an increase in permits, licence fees, rates and taxes.

1.3.2. Adjustments to base year opex

We have made adjustments to our actual base year opex consistent with the adjustments made to our forecast base year opex in our Final Plan, which approach was approved by the ERA in its Draft Decision.²⁰ These include:

²⁰ ERA Draft Decision, [251] to [262]

- five-year average of our consulting and reactive maintenance costs, rather than the 2019 base year, due to some volatility that can be experienced in these cost categories year to year;
- six-year average of our insurance costs, rather than the 2019 base year, due to the cyclical nature of insurance markets; and
- removal of one-off gas storage costs related to fuel gas incurred in reactive opex in 2019.

1.3.3. System use gas

We are forecasting \$84 million in SUG costs in AA5, a decrease of \$23 million from our Final Plan, and a decrease of \$9 million to the updated information provided to the ERA in May 2020. This reflects a reduction in the forecast volume of SUG required on account of the lower forecast throughput for reference services. It also reflects how we will utilise our SUG contracts to purchase the volume of required SUG efficiently, which slightly changes the forecast average SUG price compared to the ERA's Draft Decision. Further information can be found in Attachment 13.1A Tariff Model.

1.3.4. Opex step changes

In our Final Plan we proposed to absorb around \$8 million in increased IT opex forecast for AA5 resulting from our increased IT investment. As stated in our Final Plan:

We took this approach because we believed these higher IT operating costs may be offset by reduced opex in other areas of the business, driven specifically by our IT enabling initiatives. Further this also provides a clear incentive on us to ensure that the benefits we estimate these programs can deliver are realised and passed through to customers.²¹

...while we have not applied an explicit productivity growth adjustment to our opex in AA5, we have proposed to absorb estimated IT opex step changes of around \$8 million, which results in an implied annual productivity of around 0.6% per annum.²²

Consistent with our Final Plan, we are proposing to absorb \$9 million in increased IT opex forecast for AA5 resulting from the increased IT investment. This is \$1 million higher than in our Final Plan reflecting more detailed information from our competitive tender process for the SAP S4/Hana project, and further work completed to progress our IT Security and IT Enabling initiatives.

We note the ERA's comment at paragraph 277 of its Draft Decision that:²³

No detailed information has been provided by DBP on the \$8 million of operating expenditure that DBP did not include in its submission as a step change. Accordingly, the ERA cannot assess if this expenditure is prudent and efficient as it was not included in the submission.

The required information in support of the increased opex associated with these IT programs is provided at Attachment 8.5A Addendum to Capex Business Cases, DBP21, DBP22 and DBP23, and is summarised in Table 1.3 below.

²¹ DBP Final Plan, p. 61

²² DBP Final Plan, p. 62

²³ ERA Draft Decision, [279] to [281]

Table 1.3: Summary of increasing IT opex we have proposed to absorb in AA5 (\$'000 December 2020)

Cost	2021	2022	2023	2024	2025	Total AA5
IT Sustaining Apps – SAP	324.1	972.3	972.3	972.3	972.3	4,213.3
IT Security	5.6	549.4	696.3	811.1	768.8	2,831.2
IT Enabling (costs)	9.5	312.2	416.7	416.7	416.7	1,571.9
Total	339.2	1,833.9	2,085.3	2,200.1	2,157.8	8,616.4

While we recognise the ERA’s view taken in the ATCO AA5 decision that absorbing these costs does not necessarily mean a productivity adjustment is not required,²⁴ we consider that a productivity factor of zero remains appropriate. This is discussed further below in section 1.3.7

We would also highlight that significant investment in IT is required to achieve productivity gains, including the forecast additional IT opex to support this investment as summarised above. If the ERA imposes an explicit productivity adjustment by application of an annual productivity factor of 0.5%, then the full costs of the proposed IT capex program (of which the ERA has approved a little over 50% in its Draft Decision) and corresponding IT opex uplift outlined in Table 1.3 must also be recognised.

1.3.4.1. Capex and associated opex reductions

In the Draft Decision, the ERA noted that opex savings we proposed would be made in undertaking capex for a number of business cases have not been included as step changes in our opex forecasts for AA5.²⁵

DBP has stated in several of its capital expenditure business cases that part of the justification for undertaking the capital expenditure was the associated operating expenditure reduction. These operating expenditure savings have not been included in the operating expenditure forecasts for AA5.

Under the base-step-trend approach, any reductions in operating expenditure for the upcoming period as a result of capital expenditure projects in the period would be included as a step change. DBP’s AA5 proposal does not include any step changes.

