



Dynamic Analysis (ECA technical consultant)



## Feedback on Draft Plan

### Agenda

1. Snapshot of our feedback
2. Framework for reviewing your Draft Plan
3. Strategic issues
4. Zoning in on key issues

**SA  
Power  
Networks  
2020–2025  
Draft Plan**

Delivering better outcomes at a lower price

# Snapshot

We tried to understand your journey to the Draft Plan, and how your plan navigates you to meet the long term needs of SA consumers on reliability, prices and choice.



## Engagement

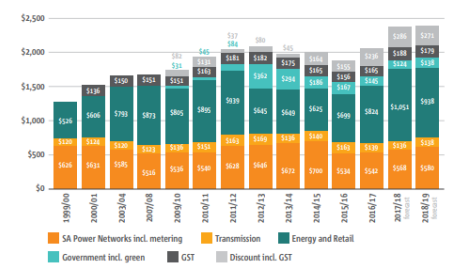
- Great workshop materials
- SAPN has sought to genuinely engage in the lead up to the Draft Plan
- There has been some mixed feedback but seems isolated to future network
- Very high quality of Draft Plan allowed genuine feedback



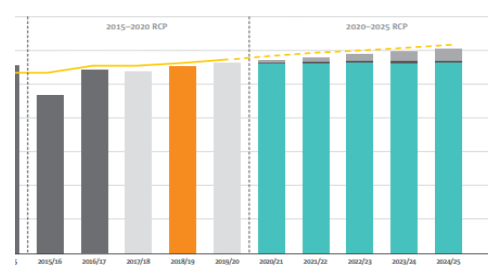
- ✓ Sustained low network prices
- ✓ Network investment was efficient
- ✓ Kept opex low and efficient
- ✓ Improved asset management
- ✓ Led future thinking on DER revolution

- ? Moderate reduction in network prices
- ✓ Keeping a lid on network capex and opex
- ✓ Pushing frontiers of extending asset life
- ? High depreciation
- ✗ Limited productivity improvement

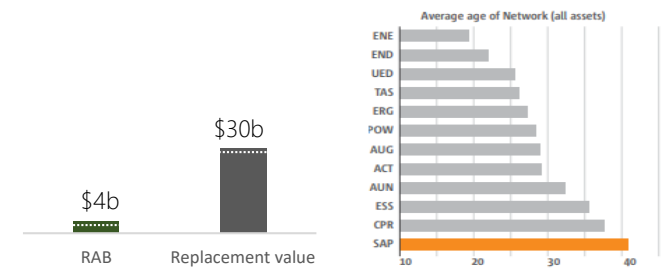
- ? Low RAB to replacement ratio
- ? Old network
- ? Base Volumes/ off-grid
- ? Interest rates at low point in cycle



Network prices have remained low in SA



No apparent productivity in opex despite IT program



Low RAB and old network means the long term replacement strategy needs to be considered now

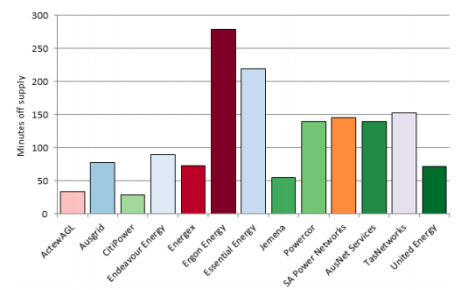
# Framework

Our way of analyzing your draft plan was to understand your circumstances and how they may interact with your prices and services in the short and long term.

Circumstances

## Reliability

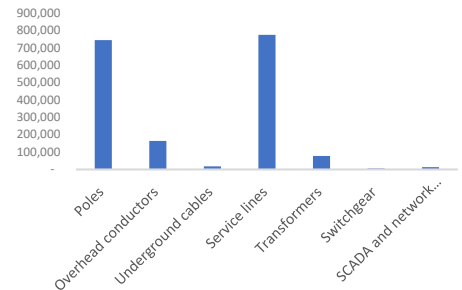
Figure 18 Average minutes off supply per customer (2011–2015)



