BUSINESS NZ ENERGY COUNCIL

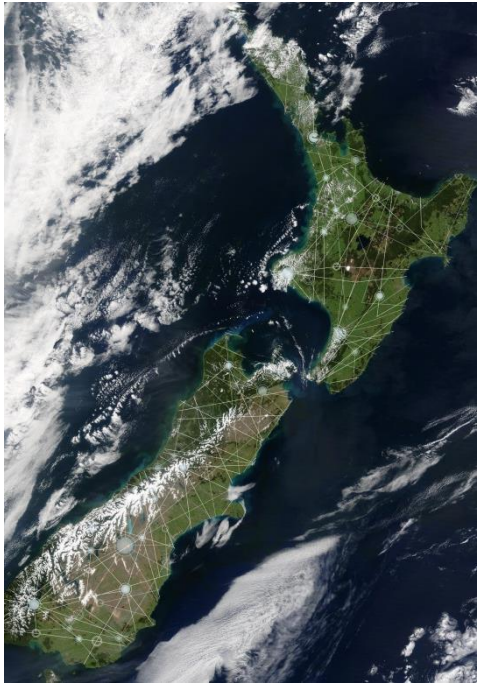
PREPARING FOR OUR TRANSMISSION NEEDS OF TOMORROW

ALISON ANDREW, CHIEF EXECUTIVE

SEPTEMBER 2016

ABOUT TRANSPOWER

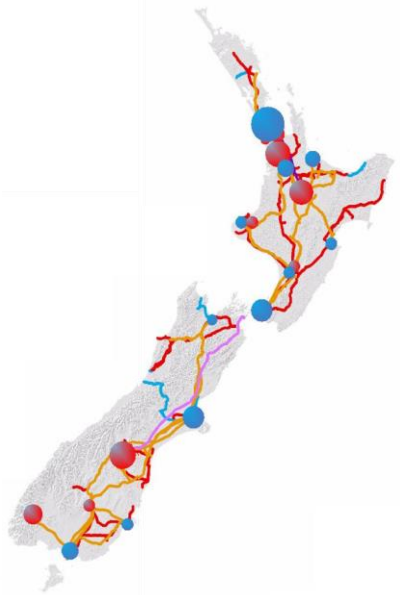
- State Owned Enterprise: National Grid Owner and System Operator
- Run the wholesale electricity market 24/7
- ‘Neutral’ party in the sector
- Transporting electricity from generators to distributors and to a number of large industrials.
- Transmission costs = 9% of Kiwi’s power bills



OUR POWER SYSTEM

System features:

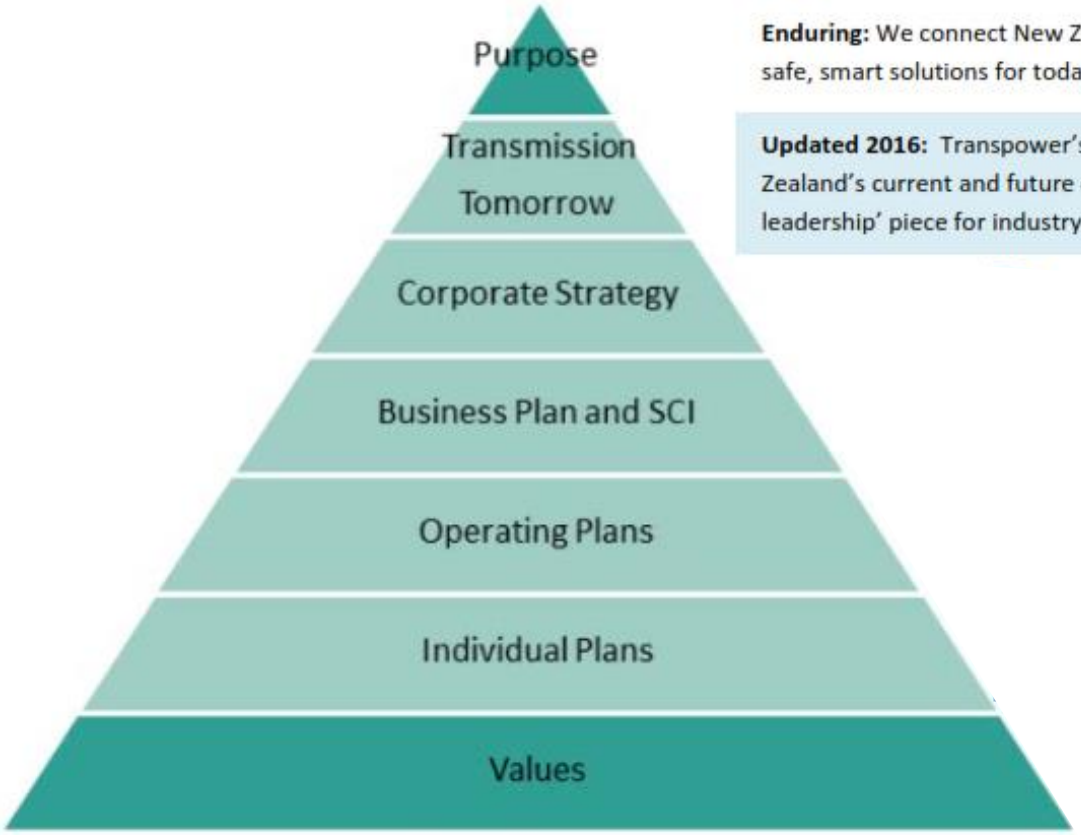
- High renewable generation
- Is long and stringy
- Over two separate islands



<u>Our challenge</u>
New Zealand needs a National Grid that is:

- Safe
- Reliable and secure
- Cost effective
- Adaptive/ flexible

OUR FUTURE FOCUS



Enduring: We connect New Zealanders to their power system through safe, smart solutions for today and tomorrow.