In order to ensure these savings are considered and passed on to customers, the ERA has included a productivity growth factor of 0.5 per cent per year on the base components of the operating expenditure forecast. This results in a decrease in forecast operating expenditure of \$6.04 million for the AA5 period.

²⁴ See: <https://www.erawa.com.au/cproot/20818/2/GDS---ATCO---AA5---Final-Decision---Public-FINAL-Version.PDF>, [524]

²⁵ ERA Draft Decision, [289] to [292]

In Table 1.4 below we have set out the specific opex impacts of our capex, including the capex business cases where part of the justification for undertaking the capex was the associated opex reduction. This excludes the IT costs already called out in Table 1.3 above.

The total value of these forecast opex savings is \$5 million. It is also partially offset by increasing opex costs of \$1 million related to opex at our Jandakot depot until the redevelopment is completed and additional opex for enhanced support for CRS, which costs have not been explicitly included in our opex forecast as step changes. The net opex savings from capex is \$4 million which is less than the ERA’s proposed productivity gains of \$6 million over AA5.

Table 1.4: Opex impacts of our proposed capex in AA4 and AA5 (\$’000 December 2020)

Business Case	Cost description	2021	2022	2023	2024	2025	Total AA5
Savings							
DBP27 Office Relocation	Reduced annual rent at new CBD office	(400.4)	(400.4)	(400.4)	(400.4)	(400.4)	(2,002.0)
DBP22 IT Enabling (savings)	Process and procurement savings	-	-	(492.3)	(984.6)	(1,477.0)	(2,953.9)
Costs							
DBP10 Jandakot	Increasing opex base (savings only achieved post 2025)	104.9	172.2	255.7	356.6	176.3	1,065.7
DBP20 CRS	Additional opex for enhanced support	76.4	76.4	76.4	76.4	76.4	382.1
Net opex savings from capex		(219.0)	(151.8)	(560.6)	(952.0)	(1,624.7)	(3,508.2)

Further information on the opex impacts of our proposed capex can be found in Attachments 8.5 Capex Business Cases and 8.5A Addendum to Capex Business Cases DBP10, DBP20, DBP22 and DBP27.

Our GEA and compressor package control systems business cases (Business Cases DBP 06 and 09) noted we would expect to see some improvements and further optimisation related to the upgrading of these obsolete systems to newer technologies, particularly once consistency is achieved across these assets along the pipeline. However these are not expected to materialise until the replacement programs are completed in AA6.

We would also highlight that the ERA’s Draft Decision resulted in slower replacement of these assets than we proposed in our Final Plan. In our revised Final Plan we have partially accepted the ERA’s Draft Decision on proposed deferrals of these assets into AA6 as discussed in Attachment 8.11.

1.3.5. Input cost escalation

1.3.5.1. Labour cost escalation

For the revised Final Plan we have applied real labour cost escalation of 0.57% per annum. This is 0.12% lower than the 0.69% per annum applied in our Final Plan and 0.27% higher than the ERA’s Draft Decision. The 0.57% reflects our acceptance of the ERA’s Draft Decision but with 2019/20 updated for actual values. Specifically we have:

- applied the ERA’s preferred calculation (consistent with the approach it adopted in Goldfields Gas Pipeline and Mid-West and South West Gas Distribution Systems access arrangements final decisions); and
- calculated the average using:
 - financial years rather than calendar years;
 - replaced the forecast value of 2019/20 with the latest actual ABS data; and
 - the arithmetic mean rather than geometric mean.

This is summarised in Table 1.5 below.

Table 1.5: Wage Price Index and Consumer Price Index data included in the calculation of real labour cost escalation (%)

	2018/19	2019/20	2020/21	2021/22	2022/23	Average annual
Wage Price Index growth	1.60%	1.70%	2.25%	2.50%	2.75%	2.16%
Consumer Price Index growth	1.30%	0.10%	2.00%	2.25%	2.25%	1.58%
Real labour cost escalation						0.57%

Source: ABS Cat no 6345.0 Table 2a (WPI), ABS Cat no 6401.0 Table 5 (CPI) and ERA Draft Decision Table 20.

We also note that further new information will likely be available after the submission of our revised Final Plan and before the ERA’s Final Decision. In particular, the 2020/21 State Budget will be released on 8 October 2020²⁶ and may update the forecasts for WPI and CPI for 2020/21 to 2022/23.

