Electricity and climate change : two intertwined policy problems

Talk for Takaka U3A
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Geoff Bertram

Institute for Governance and Policy Studies

Victoria University of Wellington

My website: www.geoffbertram.com

Agenda

Electricity sector “reform” – neoliberal promises versus real-world outcomes

The NZ Emissions Trading Scheme as a market-mechanism-based way of pricing carbon: neoliberal promises versus real-world outcomes

Interaction of the market with the corporate-captured and ineffective ETS

Some comments on policy options

The big promise from the electricity "reformers"

- Back in the 1980s the proposition was that corporatizing, reorganising, and where possible privatising electricity, would bring gains for consumers because
  - Commercial, profit-driven management would (1) raise efficiency and (2) cut costs
  - Competition (or appropriate regulation) would (3) force efficiency and productivity gains to be passed through to prices
  - Consumers would therefore enjoy better service and lower prices, while profits could rise under an SOE or private model – sharing the gains from more productive use of resources

Transforming electricity

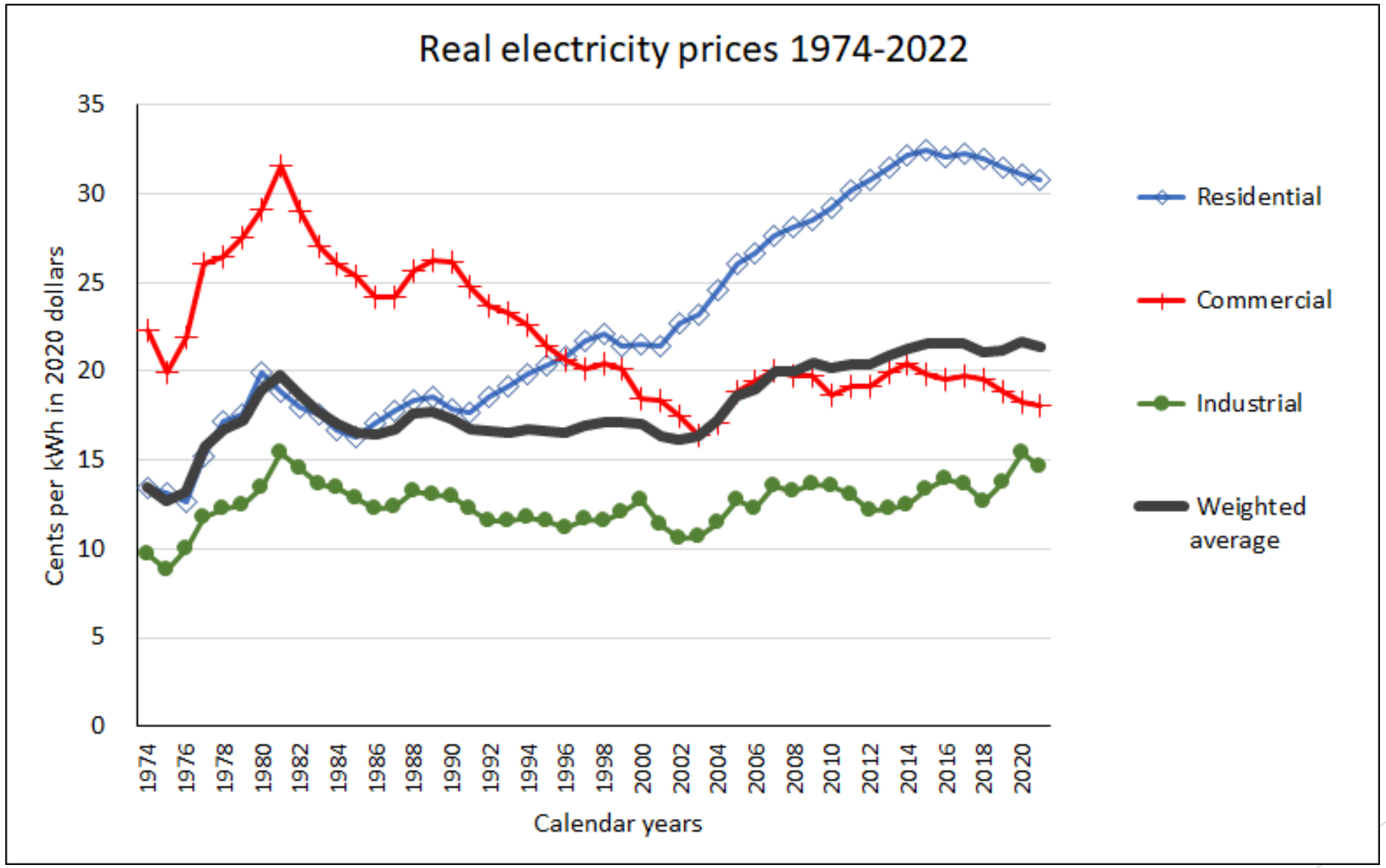
Before 1984

- An “essential service” collectively provided
- Priced as cheaply as possible to households: wellbeing the goal
- Run by civil engineers committed to optimal planned outcomes
- Integrated monopoly with non-profit objectives

Since 1984

- A commodity allegedly like any other supplied by corporates
- Priced to recover the full cost of the marginal generator plus the monopoly price for each lines-network operator plus a fat margin for dominant retailers
- Run by corporate managers and financial engineers maximising profit and “shareholder value”
- Multiple players in a complicated institutional landscape of some [allegedly] “competitive” and some [allegedly] “regulated” markets

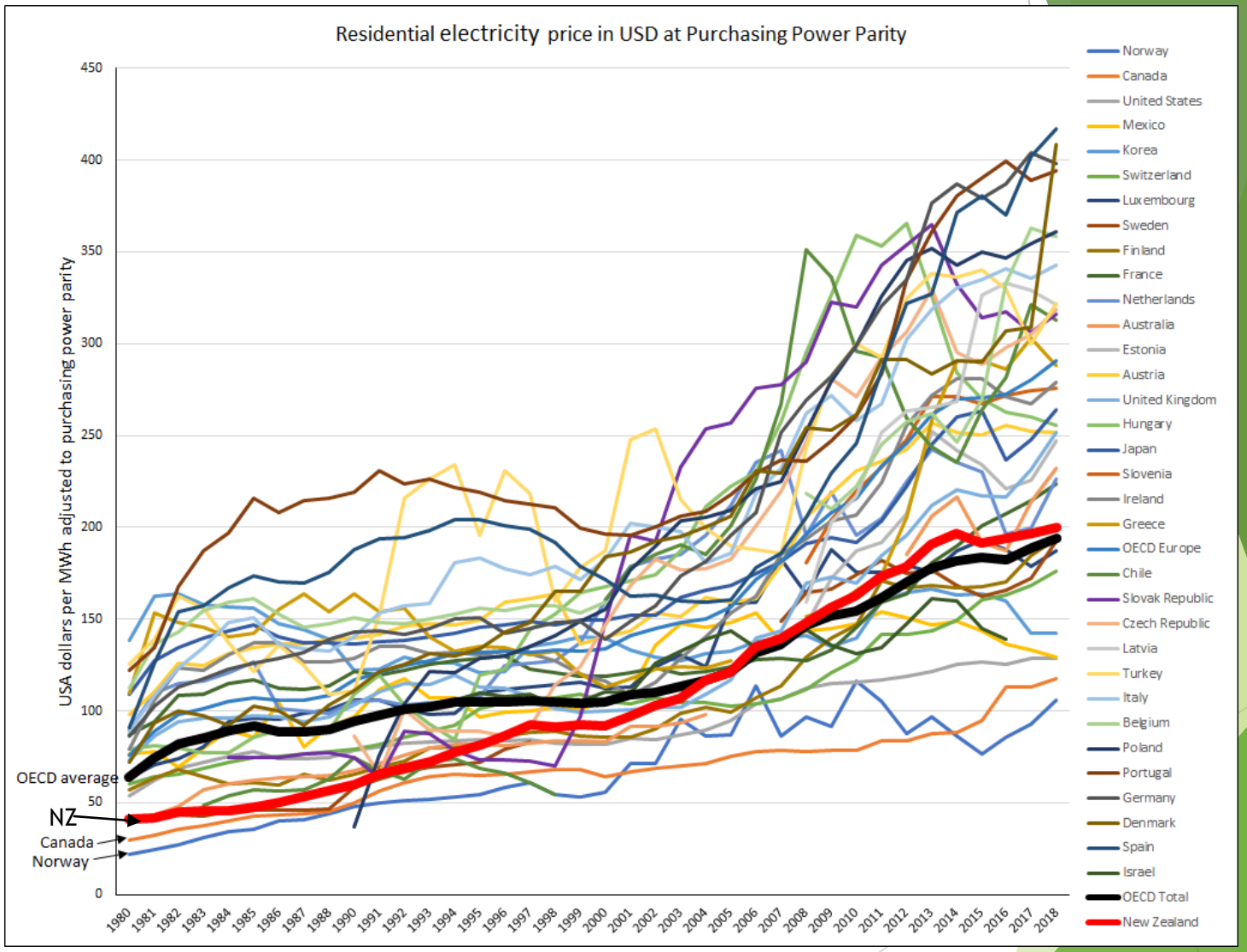
The record

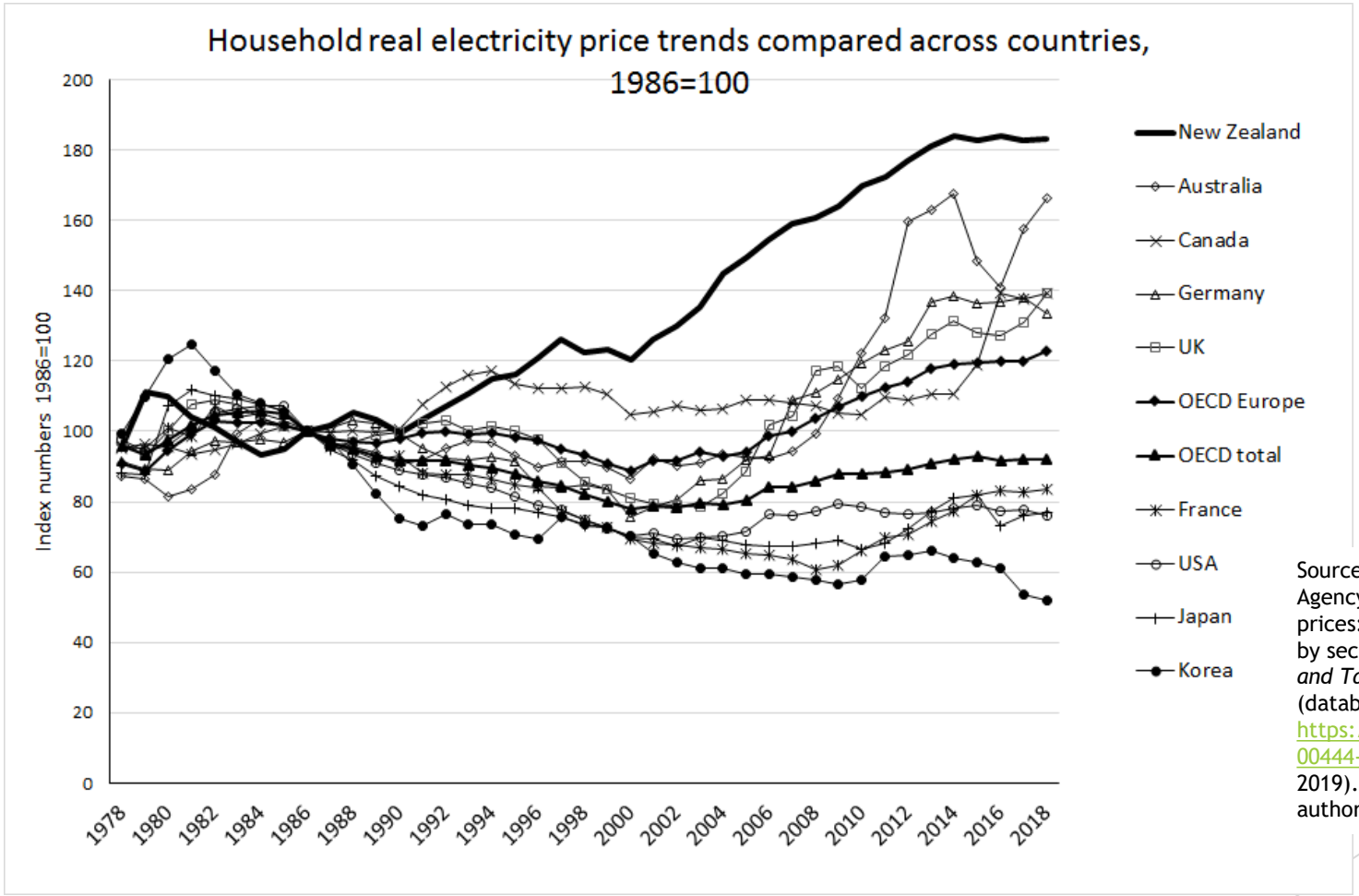

Real electricity prices 1974-2022
Cents per kWh in 2020 dollars
35
30
25
20
15
10
5
0
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Calendar years
Residential
Commercial
Industrial
Weighted average

New Zealand used to be the third lowest, at 64% of the OECD average price.

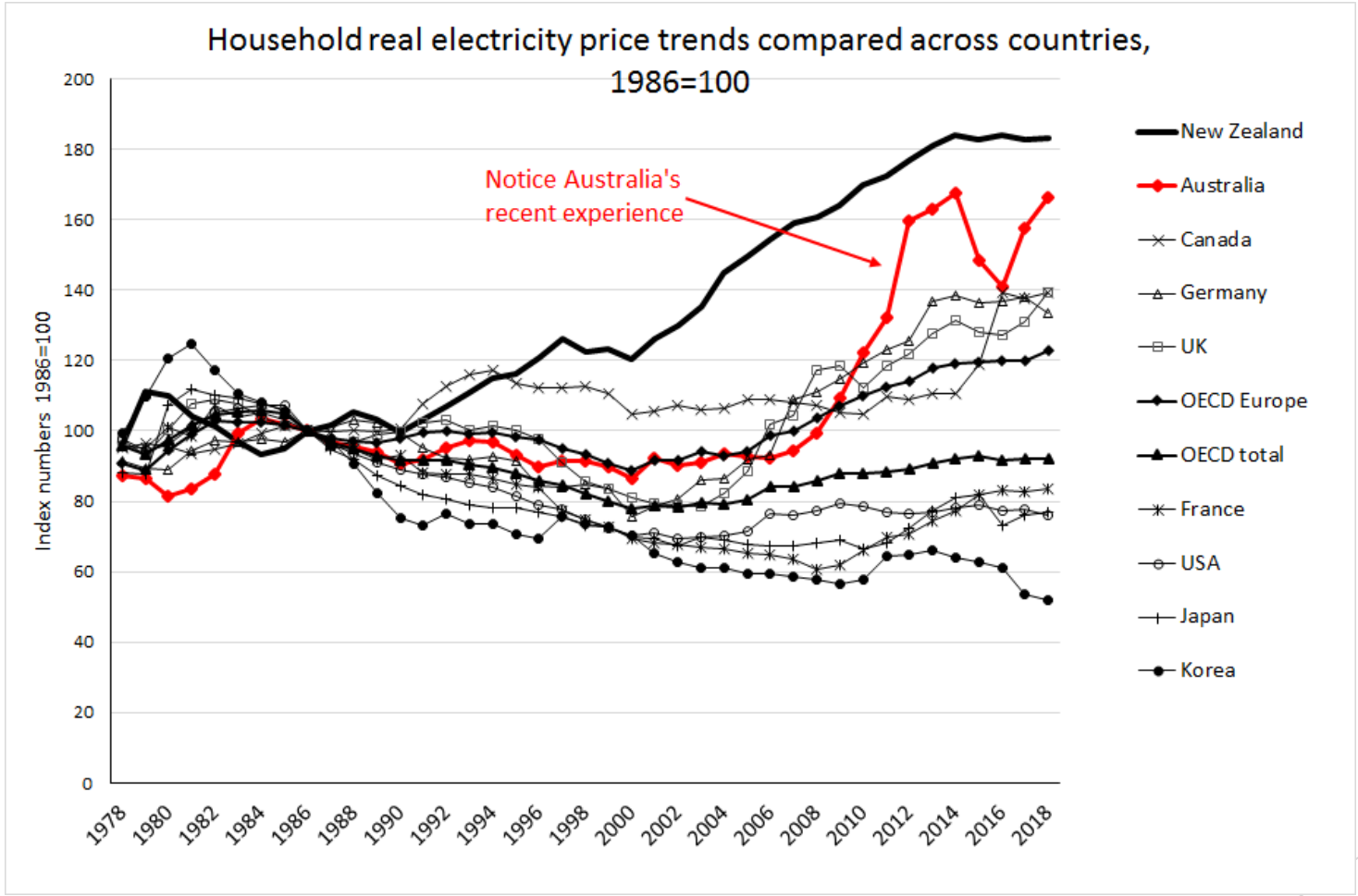
In 2018 NZ was eleventh lowest, at 103% of the OECD average.

Source: International Energy Agency database accessed 3 October 2019.





Source: International Energy Agency (2019), "End-use prices: Indices of energy prices by sector", *IEA Energy Prices and Taxes Statistics* (database), https://doi.org/10.1787/data-00444-en (accessed on 20 May 2019). Series rebased by author to 1986=100.


Household real electricity price trends compared across countries, 1986=100
Index numbers 1986=100
Notice Australia's recent experience
New Zealand
Australia
Canada
Germany
UK
OECD Europe
OECD total
France
USA
Japan
Korea
0
20
40
60
80
100
120
140
160
180
200
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
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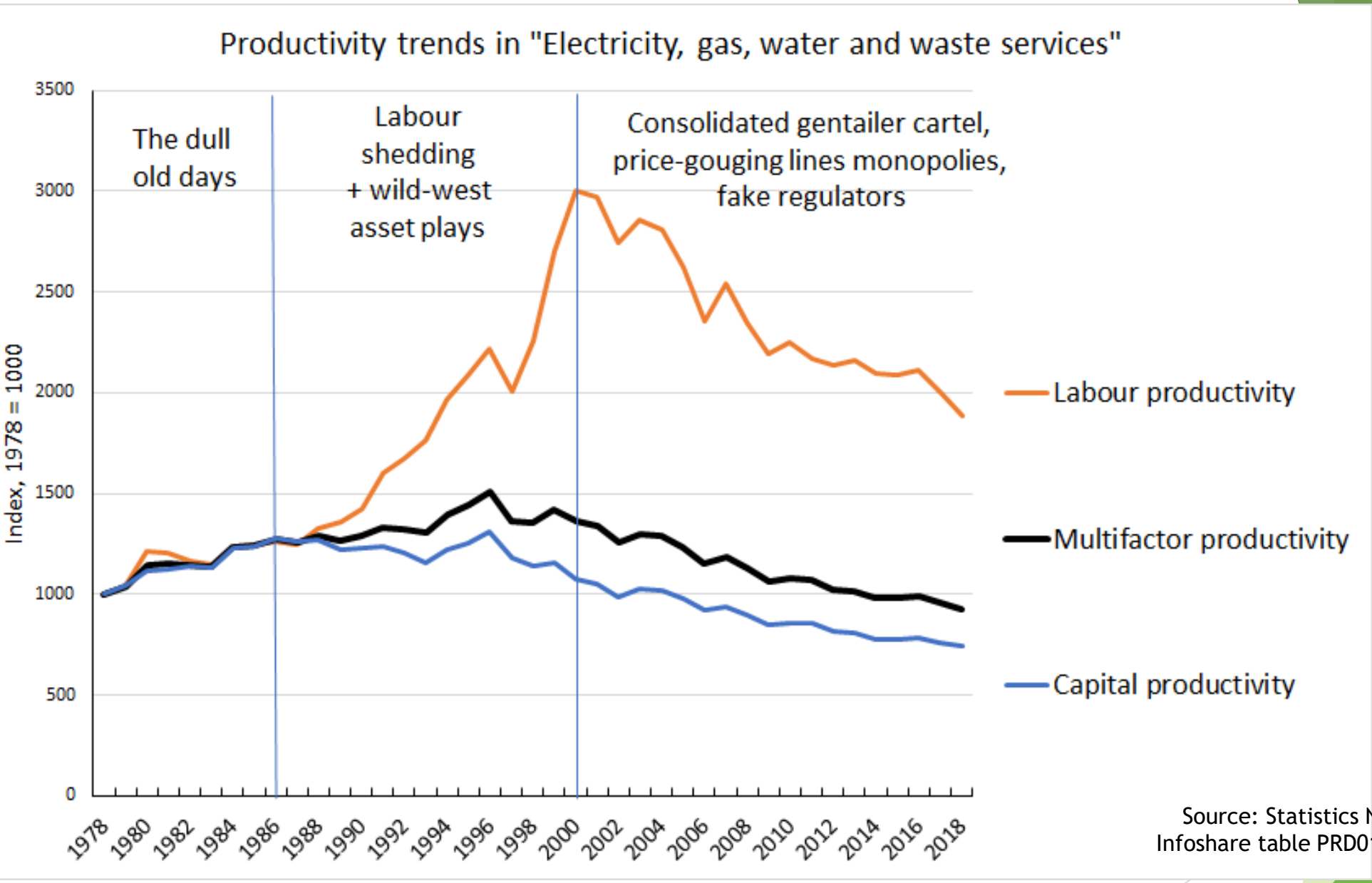
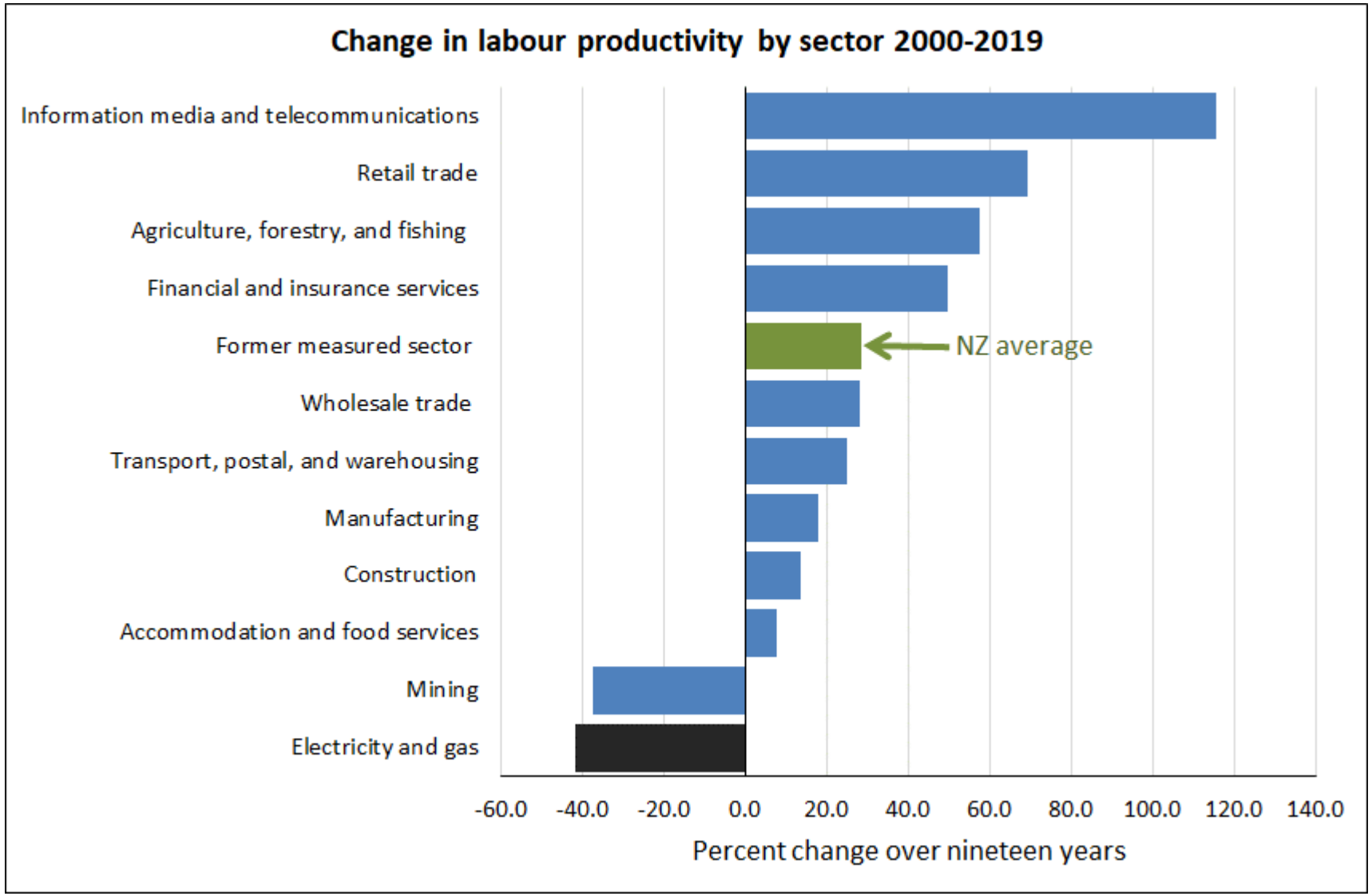
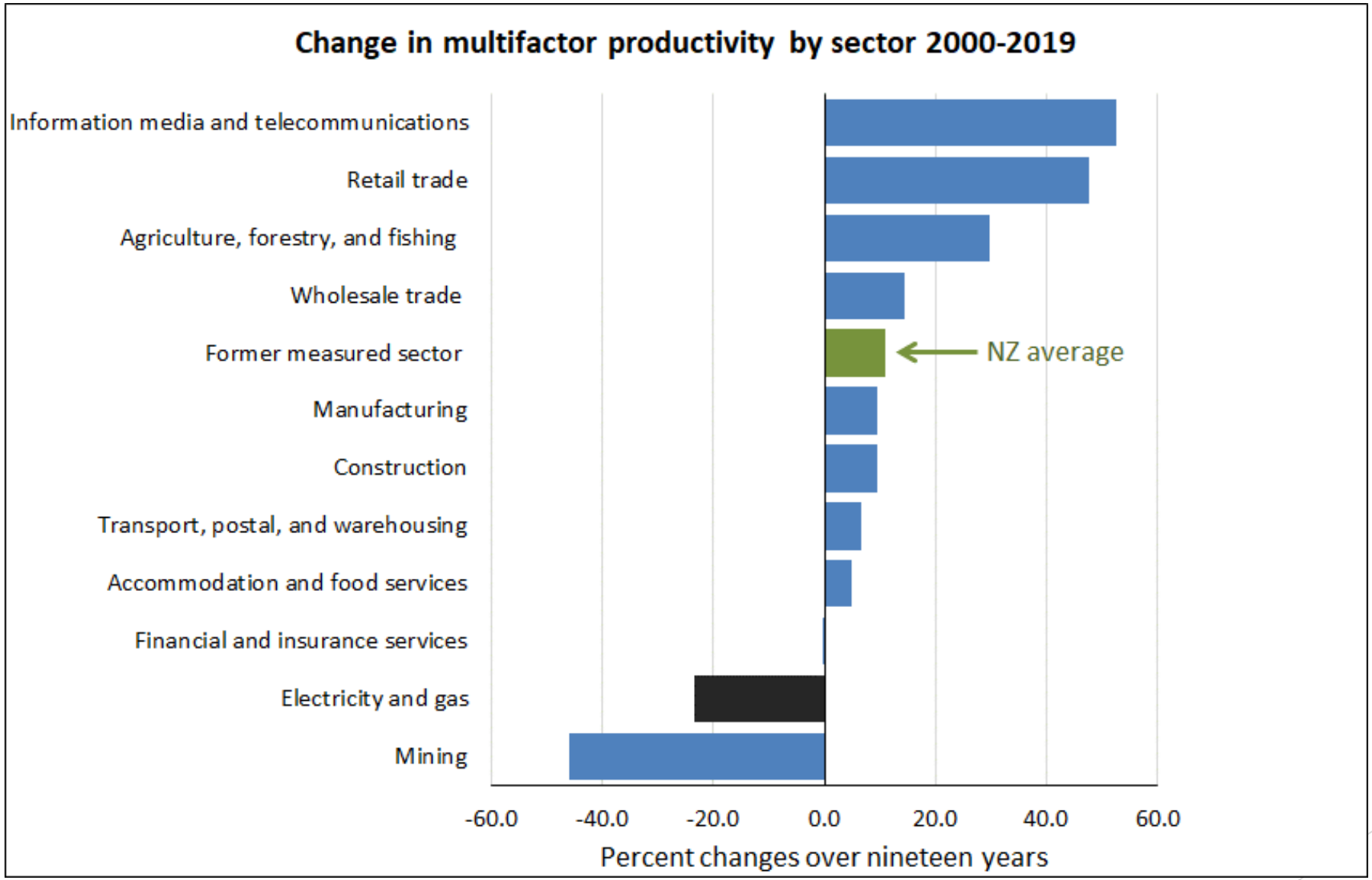
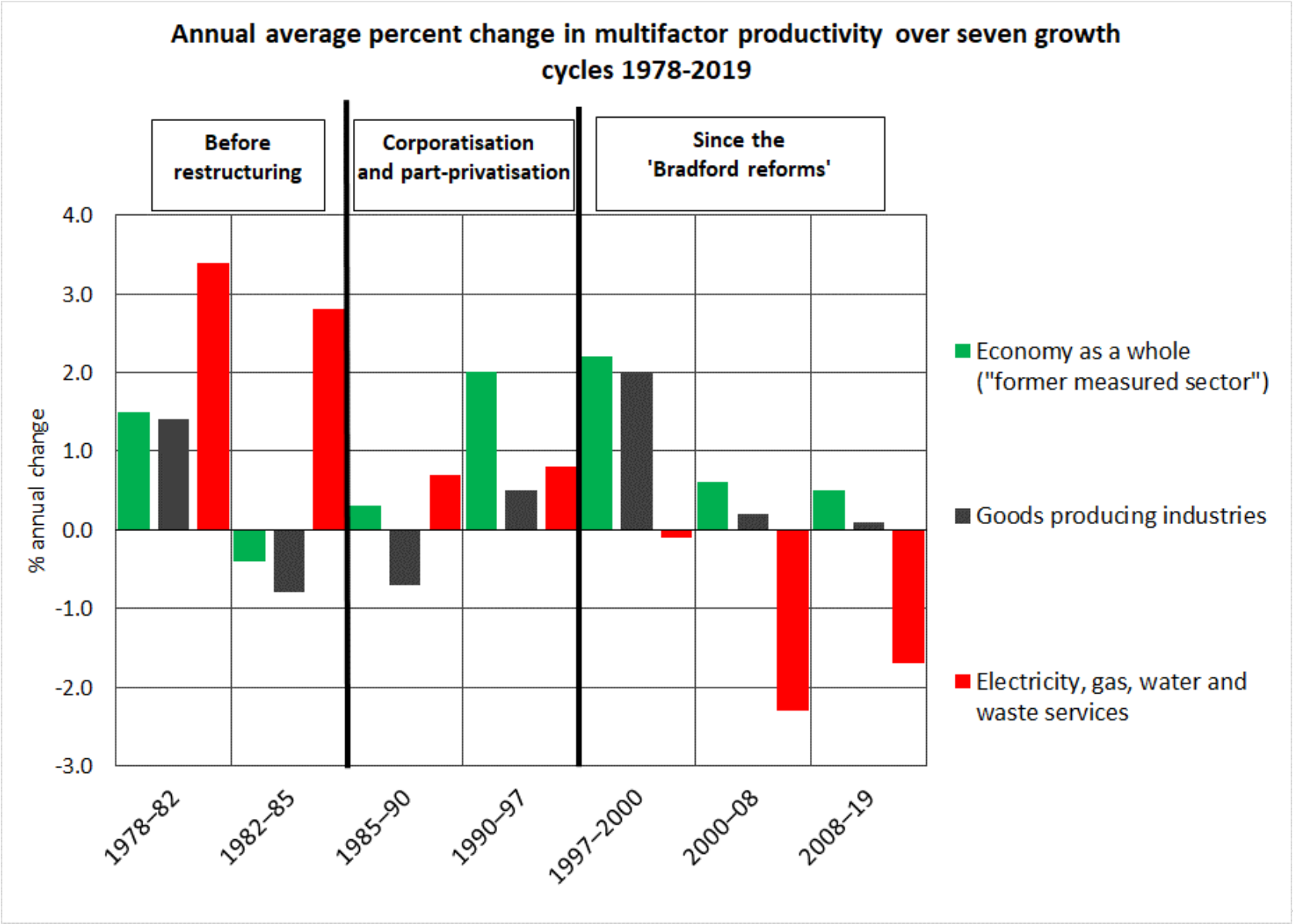
2008
2010
2012
2014
2016
2018

