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# The ideal electricity market from a Wind Generation perspective

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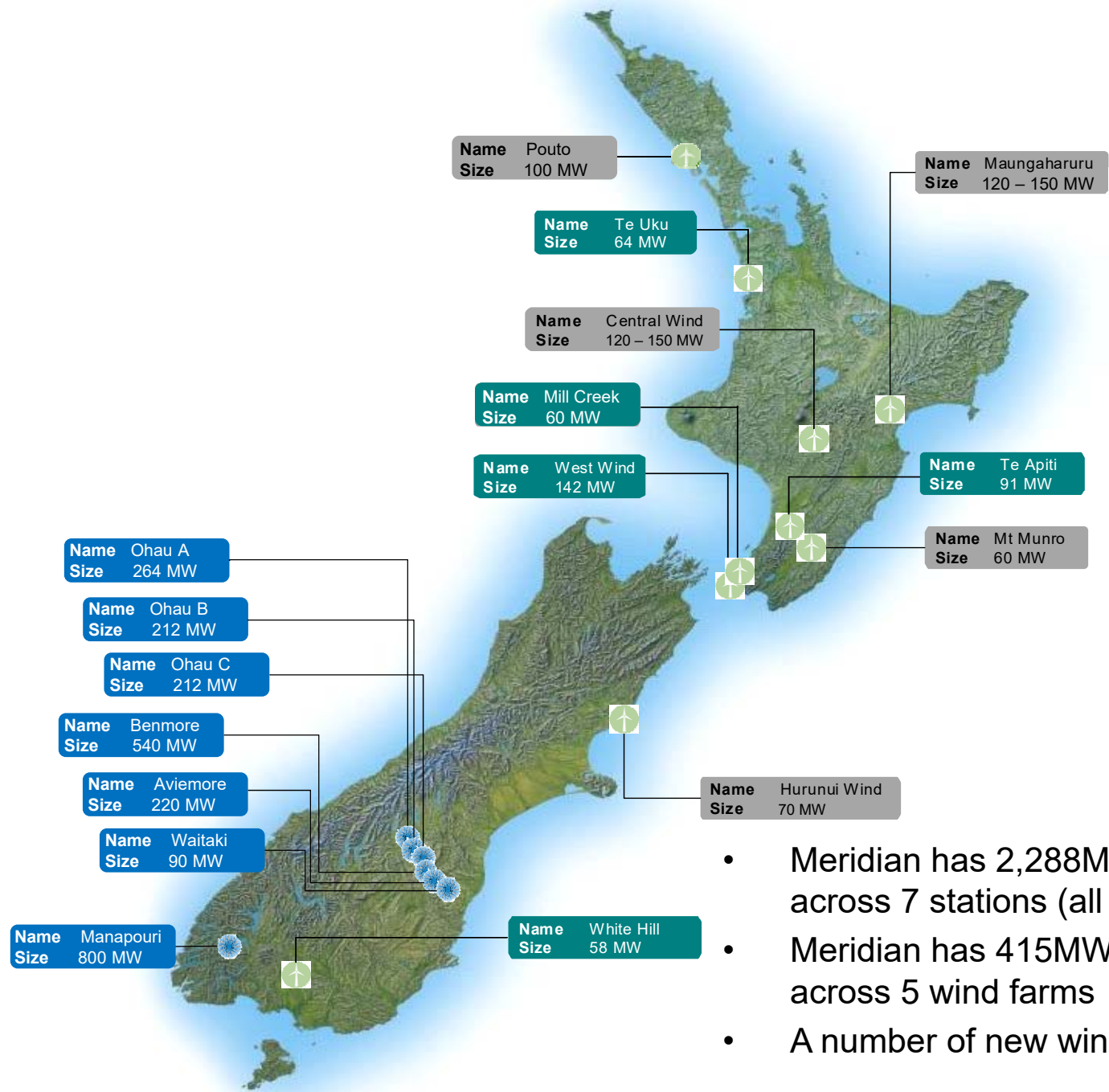
# Introduction

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## Outline:

