

NZ Power: Mainstream or Mad?



Ben Gerritsen, 1 October 2013

AGENDA

- 1. *Why are we talking about power reform (again)?***
- 2. *What is NZ Power?***
What changes to New Zealand's electricity sector structure have the Labour and Greens proposed?
- 3. *Is it mainstream?***
Which jurisdictions use an electricity sector structure similar to the NZ Power proposal?
- 4. *Is it mad?***
What does the evidence tell us about whether NZ Power would lower electricity prices?

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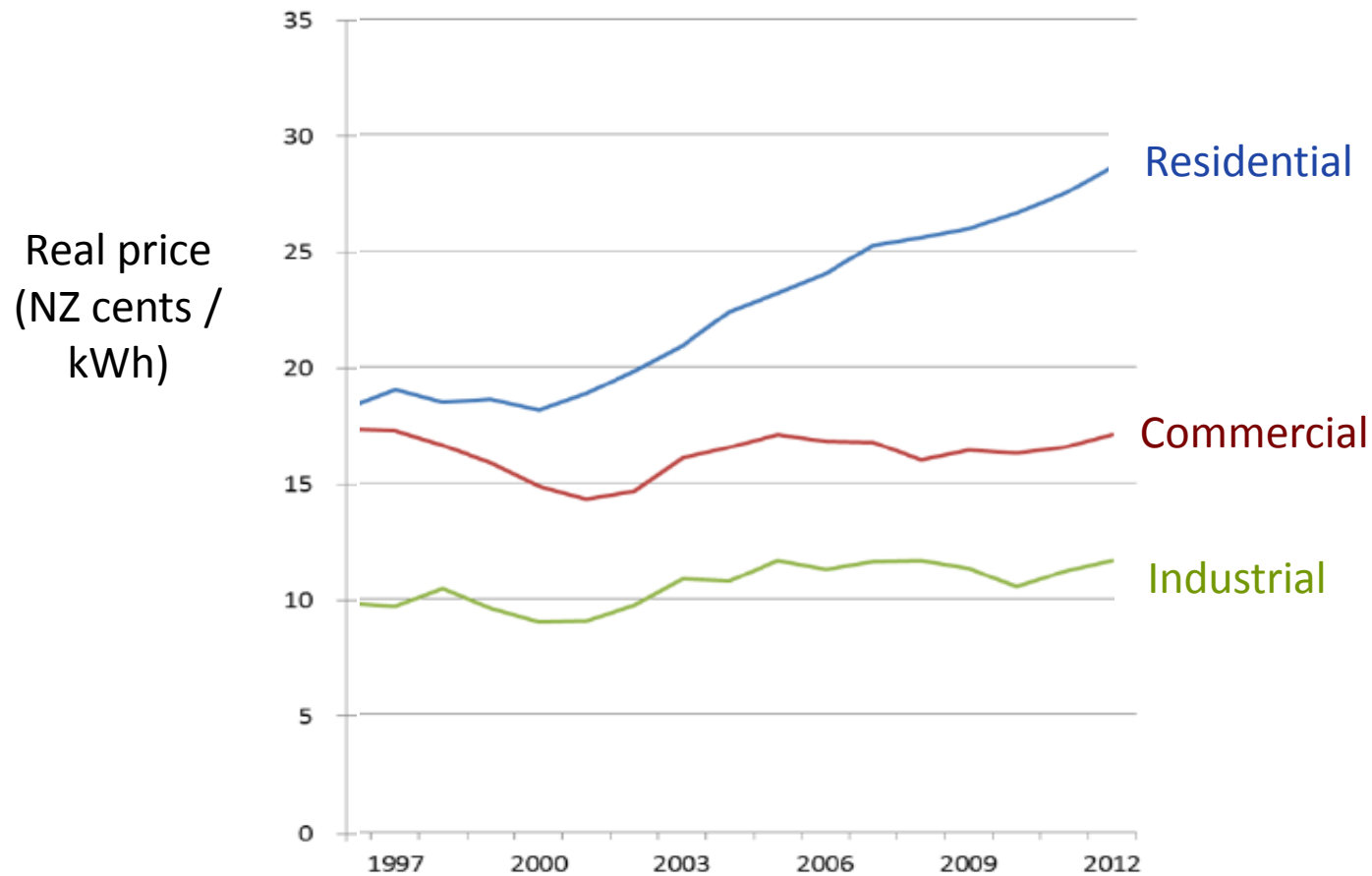
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Why are we talking about electricity sector reform (again)?



Source: "The Economics of Electricity" June 2013, Electricity Authority

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Context on NZ electricity sector

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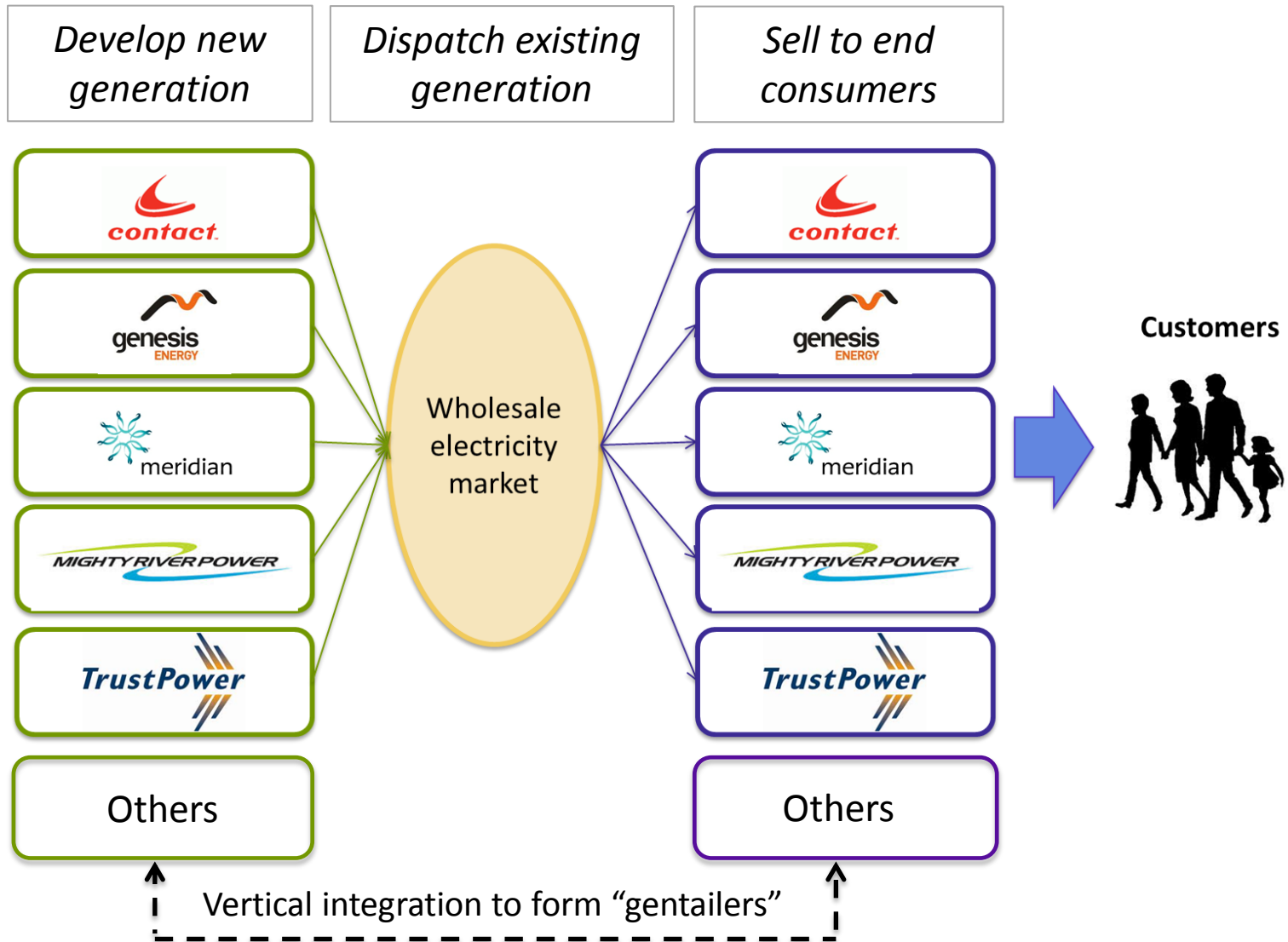
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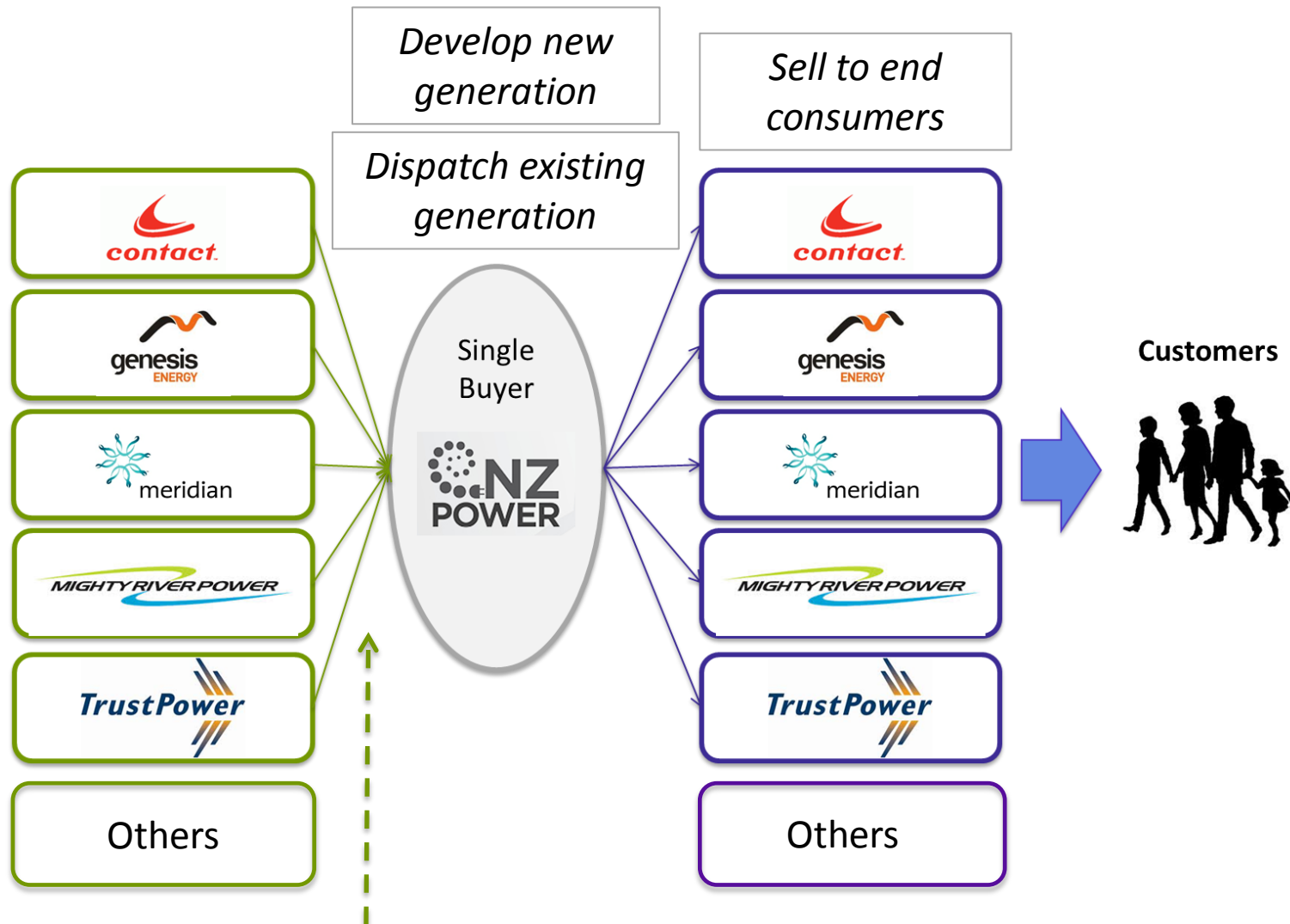
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What does the evidence tell us about whether NZ Power would lower electricity prices?

