

Industry Engagement: Asset Replacement

CitiPower, Powercor and United Energy Stakeholder Workshop (07/10/2020)

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Background, Research Objectives and Methodology

Industry Engagement Background

A core component of CitiPower, Powercor and United Energy's 2021-2026 Regulatory Reset is the network's approach to asset replacement. With poles and wires stretching across diverse geographies in Victoria, the network's approach to asset replacement is of great interest to industry stakeholders and constituents.

In response, CitiPower, Powercor and United Energy commissioned Forethought to facilitate Stakeholder Engagement Workshops to capture feedback and holistic industry thinking on how best to manage and replace poles and wires in the next five years (2021-2026).

The networks were interested in the industry expectations of the role that networks should play in asset replacement and the challenges the networks face in reaching their potential in this area. CitiPower, Powercor and United Energy stakeholders also presented the proposal to stakeholders to understand reactions and how to optimise the proposal before submission.

On the 7th of October, 2020, 25 stakeholders participated in these online workshops that included representatives from energy regulators, government, industry bodies, peak bodies and charities.

Challenge and Objectives

Business Challenge

- Submit a regulatory reset proposal to the AER that best reflects the interests of the key industry stakeholders of CitiPower, Powercor and United Energy.

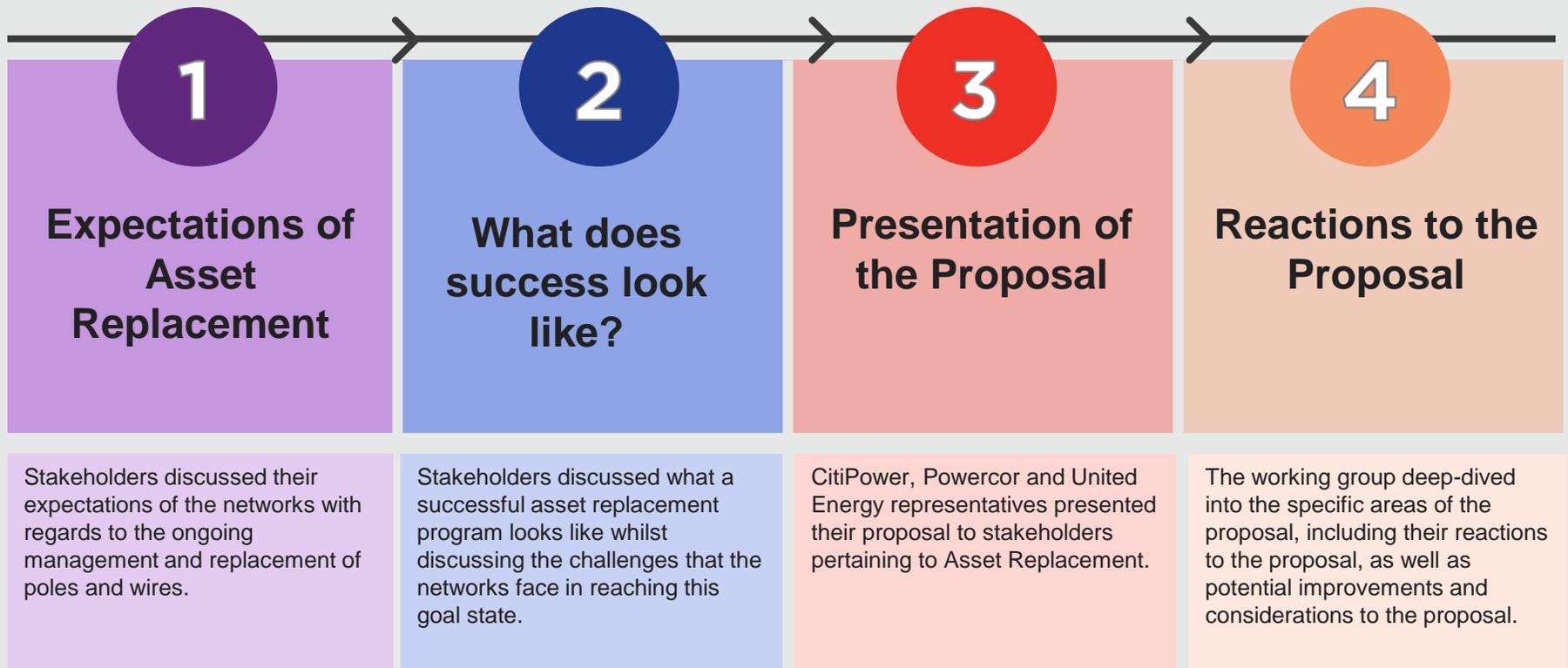


Research Objectives

- Present the asset replacement component of the regulatory reset proposal to industry stakeholders;
- Understand and contextualise industry stakeholder perceptions of the role of the networks in asset replacement; and
- Understand and contextualise CitiPower, Powercor and United Energy stakeholder perceptions of the asset replacement component of the proposal.