Good reliability but extreme weather events make averages unpredictable

## Size of network

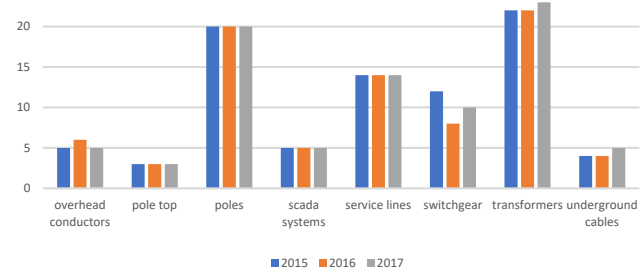
Population of core network assets



One of the bigger networks in the NEM but has one of the smallest RABs

## Asset health

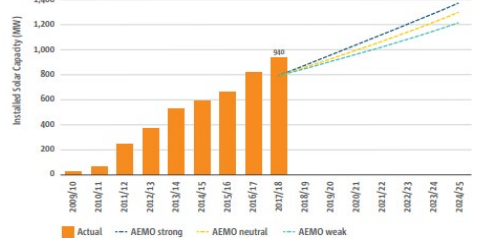
Failure rates by asset class (RIN data)



Asset management strategy appears to be working, as no evidence of increase in failure rates

## Changing network

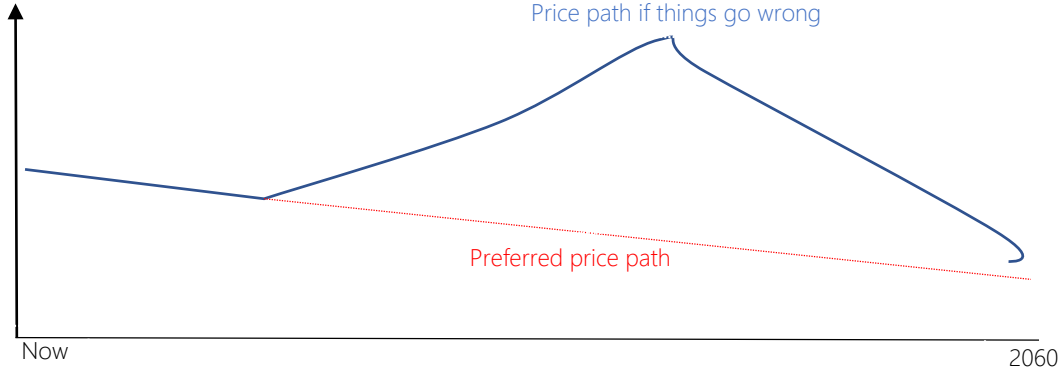
Solar penetration



Highest rate of penetration of solar suggests network design will need to change significantly

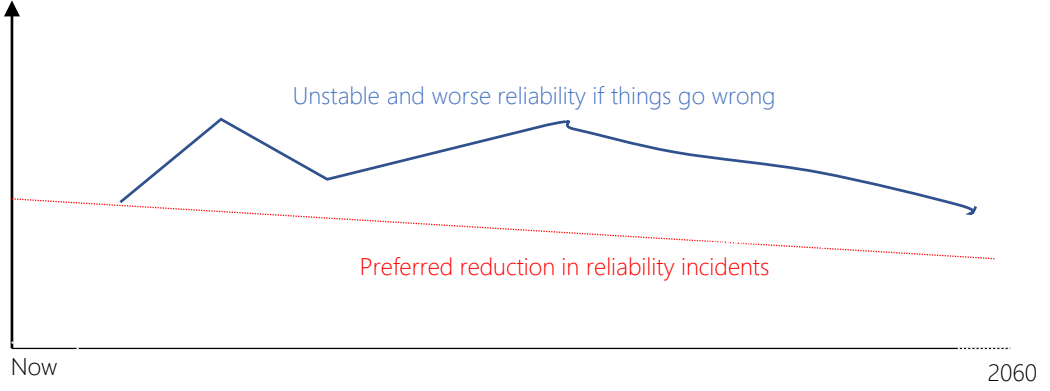
Outcomes for customers

## Prices



How do we ensure that prices continue to decline steadily over time rather than increasing or spiking?

