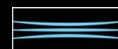


The background of the slide is a photograph of a dense green forest. Several power lines run diagonally across the frame from the top left towards the bottom right. On the right side, two workers in safety gear are suspended on a cable, working on a power line. The overall lighting is bright, suggesting a sunny day.

HOW TRANSPOWER MANAGES RISK, SERVICE AND ASSETS FOR NEW ZEALAND

FIONA ABBOTT, ASSET PLANNING MANAGER

JULIAN MORTON, PERFORMANCE & RISK MANAGER



TRANSPOWER

A landscape photograph showing a gravel road winding through a rural area. In the foreground, a dark-colored tractor is parked on the left side of the road. The road is made of light-colored gravel and leads into the distance. On the right side of the road, there are green hills and some brush. In the background, there are rolling green hills, a single tree on the left, and several high-voltage power lines stretching across the sky. The sun is very bright and high in the sky, creating a lens flare effect. The overall scene is bright and clear.

RISK-BASED ASSET MANAGEMENT

CONTEXT

- Depreciated asset base
- Expectations of downward price
- Full replacement will be unaffordable for NZ in the future
- Regulated SOE with a five yearly reset
- Energy industry uncertainty – Te Mauri Hiko
- Service definition – what is an economic service?
- We can't afford to think unilaterally – NZ pays for our investment decision

CHANGE DRIVERS

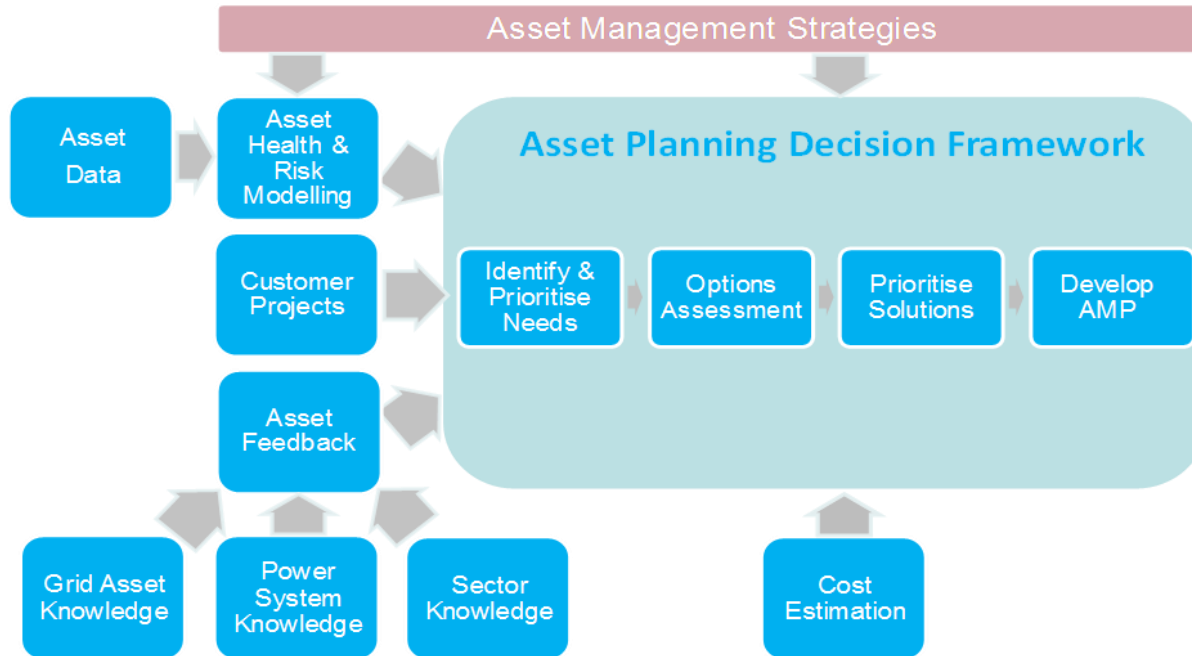
- Price path – dividend – risk is a balancing act
- Less funding, more need identification means we need to be:
 - *Mindfully prudent*
 - *More data driven*
 - *More systematic*
 - *Transparent in decision-making*
 - *Cognisant of future need*
 - *Able to value relative risk*
- Understand how much further we can reduce risk levels for the \$\$ we invest...