In our Final Plan we did not apply an industry premium to real wage price growth following the decisions made by the ERA in the Goldfields Gas Pipeline draft decision and the Mid-West and South-West Gas Distribution Systems final decision in 2019, as observed by the ERA.²⁷

However, we took this approach on the basis that the ERA would not make a productivity growth adjustment (i.e. apply zero productivity growth), for similar reasons as those outlined its final decisions for the Goldfields Gas Pipeline draft decision and the Mid-West and South-West Gas Distribution Systems.

²⁶ See <https://www.ourstatebudget.wa.gov.au/>

²⁷ ERA Draft Decision, [269]

The ERA accepted zero productivity growth for ATCO on the basis that:²⁸

a business with productivity growth is unlikely to sustain real wage growth at above average rates in the long term

.....fundamentally it is not reasonable to expect that wages growth for ATCO will exceed average economy-wide wages growth without increases in ATCO's productivity.

Similarly, in the recent Goldfields Gas Pipeline Final Decision, the ERA also allowed zero productivity growth and noted that this should translate into no additional real wage increase.²⁹

If the ERA accepts our proposal for zero productivity growth as discussed in section 1.3.7 below, then we maintain our position not to apply an industry premium, consistent with our Final Plan. However, if the ERA does impose a productivity adjustment in its Final Decision, then the ERA should also apply an industry premium to real wage growth to appropriately capture the value of productivity gains in wages, consistent with the ERA's approach taken for ATCO and Goldfields Gas Pipelines.

The appropriate premium to apply is 0.31%. This has been calculated for the period of June 2016 to June 2020 using the approach the ERA has applied to calculate this premium in the past.³⁰ Including the industry premium of 0.31% would result in real labour cost escalation of 0.88% pa where productivity growth is greater than zero. This would increase real cost escalation over the period by around \$2 million.

Table 1.6 provides a summary of real labour cost escalation with and without productivity.

Table 1.6: Annual labour cost escalation for AA5 with and without productivity

	Zero productivity adjustment	Positive productivity adjustment
Annual real labour cost escalation	0.57%	0.57%
EGWWS industry premium	-	0.31%
Total	0.57%	0.88%

1.3.5.2. Materials cost escalation

For our revised Final Plan, we have continued to apply zero real cost escalation per annum to our materials costs, consistent with our approach in our Draft and Final Plans, and also with recent regulatory decisions for gas and electricity service providers in Australia.

1.3.6. Output growth

Consistent with our Final plan, we are not proposing to apply an output growth factor to our base-step-trend opex. Two of our key costs, SUG and overhauls, vary with throughput and are already forecast using a unit cost and volume methodology. Therefore, these costs are already linked to the level of forecast throughput.

²⁸ See: <https://www.erawa.com.au/cproot/20818/2/GDS---ATCO---AA5---Final-Decision---Public-FINAL-Version.PDF>, [512]

²⁹ See: <https://www.erawa.com.au/cproot/20931/2/GGP---GGT---AA4---Final-Decision---Public.PDF>, [192]

³⁰ See ABS Cat no 6345.0 Table 5b. Note we have taken the average of the difference between the EGWWS sector and all industries over this timeframe.

1.3.7. Productivity

We do not agree with the ERA’s Draft Decision to apply a productivity growth factor of 0.5% pa over AA5 and maintain our Final Plan position that the appropriate productivity adjustment in AA5 is zero. This reflects that:

- the ERA has already in its Draft Decision accepted our proposal to absorb \$9 million in increased IT opex forecast for AA5 resulting from the increased IT investment we are proposing, which equates to a 1.0% per annum productivity adjustment;³¹
- the ERA has also applied an additional saving factor of 13% (or \$4 million) to our GEA and turbine overhaul program;
- the ERA’s reasoning is inconsistent with its reasoning in both the ATCO and Goldfields Gas Pipeline access arrangement decisions made in late 2019;
- related to the above, the ERA has not provided compensation for achieving productivity gains in its labour cost escalation;
- EMCA’s econometric modelling and analysis does not provide a measure of productivity;
- the ERA has overstated potential opex savings related to capex; and
- productivity analysis for gas distribution businesses is not necessarily reflective of productivity for gas pipelines, plus more recent data from the gas sector (which was not available for the AER’s 2019 review relied on by the ERA) suggests that productivity cycles have turned, and 0.5% productivity per annum is no longer accurate.

