Crane Borer Fleet Replacement

Business Case

26 November 2024

Part of the Energy Queensland Group

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1 EXECUTIVE SUMMARY

Title	Crane Borer Re-build and Replacement
DNSP	Energex and Ergon Energy Network
Expenditure category	☐ Replacement ☐ Augmentation ☐ Connections ☐ Tools and Equipment ☐ ICT ☐ Property ☒ Fleet
Identified need *(select all applicable)*	☐ Legislation ☐ Regulatory compliance ☒ Reliability ☐ CECV ☒ Safety ☐ Environment ☒ Financial ☐ Other Energy Queensland Limited (EQL) has a significant fleet of crane borers which are the primary platform for pole maintenance, and are critical to the safe, efficient, and reliable operation of the network and delivery of distribution services. EQL has identified that 54 crane borers are due for replacement in the 2025-30 period, which have not already been rebuilt. The Fleet Asset Management team is continuously reviewing fleet asset life cycles to optimise return on investment, with consideration given to on-going operating and maintenance costs, reliability, industry standards, market supply challenges, disposal value and emerging safety features. The relevant Australian Standards AS 1418 and AS 2550 prescribe that crane borer assets require major inspections at 10 years of service life to remain compliant. The current replacement strategy for crane borers is to: • 10YMI rebuild at 10 years on a new truck cab chassis for 97% of EQL carne borer assets to extend life of plant to 20 years. All remaining assets are replaced new. • Total service life (rebuilds) = 20 years plant, 10 years truck • Total service life (replacements) = 10 years plant, 10 years truck However, due to the current strategy, EQL is observing increased downtime and reduced reliability from aged and rebuilt assets. In addition, EQL has identified a lack of external resources available to complete rebuilds, and EQL is unable to complete the required number of rebuilds using internal resources.
Summary of preferred option	As part of our ongoing review of our fleet replacement approach, NPV analysis was undertaken which indicated that it was more efficient to pursue a full replacement approach for crane borers at 10 years, rather than continue with our previous approach of a 10 year rebuild to extend their life to 20 years. The preferred solution is Option A, which represents an appropriate balance of capital investment, operating cost reduction, and capital delivery risk. Proposal for FY26 and FY27: • Rebuild rate will remain at 97% • 10 years initial life • 10YMI on 97% EQL assets for FY26 and FY27 only, to extend life of plant to 20 years • Includes re-truck at 10 years Proposal for FY28 to FY30: • Rebuild rate 0% • Replace 100% new from FY28 to FY30 • No 10YMI • Note: For the period beyond FY30 it is expected to return to a mixture of both rebuild and replacements (50% rebuild rate)

Capital Expenditure	<table><tr><th>Year</th><th>2025-26</th><th>2026-27</th><th>2027-28</th><th>2028-29</th><th>2029-30</th><th>2025-30</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>35.1</td></tr></table> The capital expenditure forecast above sourced from the NPV model is provided in $m, 2022-23. See Appendix 2 for a conversion table which shows how this forecast is represented in the capex model. To reduce complexity, the NPV model was developed based on our most common CB assets.
NPV	+$0.7m (compared to counterfactual)
Benefits	The benefits of the preferred option include: • Reduction in whole of lifecycle costs • Increased employee safety • Increased employee productivity • Reduced operating costs and downtime • Minimise risk in procurement and minimise the lead time to source spare parts
Customer importance	Our fleet of vehicles are an essential enabler in supporting the investment, maintenance, and operational activities across our significant span of network assets for our customers and our community.

2 OVERVIEW

2.1 Our response to the AER Draft Decision

We submitted our Regulatory Proposal to the AER on 31 January 2024. The AER did not accept the forecast capex associated with our proposed crane borer strategy.

The AER's feedback included:

- *"we found Energex/Ergon Energy Network had not provided sufficient evidence for its proposed changes to the replacement strategies of elevated work platforms (EWP) and crane borers"*
- *"has not substantiated the benefits of its proposed changes to the replacement strategies for EWPs and crane borers"*
- *"provided an estimate of an average avoided days out of service per asset. However, it provided no evidence or modelling in support of these figures. As this forms the basis of the benefits calculated in the NPV model, we do not consider that Energex's/Ergon Energy Network's conclusion that its preferred option has the lowest negative NPV is justified"*

Our crane borer assets did not rely on our heavy vehicle (truck) downtime benefits calculation in the NPV model. The trucks for our crane borer assets are replaced (re-trucked) at the 10-year period as part of the 10-year major inspection. This differs to the current approach for our EWPs which are not replaced at the 10-year major inspection.