OBJECTIVE

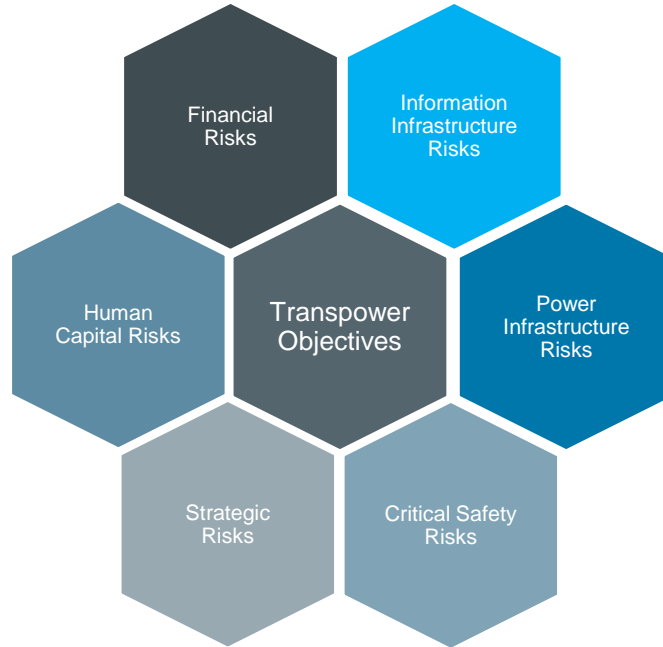
Systematic, integrated management system to:

- *Enable efficient planning and scenario analysis*
- *Drive sustainable investment planning for different futures,*
- *Ensure plans are defensible, logical, and the best representation of the needs of Aotearoa*