1.3.7.1. ERA has captured multiple productivity gains in its Draft Decision

As noted earlier in section 1.3.4 and outlined above, the ERA has embedded multiple productivity gains in its Draft Decision in addition to the application of the 0.5% productivity factor. The combined effect of these productivity adjustments total \$17 million, or 1.8% per annum.

Table 1.7 below summarises the productivity gains the ERA has actually embedded in its Draft Decision noting the annual productivity equivalent of these values.

Table 1.7 Summary of productivity gains embedded in the ERA’s Draft Decision

Area	Total value AA5	Annual productivity equivalent
Absorbed IT opex step changes	\$8.6 million	1.0%
Savings target applied to Turbine and GEA overhauls	\$4.0 million	0.5%
Opex savings related to capex	(\$3.5 million)	(0.4%)
Annual productivity growth factor	\$6.1 million	0.5%*
No industry premium on labour cost escalation	\$2.0 million	0.2%
Total	\$17.2 million	1.8%

* The ERA’s productivity calculation applies a factor of 0.5% per annum over the six years 2020 to 2025 and includes all opex forecast using the base year approach

³¹ If applied to opex which is forecast using the base year method.

Absorbed IT opex step changes

As discussed in section 1.3.3 above, we maintain our proposal to absorb estimated IT opex step changes of \$9 million, which results in an implied annual productivity of around 1.0% per annum. We have now provided additional information on the basis of the \$9 million of IT opex cost pressures we proposed to absorb, which the ERA noted it had insufficient information to assess.

Savings target applied to Turbine and GEA overhauls opex

The ERA has additionally imposed a specific top-down savings target of 13% (or \$4 million) to turbine and GEA overhauls opex. This is based on an assessment by EMCa that it expects we should be able to achieve half of the savings that were seen in AA4 when comparing forecast actual costs to our approved forecast.

Opex savings related to capex

In responding to the ERA's comments that we did not include any step changes for AA5 as a result of capex projects in the period, we have outlined all expected opex savings related to our 2020 and AA5 capex business cases in section 1.3.4.1 above. This showed that expected opex savings as a result of capex total \$5 million over AA5, \$3 million of which is related to our IT Enabling business case which the ERA rejected in its Draft Decision.

These expected savings are also partially offset by \$1 million in increased opex related to increasing opex at Jandakot until the redevelopment is completed and additional opex for enhanced support for CRS.

Annual productivity growth factor

Throughout the latter part of this section we will highlight a number of reasons as to why the annual productivity growth factor of 0.5% per annum is not an appropriate forecast of productivity gains in AA5.

As an aside, we note that the ERA's application of the 0.5% productivity factor should have been applied:

- To opex forecast on a base year approach excluding the government charges opex sub-category for permits, licence fees, rates and taxes, as per EMCa's technical advice;³² and
- From 2021 and not from 2020, as no productivity factor applied to the approved opex forecast for 2020 in its AA4 Final Decision.³³

These two factors increased the total productivity adjustment in the ERA's Draft Decision from \$4 million to \$6 million.

No industry premium on labour cost escalation

The ERA has not provided compensation for achieving productivity gains in its labour cost escalation. We did not apply an industry premium in our Final Plan as we had applied a productivity factor of zero. This was consistent with the ERA's reasoning for not allowing the premium in the ATCO decision. Since the ERA has applied a productivity factor of 0.5% in its Draft Decision, it should also have applied the industry premium to real labour cost escalation. Not doing so has embedded a further \$2 million (or 0.2%) of productivity gains.

³² ERA Draft Decision, [287]

³³ DBNGP – DBP – AA5 – Opex Model – ERA Draft Decision – August 2020

Total productivity gains embedded in the ERA's Draft Decision

The total opex productivity gains of \$17 million in the Draft Decision is the equivalent of a 1.8% per annum productivity factor to our base year opex, or a total of 8.5% over the AA5 period.

1.3.7.2. Annual productivity growth factor

We do not agree with the ERA's application of a productivity factor of 0.5% per annum in AA5 and have applied a productivity factor of zero in our revised Final Plan. Our reasons for this are:

- the ERA's reasoning is inconsistent with its reasoning in both the ATCO and Goldfields Gas Pipeline access arrangement decisions made in late 2019;
- EMCa's econometric modelling and analysis does not provide a measure of productivity; and
- productivity analysis for gas distribution businesses is not necessarily reflective of productivity for gas pipelines and more recent data from the gas sector (which was not available for the AER's 2019 review relied on by the ERA) suggests that productivity cycles have turned, and 0.5% productivity per annum is no longer accurate.

