

EWP Fleet Replacement

Business Case

31 January 2024



Part of the Energy Queensland Group



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1 EXECUTIVE SUMMARY

Title	EWP Retruck and Replacement			
DNSP	Energex and Ergon Energy Network			
Expenditure category	Replacement Augmentation Connections Tools and Equipment ICT Property K Elect			
Identified need				
(select all applicable)	☑ Registation			
	Energy Queensland Limited (EQL) has a significant number (474) of Elevated Work Platforms (EWPs) in its fleet. This fleet is critical to the safe, efficient, and reliable operation of the network. Of the fleet of EWPs, a significant number are due for replacement in the 2025-30 period.			
	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.			
	Australian Standards AS 1418 and AS 2550 require that EWPs undertake a major inspection at 10 years of service life to remain compliant.			
	The current replacement strategy for EWPs is to:			
	 10YMI rebuild at 10 years on 90% of Energex and 70% of Ergon assets. This extends the life of an EWP asset to 15 years. All remaining assets are replaced new. Total service life (rebuilds) = 15 years plant, 15 years truck Total service life (replacements) = 10 years plant, 10 years truck 			
	A rebuild means that an EWP asset is out of service for 20 weeks. Energex and Ergon Energy Network need to ensure that sufficient plant is available to cover this period of downtime, or alternatively, a unit is rented for this period. EQL is also observing increased downtime and reduced reliability from aged and rebuilt assets.			
Summary of preferred option	The preferred solution is Option A, which represents an appropriate balance of capital investment, operating cost reduction, and capital delivery risk.			
	 the alignment and reduction of rebuild rates across the two DNSPs to 50% 			
	 10YMI on 50% EQL assets, to extend life of plant 			
	Retrucking at the 10YMI (together with an additional 15YMI) to extend the life of rebuilt assets to 20 years.			
Capital Expenditure	Year 2025-26 2026-27 2027-28 2028-29 2029-30 2025-30			
	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 and reset RIN.			
	Note: This forecast refers to the capex required for vehicles impacted by the rebuild/replace strategy only, which is less than the total forecast capex for EWPs.			
NPV	+\$8.4m (compared to counterfactual)			



Benefits	 The benefits of the preferred option include: Increased employee safety Increased employee productivity Reduced operating costs and downtime Increased truck reliability through the provision of a retruck at 10 years (reduced life of truck on rebuilt assets from 15 years to 10 years) 	
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 Purpose and scope

The purpose of this business case is to provide a summary of EQL's proposed EWP replacement program (for units >14m) and to outline the options for the replacement of EWPs 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 EWPs over a number of regulatory periods.

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

2.2 Background

The fleet of EWPs is critical to the safe, efficient, and reliable operation of the network. Figure 1 shows an EWP operating in the field.



Figure 1: Example EWP in operation

EWP assets have regulated maintenance requirements that are prescribed in relevant Australian Standards AS 1418 and AS 2550. MEWPs have a Manufacturer's design life of 25 years with 1000 hours operation per year, where routine and major inspections must be satisfactorily completed to achieve the design life operating period. Major (mechanical) inspections are required on completion of an initial 10 years in service, then at 5-year intervals, i.e. Major Inspection at 10, 15, 20, 25, years in service. Following 25 years in service the MEWP must be subjected to a comprehensive structural examination to operate beyond 25 years in service. In practice, prudent asset management includes structural inspections to be included in each Major Inspection, otherwise known as rebuild. This process requires the plant to be stripped down completely, permitting the inspection of mechanical and structural components of the MEWP, with worn components refurbished or replaced as needed. Electrical testing to acceptance testing voltages is



also required as part of the major inspection process. This certifies the plant for a further 5 years, at the completion of which it must be either rebuilt again or replaced.

The current replacement strategy for EWPs is:

- 10YMI rebuild at 10 years on 90% Energex assets and 70% Ergon assets, to extend life of plant to 15 years. All other assets replaced new.
- No retruck at 10 years.
- Total service life (rebuilds) = 15 years plant, 15 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.

2.3 Identified Need

The table below provides an overview of the number of EWPs in the EQL fleet, with 168 assets being 10 years or older.

DNSP	Total EWP Assets in Fleet (as at 30 June 2023)		
Energex	245		
Ergon Energy Network	229		



Figure 2: EWPs by age and count



As the EWP fleet ages, it can also result in an increase in operating costs (maintenance, repair, fuel etc). The aging impacts for some of the common EWP brands used by EQL – are shown in Figure 3 below. Further, EWP breakdowns have a direct impact on network maintenance and capital delivery. The impact of breakdowns is discussed in section 3.2.3.





