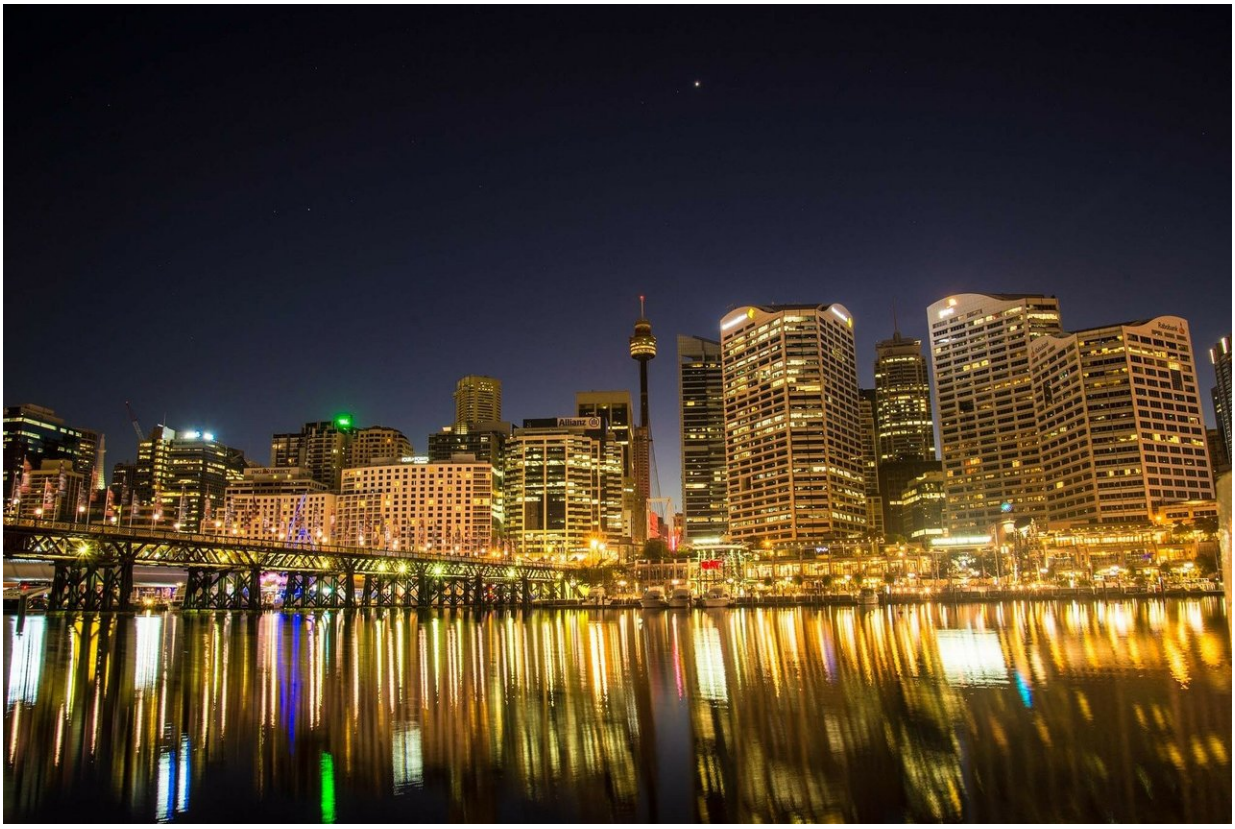
How Australia can be a carbon-neutral nation by 2050

March 4 2019, by Anna Skarbek And Anna Malos



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Strong action on climate change is vital if Australia is to thrive in the future. Lack of consensus on climate policy over the past two decades has cost us dearly. It has harmed our natural environment, our

international reputation and our economic prospects in a future low-carbon world.

The next two years will be crucial if Australia is to meet its commitment, along with the rest of the world, to limit greenhouse gas emissions and avoid the worst ravages of global warming.

In 2015, nearly all nations signed the Paris climate agreement. They pledged to limit global warming to well below 2°C and to reach net zero emissions. By our calculations, Australia needs to reach net zero before 2050 to do its part.