We are therefore resubmitting our business case for our crane borer assets. The capex for our preferred option (Option A) has not changed. We consider that the preferred option is the most prudent and efficient option, as it has the lowest NPV and is justified solely on it having the most efficient long-term operating and capital costs. In addition, our preferred option balances the moderate level of additional capex in the short term, against the supply constraints associated with both our rebuild partners and the availability of new build slots.

In the short term (FY26 and FY27) we will continue with our primary rebuild program (97%), before proposing to replace all assets at 10 years with new assets (FY28 – FY30). This will ensure we have adequate stock levels to maintain a rebuild program going forward. Our long-term strategy (post 2030) is to return to a more sustainable strategy of 50% rebuild and 50% replace new.

The capex of the preferred option is an additional $3.6m ($2022-23, total EQL) over the base case for the 2025-30 regulatory control period. This additional capex equates to approximately $1.5m ($2024-25, SCS) for Energex and $1.9m ($2024-25, SCS) for Ergon over the base case for the 2025-30 regulatory control period. We consider that this moderate increase in capex above the base case is justified not only on a cost-benefit basis, but also to ensure that we have the right mix of vehicles necessary to perform our core work.

2.2 Purpose and scope

The purpose of this business case is to provide a summary of EQL's proposed crane borer replacement program and to outline the options for the replacement of crane borers in the EQL fleet for the 2025-30 period. It provides a recommendation derived from analysis of different options as well as being informed by EQL's experience in operating crane borers over a number of regulatory periods.

The cost estimates included within this document are consistent with the unit costs included in the fleet model for the 2025-30 revised regulatory proposal.

2.3 Background

The fleet of crane borers is critical to the safe, efficient, and reliable operation of the network, being used to bore holes and stand poles. Figure 1 shows a crane borer (and EWP) operating in the field.

Figure 1: Example crane borer in operation

Crane borer assets have regulated maintenance requirements that are prescribed in relevant Australian Standards AS 1418 and AS 2550. They are manufactured to perform for a 10-year life, at which point they must undergo a "major inspection" otherwise known as a rebuild. This process requires the plant to be stripped down completely and inspected, with worn components refurbished or replaced as needed. This certifies the plant for a further 10 years, at the completion of which it must be either rebuilt again or replaced.

The Fleet Asset Management team is continuously reviewing fleet asset life cycles to optimise return on investment, with consideration given to on-going operating and maintenance costs, reliability, industry standards, market supply challenges, disposal value and emerging safety features.

The current replacement strategy for crane borers is:

- 10YMI rebuild at 10 years on a new truck cab chassis, 97% of EQL assets to extend life of plant to 20 years. All remaining assets are replaced new.
- Total service life (rebuilds) = 20 years plant, 10 years truck
- Total service life (replacements) = 10 years plant, 10 years truck

The optimal replacement criteria for each type of vehicle are set to maximise the efficiency of the asset and to ensure both lifecycle cost management and operational flexibility. The replacement program is also developed with consideration of relevant Australian and International Standards and Workplace Health and Safety legislation. It is recognised that capital and market constraints will from time-to-time mean some vehicles will not be replaced in accordance with replacement criteria. In these situations, replacement is prioritised based on safety requirements; then complying with Australian Standards; and then vehicle age, kilometres, and condition.

