GRATTAN Institute

Climate and Energy - Risks and Opportunities

Engineers Australia
20 February 2017

Outline

The contemporary political context

Policy options to drive emissions reductions (in various emission sectors)

Economic and budgetary implications of above

Reshaping the electricity market?

Challenges and opportunities

The ashes: a brief history of Australia's policies

- **1990:** Government announces first ever emissions reduction target, but will only pursue 'no regrets' measures
- **1992:** Australia signs the United Nations Framework Convention on Climate Change (UNFCCC)
- **1997:** Industry Commission advises government that 'no regrets' measures will be insufficient to meet UNFCCC targets, and raises prospect of national 'cap and trade' emissions trading scheme
- **1998:** Australia signs the Kyoto Protocol to the UNFCCC
- **2005:** Kyoto Protocol comes into force
- **2006:** both parties go to election proposing cap and trade schemes
- **2009-2010:** Rudd Government's proposed cap and trade scheme fails to become legislation on three occasions
- **2011:** Gillard Government announces new cap and trade scheme, with a fixed price period
- **2012:** fixed carbon price ('carbon tax') comes into force
- **2013:** Abbott-led Coalition wins government, sets about implementing its 'Direct Action' plan
- **2014:** carbon price repealed
- **2016:** Paris Agreement ratified committing Australia to 26-28% reduction by 2030
- **2016:** Emissions Intensity scheme ruled out by Turnbull Government

Issues with the Safeguard Mechanism as an emissions reduction policy

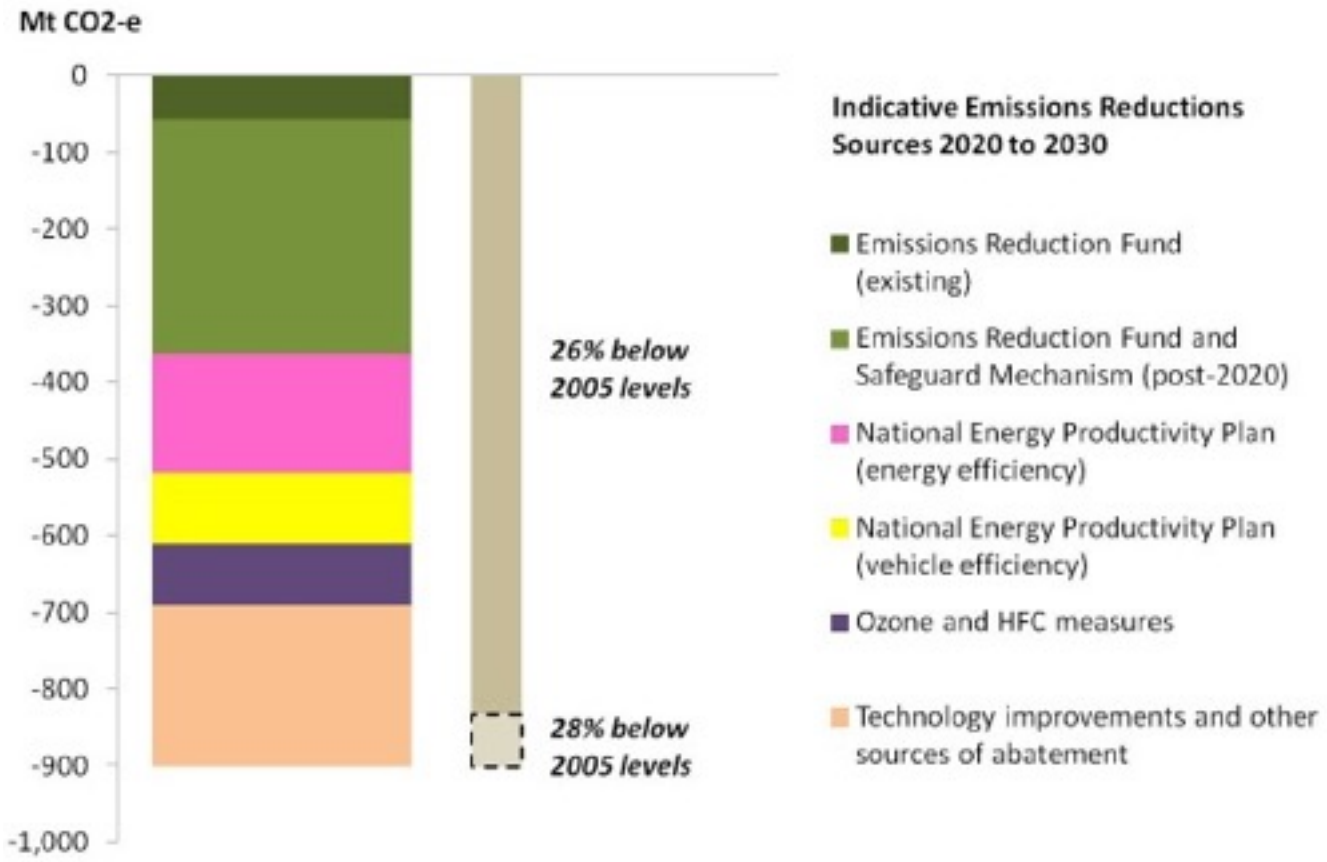
Effectively a one-sided, absolute baseline scheme. No incentive for emissions reductions below the baseline.

