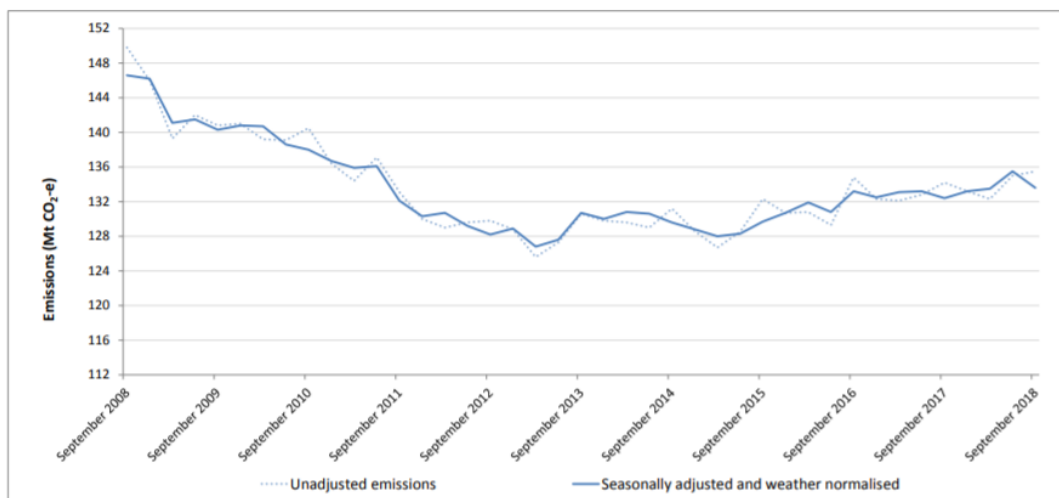


Zali Steggall Policy on Climate and Energy, 2019

Most Australians believe, as I do, that it is time Australia finally acted with conviction on climate change. For our children and grandchildren, we cannot just let Australia's emissions continue to go up. That's what they have done over the last six years, by the government's own data: see Figure 1.

Figure 1: Australia's quarterly emissions, 2008 to 2018¹



The only question is what we should do about it. We have to be responsible about our economy and jobs. We can't waste time or money on ineffective action.

We need to listen to the experts and push for wise policies for global, national and local action. If we act now, we can limit the worst impacts of global warming *and* build a strong economy for Australia's future.

Let's future-proof our economy and environment with responsible climate change policies

Here's what it will take:

Understand the global picture

1. Respect what the science is telling us
2. Be a genuine force for global action to limit global warming

National policy certainty

3. Reinststate an independent national climate change body to guide our responses to the science
4. Take full advantage of Australia's world-leading renewable energy resources
5. Accelerate the shift to clean transportation
6. Progress policies for heavy industry, forestry and agriculture

Make a difference locally

7. Ensure Warringah's planning and infrastructure are adapting to a changing climate
8. Support Warringah's growing clean energy sector
9. Set job-creating transition plans in the cities and the regions

The details of these policies are set out below. I have gone into this issue in more detail than others, as it is so important to our electorate.

The good news is that, yes, a win-win is possible: for the environment and for the economy. Investing in low emission solutions is just that: an investment – in our economic future, and as insurance against the severe human, economic and environmental costs of global warming.

UNDERSTAND THE GLOBAL PICTURE

Global warming is a global threat, accepted by global science, and demanding a global response. Australia must be part of that.

1. Respect what the science is telling us

Science has to be the bedrock of our response to the threat of global warming. That science has been tested and accepted by every credible climate and economic agency in the world – the Intergovernmental Panel on Climate Change (the IPCC)², the US National Oceanic and Atmospheric Administration, NASA, the European Environmental Agency, the World Bank, and our own Bureau of Meteorology and CSIRO.

Margaret Thatcher accepted this science way back in 1990. In her speech at the second World Climate Conference, Thatcher recognised that “The danger of global warming is as yet unseen, but real enough for us to make changes and sacrifices, so that we do not live at the expense of future generations.”³ Ever since, the UK's response to global warming has been bipartisan.

The IPCC says that global average temperatures have already risen by 1°C and are likely to rise by 1.5°C.⁴ At this level, though there will be serious climate effects (as we are already experiencing), our natural and economic systems will be able to adapt.