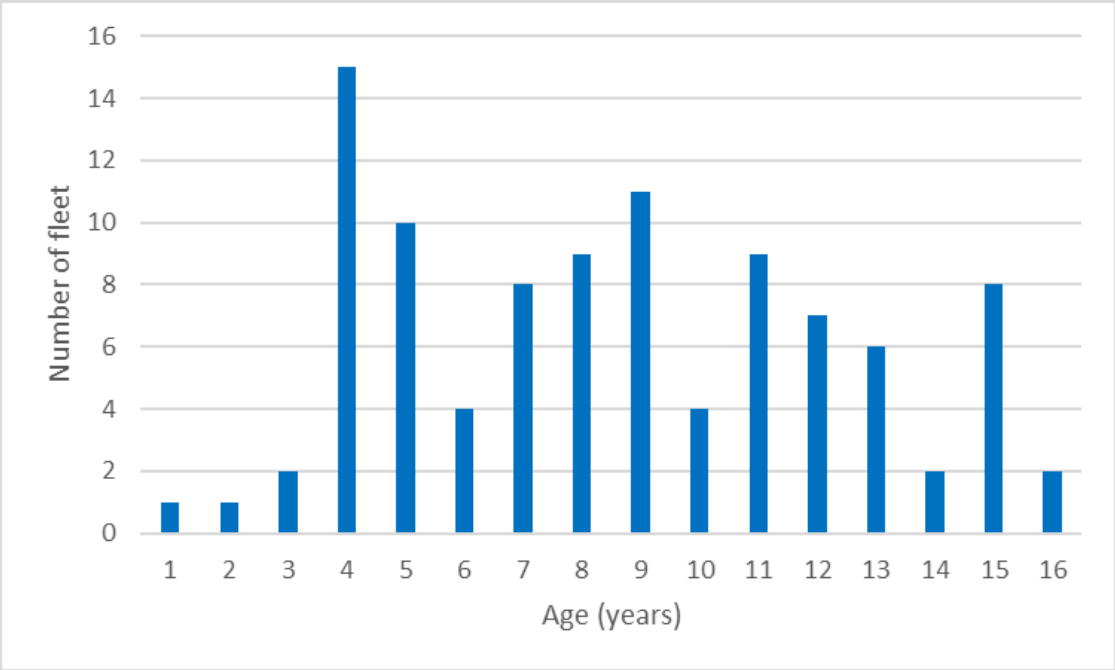
The Fleet Asset Management team is continuously reviewing fleet asset life cycles to optimise return on investment, with consideration given to on-going operating and maintenance costs, reliability, industry standards, market supply challenges, disposal value and emerging safety features.

2.4 Identified Need

The table below provides an overview of the number of crane borers in the EQL fleet, with 34 assets being 10 years or older. EQL has identified that 54 crane borers are due for replacement in the 2025-30 period, which have not already been rebuilt.

DNSP	Total Crane Borer Assets in Fleet (At 30 October 2023)
Energex and Ergon Energy Network	99

Figure 2: Number of Crane Borers and Age Profile



As the crane borer fleet ages, it can also result in an increase in operating costs (maintenance, repair, fuel etc). The aging impacts for a common borer brand used by EQL – an Ozzy Borer is shown in Figure 3 below. Further, crane borer breakdowns have a direct impact on network maintenance and capital delivery.

Another identified problem that is driving the replacement strategy for crane borers is the lack of resources (labour and assets) available to complete rebuilds. EQL is observing increased downtime and reduced reliability from aged and rebuilt assets. In addition, EQL has identified a lack of external labour resources available to complete rebuilds and internal labour resources are not available to complete this inhouse. The availability of assets is also an issue. With delays in the supply of new crane borers and existing rebuilds taking longer due to the lack of available resources, the knock-on impact is a reduction in available crane borers to enter the rebuild program.

2.5 Customer importance

Our fleet of vehicles are an essential enabler in supporting the investment, maintenance, and operational activities across our significant span of network assets for our customers and our community. Crane borer breakdowns and unavailability has a direct impact on network maintenance and capital delivery and therefore customer service.

2.6 Benchmarking

EQL's proposed replacement strategy is generally aligned to its peers as demonstrated in the benchmarking outlined in the table below.