The ERA's reasoning is inconsistent with the reasoning in its recent decisions for ATCO and Goldfields Gas Pipeline

The appropriate productivity factor to apply is zero, consistent with the reasons that the ERA determined in its recent final decisions for ATCO and Goldfields Gas Pipeline. In the recent ATCO Final Decision (November 2019), the ERA accepted productivity growth of zero on two bases:³⁴

- The ERA did not forecast that the scale of ATCO's operations would increase over AA5, and therefore the ERA considered that productivity improvements during AA5 due to economies of scale are unlikely.
- Most of ATCO's proposed capital expenditure for AA5 in its initial proposal was for network sustaining and network growth projects and structures and equipment, rather than strategic projects for enhancing the productivity and efficiency of its operations or reducing ATCO's operating cost structure.

We consider that these two circumstances also apply for DBP in AA5. Specifically, we have forecast stable, but slightly reduced, throughput (and significant reductions in capacity) over AA5 and therefore productivity improvements during AA5 due to economies of scale are unlikely. We also note the majority of our capex in AA5 (and particularly the capex accepted by the ERA in its Draft Decision) is "stay-in-business" capex required to ensure the safety and integrity of the DBNGP.

While we are forecasting no material growth over AA5, the ERA has expected us to achieve material productivity gains. This is a significant change in reasoning, but could reflect the uncertainty that the ERA had in our capacity and throughput forecast in the Draft Decision. We have provided further information on these matters in this revised Final Plan.

We did propose one project in AA5, specifically \$5.2 million (or 3% of the total capex we proposed) on IT Enabling initiatives where the driver was to improve our business intelligence, data management and digital capabilities. The savings we expected this to deliver in AA5 are outlined at 1.3.4 above. However, the ERA rejected this program in its Draft Decision stating we:

³⁴ See: <https://www.erawa.com.au/cproot/20818/2/GDS---ATCO---AA5---Final-Decision---Public-FINAL-Version.PDF>, [522] to [532]

did not adequately demonstrate that the benefits of the proposed initiatives are likely to be sufficient to justify DBP’s proposed capital expenditure for the ‘IT enabling’ business case for AA5.³⁵

A summary of the ERA’s view on productivity for the gas service providers is found in Table 1.8 below.

Table 1.8: Comparison of ERA’s decision on productivity for DBP and other gas providers

	ERA Final Decision for GGP (Dec 2019)	ERA Final Decision for ATCO AA5 (Nov 2019)	ERA Draft Decision for DBP (Aug 2020)
Productivity adjustment	0%	0% Scale of ATCO’s operations over the AA period not forecast to increase Most of capex for network sustaining and network growth, rather than strategic projects for enhancing productivity and efficiency of operations or reducing operating cost structure	0.5% Forecast throughput and capacity in line with 2020 levels Most capex is ‘stay-in-business’ capex required to maintain the safety and integrity of the DBNGP
EGWWS industry premium	0%	0% A business with no productivity growth is unlikely to sustain real wage growth	0% Accepted our application of zero in line with recent decisions for ATCO and GGP

1.3.7.3. EMCa’s econometric analysis does not provide a measure of productivity

In its Draft Decision the ERA noted that EMCa undertook a productivity analysis using a log-log regression for AA4 and found that we would have achieved a productivity improvement averaging 0.5% per annum during that period. On this basis, the ERA appears to suggest that this improvement should also be achievable in AA5.³⁶

Productivity growth is the growth in outputs relative to the growth in inputs. The analysis undertaken by EMCa is a regression which involves only opex (an input) over time. Therefore, EMCa’s analysis shows an average trend in opex growth, but cannot be considered an analysis of productivity, nor can it provide an indication of future productivity gains.

Further, EMCa’s regression analysis is conducted with only four data points. With an intercept and a time trend, this means it has two degrees of freedom in the regression, and as such, any results are unreliable. In particular, the relevant data are time series data and potentially subject to issues such as autocorrelation or non-stationarity which EMCa does not (and cannot, with only four data points) test for. Therefore, the analysis is not relevant and should not be taken into account by the ERA in determining a productivity adjustment.

1.3.7.4. The ERA has overstated potential opex savings related to capex

At section 1.3.4.1 above, we outlined all opex related to capex in our proposal and show that we actually expect cost increases to exceed cost savings in AA5 by around \$6 million, however have chosen not to apply for any opex step changes. The ERA has overstated potential opex savings

³⁵ ERA Draft Decision, [736]

³⁶ ERA Draft Decision, [284]

related to capex in referring to the potential opex savings related to capex as a reason for applying a productivity factor of 0.5% per annum in AA5. In fact, the opex related to capex would support a negative productivity adjustment having the impact of increasing opex in AA5.