Workshop Design

The online workshop design comprised of four key areas, where stakeholders were navigated from Townhall to Breakout Groups to ensure all had the opportunity for their thoughts and feedback to be heard as part of the discussion.





Expectations of Asset Replacement

Expected outcomes: stakeholders expected the networks to provide three key outcomes when managing poles and wires...

The expectation of the networks was that their asset replacement and management programs would be conducted safely and would provide safety, reliability and affordability to customers.



Safety

Asset replacement was expected to be conducted with the safety of linesmen and the community in mind. The assets were expected to minimise risk to the community, particularly the risk of fire and greenhouse gas emissions.



Reliability

The use, maintenance and replacement were expected to optimise reliability of supply to customers over their lifespan.



Affordability

The maintenance and replacement of assets was expected to be conducted prudently and efficiently to reduce the financial burden on the end consumer. At its core, stakeholders expected the networks to extend the usable base of the asset for as long as possible.

The *processes* involved in providing safety, affordability and reliability to consumers involved short and long-term plans to minimise risk to customers.

“The three networks have different priorities. CitiPower, United Energy and Powercor have different ratings. The different situations of the businesses have to be taken into account when planning.”

Workshop Stakeholder

Stakeholders expected **meticulous planning** to ensure safety, reliability and affordability were delivered to customers.

This involved **both short-term and long-term plans** for when assets should be replaced and maintained at an overall level and individual asset-level. Particular attention was placed on individual asset plans in the Powercor area, where the fire-risk was far greater than in the CitiPower and United Energy areas.

This extended to the external management of the network including vegetation management and **communication with the public**, to ensure they understood how the assets served the community.



Successful Asset Management

What success in asset management looks like...

Stakeholders defined successful asset management **by processes employed and outcomes achieved.**

To achieve successful asset management, appropriate processes and elements had to be in place, including:

- A balance of long term objectives, such as investment in innovation, and short term objectives, such as cost management, present in strategy formation;
- An appropriate ratio of asset maintenance to asset replacement;
- Initiatives for grid decentralisation and decarbonisation; and
- An organisational culture orientated toward constant improvement; meeting the desired performance levels then finding efficiencies whilst maintaining that performance.

Success in asset management was defined by end outcomes, such as:

- Assets managed to 100 percent performance and utilisation;
- Maximum minutes of supply to customers;
- Ensuring network availability to and safety of all customers; and
- Achieving distribution at an affordable price point for customers.

...and the challenges to be overcome in achieving success

Stakeholders recognised the multitude of challenges involved in asset management and ensuring its success including, but not limited to:

- The lack of tangible relationship with end customers, limiting opportunity for engagement and usage behaviour change;
- Determining the appropriate level of innovation in ratio to cost management measures;
- Adjusting strategies for the aging state of the network; and
- Ensuring effective procurement to mitigate asset failure due to design or manufacturing faults.



Response to the Proposal



Initial Reactions

Stakeholders agreed with the approach taken, but still identified room for improvement

When presented with the proposal, stakeholders were cautious about terming it as optimal, but rather 'good'.

There was consensus regarding the overall approach taken; being compliance driven and based on research and risk assessment.

Stakeholders also appreciated the level of community and third-party consultation involved in developing the process.

Despite the positivity however, stakeholders felt that rural communities and those vulnerable to fire risk had not been given due consideration.

Questions were also raised regarding projections in the proposal with assertions that the data used needed to be interrogated further. As the targets were based on data from a previous period, stakeholders were interested in reasons as to why targets were not met in previous periods, and how these targets were going to be met in the current period.

There was also a need for greater consideration regarding implementation of alternative power sources and technologies. Stakeholders questioned how the current strategy would fit into a greater plan for mitigating risk factors such as climate change, and incorporate technological advances moving forward.



Further considerations

Stakeholders wanted further information about the inputs into the model to fully understand its implications.

“The issue with graphs is the inputs. I would like to know more about the inputs before making a judgement.”

Workshop Stakeholder

Question: What should CP, PC & UE’s response be if asset replacement forecasting states that intervention doesn’t deliver net benefits?

Many stakeholders **struggled to answer** when prompted with the question: *What should the networks response be if asset replacement forecasting states that intervention doesn’t deliver net benefits?*

There was a need for **greater interrogation of the data**. Many wanted to know more about the model itself and the inputs that went into the model before answering the question. Further to this, many wanted to check the model against the regulator’s requirements and expectations.

