PERSPECTIVES ON ENERGY POLICIES AND REGULATIONS

NEW ZEALAND

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New Zealand is different

• Remote islands
• Hydro dominated
• Long thin transmission system
• Small government
• Well-connected business community
• 85% renewable electricity generation
The dry-winter adequacy challenge

National stored hydro energy (GWh)

Generation weighted average price ($/MWh)
Market structure and regulation

- State-owned independent ISO/transmission grid owner
- Regulated distribution companies
- No capacity market
- No day-ahead market
- Intra-day market is a nodal pool with 250 LMPs computed every 5 minutes.
- Ex-post prices settled for each 30 minutes trading period
- Vertically integrated retail and generation
- Some independent retailers and industrial loads.
- Forward contract market with (arguably) limited depth
- Historically light-handed regulation of EA motivated by workable competition
- Short-term exercise of market power tolerated by regulator
Regulatory timeline

• 1996: Wholesale spot market goes live
• 2001, 2003, 2008: Dry-winter electricity shortages
• 2009: Wolak report
• 2010: Electricity Industry Act sets up Electricity Authority
• 2012: Privatization of 50% of Government generation assets
• 2017: Jacinda Ardern becomes PM in coalition
• 2019: Electricity Price Review
• 2019: Climate Change Response (Zero Carbon) Amendment Bill
• Retail competition and energy hardship
• Liquidity in contract markets
• Wholesale market deemed workably competitive
Workable competition and perfect competition
New Zealand introduces bill for zero carbon emissions by 2050

Jacinda Ardern says law will address climate change but faces opposition from farmers over plans to reduce methane emissions

- Net zero CO2 emissions by 2050
- 10% reduction in methane by 2030
- 24-47% reduction in methane by 2050
- Big challenges for agriculture and process heat (milk drying)
The annual cost of 100% renewable electricity
Risk aversion: joint operation matters