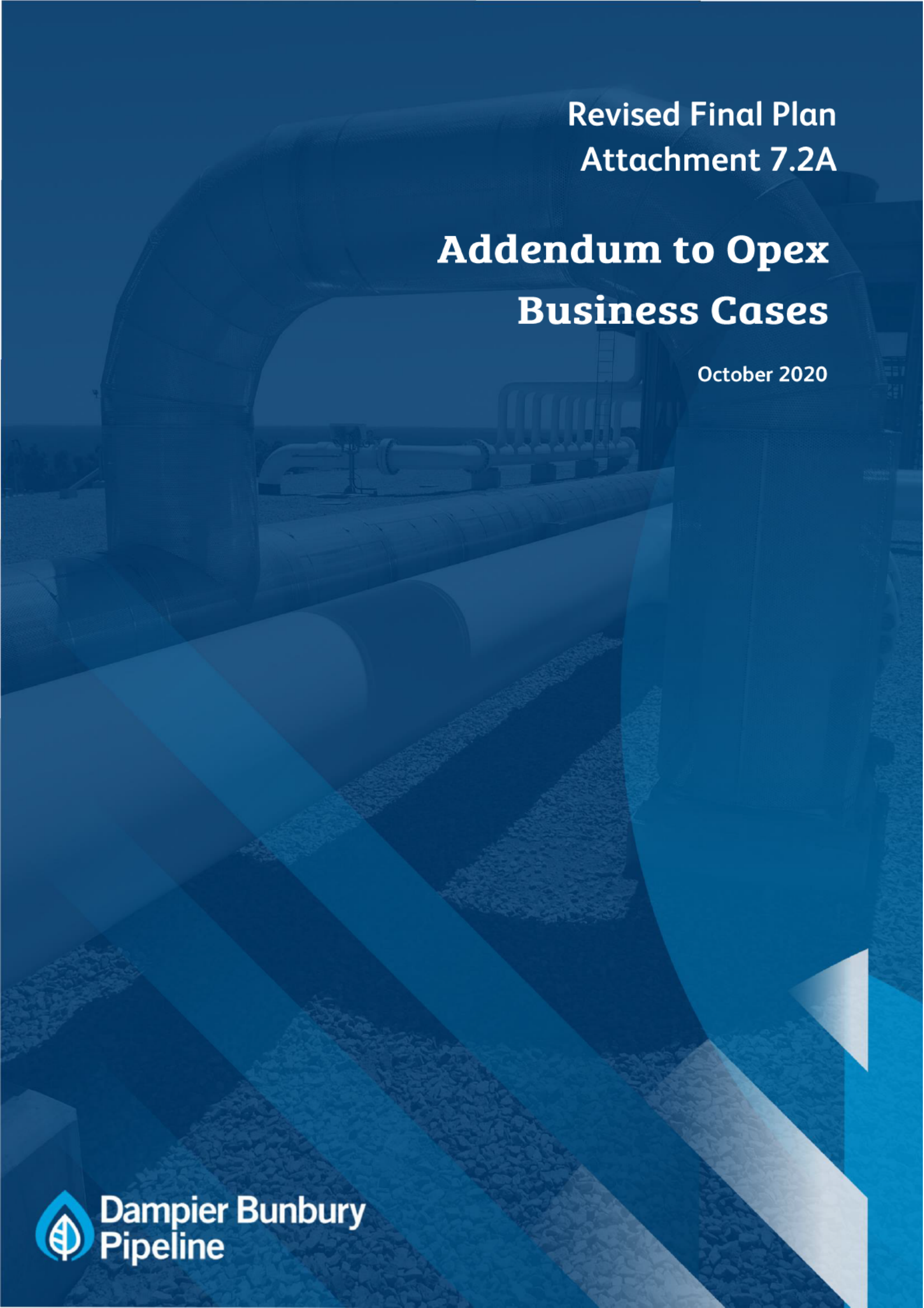
Revised Final Plan
Attachment 7.2A

Addendum to Opex Business Cases

October 2020



Dampier Bunbury Pipeline

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DBP05 Gas turbines and GEA overhauls