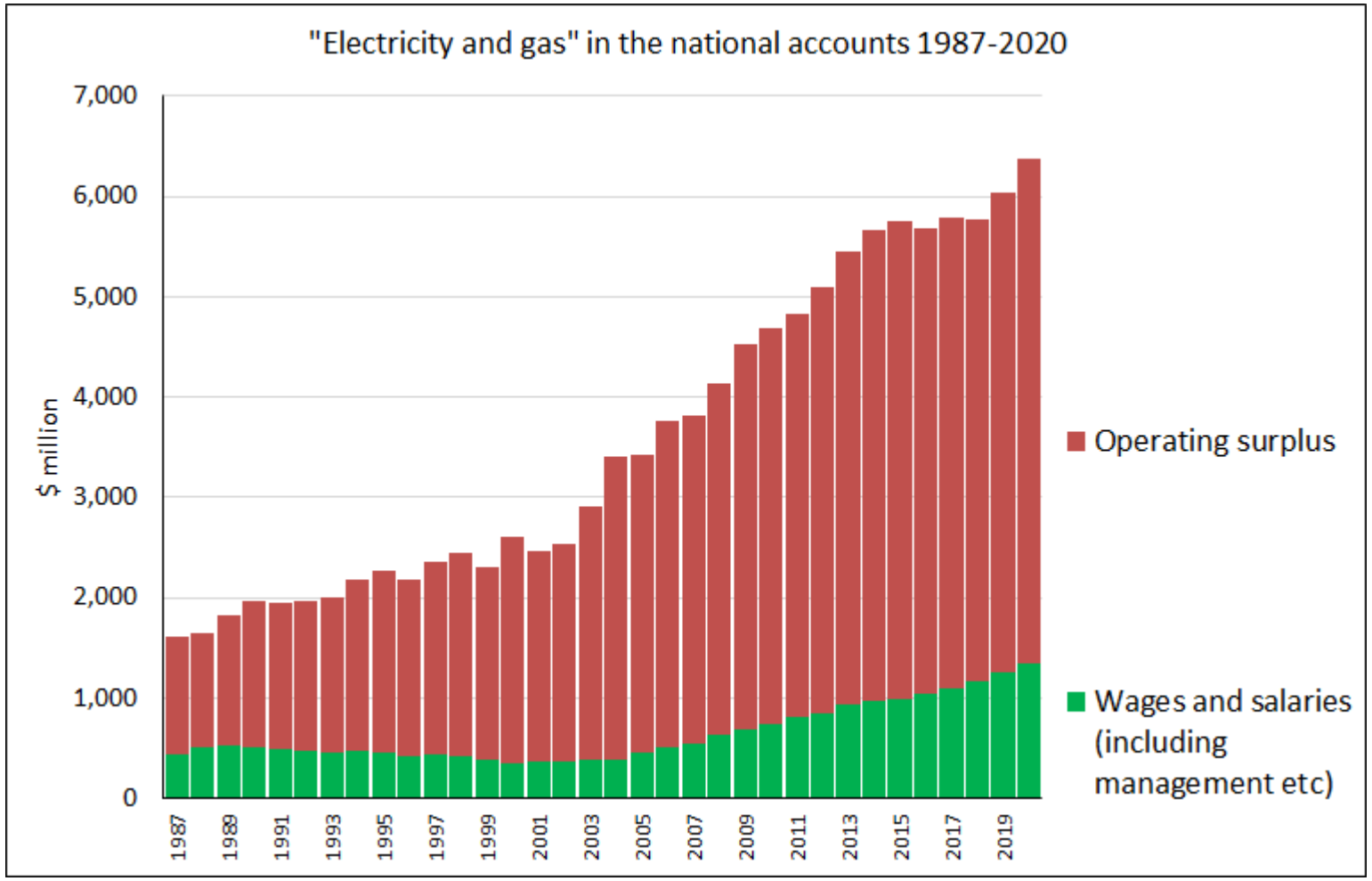


Source: Statistics NZ
Infoshare table PRD014AA


Change in labour productivity by sector 2000-2019
Information media and telecommunications
Retail trade
Agriculture, forestry, and fishing
Financial and insurance services
Former measured sector
NZ average
Wholesale trade
Transport, postal, and warehousing
Manufacturing
Construction
Accommodation and food services
Mining
Electricity and gas
-60.0
-40.0
-20.0
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Percent change over nineteen years

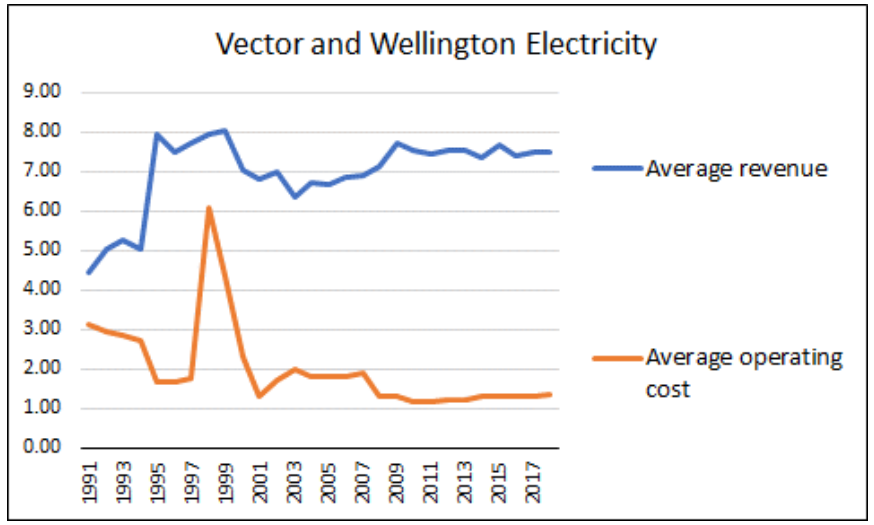

Change in multifactor productivity by sector 2000-2019
Information media and telecommunications
Retail trade
Agriculture, forestry, and fishing
Wholesale trade
Former measured sector
NZ average
Manufacturing
Construction
Transport, postal, and warehousing
Accommodation and food services
Financial and insurance services
Electricity and gas
Mining
-60.0
-40.0
-20.0
0.0
20.0
40.0
60.0
Percent changes over nineteen years

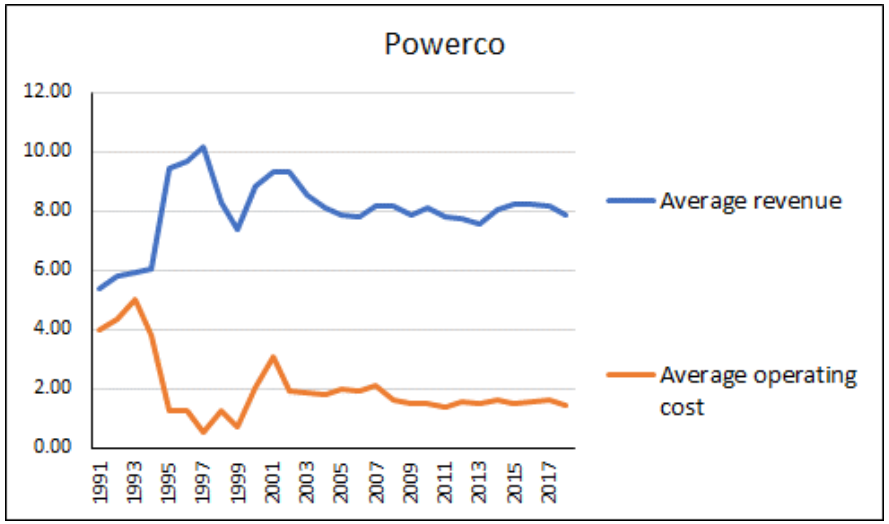

Annual average percent change in multifactor productivity over seven growth cycles 1978-2019
Before restructuring
Corporatisation and part-privatisation
Since the 'Bradford reforms'
% annual change
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
1978–82
1982–85
1985–90
1990–97
1997–2000
2000–08
2008–19
Economy as a whole ("former measured sector")
Goods producing industries
Electricity, gas, water and waste services

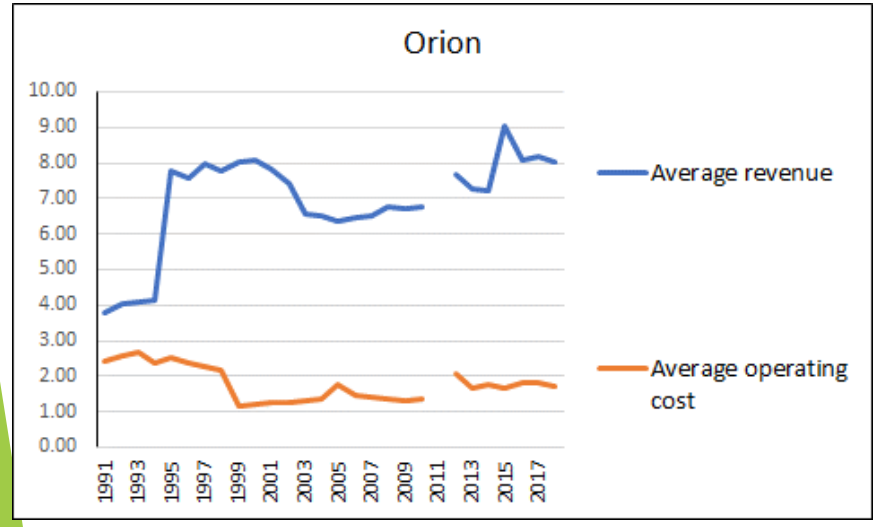


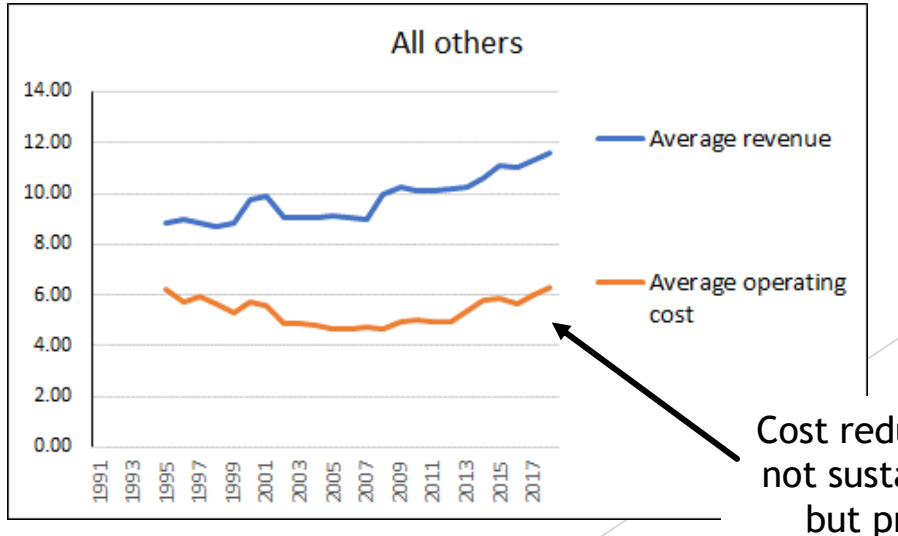
https://www.stats.govt.nz/assets/Uploads/National-accounts-industry-production-and-investment/National-accounts-industry-production-and-investment-Year-ended-March-2020/Download/national-accounts-industry-production-and-investment-year-ended-march-2020.xlsx downloaded 25 August 2022

Lines networks, increased markups 1991-2018, in 2018 cents per kWh





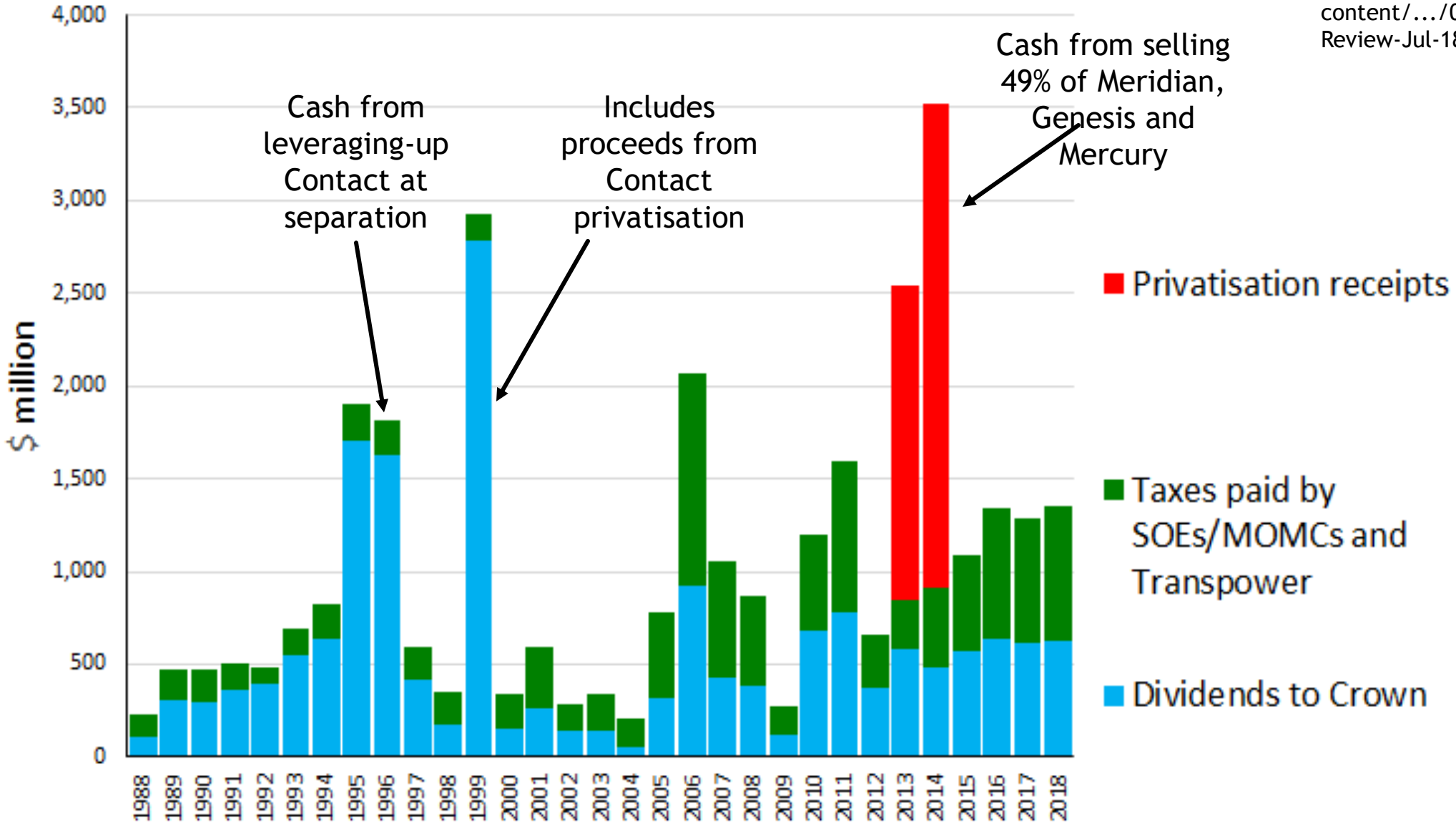


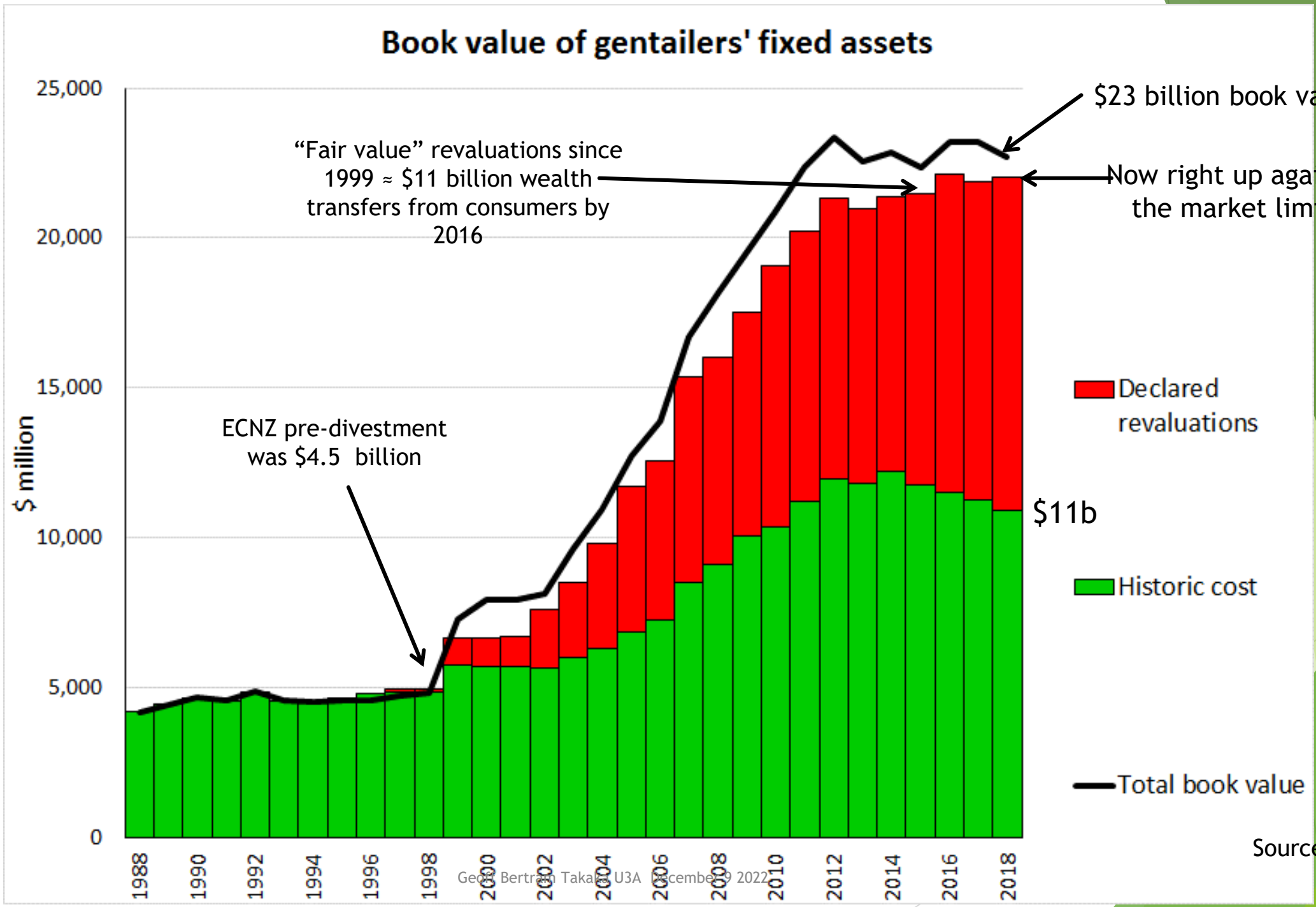


Cost reductions not sustained - but profit margins stayed

Sources company annual reports, plus TDB Review of Mixed Ownership Model July 2018 https://www.tdb.co.nz/wp-content/.../08/TDB-Mixed-Ownership-Review-Jul-18.pdf

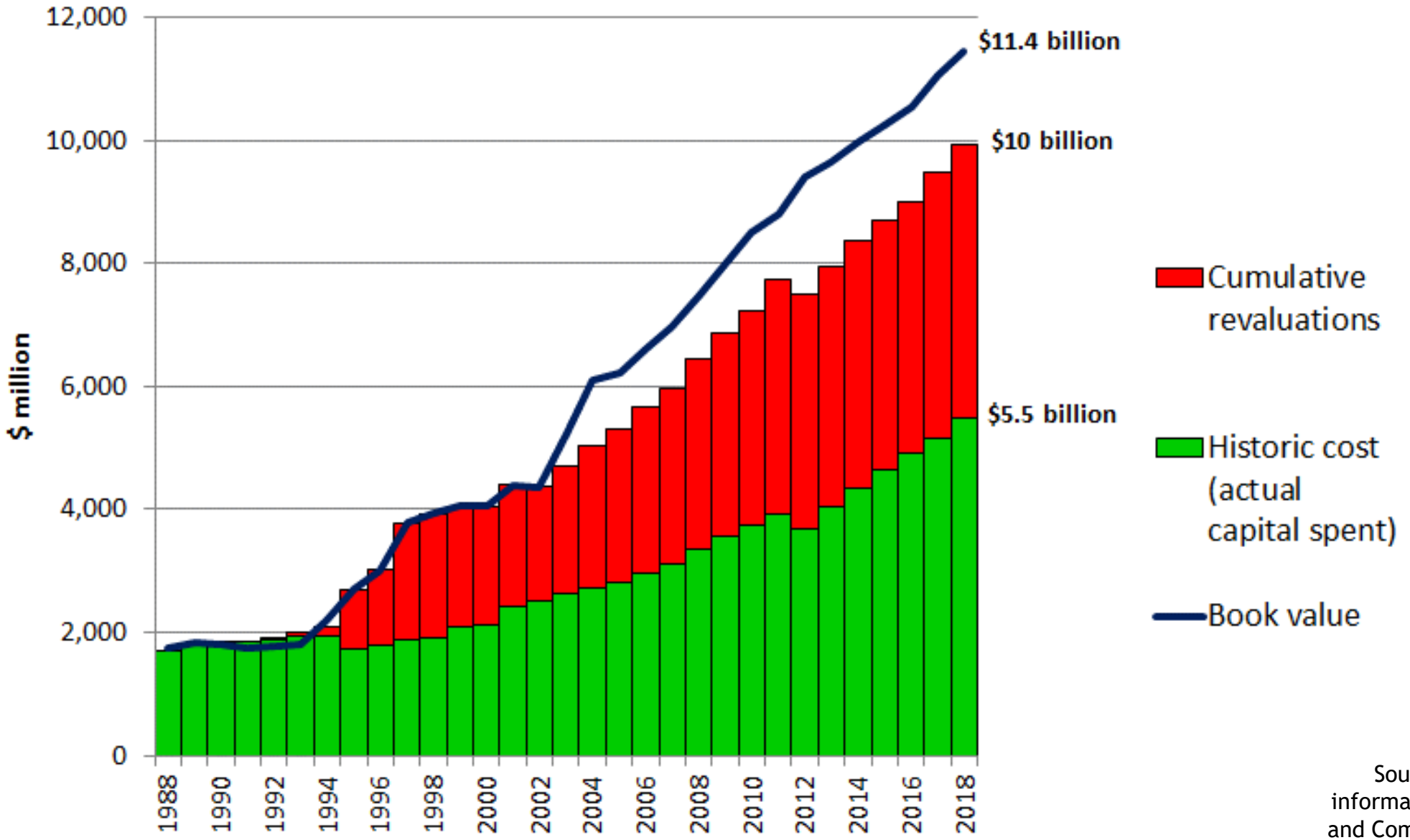
Crown income from state-owned electricity operations





Source: Company annual reports

Supply authorities/lines companies fixed assets book value



Sources: Disclosed information from Gazettes and Commerce Commission

The outcome 1986-2022

An uncompetitive oligopoly/cartel has been entrenched in control of our most strategic sector

Productivity is down 30% over three decades, gross profits are up 80%

Construction of renewable generation has been slowed down and new entrants to generation are being blocked by anti-competitive practices which are legal under the Commerce Act 1986, and supported by the "regulators" (Electricity Authority and Commerce Commission)

Prices for residential consumers have doubled in real terms and will rise further as the carbon price rises (perverse incentive)

Prices for industry are up just a couple of percent while prices for commercial users are down by a quarter. In other words, countervailing **power** is what really matters in uncompetitive markets

The electricity industry's strategic goals are now hostile to equitable climate-change policy and will block progress unless and until the cartel is broken

Bottom line: over the past two decades this sector has been loaded up with labour and capital engaged in unproductive activities

Pursuit of profit combined with complicated “competition” games and financial engineering has meant that increasing amounts of labour and capital have been allocated to high-paid sales, marketing, financial management and administrative work that adds nothing to the volume or quality of the electricity reaching consumers

Corporatisation and privatisation have culminated in a gigantic exercise in rent-seeking waste

The reason

The reformers either lacked understanding of the economics of the New Zealand electricity system – or didn't care

They were applying one-size-fits-all cookie-cutter notions imported from the UK and USA where the economics of electricity were different and neoliberal ideas were on the rise

Deregulation opened the door for looting and rent-seeking

Ideology overwhelmed common sense

The big promise of the Emissions Trading Scheme promoters

Market forces would be harnessed to trigger the most cost-effective options for emission reduction