Overview of current market structure



Proposed sector structure with NZ Power



Long term contracts set to reflect costs of individual generation assets

What have Labour and the Greens proposed?

From Labour's Policy Document:

"A new agency called NZ Power will act as a single buyer of wholesale electricity...

NZ Power will plan for new generation and invite offers to build new plants...this approach is **common-place overseas**"



Empowering New Zealand
Green discussion paper

John Key's Response:

"[the proposal is] **barking mad...**

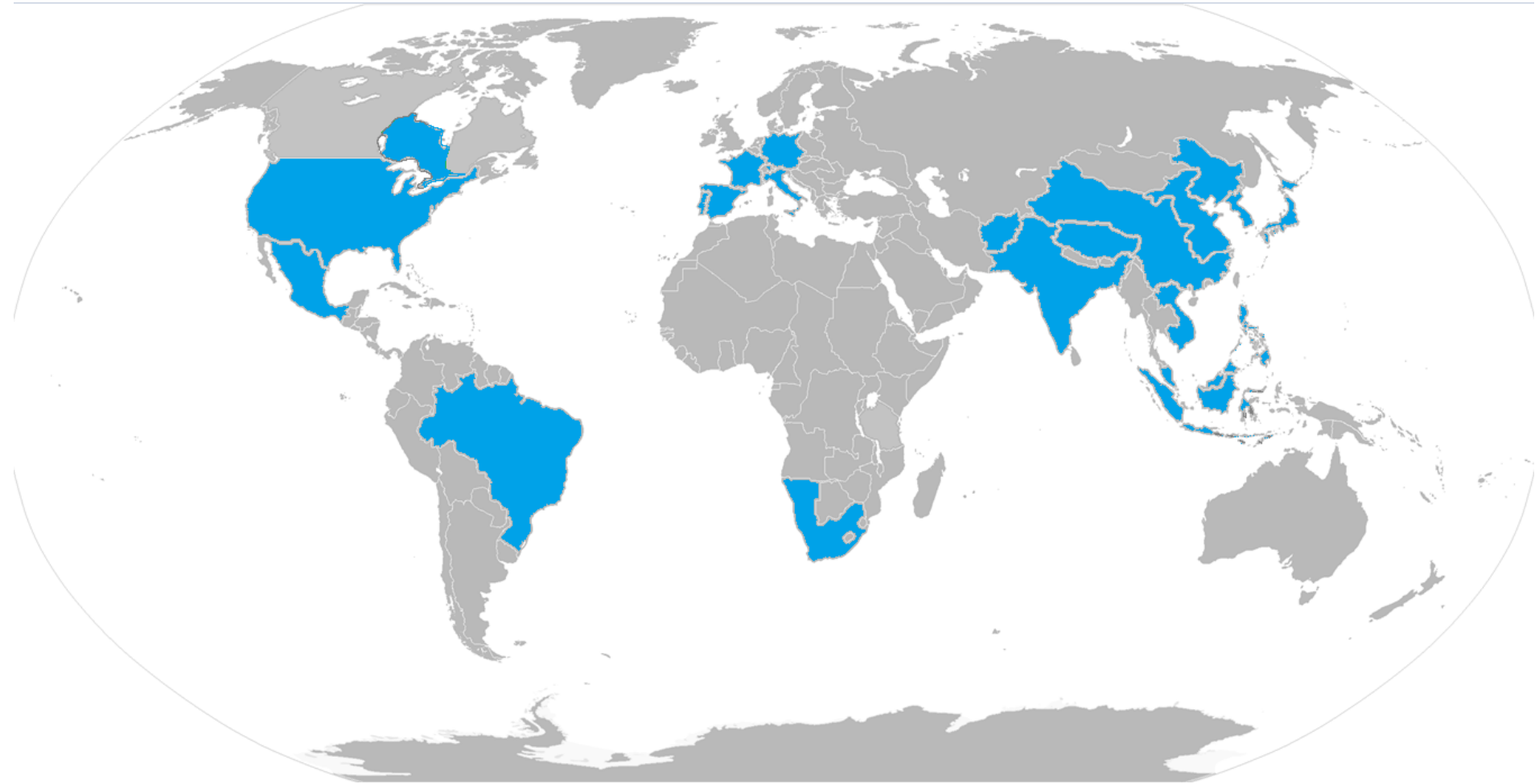
...Really, these people are taking us back to something we abandoned in the 1970s because people used to sit around candles when all the lights went out."



