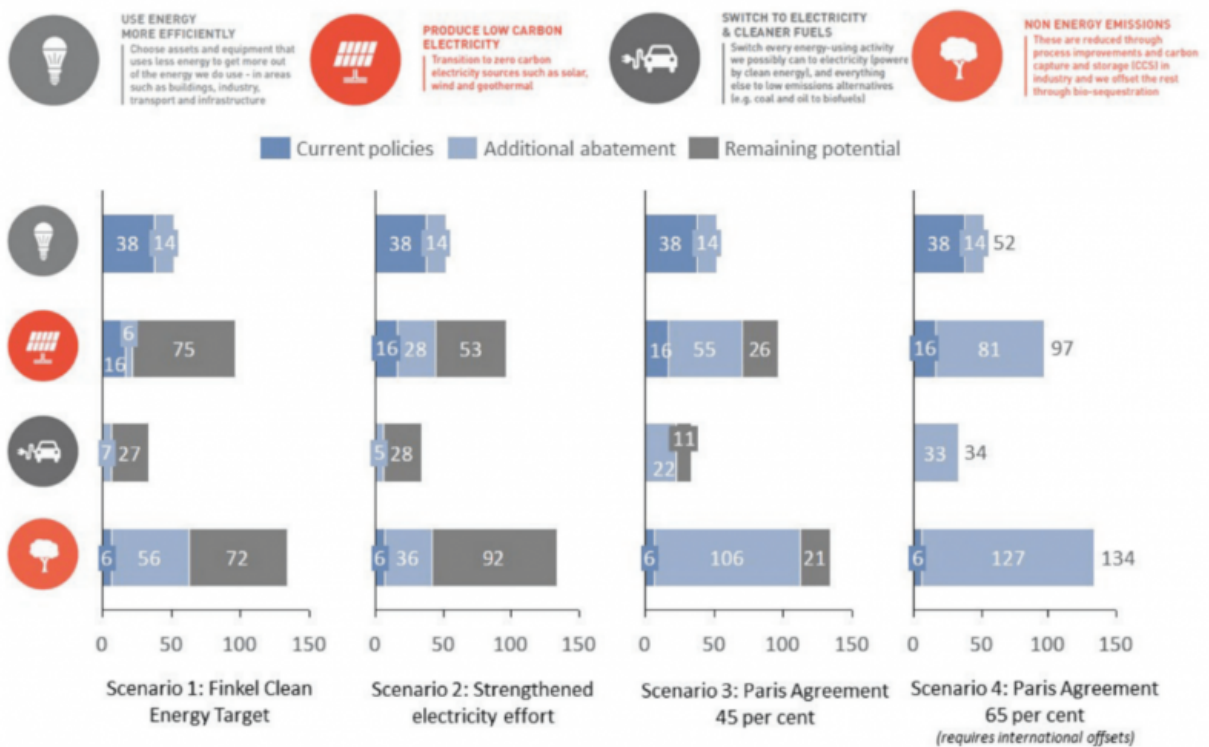


The electricity sector in Australia needs to cut carbon by 45% by 2030

July 12 2017, by Amandine Denis



Expected emissions reductions by 2030 (in megatonnes CO₂ equivalent) in four different policy areas under four different electricity scenarios. Credit: ClimateWorks Australia, Author provided

Our [new ClimateWorks Australia report](#), released today, shows that the electricity sector needs to deliver a much greater cut than the 28%

emissions reduction modelled in the Finkel Review if Australia is to meet its overall climate target for 2030.

When Australia's energy ministers [meet this Friday](#) to discuss (among other things) the Finkel Review released last month, they will hopefully consider its recommendations for the [electricity](#) sector in the broader context of developing a long-term national climate policy.

According to our analysis, the electricity sector should cut emissions by at least 45% by 2030, as part of a move towards net zero emissions by 2050. This is well beyond current government policies, but is crucial if Australia is to meet its climate obligations in an economically responsible way.

Climate commitments

The federal government has agreed to cut emissions by 26-28% on 2005 levels by 2030. As a signatory to the Paris climate agreement, Australia has also committed to global action to limit global warming to well below 2°C – and as a developed nation, that means reaching net zero emissions across the whole economy by about 2050.