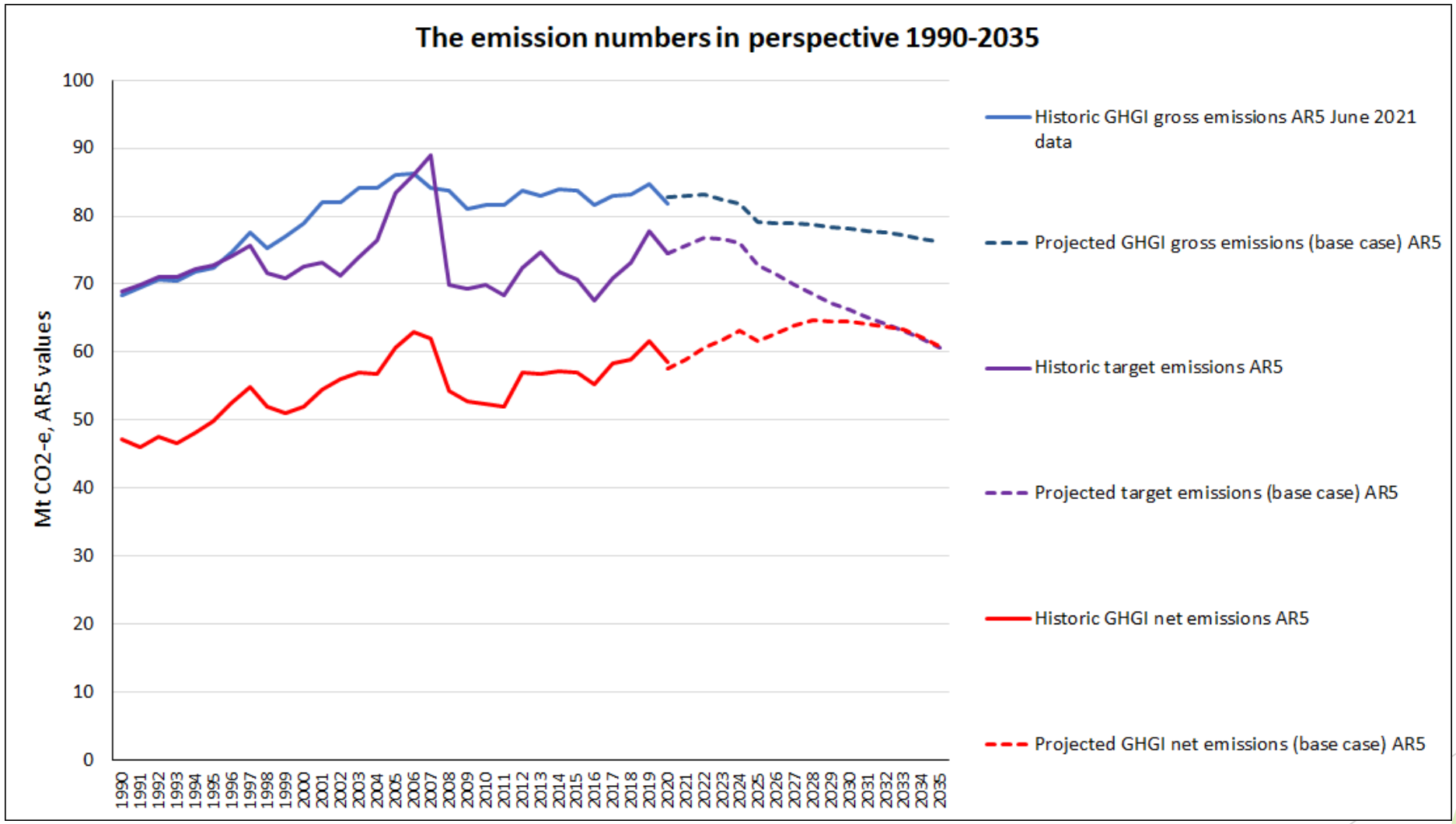
We would have a “cap and trade” system as a viable alternative to a carbon tax, given that the tax route was judged politically impossible

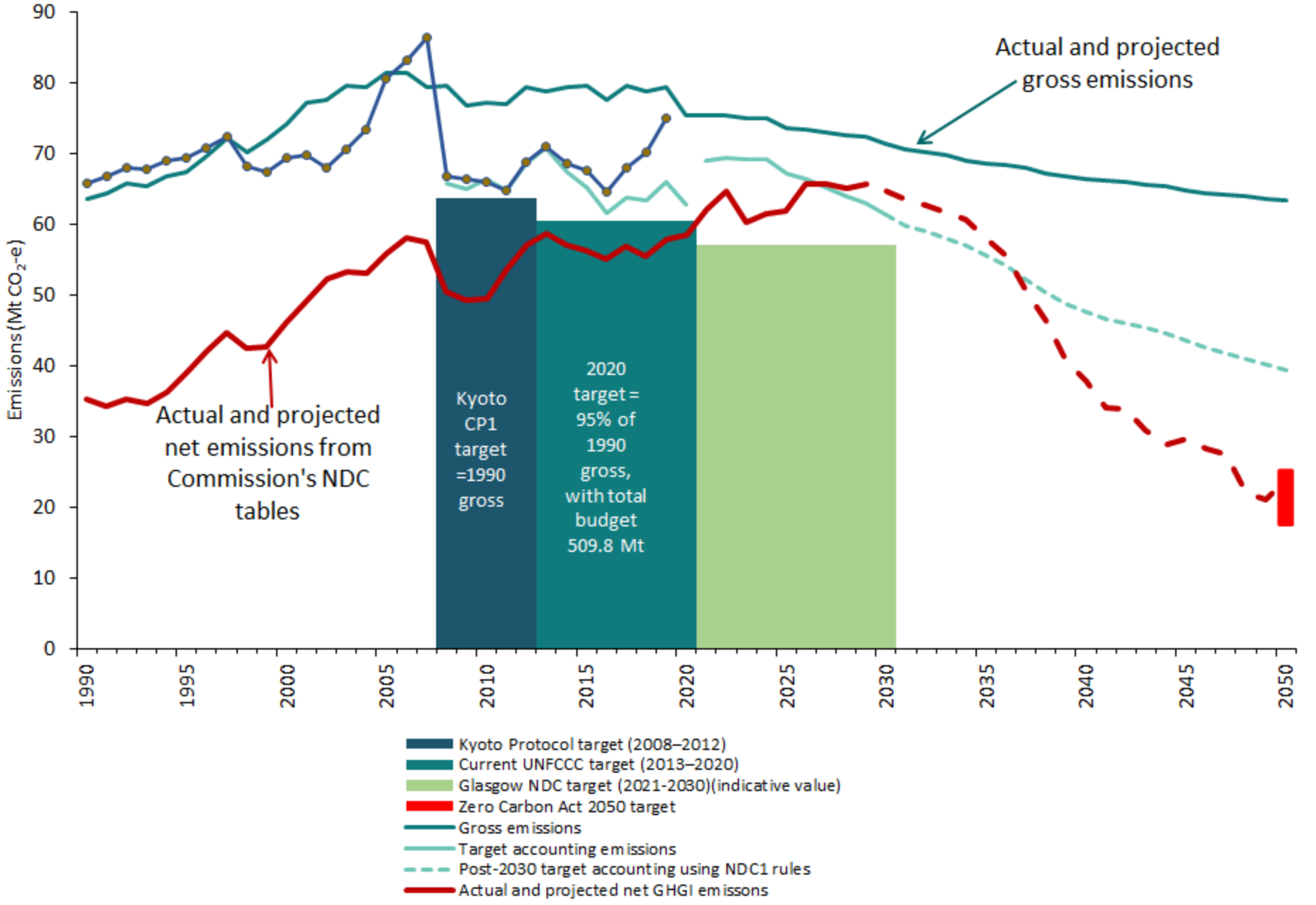
All sectors/all gases would be covered by 2013 (including agriculture)

New Zealand/Aotearoa would have a credible record to hold up for scrutiny at international gatherings

The record

Carbon emissions have shot up since 1990 and are still rising





'My version of target accounting data' sheet 'Assembled data' columns BA-BO

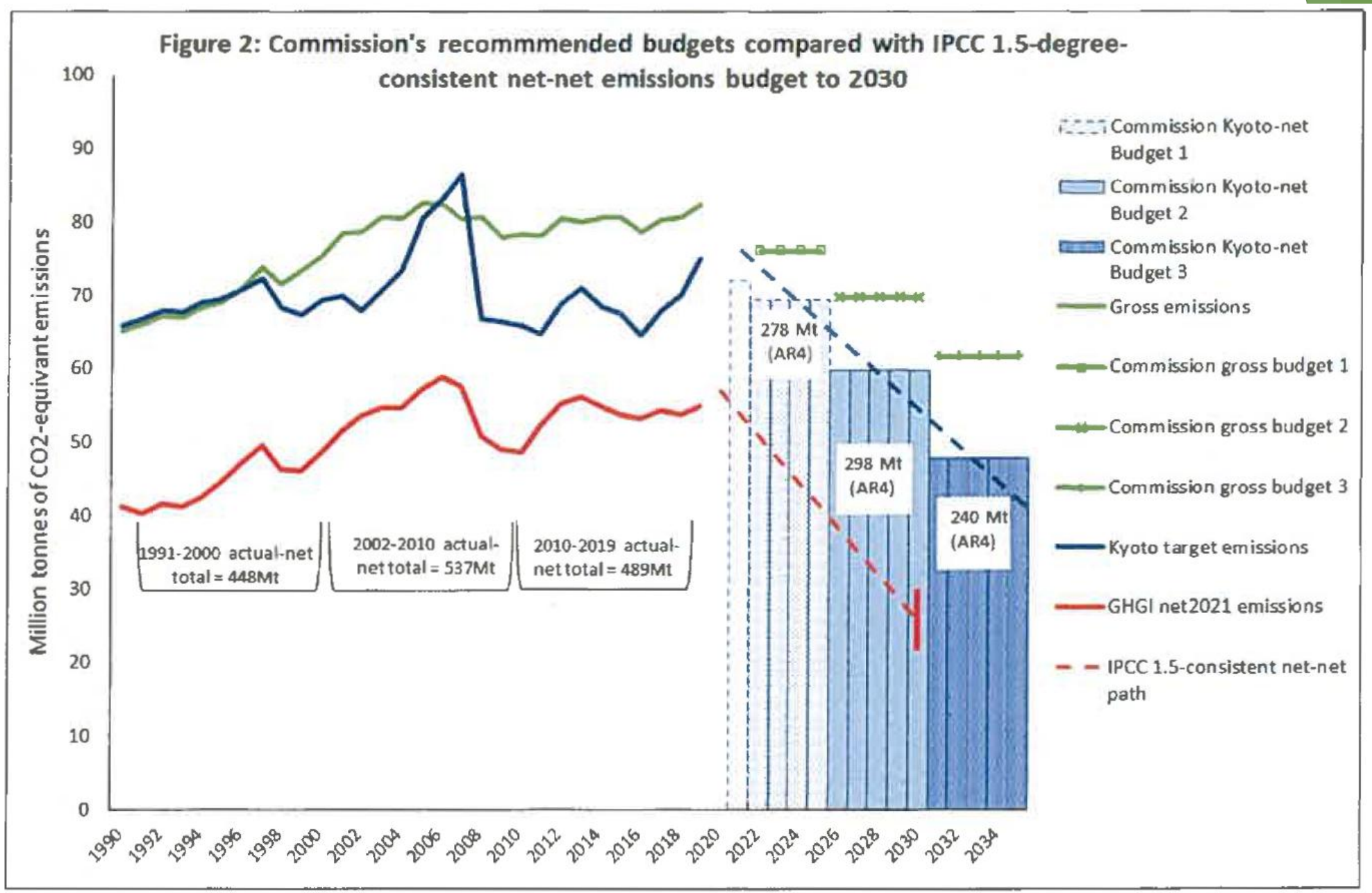
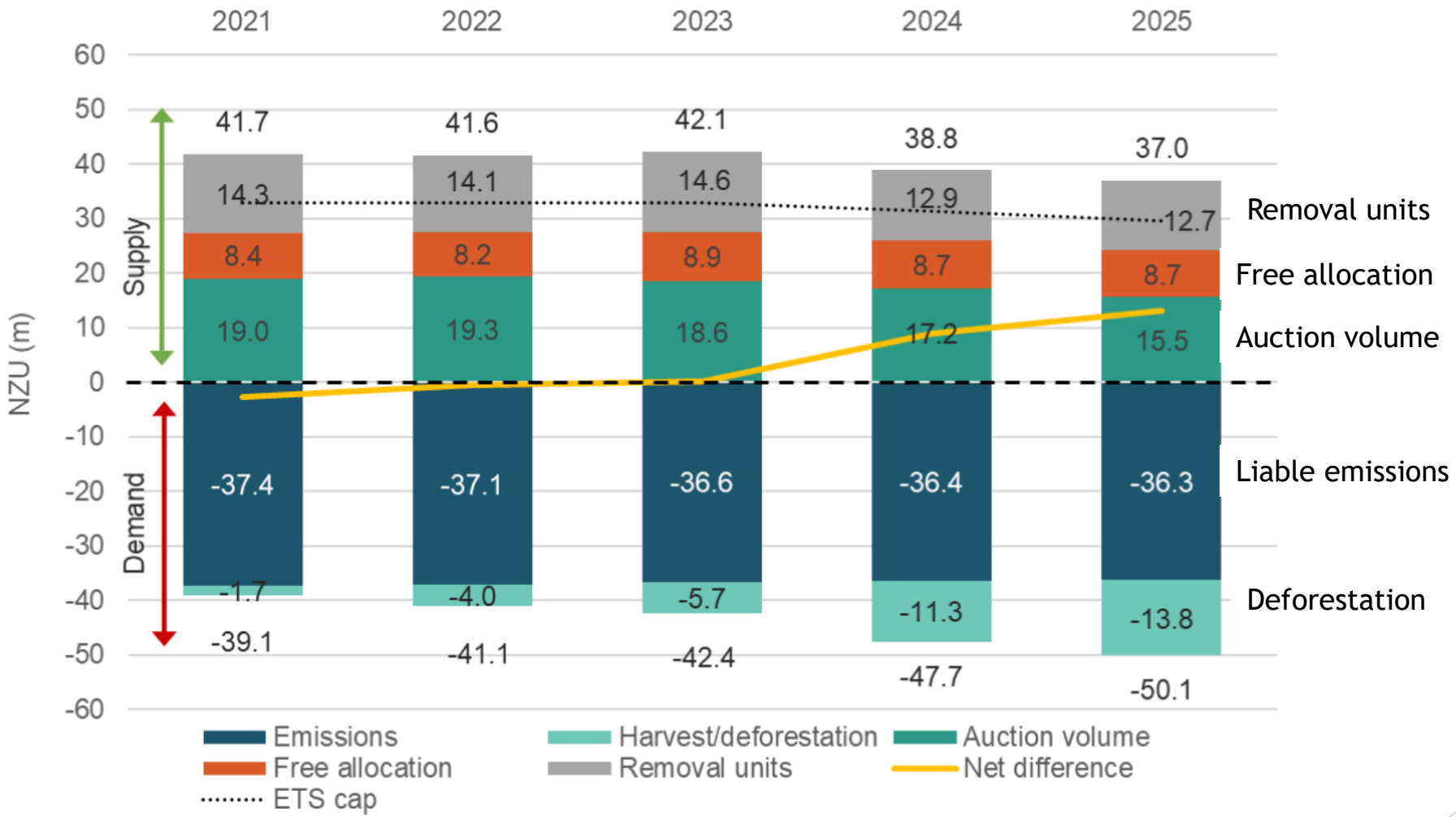


Figure 2: Commission's recommmended budgets compared with IPCC 1.5-degree-consistent net-net emissions budget to 2030
Million tonnes of CO2-equivant emissions
100
90
80
70
60
50
40
30
20
10
0
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
2032
2034
1991-2000 actual-net total = 448Mt
2002-2010 actual-net total = 537Mt
2010-2019 actual-net total = 489Mt
278 Mt (AR4)
298 Mt (AR4)
240 Mt (AR4)
Commission Kyoto-net Budget 1
Commission Kyoto-net Budget 2
Commission Kyoto-net Budget 3
Gross emissions
Commission gross budget 1
Commission gross budget 2
Commission gross budget 3
Kyoto target emissions
GHGI net2021 emissions
IPCC 1.5-consistent net-net path

Breakdown of forecast NZU supply and demand



Removal units

Free allocation

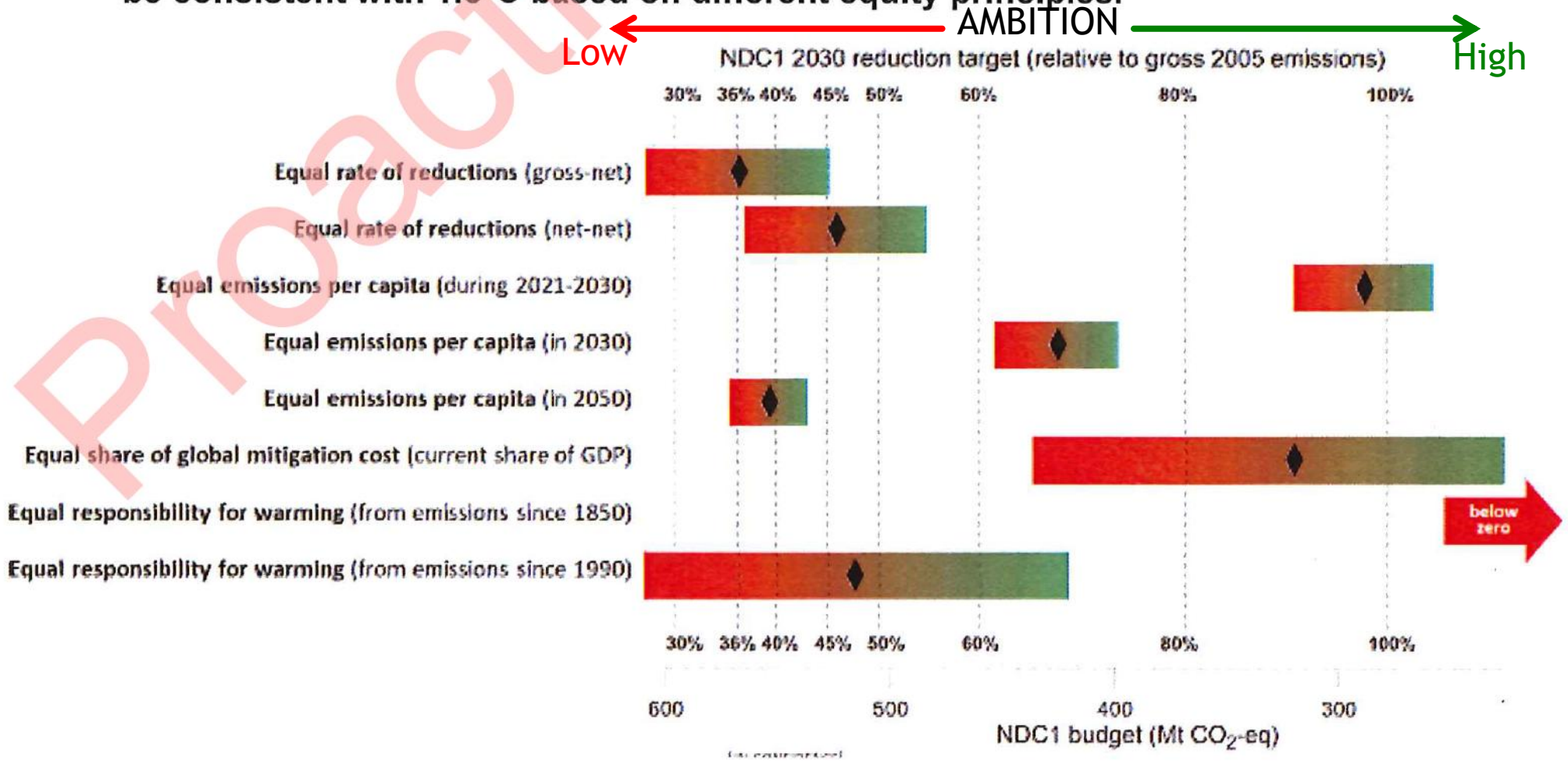
Auction volume

Liable emissions

Deforestation

https://www.mfe.govt.nz/ets/market-info-portal

Figure 1: Illustrative ranges of NDC1 budgets and 2030 reduction targets that would be consistent with 1.5°C based on different equity principles.



Note: NDC1 budgets and 2030 reduction targets are expressed using the same methodology as for the current NDC1 and used in the Commission's final advice, including Global Warming Potentials from the IPCC AR4.

Cabinet Paper 10 June 2021 https://environment.govt.nz/assets/publications/8-BRF-213-Consistency-of-NDC1-with-efforts-to-limitglobal-warming-to-1.5-degrees.pdf downloaded 9 June 2022 p.20.

Proactiv

Summing up 2008-2022

The Emissions Trading Scheme to date was from the start a massive scam designed (under corporate lobbying pressure) primarily to enrich corporate insiders – including the electricity gentailer cartel

There was no cap placed on emissions so it was never "cap-and-trade". There is still no true binding cap

The door was left wide open for using "offsets" – both forests and often-dodgy overseas carbon credits - as a substitute for mitigation effort

That might have worked if the Kyoto Protocol had been a success in establishing global carbon prices and markets, but the Protocol never flew

Either price certainty or quantity certainty is required to incentivise behavioural changes. The ETS provided, and still provides, neither

The 2020 ETS "reforms" have left the scam intact and the uncertainty unchecked

The reason

Emissions trading was never sensible in New Zealand's tiny economy – carbon tax was always the better option but corporate stonewalling (channelled by New Zealand First in 2005) blocked that route

ETS design was captured from the outset by corporate vested interests and climate change deniers (Business Round Table and Treasury)

⇒ An institutional innovation that was designed and destined to fail from the start

Rent-seeking and vested interests overwhelmed common sense

My interpretation of these outcomes

High profits in electricity have come not from efficiency gains but from price-gouging residential consumers, under cover of entrenched market power, while the countervailing power of big business has protected industrial and commercial users.

Meantime, our electricity sector has become a major roadblock to dealing with climate change imperatives

The Emissions Trading Scheme is a scam that tarnishes NZ internationally and blocks genuine progress on decarbonisation

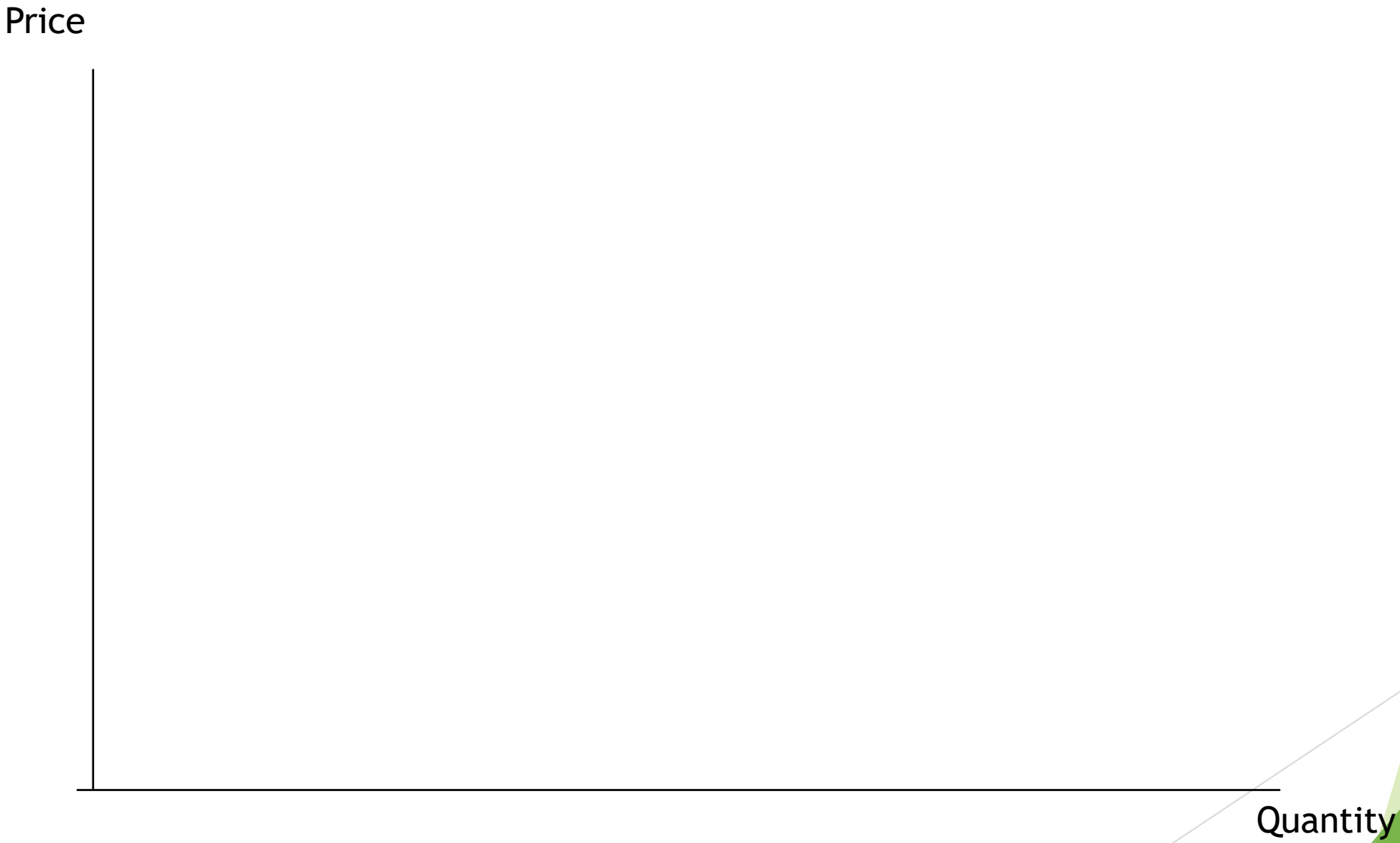
We would do better with a carbon tax, supplementary regulatory measures, and border adjustments

In a nutshell, the big promises were hollow.