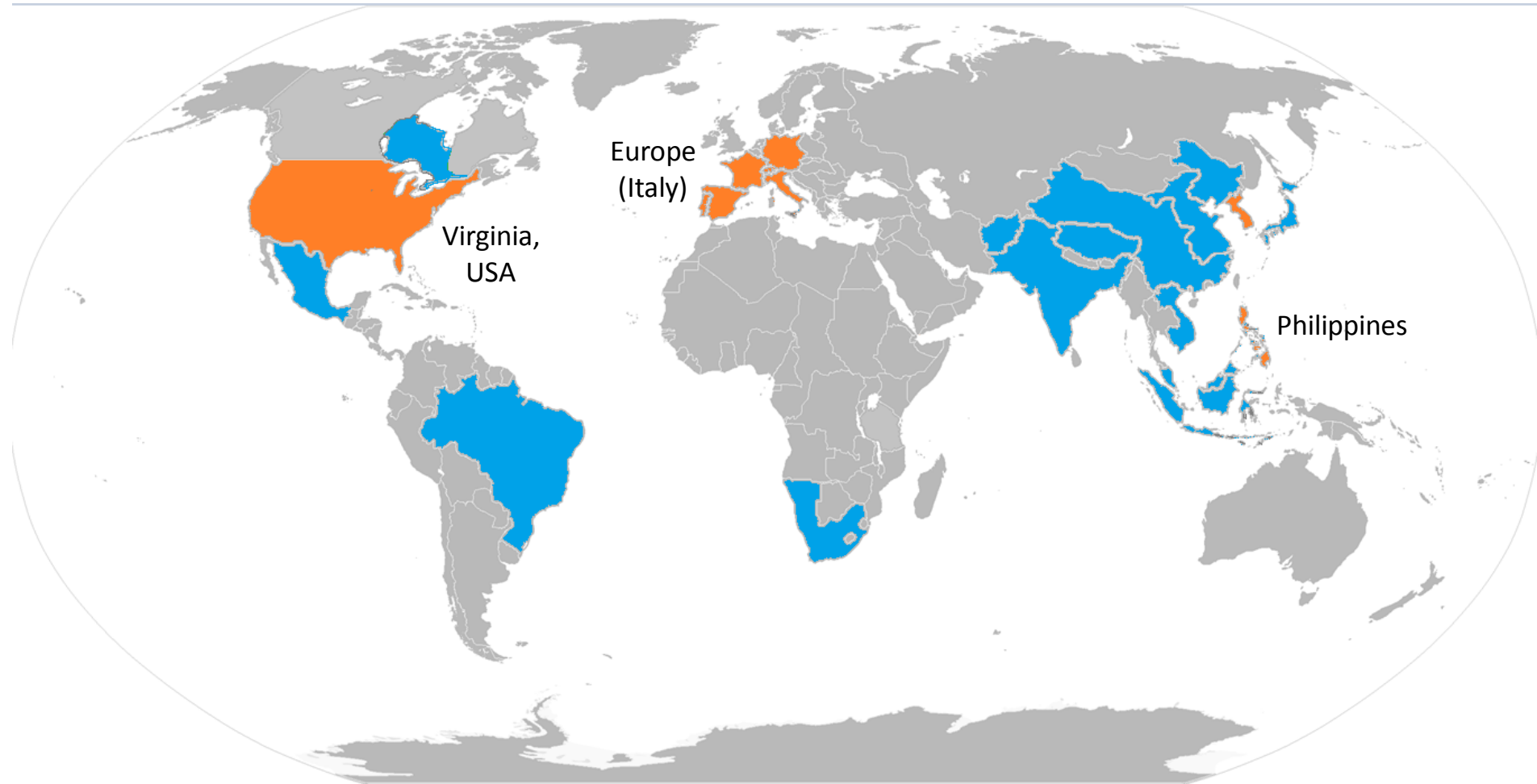
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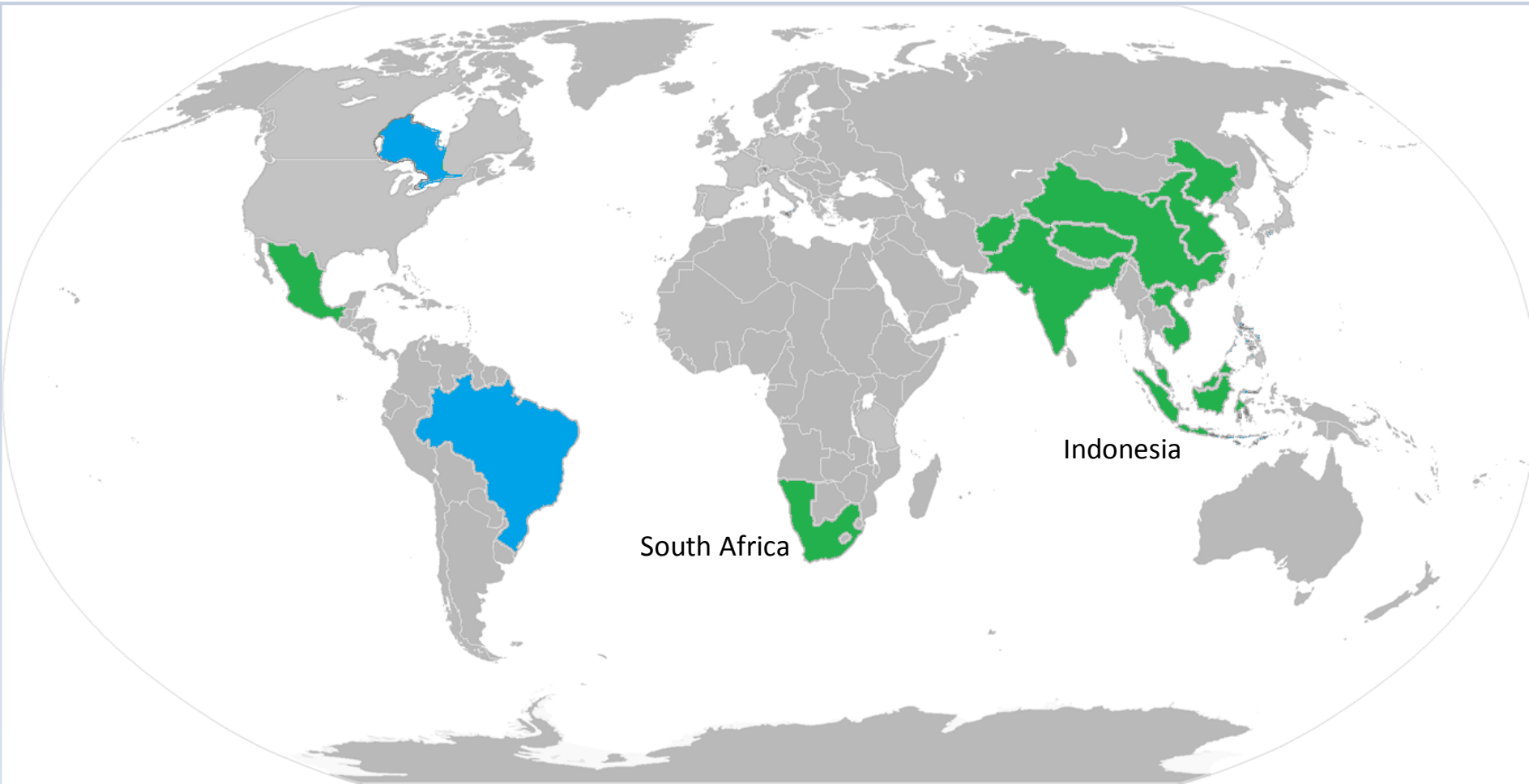
Jurisdictions that Labour/Greens Claim are “Single Buyer”



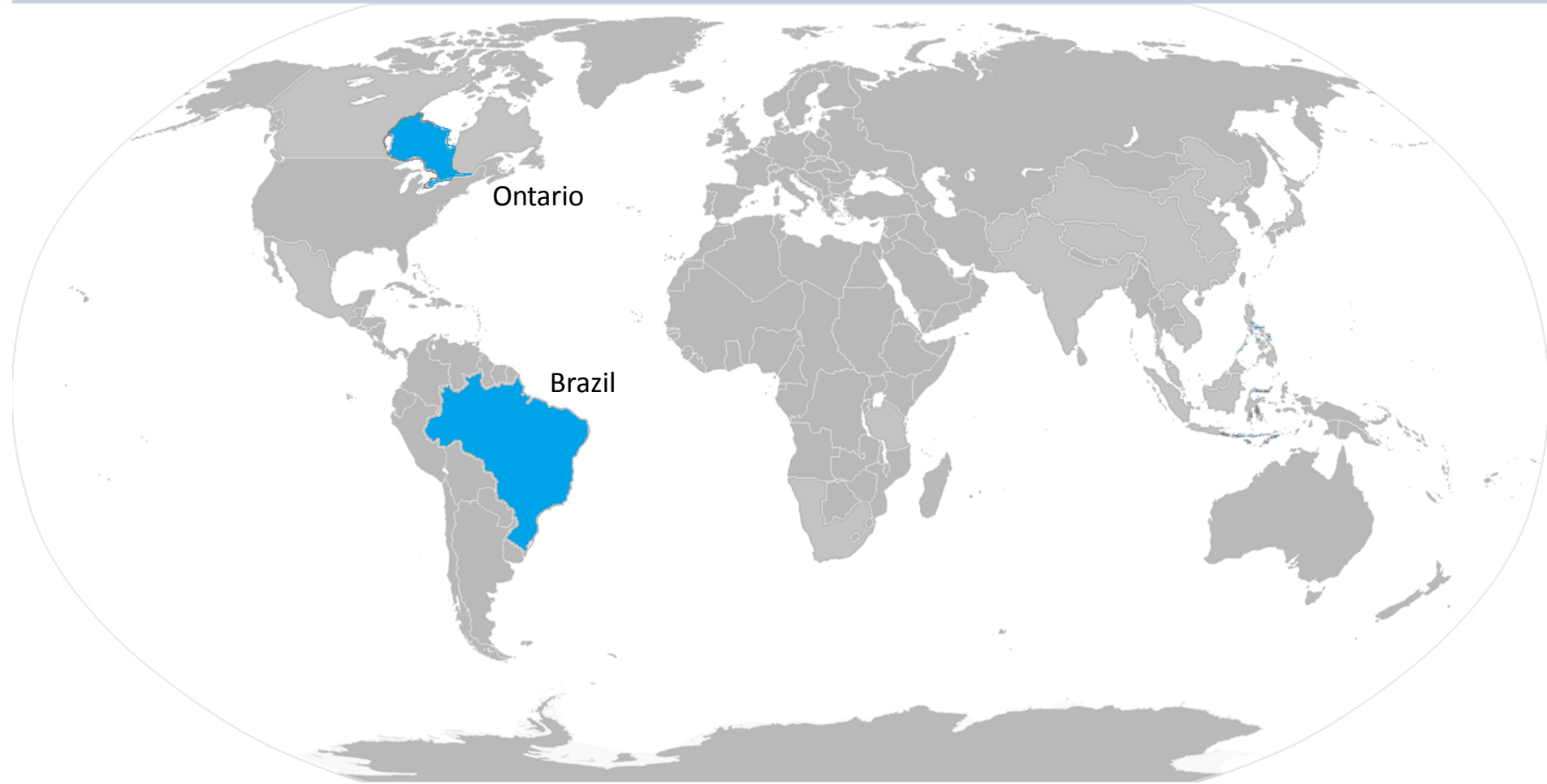
Jurisdictions that are clearly not “Single Buyers”