Project Summary	
Project name	Gas turbines and GEA overhauls
Risk	High
Budget category	Operating expenditure (Opex)
Amendments to original business case	The original business case 'Gas turbines and GEA overhauls – DBP05' (prepared in Q3/Q4 2019) estimated $29.7 million in opex in the 2021-25 access arrangement period (AA5) to overhaul eight gas turbines and 20 gas engine alternators (GEA). Gas turbines and GEAs generate the power required either as a primary energy source for our compressors, or as backup power for battery charging. These assets are therefore essential to the continued operation of our compressor stations and the provision of pipeline services. We submit that $29.7 million remains the best estimate for the AA5 period. Our gas turbines and GEA overhauls forecast is based on: • a proactive maintenance approach; • manufacturer recommendations; • the condition of each of our gas turbines and GEAs; and • the expected run time of each based on our expectation of demand and pipeline utilisation. **Gas turbines** We propose $24.7 million to cover seven planned gas turbine overhauls at various compressor stations (CS), plus one premature (unplanned) failure. Each of the planned overhauls are on turbines with current run hours between ~13,000 and ~30,000. The manufacturer's recommended threshold before performance degradation occurs and a major overhaul is required is 30,000 to 35,000 (depending on the unit). We expect these turbines to reach their overhaul threshold during the AA5 period. The fleet is managed so that no more than three units can reach their overhaul threshold in any given year. **GEAs** We also propose $5.0 million for [redacted] GEA overhauls. GEAs need to be serviced at regular intervals and to undergo minor overhauls at 12,000 and 24,000 hours, and major overhauls at 48,000 and 52,000 hours. Of the [redacted] required overhauls, [redacted] require major overhauls, and [redacted] are only minor. The ERA has determined the gas turbine and GEA overhaul actions are prudent and the unit rates are efficient. However, the ERA's technical consultant (EMCa) has assumed a further 13.2% reduction can be achieved based on its view that our forecast is not the best estimate and that savings made during the AA4 period can be repeated (albeit to a lesser extent) during AA5. We submit that EMCa's assumed savings are not achievable, nor has EMCa's estimate been arrived at on a reasonable basis. Our forecast already includes assumptions on machine swaps and expenditure optimisation. Improvements in the rigour of our forecasting approach for AA5 also means that there is considerably less opportunity to outperform the forecast than there was during AA4. Our AA5 forecast has been arrived at on a reasonable basis and represents the best estimate available in the circumstances. It therefore meets the requirements of NGR 74. It is not reasonable to substitute the original forecast, which the ERA and EMCa acknowledges is based on sound industry practice and reasonable unit rates, with an assumption that further savings can be made based on the unique circumstances of AA4. We therefore maintain that our original forecast for the gas turbines and GEA overhauls during the AA5 period remains the best estimate and is 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 delivering pipeline services.
Estimated cost	The estimated total opex investment of gas turbine and GEA overhauls in AA5 is $29.7 million. The total cost in each year is shown in the table below.

$'000 June 19	2021	2022	2023	2024	2025	Total AA5
Opex	8,700.0	7,400.0	7,400.0	4,200.0	2,000.0	29,700.0

Basis of cost estimates	All costs are presented in real unescalated dollars of June 2019 unless otherwise stated.
Consistency with NGR	This operating expenditure conforms with the following National Gas Rules (NGR): **NGR 91(1)** – As agreed by the ERA and EMCa, our proactive overhaul of gas turbines and GEAs maintains the safety, integrity and reliable delivery of gas along the DBNGP. Overhauls of the turbines and GEAs are being conducted in line with the manufacturer's recommendations and scheduled to minimise the risk of failure and/or significant downtime. As a result, the opex is 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 delivering pipeline services. **NGR 74** – We contend the forecast has been arrived at on a reasonable basis as it considers historical unit rates and manufacturer's advice, incorporates expenditure optimisation assumptions, and is founded on a detailed assessment of asset condition and past operating experience. The forecast already includes assumptions on machine swaps and program optimisation, and the unit rates have been approved in principle by the ERA and EMCa. The forecast therefore provides the best estimate in the circumstances and meets the requirements of NGR 74.
Project Approval	
Prepared by:	Salman Azhar, Senior Rotating Equipment Engineer Henry Muharemovic, Head of Mainline – Transmission Operations
Reviewed by:	Hugo Kuhn, Head of Engineering
Approved by:	Tawake Rakai, GM Transmission Asset Management
Other Relevant Documents	
This addendum should be read in conjunction with: • the original business case 'Gas turbine and GEA overhauls - DBP05', which was provided to the ERA on 23 January 2020 as Attachment 7.2 to the Access Arrangement (AA5); and • our response to information request EMCa40 provided on 1 April 2020.	