Baselines have been set for individual facilities covered by the Safeguard Mechanism at the highest level of reported emissions between 2009-10 and 2013-14.

No link to Australia's emissions reduction targets – no scope to adjust baselines downwards.

Only covers about 50 per cent of Australia's emissions. The current mechanism leaves half of Australia's emissions unrestricted.

Current policy based on a 900mt reduction wedge



Source: Department of Environment "Australia's 2030 climate change target

The numbers will be increasingly debated

The real challenge +1 billion tonne reduction wedge

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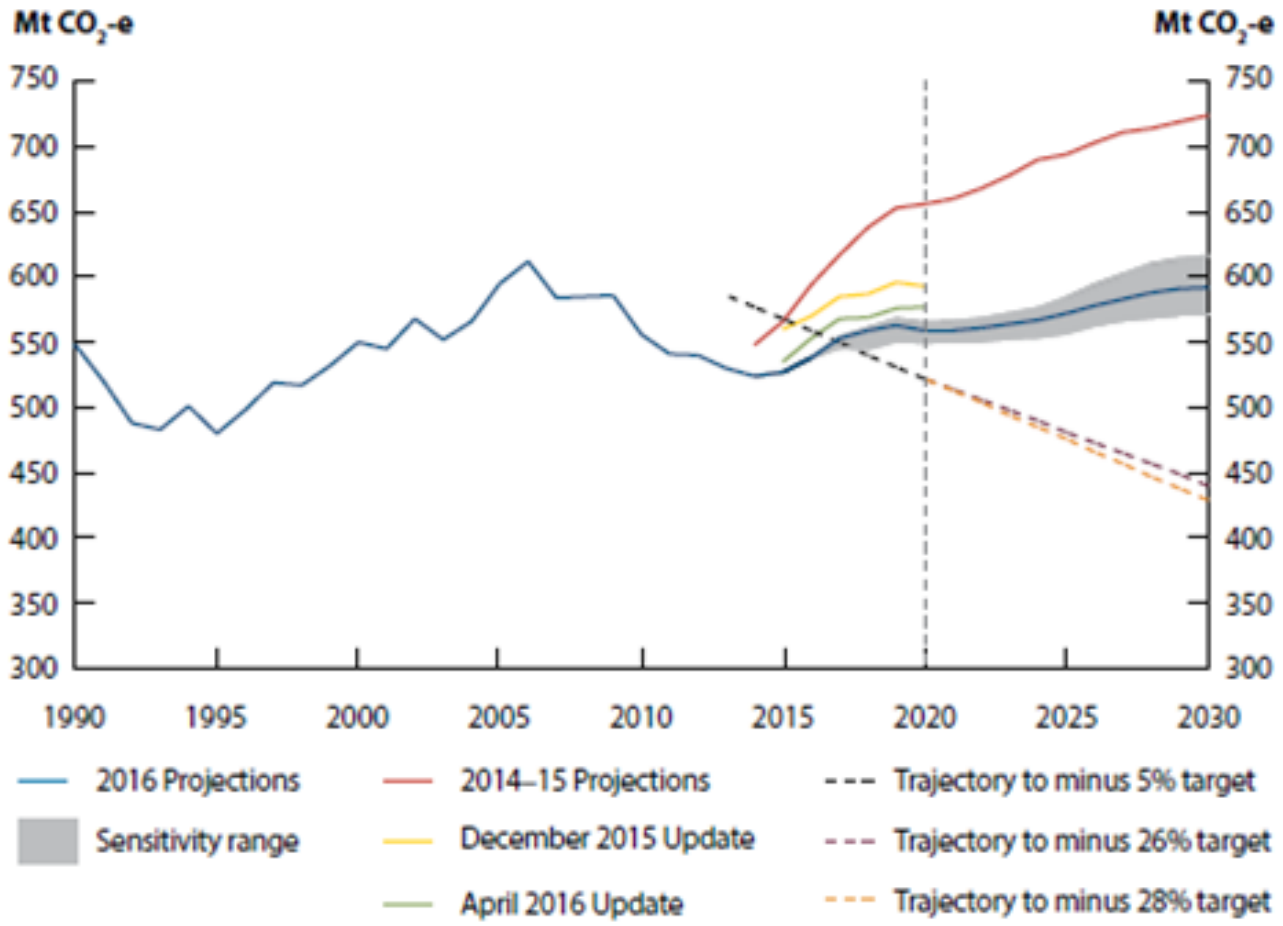
Figure 3 **Australia's emissions trends, 1990 to 2030**