Jurisdictions with vertically integrated utilities



Two jurisdictions that are similar to NZ Power proposal



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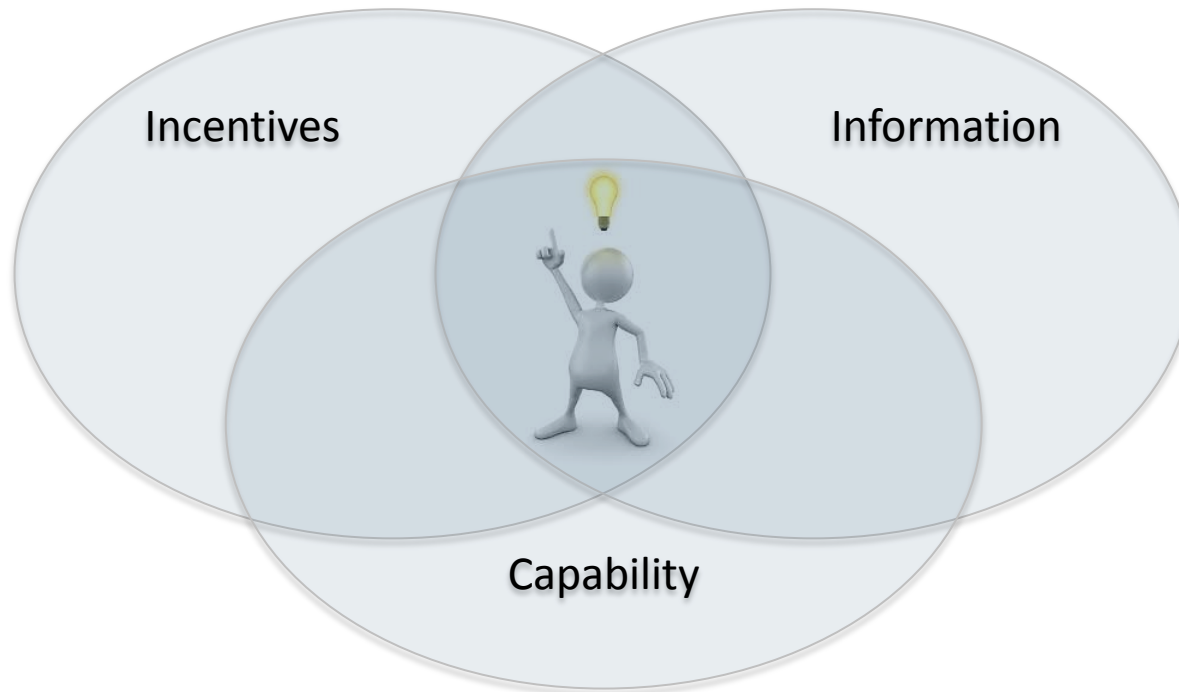
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How might NZ Power lead to lower prices?

- Make better decisions on new investments
- Lower the costs of operating existing assets
- Reduce the returns earned by generators:
 - Eliminating “excess profits”
 - Redistributing normal profits

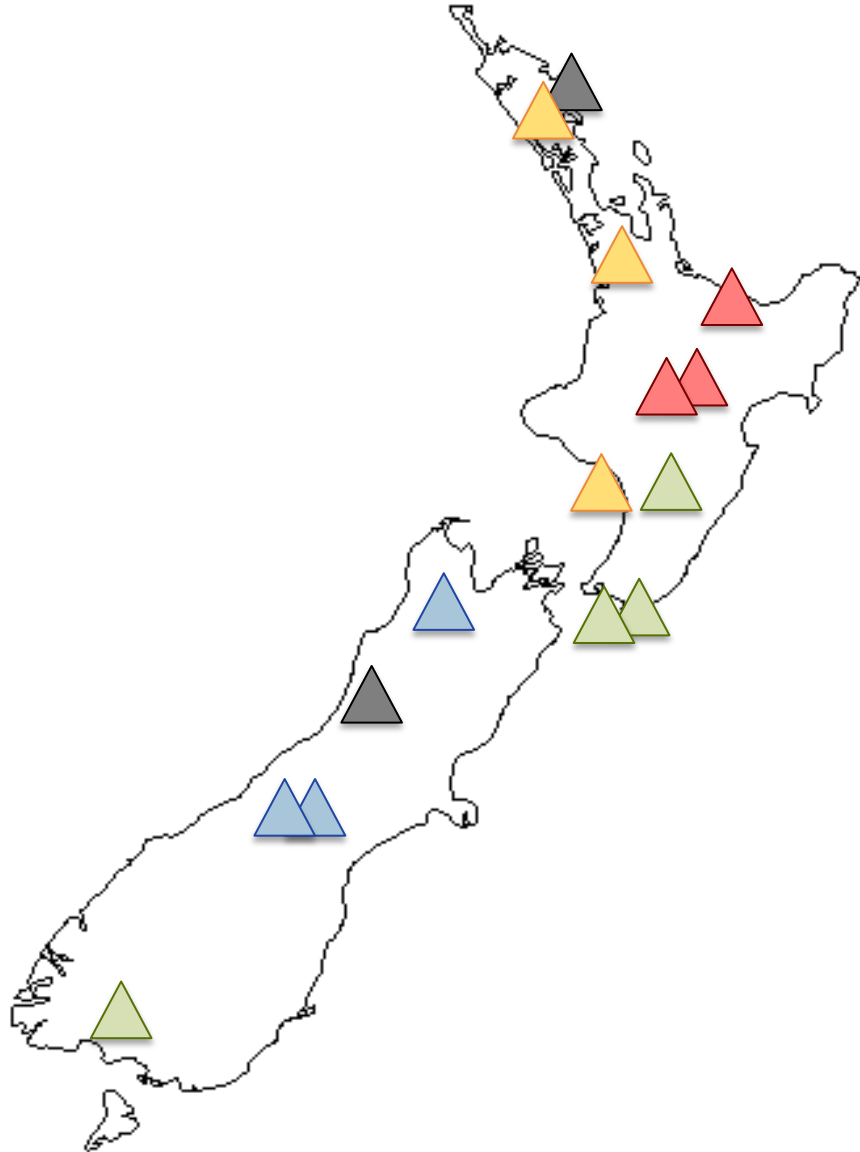
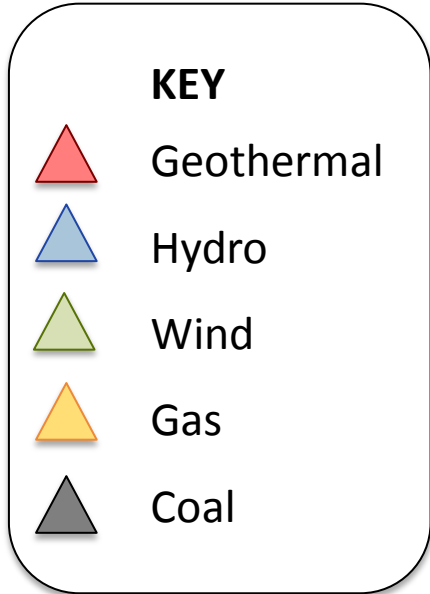
Are the costs of new generation likely to fall?

Characteristics of a good decision maker



Are decision makers at NZ Power likely to make better decisions about where and when new generation is needed than private generators?