1.1 Original business case

Our original business case 'DBP05 Gas Turbines and GEA Overhauls' included opex of $29.7 million in AA5. The forecast allowed for eight gas turbine ([redacted] planned and [redacted] unplanned) overhauls at a cost of $24.7 million, and [redacted] GEA overhauls at a cost of $5.0 million.

The forecast was developed by identifying the turbines and GEAs that are expected to reach the threshold of run hours during the AA5 period whereby an overhaul is required. The overhaul threshold is specified by the manufacturer, and represents a reasonable estimate of the number of run hours after which performance degradation can be expected to occur and the unit should be subject to proactive maintenance and refurbishment. Overhauls can be major or minor, and vary depending on the model of the turbine/GEA unit.

The unit rate for overhauls was also prepared based on manufacturer's recommendations, coupled with an assessment of historical unit costs.

The AA5 forecast is $5.7 million higher than actual capital expenditure of $24.0 million during AA4. This is due to more machines reaching their overhaul thresholds during AA5, the higher unit costs for overhauling a [redacted] versus the [redacted] units, and the additional work required on the [redacted] units due to findings from investigations into premature failures.

In our proposal we considered the following three options:

- Option 1 – Maintain expenditure at AA4 levels;
- Option 2 – Move to a replacement on failure policy; and
- Option 3 – Proactive overhaul based on the volume and activities identified in the Asset Management Plan.

We recommended Option 3 as it appropriately mitigates the risk identified under our Operational Risk Framework, and manages the asset consistent with asset management principles and the relevant manufacturers' specification.

1.2 ERA Draft Decision

In its Draft Decision, both the ERA and its technical expert (EMCa) find DBP's asset management approach, and therefore forecast volumes to be prudent, and the unit cost to be reasonable[1].

The ERA (in line with EMCa's advice) accepts that:

- DBP's approach to managing its gas turbine fleet is reasonable and in line with good industry practice;
- the forecast cost difference between AA4 and AA5 is reasonable;
- the method used to determine when each individual turbine is overhauled is prudent; and
- the calculation of and resulting unit cost is efficient.

Despite finding the forecast activity prudent and the estimated costs efficient, EMCa considers our forecast does not represent a 'best estimate' of the required expenditure. EMCa provides advice to the ERA that:

> *While we consider that DBP's approach to managing its GEA and Turbine overhaul costs is prudent, we consider that its forecast does not represent a 'best estimate' of the required expenditure. In AA4, DBP spent $6.1m (in $2019 terms) less than the allowance for such overhauls, a saving of 26%.*
>
> *At our onsite meeting, DBP explained measures that it took to achieve this, which included obtaining overhauled 'swap' machines at lower cost and some overhaul costs being offset by insurance claims. DBP also explained the factors that can lead it to be able to extend run hours in some circumstances. From those discussions, we consider that it is likely that DBP will again find that it has opportunities to optimise the management of its fleet, and*

[1] ERA Draft Decision, [299] and [308]

> *its overhaul options and unit costs to achieve savings that are not incorporated in its forecast.*
>
> *Not all measures that DBP took in AA4 are repeatable, or at least not to the same extent, however we consider that DBP will find expenditure optimisation opportunities. Accordingly, we propose adjusting this component of DBP's forecast on the assumption that it will achieve 50% of the proportionate savings achieved in AA4. This equates to a 13.2% reduction to its proposed forecast.* [2]

Based on this advice the ERA *considers that there is scope for savings to be made in the proposed expenditure for GEA and Turbine overhauls in AA5 as occurred in previous access arrangement periods including AA4.*[3]

Further, the ERA states:

> *Based on the information provided, the ERA is not satisfied that the proposed expenditure of $30.34 million on GEA and turbine overhauls is consistent with rule 91(1) of the NGR and would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.*[4]

Consequently, the ERA has reduced our opex forecast by 13.2%[5], as per EMCa's recommendations.

