Learning the hard way: Policies to reduce emissions

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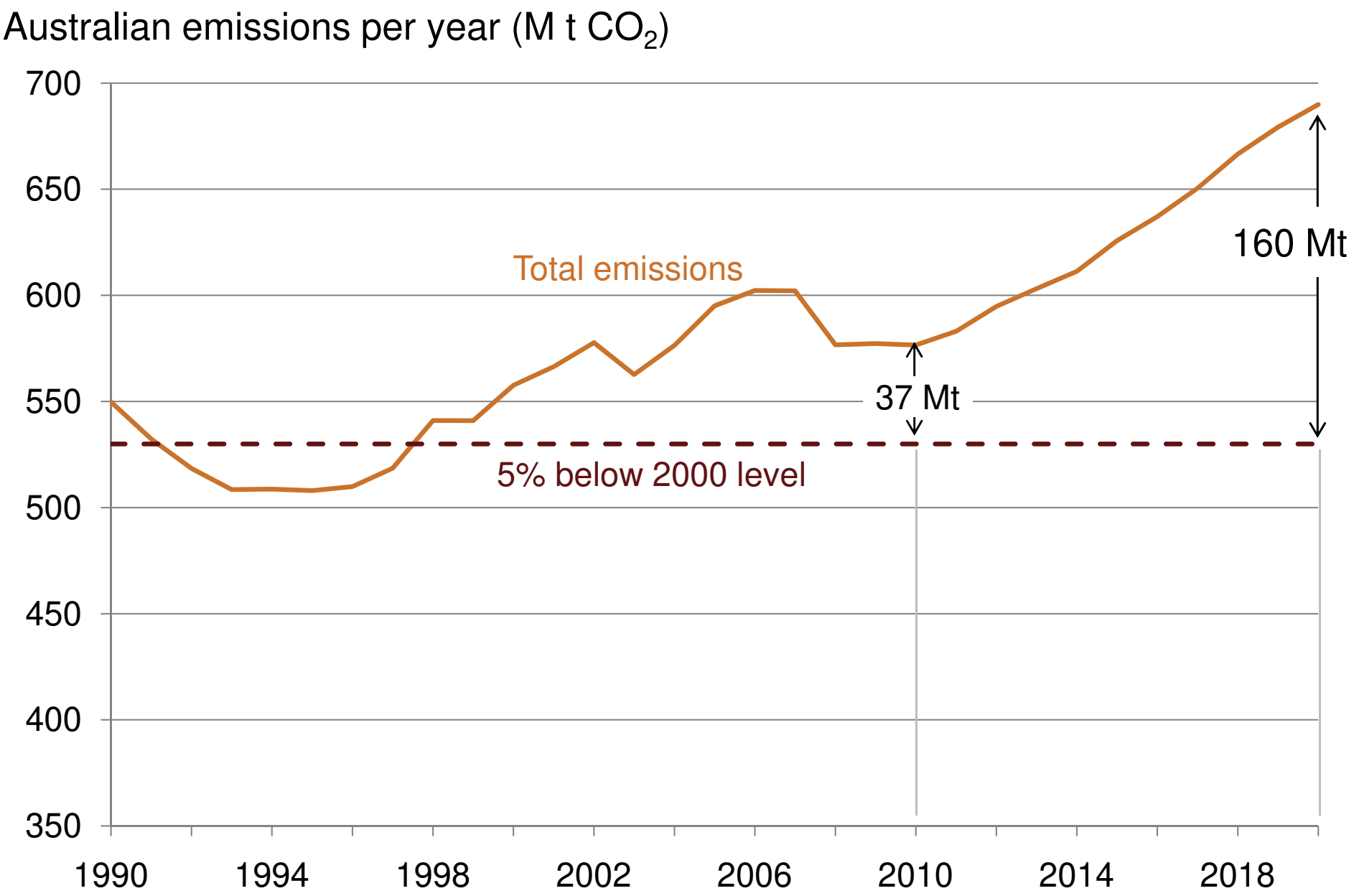
About the research project

- Reviewed over 300 Federal and State government policies since 1997
- Looked for patterns of what works
- Analysed 4 policy frameworks driving 80% of abatement (except land-use change)
  - **Market-based** measures (carrot or stick per tonne for delivered reductions)
  - **Grant tendering** (government payment to successful tenderer of project expected to reduce emissions)
  - **Rebates** (government payment to anyone undertaking specific action (eg home insulation)
  - **Energy efficiency** regulatory standards