- Meridian – Wind Farms and Hydro Sites
- Electricity Market efficiency - Wind Generation
- Wind Generation – Production Volatility
- Forecast Error
- Market Structure – Future Adjustments



- Meridian has 2,288MW of hydro generation across 7 stations (all in the South Island)
- Meridian has 415MW of wind generation across 5 wind farms
- A number of new wind farms in its pipeline



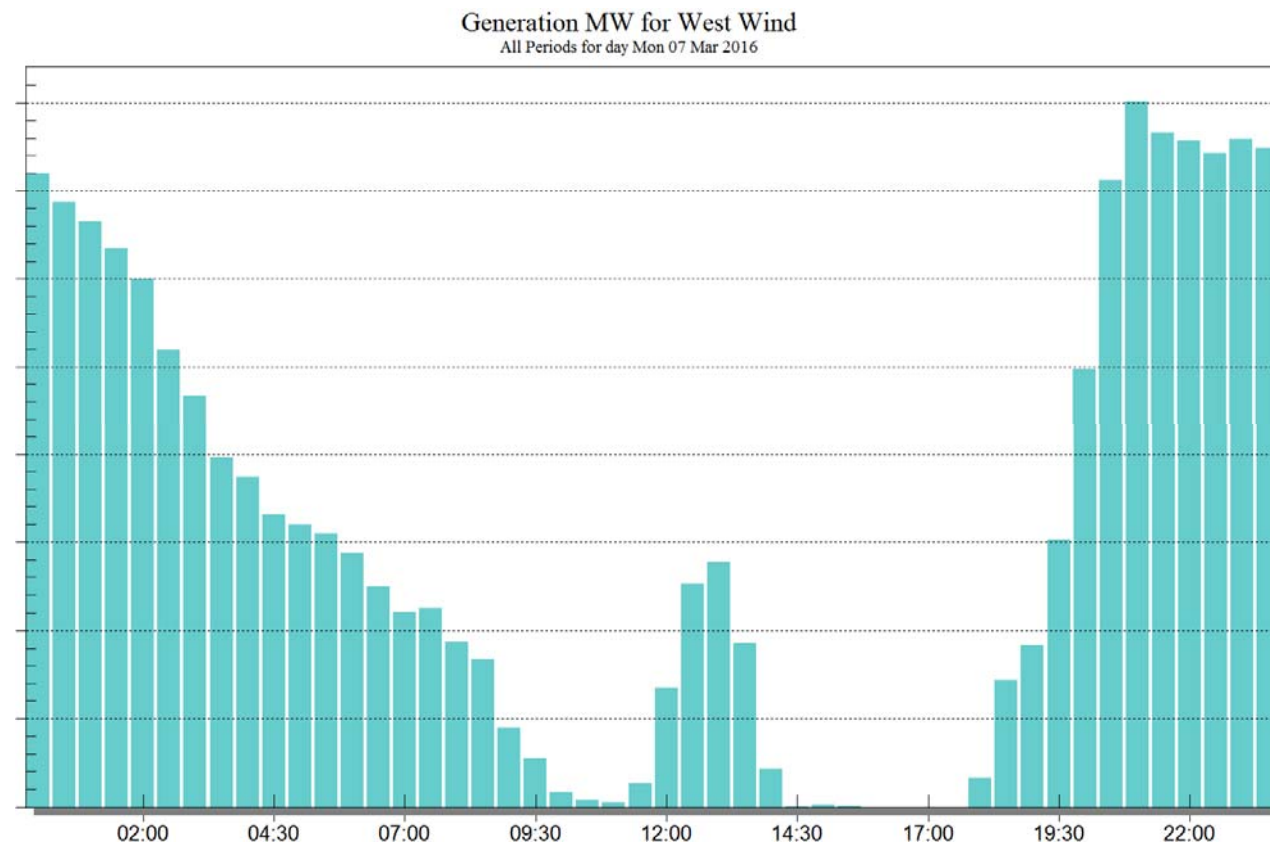
## Electricity Market Efficiency

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- Wind – just one form of generation
- NZEM is important to Meridian
  - our generation, our customers and forward markets rely on it
- Improving NZEM efficiency is the goal
  - Meridian trades its hydro assets
  - Meridian wants to trade its wind assets
- To achieve this NZEM offer rules must be refined
  - first the market “offer” gate
  - then wind offer rules