Power planning: NZ Power unlikely to reduce cost

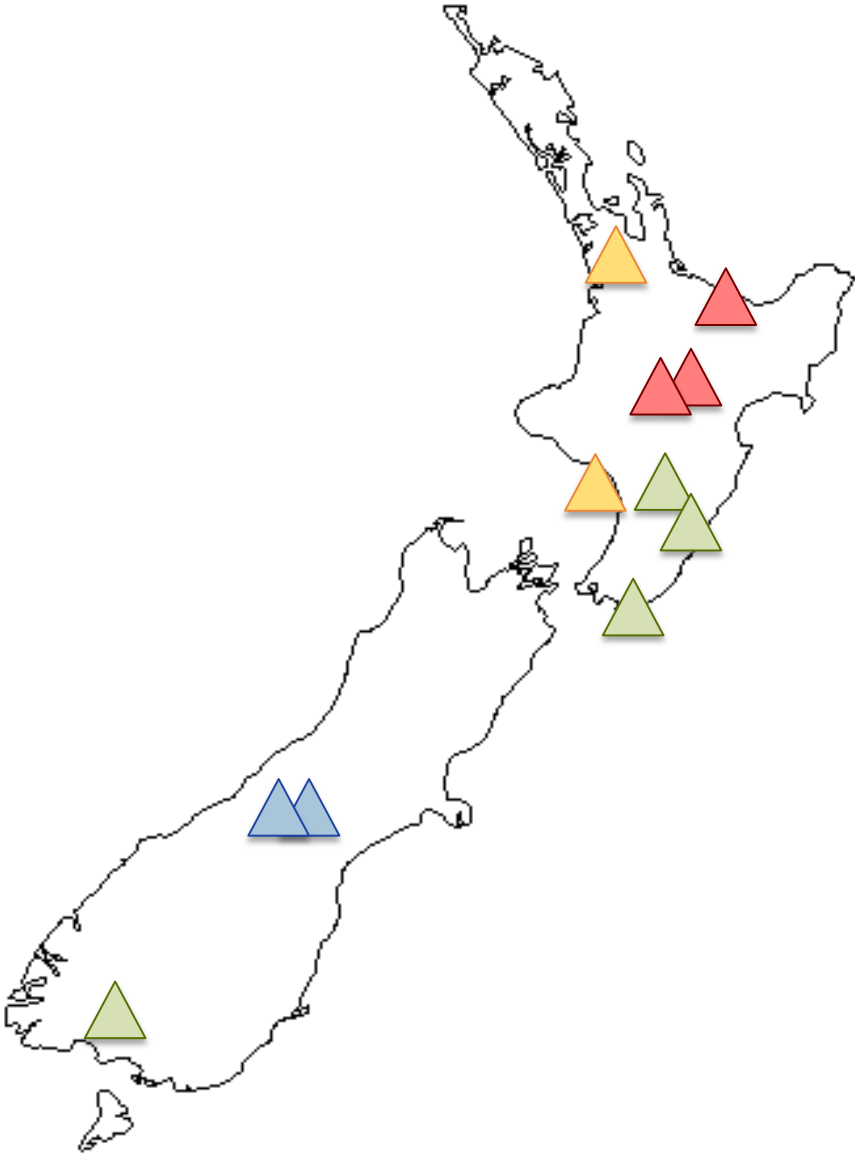


Planned new generation plants (Statement of Opportunities 2005 & 2008)

Power planning: NZ Power unlikely to reduce cost

KEY

- ▲ Geothermal
- ▲ Hydro
- ▲ Wind
- ▲ Gas
- ▲ Coal

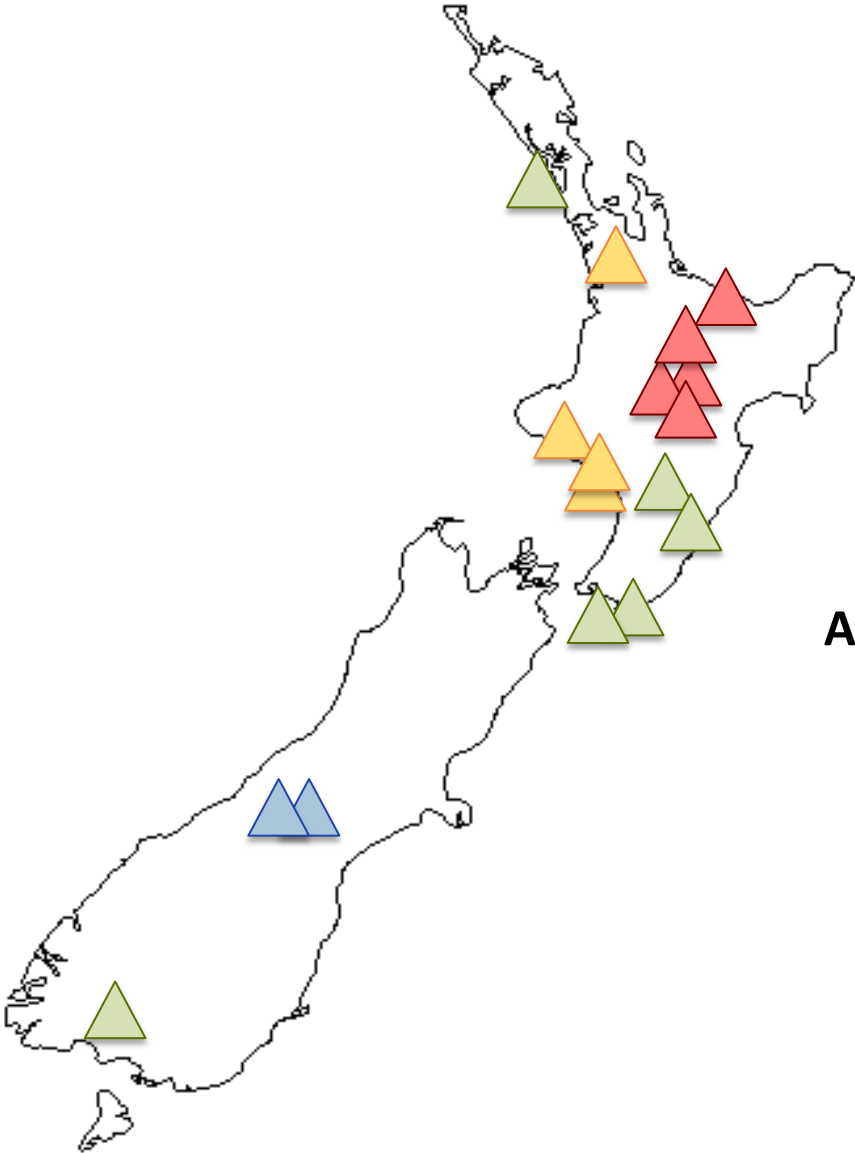


Minus planned plants, never built

Power planning: NZ Power unlikely to reduce cost

KEY

- ▲ Geothermal
- ▲ Hydro
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- ▲ Coal



Add built, but not planned

How might NZ Power lead to lower prices?

- ~~Make better decisions on new investments~~
- **Lower the costs of operating existing assets**
- Reduce the returns earned by generators:
 - Eliminating “excess profits”
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Can't Change O&M Costs of Existing System

Generation (competitive)

36% of residential
electricity bill

Transmission (monopoly)