## Reliability incidents



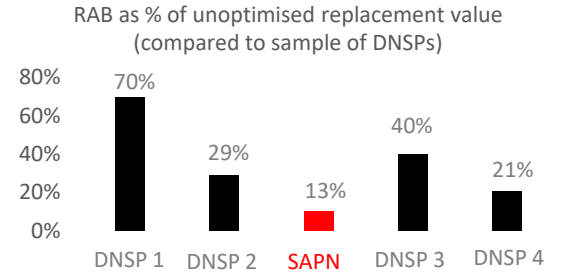
How do we ensure that reliability incidents decline steadily over time?

# Strategic Issues

The key issue is whether SAPN's decisions over 2020-25 will provide the foundation for SA customers to receive low and stable prices, stable reliability and security, and choice into the future.

SA Power Networks is in a unique position, and will face a series of headwinds in the medium to long term.

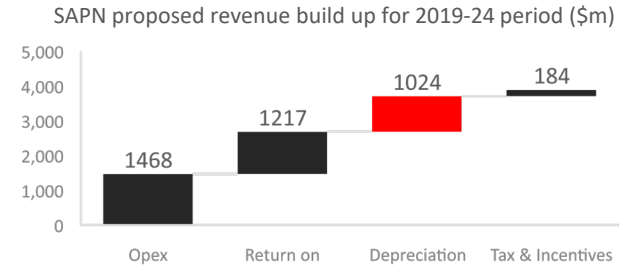
### 1. Low RAB



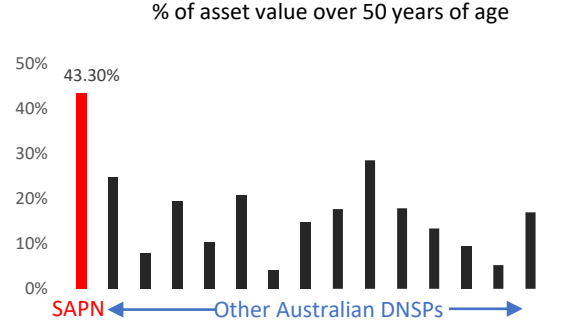
A higher RAB to replacement ratio means that new capex has a greater impact on prices if uplift occurs. SAPN has one of the lowest RABs for the size of its network.

Due to relatively fast depreciation, the RAB is being maintained at this relatively low level.

### 2. Depreciation keeps low RAB

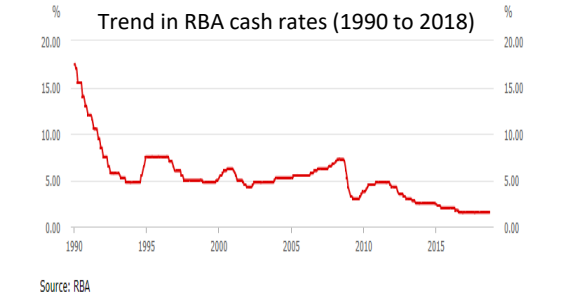


### 3. Replacement wave in long term



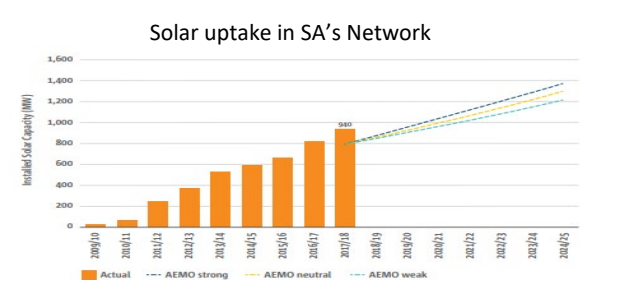
SAPN may face a sudden uplift in replacement in the medium to long term as it has many older assets, and these are generally high valued assets.