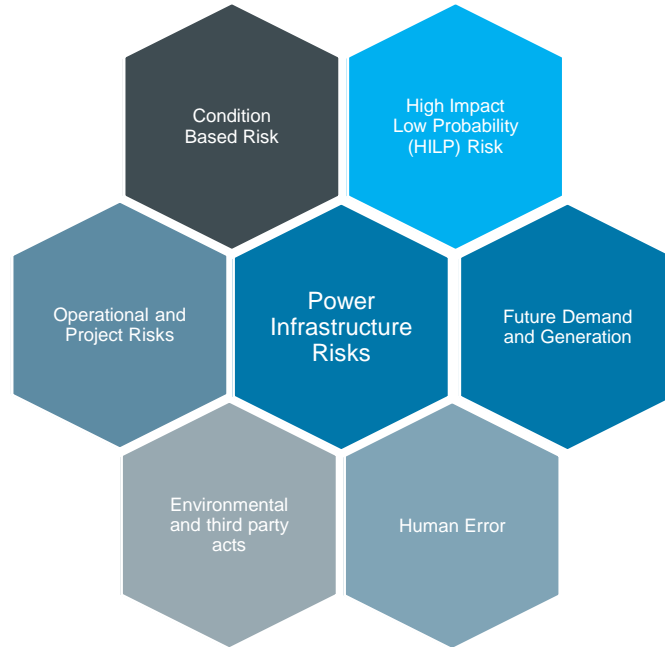
ASSET PLANNING DECISION FRAMEWORK



RISK CONTEXT



RISK CONTEXT



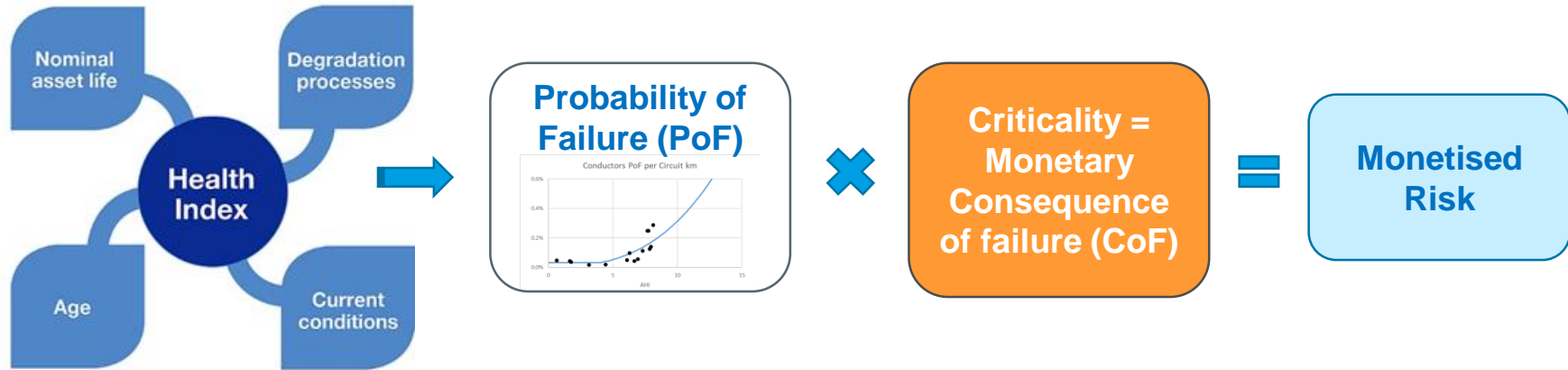