As a first step, Australia has committed to reduce its total emissions by 26-28% below 2005 levels by 2030. Under the Paris Agreement it will have to submit progressively stronger targets every five years. Unfortunately, Australia is not yet on track to meet even its comparatively modest 2030 goal.

Falling short

Analysis by ClimateWorks Australia found that although Australia's emissions have fallen by around 11% economy-wide since 2005, emissions have been steadily climbing again since 2013. In 2013 Australia emitted the equivalent of 520 million tonnes of carbon dioxide. By 2016 that had bounced back up to 533 million tonnes.

While some parts of the economy cut emissions at certain times, no sector improved consistently at the rate needed to hit the overall 2030 target.

Emissions are still above 2005 levels in the building, industrial and transport sectors, and only 3% below in the electricity sector, based on 2016 figures, the latest available. The overall fall was mainly delivered

by the land sector, thanks to a combination of reduced land clearing and increased forestation. Increased energy efficiency and the growth of renewable energy also made modest contributions.

Unfortunately, progress in reducing emissions has now stalled in most sectors and reversed overall.

How fast should we be cutting emissions?

We calculate that Australia needs to double its emissions reduction progress to deliver on the 2030 target. We will have to triple it to reach net zero emissions by 2050.

Hitting net zero by 2050 means going much further than the Coalition government's 2030 target of 26-28%, or the 45% proposed by federal Labor. Australia would need to cut total emissions by 55% below 2005 levels by 2030 (the middle of the range recommended by the Climate Change Authority) to get there without undue economic disruption.

Fortunately, there are enough opportunities for further emission reductions in all sectors to meet our Paris targets. We can probably do better than that, given the falling costs of many key technologies.

The gap to the 2030 target could be more than covered by further activity in the land sector alone, or by the electricity sector alone, or by the combined potential of the building, industrial and transport sectors. Emission reductions from energy efficiency – through better buildings, vehicles and white goods – can even save money in the long term.

Clearly, not all sectors have the same potential to reduce emissions based on current technological progress, but all have significant room for improvement.

We calculated that:

- the electricity sector was on track to cut its emissions by 21% by 2030, but could cut them by nearly 70%
- transport sector emissions are set to be 29% above 2005 levels by 2030, but with projected technology improvements could be 4% below
- the land sector is set to hit 45% below 2005 levels by 2030, but with more support for planting could be 103% below – well into "negative emissions" territory. The land sector would then be sucking up carbon and making up for emissions from other sectors.

How do we get there?

To ensure a smooth, cost-effective transition to a net-zero-emissions economy by 2050, some sectors will need to do more sooner, to avoid putting too much onus on other sectors where emissions savings are harder and more expensive.

This will require major upgrades to Australia's current policy settings. Since 2013 Australia's efforts to cut emissions have focused largely on the land sector via the Emissions Reduction Fund (ERF) and the electricity sector through the Renewable Energy Target. With the ERF due to run out of funds soon and no clear energy policy even as our ageing power stations shut down, policy certainty is urgently needed in both these areas to encourage investors.

Renewable energy is powering ahead and starting to tap into Australia's huge potential in clean energy resources. However, ongoing policy support is needed to ensure our energy remains affordable and reliable through the transition.

Despite the importance of the electricity and land sectors, we need emission reductions throughout the economy. Fortunately, there is plenty that Australia can do to cut emissions further, in many different ways:

- in the land sector through revegetation and forestation
- in electricity by increasing renewables and phasing out coal
- in industry by bolstering energy efficiency, fuel switching and reducing non-energy emissions
- in transport by introducing vehicle emission standards and shifting to electric vehicles and low-carbon fuels
- in construction by increasing standards for buildings and appliances.

With well-targeted policies across all sectors of the economy, we can get back on track and meet our Paris targets.

Australia's states and businesses are recognising how much they can and should do. For instance, 80% of Australia's emissions are in states and territories with goals to reach net zero emissions by 2050, while many large companies and universities are pledging to be carbon-neutral or use 100% renewable energy.

There is more than enough opportunity, but we have to act now.

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