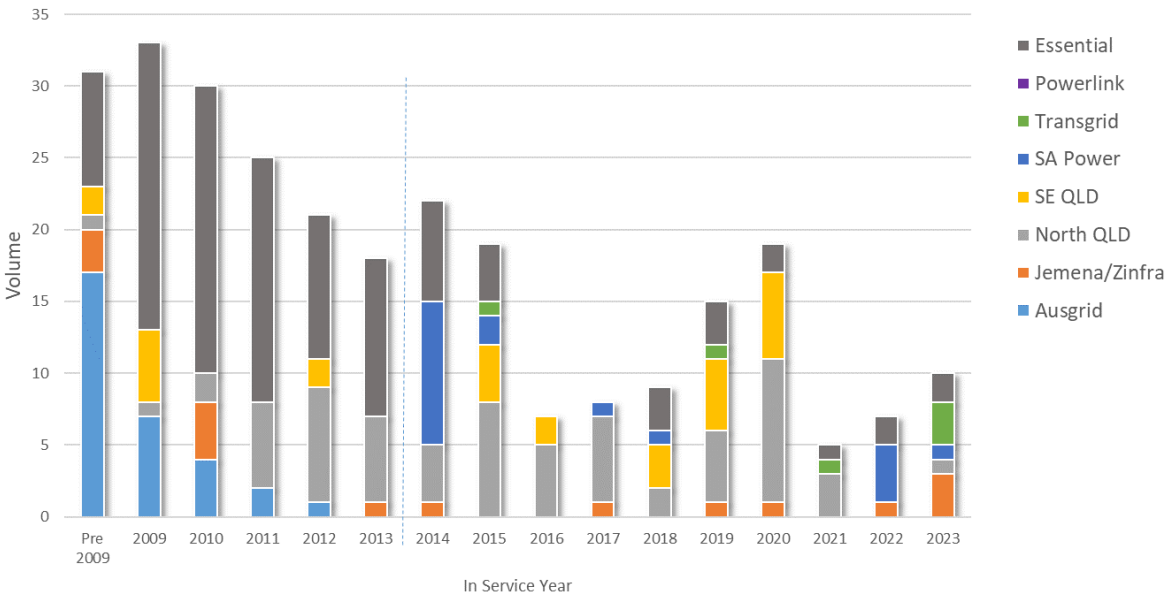
Table 1: Crane Borer Replacement Criteria Benchmarking

Network	Replacement Criteria
Ausgrid	10 years rebuild and 15 years replacement
South Australian Power Network	10 years rebuild and 14 years replacement
Endeavour Energy	10 years rebuild and 15 years replacement
Essential Energy	10-15 years
TasNetworks	10 years rebuild and 15 years replacement

Network	Replacement Criteria
Powercor	10 years / 300,000kms – Cab 20 years Crane / Borer
Energex and Ergon Energy	**10-20 years** **FY25-FY27: 97% rebuild** **FY28-FY30: 0% rebuild** **FY30 onwards: 50% rebuild**

Figure 4 below provides an overview of the volume and age of crane borers across the energy industry (information provided by SG Fleet).

Figure 4: Number of crane borers and age profile across DNSPs



3 OPTIONS ANALYSIS

3.1 Options overview

The table below provides a high-level description of the options considered.

Table 2: Options considered for NPV analysis

Option	Description	Maximum Asset Life
Counterfactual (Base Case)	- Initial life of 10 years - 10YMI carried out on 97% of assets - Re-truck on 10YMI assets - New service life is 20 years - Replace all 10YMI assets with new at 20 years	20 years
Option A	For FY26 and FY27: • As per Counterfactual From FY28: • Replace assets with new (no rebuilds) From FY31: • Rebuild rate proposed 50%	20 years FY26 and FY27 10 years FY28, FY29, FY30 20 years FY31 onwards
Option B	Replace all assets with new assets at 10 years	10 years

3.2 Assumptions

3.2.1 General

Table 3: General assumptions

Assumption	Value	Applicable Option
Time period (for NPV)	20 years	All options
WACC (pre-tax real)	3.5%	All options

3.2.2 Capital and operating costs

Table 4: Capital and operating cost assumptions

Assumption	Item	Value $2022-23	Applicable Option
Capital costs ($2022/23) (See Appendix 4 for details)	New replacement (Crane Borer)	[redacted]	All options
	New replacement (Truck)		All options
	Rebuild (10YMI, incl truck)		Counterfactual, Option A
Operating costs	Crane Borer 0-10 years		All options
	Crane Borer 10-20 years (post 10YMI)		Counterfactual, Option A
	Truck 0-10 years		All options
	Hire during rebuild		Counterfactual, Option A

3.2.3 Replacement volumes

The replacement volumes assumptions applied in the analysis are outlined in the table below. The replacement volumes for each option over the analysis period are also provided in Appendix 4.