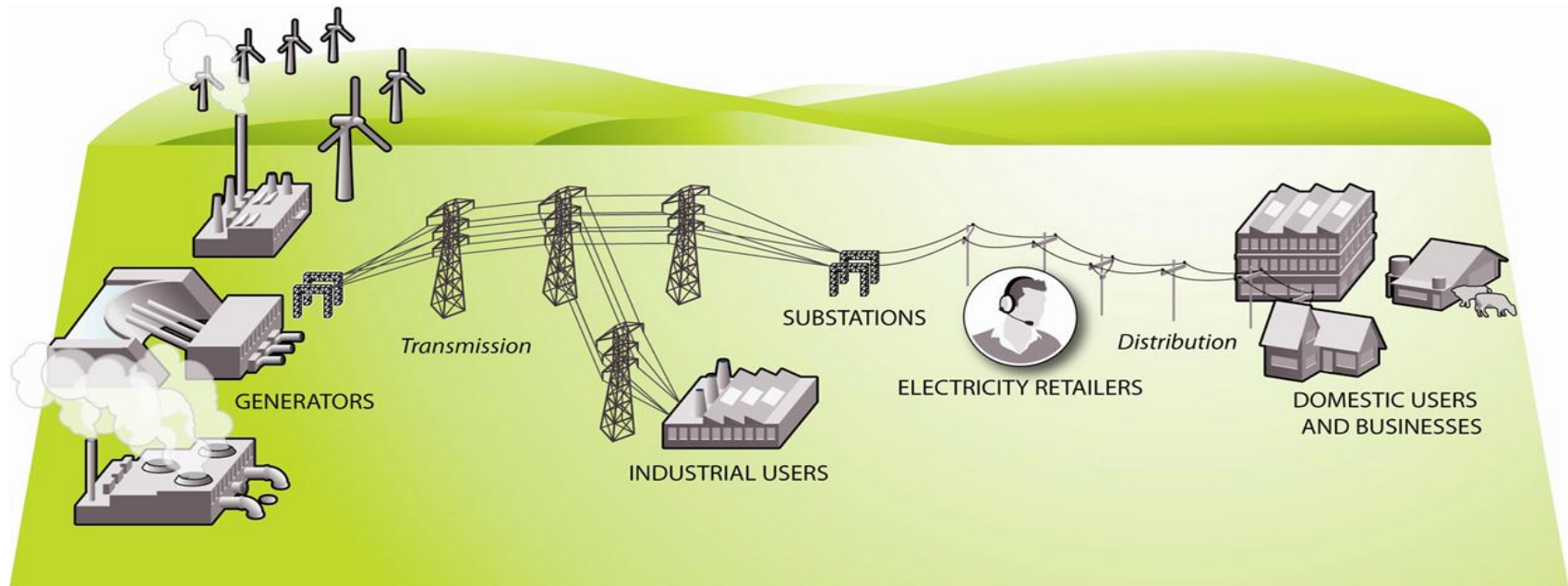
8% of residential
electricity bill

Distribution (monopoly)

29% of residential
electricity bill

Retail (competitive)

14% of residential
electricity bill



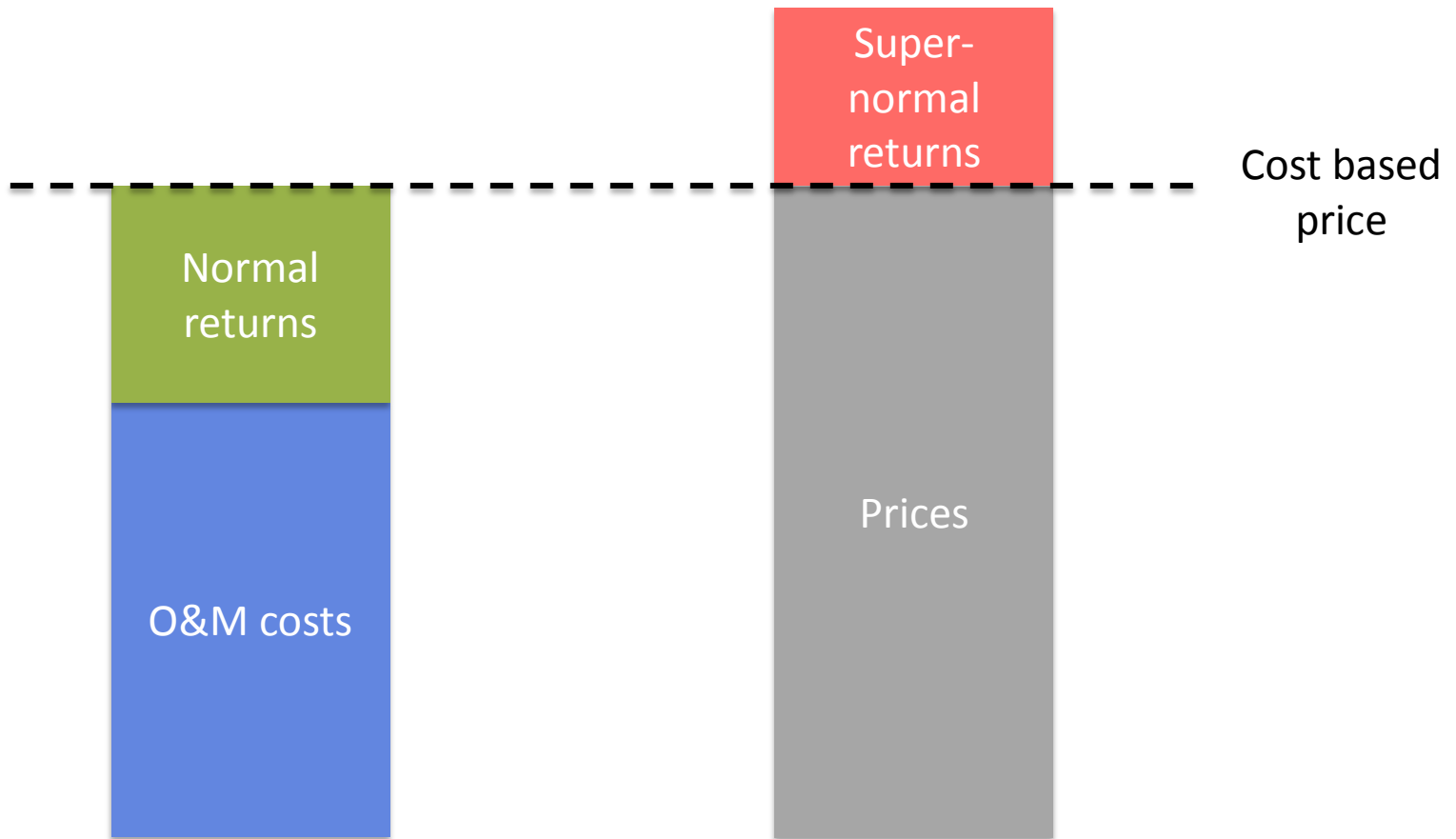
*Remaining percentage of retail costs: 2% on metering, 11% on tax

Source: "Electricity in New Zealand" by the Electricity Authority

How Might NZ Power Lead to Lower Prices?

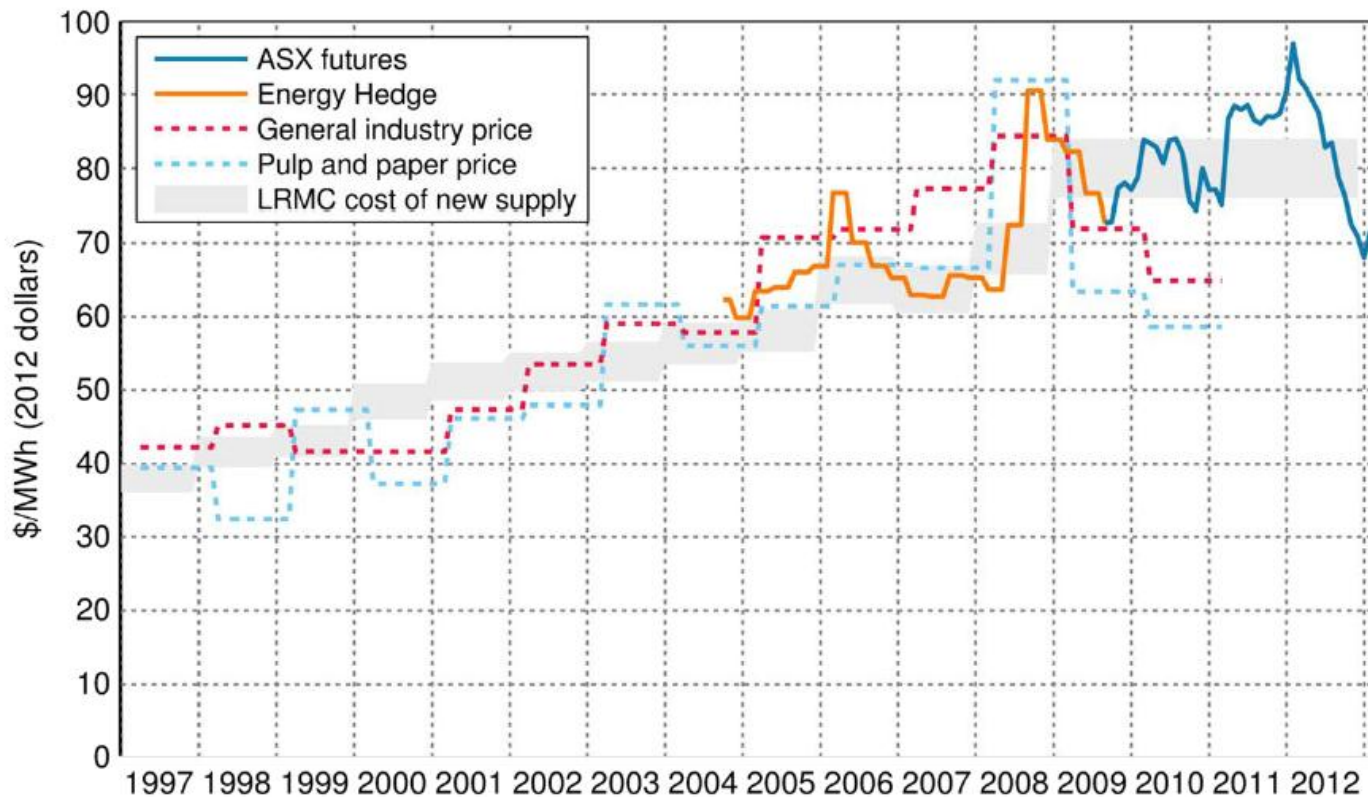
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- ~~• Lower the costs of operating existing assets~~
- **Reduce the returns earned by generators:**
 - **Eliminating “excess profits”**
 - Redistributing normal profits

O&M Costs are fixed: how else can we lower prices?