### 4. Risk of higher WACC



We are at a very low point of the interest rate cycle compared to trends over the last 30 years. If interest rates rise, so does WACC, meaning higher nominal prices for customers

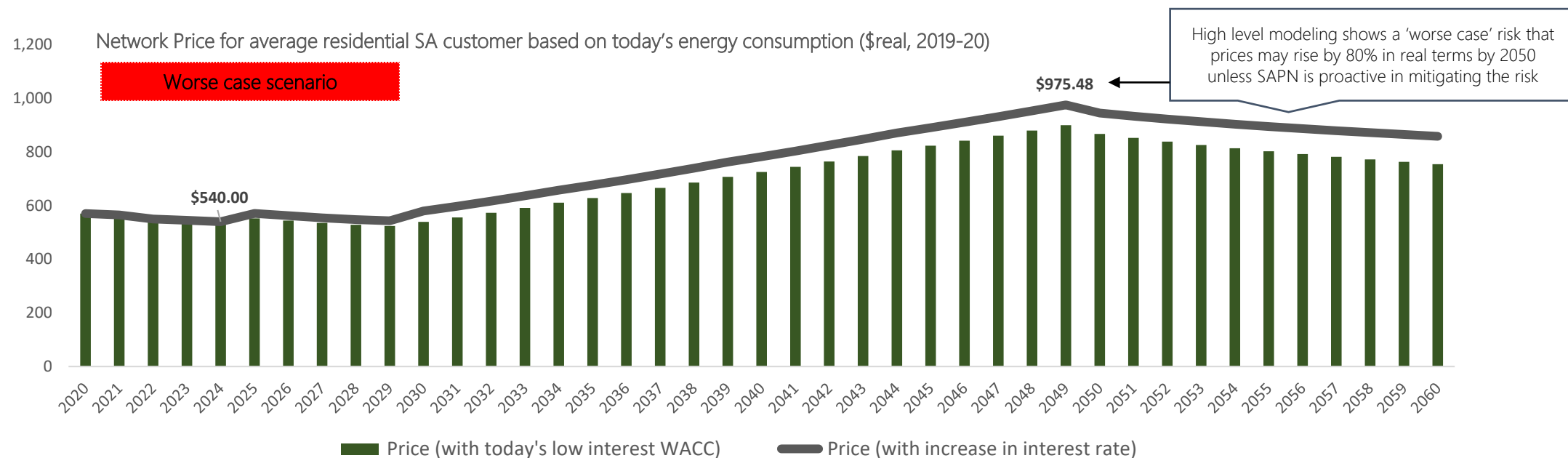
### 5. Flattening sales



Volumes are flattening as a result of customers consuming their own solar. There may be also loss of sales if commercial customers see opportunities to go off grid. Lower sales increases average price of electricity.

# Strategic Issues (continued)

A paradigm change in engineering philosophy and a clear productivity transformation will be required to maintain prices and reliability at today's level