Table 5: Replacement Volumes

Option	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Counterfactual						
Assets rebuilt	6	8	3	15	17	**49**
Assets replaced new	1	1	1	1	1	**5**
Total	7	9	4	16	18	**54**
Option A						
Assets rebuilt	6	8	0	0	0	**14**
Assets replaced new	1	1	4	16	18	**40**
Total	7	9	4	16	18	**54**
Option B						
Assets replaced new	7	9	4	16	18	**54**

3.3 Financial Summary

3.3.1 Expenditure summary 2025-30

Table 6: Capital and operating expenditure summary 2025-30 (Confidential)

Capital expenditure ($m, direct 2022-23)	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025-30
Counterfactual (Base)	[redacted]					**$31.5**
Option A						**$35.1**
Option B						**$36.5**
Operating expenditure ($m, direct 2022-23)	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**Total 2025-30**
Counterfactual (Base)	$0.7	$1.1	$0.8	$2.2	$2.8	**$7.5**
Option A	$0.7	$1.1	$0.4	$0.8	$1.2	**$4.1**
Option B	$0.2	$0.4	$0.5	$0.9	$1.3	**$3.2**

3.3.2 NPV analysis

The results of the NPV modelling indicates that Option A returns the most favourable result over the modelling period.

Table 7: NPV analysis

Option	Counterfactual (Base) – 97% rebuild rate	Option A – 0% rebuild rate from FY28	Option B – 0% rebuild, new assets only
Financial benefit	0	+$0.7m	-$0.1m

4 RECOMMENDATION

Option A: is the recommended option based on the analysis conducted, based on both financial and non-financial considerations.

The NPV over 20 years is +0.7m compared to the counterfactual (base case) option.

The investment provides additional benefits, including:

- Reduction in whole of lifecycle costs
- Increased employee safety
- Increased employee productivity
- Reduced operating costs and downtime
- Minimise risk in procurement and minimise the lead time to source spare parts

Table 8: Options Analysis Scorecard

Criteria	Counterfactual (Base)	Option A	Option B
Net Present Value (compared to counterfactual)	$0.0	$0.7	-$0.1
PV Capital & Operating cost (total across 20-year NPV model period)			
Advantages over counterfactual	Maintains status quo	Newer assets available in fleet Reduced operating and maintenance costs Improved reliability	Newer assets available in fleet Maximum asset life of 10 years Reduced operating and maintenance costs Improved reliability
Disadvantages over counterfactual	Aging assets Reliability and operating costs increasing Lack of resources available to complete rebuilds	Higher capital cost for customers in the 2020-25 period Replacing 100% of assets may be impacted by any global and national demand pressures	Higher capital cost for customers in the 2020-25 period Replacing 100% of assets may be impacted by any global and national demand pressures Market supply challenges to supply new assets in FY26 and FY27

4.1 Deliverability

EQL is anticipating that the demand for fleet will increase to accommodate the program of work over the 2025-30 regulatory period in addition to the normal replacement lifecycle.

To manage this increase in the procurement of fleet, the Fleet Services Team has taken the following steps to mitigate the risks to deliverability:

- Increased internal resources to support the end-to-end fleet management lifecycle

- Streamlining of work practices to align with changed supplier environment, including changes to procurement approach (i.e. bulk ordering)
- Diversifying supply chain

EQL has also entered into longer term contracts, with additional suppliers, which ensures the ability to increase supply as and when required and provides increased security for ongoing deliverability. EQL's ability to increase the number of suppliers has been aided through screening and due diligence processes provided by the Strategic Procurement Group.

Successful delivery of the crane borer program is also dependent on robust, on-site pre-commissioning inspections and the development of risk assessments and safe operating procedures. It is considered that these risks have been appropriately mitigated through robust planning and the establishment of key commercial arrangements.

4.2 Change Impacts

Change impacts are expected to be minimal given it is only a minor change to current operations.