CONDITION BASED ASSET HEALTH



ASSET CRITICALITY



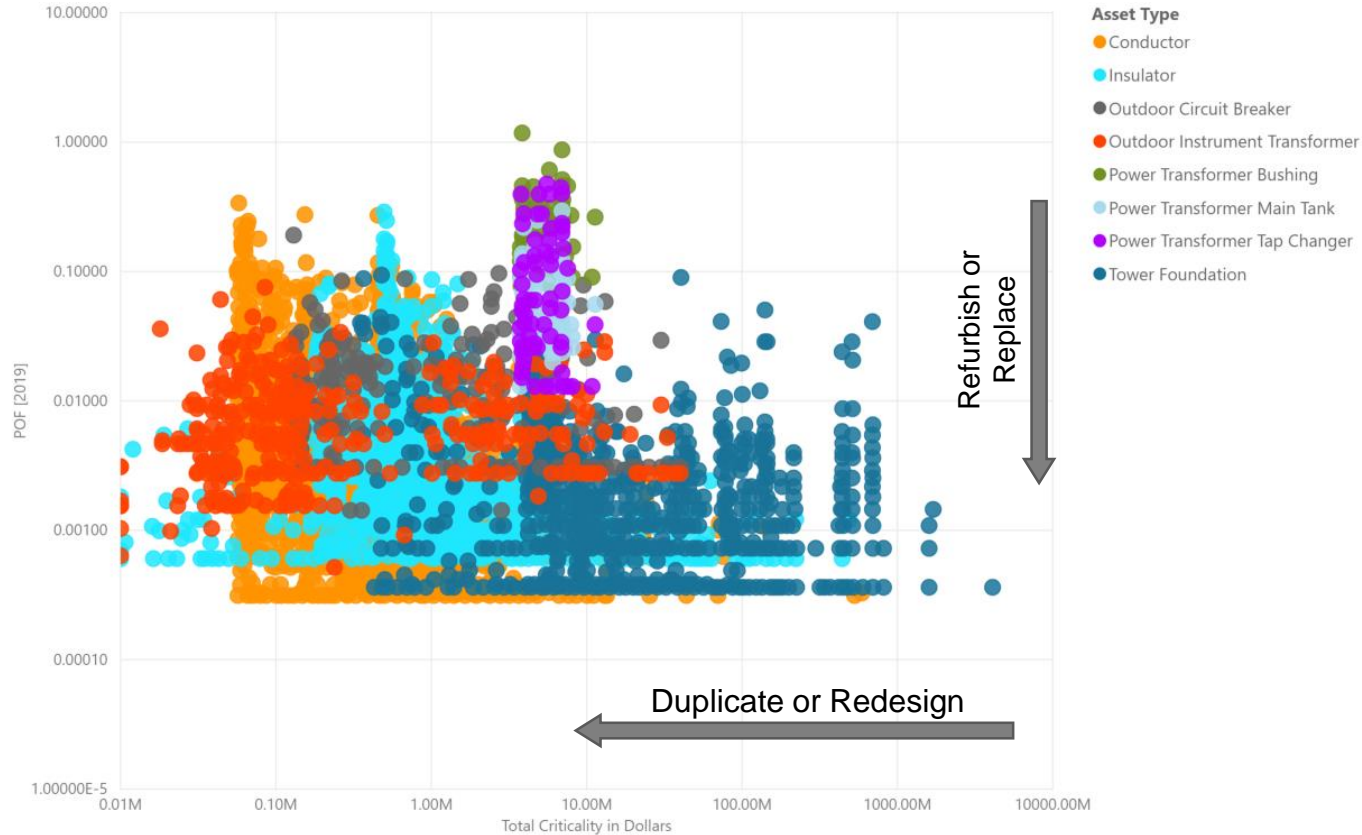
RISK IN REPLACEMENT AND REFURBISHMENT PLANNING