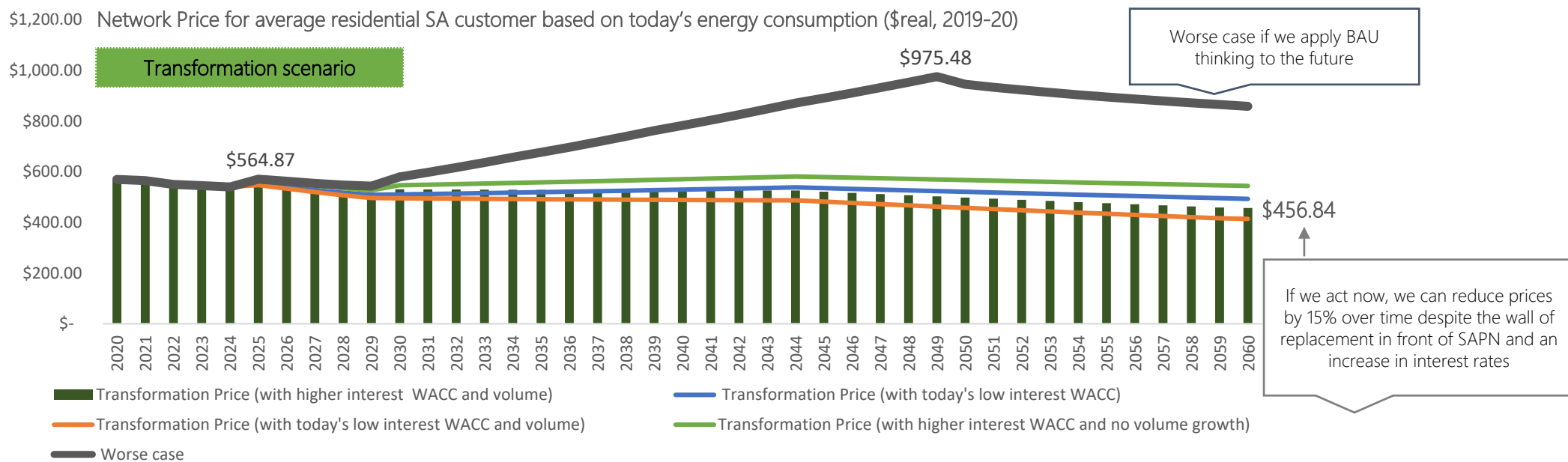


## Based on very high level modelling using worst case assumptions

- Proposed average replacement rate in 2019-24 is 0.5% assuming \$30b unoptimized value of network.
- We assume that average network assets can live 60 years on average, which means long term sustainable rate of replacement is 1.67% per annum.
- We consider that SAPN's current replacement strategy is efficient to extend asset life, but eventually a large cohort of assets will reach 60+ which will spark an uplift in replacement. We have chosen the smoothest profile over time to deliver least price fluctuation, but in reality we would expect high levels of replacement in a short period.
- We have assumed that all other levels of expenditure and tax remain fixed, but we have increased straight line real depreciation in proportion to capex uplift.
- We have assumed that prices increase in proportion with revenue. This assumes that customer growth is offset by decline in energy sales.
- Initial scenario is the structurally low interest rate will continue. The grey line assumes 200 basis point increase in cost of debt due to interest rate rise.

# Strategic Issues (continued)

Ambitious engineering and economic transformation can avert a price increase and result in steadily lower network prices over the next 40 years.



## What are the ambitious assumptions underlying the analysis

- Extending asset life so the average age of a replaced asset is 70 years on average.
- Optimising the design of the network by using DER to shrink the size of the network (75% the size of today's network)
- Pursuing 1% efficiency per annum in each area of the business – opex, network replacement, augmentation, IT and non-network.
- Promoting energy sales through electrical vehicles infrastructure (assume increase in energy sales and continued customer growth)
- Ensuring WACC does not increase from AER's draft guideline except when forced by interest rates.

NB: Data has been prepared on RIN data. The data has not been verified or audited so should not be re-produced or relied on without express permission by Dynamic Analysis



# Strategic Issues (continued)

We have taken a helicopter view of your draft plan to see if it fits the ambitious transformation roadmap so customers continue to get a good service at a reasonable price for the long term

## Engineering Vision

- We see that asset management risk method is extending life of assets
- We see investment in enabling peer to peer trading, enabling customer choice.
- We would like to understand more about slimming the future design of the network:
  - Are you retiring rather than replacing, and which areas are you targeting in the future?
  - Are you de-scaling the capacity/ redundancy of the network
  - How are you using DM/ DER in replacement, augmentation and reliability decisions?