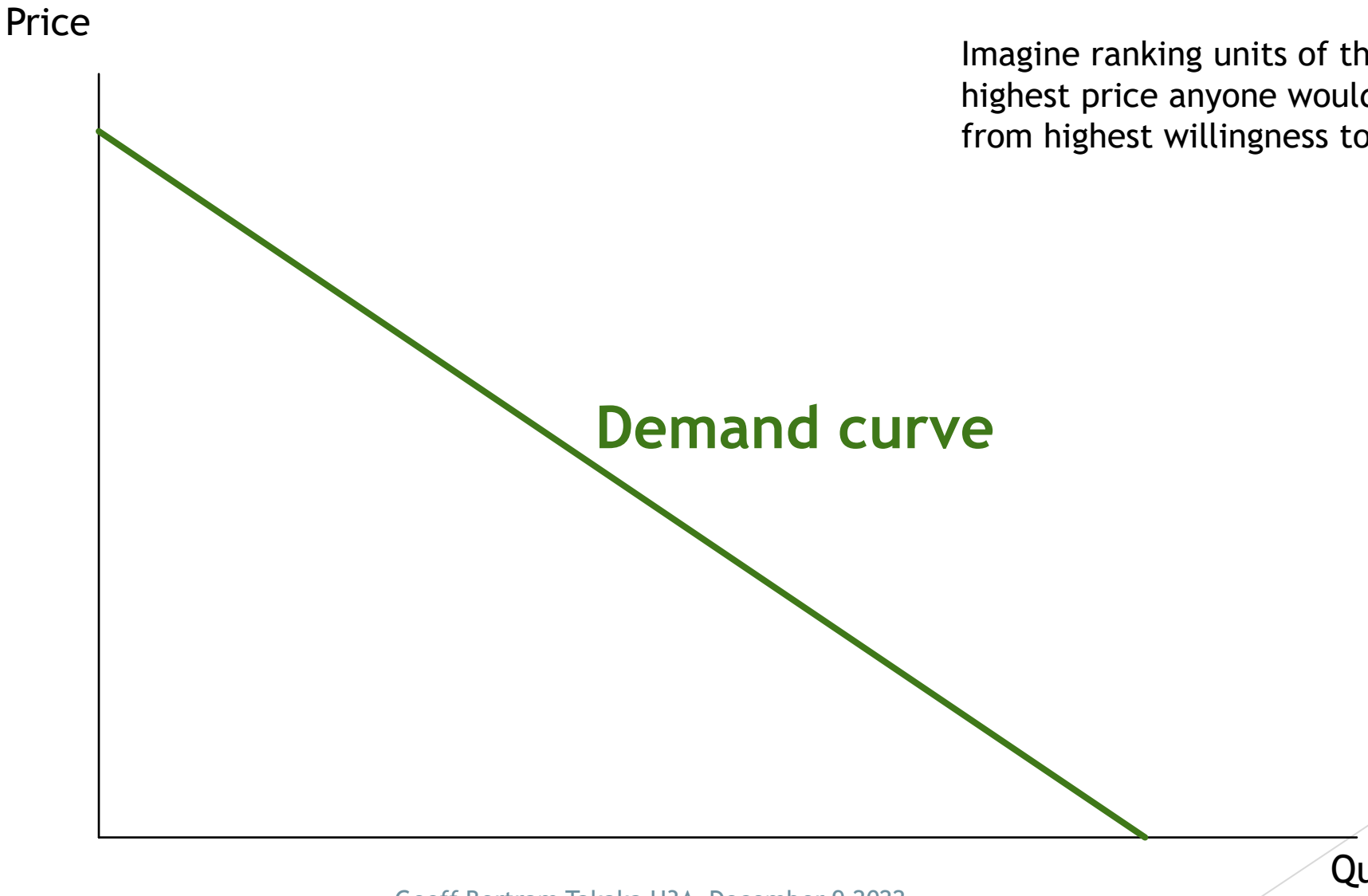
So from here …

1. A primer on supply/demand diagrams
2. Some technical stuff on the NZ electricity “market”
3. Some technical stuff on the New Zealand Emissions Trading Scheme
4. A couple of modest suggestions for change…

Start by constructing two axes: a vertical one for price, and a horizontal one for quantity

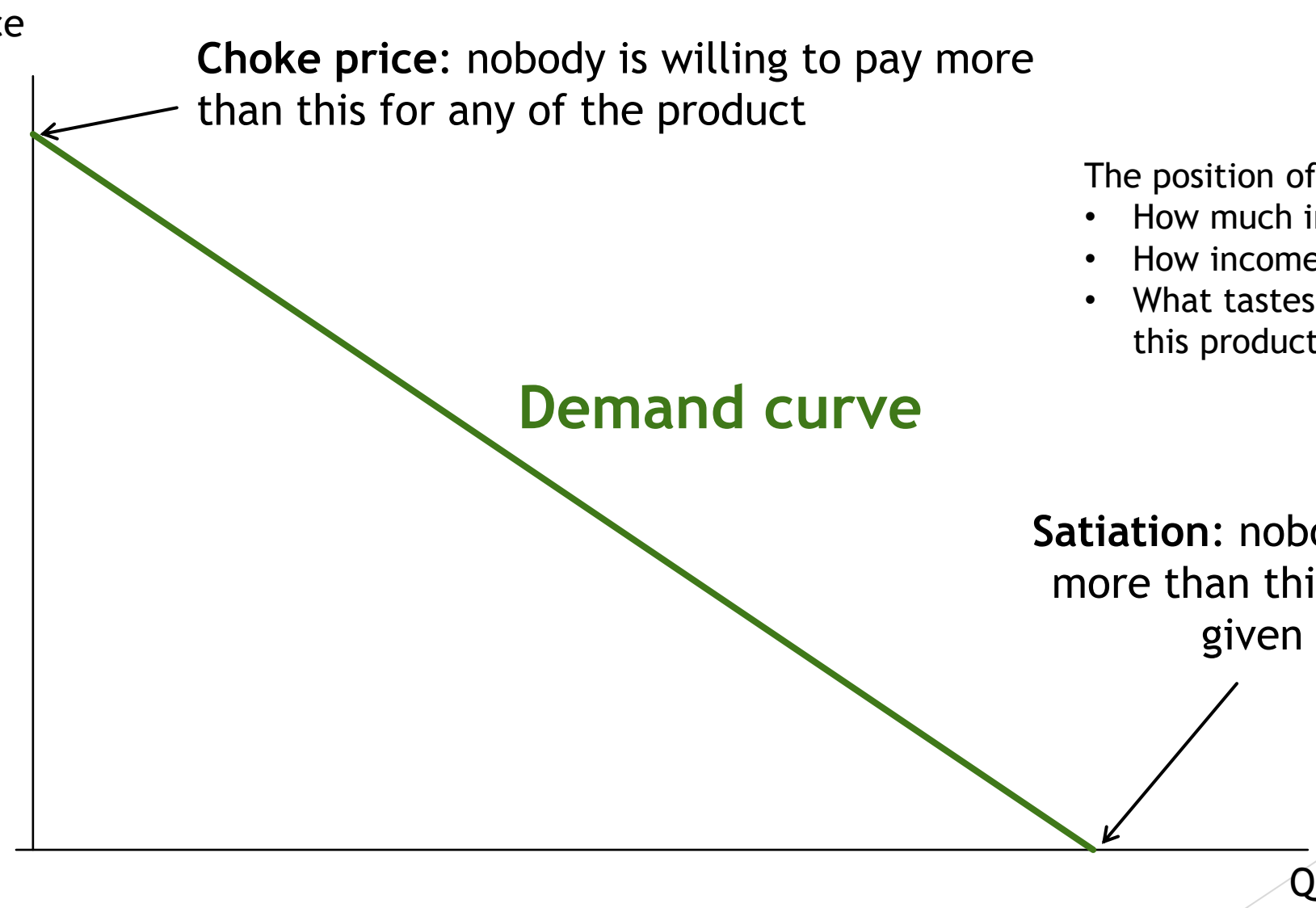


Now draw a line to represent the [rather grandly named] “law of demand”



Imagine ranking units of the product in order by the highest price anyone would be willing to pay for that unit, from highest willingness to pay to lowest

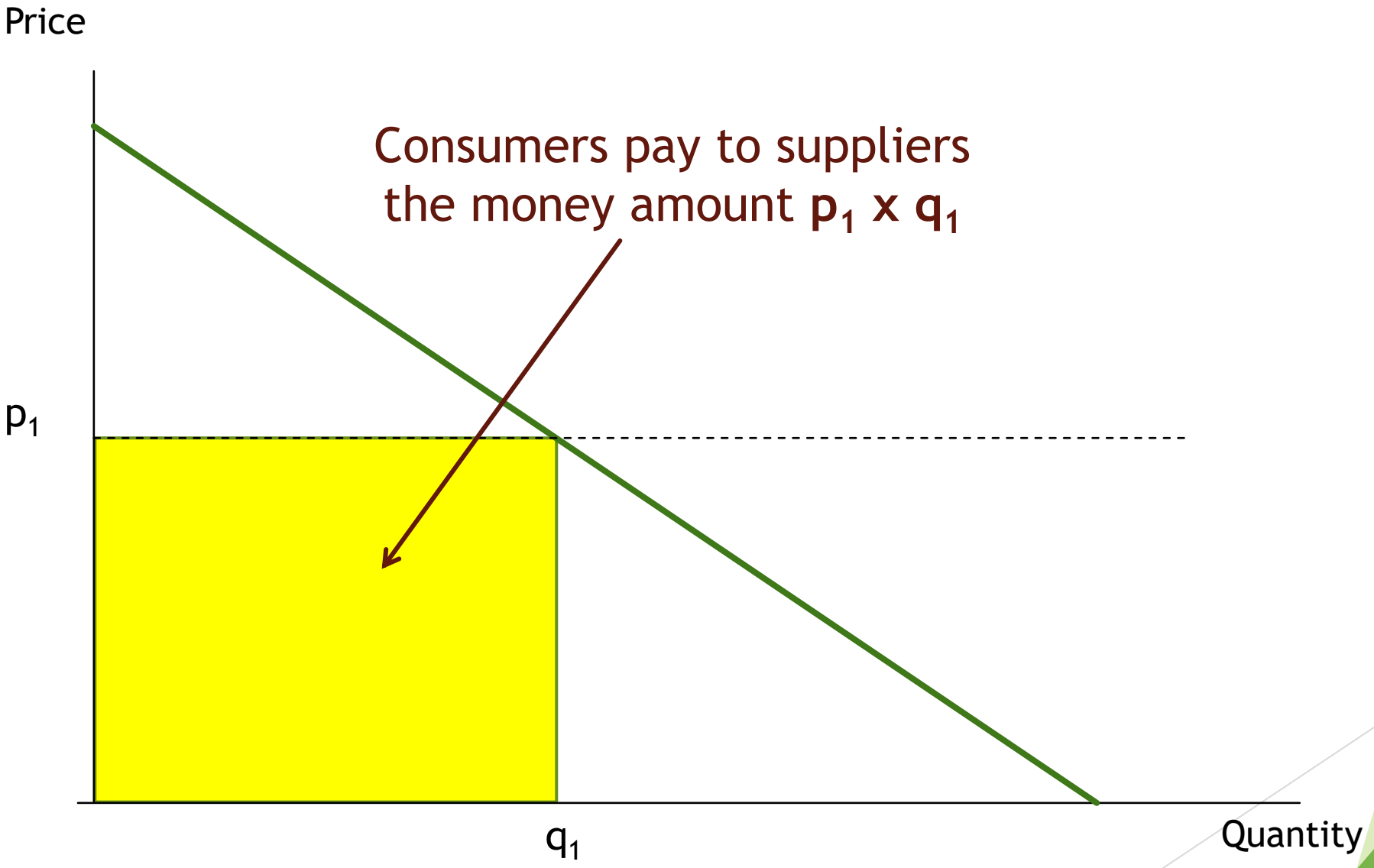
The two end-points of the simple demand curve



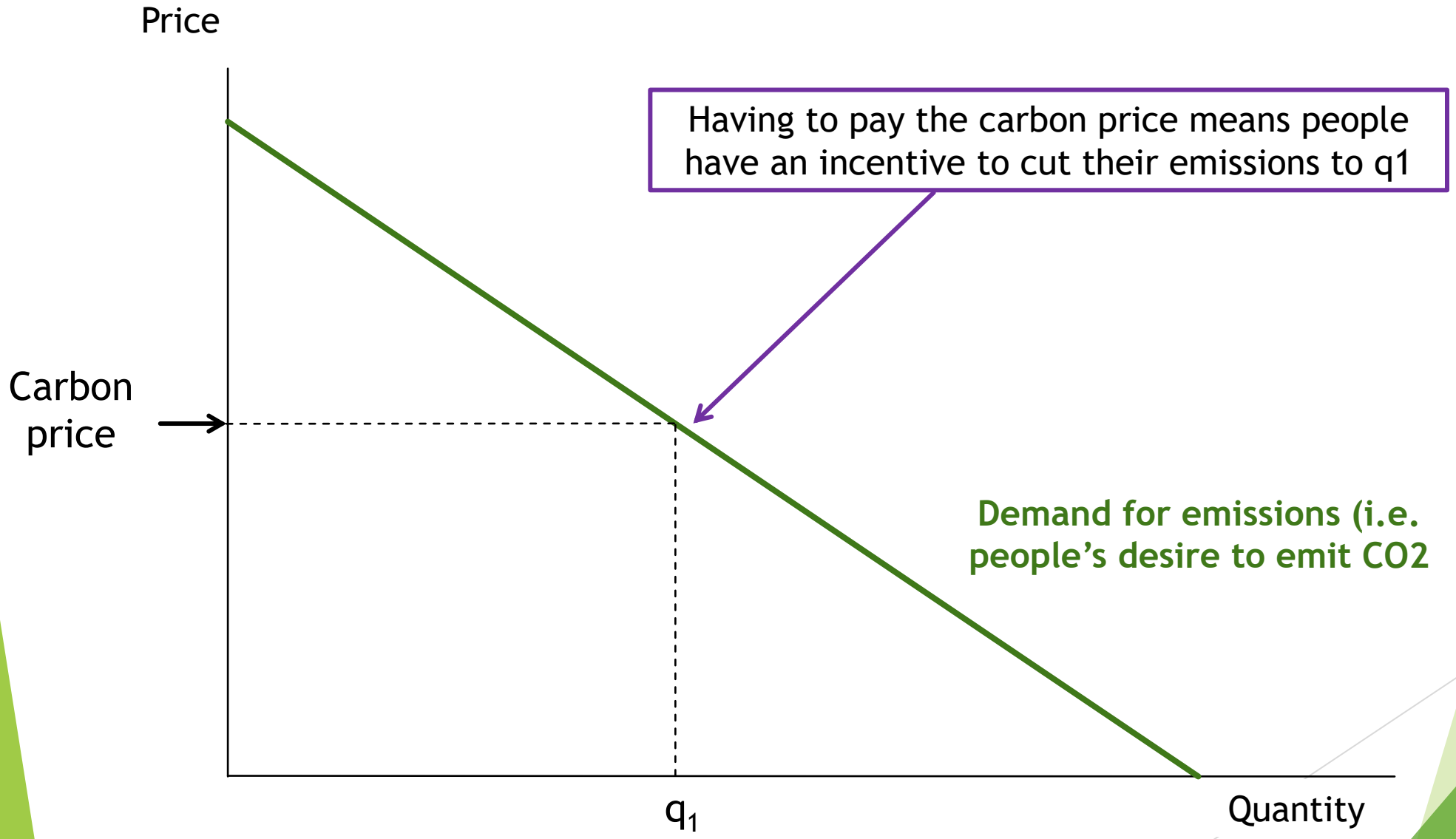
The position of the curve depends on

- How much income consumers have to spend
- How income is distributed across the population
- What tastes ("preferences") people have for this product versus alternatives ("substitutes")

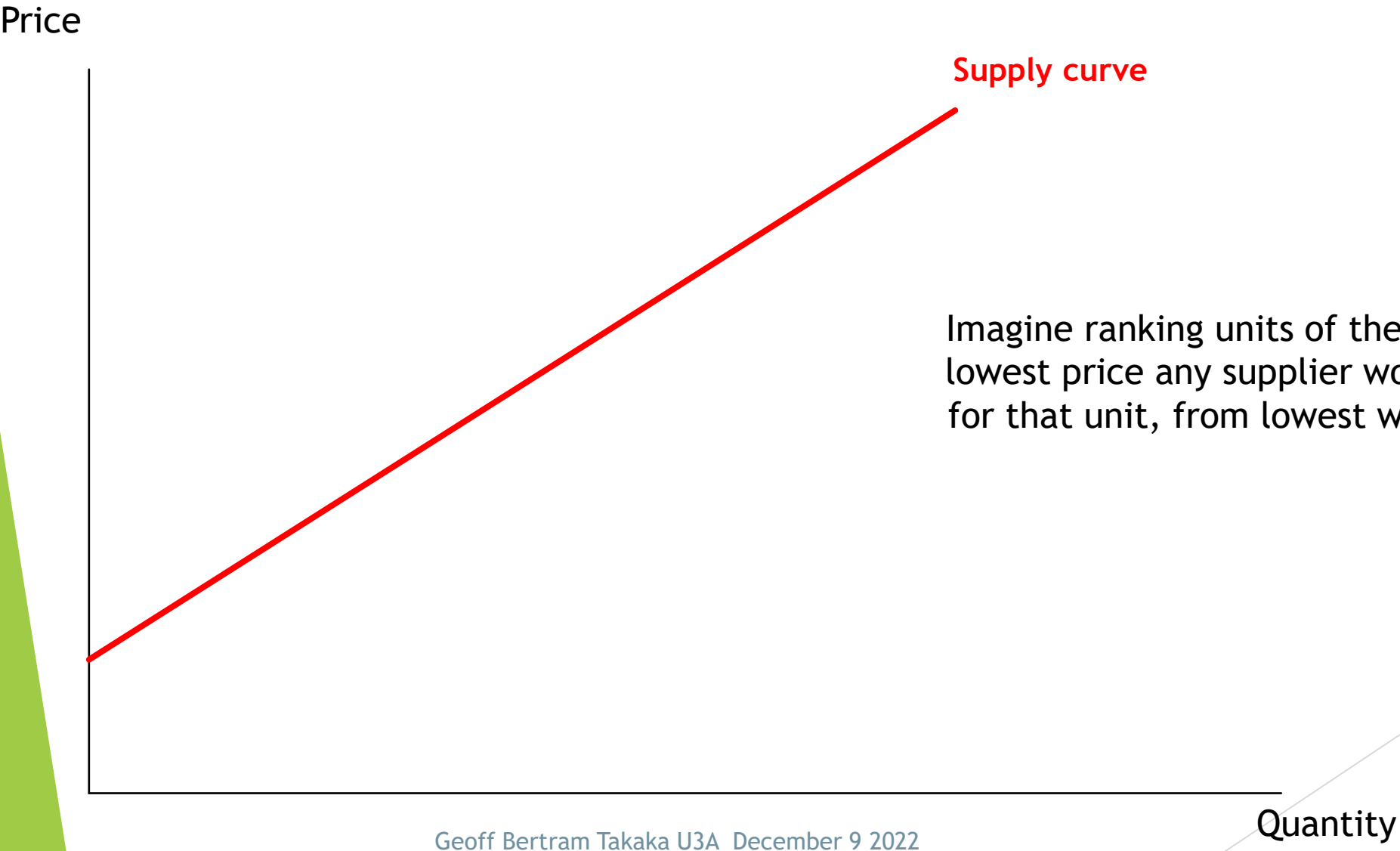
The role of price is to ration the quantity demanded to q_1



An example of the price constraint is a carbon tax on emissions (or price of emission permits)

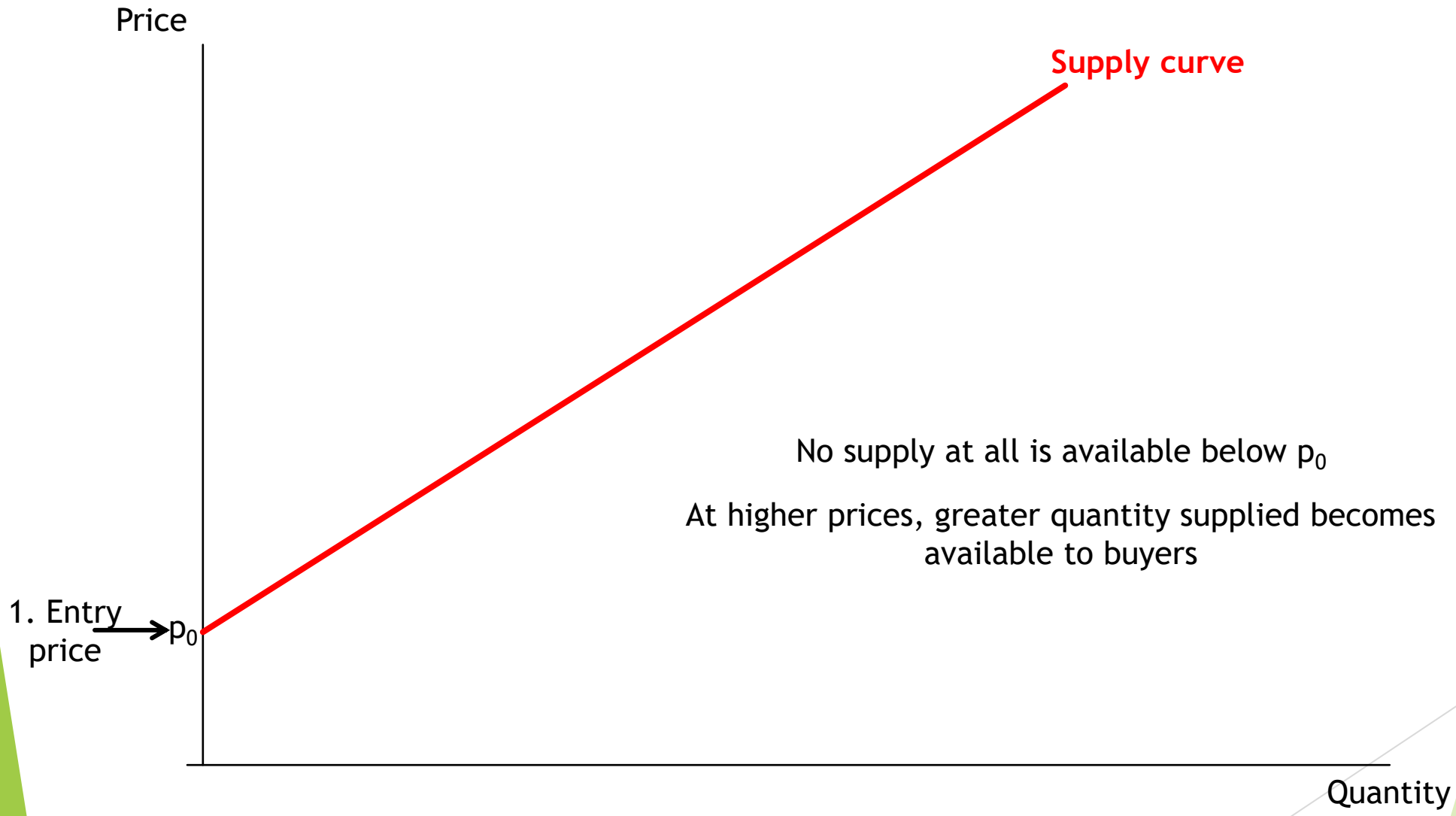


Where does the price come from in a competitive market? Answer: the supply curve (what has to be paid to get different amounts of the product)

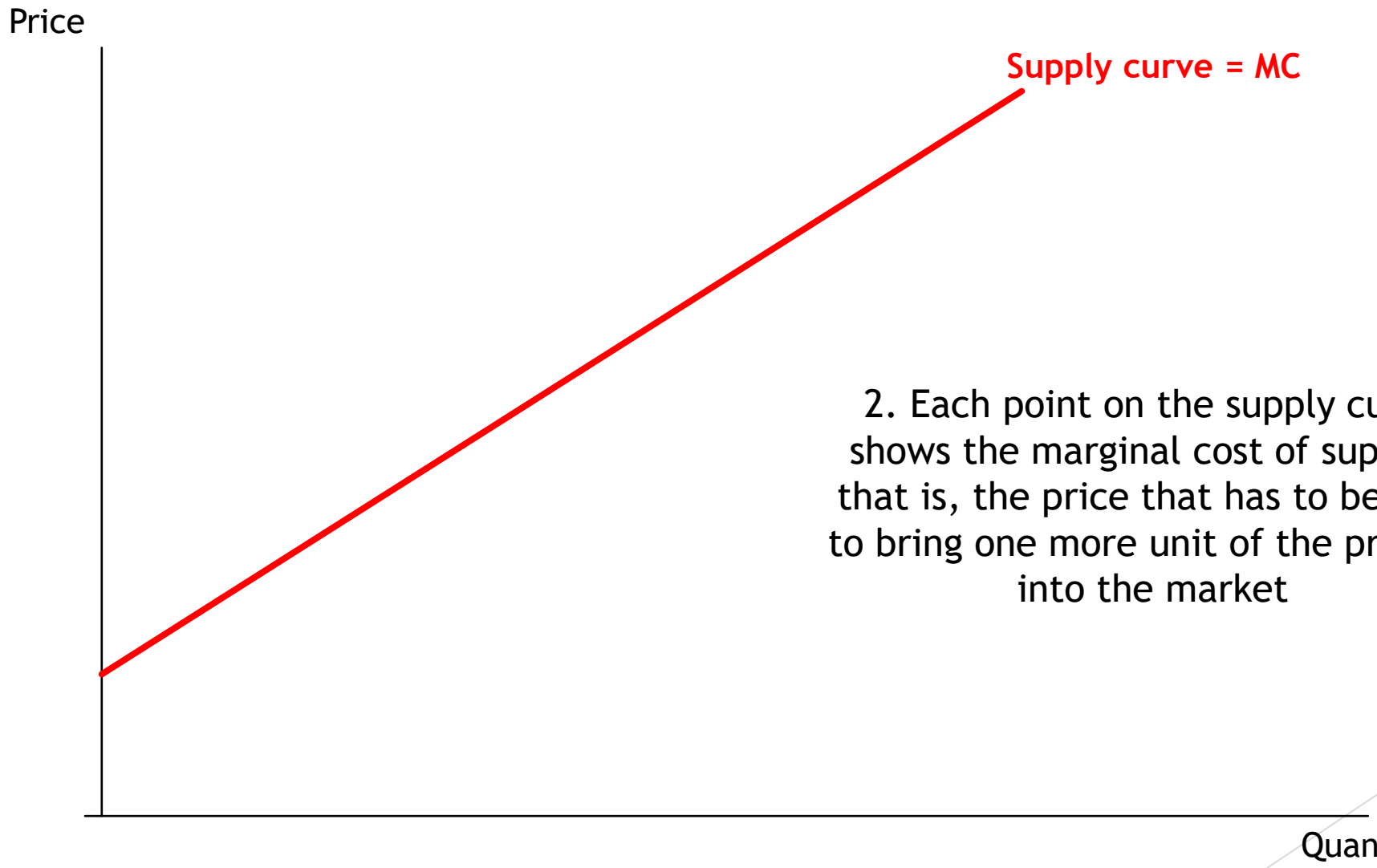


Imagine ranking units of the product in order by the lowest price any supplier would be willing to accept for that unit, from lowest willingness to the highest

Two key features of the simple supply curve

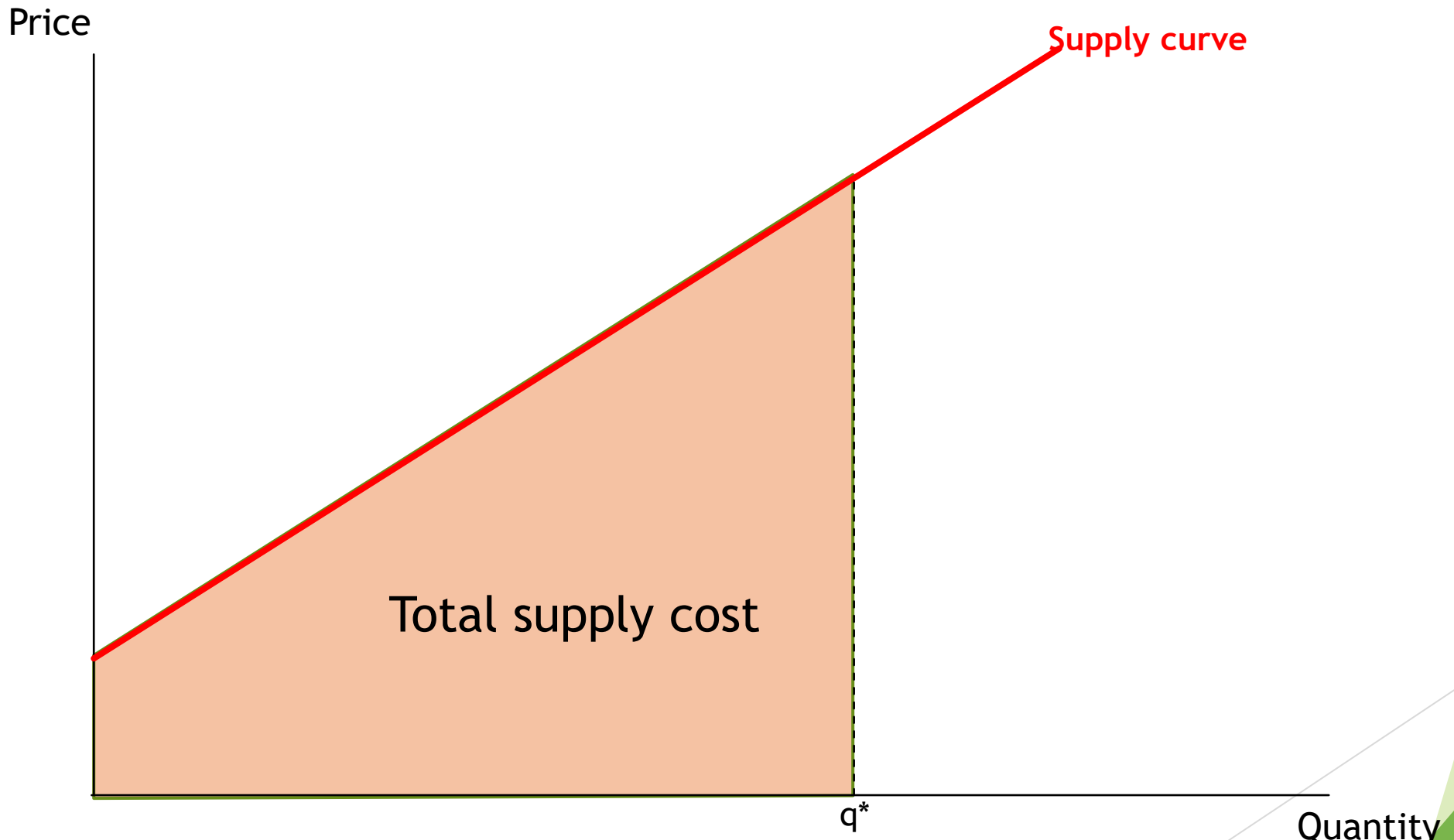


Two key features of the simple supply curve

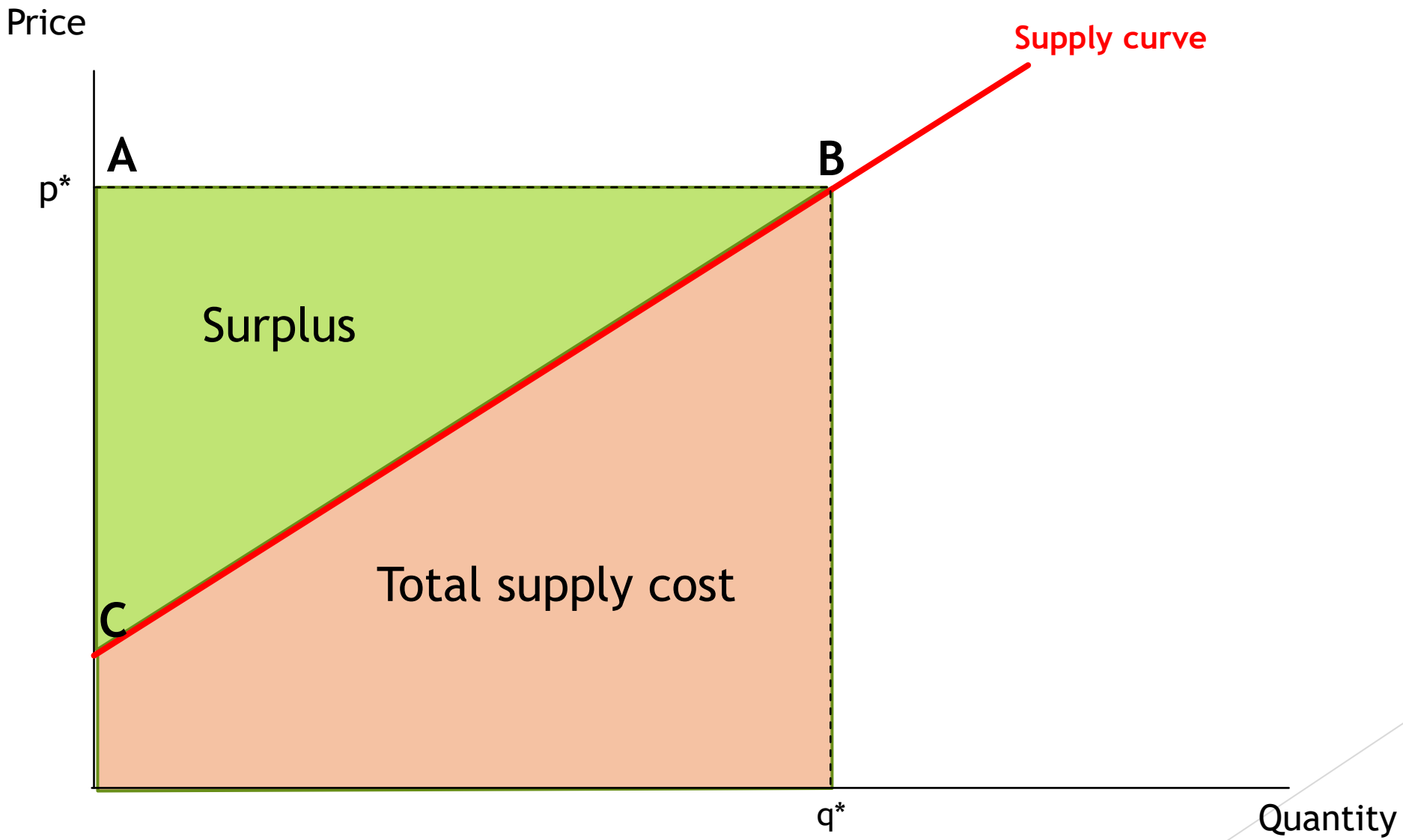


2. Each point on the supply curve shows the marginal cost of supply – that is, the price that has to be paid to bring one more unit of the product into the market