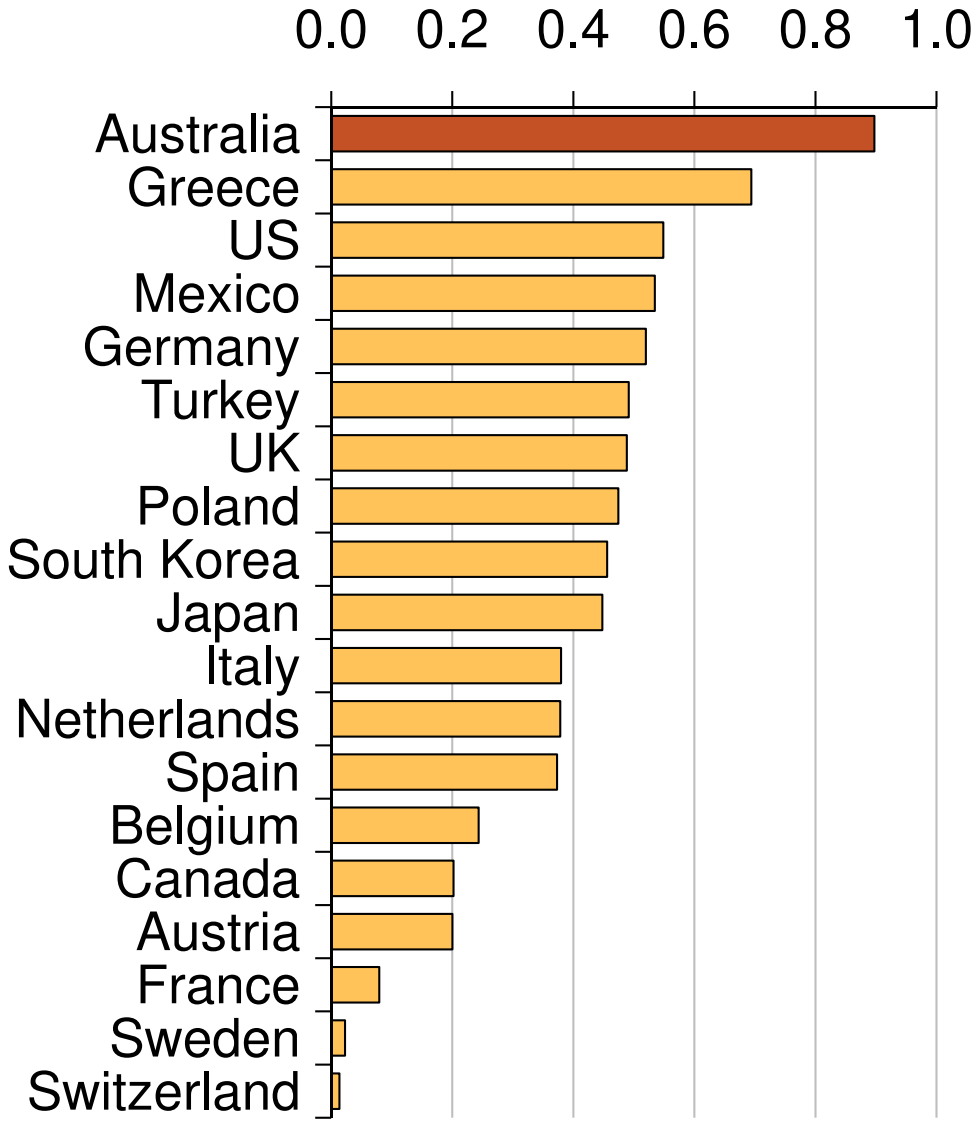
- Assessment criteria:
  - **Scalability**: Delivered > 10m t CO_2 (target: extra 160m t CO_2 by 2020)
  - **Speed**: Can deliver by 2020
  - **Cost**: Under $50 / t CO_2 (preferably under $30/t) – coal to gas electricity
    Need to look at both government budget cost and consumer cost
  - **Certainty**: High confidence the policy will deliver