Productivity measures for the electricity sector and gas distribution are not applicable to gas pipelines and more recent data suggests 0.5% is no longer accurate

In its Draft Decision the ERA cited the 2019 AER report on productivity in the electricity sector, which concluded that 0.5% per annum is a suitable forecast of expected productivity, noting this was also relevant to gas distribution businesses.³⁷

Firstly, we note that measures of productivity for the electricity sector and gas distribution are not necessarily applicable to gas transmission pipelines. In fact, the ERA summarising technical advice of EMCa on our IT Enabling initiatives stated:³⁸

DBP's approach and the resulting benefits are based on Australian Gas Network's distribution experience and 'rule of thumb' assumptions of the benefits (costs avoided) of pursuing the planned initiatives, which in EMCa's view, do not translate to management of a linear transmission pipeline.

There are real differences in the management of a linear transmission pipeline compared to a meshed distribution network that are likely to impact on potential productivity gains. However, there are insufficient data available to undertake robust productivity analysis for gas transmission pipelines. In particular, the variability and individual characteristics across gas transmission pipelines may also produce misleading results when pooling data. This deficiency has been recognised by the AER in its reviews of regulated gas transmission pipelines too.³⁹

The gas distribution results presented in the AER report dated from 2016 and earlier. More recent evidence suggests that these figures are now out of date and that productivity growth rates in the gas sector have cycled downwards. This is shown in Figure 1.1 below for the Electricity Gas, Water and Wastewater (EGWWS) sector, where the green lines indicate the business cycles the ABS has determined for this sector.

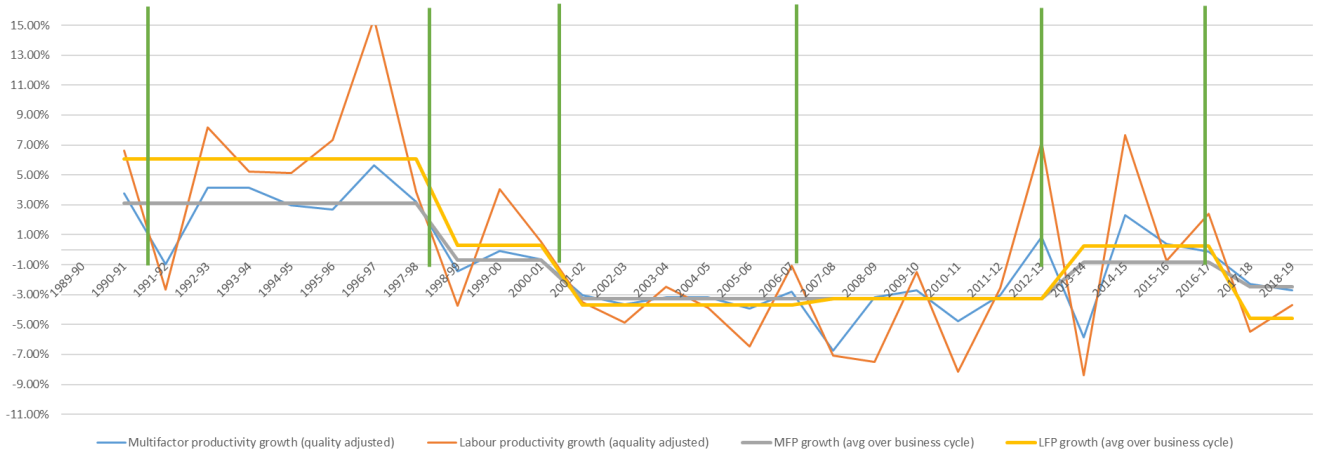
³⁷ ERA Draft Decision, [285]

³⁸ ERA Draft Decision, [736]

³⁹ See AER, Roma to Brisbane and Amadeus Access Arrangements:

<https://www.aer.gov.au/system/files/AER%20-%20Draft%20decision%20Amadeus%20Gas%20Pipeline%20access%20arrangement%20-%20Attachment%207%20-%20Operating%20expenditure%20-%20November%202015.pdf>, p. 19.