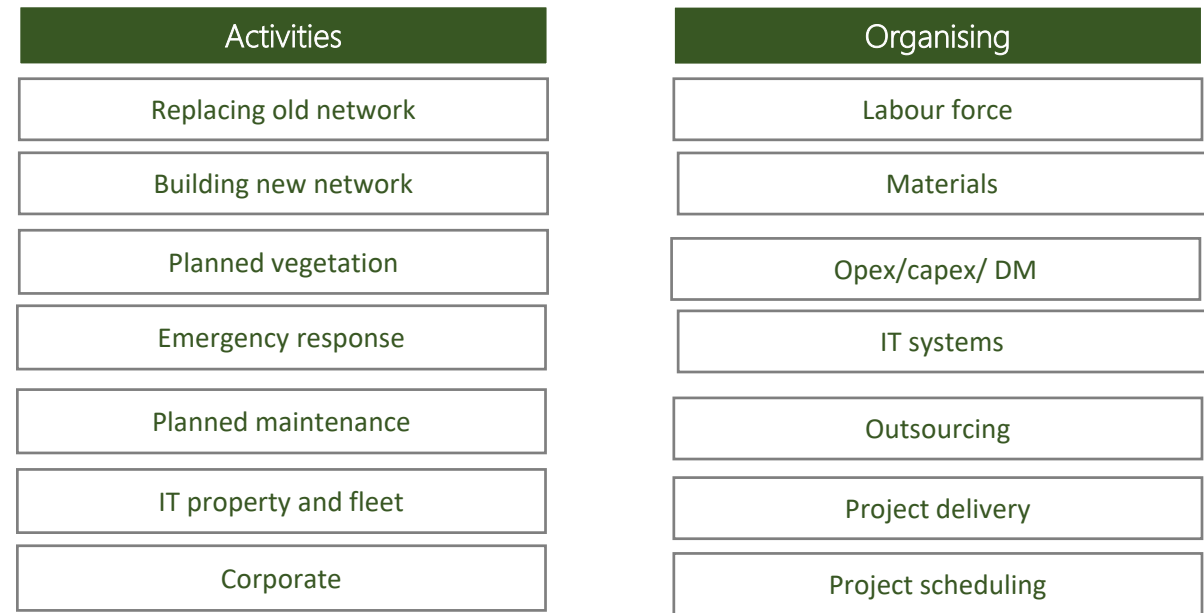
## Economic Vision

- We are surprised to see little in the way of productivity embedded into the forecast for opex and capex.
- In particular, we would expect such a large IT spend to have opex/capex benefits in the short run given a 5 year depreciation life
- We would like to understand more about where there are opportunities for efficiency



Is there scope for optimizing the asset base to slim the network of the future?