For the next regulatory period, EQL has identified that:

- There are 119 EWP assets that are eligible to be rebuilt (and are the subject of this business case)
- 61 EWPs are not eligible to be rebuilt and will be replaced with new
- 44 EWPs have already been rebuilt and will be replaced with new
- In addition, prior to 2025, EQL has identified 73 EWPs that have a rebuild already planned.

Table 1: EWPs Rebuild / replace number and strategy

Energex and Ergon Energy Network	Total Assets	Strategy
Assets <14m	61	Replace with new at 10 years
Assets >14m already rebuild	44	Replace with new at 15 years
Assets >14m with rebuild plans prior to 2025-30 period	73	Replace with new at 15 years
Other Assets >14m	119	Eligible for replace or rebuild

The drivers for the change in replacement approach include:

- Aging assets in fleet
- Downtime or reduced reliability of fleet for operational needs
- Lack of resources available to complete rebuilds
- Lack of available loan vehicles available from existing fleet while rebuild is in progress (requiring EQL to hire assets for 20+ weeks)
- High opex/aging truck assets driving retruck strategy
- Greater alignment with other DNSPs

2.4 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. EWP breakdowns and unavailability has a direct impact on network maintenance and capital delivery and therefore customer service.

2.5 Comparison to peers and industry

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

Table 2: Comparison of EWP asset replacement approach to other DNSPs

Network	Replacement Criteria
Ausgrid	15 years
South Australian Power Network	10 years
Endeavour Energy	10 years
Essential Energy	10 years



Network	Replacement Criteria		
Power and Water	10 years		
CitiPower / Powercor	15 years		
Energex and Ergon Energy	10 years initially, plus additional 10 years with 10YMI, 15YMI and retruck for selected assets		

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



Figure 4: Number of EWPs 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 3: Options	s considered fo	or NPV analysis
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Option	Description	Maximum asset life
Counterfactual (Base Case)	 Rebuild rate = 90% SEQ/70% NSQ 10 years initial life 10YMI on 90% SEQ/70% NSQ assets, to extend life of plant to 15 years. All other assets replaced new. No retruck at 10 years. Total service life (rebuilds) = 15 years plant, 15 years truck Total service life (replacements) = 10 years plant, 10 years truck 	15 years (with 10YMI only) for eligible rebuilds
Option A	 Rebuild rate = 50% EQL 10 years initial life 10YMI on 50% EQL assets, to extend life of plant to 15 years. 15YMI on rebuilt assets to extend life to 20 years Retruck at 10 years Total service life (rebuild) = 20 years plant, 10 years truck Total service life (replacements) = 10 years plant, 10 years truck 	20 years (with retruck, 10YMI and 15YMI) for eligible rebuilds
Option B	Replace all assets with new assets at 10 years (no 10YMI or retruck where relevant)	10 years (no rebuilds)

3.2 Assumptions

3.2.1 General

Table 4: General assumptions

Assumption	Value	Applicable Option
Time period (for NPV)	20 years	All options
WACC	6.35%	All options

3.2.2 Capital and operating costs

Table 5: Capital and operating cost assumptions (Confidential)

Assumption	Item	Value \$2022-23	Applicable Option
Capital costs	New MEWP		All options
(\$2022/23) (See	Truck		All options



Assumption	Item	Value \$2022-23	Applicable Option
Appendix 5 for details)	10YMI (plant and truck)		Counterfactual
,	10YMI (plant only)		Option A only
	Retruck		Option A only
	15YMI		Option A only
	EWP 0-10 years		All options
Onerating	EWP 10-15 years		Counterfactual, Option A
costs (\$ per	EWP 15-20 years		Option A
annum per	Truck 0-10 years		All options
veniciej	Truck 10-15 years (no retruck)		Counterfactual
	Hire of EWP during rebuild		Counterfactual, Option A

3.2.3 Benefits

The aged heavy vehicle (truck) assets in the 10-15 year age bracket experience additional unscheduled downtime compared to assets in the 0-10 year age bracket. The table below outlines the estimated average days out of service by age.