Some also questioned why net benefits did not outweigh or equal net cost in the first place.

Despite this, there was a common view that if net costs outweighed net benefits, **the government or state should bear the cost**, rather than the customer or the networks.

“If the standards are higher in Victoria and there is a cost-differential, I think that third parties such as government should bear the costs.”

Workshop Stakeholder



Stakeholders asked for greater extrapolation of the model and for it to include safety and risk-management elements.

“They need to build out the value proposition. What are the externalities and other little things and how do they interact with it?”

Workshop Stakeholder

Question: What else needs to be considered in the cost-benefit analysis. Why?

Further to the greater need for better understanding of the inputs to the model, there were **many other factors that stakeholders felt needed to be included in the model.**

Most notably, stakeholders asked for further consideration to be given to:

- Affordability;
- Reliability; and
- Insurance impacts.

For stakeholders representing stakeholders from regional areas, elements such as safety and risk-management such as bushfire risk should needed to already be in the model.

There were also calls for **more consumer-based research** to be conducted to understand residential consumer preferences and for these preferences to be reflected in the model.

*“Show the regulatory and risk components. If the risk component is much less, show it. What difference the risk assessment is making to cost-benefit analysis?
How those benefits are being included?”*

Workshop Stakeholder

Stakeholders called for new technologies and innovations to be included in the revised proposal.

Stakeholders placed priority on **minimising risk** (fire and outage risk) and mitigating emissions through the discussions.

Technologies such as **standalone power systems, microgrids and community battery** were flagged as technologies that should be included in the proposal to reduce emissions and outage risk.

These technologies and innovations should be **looked at a network-level** to ensure risks are considered across networks. Stakeholders paid particular attention to the Powercor network where these innovations could reap great benefit.

Further to this, stakeholders spoke of the potential to include **short-term solutions instead of long-term stranded assets** into the proposal to mitigate the risk of stranding assets in the future.

“There needs to be options to mitigate the risk such as technological options. This could mean that we are able to identify a failed pole during high-weather condition days for fire.”

Workshop Stakeholder

Question: What alternative asset management options should be considered in the revised proposal? Why?

Appendix: Proposal presented to stakeholders

Wood Pole Replacement Program

Wood Pole Management Review

- Following bushfires in the south-west of Victoria, we reviewed our wood pole asset management practices for CitiPower and Powercor
- Energy Safe Victoria (ESV) also reviewed our wood pole management practices, and concluded that our existing practices would not deliver sustainable outcomes for the future
- Our response to ESV's review is set out in our pole management improvement plan, which ESV have accepted, including:
 - adoption of a risk-based asset management approach
 - recognition that wood pole fibre strength will degrade over time
 - transition to Australian Standards: AS7000
- For United Energy, we've considered the relevance of ESV's findings to our existing asset management practices

Our Regulatory Proposal

Our regulatory proposal included wood pole intervention forecasts for both compliance and risk-based drivers

Compliance-driven

- Our Electricity Safety Management Scheme (ESMS) sets out how we comply with our general duties obligations under the Electricity Safety Act; our ESMS refers directly to our pole asset management policies, and has been accepted by ESV
- Compliance-driven interventions are based on the forecast condition of the pole (i.e. irrespective of the consequences of the pole failing)
- Compliance-driven interventions also include interventions due to visual factors (e.g. presence of termites), with these based on historical volumes

Risk-driven

- Risk-driven interventions recognise that in high-risk locations, the consequences of a pole failure can be significant, such that earlier intervention may be prudent (in comparison to similar condition poles in lower-risk locations)

Stakeholder Feedback

Some stakeholders supported our regulatory proposal

- **ESV and the Victorian Government submissions supported our proposals:**

“Informed by its review, and the undoubted need to increase pole interventions, ESV supports the Powercor case for increased levels of intervention”

“The Victorian Government supports the proposals from CitiPower, Powercor and United Energy to increase pole replacement. We note the significance of Energy Safe Victoria’s (ESV’s) findings and recommendations from its recent investigation into Powercor’s wood pole management and the subsequent proposals from CitiPower, Powercor and United Energy to increase their investment in pole replacements”

- **Our customers expect safety to be maintained and improved where possible:**

“What we really want is confidence in the infrastructure. People need to feel that it is safe”