1.3 Our response

We submit that the original forecast of $29.7 million to conduct the necessary gas turbine and GEA overhauls is consistent with NGR 91(1) and remains the best estimate of the costs of undertaking this work. This is 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.

[2] EMCa Technical Review, [422] to [424]

[3] ERA Draft Decision, [312] and [313]

[4] ERA Draft Decision, [314]. The quoted $30.34 million reflects our $29.7 million forecast plus cost escalation into December 2020 dollars.

[5] Plus, a further $160,000 adjustment for the ERA's forecast of inflation and labour cost escalation.

Based on our assessment of asset condition, manufacturer guidance, opportunity for optimisation, and experience during AA4, we do not consider that the magnitude of savings (13.2%) hypothesised by EMCa and ultimately adopted by the ERA is achievable during AA5.

As recognised by EMCa, not all measures that DBP took in AA4 are repeatable, or at least not to the same extent.[6] The 26% lower-than-forecast expenditure during the AA4 period was achieved via a combination of insurance benefits, foreign exchange savings and the availability of swap machines.[7] The AA4 bottom-up forecast for the gas turbine and GEA overhauls was also developed on less mature asset management information than currently exists, therefore part of the AA4 underspend may be attributed to over estimation in the first instance.

We acknowledge there may be some opportunity to reduce expenditure during the AA5 period including using swap machines or if circumstances allow us to reduce run times. These have been factored into our $29.7 million forecast accordingly. However, as demonstrated during AA4, the ability to find further cost savings is also subject to numerous factors outside of our control (such as foreign exchange rates and unplanned failures).

By extension, making the assumption DBP will be able to achieve 50% of the proportionate savings in AA4 does not appear to be a reasonable basis on which to forecast savings going forward, and would therefore result in a forecast that is not consistent with NGR 74. We submit our approach, which is to arrive at a forecast based on the best asset data available in the circumstances, only factoring in cost savings within our control (swaps and run times), results in a more reasonable forecast.

These matters are discussed further below.

1.3.1 Improved asset information and forecasting accuracy

The information used to inform the AA5 forecast represents a more mature suite of asset data and practical experience of how machines can be swapped and run times can be adjusted to optimise expenditure. Gas turbine and GEA overhauls is now an established ongoing program of maintenance works built on a strong knowledge of our cost base and asset management practices.

Incremental improvements have been made to our investment governance process over the course of AA4. We have taken on board feedback during the AA4 determination process (notably from EMCa) regarding the limitations of our forecasting approach.[8] For example, when developing the AA5 forecasts we have incorporated more clearly defined project scopes, provided options analyses, and conducted a more detailed sense check of deliverability.[9] Though we are still seeking further improvements over AA5, our business cases, data analysis capabilities, and asset management strategies are more robust than they were in AA4.

[6] EMCa Technical Review, [424]

[7] It should be highlighted that even though CS1 appears to be the lowest utilised compressor, its inclusion is because it includes a swapped unit that was already close to the limit of operational hours after which it would be required to be replaced. On this basis it is required to be replaced despite being recently swapped to reduce overall capex in the AA4 period.

[8] ERA Draft Decision [465]

[9] The lack of these was a criticism highlighted by EMCa during its AA4 review.

These improvements are reflected in the improved accuracy of our forecasts. As noted by EMCa during this (AA5) determination process:

> *We consider that the management of run-hours on a per-site and per-machine basis is prudent with significant operational history to support decision making. It is reasonable to expect that the forecast number of engines will reach the required run-hours during AA5.*
>
> *We also consider that the forecast expenditure on GEA overhauls during AA5 is reasonable. The forecast unit costs are only marginally higher for AA5 than for AA4, and within reasonable forecasting accuracy.*[10]

We have worked extensively on projects included as part of the AA5 submission to provide more accurate estimates and information. We submit the bottom-up build used to develop the gas turbine and GEA overhaul opex forecast is more robust and has a greater degree of certainty than achieved during the AA4 review. We have considered opportunities to find synergies across the entire portfolio of capex and opex projects, as well as to defer projects to future years where safe and prudent to do so. This results in significantly less opportunity to find further efficiencies or savings.