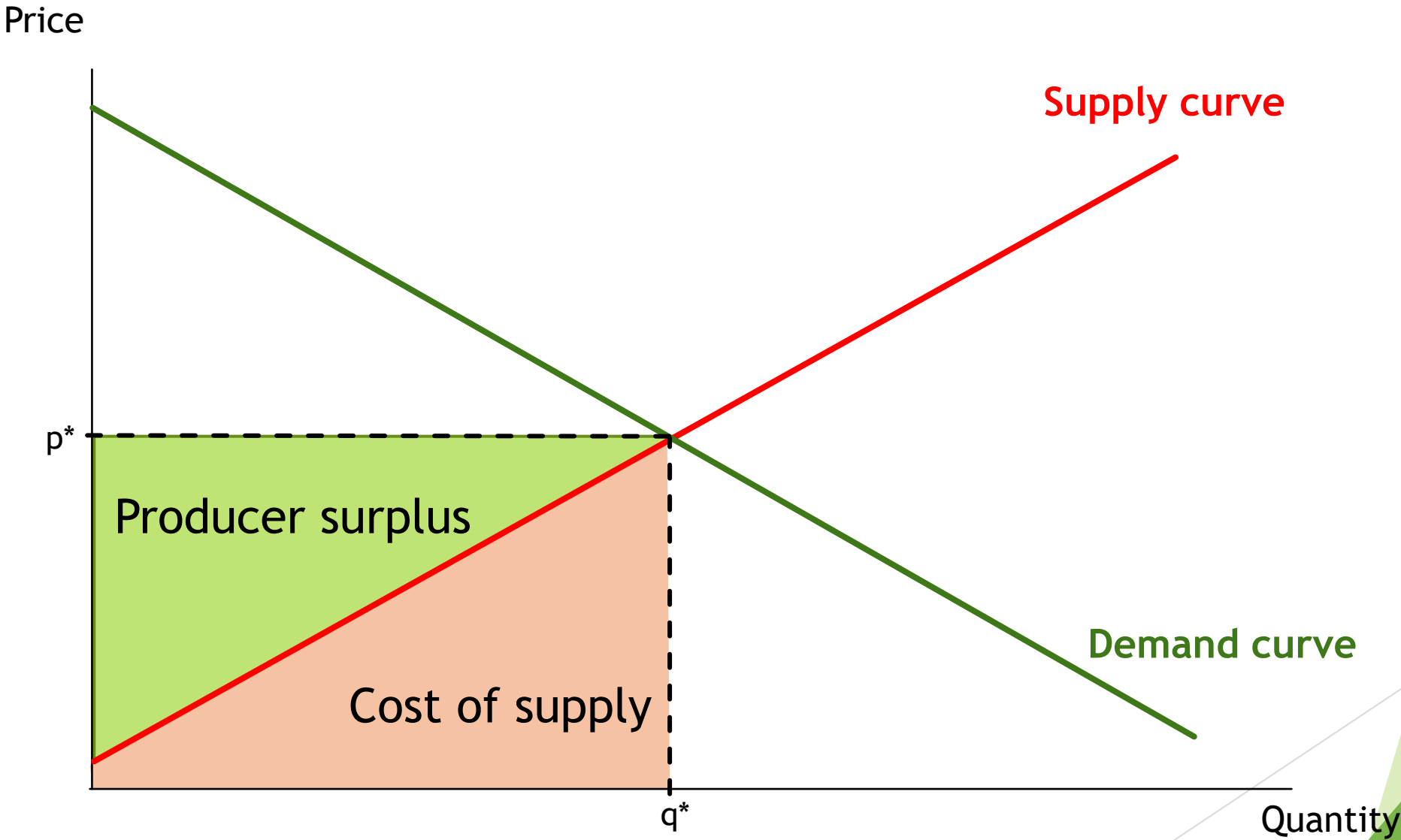
We can think of the area under the curve up to any quantity q* as the total cost of supplying the product, calculated by adding up the supply price of all successive units of quantity supplied



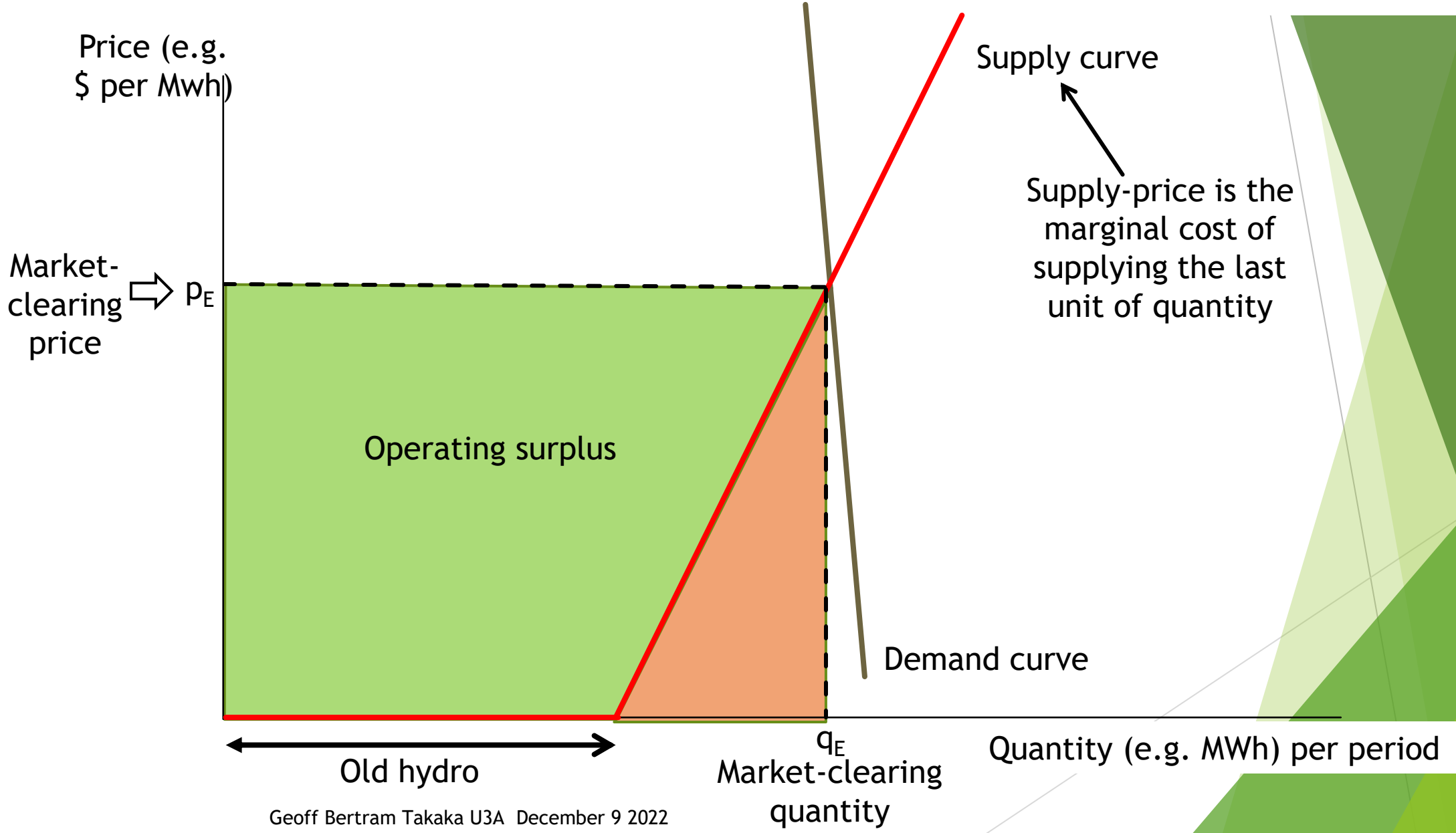
The price corresponding to q* is p*. When this price prevails, suppliers collect p* x q* in total revenue of which ABC is “producer surplus”

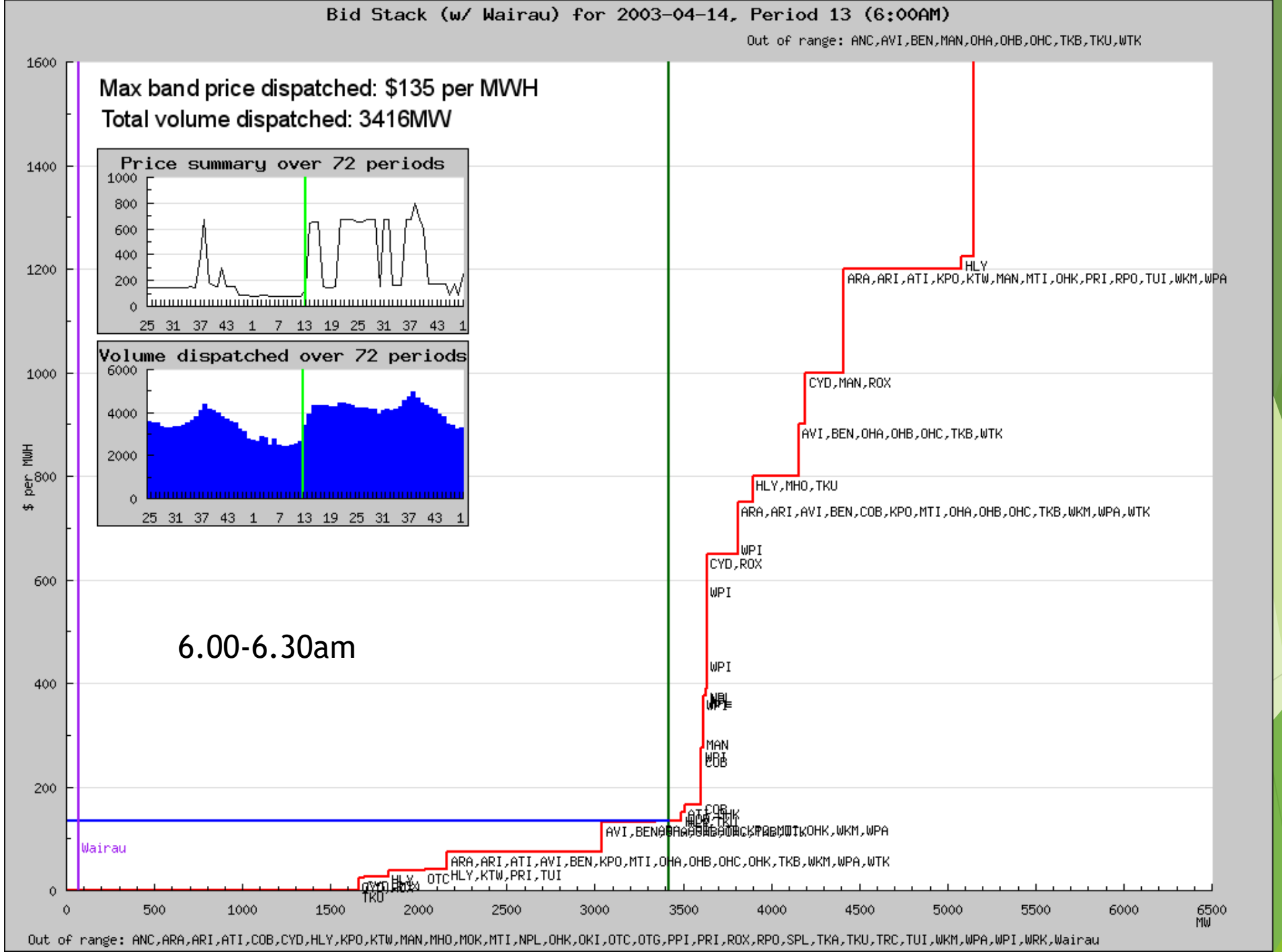


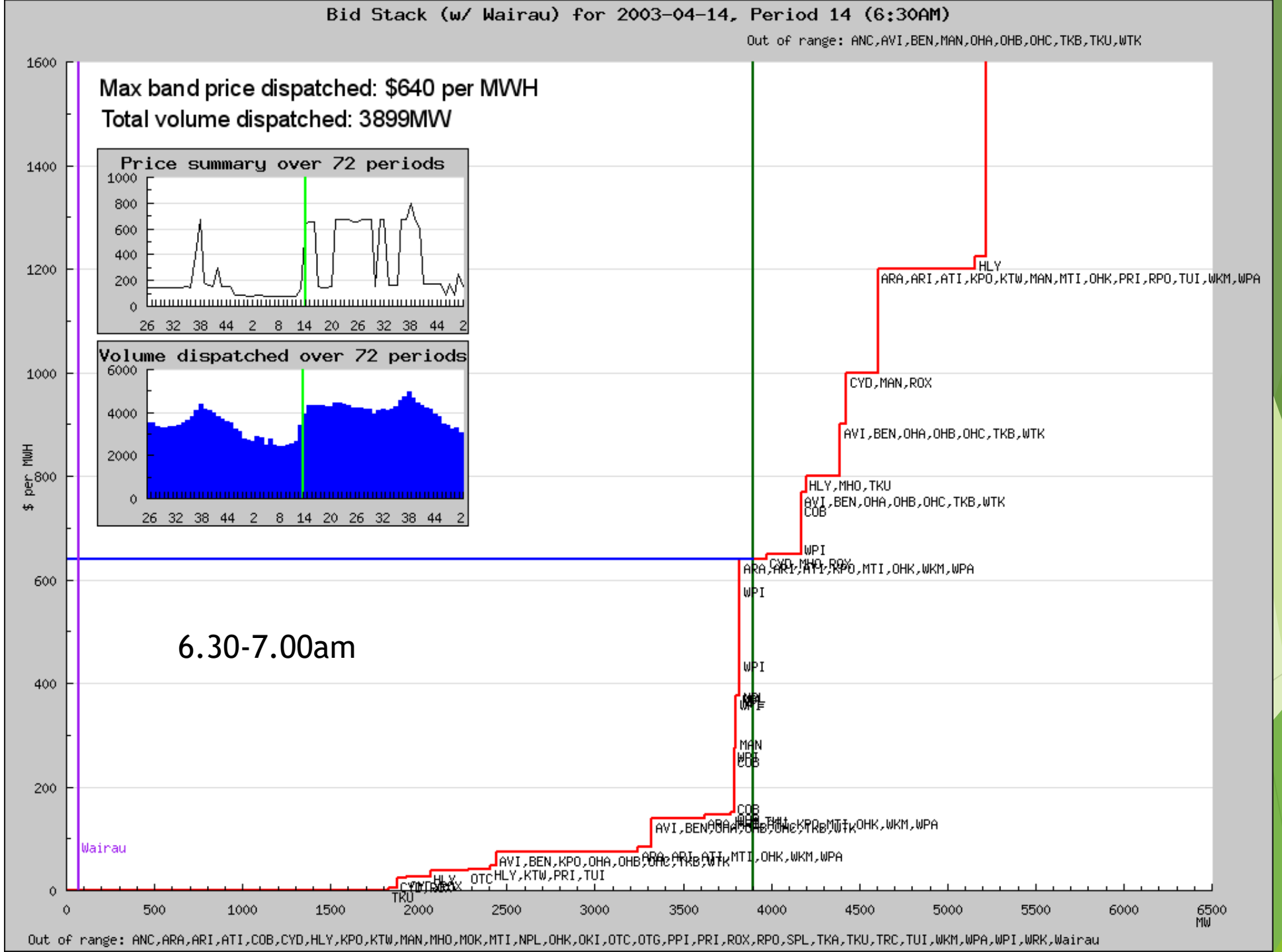
Summary: competitive market equilibrium under standard assumptions

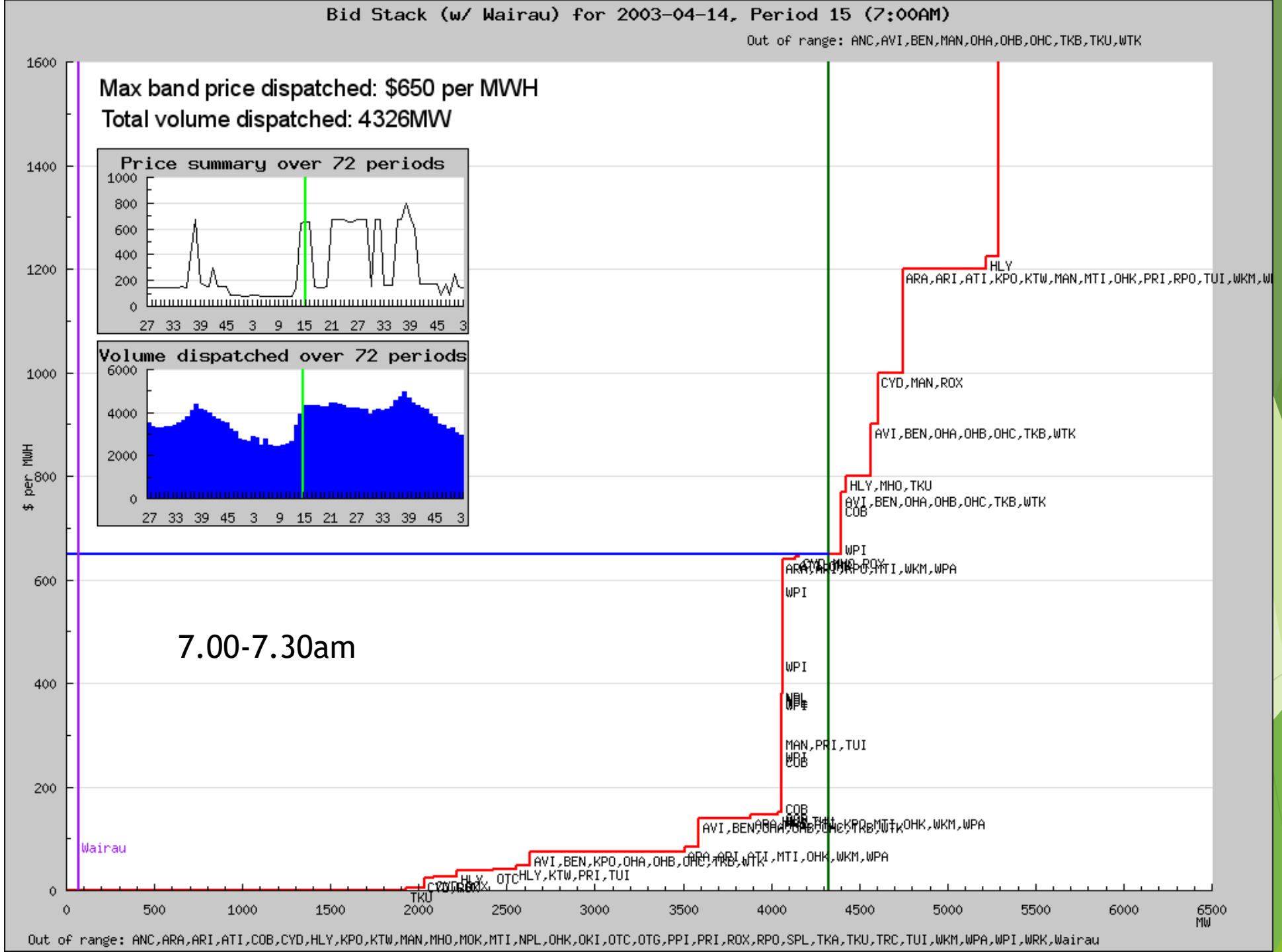


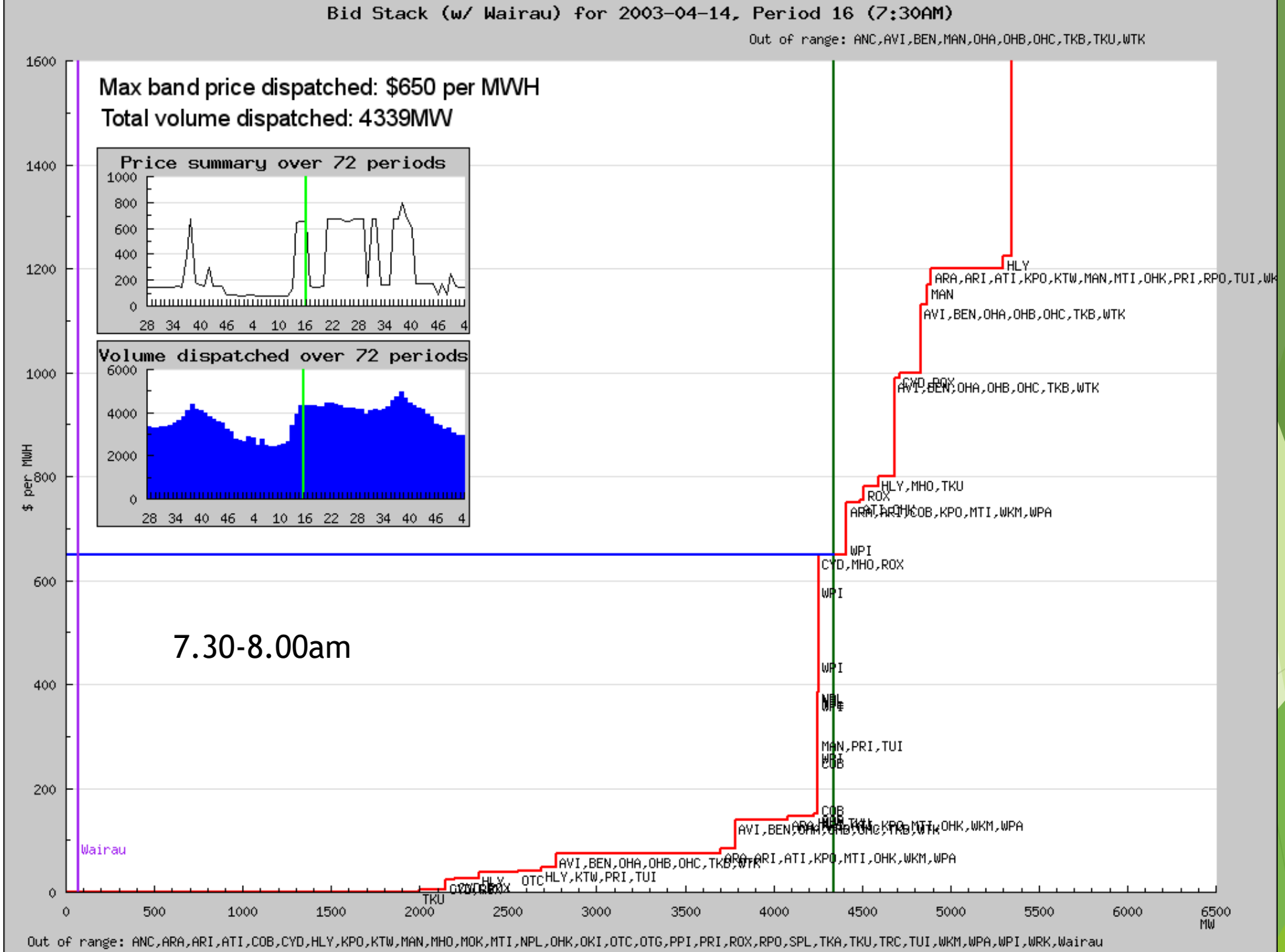
The New Zealand electricity wholesale market has a distinctive (short-run) supply curve and a very steep demand curve

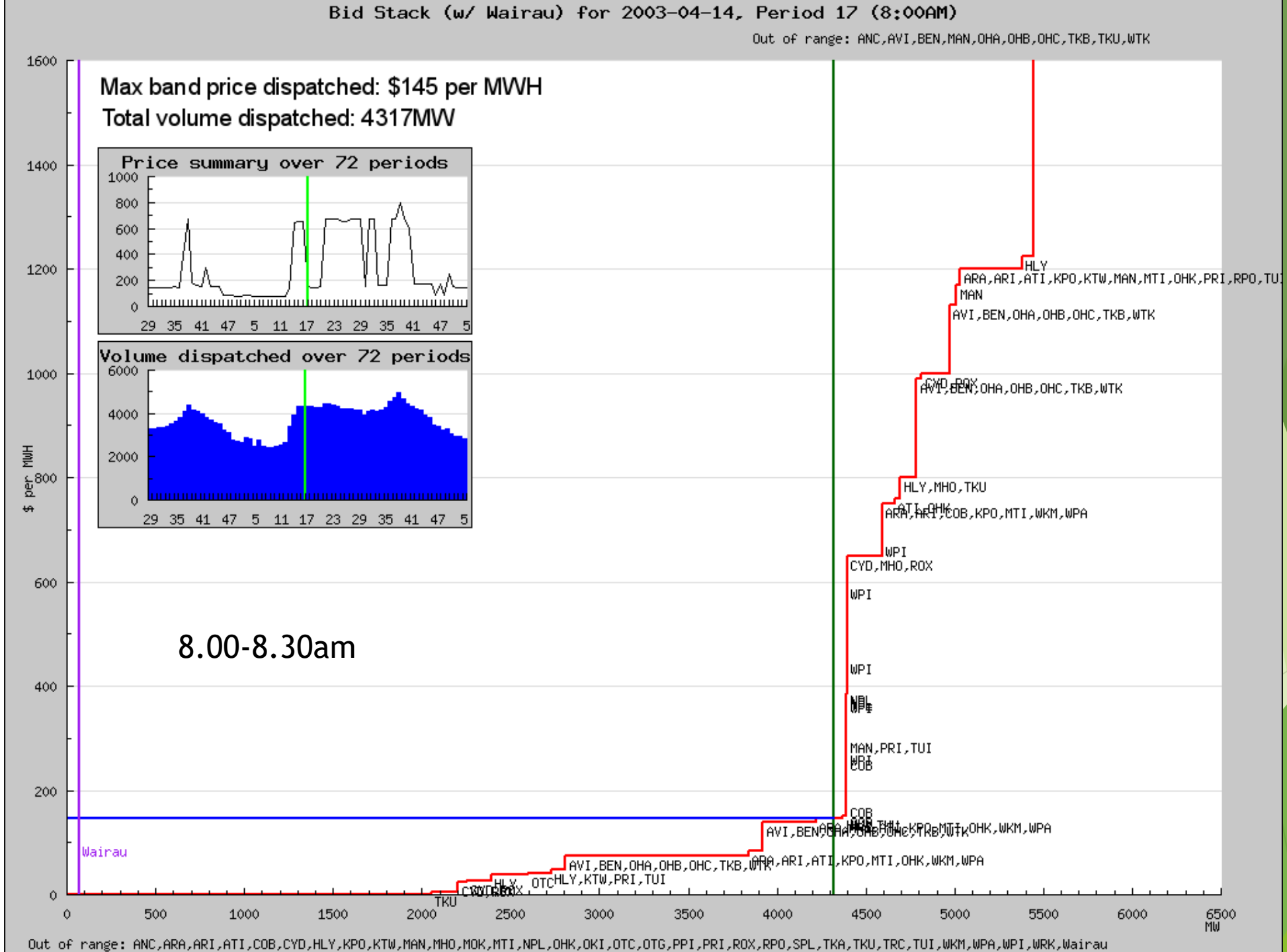



Bid Stack (w/ Wairau) for 2003-04-14, Period 13 (6:00AM)
Out of range: ANC,AVI,BEN,MAN,OHA,OHB,OHC,TKB,TKU,WTK
Max band price dispatched: $135 per MWH
Total volume dispatched: 3416MW
Price summary over 72 periods
Volume dispatched over 72 periods
6.00-6.30am
$ per MWH
MW
Wairau
HLY
ARA,ARI,ATI,KPO,KTW,MAN,MTI,OHK,PRI,RPO,TUI,WKM,WPA
CYD,MAN,ROX
AVI,BEN,OHA,OHB,OHC,TKB,WTK
HLY,MHO,TKU
ARA,ARI,AVI,BEN,COB,KPO,MTI,OHA,OHB,OHC,TKB,WKM,WPA,WTK
WPI
CYD,ROX
WPI
WPI
MAN
COB
ARA,ARI,ATI,AVI,BEN,KPO,MTI,OHA,OHB,OHC,OHK,TKB,WKM,WPA,WTK
HLY,KTW,PRI,TUI
OTC
Out of range: ANC,ARA,ARI,ATI,COB,CYD,HLY,KPO,KTW,MAN,MHO,MOK,MTI,NPL,OHK,OKI,OTC,OTG,PPI,PRI,ROX,RPO,SPL,TKA,TKU,TRC,TUI,WKM,WPA,WPI,WRK,Wairau