Proposed change management activities include:

- Stakeholder and supplier engagement
- Updating of relevant policies and procedures

APPENDICES

Appendix 1: Alignment with the National Electricity Rules

Table 9: Recommended Option's Alignment with the National Electricity Rules

NER capital expenditure objectives	Rationale
A building block proposal must include the total forecast capital expenditure which the DNSP considers is required in order to achieve each of the following (the capital expenditure objectives):	
6.5.7 (a) (1) meet or manage the expected demand for standard control services over that period	
6.5.7 (a) (2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;	
6.5.7 (a) (3) to the extent that there is no applicable regulatory obligation or requirement in relation to: (i) the quality, reliability or security of supply of standard control services; or (ii) the reliability or security of the distribution system through the supply of standard control services, to the relevant extent: (iii) maintain the quality, reliability and security of supply of standard control services; and (iv) maintain the reliability and security of the distribution system through the supply of standard control services	The crane borer forecast has been developed based on the expected demand for standard control services over the period. The replacement of crane borer fleet is critical to ensuring Energex and Ergon Energy Network are able to comply with regulatory requirements associated with the provision of standard control services. The correct crane borer fleet enables Energex and Ergon Energy Network to deliver the network program of work required such that the quality, reliability and security of supply are maintained.
6.5.7 (a) (4) maintain the safety of the distribution system through the supply of standard control services.	
NER capital expenditure criteria	**Rationale**
The AER must be satisfied that the forecast capital expenditure reflects each of the following:	
6.5.7 (c) (1) (i) the efficient costs of achieving the capital expenditure objectives	The forecast vehicles have been selected to align with the expected services required over the period. The capital expenditure has been developed based on recent actual pricing or quotations, or the escalation of historical costs where recent pricing information is not available.
6.5.7 (c) (1) (ii) the costs that a prudent operator would require to achieve the capital expenditure objectives	
6.5.7 (c) (1) (iii) a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives	

Appendix 2: Reconciliation to fleet replacement and capex model

Table 10 below provides a reconciliation between the crane borer fleet forecast (included in this business case) which is prepared in $2022-23, with the fleet forecast in the AER capex model ($June 2025).

Table 10: Reconciliation of business case forecast $2022-23 to $June 2025

Expenditure	DNSP	2025-26	2026-27	2027-28	2028-29	2029-30	2025-30
Crane Borer business case/NPV Model ($m, 2022-23)	Energex & Ergon	[redacted]					**35.1**
Uplift and other minor adjustments[1] ($m, 2022-23)	Energex & Ergon	[redacted]					**-1.8**
Total Crane Borer Capex ($m, 2022-23)	Energex & Ergon	4.0	4.0	2.3	10.8	12.1	**33.3**
Allocation to DNSP (where applicable)							
DNSP capex ($m, 2022-23)	Energex	1.7	1.7	1.0	4.6	5.2	**14.3**
DNSP capex ($m, 2022-23)	Ergon	2.3	2.3	1.3	6.1	6.9	**19.0**
Allocation to SCS capex							
SCS capex ($m, 2022-23)	Energex	1.6	1.6	0.9	4.2	4.7	**12.9**
SCS capex ($m, 2022-23)	Ergon	1.9	1.9	1.1	5.1	5.8	**15.8**
Add escalation adjustments							
Escalation from $2022-23 (Dec 2022) to $2024-25 (June 2025)	Energex	0.2	0.2	0.1	0.5	0.5	**1.5**
Escalation from $2022-23 (Dec 2022) to $2024-25 (June 2025)	Ergon	0.2	0.2	0.1	0.6	0.7	**1.8**
Expenditure in AER capex model $m, 2024-25	**Energex**	**1.7**	**1.7**	**1.0**	**4.6**	**5.2**	**14.3**
Expenditure in AER capex model $m, 2024-25	**Ergon**	**2.1**	**2.1**	**1.2**	**5.7**	**6.4**	**17.6**

[1] Includes minor modelling adjustments which account for the individual vehicle types used in the Fleet Replacement model (to reduce complexity, the NPV analysis uses our most common vehicle type only to determine the preferred strategy)