Figure 1.1: Productivity growth for the EGWWS sector



Source: ABS Cat no 5260.0.55.002 Estimates of Industry Multifactor Productivity, Australia Tables 1 and 6

While we recognise that the EGWWS sector is wider than gas or electricity, the AER has noted that ABS labour productivity results follow a similar pattern to its own opex partial factor productivity measures.⁴⁰ We also note that the EGWWS sector has been the source of the premium for wages in the past, and we therefore consider the data is also relevant for productivity.

The AER has noted that it is desirable to consider whole business cycles, including to avoid year-on-year volatility.⁴¹ The data show a drop in average labour productivity growth from 0.2% per annum in the last cycle to -4.6% per annum in the current cycle (with similar drops in multifactor productivity growth). This suggests the upward trend which the AER observed starting in 2012 that caused it to shift in its 2019 report from using 0% as the productivity adjustment factor to using 0.5% has now run its course and that future growth is now lower; just as it was in previous cycles before 2012.⁴²

A further issue is that most of the studies considered by the AER uses time series data dating back to the early 2000s, and sometimes earlier. In an industry which has undergone significant reform, like energy, the potential for structural breaks in the productivity data is significant. The Productivity Commission has recently noted:⁴³

Similarly, the electricity, gas, water and waste services industry, which was a target of microeconomic reforms through the 1980s and 1990s and made a strong contribution to labour productivity at that time, has since given up those gains and overall detracted from productivity growth during the period after 2005.

This conclusion from the Productivity Commission suggests caution should be exercised before making use of data prior to 2005 to estimate future potential productivity growth, as this may represent a paradigm of growth potential which has now passed.

⁴⁰ AER Opex Productivity, p.61.

⁴¹ AER Opex Productivity, p.79.

⁴² AER Opex Productivity, p.61.

⁴³ See Productivity Commission, 2020, PC Productivity Insights, February 2020, p20, available from REF. Note also p18 and 19 of the same publication, which suggest that productivity growth slowdown is widespread throughout the economy, and also globally.

With this in mind, we commissioned research from ACIL Allen for gas distribution networks which is provided at Attachment 7.6. The results from the ACIL Allen work indicate productivity in the range of 0-0.4% as summarised in Table 1.9 below.

Table 1.9: ACIL Allen productivity growth results

	Stochastic Frontier Analysis	Feasible Generalised Least Squares
Customer numbers and energy outputs	0.11%	0.02%
Customer numbers and mains length outputs	0.11%	0.39%

Source: ACIL Allen, 2020, Opex Partial Productivity Study Tables 5.5 to 5.8 (see Attachment 7.6)

In particular, the customer number and energy models range from 0.02% to 0.11% and the customer number and mains length models range from 0.11% to 0.39%. From this, ACIL Allen concludes that the average of 0.17% over all four models is the robust result. We also note the concerns of the AER that least squares models in particular are likely to include elements of catch-up growth rather than just the growth of the efficiency frontier which is the proper concern of the productivity factor employed in regulation.⁴⁴ For this reason, the 0.39% for the FGLS model in Table 6 of the ACIL Allen review should be viewed with some caution.

The latest results from ACIL Allen suggest the best estimate of future productivity gains would be 0.17%, which if applied to AA5 opex forecast using the base year approach excluding government charges would result in a \$2 million reduction to opex as a result of productivity.

However, we note that the figures from gas distribution represent businesses with, generally, growing demand whilst our demand is falling. To the extent that data from gas distribution are relevant, therefore, it is only as an upper bound to potential productivity gains for the DBNGP. In considering all the information together we think the appropriate productivity factor to apply is zero.

1.3.7.5. Summary of response on productivity

The ERA has applied productivity adjustments equivalent to \$17 million (or 1.8% per annum) over AA5 comprising:

- A productivity factor of 0.5% (\$6 million);
- Accepting DBP’s proposal to absorb IT opex of \$9 million;
- A savings factor of 13% (or \$4 million) to the Turbine and GEA Overhaul program; and
- No compensation for achieving productivity gains by not applying the industry premium in its labour cost escalation.

For the reasons outlined above, gains arising from productivity are best reflected in the opex forecast for AA5 by:

- Accepting the increase of \$9 million related to IT opex be absorbed by DBP;
- Applying a productivity adjustment factor zero;

⁴⁴ AER Opex Productivity, p.45

- Removing the assumed saving factor of 13% to the Overhaul program for reasons set out in section 1.3.8 below; and
- Not applying the industry premium to labour cost escalation.

If the ERA determines to apply a productivity factor, all relevant adjustments to facilitate achieving that productivity factor should be made, including the IT opex increase of \$9 million and higher labour cost escalation of 0.88% reflecting the industry premium.