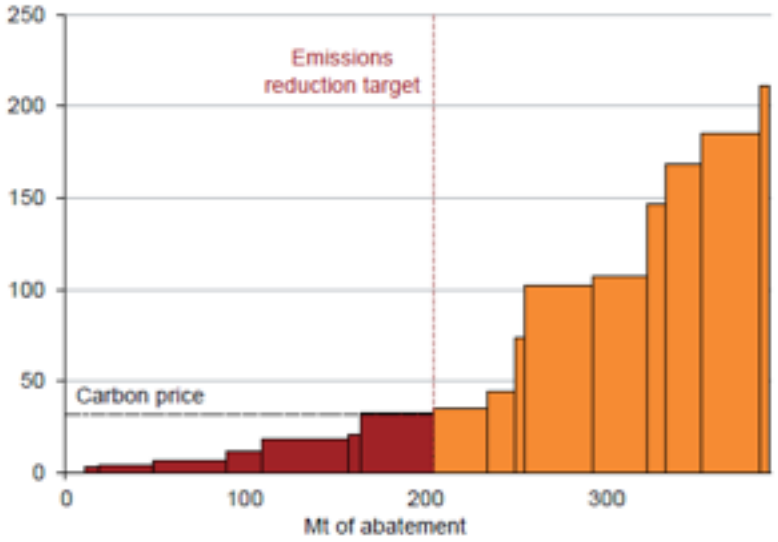


	Credibility	Political viability	Flexibility	Adaptability	Public acceptability	Low cost
Cap and trade	Can be set to meet any target.	Does not have bipartisan support today, although an absolute baseline and credit scheme could be developed out of the existing ERF safeguard mechanism.	Can be adjusted to meet any target.	Is a market-based scheme that can be applied broadly, although there are challenges in applying it to some sectors.	Complex design makes it hard to communicate.	Can provide incentives for low-cost reductions across a range of sectors. There is less need for complementary or additional policies.
Carbon tax	Difficult to set the tax to achieve a specific target. Tax does not limit emissions.	Politically bruising history in Australia.	Can be adjusted, but no direct link to target.	Can be applied broadly, although challenges in some sectors. Can be transformed to a market-based scheme.	'Taxes' are unpopular. The bruising experience of Australia's fixed price on carbon adds to this unpopularity.	Can provide incentives for low-cost reductions across a range of sectors. There is reduced need for complementary or additional policies.
Intensity baseline and credit	No direct link between individual baselines and overall reduction target.	Smaller effect on consumer prices compared with other forms of carbon pricing.	Individual baselines can be adjusted, but estimating the baseline to meet a specific target is difficult.	Is a market-based scheme, but may be onerous to apply to multiple sectors. Can be transformed to a cap and trade scheme.	Smaller effect on prices makes it more acceptable than other forms of carbon pricing, but its complex design makes it hard to communicate.	Can provide incentives for low-cost reductions within a sector, but may be more costly to apply to multiple sectors.
Emissions purchasing scheme	Allocated budget puts a constraint on meeting targets. Lack of assurance that the target will be met given the scheme is voluntary.	Australia's current emissions purchasing scheme lacks bipartisan support.	Difficult to adjust since additional funds will need to be sourced from the budget.	Cost to the budget makes extending the scheme across the entire economy unlikely.	Acceptable for achieving low levels of emissions reduction, but cost visibility will grow for larger reductions.	Reverse auctions can secure low-cost reductions, but from a set of predefined opportunities.
Regulation	Difficult to link regulations across multiple sectors to meet a specific target.	Seen as a clear and direct way to reduce emissions.	Adjusting regulations is time-consuming, with no direct link to targets.	By its nature, cannot be transformed to a market-based mechanism.	Seen as a clear and direct way to reduce emissions. Costs of regulation can be less transparent to the public.	Need for precise and extensive information makes it difficult to target the lowest cost reductions.
Tradable green certificate schemes	Only covers the electricity sector and cannot be relied on to meet a specific, national target.	Both sides of politics committed to RET, but the recent reduction in its target raises questions as to whether this commitment is long-lasting.	Only covers the electricity sector.	Difficult to see how to apply to sectors outside of electricity.	Providing incentives for renewable energy is popular in Australia.	Australian experience shows emissions can be reduced at moderate cost, although not at lowest cost.

