



# Electricity distribution

Distribution policy, regulation and implications for the electricity sector

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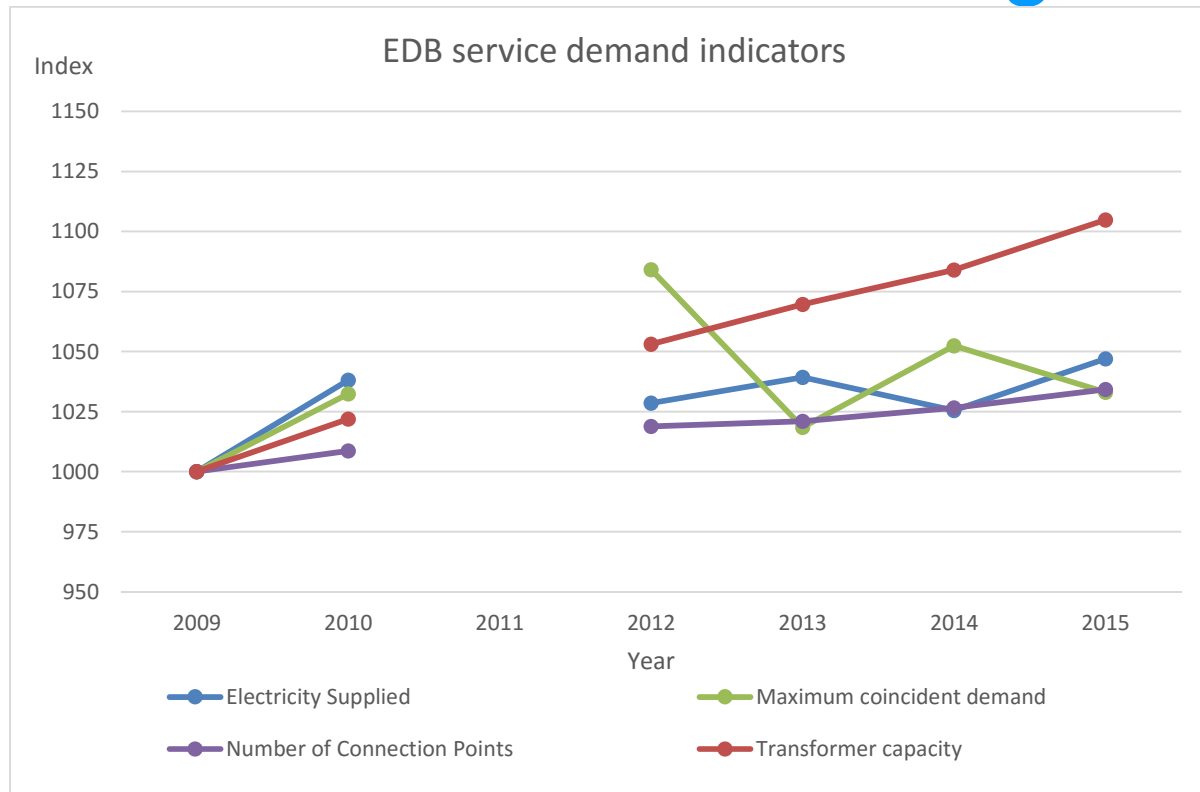
# Thinking about the future

- Starting point - current situation
  - Foundation of current distribution model:
    - Economies of scale and co-ordination
    - Regulation of geographical monopolies
  - Demand for services and cost
  - Regulator consultations
- 5 to 10 year outlook – hard to pick change triggers
  - Material change in network use?
  - Potential review of input methodology?
  - Unlikely to be enough time for step change in either:
    - Economies of scale/co-ordination in electricity supply
    - Regulator problem definition and approach
- Outlook 10-20 years – history of structural reform?

# Current situation

- Modest demand growth
  - Most customers expect instant access to capacity
- Varied tariff structures
  - Revenue relies on energy supplied rather than capacity
- Regulated price/quality path
  - Allow fair market return on assets
  - WACC uplift supposed to avoid under-investment
- Foundation of distribution model looks durable:
  - Batteries etc. also offer economies of scale/co-ordination
  - Unchanged regulator issue - geographical monopoly
    - New twist - how to encourage monopolies to innovate

# Demand drivers – slow growth



- Core EDB service is network access
  - Peak load slightly more volatile than energy supplied
  - EDB capacity to meet peaks – hard to measure
    - Transformer capacity rising faster than demand measures

# Is network access pricing ‘cost reflective’

**Table 1 EDB reliance on energy volume fees – ‘all customers’**

Proportion of EDB lines revenue earned from \$per kWh charges

Less than 50%	50% to 60%	60% to 70 %	70% to 90%	More than 90%
<b>18% of all EDB</b>	<b>29% of all EDB</b>	<b>36% of all EDB</b>	<b>12% of all EDB</b>	<b>5% of all EDB</b>
The Lines Co	EA Networks	Vector	Northpower	Top Energy Ltd
Horizon Energy	Powerco	Westpower	Buller Electricity	Electra Limited
Orion NZ Ltd	Aurora Energy	Wellington	Counties Power	MainPower NZ
Marlborough	The Power Co	Invercargill	Eastland	
Alpine Energy	Unison	Net. Tasman	WEL Networks	
OtagoNet Joint	Centralines		Scanpower	
Nelson			Net. Waitaki	
			Waipa	

Source: NZIER analysis of Commerce Commission EDB information disclosure

- Wide variation in use of fixed charges
  - What drives the difference in approach?
  - Does it affect network investment decisions

# Regulator consultation

- **Commerce Commission**
  - Review of input methodologies
    - Continue building block approach
    - May switch to revenue cap
      - Some EDBs argue this makes tariff change easier
- **Electricity Authority**
  - **Transmission Pricing Methodology**
    - Proposal to reallocate cost of transmission network
  - **Recent consultation on evolving technology**
    - Current distribution pricing not good at reflecting cost of capacity
    - Distribution pricing can/should reflect cost of access to capacity
    - Some EDB pricing more cost reflective than others
    - What happens next?

# Main drivers for change in 5-10 years

- Consumer appetite for:
  - New technology; solar PV, EV, batteries
  - Demand management (supply or peak)
- EDBs
  - Improved understanding and evidence of:
    - Use of batteries in EDB network to defer other investment
    - Change in relationship between peak load vs energy supplied
  - Development of new products/marketing to customers
- Regulators – balancing efficiency and innovation
  - EA wants cost reflective pricing –delivered by EDBs
  - Commerce Commission – refining IM approach – no indication of appetite for radical change

## Likely outcomes within 5 to 10 years

- Uneven residential user adoption of new tech:
  - Solar PV/battery take-up modified by EDBs either:
    - Re-setting tariffs to recover access cost (slows take-up)
    - Direct offer of the technology to households (new relationship)
  - Demand management
    - Marketed to consumers that can flatten peaks
    - By-product of energy saving technology for most
- EDBs
  - Optimise income from RAB under Input Methodology model
  - Develop new services to hedge against change in regulation
  - Possible shift toward capacity charging
- Regulators – continue current approach
  - Input methodology similar to ‘emerging view’
  - EA advocate for ‘efficient pricing’