1.3.2 Expenditure optimisation assumed in the turbine and GEA overhauls forecast

We used a bottom-up method to develop our AA5 opex forecasts for the gas turbine and GEA overhaul program. This is more appropriate than the base year roll forward approach, as the volumes and types of overhauls (i.e. major or minor) vary between regulatory periods. If a base year roll forward approach were used, we would see windfall gains and losses between periods. This would also adversely impact the incentives under our proposed E-Factor regime.

Our AA5 forecast is based on a proactive maintenance approach, manufacturer recommendations, the condition of each of our gas turbines and GEAs, and the expected run time of each based on our expectation of demand and pipeline utilisation. Considering all of these factors, we have estimated costs to cover the following:

- [redacted] planned gas turbine overhauls, comprising [redacted] overhaul at each CS1, C2 and C3, and [redacted] overhauls at each CS6 and CS8;
- [redacted] early gas turbine failure (within the manufacturer's warranty period); and
- [redacted] GEA overhauls.

Each of the planned gas turbine overhauls are on turbines with current run hours between ~13,000 and ~30,000. The manufacturer's recommended threshold before performance degradation occurs and a major overhaul is required is 30,000 to 35,000 (depending on the unit). We expect these turbines to reach their overhaul threshold during the AA5 period. The fleet is managed so that no more than three units can reach their overhaul threshold in any given year.

GEAs need to be serviced at regular intervals and to undergo minor overhauls at 12,000 and 24,000 hours, and major overhauls at 48,000 and 52,000 hours. Of the [redacted] required overhauls, [redacted] require major overhauls, and [redacted] are only minor.

In developing our forecast, we used the asset management approach outlined in our Asset Management Plan to determine which gas turbines and GEAs require either major or minor

[10] EMCa Technical Review, [414 and 415]

overhauls. Our plan is optimised across the program and across assets to reduce costs to the extent possible. Our forecast includes:

- consideration of our ability to swap machines, noting that the low-risk stations we swapped out during AA4 are now approaching their operating thresholds and should not be swapped again;
- an optimised delivery schedule, whereby we bundle works to undertake other programs / maintenance while our technicians are at each location. For example, when we do gas turbine exchanges, we will install new equipment (as necessary), change / upgrade gearboxes, change seals, check oil and inspect all other assets at the compressor station;
- an assumption of only one premature failure over the AA5 period, compared with three in AA4. As indicated in response to information request EMCa40, we implemented overhaul scope design changes in consultation with the vendor in order to reduce the likelihood of rotor disk cracks and failure. As a result, we have only forecast one premature failure (and associated swapped asset efficiencies / insurance claim recovery) during AA5; and
- an assumption of the prevailing foreign exchange rates.

1.3.3 Limited opportunities for further efficiencies

While we accept the principle of reducing the overall cost of service where practicable, efficiencies and expenditure optimisation outcomes have already been built into our overall AA5 opex forecast and unit costs. For example:

- where we have achieved operational efficiencies in AA4 in relation to ongoing, routine maintenance under annual programs of work, we included these in the base year roll forward opex forecast method. This will in-turn benefit customers in AA5 and several future periods as they continually lower the benchmark costs;
- where we have achieved operational efficiencies in AA4 in relation to ongoing routine maintenance for less consistent / predictable programs of work (such as the gas turbine and GEA overhauls), we have included these in the unit rate used to develop the bottom-up forecast; and
- where we expect to achieve operational efficiencies in AA5 as a result of specific programs of work, for example in the case of our 'One IT' program of work, we have included these explicitly in the associated business case by not adding associated step changes to our opex forecast.

For the gas turbine and GEA overhauls program, we have already achieved the 'quick-wins' available through governance, planning and contracting improvements. Therefore, while we have achieved significant cost reductions over the AA4 period[11], similar savings forecast through swaps and deferrals are not expected to occur in AA5 and beyond. To achieve further efficiencies would require targeted investment in process improvement and automation, and these are heavily dependent on increasing IT investment.