Response: prices are consistent with entry costs

“[Wholesale] market power... is only a concern if it occurs frequently enough and to a significant enough magnitude to lead to average annual wholesale prices being above the long-run marginal cost (LRMC) of generation (AEMC, 2013)



Source: “The Economics of Electricity” June 2013, Electricity Authority

Response: returns are consistent with cost of capital

No evidence that generator/retailers have been earning substantially more than a risk adjusted return on investment (the cost of capital)

“Infratil Update”

(<http://www.infratil.com/assets/Uploads/PDF/updateseptember2013.pdf>)

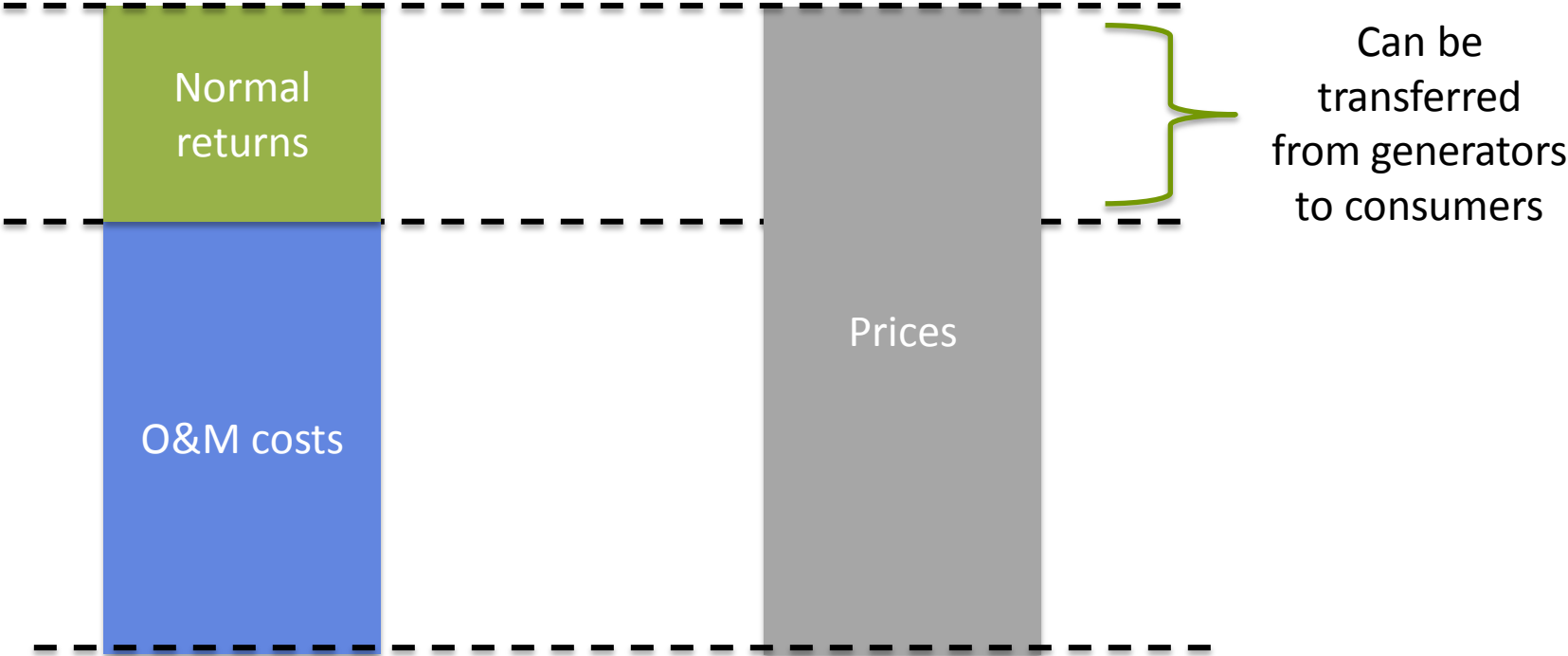
- Return on Cobb Power Station (purchased in 2003) of 6% real (8% nominal)
- Contact shareholder returns of 8.8% since 1999
- Trustpower shareholder returns of 13.2% since 1999

SOE generator/ retailer returns on historic cost (based on Ernst & Report to COMU) also in line with estimated cost of capital (see appendix)

How Might NZ Power Lead to Lower Prices?

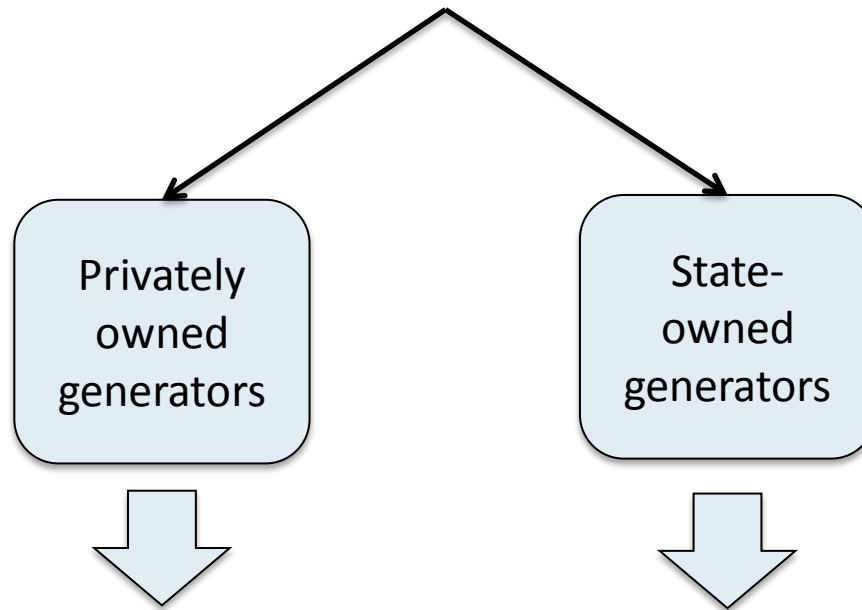
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 - **Redistributing normal profits**

Can only lower prices by redistributing normal returns



Lower Return on Investment Needed to Lower Prices

Which investors will
face a lower return?



Regulatory expropriation

“Money-go-round”

Brazil: Politicians Lower Prices through Money-go-round

Brazil's Cheaper Electricity Comes at a Cost

EXPROPRIATION

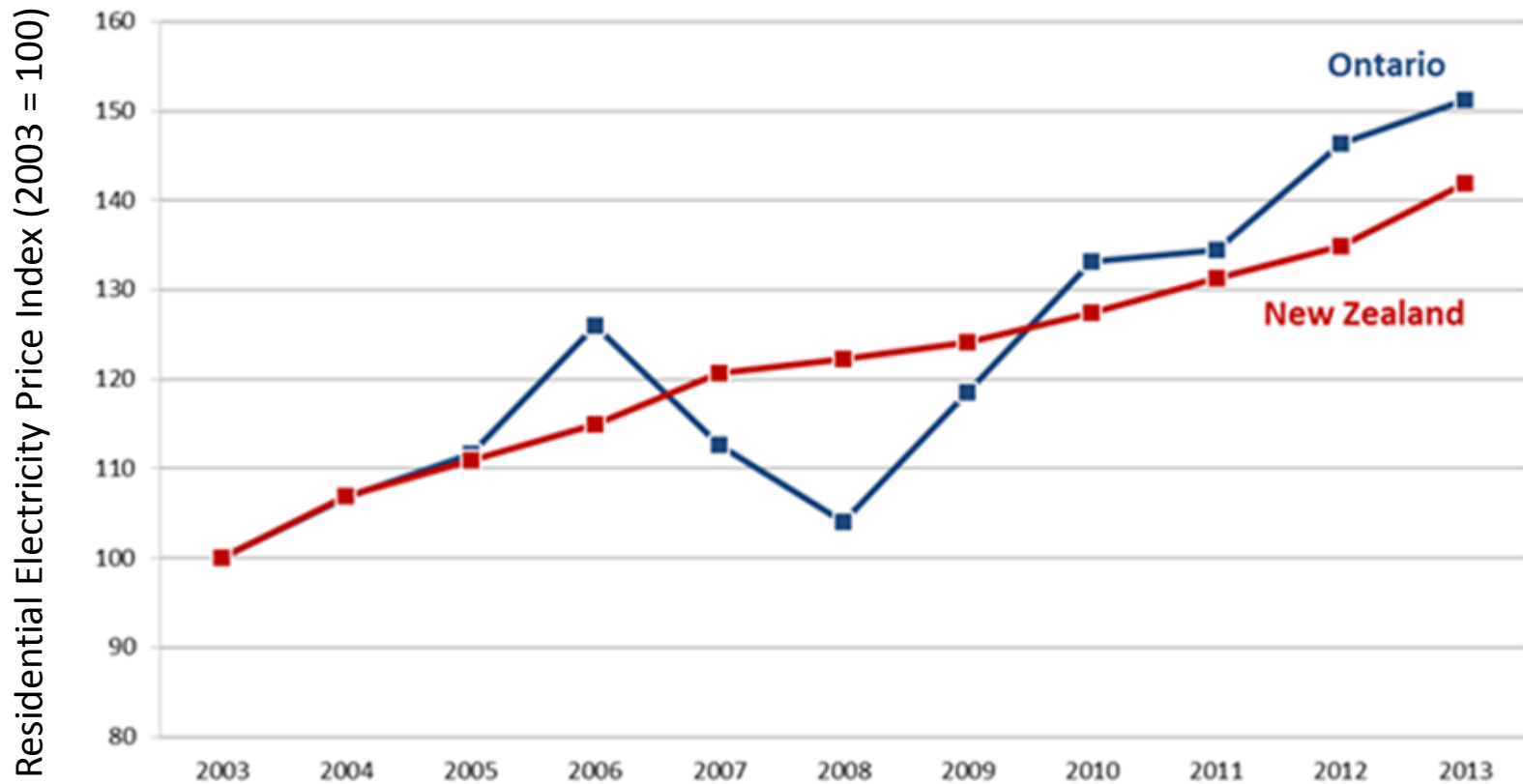
“The bottom line: shares in Brazil’s Eletrobras have fallen 50 percent in the past year because of a government drive to cut the cost of power”