1.3.8. Turbine and GEA overhauls

Consistent with our Final Plan, we are forecasting \$30 million in AA5 to conduct the necessary gas turbine and GEA overhauls. This remains the best estimate of the costs of undertaking this work because:

- the forecast is based on more mature asset management information than was available during the AA4 determination, therefore we have greater confidence that the AA5 forecast more accurately represents the costs we will incur and there is less opportunity to underspend;
- the opex forecast already includes consideration of using overhauled swap machines, and is based on an optimised expenditure profile;
- the method used to develop our forecast is prudent and reasonable, as acknowledged by the ERA and EMCa;
- the unit rate assumptions are reasonable and efficient, as acknowledged by the ERA and EMCa; and
- our forecast has been arrived at on a reasonable basis, represents the best estimate possible in the circumstances, and therefore meets the requirements of NGR 74.

Based on our assessment of asset condition, manufacturer guidance, opportunity for optimisation, and experience during AA4, we do not agree with the ERA's Draft Decision to apply a 13% savings factor to our forecast costs for turbine and GEA overhauls, which reduces the total cost by \$4 million. More detail can be found in the Addendum to the Turbine and GEA Overhauls Business Case DBP05 at Attachment 7.2A.

1.3.9. Change in capitalisation

We have included \$10 million of asset inspections, other minor pipeline works, health and process safety initiatives as opex from AA5. This is \$0.1 million below our Final Plan and \$0.3 million above the ERA's Draft Decision.

As noted in section 1.3 above, we have updated our AA5 forecast for Asset Management and Process Safety to align with the costs that have been incurred for these activities in AA4. The updated costs for these activities is shown in the tables below and can be considered to reflect the best possible estimate in the circumstances.

Table 1.10: AA4 Process Safety spend (\$'000 June 2019)

	2016	2017	2018	2019	2020	Total AA4	Average annual AA4
Process Safety	14.0	25.0	-	-	-	39.0	8.0

Table 1.11: AA5 forecast Process Safety spend (\$'000 June 2019)

	2021	2022	2023	2024	2025	Total AA5
Process Safety	8.0	8.0	8.0	8.0	8.0	40.0

Table 1.12: AA4 Asset Management spend (\$'000 June 2019)

	2016	2017	2018	2019	2020	Total AA4	Average annual AA4
EOP Subsequent costs	345.0	318.0	56.0	675.0	256.0	1,650.0	330.0
Management of change	373.0	204.0	202.0	206.0	200.0	1,184.0	237.0
Gas Measurement	-	-	-	-	-	-	-
Total Asset Management	718.0	522.0	258.0	881.0	456.0	2,834.0	567.0

Table 1.13: AA5 forecast Asset Management spend (\$'000 June 2019)

	2021	2022	2023	2024	2025	Total AA5
EOP Subsequent costs	330.0	330.0	330.0	330.0	330.0	1,650.0
Management of change	237.0	237.0	237.0	237.0	237.0	1,185.0
Gas Measurement			50.0			50.0
Total Asset Management	567.0	567.0	617.0	567.0	567.0	2,835.0

All other capex to opex business cases remain unchanged from our Final Plan, which is also consistent with the forecast spend accepted in the ERA's Draft Decision.

1.4. Summary

Our revised Final Plan opex forecast for AA5 is \$441 million, which is \$20 million less than the ERA's Draft Decision. We believe our approach to forecasting opex incorporates feedback from our customers and stakeholders and reflects the ERA's preferred approach wherever possible.

A summary of our revised opex forecast is provided in Table 1.14 below.

Table 1.14: Revised Final Plan Opex Forecast (\$'000, December 2020)

	2021	2022	2023	2024	2025	Total AA5
2019 Base year opex	62,405.1	62,405.1	62,405.1	62,405.1	62,405.1	312,025.6
Step changes	-	-	-	-	-	-
Input cost escalation	364.2	547.9	732.6	918.4	1,105.3	3,668.5
Output growth	-	-	-	-	-	-
System use gas	19,082.0	18,762.1	18,660.5	14,132.4	13,834.7	19,082.0
Turbine and GEA Overhauls	8,902.1	7,588.3	7,604.7	4,325.5	2,064.2	30,484.8
Change in capitalisation	2,274.0	1,888.7	2,165.1	2,154.3	1,864.8	10,346.9
Total forecast opex	93,027.4	91,192.0	91,568.1	83,935.8	81,274.2	440,997.4