Bid Stack (w/ Wairau) for 2003-04-14, Period 14 (6:30AM)
Out of range: ANC,AVI,BEN,MAN,OHA,OHB,OHC,TKB,TKU,WTK
Max band price dispatched: $640 per MWH
Total volume dispatched: 3899MW
Price summary over 72 periods
Volume dispatched over 72 periods
$ per MWH
MW
Wairau
6.30-7.00am
HLY
ARA,ARI,ATI,KPO,KTW,MAN,MTI,OHK,PRI,RPO,TUI,WKM,WPA
CYD,MAN,ROX
AVI,BEN,OHA,OHB,OHC,TKB,WTK
HLY,MHO,TKU
COB
WPI
MAN
AVI,BEN,KPO,OHA,OHB,OHC,TKB,WTK
HLY,KTW,PRI,TUI
OTC
TKU
Out of range: ANC,ARA,ARI,ATI,COB,CYD,HLY,KPO,KTW,MAN,MHO,MOK,MTI,NPL,OHK,OKI,OTC,OTG,PPI,PRI,ROX,RPO,SPL,TKA,TKU,TRC,TUI,WKM,WPA,WPI,WRK,Wairau


Bid Stack (w/ Wairau) for 2003-04-14, Period 15 (7:00AM)
Out of range: ANC,AVI,BEN,MAN,OHA,OHB,OHC,TKB,TKU,WTK
Max band price dispatched: $650 per MWH
Total volume dispatched: 4326MW
Price summary over 72 periods
Volume dispatched over 72 periods
$ per MWH
MW
Wairau
7.00-7.30am
HLY
ARA,ARI,ATI,KPO,KTW,MAN,MTI,OHK,PRI,RPO,TUI,WKM,W
CYD,MAN,ROX
AVI,BEN,OHA,OHB,OHC,TKB,WTK
HLY,MHO,TKU
AVI,BEN,OHA,OHB,OHC,TKB,WTK
COB
WPI
ARA,MTI,WKM,WPA
WPI
WPI
MAN,PRI,TUI
WPI
COB
COB
AVI,BEN,OHA,OHK,WKM,WPA
AVI,BEN,KPO,OHA,OHB,OHC,TKB,WTK
ARA,ARI,ATI,MTI,OHK,WKM,WPA
HLY,KTW,PRI,TUI
OTC
TKU
Out of range: ANC,ARA,ARI,ATI,COB,CYD,HLY,KPO,KTW,MAN,MHO,MOK,MTI,NPL,OHK,OKI,OTC,OTG,PPI,PRI,ROX,RPO,SPL,TKA,TKU,TRC,TUI,WKM,WPA,WPI,WRK,Wairau


Bid Stack (w/ Wairau) for 2003-04-14, Period 16 (7:30AM)
Out of range: ANC,AVI,BEN,MAN,OHA,OHB,OHC,TKB,TKU,WTK
Max band price dispatched: $650 per MWH
Total volume dispatched: 4339MW
Price summary over 72 periods
Volume dispatched over 72 periods
7.30-8.00am
$ per MWH
MW
Wairau
Out of range: ANC,ARA,ARI,ATI,COB,CYD,HLY,KPO,KTW,MAN,MHO,MOK,MTI,NPL,OHK,OKI,OTC,OTG,PPI,PRI,ROX,RPO,SPL,TKA,TKU,TRC,TUI,WKM,WPA,WPI,WRK,Wairau


Bid Stack (w/ Wairau) for 2003-04-14, Period 17 (8:00AM)
Out of range: ANC,AVI,BEN,MAN,OHA,OHB,OHC,TKB,TKU,WTK
Max band price dispatched: $145 per MWH
Total volume dispatched: 4317MW
Price summary over 72 periods
Volume dispatched over 72 periods
8.00-8.30am
$ per MWH
MW
Wairau
HLY
ARA,ARI,ATI,KPO,KTW,MAN,MTI,OHK,PRI,RPO,TUI
MAN
AVI,BEN,OHA,OHB,OHC,TKB,WTK
HLY,MHO,TKU
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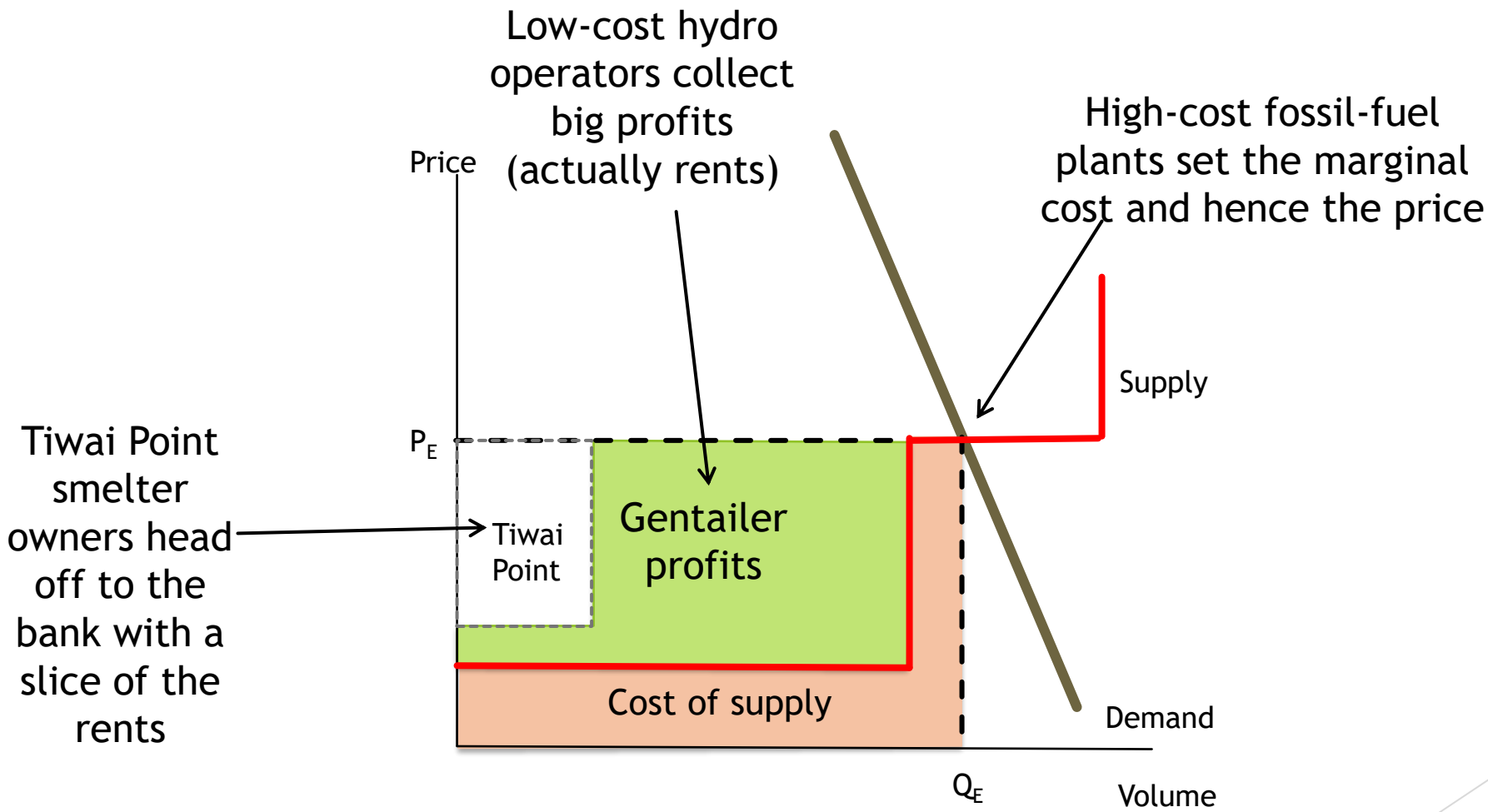
ARA,ARI,ATI,KPO,MTI,OHK,WKM,WPA
HLY,KTW,PRI,TUI
OTC
TKU
Out of range: ANC,ARA,ARI,ATI,COB,CYD,HLY,KPO,KTW,MAN,MHO,MOK,MTI,NPL,OHK,OKI,OTC,OTG,PPI,PRI,ROX,RPO,SPL,TKA,TKU,TRC,TUI,WKM,WPA,WPI,WRK,Wairau

Generation rents in the New Zealand wholesale electricity market:



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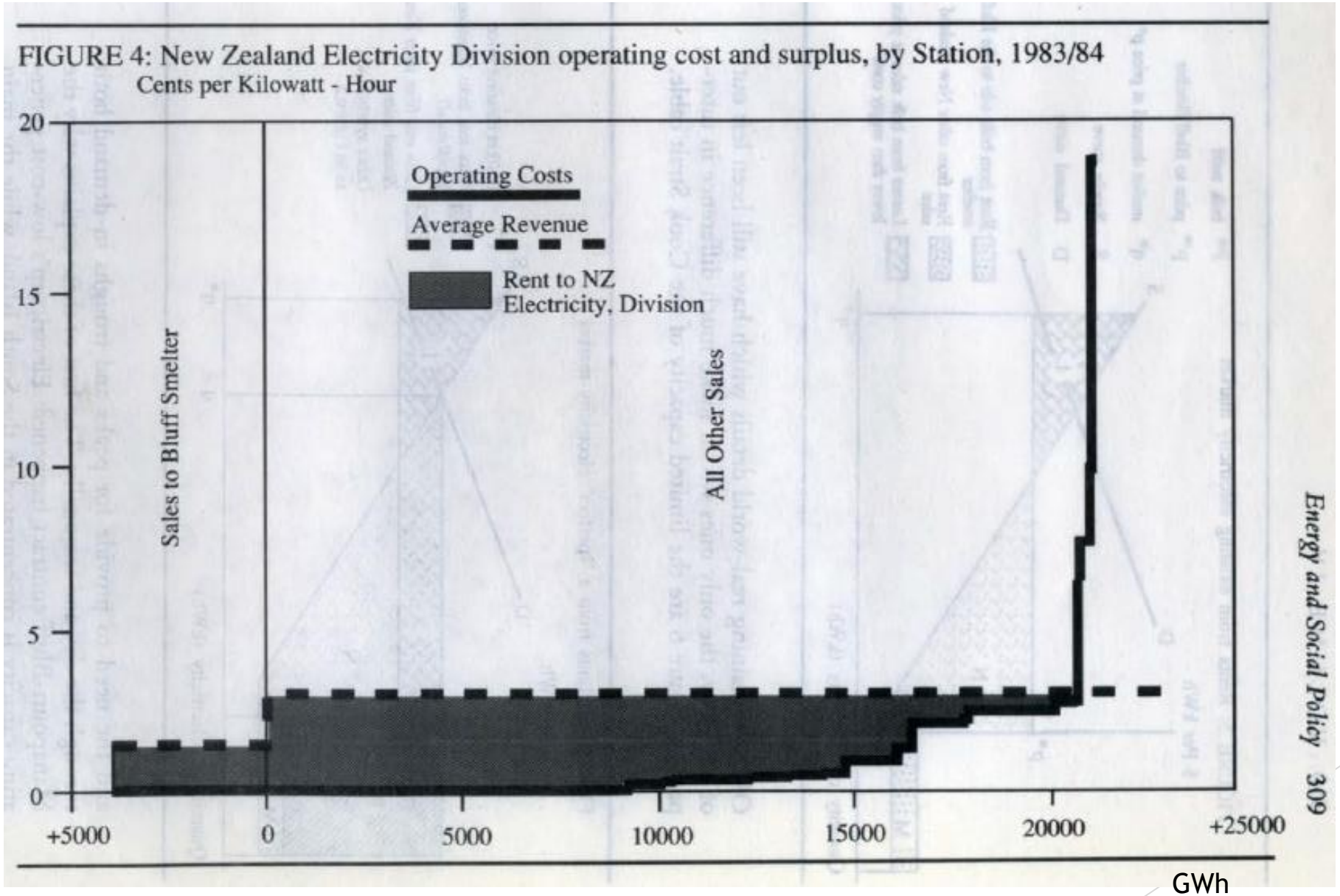
A chart from my 1988 paper for the Royal Commission on Social Policy

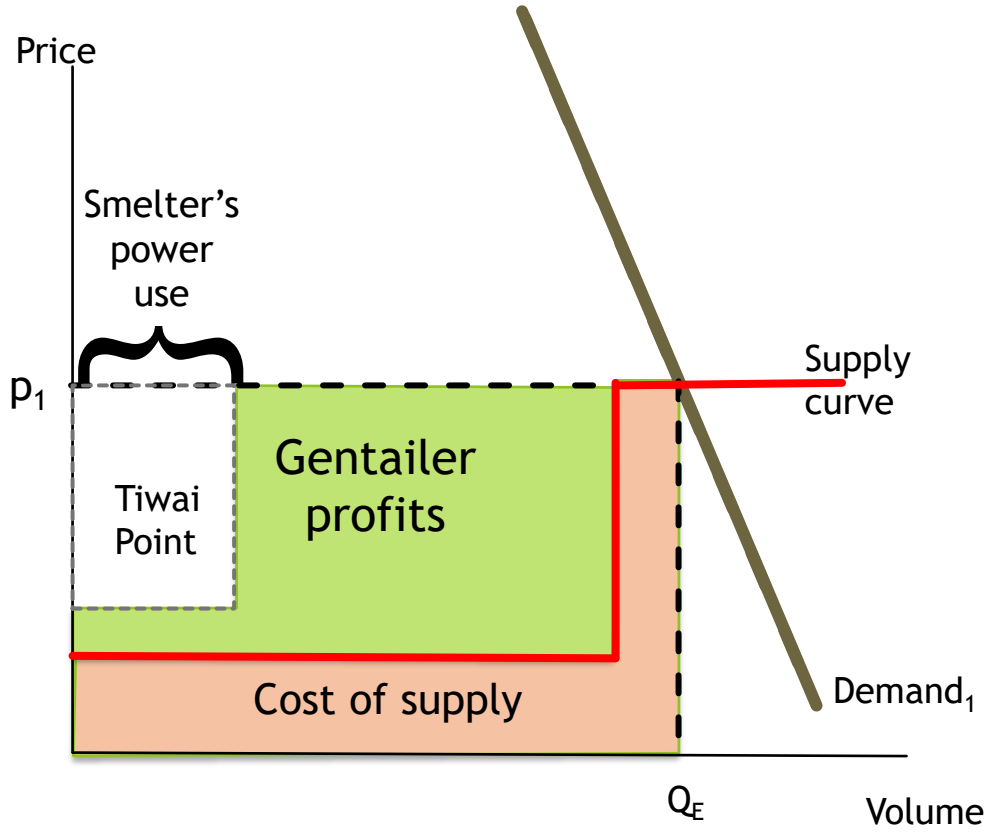


There are two big threats to those gentailer profits

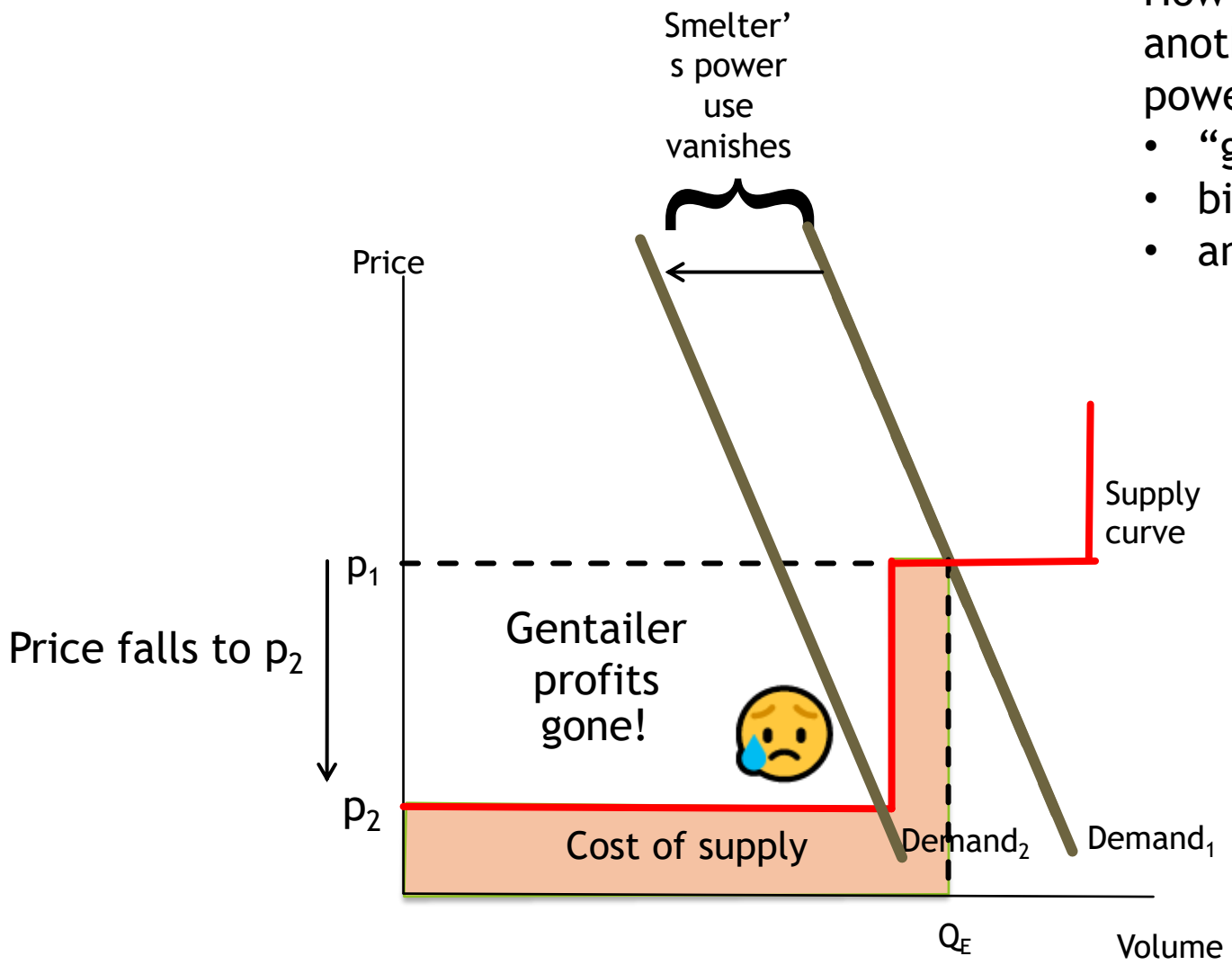
1. A collapse in demand if Tiwai Point closes

2. An unwelcome increase in supply if lots of low-operating-cost renewables get installed

1. Suppose Tiwai Point closes…



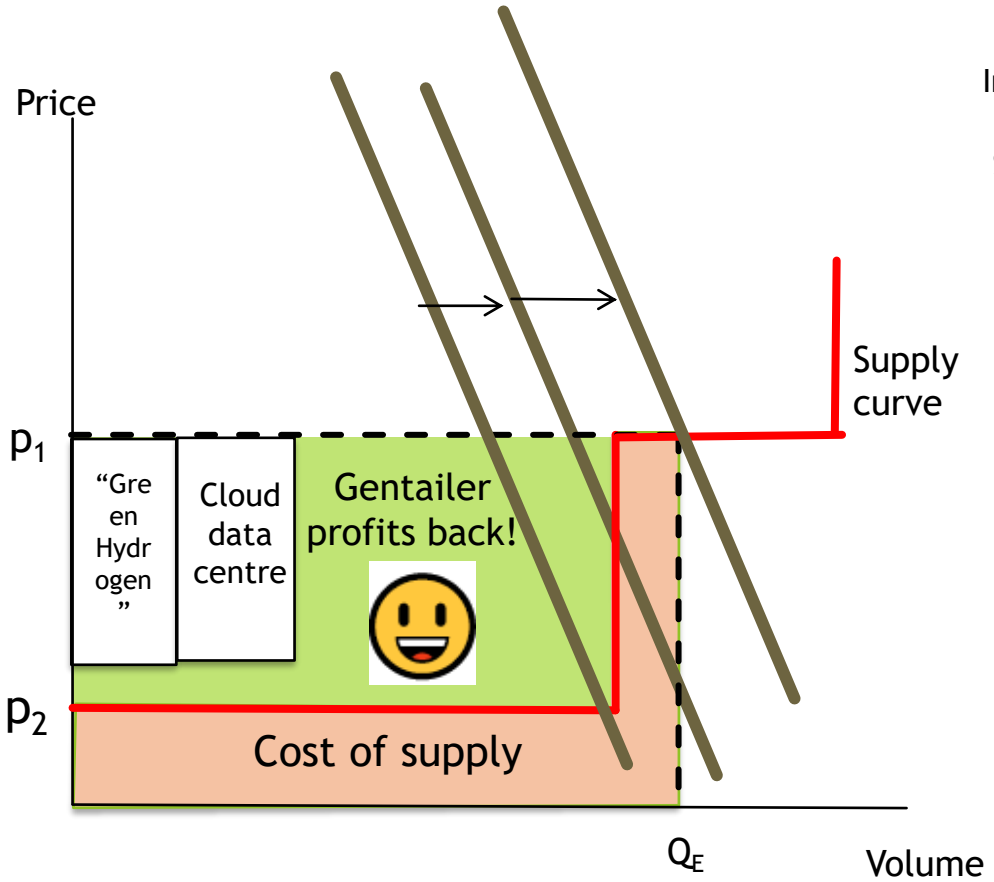
1. Suppose Tiwai Point closes…



How to stop this: sign up another big user with a cheap power contract asap:

- "green hydrogen"
- big data centres
- anything…..

1. Suppose Tiwai Point closes…

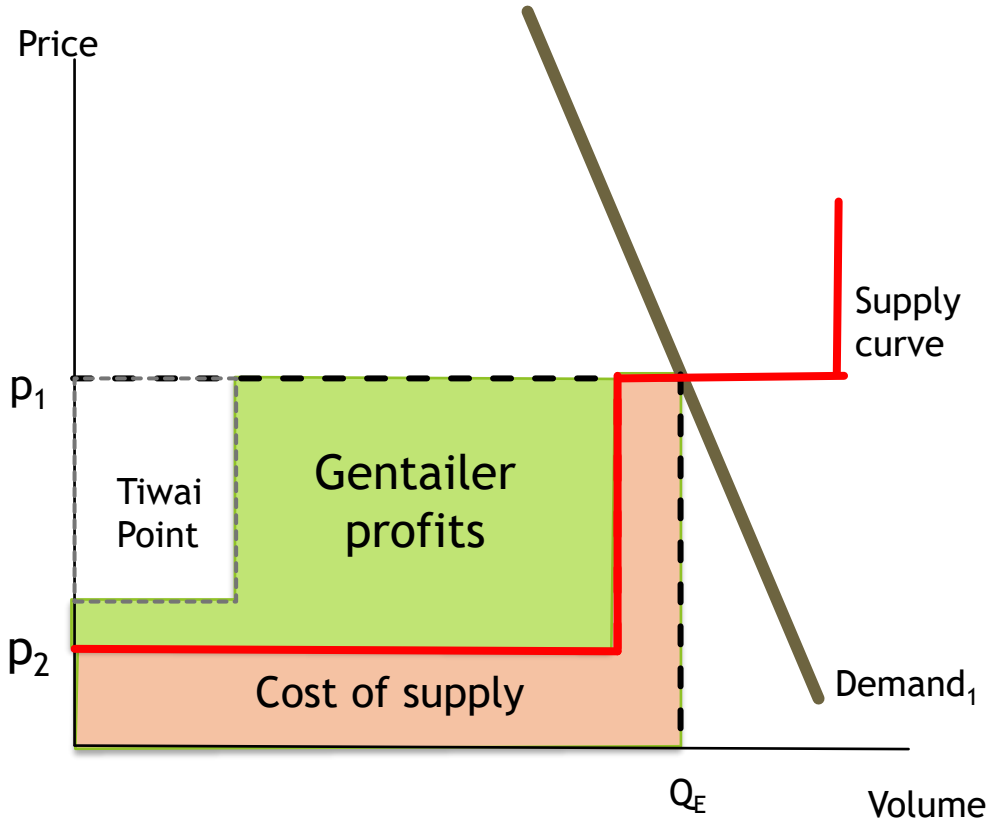


Even the Electricity Authority is balking at this! *

- *Inefficient Price Discrimination in very large electricity contracts: Proposed Code Amendment* 18 August 2022, https://www.ea.govt.nz/assets/dms-assets/30/Inefficient-Price-Discrimination-in-very-large-electricity-contracts-Consultation-paper.pdf

In August 2022 the Authority made an urgent amendment to the Electricity Industry Participation Code to prohibit generators from giving effect to contracts of net 150MW or more unless certain conditions are met.

