Asset Reinvestment Review

Working Group

7 February 2023

Acknowledgement

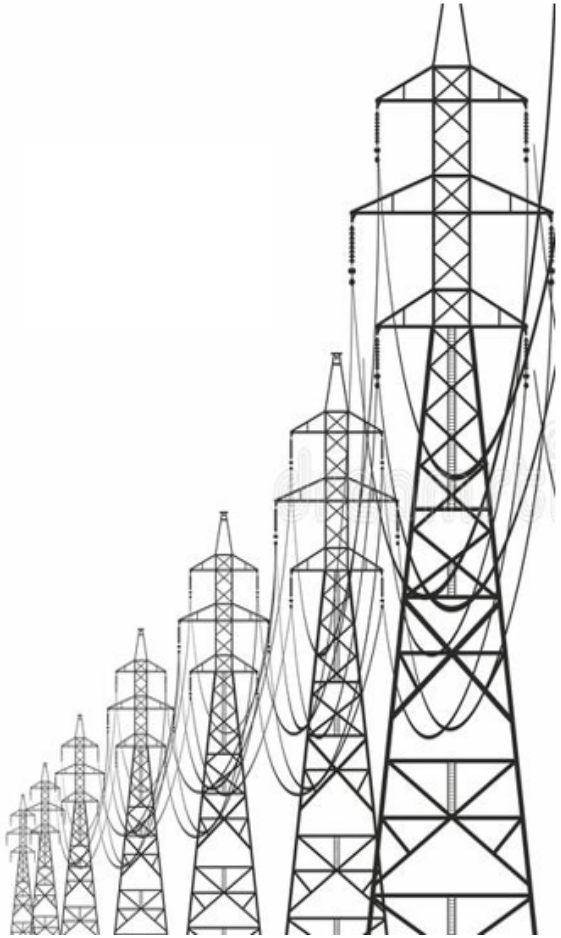
Powerlink acknowledges the Traditional Owners and their custodianship of the lands and waters of Queensland and in particular, the lands on which we operate. We pay our respect to their Ancestors, Elders and knowledge holders and recognise their deep history and ongoing connection to Country.

