

# Better energy future



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The information contained in this presentation should be considered in conjunction with the condensed interim financial statements, which are included in Meridian's annual report for the year ended 30 June 2015 and is available at:

http://www.meridianenergy.co.nz/investors/

All currency amounts are in New Zealand dollars unless stated otherwise.

#### **Today**

- New technologies
- Thermal plant retirement in New Zealand
- Wholesale environment in Australia
- 2016 operating update
- About Meridian and the New Zealand market





### New technologies



#### **Utility scale generation**

- Marine/wave technology not expected to be cost competitive in NZ for the foreseeable future
- Grid scale solar PV is not expected to be cost competitive in NZ for 20 years
- Wind turbine improvements are expected to lead to cost reductions
- Meridian is collaborating with manufacturers to achieve a sub NZ\$70 per MWh cost of energy wind options

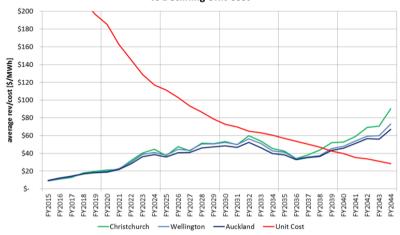


#### **Utility scale batteries**

- NZ has a significant amount of grid storage through its hydro lakes
- Battery storage will do little to add value to system flexibility for some time
- Value of battery storage significantly below current costs
- Costs will fall and value will increase over time
- Transition point is not for some time
- Network companies may defer distribution investment through installation of batteries







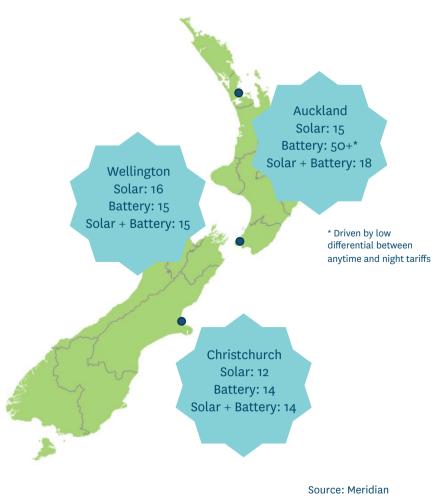
Source: Meridian

#### Distributed solar PV and batteries in NZ

- Solar PV is growing and battery trials are beginning, industry participation is spreading
- Overall less than 0.5% of NZ customers
- Residential economics are not subsidised and very marginal; may improve with falling prices or worsen with changing lines charges
- Demand grows even assuming high rate of solar PV installation
- Batteries do not materially change system demand
- Meridian's focus is on being a tariff provider – little opportunity across the solar PV/battery value chain

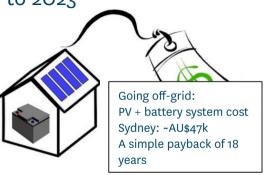


Lowest current simple payback periods in years (3kW solar, 7 kWh battery – not going off grid)



#### Distributed solar PV and batteries in Australia

- Subsidies have supported high solar PV penetration – 1.4m homes
- Forecast to triple during the next decade
- Superior economics than NZ with additional subsidies
- Mass exodus from the grid is unlikely but hot spots for solar PV and storage emerging
- Retailers are much more active in solar PV and increasingly batteries than in NZ
- AEMO forecast that energy efficiency and solar PV will absorb most NEM demand through to 2023



Lowest current simple payback periods in years (3kW solar, 7 kWh battery – not going off grid)

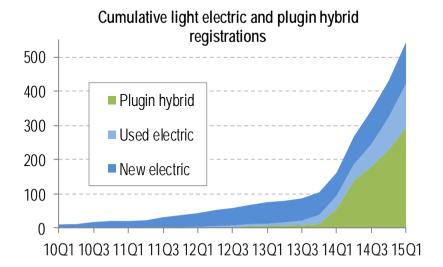


Source: Meridian

#### Electric vehicles in NZ

- Small number of electric vehicles in NZ currently
- Growth initially expected to be dominated by hybrids
- Battery v hydrogen technology futures yet to play out
- A lot of discussion and work on charging infrastructure is occurring
- Meridian's focus currently on retail tariffs to electric vehicle owners
- Switching to electric vehicles at scale would bolster demand growth
- Charging consumes less energy than the peak it creates; battery and price incentives should smooth this peak





Source: New Zealand Government

### Thermal plant retirement



#### **Recent announcements**

Otahuhu B

Owner: Contact Energy

Capacity: 400MW Closed: 30 Sep 2015

Retirements will remove almost 1,100MW from the system

- And the flexibility inherent in the Huntly coal stockpile
- Depletion of that stockpile by 2018 will mean up to 2/3 of current thermal storage will have been removed