Reduction targets

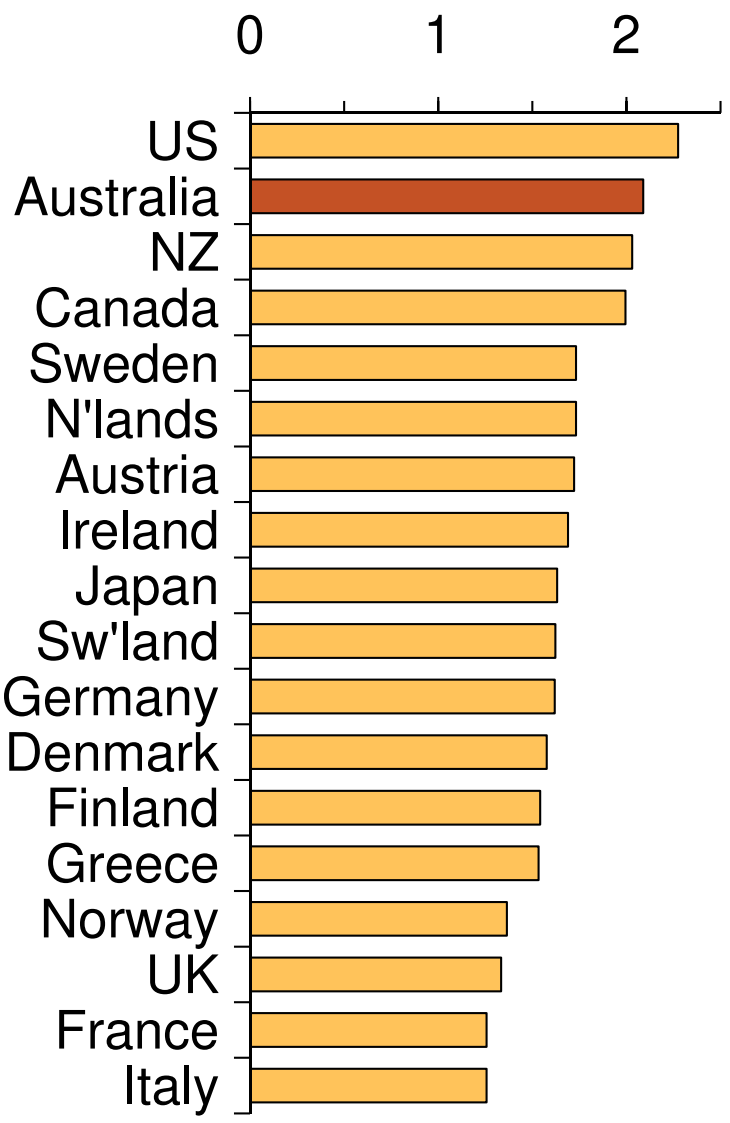


Australia's task

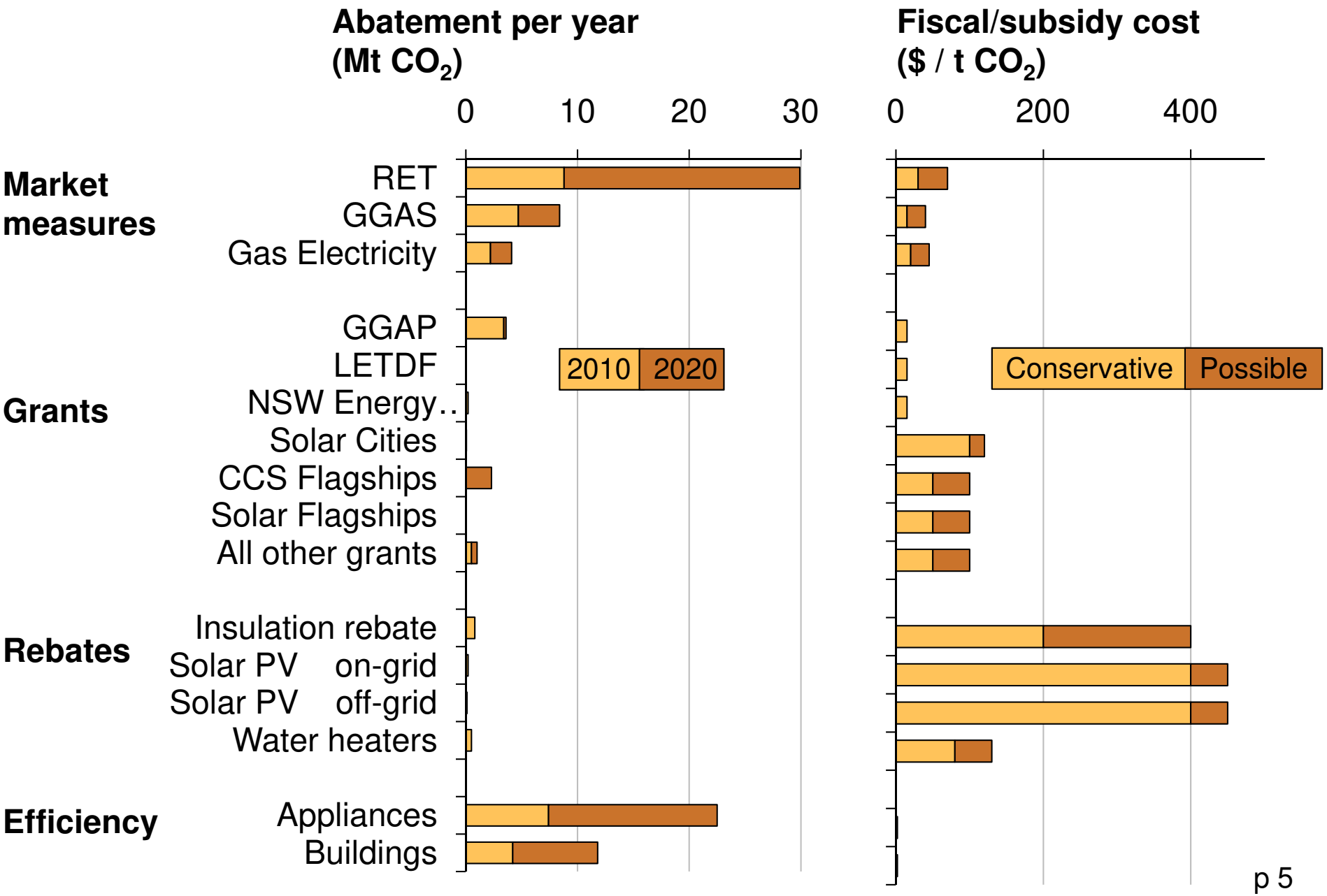
Carbon emissions from electricity
(t CO_2 / MWh)