It is also important to highlight that approximately $0.9 million (15%) of the saving during the AA4 period was due to favourable foreign currency exchange rates. New turbines/GEAs and components are purchased from the United States of America and Europe and imported into Western Australia as required. It is not possible to predict the impact of foreign exchange rates with any certainty,

[11] EMCa's analysis showed DBP would have achieved a productivity improvement averaging 0.5 per cent per year compounding over AA4.

therefore we do not consider it prudent to assume the same favourable scenario will reoccur during AA5.

In summary, while we will endeavour to deliver our gas turbine and GEA overhauls program for the lowest sustainable cost, we do not consider a 13.2% deferral of expenditure and associated critical maintenance (as proposed by EMCa) is the best possible forecast available in the circumstances.

1.3.4 DBP's forecast meets the requirements of NGR 74

As noted above, the ERA and its technical experts found DBP's asset management approach with regard to gas turbines and GEAs to be prudent, and the unit cost to be reasonable. Despite this, the ERA has determined DBP has scope to achieve further savings of 13.2% based on DBP achieving reductions in previous AA periods, including AA4.

We consider that the ERA's top-down reduction is inconsistent with NGR 74 as it has not been arrived at on a reasonable basis and does not represent the best forecast or estimate currently possible. This is because:

- the top-down reduction does not appear to recognise that past efficiencies and opportunities to achieve further expenditure optimisation has already been factored into the estimated costs of delivering the gas turbine and GEA overhauls program, as well as the broader AA5 opex forecast;
- it is not industry practice, nor realistic, to achieve further significant operational cost savings (beyond those already built into the forecast) in the absence of clear technological or other overt drivers; and
- EMCa's forecast reduction does not appear to have been based on an assessment of asset condition, economic environment, risk, forecast error or identification of specific opportunities for deferrals. Rather, the 13.2% reduction seems to be based on assuming that the circumstances during AA4 (or similar) may reoccur and making the further assumption that DBP will be able to achieve half of the benefit. We do not consider this set of assumptions is a reasonable basis on which to develop a forecast and we do not agree that it would result in a better forecast than the one proposed by DBP.

The ERA's reduction will not allow DBP to recover at least its efficient costs, and has the potential to incentivise implementation of cheaper options in the short-term that are inconsistent with achieving the long-term lowest sustainable cost. It is therefore inconsistent with the National Gas Objective (NGO) and revenue and pricing principles (as set out in the National Gas Law).

Conversely, the forecast provided by DBP is consistent with the NGO, NGR 74 and 91, and the revenue and pricing principles, because:

- there is little scope for further efficiencies (i.e. doing the same volume of work at a lower unit cost) in the AA5 period. The proposed scope of work required is necessary to achieve the lowest sustainable cost of maintaining the assets and is accepted good industry practice, therefore meeting the requirements of NGR 91; and
- the forecast has been arrived at on a reasonable basis as it considers historical unit rates and manufacturer's advice, incorporates expenditure optimisation assumptions, and is founded on a detailed assessment of asset condition and past operating experience. The forecast therefore provides the best estimate of costs in the circumstances and meets the requirements of NGR 74.

Moreover, the ERA has assessed DBP's estimation processes to be adequate, volumes to be prudent, and unit cost to be reasonable. It therefore follows that the DBP forecast has been arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances.

1.4 Summary

1.4.1 Estimating efficient costs

Gas turbines

As described in the original business case, for gas turbine overhauls the reflection of a three year average actual cost incurred in AA4 has not been possible due to the impact on the average unit rate of the overhauls completed within manufacturer's warranty and the impact of favourable foreign exchange rates. For AA5, the unit costs have instead been estimated based on the most recent historical cost incurred for the same or a similar program of work, [redacted]

Table 1 summarises the total volumes and unit costs for gas turbine overhauls in AA5.

Table 1: Gas turbine overhauls cost estimate ($'000 June 2019)

	2021	2022	2023	2024	2025	Total
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total (volume)						
Total (cost)	**7,700.0**	**6,400.0**	**6,400.0**	**3,200.0**	**1,000.0**	**24,700.0**

GEA overhauls

As described in the original business case, for GEA overhauls the use of a three-year average actual cost incurred in AA4 has been used.