Appendix 3: Replacement volumes for each option

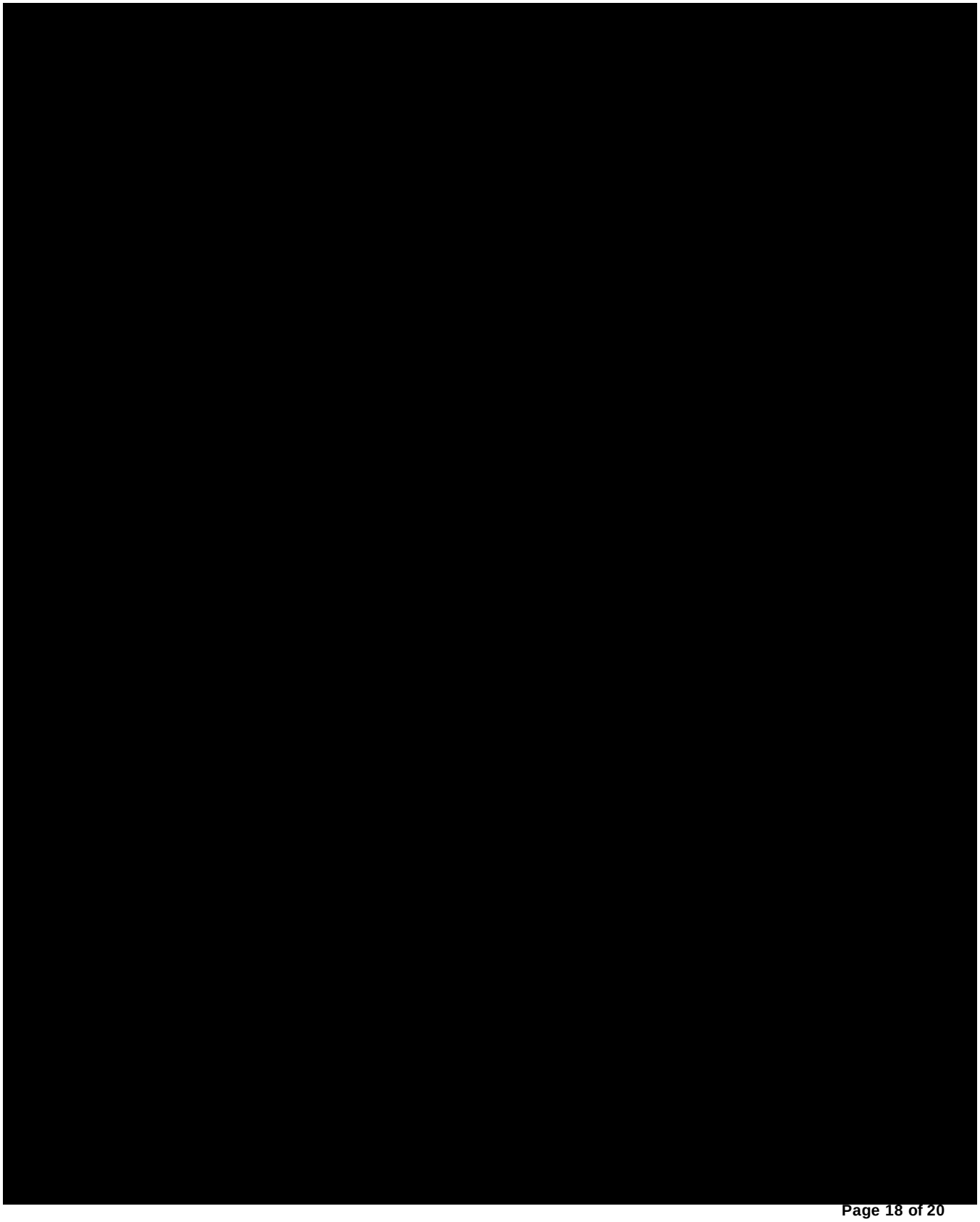
Energex and Ergon Energy Network

Base Case	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
New	1	1	1	1	1	0	0	0	0	0	7	9	4	16	18	0	0	0	0	0
10YMI	6	8	3	15	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Option A	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
New	1	1	4	16	18	0	0	0	0	0	7	9	2	8	9	0	0	0	0	0
10YMI	6	8	0	0	0	0	0	0	0	0	0	0	2	8	9	0	0	0	0	0

Option B	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
New	7	9	4	16	18	0	0	0	0	0	7	9	4	16	18	0	0	0	0	0

Appendix 4: Cost details and supporting information (CONFIDENTIAL)



Appendix 5: Glossary

Term	Definition
AER	Australian Energy Regulator
AS	Australian Standard
DNSP	Distribution Network Service Provider
EQL	Energy Queensland Limited
EWP	Elevated Work Platform
NPV	Net Present Value
RIN	Regulatory Information Notice
WACC	Weighted Average Cost of Capital