Other stakeholders questioned the program need or our forecasts

- How has Powercor demonstrated it has done ‘just enough’ to respond to the ESV requirements—can its forecast be demonstrated to be prudent and efficient?
- How has Powercor considered the impact of other major bushfire programs in its risk assessments for poles?
- Why are the findings for a particular, rural area appear being applied across network areas spanning different conditions, environmental exposure and failure risks?
- It is in customers’ interests that replacement expenditure does not follow a boom-bust cycle—a sustainable level of replacement helps keep prices and RAB growth stable

AER draft decision

Powercor
Proposed \$261m
AER draft \$137m

- Recognised findings from ESV review, and that an increase on historical volumes is required
- However, characterised forecast increase as addressing 'backlog' issue (e.g. if we had replaced more poles in the period 2014–2018, an additional uplift today would not be required)
- Substitute forecast based on volumes achieved in 2013, plus the 'balance' of poles not replaced in 2014–2018
- Substitute forecast is lower than our forecast compliance obligations

CitiPower
Proposed \$63m
AER draft \$15m

- Recognised CitiPower and Powercor apply the same management strategy, such that ESV review findings are likely applicable to CitiPower
- However, rejected forecast as 'not satisfied that there is likely to be a substantial escalation of risk over the forecast period'
- Substitute forecast based on 10-year average of intervention volumes
- Substitute forecast is lower than our forecast compliance obligations

United Energy
Proposed \$90m
AER draft \$57m

- Recognised strong historical performance, citing low pole failures
- However, rejected condition-based forecast using a 9-year historical trend, as this is 'inconsistent with the majority of repex programs'
- Substitute forecast based on 4-year average of intervention volumes
- Substitute forecast is lower than our forecast compliance obligations

Our Response to Stakeholders

United Energy: can our forecasts be demonstrated to be prudent?

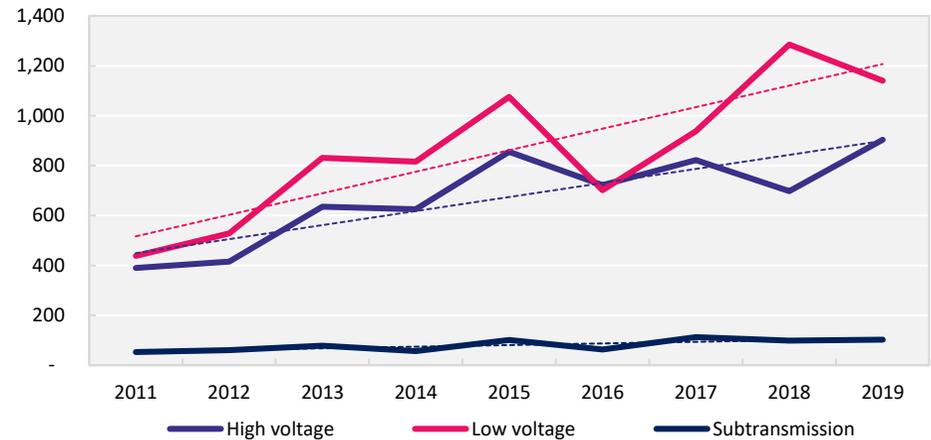
- The serviceability of all our wood poles are forecast through using our 'enhanced pole calculator'
- The serviceability of our wood poles are particularly sensitive to the assumption of how heavily loaded a pole is—this loading is reflected at the 'tip' of the pole
- We do not have actual data for the 'tip load' of each pole; rather, we assumed a loading based on the location of the pole for our regulatory proposal
- In response to stakeholder feedback, we brought forward the timing of our wood pole trial of 4,500 poles across our network
- Our wood pole trial is now due to be completed in October, and will be used to re-calibrate our modelling

Our Response to Stakeholders

CitiPower and Powercor: can our forecasts be demonstrated to be prudent?

- For United Energy, forecast pole intervention volumes are based on a linear trend
- We have since reviewed our forecast trend relative to existing and forecast pole condition data:
 - more poles with less 'sound-wood' now than in 2016
 - decay rates initially estimated 23,000 wood poles to transition to less than 70mm of sound-wood by 2026
 - scrutinised decay rate data, and removed dummy inputs for young poles (i.e. lowering decay rates)
 - calibrated decay rate data to actual volumes in 2016–2020 (i.e. further lowering decay rates)
 - revised forecasts support between 14,966 and 19,429 interventions over 2021–2026

Historical wood pole interventions (volumes)