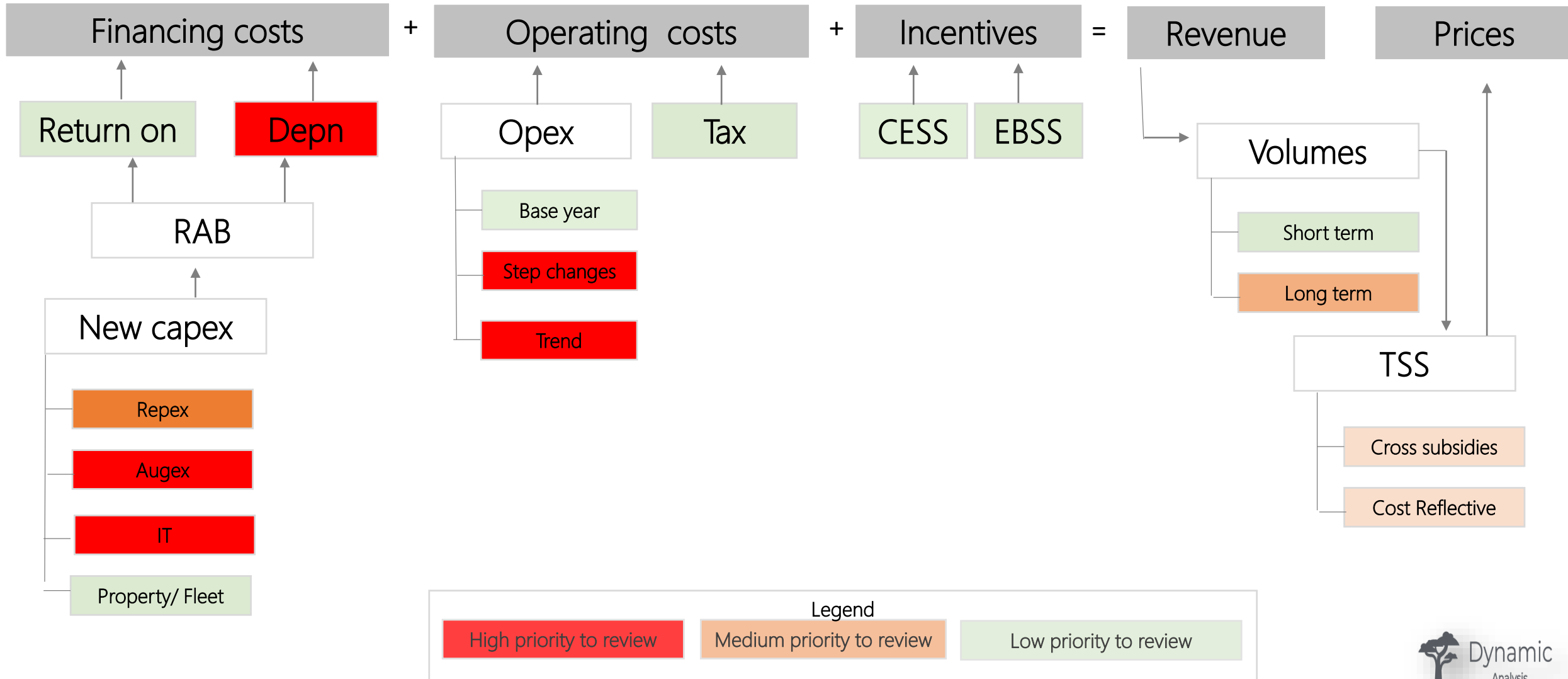
## Planning



What processes does SAPN use to explore ways to reduce its costs over time

# Zoning in on key issues

The strategic lens has provided insight on areas of your Draft Plan that require further justifications, clarifications, and potential amendments





# Zoning in on key issues – Capex

We think there are 2 questions with capex – is there a need, and is it the cheapest way? Our strategic review has shown that every capex \$ is important in keeping prices low in the long term

## Replacement

- Given the age of the network we see there is a need for volume of replacement.
- We also recognise that SAPN is on the forefront of risk assessment, and understand the drive to extend asset life within safe and reliable bounds.
- We would expect the regulatory proposal to show how SAPN is getting the least cost for the volumes of replacement.
- We also want to see examples of where DER/ technology landscape has been considered (including instances of retiring assets rather than like for like replacement) through DM.
- We would also want assurance that the program can be delivered, and reasons why SAPN did not deliver its program this period.



Customers will want to be assured that the program can be delivered, given under-delivery this period

## Augmentation

- We understand that many programs have been categorized under augmentation. Our first impression is that it is very large for a network with flat energy volumes, low connections, and high rates of DER.
- We hope the regulatory proposal will identify the locations where new growth is occurring, and the forecast of maximum demand in these areas. We hope to see consideration of transfer/ DM possibilities.
- We would like to understand the drivers of the bushfire and safety programs. A clear articulation of the risks to the community, and the cost options analysis will be useful.
- We understand the drivers for “future network” expenditure, but we note that stakeholders have raised concerns on the programs. We would like you to continue to work collaboratively in addressing stakeholder concerns.

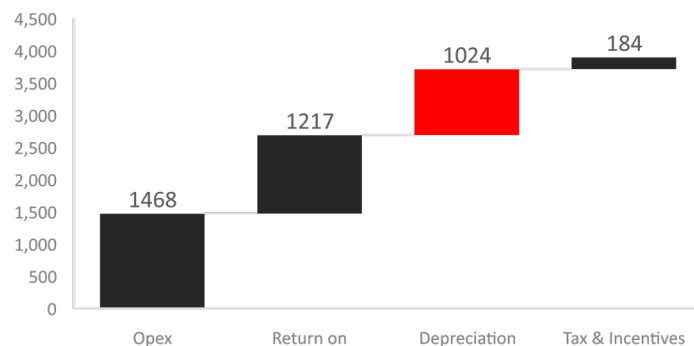
## IT capex

- IT has a significant impact on revenues with its short asset life, and need for continual renewal.
- We want some assurance that the IT programs are delivering benefits to customers through lower cost and valued services.
- We would like to see holistic cost benefit analysis to justify the program.

# Zoning in on key issues – Depreciation

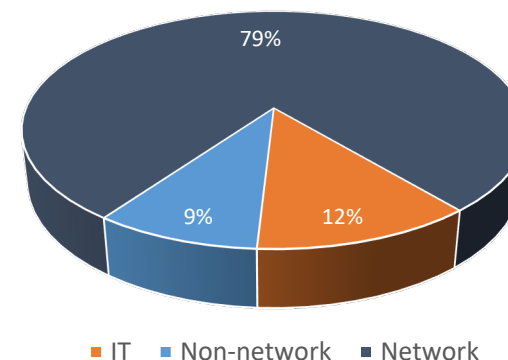
Depreciation makes up close to 25% of revenue for the 2020-25 period. Put another way, the average customer pays about \$130 each year for depreciation

SAPN proposed revenue build up for 2019-24 period (\$m)



SAPN's proposed depreciation is higher than other DNSPs as a proportion of total revenue. This may be due to the intricacies of the AER's PTRM, but we would like to understand if this makes sense for the customer in the long run.