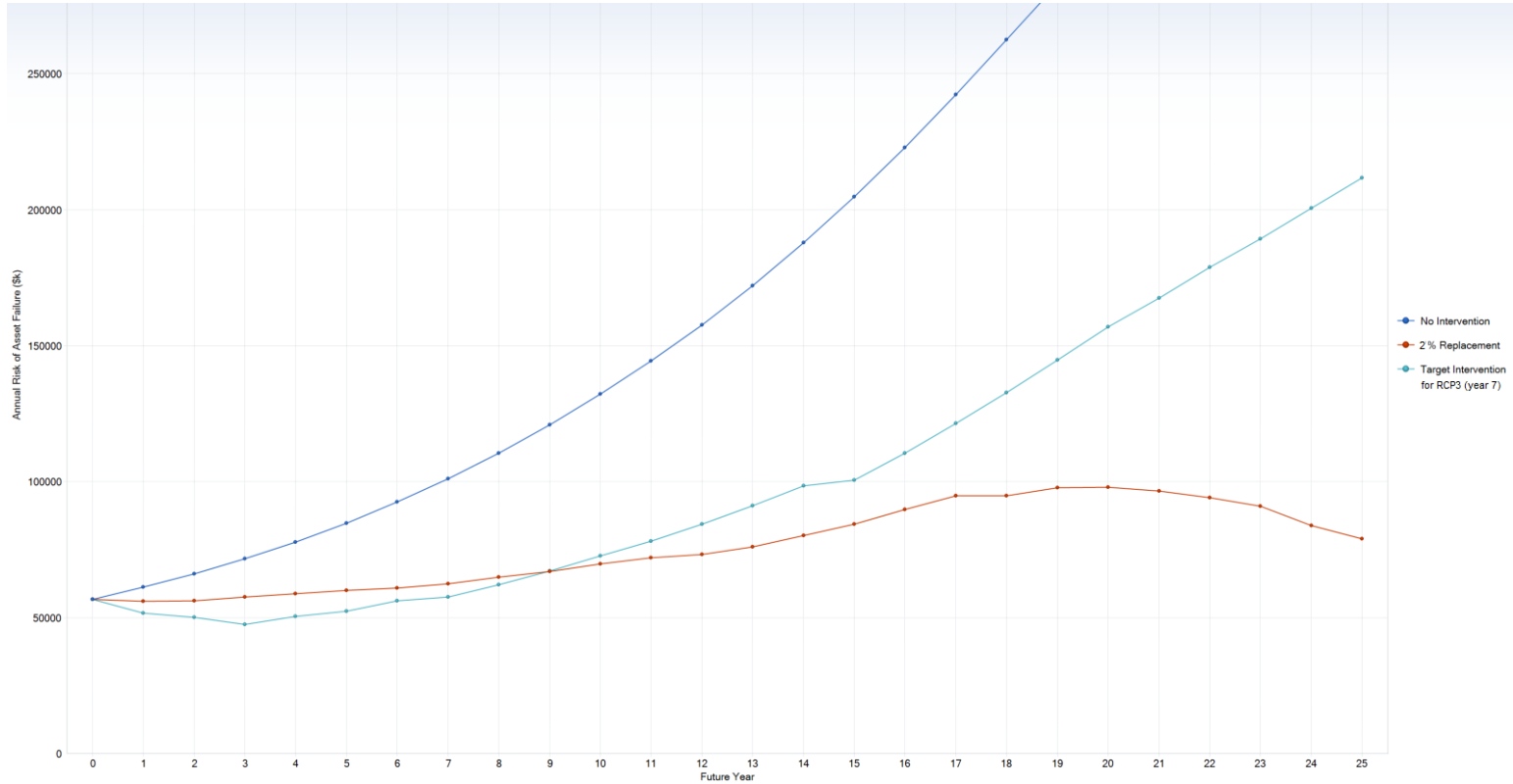
TRANSPower



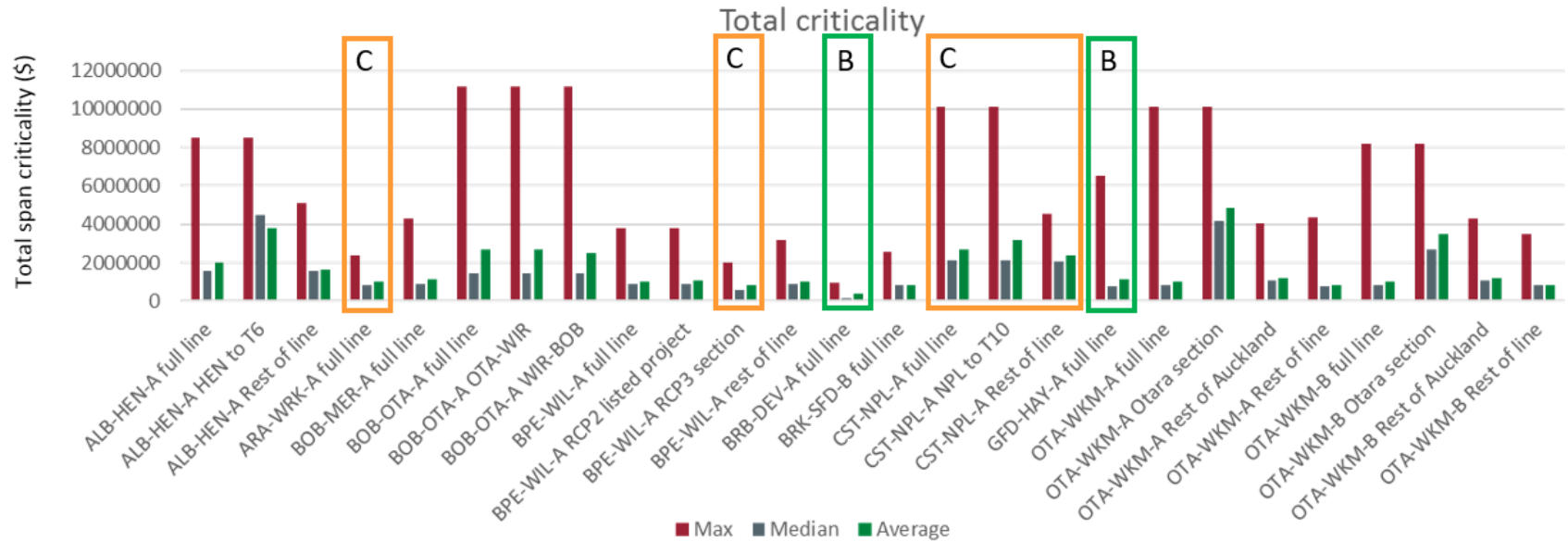
Condition Based Risk Reporting



PORTFOLIO INVESTMENT IMPACT



CRITICALITY VIEW



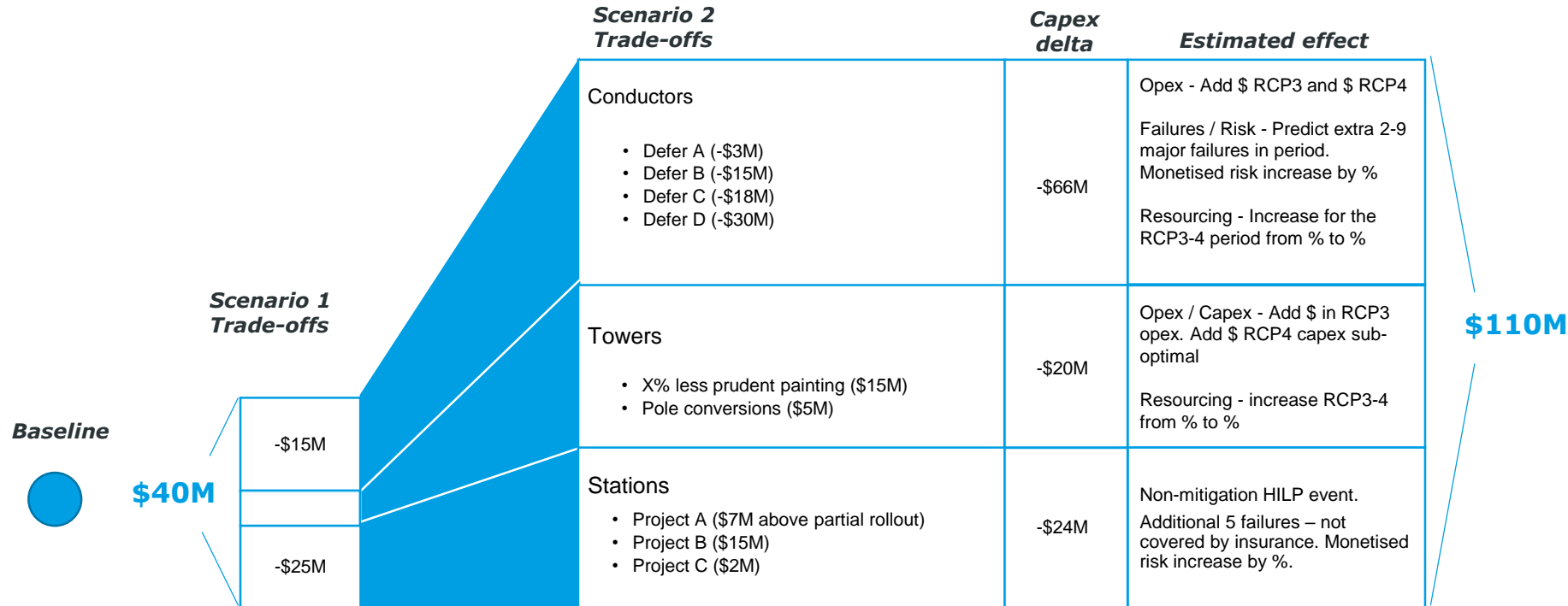


BENEFITS OF OUR APPROACH

BENEFITS

- Test different scenarios and quantify the trade-off between expenditure and risk at asset or asset class level.
- Efficient, repeatable, traceable.
- Better use of SME's knowledge gains support a more data driven approach.
- Investment decision line of sight to corporate risk matrix