[redacted] supply the equipment for this program under a preferred supplier contract. The costs are specific to the GEA that is being overhauled. The estimated cost for the equipment in AA5 is based on recent actual costs incurred, which reflect improved commercial terms recently secured.

Key assumptions which have been made in the cost estimation for gas turbine overhauls include:

- forecast rates for Australian dollar equivalent costs of equipment sourced in the United States of America or Europe are based on the two most recent purchases, reflecting recent exchange rates;
- none of the overhauls will be done under manufacturer's warranty; and
- internal costs are unchanged relative to recent actual costs incurred.

Table 2 summarises the total volumes and unit costs for gas turbine overhauls in AA5.

Table 2: GEA overhauls cost estimate

($'000)	2021	2022	2023	2024	2025	Total
Volume (units)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Unit Cost	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Total	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**5,000.0**

Total

Table 3 summarises the total unescalated costs by cost type for the Gas Turbines and GEA Overhauls capital works program. Table 4 shows the escalation applied to escalate the program to real dollars of December 2020, including labour cost escalation of 0.57% per annum.

Table 3: Gas Turbines and GEA overhauls cost estimate, by cost type

($'000)	2021	2022	2023	2024	2025	Total
Internal Labour	474.2	403.3	403.3	228.7	108.7	1,618.1
External Contractors/ Consultants	217.4	202.4	202.4	165.4	140.0	927.6
Materials & Services	7,951.3	6,746.6	6,746.6	3,781.2	1,742.5	26,968.1
Travel & Others	57.1	47.8	47.8	24.7	8.8	186.2
Total cost	**8,700.0**	**7,400.0**	**7,400.0**	**4,200.0**	**2,000.0**	**29,700.0**

Table 4: Gas Turbines and GEA overhauls total escalated cost real dollars December 2020

($'000)	2021	2022	2023	2024	2025	Total
Total unescalated ($ Jun 19)	8,700.0	7,400.0	7,400.0	4,200.0	2,000.0	29,700.0
Escalation	202.1	188.3	204.7	125.5	64.2	784.8
Total escalated ($ Dec 20)	**8,902.1**	**7,588.3**	**7,604.7**	**4,325.5**	**2,064.2**	**30,484.8**

1.4.2 Consistency with the National Gas Rules

The ERA and EMCa consider our proposed proactive overhaul program, based on the Asset Management Plan, is consistent with the requirements of NGR 91(1), specifically the proposed expenditure is:

- **Prudent** – Proactive overhaul of gas turbines and GEAs maintains the safety, integrity and reliable delivery of gas along the DBNGP by ensuring gas turbine units are available as required to meet customer demand and GEAs can provide for the power needs of the gas turbines and other assets at compressor stations and other facilities. The proposed expenditure can therefore be seen to be of a nature that would be incurred by a prudent service provider;

- **Efficient** – Our forecasts for when overhauls will fall due is based on the latest information on run hours, utilisation and expected throughput. The forecast cost per overhaul is based on historical costs and prevailing foreign exchange rates. Proactively overhauling represents a more cost-effective solution over the life of the asset than full replacement. The proposed expenditure can therefore be considered consistent with the expenditure that a prudent service provider acting efficiently would incur;

- **Consistent with accepted and good industry practice** – The proposed overhaul activity follows good industry practice of aligning overhauls with commitments embedded within the AMP and manufacturer's recommendations; and

- To achieve the **lowest sustainable cost of delivering pipeline services** – Undertaking the overhaul program in a proactive, planned and scheduled manner based on run hours forecast reduces total costs over the life of these assets, where unplanned failure could lead to damage requiring full replacement. Our contractual arrangements with the manufacturer are managed in line with our procurement policy to ensure the best commercial terms can be achieved.

The ERA's Draft Decision suggested our forecast was not consistent with NGR 74 as it expected we could further optimise our expenditure. However, we contend that the forecast has been arrived at on a reasonable basis as it considers historical unit rates and manufacturer's advice, incorporates expenditure optimisation assumptions, and is founded on a detailed assessment of asset condition and past operating experience. The forecast already includes assumptions on machine swaps and program optimisation, and the unit rates have been approved in principle by the ERA and EMCa. The forecast therefore provides the best estimate in the circumstances and meets the requirements of NGR 74.