Energy used in transport per km
(Megajoules per km)

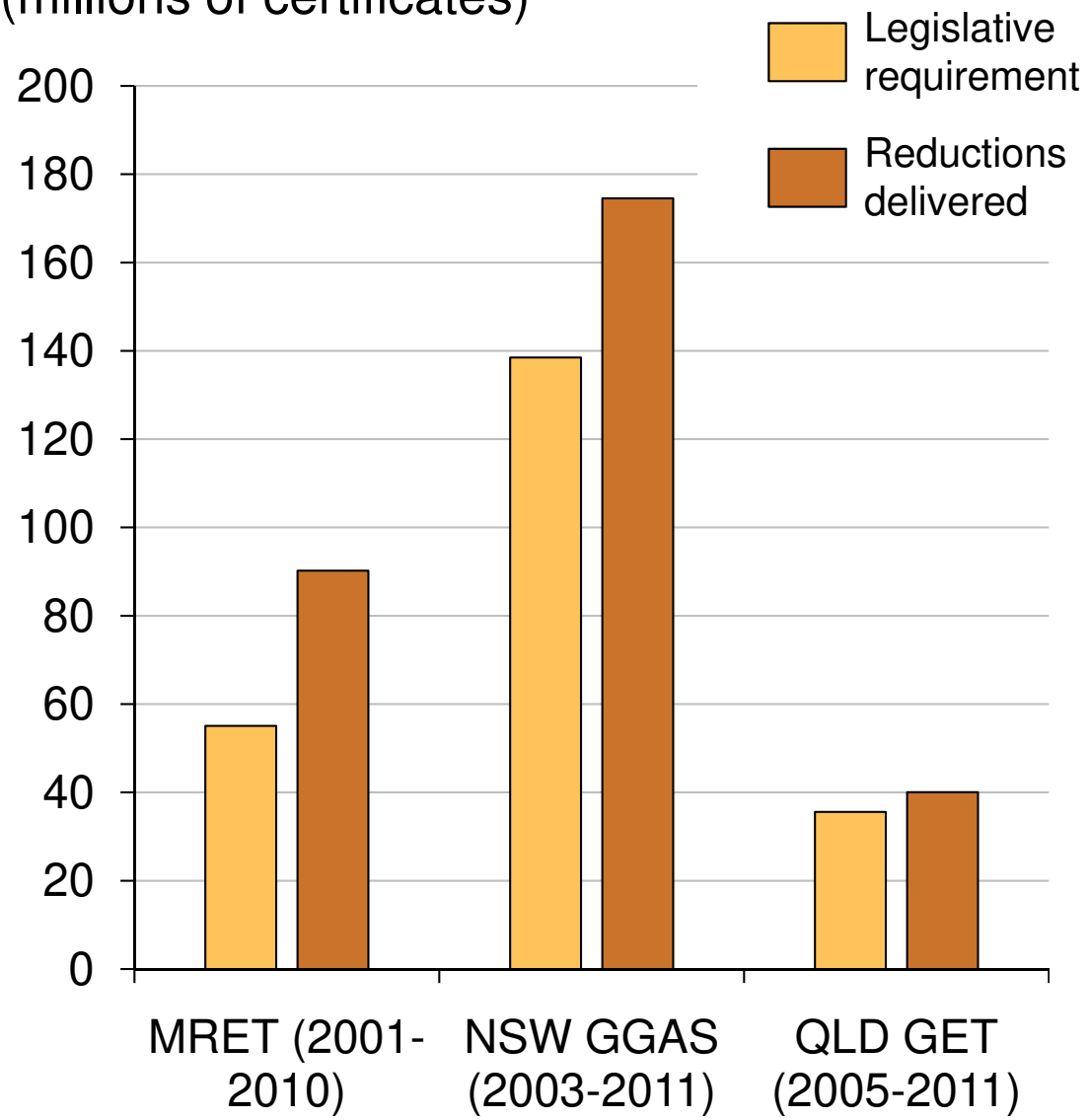


Overview of Australia's experience



Market-based measures: more effective than predicted

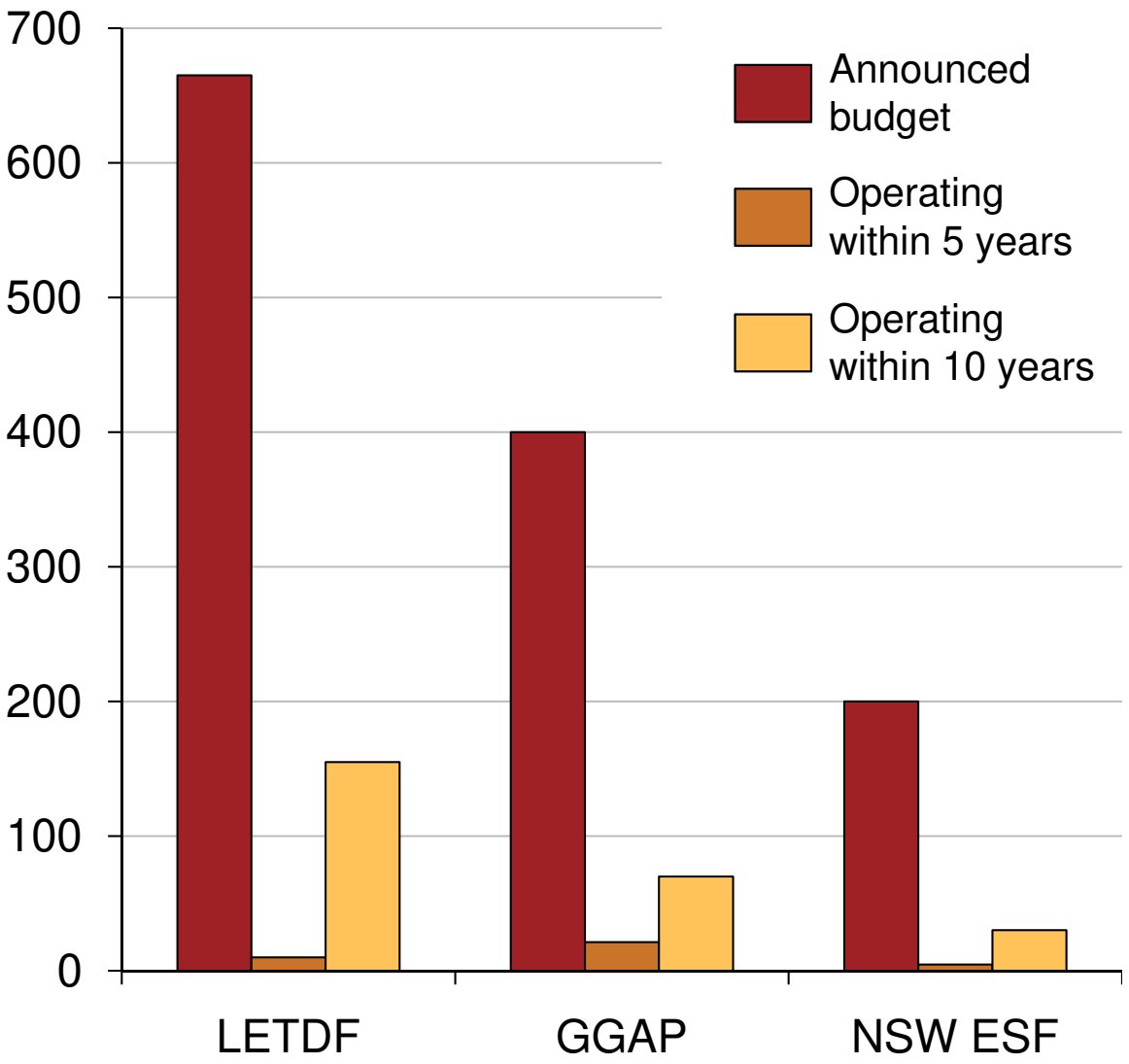
Market based scheme requirements and achievements (millions of certificates)



- Proven ability to deliver targets
- Usually cheaper than expected
- Deliver certainty and flexibility

Grant schemes: struggling to spend the money

Grants announced and spent
($m)