Cost-Risk trade-off – Example Only



NOTE all numbers are examples only

OPPORTUNITIES AND CHALLENGES



OPPORTUNITIES

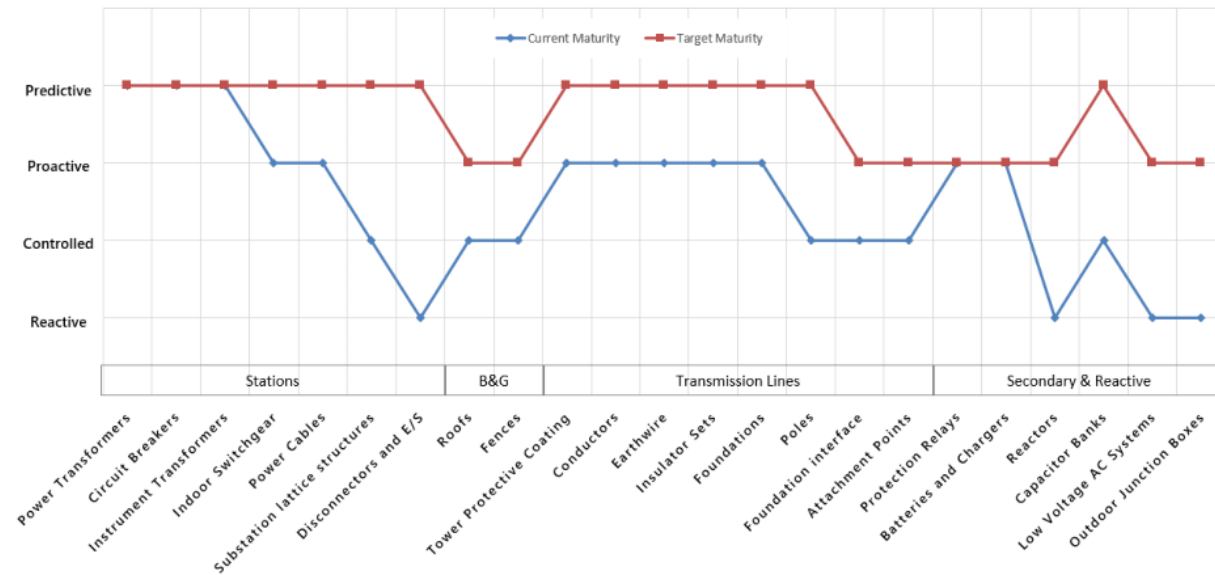
- Challenging our strategy – resilience versus reliability
- Using risk to prioritise predictive maintenance
- Improving coverage, refining assumptions, evidence collection and calibration
- Overlaying growth and constraints

CHALLENGES

- Risk is not exact – cultural change
- Data quality and construct – validation
- Avoiding short-termism – intergenerational inequity
- How far is too far?

MATURITY

**MATURITY OF ASSET HEALTH MODELS
2018 ASSESSMENT USING THE DELOITTE MATURITY MODEL**



Modelling Functionality and Maturity by Asset Class

Asset Class	Asset Health Model	Asset Criticality	Probability of Failure	Monetised Risk
Tower Protective Coating		N/A	N/A	N/A
Insulator Sets				
Attachment Points				
Tower Grillage Foundations				
Tower Non Grillage Foundations				
Tower Interfaces				
Poles				
Earthwire				
Conductor				
Power Transformers				
Outdoor Circuit Breakers				
Disconnectors and E/S				
Instrument Transformers				
Indoor Switchgear				
Gantries and Bus Supports (steel lattice)				
Batteries and chargers				
Capacitor Banks				
Power Cables				
Protection Relays				
Roofing (SPM converted to AHI)				
Fences (SPM converted to AHI)				
Yes - low maturity or low coverage	Yes - mature with improvements planned			

A photograph of a playground with children. In the foreground, a boy in an orange shirt and a girl in a brown polka-dot shirt are sitting on a red metal play structure. A younger girl in a pink shirt is standing nearby. In the background, there is a yellow and red climbing structure, a swing set, and a boy in a grey shirt and red cap is lying on a red play structure. The word "DISCUSSION" is overlaid in large white letters across the center of the image.

DISCUSSION