2. Suppose heaps of households install rooftop solar..



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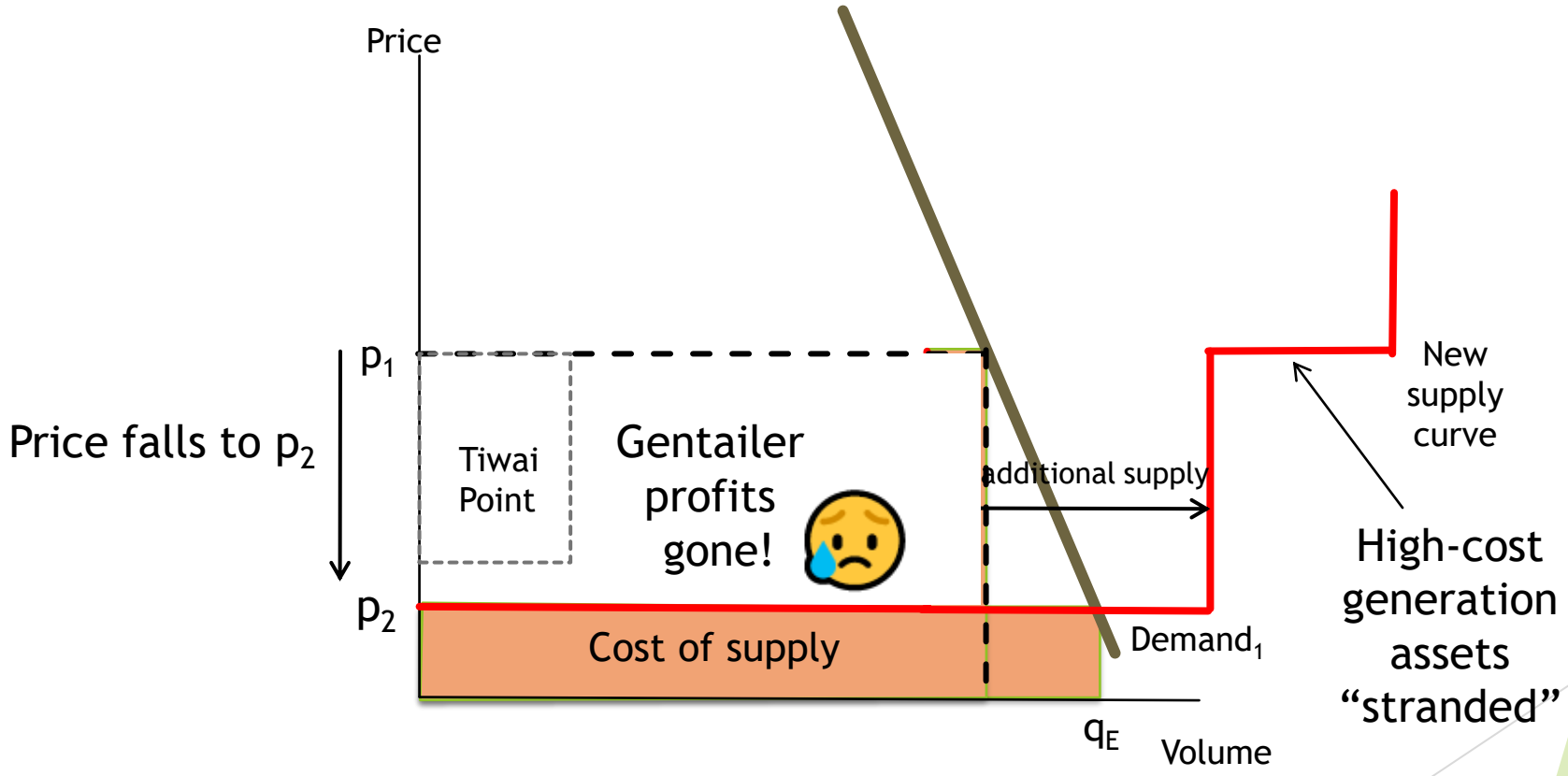

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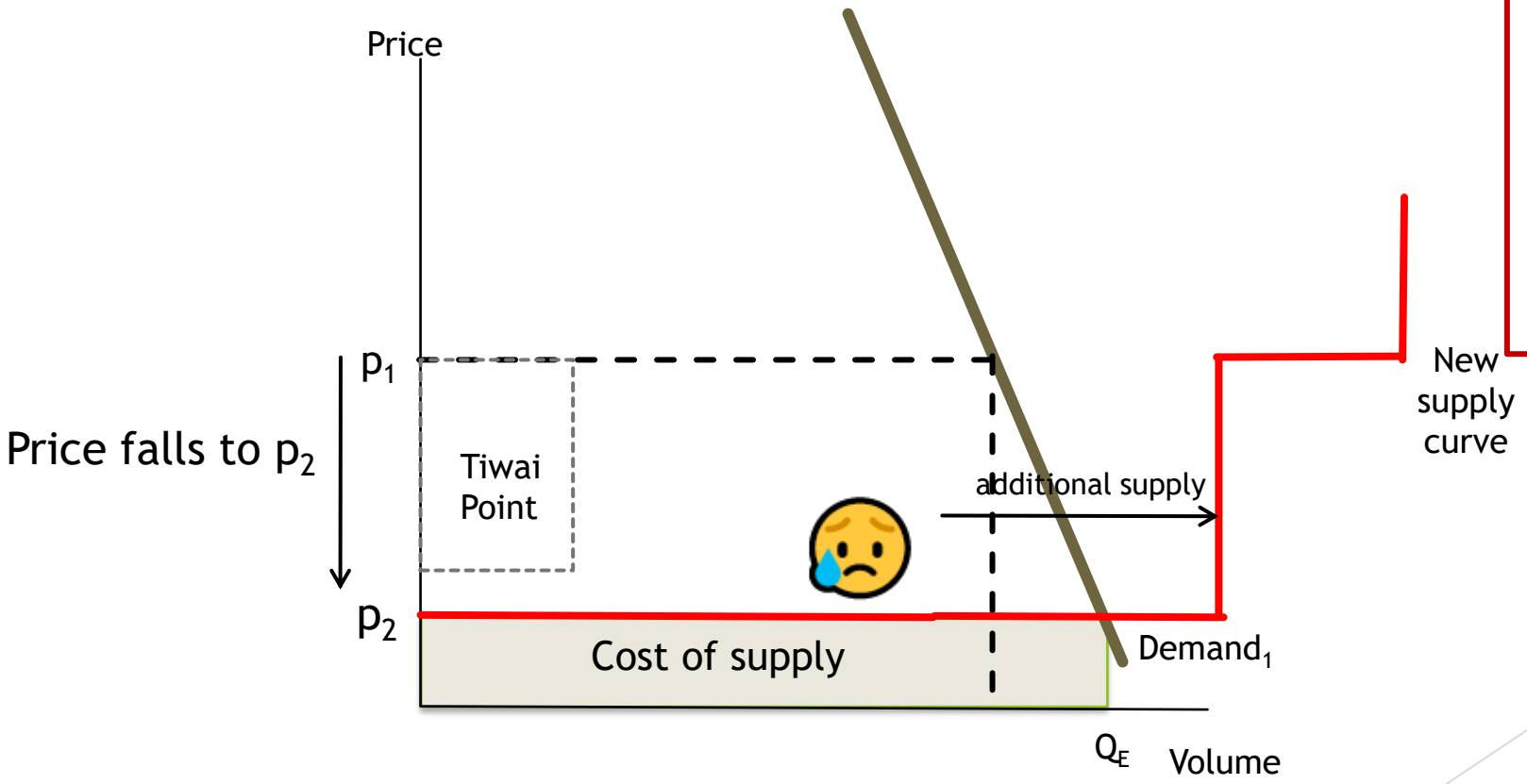


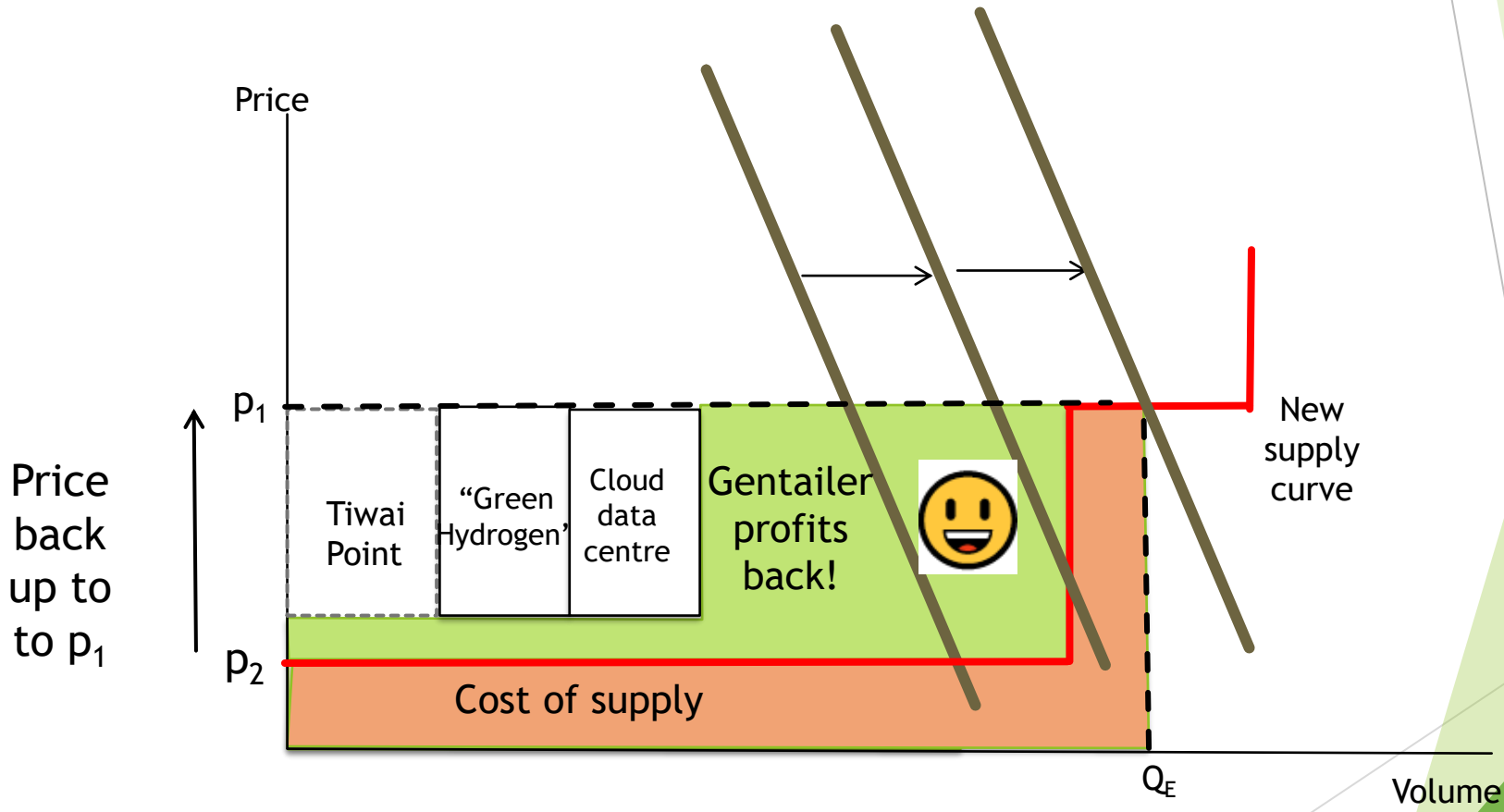
How to prevent or limit the supply shock:

- make it really hard for distributed renewables to get connected to users (regulatory obstruction using “rules”)
- Pay minimal amounts for power from household panels (using market power from vertical integration of generation and retailing)

2. Suppose heaps of households install rooftop solar..

And once again:

- Sign up hydrogen plants, cloud data centres, anything power-hungry

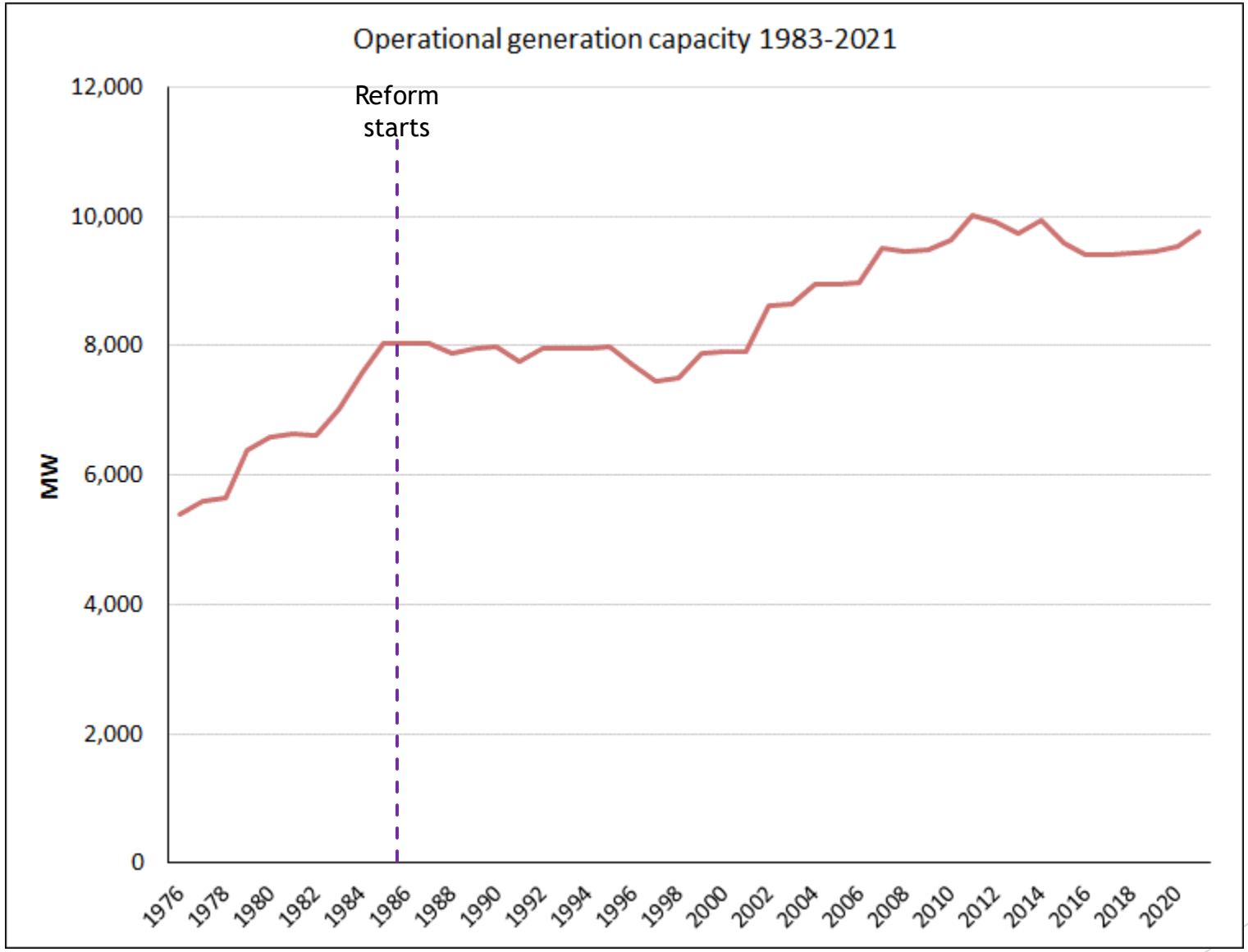


So core strategy for Contact, Meridian, Mercury, Genesis and Trustpower is:

Keep demand up
(keep the Tiwai Point smelter open!)
(or have a huge hydrogen plant built!)
(or anything!)

Keep supply constrained
(don't build too many windfarms, and block rooftop solar if possible)

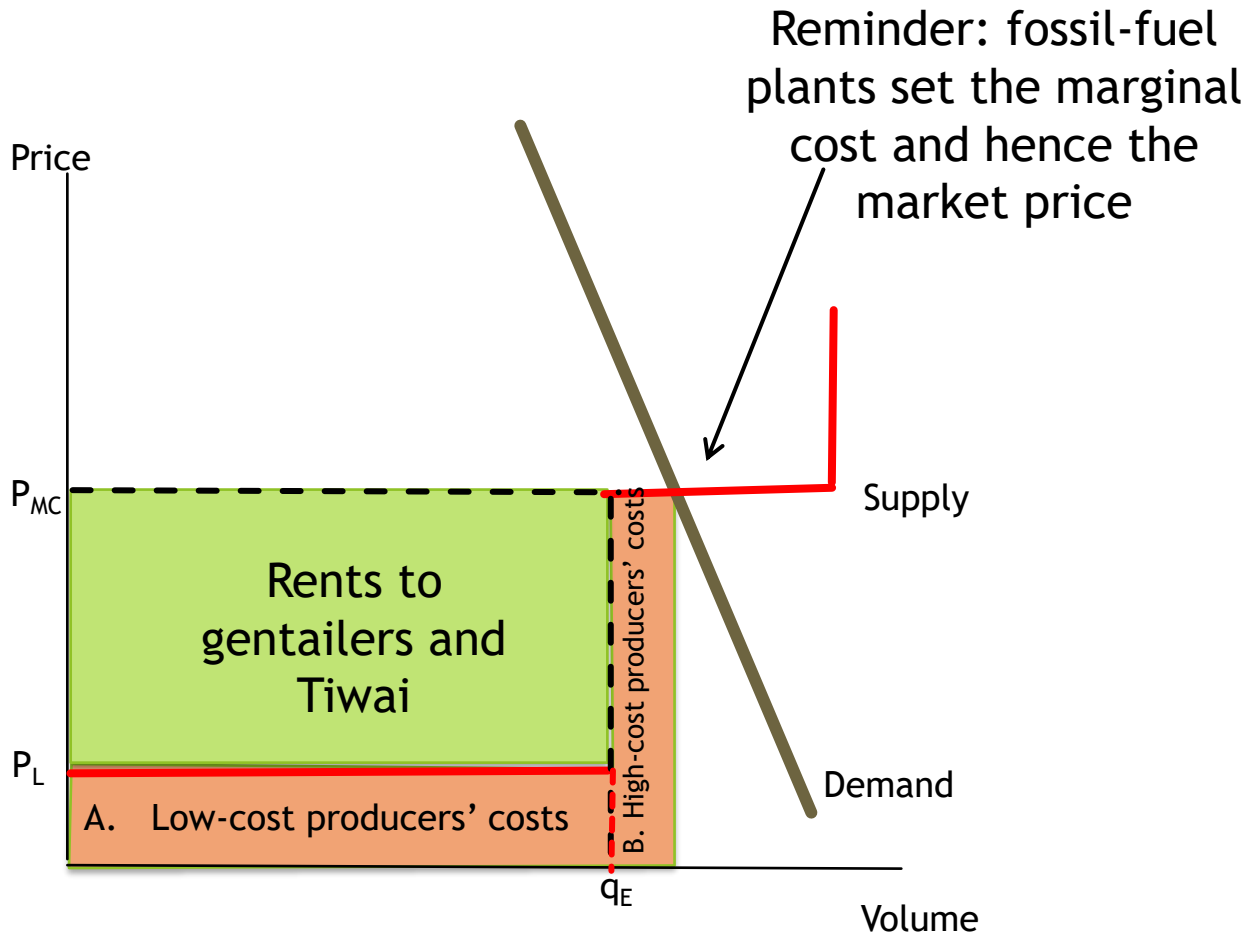
New Zealand total generation capacity



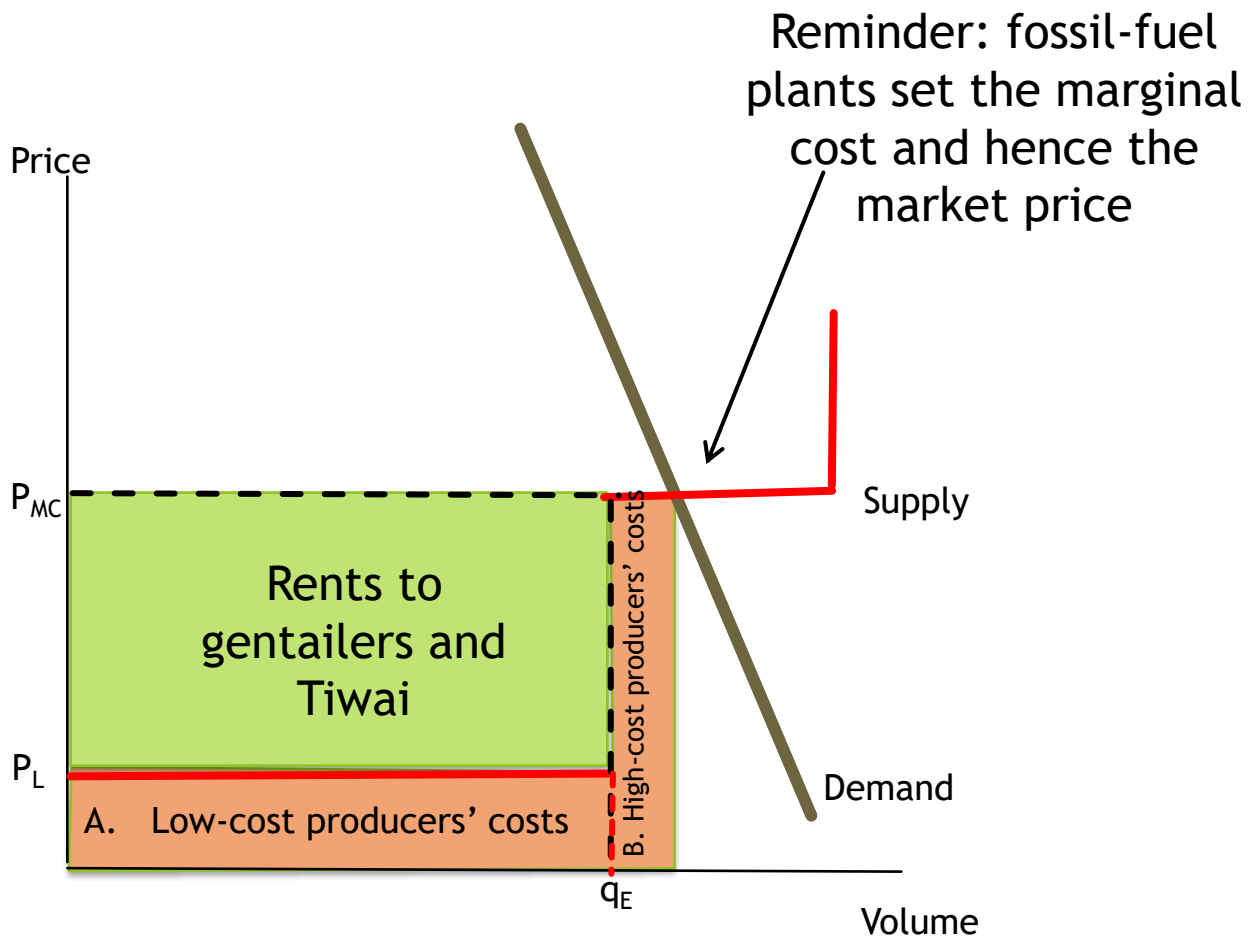
https://www.mbie.govt.nz/assets/Data-Files/Energy/nz-energy-quarterly-and-energy-in-nz/electricity.xlsx at 7 December 2022

Turn now to carbon charges and the price of renewable electricity

Here's the New Zealand wholesale electricity market again:

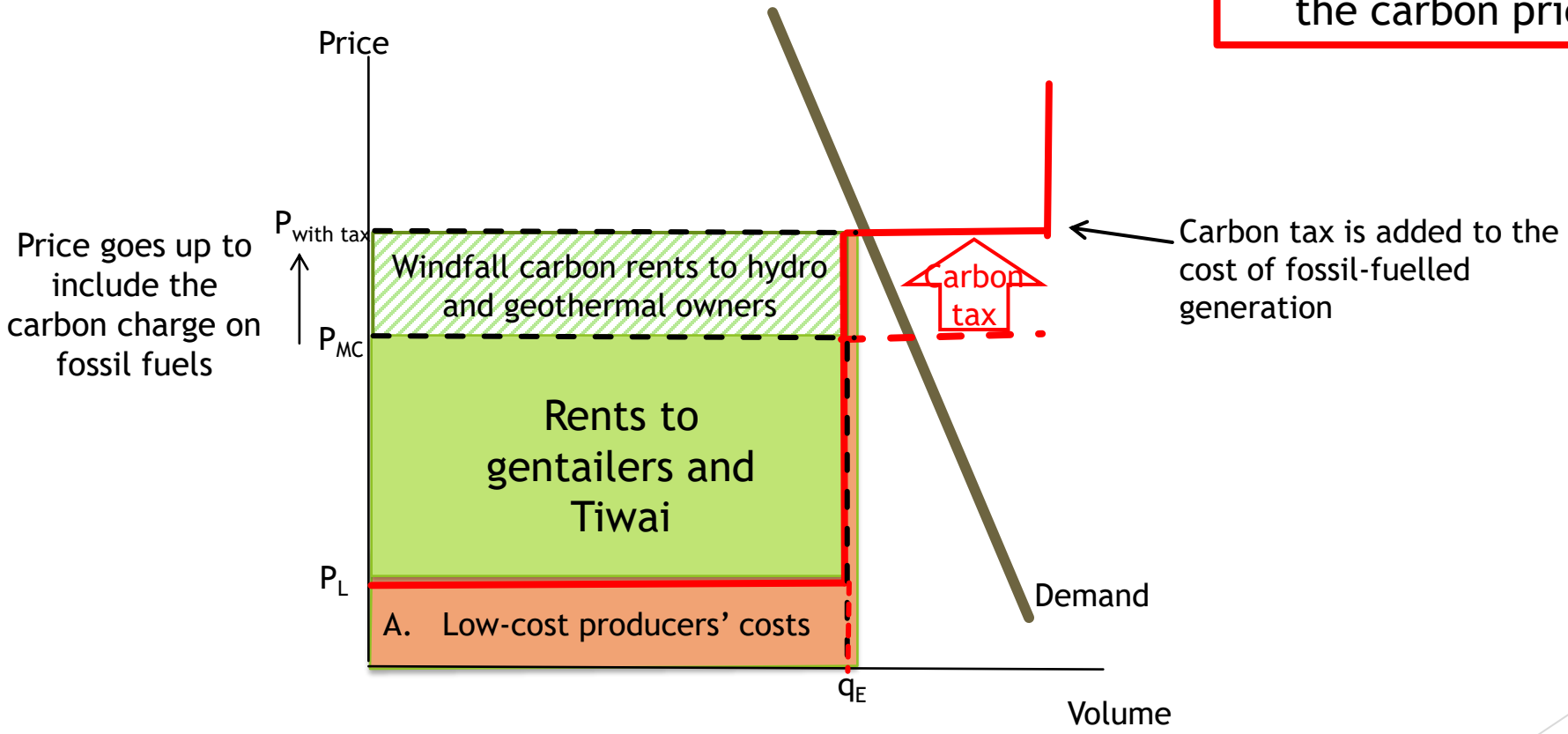


Now impose a carbon charge on fossil-fuel generation



Now impose a carbon charge on fossil-fuel generation

That's a major disincentive to electrification of the wider economy, which gets worse as the carbon price increases



So who saw that carbon-price-driven-price hike coming?

Answer: the big corporate electricity users, right back in 2008 when the NZETS started up

Their solution: get the Government to hand them out free carbon credits sufficient to offset to extra cost of using electricity when the carbon price went up

The scheme is called the Electricity Allocation Factor

Government agreed - and since 2010 has handed out the free credits each year even though the carbon price did not go up as much as was expected => a corporate windfall at the expense of the rest of the population

A quick rough look at who got the EAF benefits in 2020…

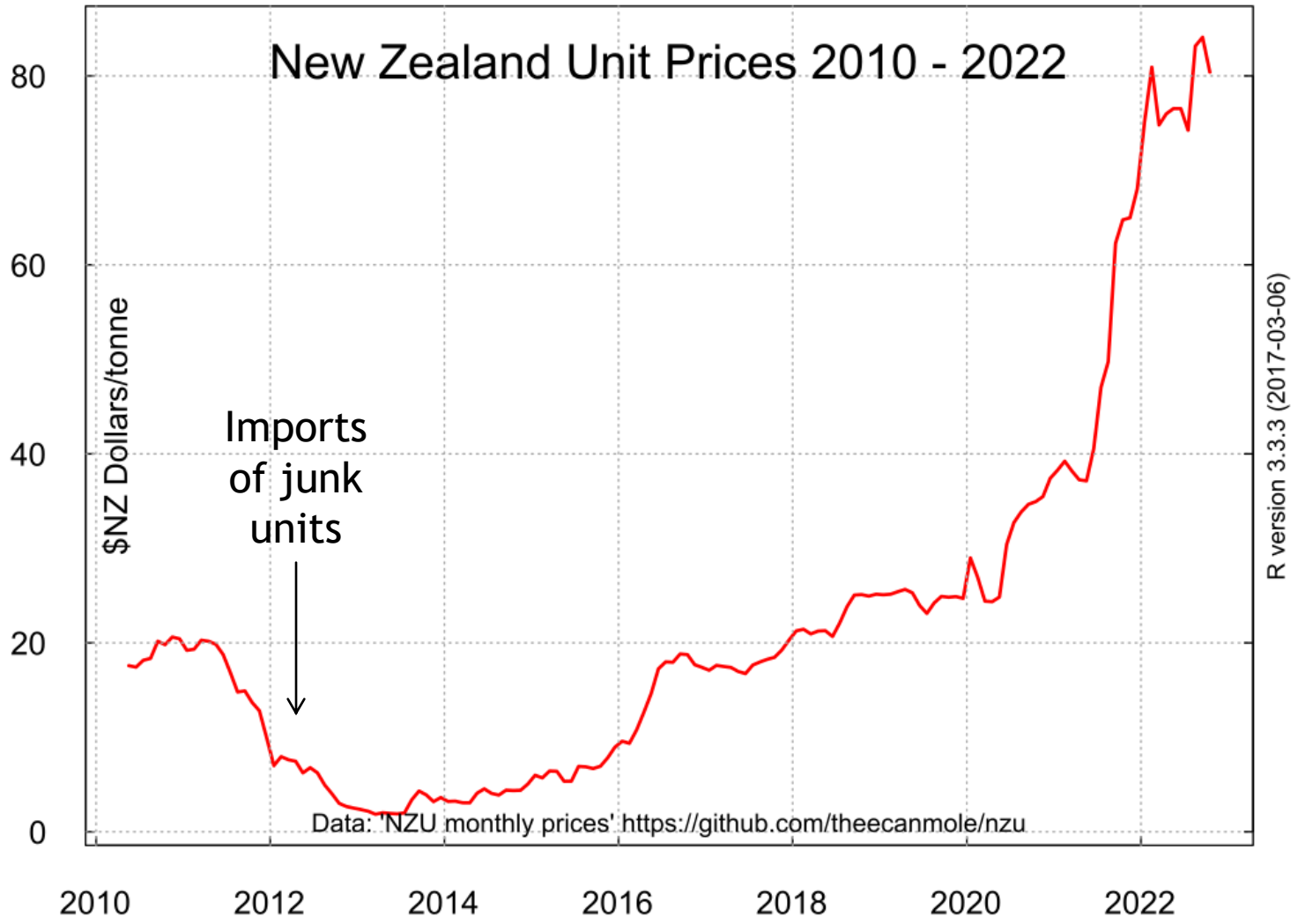
Final Allocation Decisions

Environmental Protection Authority
Te Mana Rauhi Taiao

Activity	Applicant's name	2020 allocation	Value at $25 price in $m	One third of that $m
Iron and steel manufacturing from iron sand	New Zealand Steel Development Limited	2,030,166	50.8	16.9
Aluminium smelting	New Zealand Aluminium Smelters Limited	1,558,268	39.0	13.0
Methanol	Methanex New Zealand Ltd	1,181,995	29.5	9.8
Cementitious products	Fletcher Concrete and Infrastructure Limited	640,351	16.0	5.3
Carbamide (urea)	Ballance Agri-Nutrients (Kapuni) Limited	349,257	8.7	2.9
Market pulp	Oji Fibre Solutions (NZ) Limited	278,907	7.0	2.3
Packaging and industrial paper	Oji Fibre Solutions (NZ) Limited	260,505	6.5	2.2
Market pulp	Pan Pac Forest Products Limited	212,436	5.3	1.8
Newsprint	Norske Skog Tasman Ltd	202,858	5.1	1.7
Market pulp	Winstone Pulp International Limited	171,889	4.3	1.4
Cartonboard	Whakatane Mill Limited	169,786	4.2	1.4
Burnt lime	Graymont (NZ) Limited	145,002	3.6	1.2
Glass containers	ACI OPERATIONS NZ LIMITED	65,621	1.6	0.5
Lactose	Fonterra Limited	53,229	1.3	0.4
Another 64 recipients		395,452	9.9	3.3
TOTAL		**7,715,722**	**193**	**64.3**