Southdown

Owner: Mighty River Power

Capacity: 140MW

Expected closure: 31 Dec 2015

**Huntly Rankine Units** 

Owner: Genesis Energy

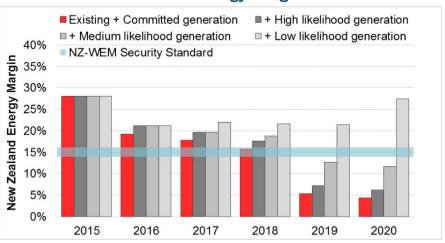
Capacity: 500MW

Expected closure: by Dec 2018

#### **Security of supply**

- If all announced retirements proceed and no new builds occur:
  - NZ's winter energy margin will fall below the current security standard
  - Capacity adequacy in the upper North Island will also become a concern
- New builds will be required:
  - Flexible thermal generation to manage hydro swing
  - New baseload generation to manage growing seasonal demand
- Low demand growth does not remove the need for new builds or deferred retirements
- A smelter exit only defers the need for new builds
- Smelter's operating future creates generation investment uncertainty

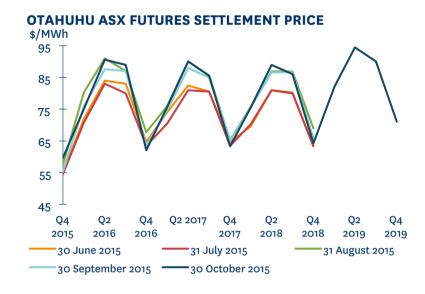
#### **New Zealand Winter Energy Margin**



Source: New Zealand System Operator

#### **Price impacts**

- ASX prices have lifted since early August
- 2019 prices are trading above 2018
- Over the longer term prices are expected to rise above the cost of new generation
- Low demand growth does not alter the expectation that prices will rise
- A smelter exit only defers the expectation of future price increases
- It falls to the whole industry to manage the implications and risks



Source: Meridian, ASX

#### Meridian's response

- Thermal retirements do not change the NZ system's need for flexible generation and fuel
- 5,000-8,000 GWh of load is currently spot exposed and system shortfall is highly undesirable
- Meridian's operational risks are less concerning than physical impacts on the system
- New Zealand's renewable generation means that some thermal plant will be required for the foreseeable future
- Mitigations to the recent announcements are being investigated by all major industry participants





#### **Possible industry mitigations**

- Thermal fuel flexibility options
  - Particularly gas supply/demand/ storage
- Options for thermal generators
  - Genesis may retain Huntly given its cost advantage over new builds
  - Others are considering new open or combined cycle gas turbines
- Renewable options for Meridian and others
  - New builds and variations to existing hydro storage
- Demand responses
- Given the range of options and the industry-wide incentives, confidence a market solution will emerge



### Australian wholesale environment



#### The Australian market

- Declining demand at the market level
- Adjusted RET (33TWh p.a. by 2020) calls for more than 7,000MW of new generation
- Certificate market has firmed and medium term thermal plant retirement should increase wholesale prices
- Market's pipeline for new development is significant, but options are short term
- Appetite for conventional PPAs is low
- Grid scale solar continues to get cheaper and may eclipse wind in the medium term
- Increased penetration of rooftop solar, even with reduced or no subsidy

#### NEM ELECTRICITY CONSUMPTION



source: Bloomberg



# Strategic focus



#### **Strategic focus**

# Maintaining an open market in which we can compete effectively

- Transmission pricing
- RFT
- Thermal retirements

# Protecting and maximising generation asset and wholesale position

- Agreed position on water use with main competing interests including enhanced storage
- Reducing exposure to NZAS
- Improving asset yield while maintaining low stay in business capex

#### Close known retail profit gap

- Efficiency full smart meter rollout and investment in self service
- Service significantly improved service stats
- Price focus on higher profitability segments and shift in comparative price position

#### Opportunities for earnings growth

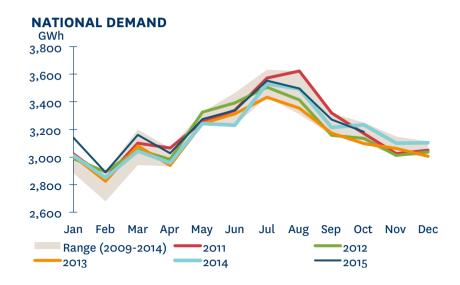
- Powershop Australia
- Powershop in the Northern Hemisphere
- NZ renewable pipeline