Updated 2016: Transpower's public view of how it will meet New Zealand's current and future electricity needs. An important 'thought leadership' piece for industry.

TRANSMISSION TOMORROW

POWERING NEW ZEALAND TODAY + TOMORROW

TRANSMISSION TOMORROW

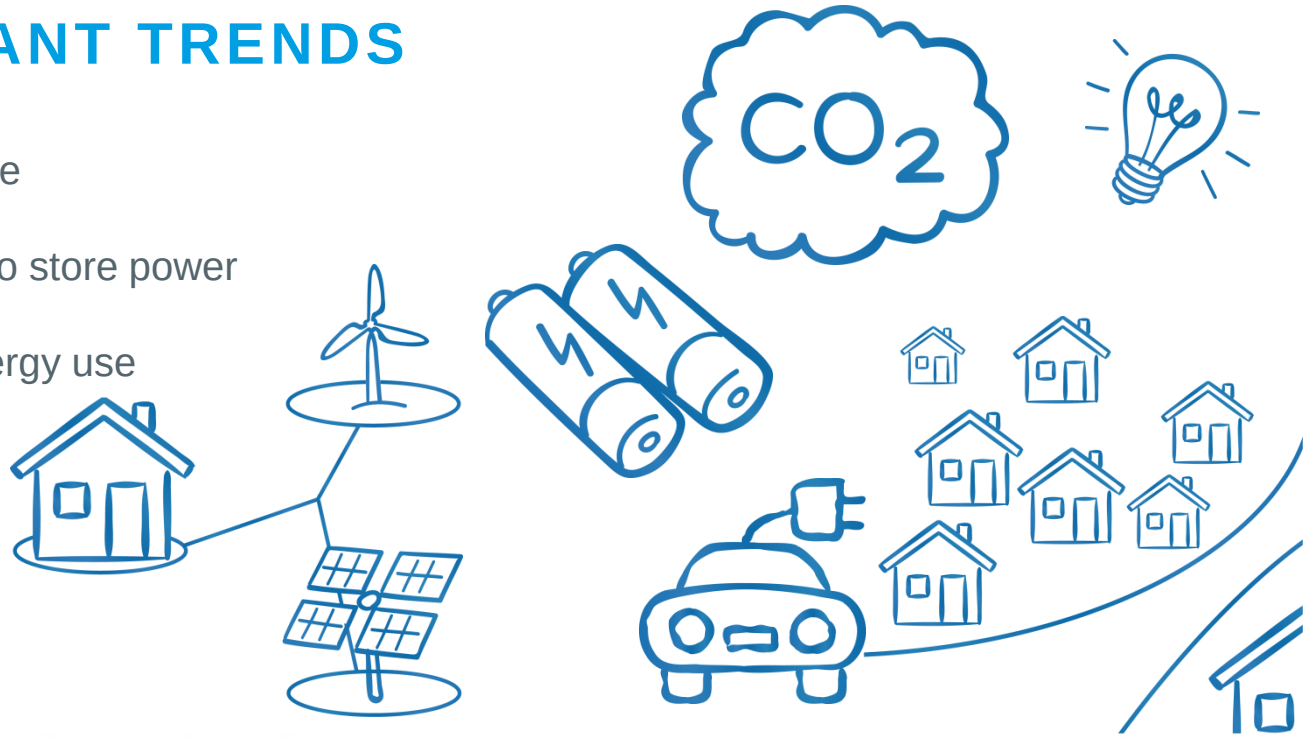
1. **Look in the mirror**
   - our value proposition
   - social licence to operate

2. **Look to the future**
   - trends
   - scenarios
   - likely impacts

3. **Paint a picture for the public and industry**
   We wanted to generate discussions about the challenges and opportunities we face