Our analysis suggests that the electricity sector will need do a larger share than other sectors of the economy, because it has more technical potential to do so and can support emissions reductions in other sectors. In practice, reaching net zero emissions means shifting from coal and other fossil fuels to zero- or near-zero-carbon energy sources such as renewable electricity and bioenergy. Coal or gas will only be feasible if fitted with carbon capture and storage. Achieving near zero-emissions electricity is a key step in the transition to a net zero-emissions economy, not least because of the future importance of electrically powered transport.

The good news is that our [previous research](#) has shown that this is achievable with existing technologies, thanks to Australia's rich renewable resources.

CSIRO and Energy Networks Australia have also shown that the electricity sector can reach zero emissions by 2050 while still maintaining security and reliability, and that this will actually [save households an estimated A\\$414 a year compared with business as usual](#).

The 2030 target matters

Cutting emissions faster now will make it easier and less economically disruptive to reach net zero by 2050. Yet the latest government emissions projections forecast that Australia's emissions will grow by 9% by the end of the next decade, from [543 megatonnes of carbon dioxide equivalent \(CO₂e\) in 2016](#) to [592Mt CO₂e in 2030](#).

If the impact of existing policies (such as the [National Energy Productivity Plan](#), the [phase-down of hydrofluorocarbon emissions](#), and state renewable energy targets) are taken into account in the projections, emissions could drop to 531Mt CO₂e in 2030. This still leaves an 82-megatonne gap to reach even the minimum [emissions reduction](#) target of 26% percent below 2005 levels.

Time to do more

Our report, [Power Up: Australia's electricity sector can and should do more to deliver on our climate commitments](#) shows that Australia's electricity sector can cut emissions by up to 60% below 2005 levels by 2030. This is nearly six times more carbon reduction than is expected to be delivered by current policies, and could by itself fill the whole emissions reduction gap.

However, should the electricity sector only make a 28% reduction in its emissions, in line with the Finkel analysis, then it would only reduce emissions by 6Mt CO₂e beyond current policies, leaving most of the effort of reducing emissions to other sectors such as buildings, transport, industry, waste and land management, where cutting carbon is likely to be significantly more expensive.

To reach this level of emissions reductions in the land sector, for instance, we would need to increase forest planting by more than three times the amount estimated to be delivered by the federal government's [Emission Reduction Fund](#) in 2018, its peak year.

In its defence, the Finkel Review focused exclusively on the electricity sector and its analysis did not look at the impact that limited change in this sector would have on the required effort from other parts of the economy.

We therefore modelled various other scenarios, including one in which the share of renewables increases from 40% to 50% by 2030. This could enable the electricity sector to achieve double the carbon reductions delivered by efforts in line with the Finkel review.

Our third and fourth scenarios are aimed at meeting the [more ambitious emissions target range recommended by the Climate Change Authority](#), corresponding to a more progressive and therefore economically responsible trajectory towards net zero emissions. This requires Australia achieving a 45-60% reduction in emissions from the electricity sector by 2030.

The long view

Like the Finkel Review, our report recommends that the [federal government](#) defines a specific emissions-reduction policy for the

electricity sector, which in Finkel's case was the Clean Energy Target. This will help to ensure a smooth shift to reliable, affordable, low-carbon energy.

Our report outlines the key principles that Australian governments need to consider in order to make effective decisions on climate change policy, with a view to achieving net zero emissions by mid-century.

These include providing clear long-term direction to support the industry's investment decisions, and ensuring that decision-making to 2030 is compatible with reaching net zero emissions by 2050.

Climate policy should also be flexible so that it can be scaled up to meet future targets and allow a range of solutions, including the uptake of emerging technologies to make the transition faster and cheaper.

Given that net zero emissions is the ultimate goal, we need to move faster and achieve greater emissions reductions by 2030 to help deliver a fully decarbonised electricity system, on time and on budget.

This article was originally published on [The Conversation](#). Read the [original article](#).

Provided by The Conversation

Citation: The electricity sector in Australia needs to cut carbon by 45% by 2030 (2017, July 12) retrieved 23 June 2024 from <https://phys.org/news/2017-07-electricity-sector-australia-carbon.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.