Table 6: Average days out of service (unscheduled downtime)

Age of heavy vehicle	Average days out of service (unscheduled downtime)
0-5 years	6.5 days per annum
10-15 years	14.9 days per annum

The net benefit of the proposed retruck (ie. purchase of a new truck) at the 10YMI point is therefore 8.4 days per annum in downtime. EQL has applied a conservative estimate of 6 days per annum for the purposes of the NPV analysis.

The reduced downtime has been applied to the estimated costs we expect to incur due to a vehicle breakdown. Benefits have been applied to both Option A and Option B.

Table 7: Estimated additional costs due to single vehicle breakdown

Job type	Estimated additional cost



3.2.4 Replacement volumes

The replacement volumes applied in the analysis are outlined in the table below. The replacement volumes for each option over the 20-year analysis period are presented in Appendix 4.

Option	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Counterfactual						
Assets replaced new	6	7	4	4	6	27
Assets rebuilt	26	27	14	7	18	92
Total	32	34	18	11	24	119
Option A						
Assets replaced new	16	17	9	6	12	60
Assets rebuilt	16	17	9	5	12	59
Total	32	34	18	11	24	119
Option B						
Assets replaced new	32	34	18	11	24	119
Assets rebuilt	0	0	0	0	0	0
Total	32	34	18	11	24	119

Table 8: Replacement Volumes

Other assumptions include:

- The replacement volumes consider only assets >14m eligible for replacement or rebuild in the 2025-30 period.
- The NPV analysis excludes:
 - Any additional assets in the fleet which are assumed to be replaced with new assets
 - \circ Assets <14m which are assumed to be replaced with new assets
 - Assets >14m already rebuilt or with planned rebuild prior to FY26



3.3 Financial Summary

3.3.1 Expenditure summary 2025-30

Table 9: Capital and operating expenditure summary 2025-30

Capital expenditure (\$m, direct 2022-23)	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025-30
Counterfactual (Base)						
Option A						
Option B						
Operating expenditure (\$m, direct 2022-23)	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025-30
Counterfactual (Base)	\$2.1	\$2.8	\$2.4	\$2.2	\$3.3	\$12.9
Option A	\$1.5	\$2.1	\$1.9	\$1.9	\$2.7	\$10.1
Option B	\$0.5	\$1.1	\$1.4	\$1.6	\$2.0	\$6.6
Benefits (\$m, direct 2022-23)	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025-30
Counterfactual (Base)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Option A	\$0.6	\$1.3	\$1.7	\$1.8	\$2.3	\$7.8
Option B	\$0.6	\$1.3	\$1.7	\$1.8	\$2.3	\$7.8

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 10: NPV analysis

Option	Counterfactual (Base) –	Option A –	Option B –
	90%/70% rebuild rate	50% rebuild rate	0% rebuild
	No retruck	Retruck at 10y	New assets only
Financial benefit	0	+\$8.4	+\$8.0



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 +\$8.4m compared to the counterfactual (base case) option.

The investment provides additional benefits, including:

- Increased employee safety
- Increased employee productivity
- Reduced operating costs and downtime
- Increased truck reliability through the provision of a retruck at 10 years (reduced life of truck on rebuilt assets from 15 years to 10 years)
- Additionally, retrucking permits the timely introduction of alternative power/fuel outcomes for the heavy vehicles, for trucks with improved economy, efficiency, and reduced emissions in keeping with State and Federal Government targets
- Increased plant availability during rebuild
- Minimise risk in procurement and minimise the lead time to source spare parts
- Enables EQL to effectively deliver for our customers and communities for both routine and emergence response activities

Criteria	Counterfactual (Base) – 90%/70% rebuild rate	Option A – 50% rebuild rate	Option B – 0% rebuild, new assets only
Net Present Value (compared to counterfactual)	\$0.0	+\$8.4	+\$8.0
PV Capital & Operating cost (total across 20- year NPV model)			
Advantages over counterfactual	Maintains status quo	NPV positive over 20-year assessment period Newer assets available in fleet Maximum truck life of 10 years Reduced operating and maintenance costs Improved reliability/reduced downtime	Newer assets available in fleet Maximum truck life of 10 years Reduced operating and maintenance costs Improved reliability/reduced downtime
Disadvantages over counterfactual	Aged truck assets Issues with supply of EWPs during periods of rebuild	Higher capital cost in the 2020- 25 period Replacing a higher proportion of assets may be impacted by any global and national demand pressures	Higher capital cost in the 2020- 25 period Replacing a higher proportion of assets may be impacted by any global and national demand pressures Market supply issues in obtaining 100% new assets

Table 11: Options Analysis Scorecard



4.1 Deliverability

EQL is anticipating that the demand for fleet will increase to accommodate the increase in employee numbers and 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.