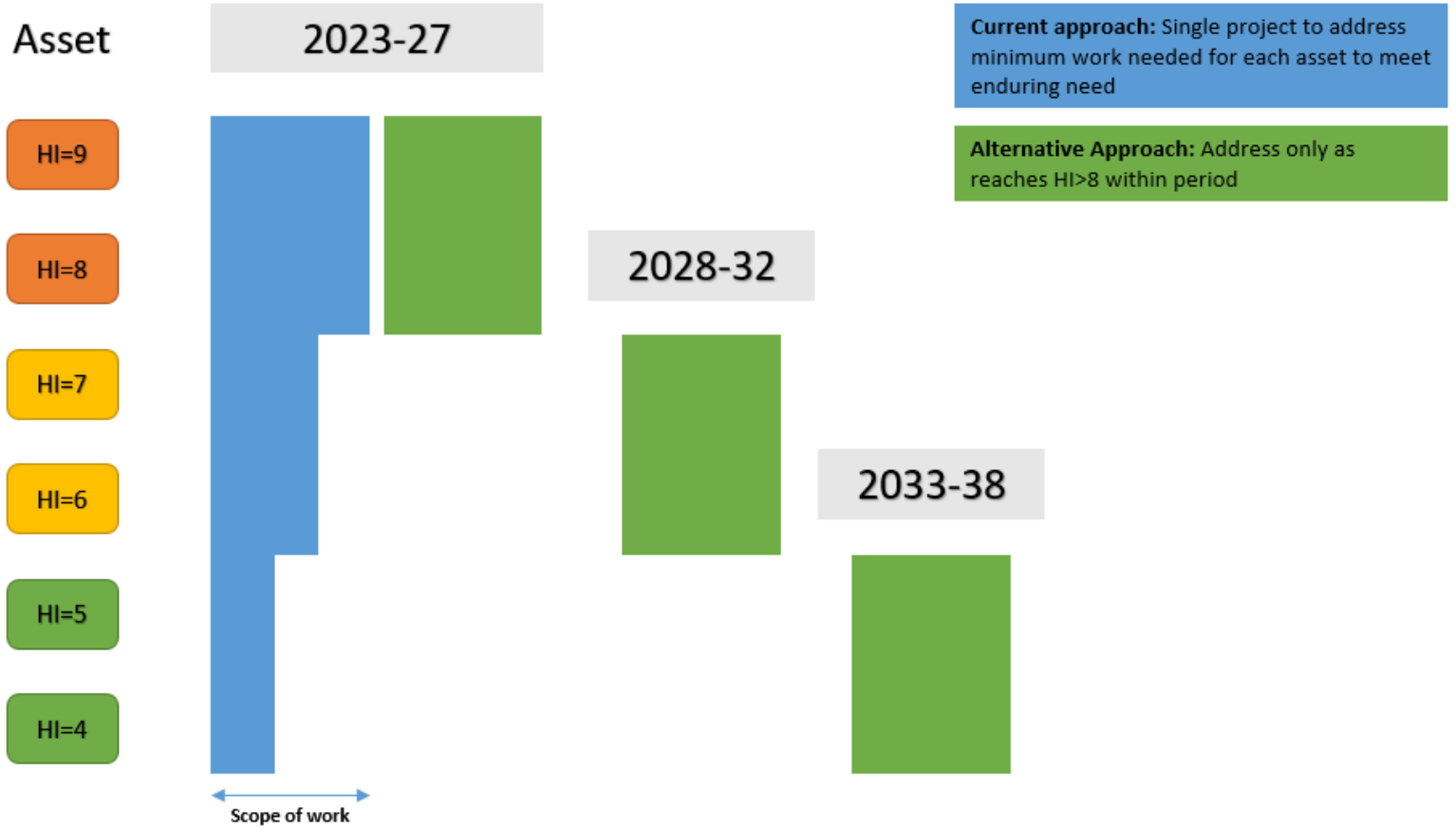
Recap – how we got here

Month	Key focus area
March 2022	Discussed review scope
April	Glossary of terms, current approach overview, deep dive into Ross to Chalumbin
May	Confirmed scope, built section definition, review focus areas
June	Site visit to Rocklea Tower Farm and Goodna tower site
July	Strawman outline of five options for the breakdown of built sections: 1. Powerlink current approach 2. Environment 3. Fixed length 4. Assets defined based on function (structure, insulator, conductor etc.) 5. Accessibility
Oct	Use Ross to Chalumbin case study to compare three approaches: • Current approach • Each asset type with a built section is one asset – i.e. four assets per built section • Each individual asset component is one asset – every structure, conductor span, insulator etc. (more than 3,000 assets in case study built section)

Alternative Bundling Approach

Visualisation of Bundling Options (example for 15 year enduring need)