# Electricity Market – Wind volatility

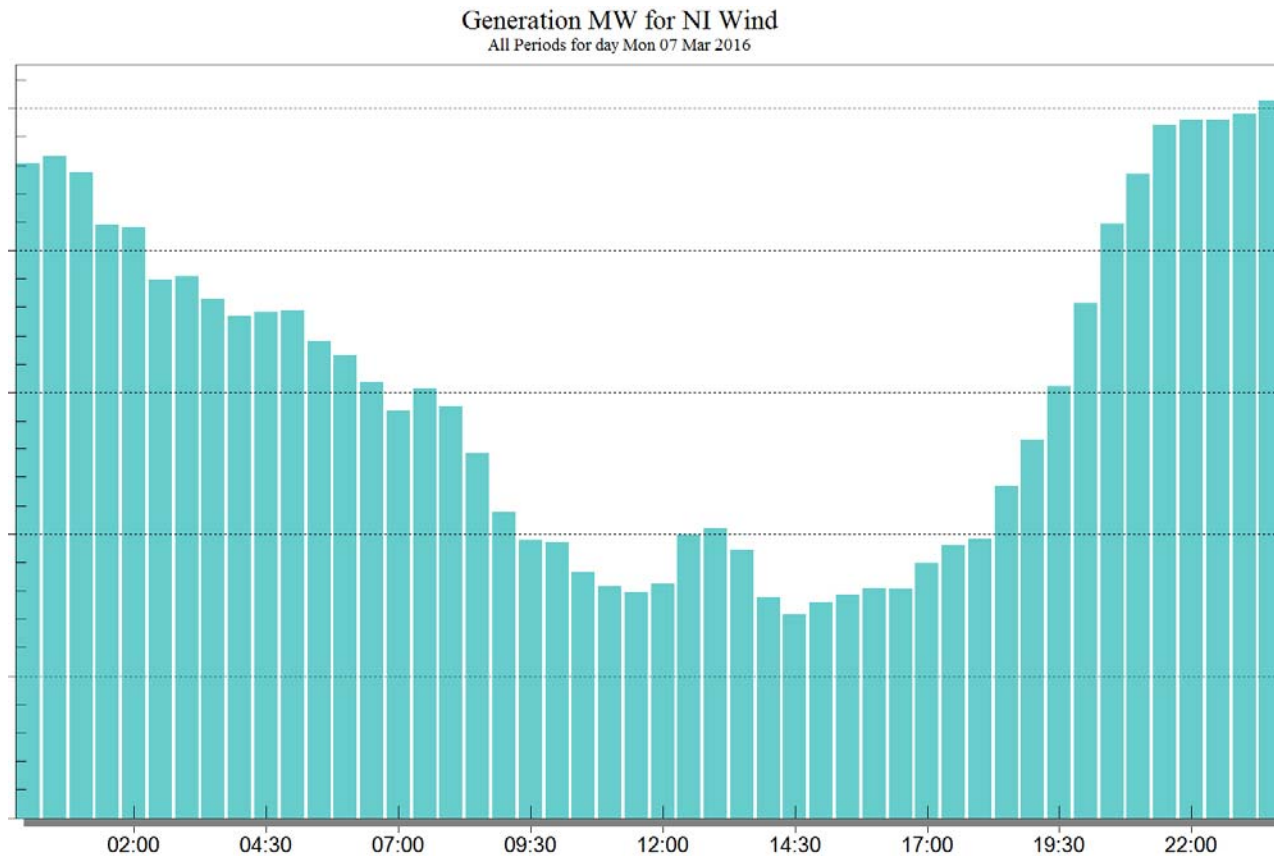
- The graph below shows hourly wind production for West Wind