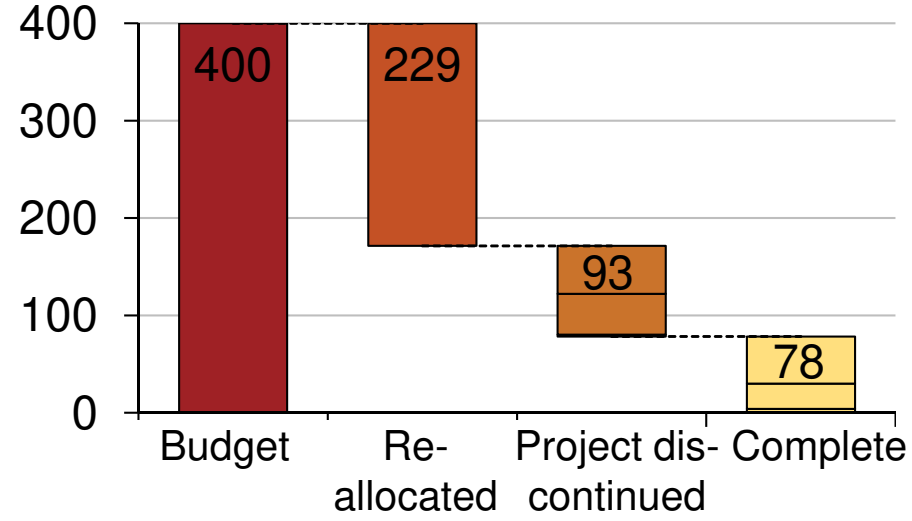


- Bidders encouraged to over-promise as no pre-existing standard for delivery
- Government must pick the winning technology and the winning firm to deliver it
- Money committed well before project produces a result
- Tender process slow and locks out unsuccessful bidders
- Winners often drop out if problems with finance, or technology doesn't work

Grants schemes – a repeating story

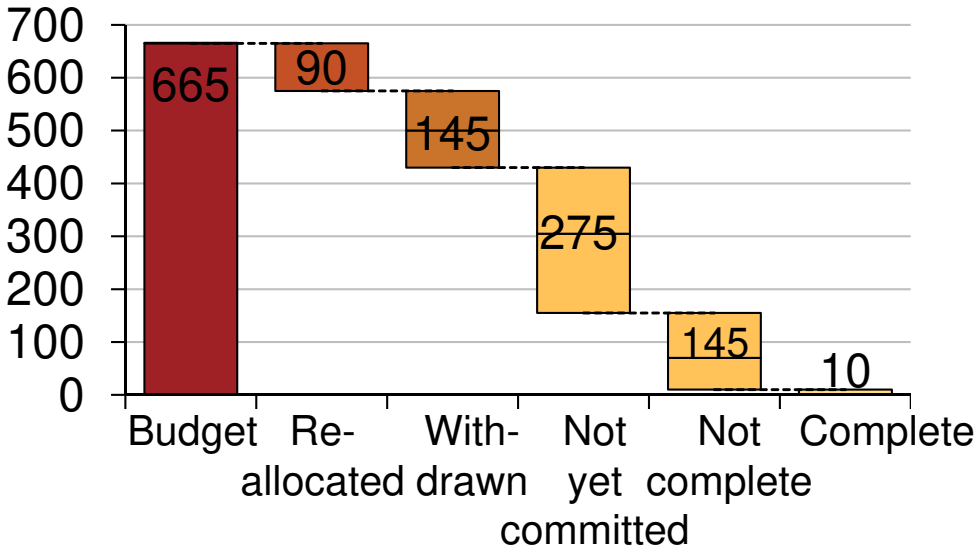
GGAP

($ millions)



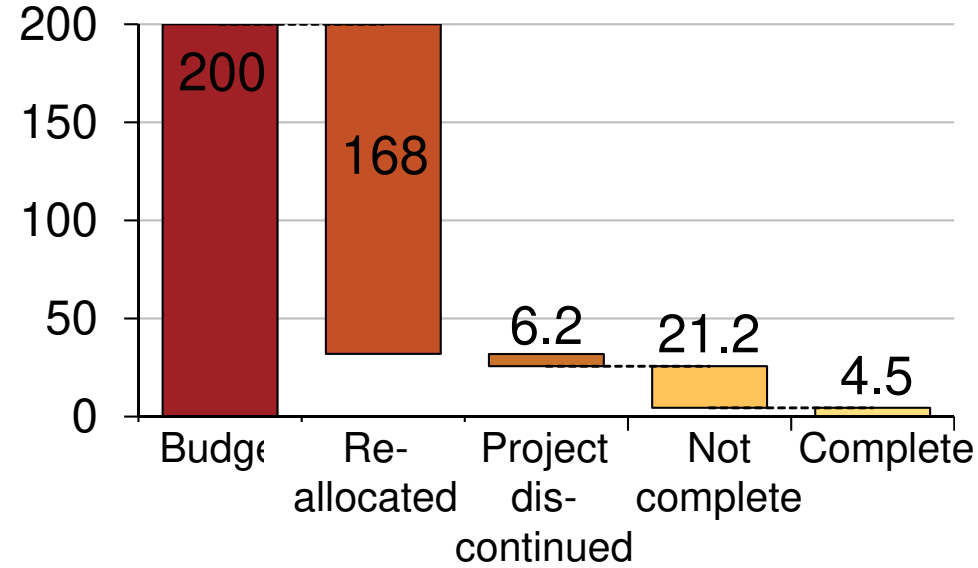
LETDF

($ millions)