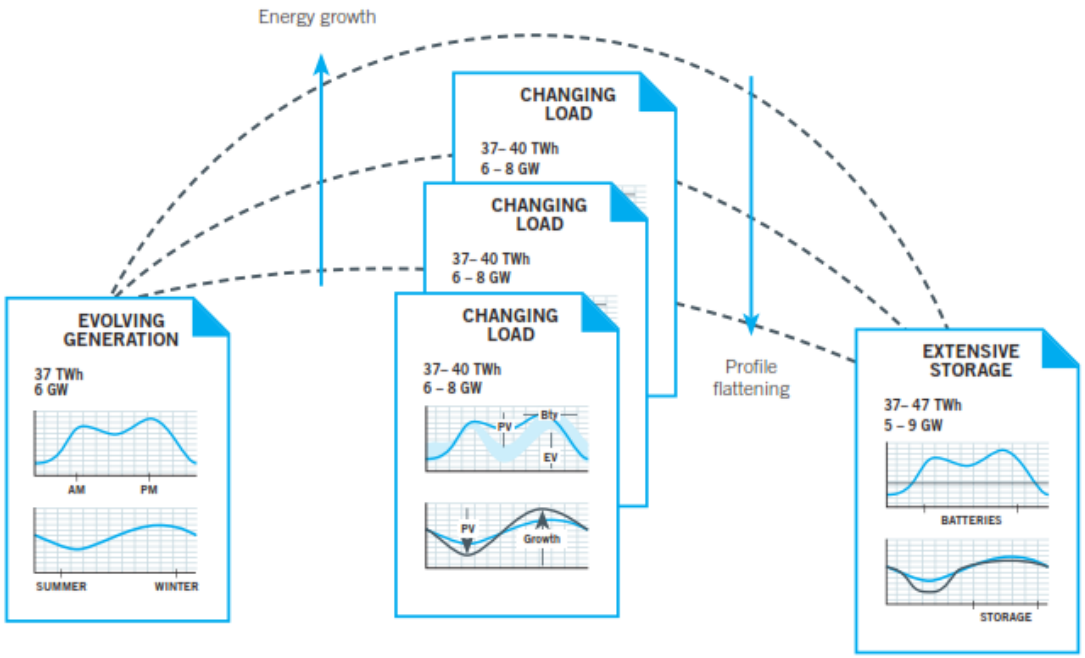
SIGNIFICANT TRENDS

- Climate change
- More options to store power
- Consumer energy use
- Smart grid
- Urbanisation
- Electrification



WE DEFINED THREE LIKELY FUTURE STATES

- Evolving Generation
- Changing Load
- Extensive Storage



EVOLVING GENERATION (NOW – 2020)

- Uncertainty continues, planning is difficult
- New technology but limited use
- Climate policy movement
- Window of opportunity to prepare for future
- Business transformation and agility

CHANGING LOAD (2020 - 2040)

- Technologies commonplace
- Population growth has increased demand
- Changing load presents challenges
- Changes are fundamental but dynamic
- Cost effective by accommodating growth but limiting investment

EXTENSIVE STORAGE (2040 - BEYOND)

- Technologies fully leveraged
- Extensive storage is coordinated
- Reliability behind the grid
- Will require successful evolution of technical, commercial and operational arrangements
- Grid ensures resilience, enables low carbon energy

THESE STATES = OUR PLANNING TRAJECTORY

1. Evolving generation **(NOW to 2020)**

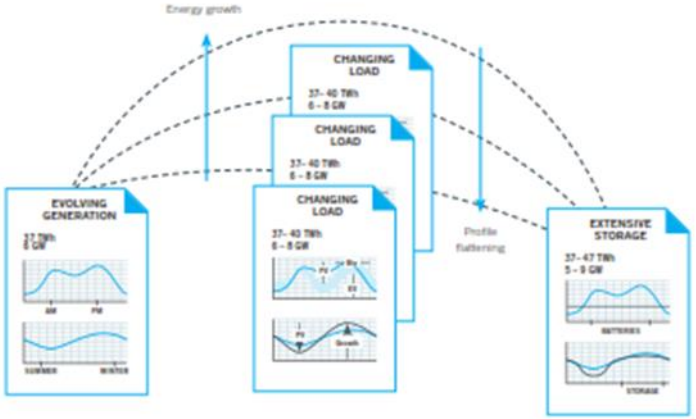
    - planning uncertainty
    - opportunity to prepare

2. Changing load **(2020 to 2040)**

    - changing operations
    - pressure to expand

3. Extensive storage **(2040+)**

    - game change



WHAT THIS MEANS FOR US

- As an industry, we need to work together to create a sustainable power system for New Zealand
- The timing may be right for our businesses to consider battery storage options in homes and offices – and electric cars
- The viability of solar will continue to be a hot debate – we should continue to lead these discussions in the public form

TRANSPOWER IS HERE FOR NEW ZEALAND

- Our role will endure as electricity needs evolve and grow
- The National Grid is 99.996% reliable
- The system is over 80% renewable
- We provide value for money
- We will work efficiently to meet the changing energy needs of our country

OUR STRATEGIC PRIORITIES

1. REDUCE COSTS AND EVOLVE OUR SERVICES TO REMAIN COMPETITIVE
2. PLAY AN ACTIVE ROLE IN SHAPING THE INDUSTRY'S FUTURE
3. SUSTAIN OUR SOCIAL LICENCE TO OPERATE
4. MATCH OUR INFRASTRUCTURE BUILD TO NEED OVER TIME
5. IMPROVE OUR ASSET MANAGEMENT
6. DEVELOP OUR ORGANISATIONAL EFFECTIVENESS

QUESTIONS?