# Electricity Market – Wind volatility

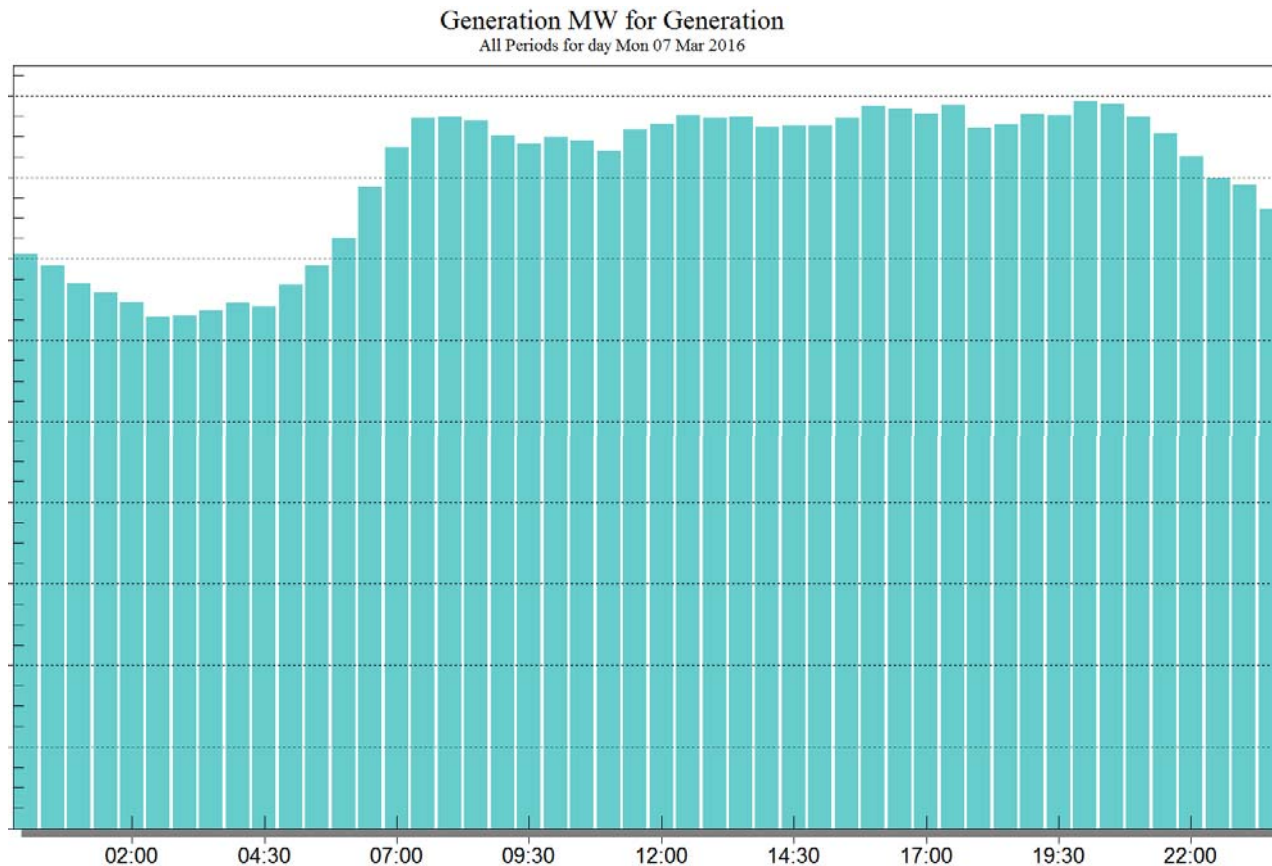
- This graph shows hourly production for Meridian’s NI Wind farm
  - a Portfolio of Wind sites offsets variable production at one (this is what Portfolio’s do)





## Electricity Market – Wind volatility

- This graph shows Meridian’s combined hydro and wind production on the same day
  - the combination eliminates volatility and ends up looking like a consumers profile