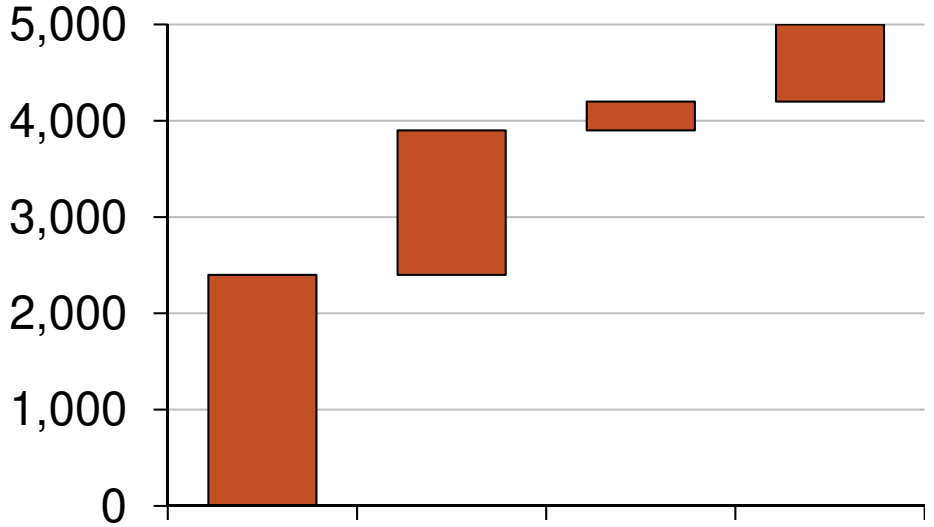
NSW ESF

($ millions)

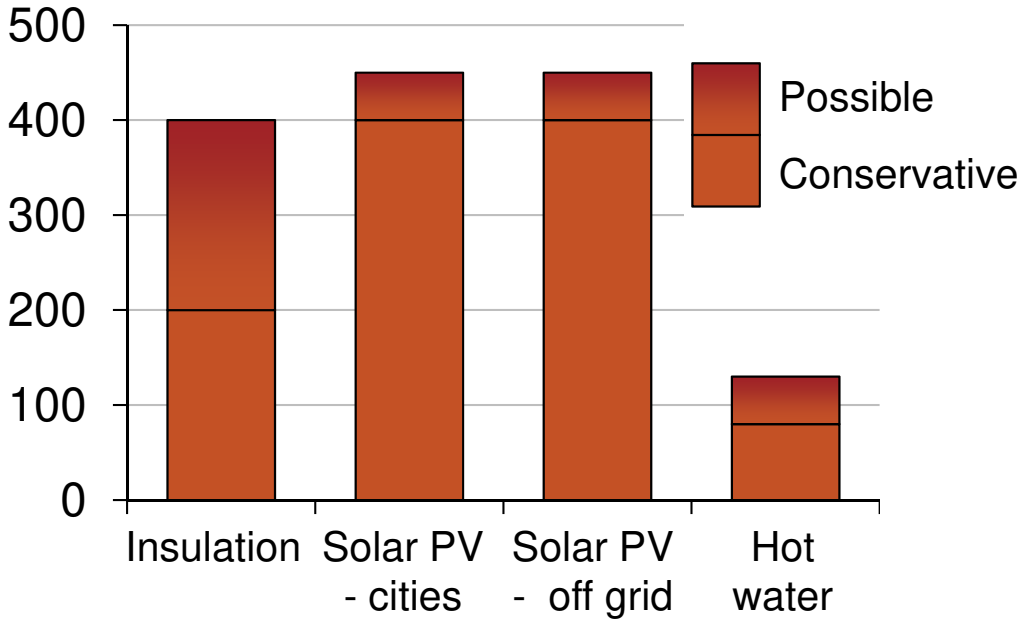


Rebates: why so bad?

Budget cost to 2015 ($ m)