Beyond 1.5°C, there will be damaging, irreversible and unpredictable changes to the earth's climate systems.⁵ To avoid those changes will require “rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings) and industrial systems”.⁶

2. Be a genuine force for global action

Climate change is a global problem that needs global action. We need an international agreement to do so – as we had to address acid rain and threats to the ozone layer in the late 20th century.⁷

Australia must be a genuine part of global action. Our emissions, per capita, rank with the US as the highest in the world.⁸ We have the wealth, the natural resources, and the technology to do what's needed. And we have so much at risk: our reefs and coastal ecologies, our water basins and agriculture, our coastal lifestyles and health.

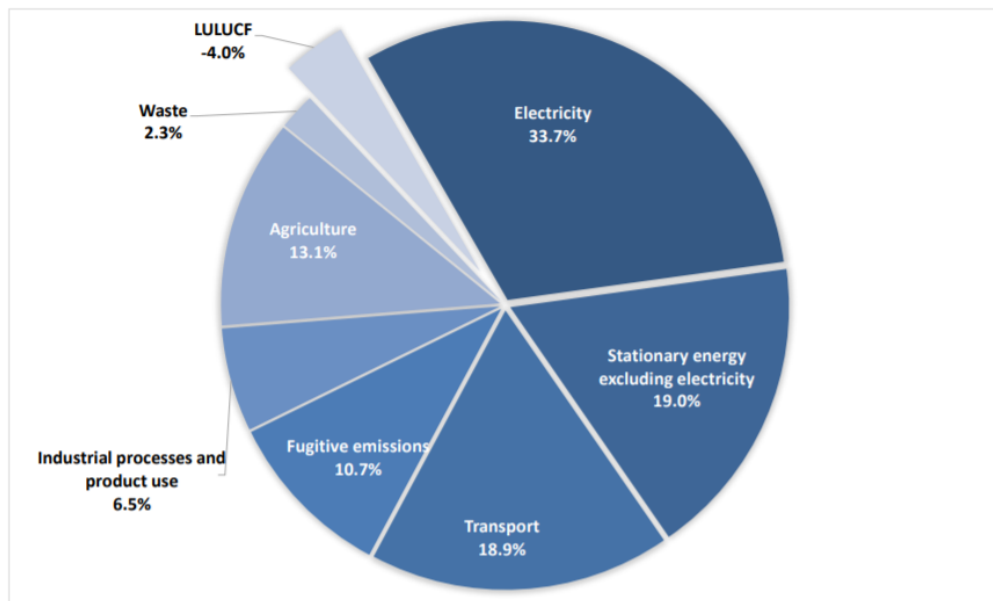
We also have the very real prospect of humanitarian disasters in low-lying countries on the Pacific and Indian Oceans, in particular Bangladesh and the Pacific Islands, and refugees from those countries that may well need our assistance.

Australia is a middle power with a proud international history. We have been effective participants on trade, on security issues, and on other environmental issues. We must join the international community on this, our greatest threat.

NATIONAL POLICY CERTAINTY

If Australia is to be part of the global response to global warming, we will need to take action across multiple industries: energy, transport, construction, agriculture, forestry, mining and mineral processing: see Figure 2. In all these industries, there will need to be more research, investment and use of new technologies, under stable national policies. The more stable the policies, the lower the investment risk, and the lower the cost of energy (and other transitions) to business and households.

Figure 2: Emissions contribution by sector, Australia, year to September 2018⁹



3. Reinstate an independent climate change body to guide a clear, long-term national policy

To do this, we need a trusted, independent national body with a clear mandate to guide Parliament on global climate science, local impacts, responsible global commitments, and the most efficient strategies to meet those commitments, and on our progress.

This permanent national body must have the powers and resources to recommend and coordinate an effective and efficient national climate change and energy policy.

That body must be one that we can trust. It must be like a 'Reserve Bank' for climate change, to take politics out of the science and let business and governments get on with their jobs.

4. Take full advantage of Australia's world-leading renewable energy resources

Energy is Australia's largest source of emissions (see Figure 2) so we must act on that as a priority.

Taking action on climate change means we can take advantage of the most abundant renewable energy resources in the world. Australia has the highest solar radiation per square metre of any continent, and so our solar plants can operate more efficiently for more of the year than almost anywhere else on Earth.¹⁰ We also have rich wind and tidal resources, and our existing hydro stations in the Snowy Mountains and Tasmania.