## Electricity Market – Forecast Error

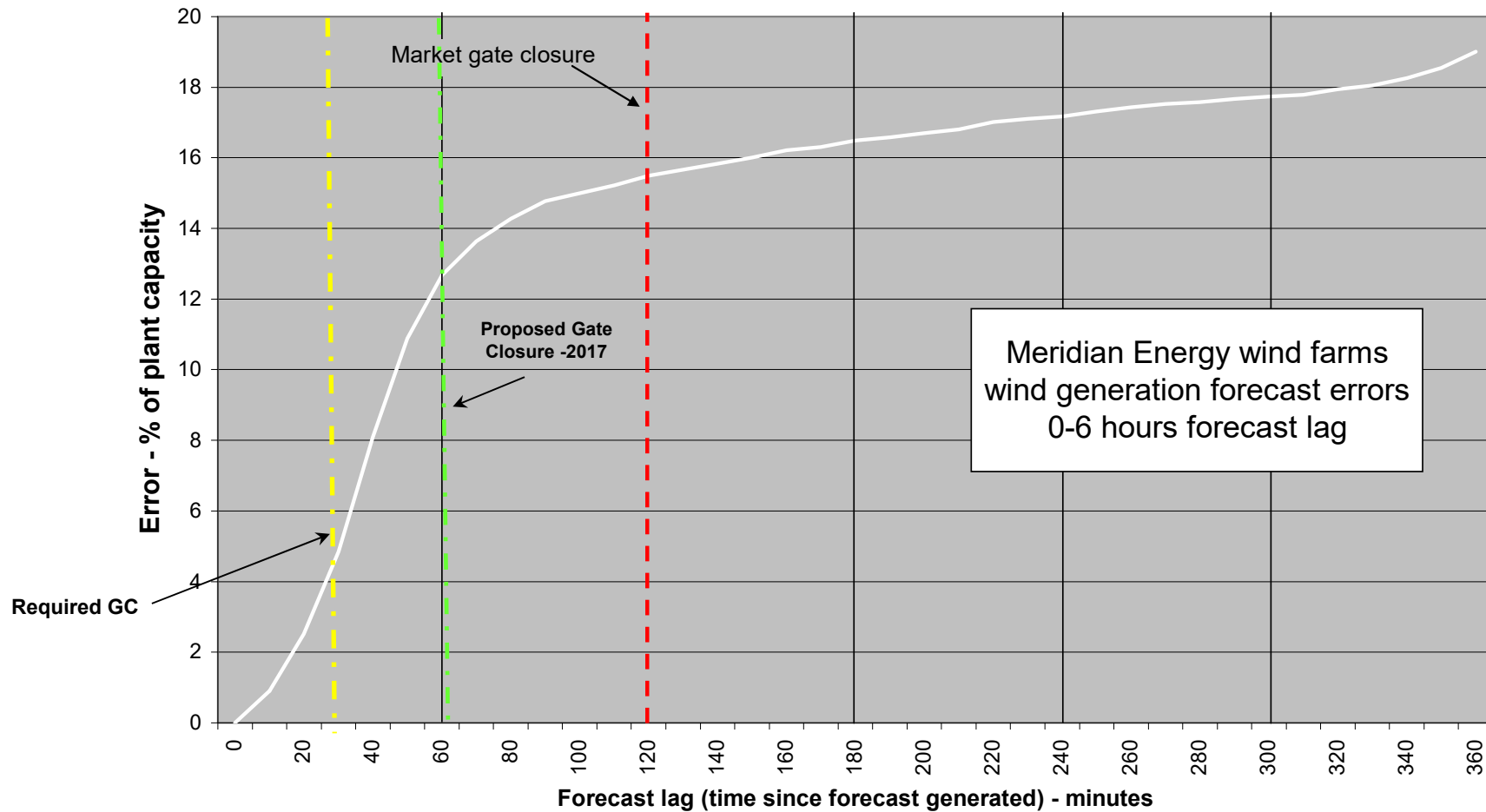
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- Key Takeout – wind volatility does not create market challenges for others
- So the question for this conference is what market elements might support more wind generation?
- The answer is simple
  - reduce the market gate further
- Why?
  - forecast error



# Electricity Market – Forecast Error

- Forecasting these elements introduces error in prices





## Electricity Market – Future Development

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- ½ hour Gate closure facilitates the next step in market development - Wind offering
- And that is where we want to get to
- It would get us closer to an “ideal electricity market for everyone”