Estimate of contribution of straight line depreciation of different asset classes (%)



While short lived assets (eg: IT) contribute to the straight line depreciation, majority is network assets with older asset lives.

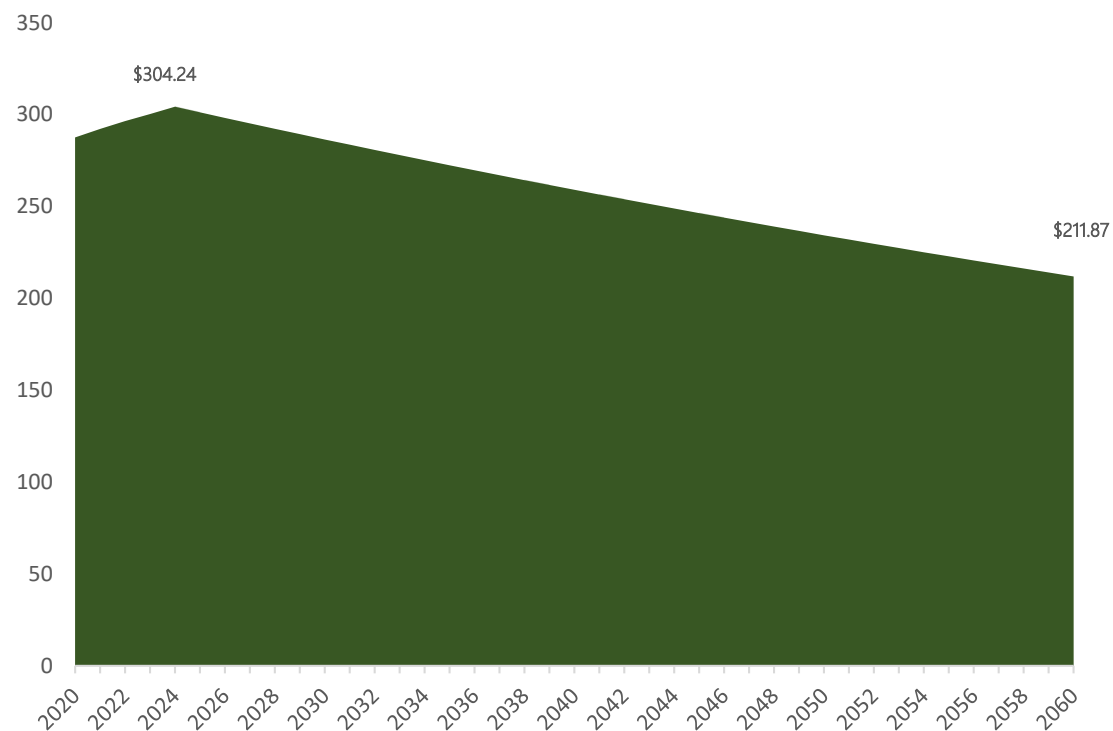
## Depreciation is complex, but some simple conceptual details would help stakeholders get a better handle

- We do not wish to prescribe a method.
- But we would like some assurance that it is sensible to so quickly depreciate network assets that are living longer and longer.
- We would like to understand the interactions with the RAB over time.
- We also note that the PTRM can cause these issues – we would like SAPN to provide its views on whether this is desirable.
- We would also like to understand whether IT systems only have a life of 5 years, or whether longer depreciation is appropriate.

# Zoning in on key issues – Opex

A key aspect of keeping prices lower in the long term is to ensure that opex continues to decline over time through productivity improvements

Opex over time under ambitious transformation scenario of 1% pa productivity (\$m, 2019-20 real)



## Productivity targets are crucial

- We understand that the EBSS provides incentives to reduce opex over time.
- We would really encourage you to adopt targets that can be shared with customers earlier through lower prices in 2020-25.

## Positive step changes

- We would like to see more detail on each step change in the regulatory proposal.

In our earlier modeling of prices we assumed that 1% pa productivity would be required to help prices stay below today's level into the future.