Carbon price v. regulation

Figure 2.1: An explicit carbon price targets the cheapest ways to reduce emissions

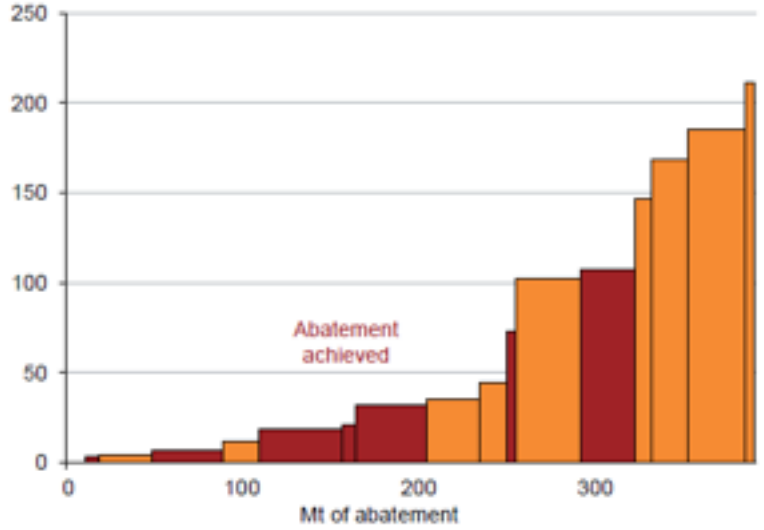
Cost per tonne to reduce emissions ($)



Notes: Hypothetical marginal abatement cost curve.

Figure 2.2: An implicit carbon price policy may not target the cheapest ways to reduce emissions

Cost per tonne to reduce emissions ($)



Notes: Hypothetical marginal abatement cost curve.

Some sectors not conducive to an economy-wide scheme

Measuring emissions from businesses in some sectors can be difficult, such as:

- **Agriculture;**
- **Land use, land use change and forestry; and**
- **Gas industry**

It is administratively complex to include very many small emitters in a broad-based scheme.