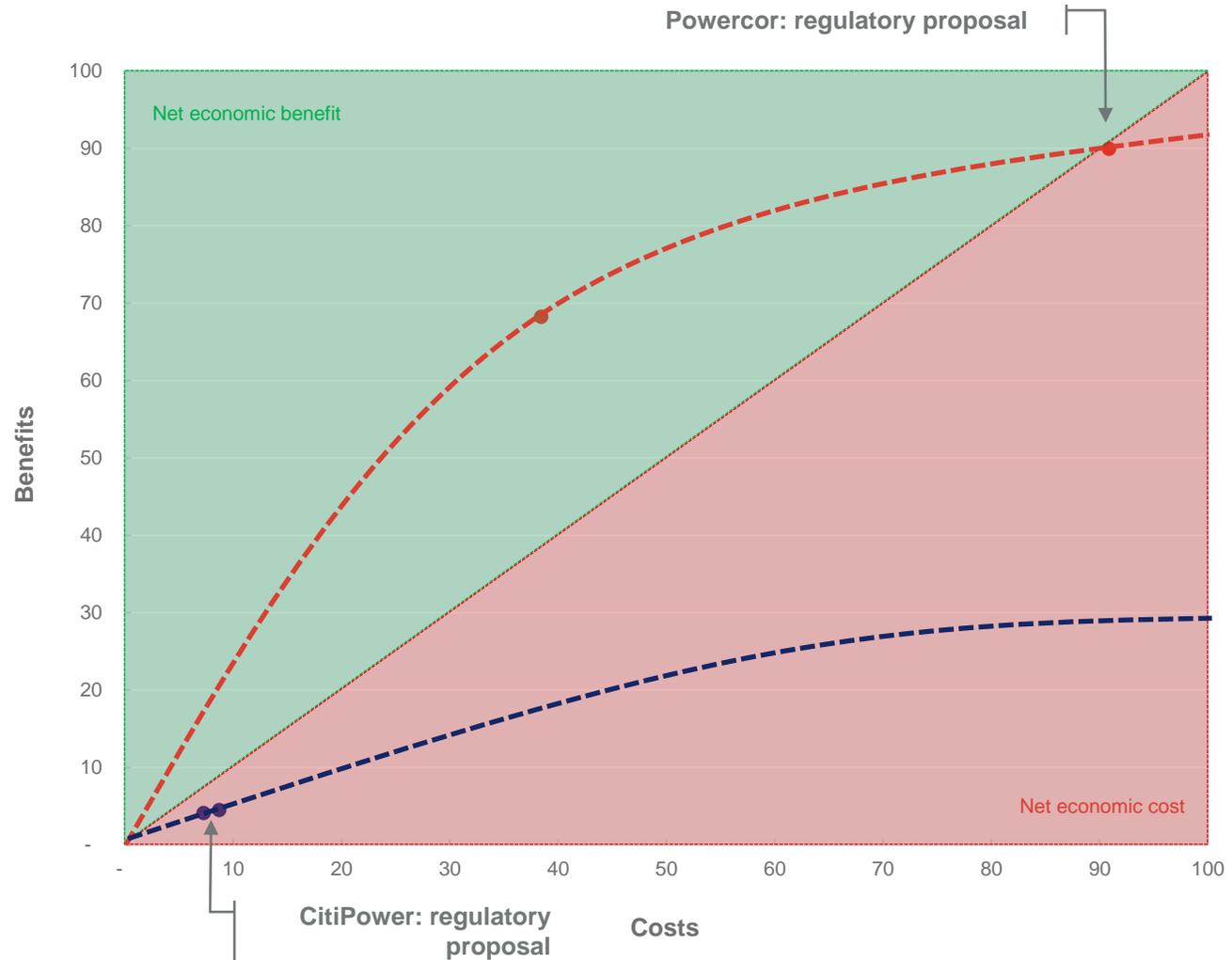
Forecast wood pole condition at the end of 2025 with calibrated decay rate

Sound wood (mm)	Year end						Delta
	2020	2021	2022	2023	2024	2025	
0 - 30	398	422	460	546	786	841	443
31 - 70	5,878	7,040	9,898	13,151	16,342	22,964	17,086
71 - 80	8,804	9,667	13,447	19,062	25,954	33,166	24,362
81 - 90	20,276	25,966	33,172	37,216	37,394	25,871	5,595
91 - 100	43,716	37,386	25,865	16,688	10,118	10,994	-32,722
101 - 130	28,920	28,310	27,620	26,551	25,119	25,564	-3,356
131 - 170	29,086	28,345	26,784	24,185	21,729	18,042	-11,044
> 170	641	583	473	320	277	277	-364
Total	137,719	137,719	137,719	137,719	137,719	137,719	0

Our Response to Stakeholders

We've undertaken cost-benefit analysis on our forecast risk-driven interventions

- The risk-reduction from additional intervention volumes for Powercor exceed the costs
- The risk-reduction from additional intervention volumes for CitiPower are less than the costs
- Analysis will be updated for pole-trial outcomes



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