Treble this for the current price

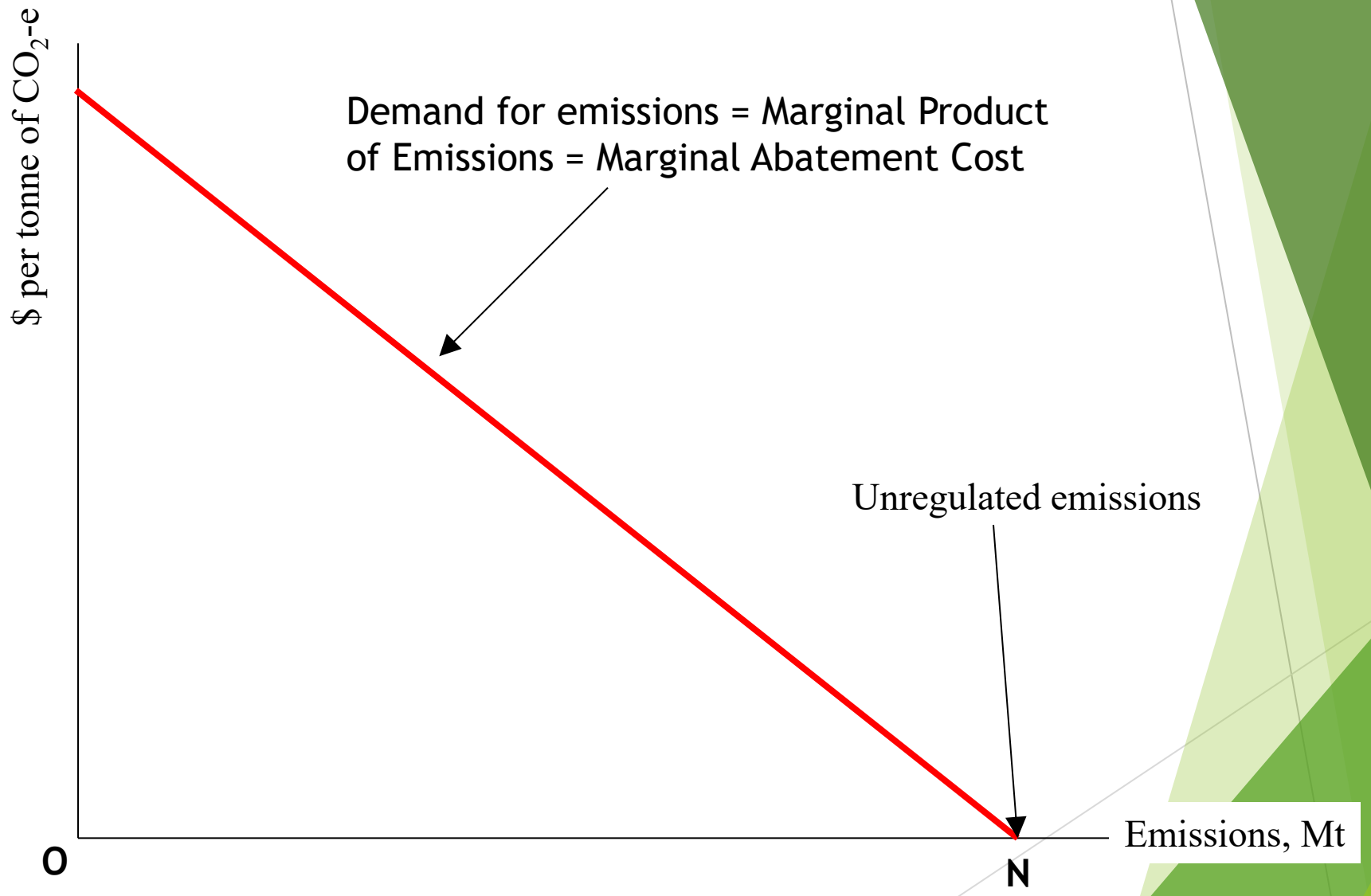
https://www.epa.govt.nz/assets/Uploads/Documents/Emissions-Trading-Scheme/Reports/Industrial-Allocations/Industrial-Allocations-Final-Decisions.xlsx
downloaded 25 August 2022.



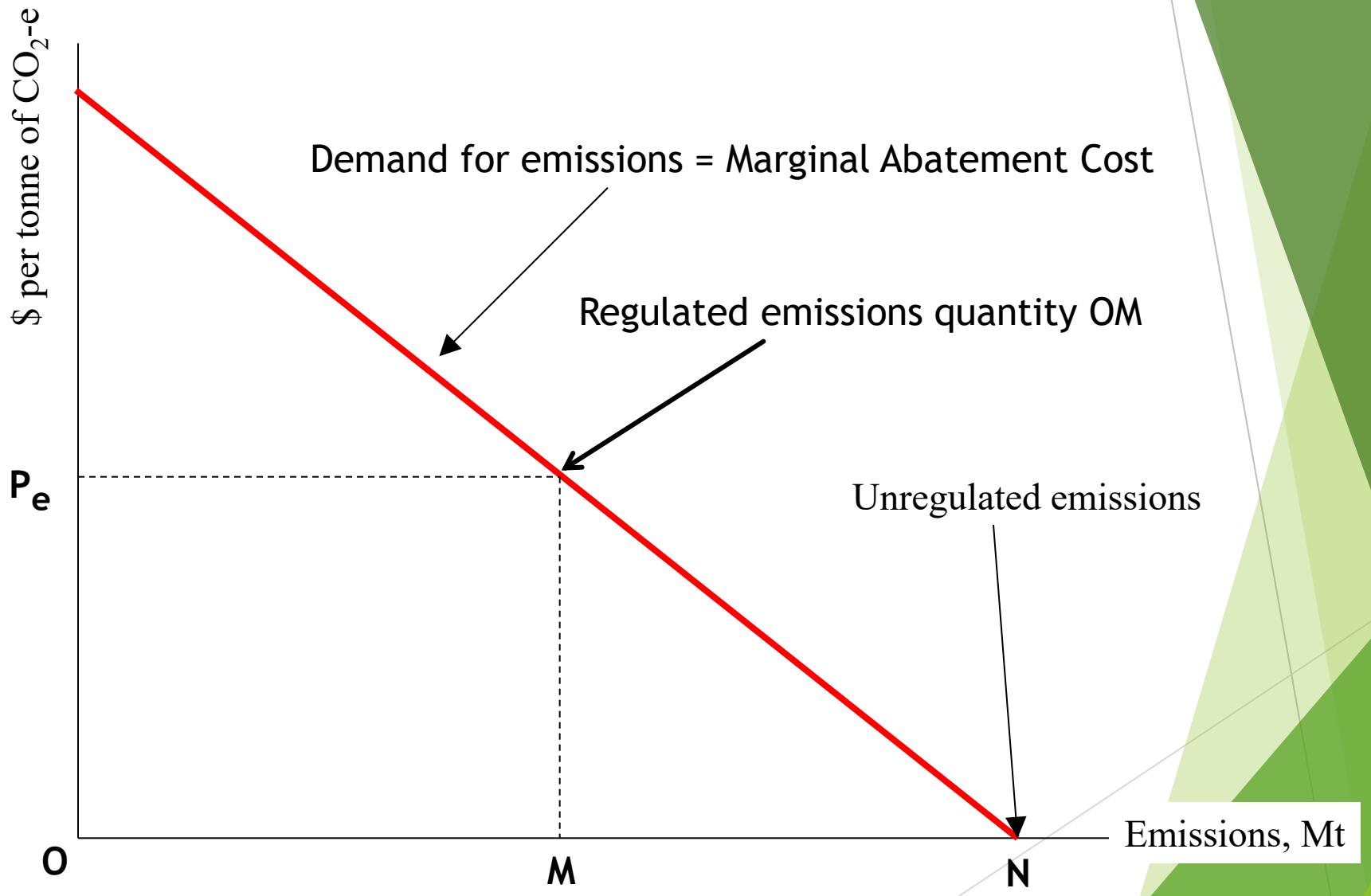
https://en.wikipedia.org/wiki/New_Zealand_Emissions_Trading_Scheme#/media/File:NZU-NZ-emission-unit-720by540.svg at 7 December 2022

Economics of emissions reduction

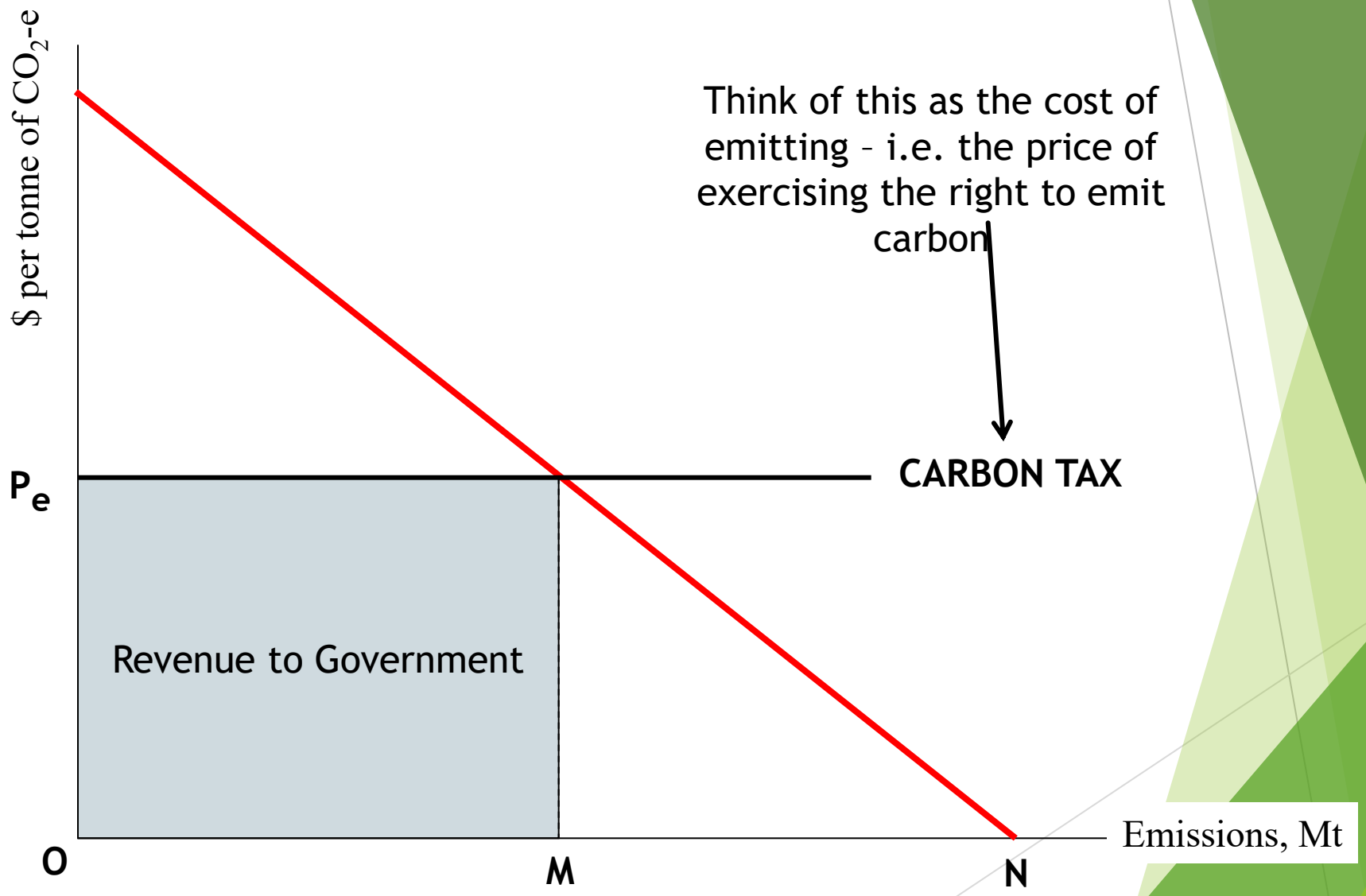
The “carbon market”



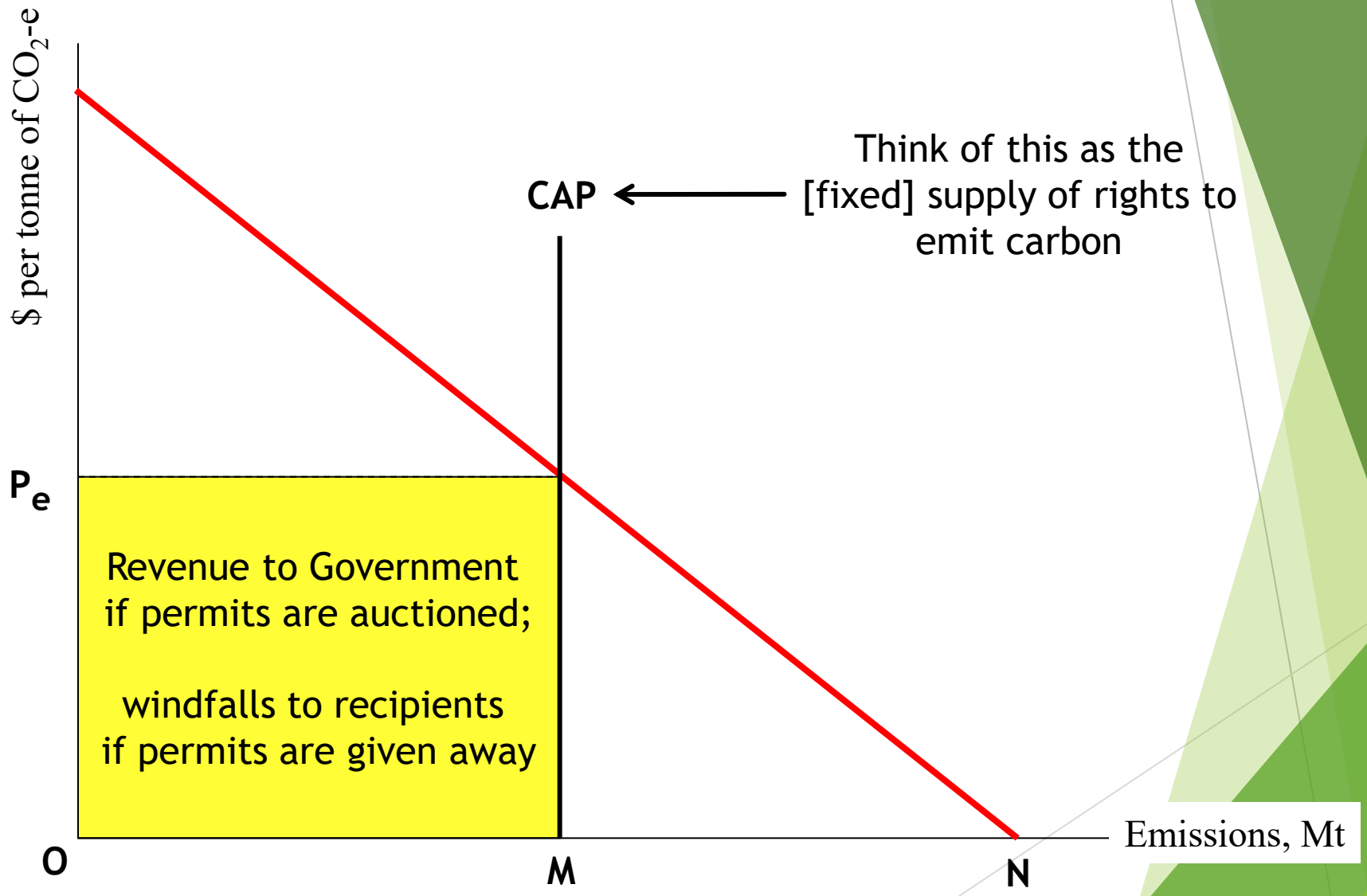
If the price of emissions rises to P_e then the quantity falls to OM and the emissions reduction ("abatement" or "mitigation") is MN



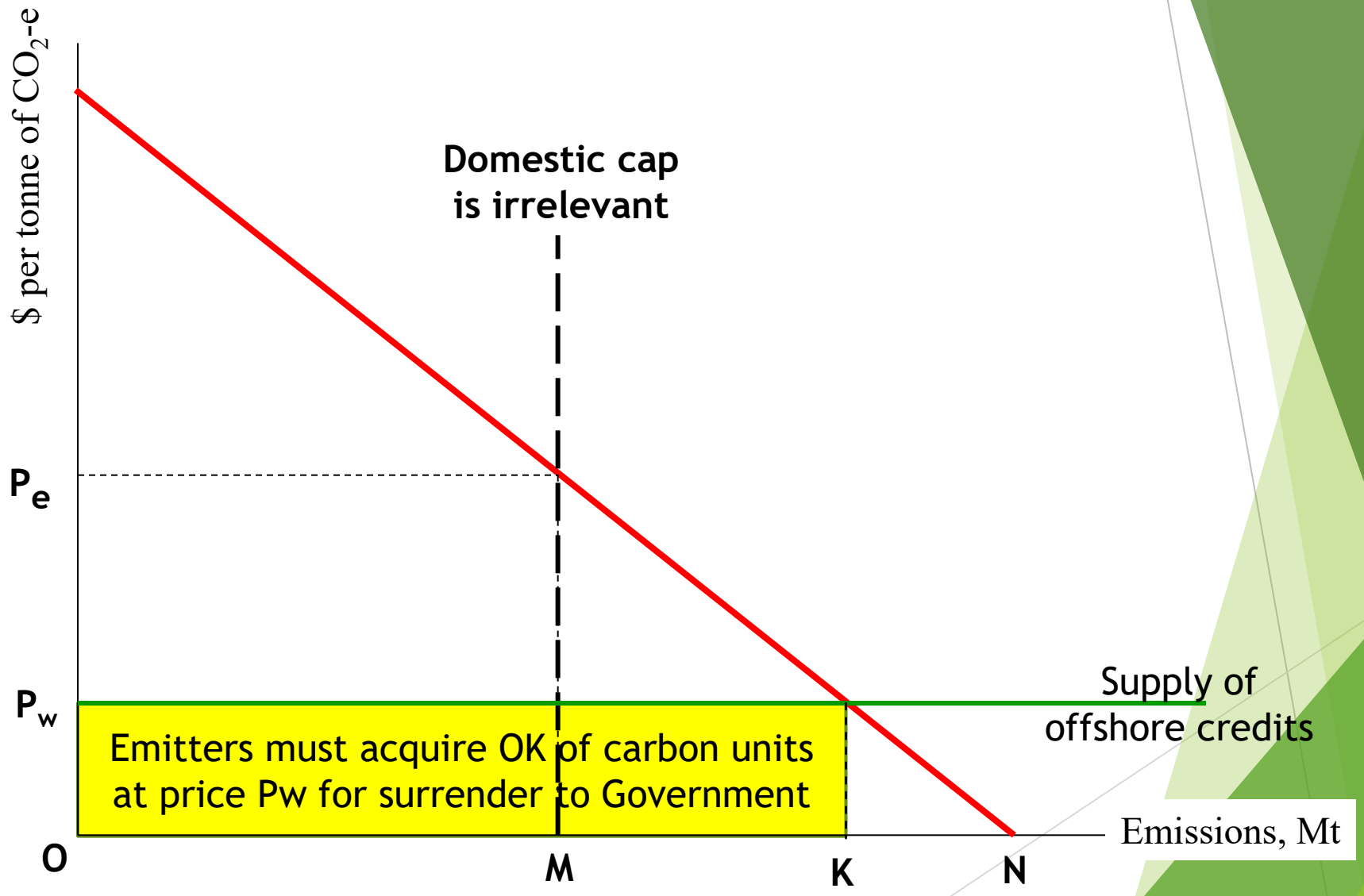
One way of doing it: a carbon tax of P_e would lead to MN of abatement



Or the Government could impose a cap at M, issue permits, allow trading, and the carbon price would be bid up to P_e



With international emissions trading there is neither a cap nor a locally-set price



Under the NZETS

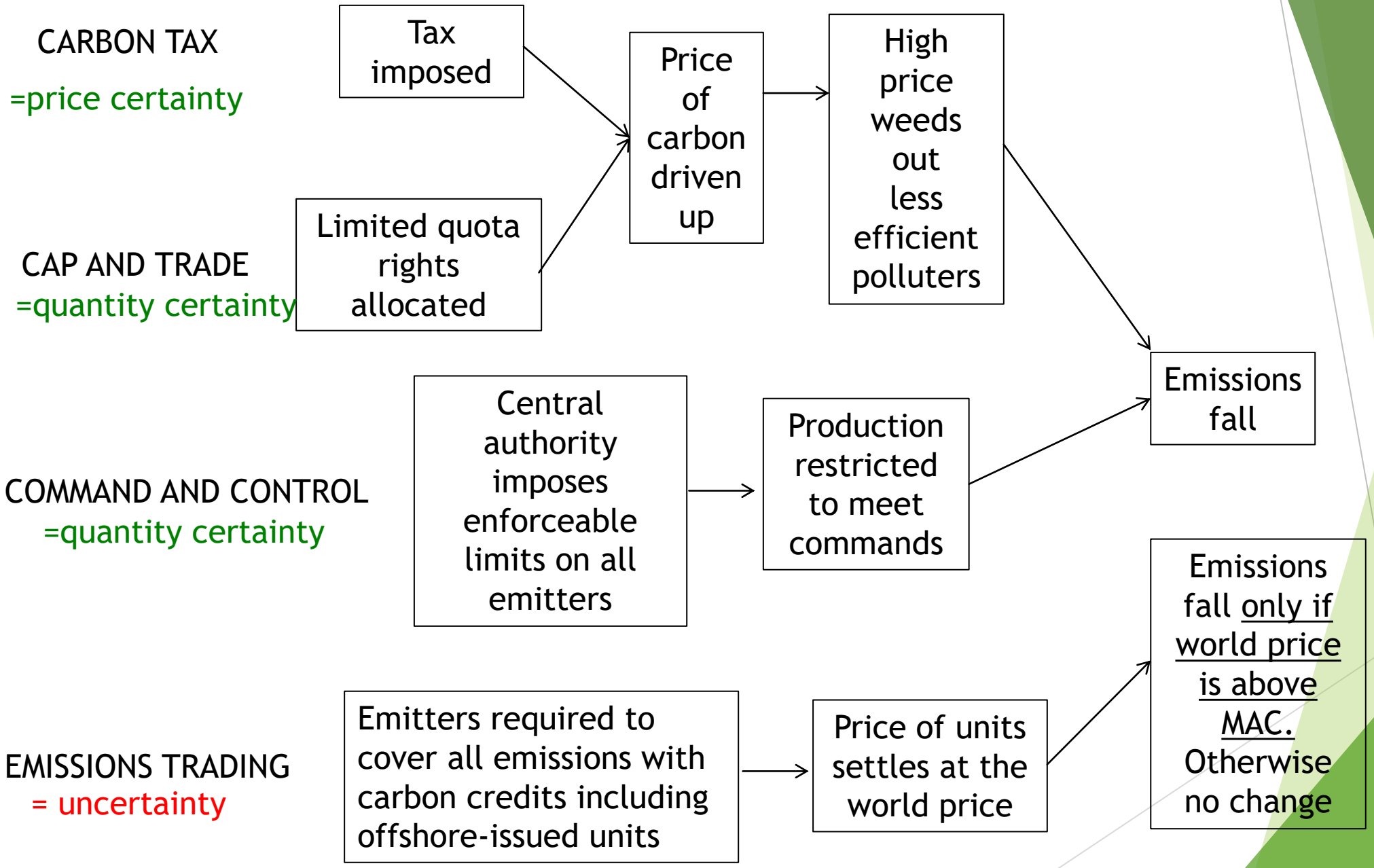
NZUs are issued free to corporate insiders (a) to prevent carbon leakage and (b) to compensate for any effect the ETS may have on the electricity price

NZUs can be earned by forestry operations if the forest owner opts in, and these units can be sold into the market if the owner chooses not to bank them

‘Banked’ NZUs can be used to cover current emissions (there is currently a big overhang of banked units)

Offshore carbon credits can be imported and used to cover local emissions if and when the Minister authorises this (by getting an Order in Council)

The quantity of NZUs released for auction by Government is at the whim of politicians subject to corporate capture


CARBON TAX
=price certainty
Tax imposed
Price of carbon driven up
High price weeds out less efficient polluters
CAP AND TRADE
=quantity certainty
Limited quota rights allocated
Emissions fall
COMMAND AND CONTROL
=quantity certainty
Central authority imposes enforceable limits on all emitters
Production restricted to meet commands
EMISSIONS TRADING
= uncertainty
Emitters required to cover all emissions with carbon credits including offshore-issued units
Price of units settles at the world price
Emissions fall only if world price is above MAC. Otherwise no change

Ineffectual attempts to create certainty

The ‘trigger price’ reflects Government’s terror of a high carbon price – but may not be sustainable in the face of market developments (cf the housing market 2000-2021)

Promises to not allow too much importing of units can be broken at any time – e.g. after a change of government

Leaving agriculture out is of uncertain credibility

Forestry decisions and hence claims to earn NZUs are inherently hard to predict – and policy on forests keeps changing, partly because of the risk that so much will be planted that the NZETS will have no effect on actual emissions

The future world price and availability of offshore credits is unknowable

Why a carbon tax with border adjustments would have been the smart move (and still could be)

The tax can be imposed across the entire economy with no exemptions and can be adjusted regularly as conditions change (cf the RBNZ's use of the OCR)

Border adjustments mean that the carbon tax is automatically rebated on all export goods – just like GST - so no need to rush around arranging special deals for farmers, Tiwai Point, Carter Holt Harvey and all. That kills the "competitiveness at risk" argument for special favours

The revenue can be recycled as a dividend to all households (a sort of Universal Basic Income) or can be hypothecated to funding green investments

Certainty can be locked in if there's bipartisan support

Harmonisation with other countries' carbon-tax regimes is straightforward and international commitments can be made (=> "carbon clubs")

What does this mean for tackling climate change?

Getting emissions down and moving towards a zero-carbon economy requires (among other things of course)

- Rapid electrification of all possible areas of the economy to push out fossil fuels – so need the lowest possible electricity prices as incentive

- Maximum possible deployment of renewable/nondepleting sources of electricity: wind, solar, tidal, waves, hydro, geothermal….

Two essential requirements for success are that

- Price incentives like carbon taxes or emission pricing penalise fossil fuel use while at the same time encouraging use of renewable electricity

- Vested interests must not be able to place barriers to entry in the way of renewables (including small-scale distributed ones like rooftop solar and backyard wind)

The required level of regulatory intervention may be “politically unfeasible”

But the bottom line is that Nature does not negotiate

The present electricity market setup ensures that

Feed-in tariffs, retail pricing structure, and entry barriers to rooftop solar, have been manipulated by the gentailer cartel and its enablers to make ‘prosumer’ investments unprofitable

Carbon charges drive up the price of grid-connected renewable electricity

Parliament has repeatedly failed to confront these problems

Why so little distributed renewable generation?

For example rooftop solar, local community energy networks with wind, solar, micro-hydro and batteries

MY ANSWER:

because that threatens the profits of the gentailer cartel

and the so-called regulatory agencies have been captured by the big players

The electricity industry's central strategic goal: maximize electricity demand while blocking the path to 100% renewables

So long as fossil fuels stay in the mix, they are at the wholesale market margin and so set the spot price way above the supply cost of hydro, geothermal and wind

So long as fossil fuels are on the margin, every increase in the carbon price - whether via the ETS or otherwise - pushes up the price of all electricity, including renewables

That means wealth transfers to the gentailers as other desperate policy measures drive electrification against the electricity-pricing tide

The commercial (as distinct from lifestyle) viability of small-scale distributed generation such as rooftop solar and small windfarms is quite sensitive to the price structure facing households: removing the low-fixed-charge regulation was a quick way to make rooftop solar less economic.

A big threat to gentailer profits is the huge potential wind resource, but the gentailer cartel has locked up and "banked" the best sites (plus several hydro options)

Without institutional change, Government policy is hostage to the cartel's stranglehold

Five modest policy suggestions

1. Reorganise existing electricity assets to perform two key roles:

   i Backstop intermittent renewables

   ii. Supply low-priced contract blocks of electricity for supply to low-income households and climate-friendly activity

   That boils down to renationalising hydro plus maybe some other assets

2. Immediately enable/encourage local/regional small-medium scale distributed renewable generation => generous feed-in tariff and remove regulatory barriers
3. Abolish the lines/energy split – certainly at local level => distribution networks can become local pools/coordinators
4. Dump the NZETS and switch to a carbon tax with border adjustments tailored to a world of carbon clubs
5. Make the statutory carbon budget binding, not “aspirational”