It is politically difficult to include some sectors in a scheme

Options specifically for the electricity sector

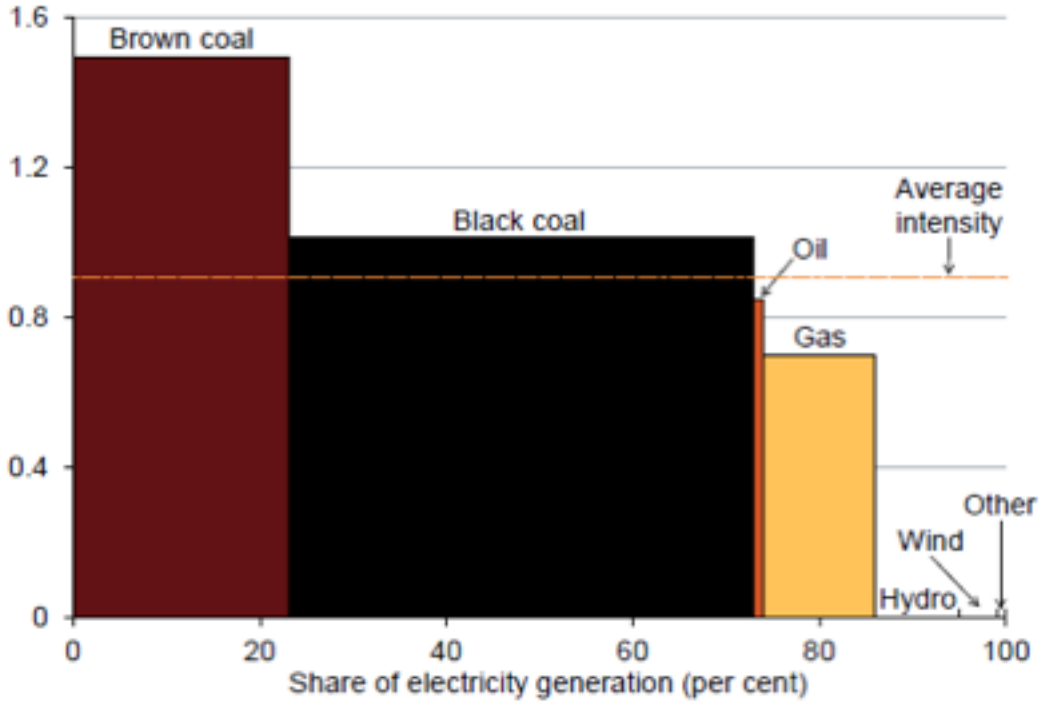
Emissions intensity

Regulated closure

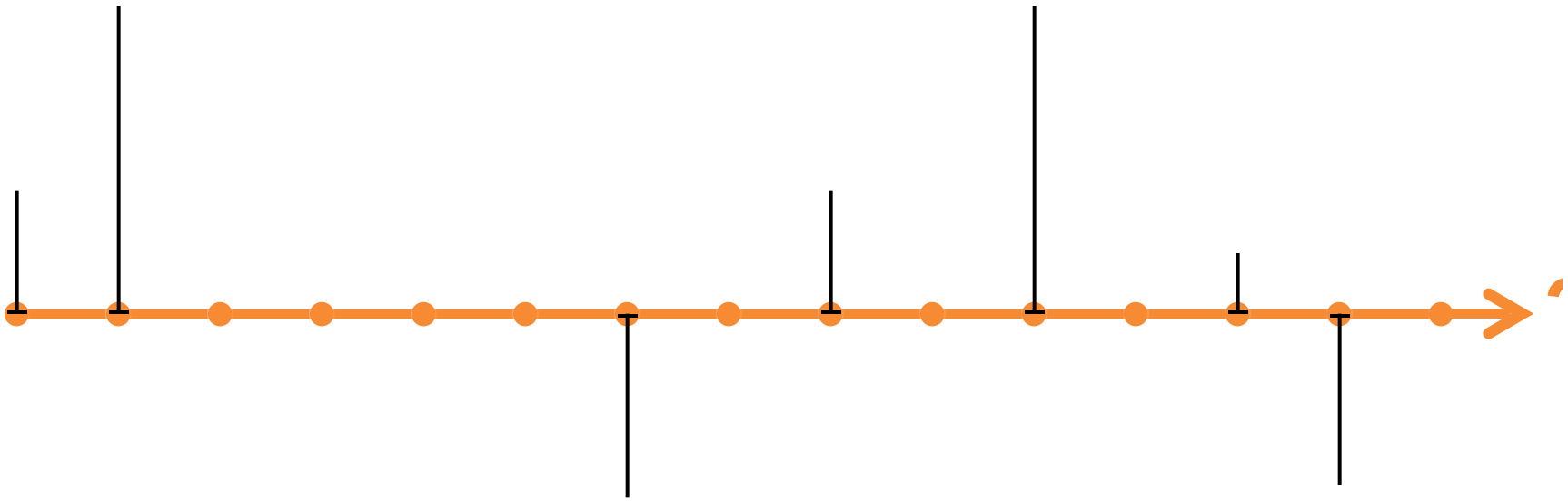
RET or CET

Contract-for-difference

Figure 2.3: Electricity is produced with varying levels of emissions
Average emissions intensity (tonnes of CO_2-e per megawatt hour) by source, NEM, 2014