## 2016 operating update

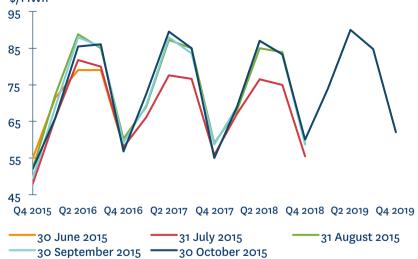


#### **Market data**

- Demand growth in the 2015 calendar year has slowed to be 1.7% higher than the same ten month period last year
- Switching remains high with the 12 month average switching rate for all retailers at 19.9% at the end of September 2015
- 2016 to 2018 ASX prices lifted during August 2015 with the thermal plant retirement announcements
- 2019 futures are trading above 2018 prices

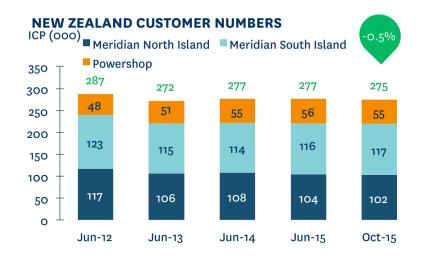


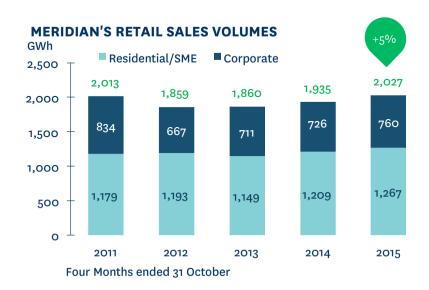




#### **New Zealand retail**

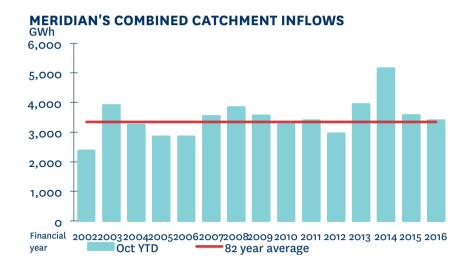
- Small decline in ICP numbers since June 2015, reflecting aggressive residential sales activity
- To date this financial year residential/
   SMB sales volumes are 5% higher than the same period last year
- Corporate sales volumes are 5% higher than the same period last year
- To date this financial year the average retail sales price is 4% higher than the same period last year

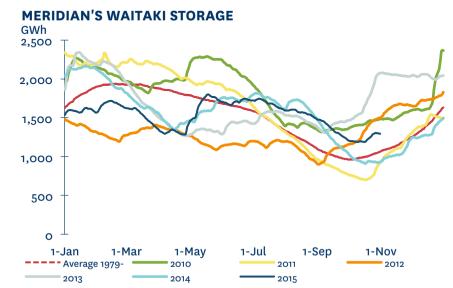




#### **Hydrology**

- To date this financial year inflows are around historical average levels
- Storage at the end of October 2015 was 121% of historical average
- To date this financial year Meridian's New Zealand generation is 4% lower than the same period last year
- To date this financial year the average price Meridian has received for its New Zealand generation is 10% lower than the same period last year
- Similarly the average price Meridian paid to supply contracted sales is 12% lower than the same period last year





### Meridian and the New Zealand market

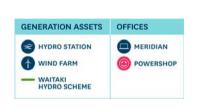


#### **About Meridian**

- Vertically integrated renewable generator, retailing electricity to over 330,000 customers in New Zealand and Australia
- New Zealand's largest generator from purely renewable sources
- Seven hydro stations
  - Flexible plant with New Zealand's largest storage
  - Long life assets with low operating cost
  - Benchmark operational efficiency and low capital needs
- Seven wind farms
  - More than a decade of construction and operational experience
  - Unsubsidised in NZ with high capacity
     factors

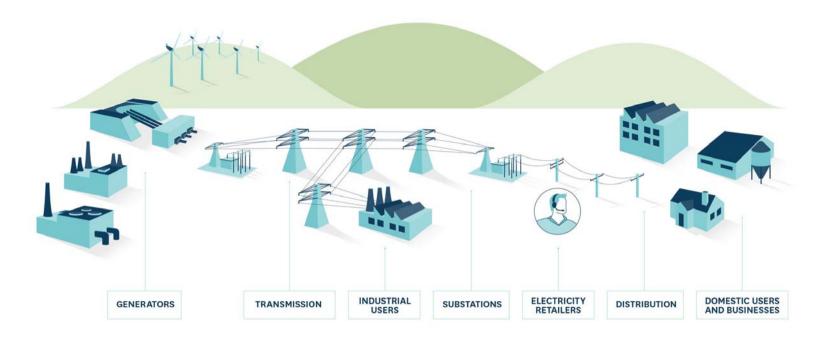
    MERIDIAN ENERGY LIMITED 2015 UBS AUSTRALASIA CONFERENCE







#### The New Zealand electricity market



**5** Major generators

Transmission grid operator

29 Distribution businesses

26 Electricity retail brands

Million consumers