MONEY-GO-AROUND

“Two companies... have decided not to renew their concessions – which give them a right to operate government-owned power plants and transmission lines – rather than accept rate cuts”

Source: <http://www.businessweek.com/articles/2013-02-07/brazils-cheaper-electricity-comes-at-a-cost>

Ontario's attempt to lower prices without lowering costs



Questions and discussion



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Bogota

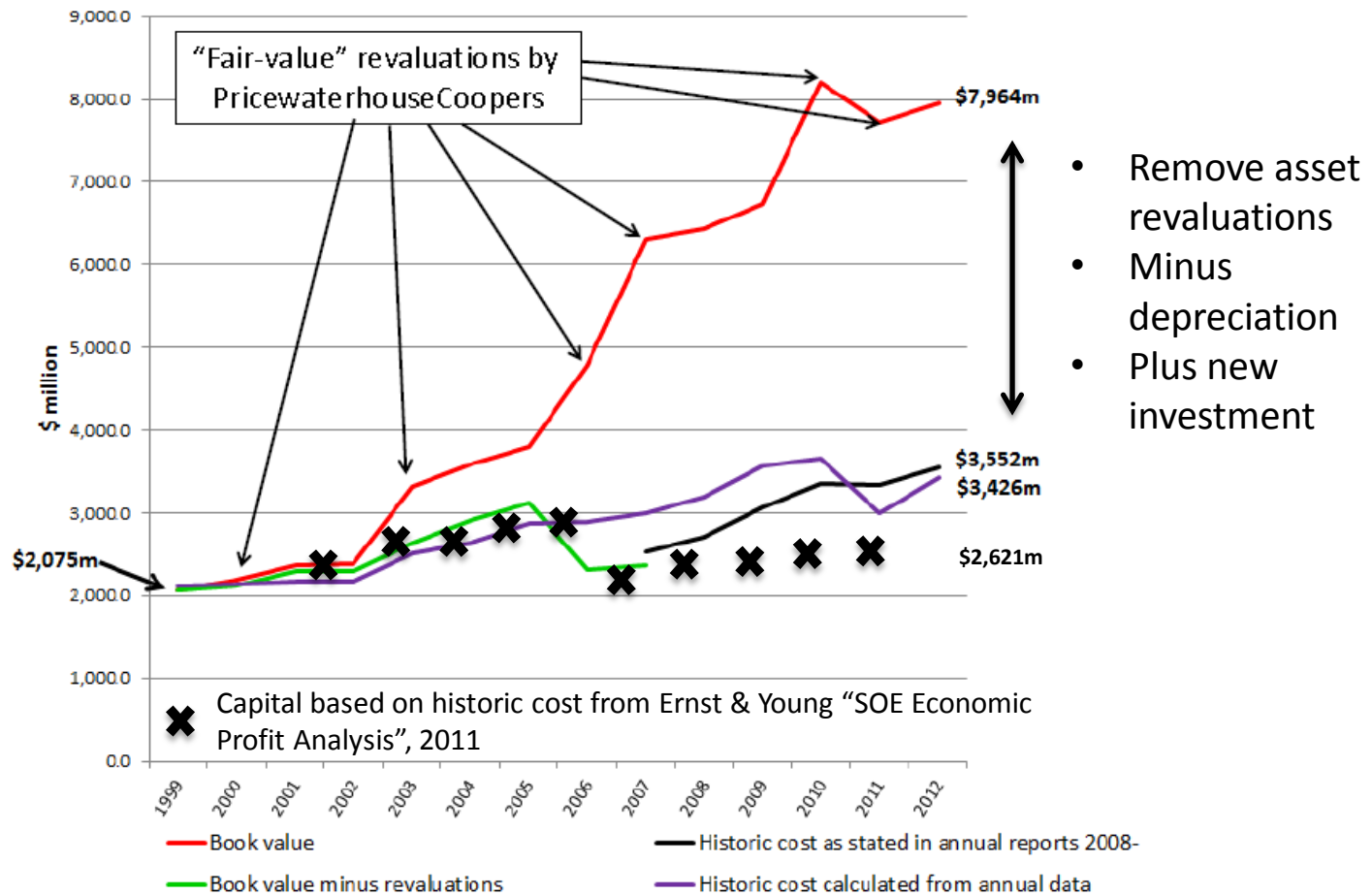
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APPENDIX

*Further material on analysis of returns of SOE
generator / retailer returns against cost of financing
assets valued at historic cost*

Concern: gentailer returns are too high

Meridian Energy – Asset Values on Historic Cost and After Revaluations



Source: “Asset revaluations, price gouging, and barriers to entry: the state of play in electricity sector non-regulation” May 2013, Geoff Bertram

Response: returns are in line with historic cost

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Historic Cost of Assets (Capital)	1,902	2,407	2,835	2,774	2,953	2,137	2,189	2,240	2,549	2,621
Adjusted Profit* (NOPAT)	103	171	224	305	257	271	228	195	329	291
Return on Historic Cost	5.4%	7.1%	7.9%	11.0%	8.7%	12.7%	10.4%	8.7%	12.9%	11.1%
Cost of Capital**	9.1%	9.1%	8.1%	8.8%	8.4%	8.5%	9.1%	9.1%	8.8%	8.6%
“Excess” Return	-3.7%	-2.0%	-0.2%	2.2%	0.3%	4.2%	1.3%	-0.4%	4.1%	2.5%

Notes: * Profits adjusted to reflect lower depreciation

** Cost of capital estimates use 10 year bonds for the risk free rate, and an asset beta of 0.58

Over the 10 years analysed by Ernst & Young, Meridian earned \$221 million (+0.8 percentage points) more than the cost of capital (+\$22.1 million per year)

Response: returns are in line with historic cost

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg.
Meridian "Excess" Return	-3.7%	-2.0%	-0.2%	2.2%	0.3%	4.2%	1.3%	-0.4%	4.1%	2.5%	0.8%
MRP "Excess" Return	-2.3%	2.9%	5.3%	7.9%	6.8%	2.3%	-1.6%	18.4%	2.4%	-0.4%	4.2%
Genesis "Excess Return	-3.9%	-1.1%	-1.0%	0.4%	1.9%	-1.0%	-0.5%	-5.0%	1.0%	-1.8%	-1.1%

Notes: * Profits adjusted to reflect lower depreciation and higher tax (generally higher than reported profits)

** Cost of capital estimates use 10 year bonds for the risk free rate, and an asset beta of 0.58

**Over the 10 years analysed by Ernst & Young, all three SOEs earned \$538 million (+1.1 percentage points) more than the cost of capital (+\$53.8 million per year).
c.f. Bertram claims that generator retailers are earning excess revenues of \$1.5 billion per year (+\$1 billion after tax per year)**

Difficulties Assessing the Competitive Returns Critique

- “Historic costs” are not observable – Bertram uses “vesting cost”, which may include previous asset write downs or upward revaluations
- Ernst & Young use a consistent approach to backing out revaluation gains and adjusting for value changes in financial instruments and foreign exchange gains or losses
 - But hard to develop an approach that works for all companies in all years
- Need to reconcile firm’s reported asset and net profit numbers – higher asset values will tend to reduce reported profits due to higher depreciation costs