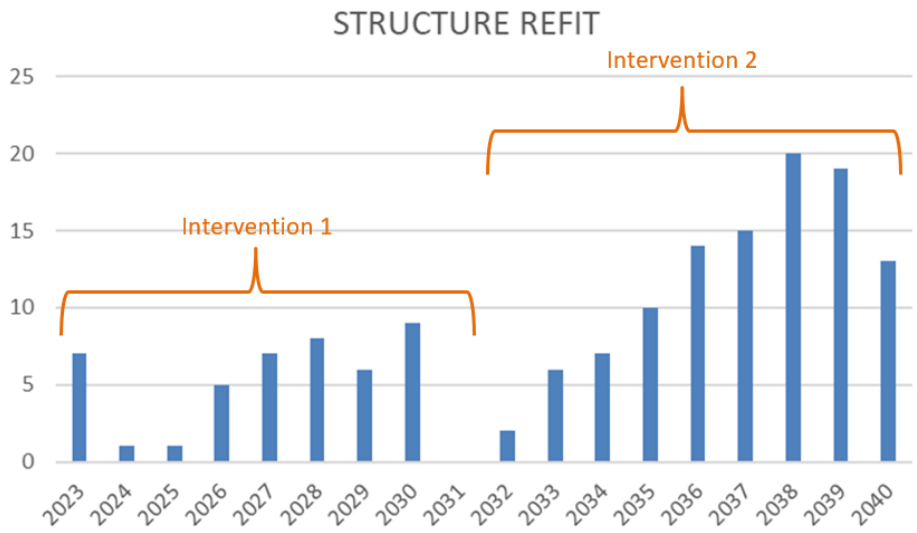




Economic Modelling

Case Study: Refit of Ross to Chalumbin 275kV transmission line

- Considered four intervention scenarios over 15 year period
  - Scenario 1: single upfront bundled intervention (base case)
  - Scenario 2: two bundled interventions (observed structure condition)
  - Scenario 3: three bundled interventions (nominal 5 years)
  - Scenario 4: annual interventions based upon expected condition



Economic Modelling

Preliminary results – net present cost (CP.02754 Ross to Chalumbin)

	Built section [*base case]	Variance to base case	Asset types (4)	Variance to base case	Asset components (3000)	Variance to base case
Current approach (single intervention)	$24.8m*	NA	$24.8m	-	$24.8m	-
Two bundled interventions	$23.4m	($1.4m)	$23.4m	($1.4m)	$23.4m	($1.4m)
5-yearly bundled interventions	$23.2m	($1.6m)	$23.0m	($1.8m)	$23.0m	($1.8m)
Annual interventions	$36.4m	$11.6m	$34.6m	$9.8m	$31.7m	$6.9m

Economic Modelling

Preliminary results – input to further analysis

- Significant disadvantage in unbundling works completely and implementing annual interventions
  - No further consideration of this option
- Economic outcomes for two interventions or 5 yearly intervention similar – likely same scenario impacted by practicality of timing
  - Model two interventions only; timing typically 5-7 years apart
- Repeat economic analysis for additional project scenarios
  - Calliope River to Wurdong Tee (CP.02644)
  - Davies Creek to Bayview Heights (CP.02754)
  - Greenbank to Mudgeeraba (CP.02415)

Economic Modelling

Preliminary results – net present cost

	Built section [*base case]	Variance to base case	Asset types (4)	Variance to base case	Asset components (3000)	Variance to base case
CP.02644 – current approach	$4.7m*	NA	$4.7m	-	$4.7m	-
CP.02644 – alternative approach	$4.8m	$0.1m	$4.8m	$0.1m	$4.8m	$0.1m
CP.02754 – current approach	$37.7m	NA	$37.7m	-	$37.7m	-
CP.02754 – alternative approach	$37.9m	$0.2m	$37.9m	$0.2m	$37.9m	$0.2m
CP.02415 – current approach	$30.5m	NA	$30.5m	-	$30.5m	-
CP.02415 – alternative approach	$31.8m	$1.3m	$31.8m	$1.3m	$31.8m	$1.3m

Results of Economic Modelling

- No single most efficient option for all cases – suggests need to compare single and potential multiple staged approach
- Asset definition made no difference to economic outcomes in almost all cases
- Highest observed variance in net present cost approx. 5%
  - no material difference between modelled approaches
  - potential benefit to defer works for longer built sections
  - improved view of trade-offs after initial condition assessment

Preliminary Recommendations

- Only carry out compliance works on structures where condition based work is to be performed
- Include alternative bundling approach (multiple interventions) in addition to the current approach for lines refit projects
  - no material change in risk providing projects target completion of HI8 structures in a timely fashion
  - enables a more flexible delivery and resourcing model through staging of projects based on risk
- No change proposed to built section definition.

Next Steps

- Apply to RIT-T assessments for future refit projects with immediate effect to trial approach
  - revised approach to compliance actions within built section
  - consideration of both current and alternative bundling approach in economic assessment based upon detailed condition assessment and estimates
- Draft and publish ARR report
- Review outcomes one year after report published.

High Level Report Structure

1. Executive Summary
2. Background
3. Engagement Process
4. Existing Approach for Reinvestments
5. Analysis of Options
6. Findings / Discussion and Working Group Insights
7. Recommendations
8. Future Review

Questions?