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 engagement
- Updating of relevant policies and procedures



APPENDICES

Appendix 1: Alignment with the National Electricity Rules

Table 12: Recommended Option's Alignment with the National Electricity Rules

NER capital expenditure objectives	Rationale
A building block proposal must include the total forecast capi each of the following (the capital expenditure objectives):	tal expenditure which the DNSP considers is required in order to achieve
 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	The EWP forecast has been developed based on the expected demand for standard control services over the period.
 obligation or requirement in relation to: (i) the quality, reliability or security of supply of standard control services; or 	The replacement of EWP 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 reliability or security of the distribution system through the supply of standard control services, to the relevant extent: maintain the quality, reliability, and security of supply 	deliver the network program of work required such that the quality, reliability and security of supply are maintained.
 (iv) maintain the equality, reliability and security of stapping of standard control services; and (iv) maintain the reliability and security of the distribution system through the supply of standard control services 	
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 expendit	ure reflects each of the following:
6.5.7 (c) (1) (i) the efficient costs of achieving the capital expenditure objectives	
6.5.7 (c) (1) (ii) the costs that a prudent operator would require to achieve the capital expenditure objectives	I he torecast 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
6.5.7 (c) (1) (iii) a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives	pricing information is not available.



Appendix 2: Reconciliation to fleet replacement and capex model

The table below provides a reconciliation between the EWP fleet forecast (included in this business case) which is prepared in \$2022-23, with the fleet forecast in the AER capex model/Reset RIN (\$June 2025).

Expenditure	DNSP	2025-26	2026-27	2027-28	2028-29	2029-30	2025-30
EWP NPV Model (EWP >14m eligible for rebuild) (\$m, 2022-23)	Energex & Ergon						
Uplift, other adjustments, and EWPs not eligible for rebuild (\$m, 2022-23) ¹	Energex & Ergon						
EWP Replacement Model (\$m, 2022-23)	Energex & Ergon	46.6	51.2	30.8	26.8	23.9	179.3
Allocation to DNSP (where appl	icable)						
DNSP capex (\$m, 2022-23)	Energex	20.0	22.0	13.2	11.5	10.3	77.1
DNSP capex (\$m, 2022-23)	Ergon	26.6	29.2	17.6	15.3	13.6	102.2
Allocation to SCS capex							
SCS capex (\$m, 2022-23)	Energex	18.0	19.9	11.9	10.4	9.2	69.4
SCS capex (\$m, 2022-23)	Ergon	22.0	24.2	14.6	12.7	11.4	84.9
Add escalation adjustments							
Escalation from \$2022-23 (Dec 2022) to \$2024-25 (June 2025)	Energex	2.1	2.3	1.4	1.2	1.1	8.1
Escalation from \$2022-23 (Dec 2022) to \$2024-25 (June 2025)	Ergon	2.6	2.8	1.7	1.5	1.3	9.9
Expenditure in AER capex model/ Reset RIN \$m, 2024-25	Energex	20.1	22.2	13.3	11.6	10.3	77.5
Expenditure in AER capex model/ Reset RIN \$m, 2024-25	Ergon	24.6	27.0	16.3	14.2	12.7	94.8

Table 13: Reconciliation of business case forecast \$2022-23 to \$June 2025

¹ Includes additional EWPs included as part of the resource uplift forecast and other minor modelling adjustments which account for the individual vehicle types used in the Fleet Replacement model (for simplicity, the NPV analysis uses an average vehicle type). In addition, the replacement model includes a number of EWPs which were not considered in the NPV analysis as per Table 1.



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	6	7	4	4	6	26	27	14	7	18	3	3	2	2	3	8	9	6	5	7
10YMI	26	27	14	7	18	0	0	0	0	0	3	4	2	2	3	21	22	10	4	14

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	16	17	9	6	12	0	0	0	0	0	24	26	14	8	18	0	0	0	0	0
10YMI	16	17	9	5	12	0	0	0	0	0	8	8	4	3	6	0	0	0	0	0
15YMI	0	0	0	0	0	16	17	9	5	12	0	0	0	0	0	8	8	4	3	6

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	32	34	18	11	24	0	0	0	0	0	32	34	18	11	24	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