Notes: Other includes solar PV and other renewables. Does not include rooftop solar.
Source: AEMO (2015a), and AER (2014)



Technical issues

Storm-driven events

Opportunities in electricity

Fix market basics:

- **Dispatch and settlement periods should be aligned in the wholesale market**
- **Consumers need clearer price signals to be able to demonstrate their preferences**
- **A Demand Response Mechanism should be introduced**

Boost options to manage system security:

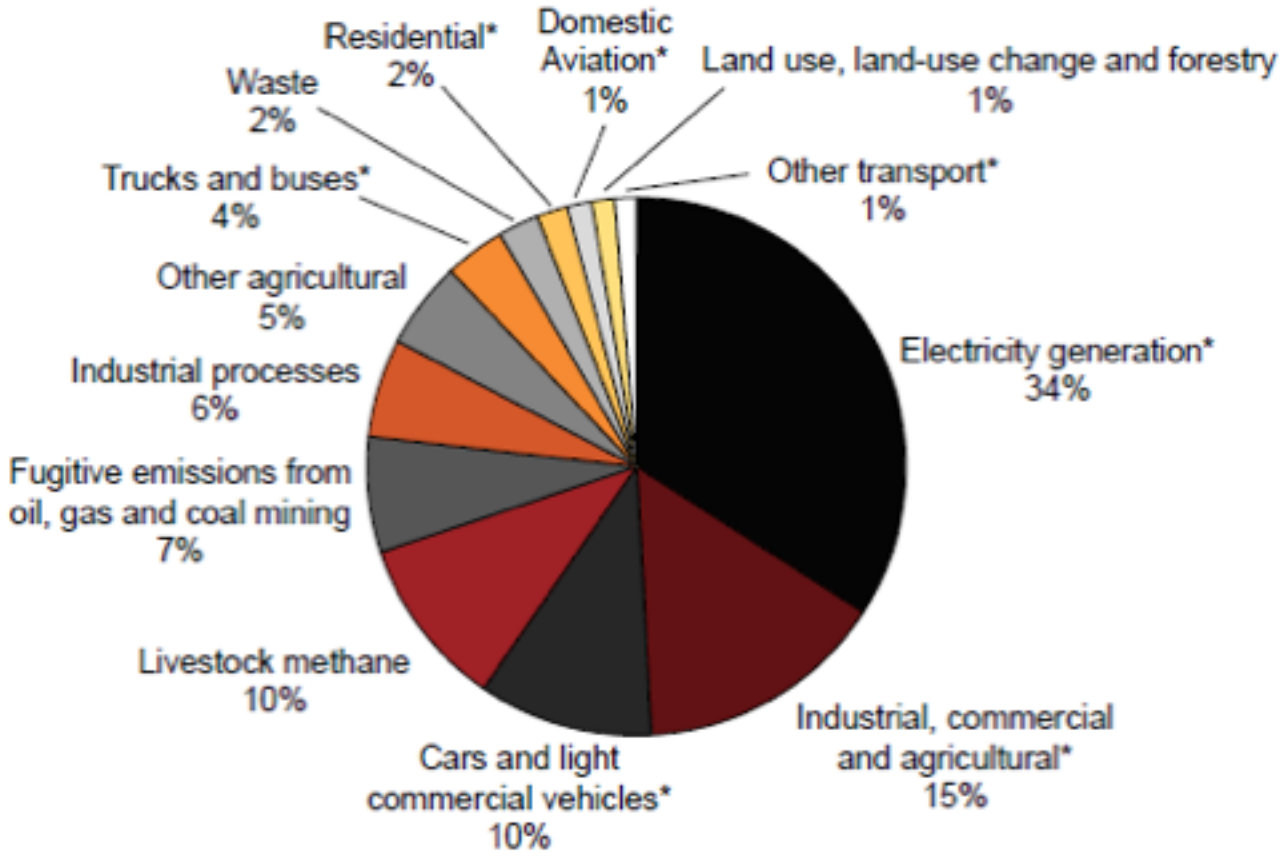
- **Faster frequency response services;**
- **Inertia services;**
- **System strength services; and**
- **Demand response services**

Incentivise low-emissions technology

- **ARENA;**
- **CEFC;**
- **Emissions reduction policy**

Overemphasis on electricity

Figure 1.1: Australia's emissions come from a range of sources
Per cent of total greenhouse gas emissions, 2012-13



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