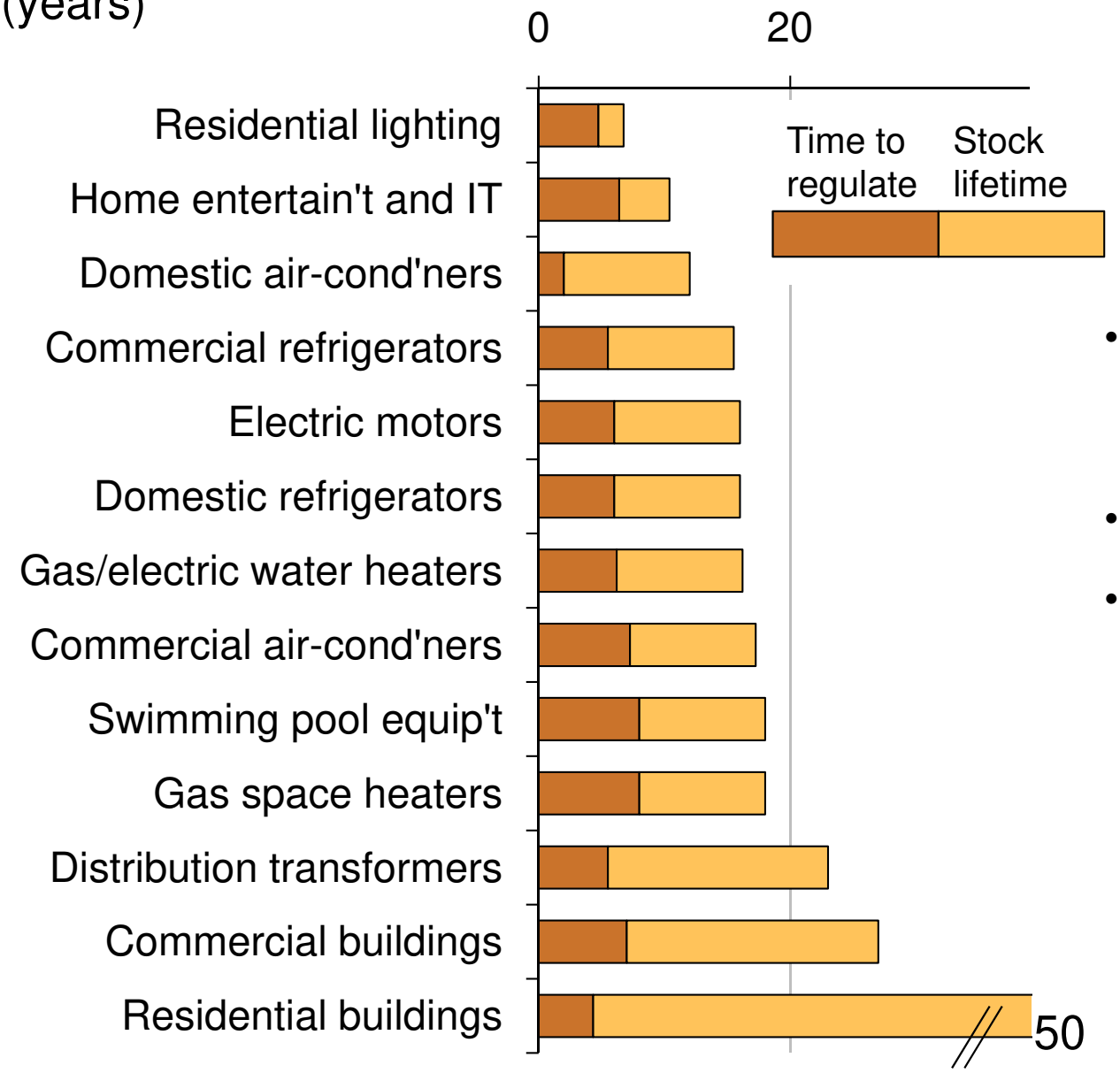
Cost ($ / t CO_2 abatement)



- Activities chosen for political popularity rather than cost-effectiveness
- Often reward activities that would have happened anyway
- Take-up can cause budget blow-out if cost of device falls (eg solar PV panels)
- Stop-start due to rapid policy change undermines investment confidence

Energy efficiency: worth doing, but slow

Efficiency regulation implementation time (years)



- Significant abatement and saved the community money
- Slow to implement
- Not enough opportunities to be the main game

Market measures v grants v rebates

	Market measure	Grant	Rebate
Basis for claim	Pay per tonne abatement delivered	Pay during construction	Pay per activity completed
Eligibility	Everyone is liable; anyone can claim	Tender winners only	Usually consumers and small business
Source of abatement	Not predictable – likely to be surprised	As nominated in winning tender chosen by government	As nominated by government in rebate scheme
Innovation	Encouraged	Tenderers may innovate, but process rewards proven technology	Unlikely
Government involvement	Limited	Intensive	Required to check if scheme succeeding too much

Soil carbon

What is it?	Plants absorb CO_2 and their biomass is captured in the soil and not released back to atmosphere.	
Who supports it?	Government:	Carbon Farming Initiative: • Pre-project process to approve method • Only if project wouldn't happen without support. • Limited use: some can be sold internationally, rest for voluntary offsets, and perhaps CPRS Mk IV
	Garnaut:	• Government to purchase farming carbon offsets of 2%-4% of total emissions; Emitters to purchase Kyoto-compliant credits from 4% to 10% of their emissions • If oversupply, reduce purchase price
	Liberal Party:	Emissions Reductions Fund for soil carbons: • Farmers can "tender" for verified additions in soil carbon • Up to 85m t CO_2 / yr • Other farming initiatives can also tender for Fund money
Will it work?	CSIRO:	Quantity and cost of soil carbon storage unclear
How to incent	Grant:	Pay farmers with good track record to do it
	Rebate:	Pay farmers who complete specified activity
	Market:	Pay per tonne to any farmer who reduces actual emissions