Where that energy is available, renewable energy plants are now proving themselves to be cheaper¹¹, safer¹², cleaner and more reliable¹³ than fossil fuel energy. Already, building a renewable energy and storage plant is cheaper to build and operate than coal and gas-fired power plant.¹⁴ They are also faster to build: 1 to 3 years compared to 5 to 7 years for a coal-fired power station.¹⁵ In 7 years' time, renewables and batteries will be even cheaper, and the world will be even more determined to reduce emissions.

So, we should harness our natural resources for renewable energy, and we are. Australia is already installing renewable energy (solar photovoltaics and wind) with great success.¹⁶ Our residential solar panels have cut energy costs and emissions for over 2 million households – most recently using the global-standard PERC technology developed at UNSW.

To continue that push, we need to confirm our targets for renewable generation, for energy storage, and for new innovation investment. These policies will support renewables as a job-creating, clean, safe, affordable and reliable source of power – nationally and in Warringah.

a) Policies for renewable energy generation

The independent Climate Change Authority would set renewable energy targets that support our national commitments to reduce emissions, and to supply affordable, reliable energy. Our existing Renewable Energy Target (RET) has driven the uptake of renewables so far. However, the political deadlock has delayed its replacement. Either a new RET or the proposed National Energy Guarantee could work. We must take the advice of the Australian Energy Market Operator (AEMO) and the independent Climate Change Authority to break that deadlock.

These policies must provide for the phasing out of all coal-fired generation in Australia as plants reach the end of their planned economic life. No new coal-fired plants should be built, and retired plants should be replaced by a portfolio of renewable generation, storage and transition. This is what AEMO has advised is the lowest-cost transition plan for Australia.¹⁷

b) Policies for energy storage

Renewable power must be delivered reliably across the grid. Many technologies are needed, but the most important is storage.

AEMO says that our energy system will be most reliable and at lowest cost when between a fifth to a quarter of Australia's energy needs are held in reserve (i.e. storage) at any time.¹⁸ That stored energy can then be drawn on when there is a surge in demand in any one area, or across the whole grid.

Many types of storage can contribute to that target, from large scale batteries like the Tesla battery in South Australia, pumped hydro like Snowy 2.0, and smaller batteries at

homes and businesses. We need policies to support small businesses and families having effective storage capacity with batteries.

c) Policies for investment

The Clean Energy Finance Corporation (CEFC) and ARENA both need to be adequately funded to ensure there is continuing new energy investment and innovation in Australia. ARENA in particular fills a gap in new technology finance and is able to support Warringah's emerging renewable energy industry.

d) Policies for transitioning energy exports from fossil fuels to clean energy and services

There is no doubt that, over time, a world seeking to cut its emissions will seek less of our coal, even our high quality black thermal coal. For example, the *Financial Times* tells us that "investment in coal power in India has ground to a near halt, as many new plants have fallen into deep financial distress in the face of competition from low-cost renewable energy."¹⁹

We are a resources and energy nation, not a coal nation. Our traditional strength in mining will still be called on. Renewable energy and EVs rely heavily on cobalt, lithium, nickel and copper. Australia is in the top four global producers of all of them, leading *The Economist* to laud Australia as "the new frontier for battery minerals."²⁰ We should be pursuing these exports as well as processing more of these minerals onshore.

Then there is hydrogen – pure energy that CSIRO and others are showing may well be our biggest clean energy export, and which Australia can produce more cheaply than other nations.²¹ With better export and R&D policies, there can be more opportunities to export Australian technologies and services. A notable Australian success story is Queensland company Tritium, that has the biggest share of super-fast electric vehicle chargers in the USA, the UK and Norway, and exports 98% of its product.²²

5. Accelerate the shift to clean transportation

Electric vehicles and the opportunities they represent for Australia have been absent in the overall debate until recently. Apart from reducing emissions, EVs will:

- be up to \$1700 a year cheaper to run and maintain than petrol/diesel vehicles²³
- reduce air particulate pollution to make our communities healthier, and
- improve our national security by reducing our dependence on imported oil.²⁴

The sooner Australia secures these very real benefits, the better. That means a fast acceleration in our take up of EVs. Currently, due to their relatively high up front cost, they make up only 0.2% of our market. But this will change. As Australia now imports all of our vehicles, global car makers will have the biggest say in what cars we drive. It is worth noting that most have plans to phase out petrol and diesel vehicles, with Germany and other countries imposing bans from 2030 or 2040.²⁵

Because many of these benefits are public rather than private benefits, it is in our community interest for government policy to help accelerate the uptake and infrastructure for EVs in Australia:

- a) Fuel emissions standards for importers.** We need sensible fuel emissions standards for

all vehicles. Carbon and particulate emissions from Australian cars are double the global average. We should reduce our average emissions per km travelled from our current 182 grams down to 105 grams, in line with the US though still well behind Europe.²⁶

- b) Co-fund charging infrastructure.** We need a national electric vehicle highway plan that identifies areas of key investment and then encourage the co-funding of required charging infrastructure. Companies like the NRMA are already installing their own fast charging networks across NSW and the ACT.²⁷ We should build on this initiative.
- c) Tax reform for zero emissions vehicles.** Due to their emission and public health benefits, EVs should receive preferential treatment under import tariffs, fringe benefits tax, and luxury car taxes.
- d) Government fleet procurement.** All levels of government should take the lead by purchasing large quantities of EVs for government fleets. By doing this we can reduce the risk for importers and so accelerate the introduction of new EV models to our market.

6. Progress policies for agriculture, forestry and heavy industry

These three sectors are the biggest sources of emissions after energy and transport, and there is no clear policy yet in place for them. The renewal of Whyalla steel manufacturing with renewable energy by Liberty Steel shows what is possible in heavy industry.²⁸ In forestry, Australia has the opportunity to build biodiversity corridors and offset the bulk of Australia's emissions. In agriculture, Australia has an opportunity to continue to provide food and fibre to the world. Our farmers will be asked to reduce emissions from their production at the same time as coping with more natural disasters and shifting regional climates.

We need to support adaptation in these three sectors and ensure that productivity and profitability can be sustained with a changing climate, as well as progressing strategies to reduce long-term environmental and societal impacts. As part of this there must be a focus on deforestation management and reduction, accelerating replanting and sustainable agriculture practices that meet the needs of a growing population.

MAKE A DIFFERENCE LOCALLY

Whilst Warringah's shorelines may see the negative impacts of climate change, our workforce is likely to benefit from our economy's response to climate change.

7. Support Warringah's growing clean energy sector

Manly alone is already home to 200 specialists in renewable energy infrastructure and finance, managing over \$2bn of investment across Queensland, NSW and Victoria – enough to power about 500,000 homes. Many more local businesses are installing renewable and smart energy technologies across our electorate. I would support this emerging sector by working with its leaders to establish an innovation hub in Brookvale to help unleash their full potential.

8. Ensure Warringah's planning and infrastructure are adapting to a changing climate

Insurance companies and the federal government already have clear maps of the climate risks to our coastal regions, especially low-lying areas. The planning for Warringah's built

environment, infrastructure and natural reserves must take this science into account.

9. Set job-creating transition plans in the cities and the regions

Transition to a low emission economy will create jobs for Australia's future. For example, the renewable energy sector is expected to provide 56,000 direct jobs by 2030²⁹. In comparison, only about 14,000 direct jobs come from mining coal and using it for energy production in Australia³⁰. We can build and install renewables anywhere, so regional communities can benefit from new jobs and economic growth as well. Renewable energy is job-creating energy. New expertise will be needed for jobs in our low emission future. We will need to support TAFE courses for building, installing and maintaining low emission energy and transport technologies.

* * *

We must also consider what this investment in our future is worth.

There have been at least six studies into the cost of climate action in Australia. These are the Stern Review (2006), the Business Roundtable on Climate Change, 2006 (BP, IAG, Origin, Swiss Re, Visy and Westpac), the Garnaut Review (2008, updated 2011), ClimateWorks (2014), and the CSIRO's Australian National Outlook (2015).

All of these studies have made it absolutely clear that the investment needed is sizeable but nonetheless tiny compared to the \$1.7 trillion Australian economy and the cost of inaction on climate change. It is important to note, too, that these studies do *not* calculate the potential value to the economy of new low-emission technologies.

"We are at a unique stage in our history. Never before have we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about that." David Attenborough, 2017.³¹

Zali Steggall, Candidate for Warringah, 2019

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- ² The IPCC science has to be approved by all 195 member countries – including Australia and the US. So they are very conservative in what they say. Every five or six years since 1990 the IPCC has set out the science and forecast the future rate of global warming. Every time their forecast has underestimated the pace of warming.
- ³ <https://www.scientificamerican.com/article/iron-lady-took-strong-stance-on-climate-change/>
- ⁴ [IPCC Special Report 2018](#), Summary for Policy Makers, A.1
- ⁵ [IPCC Special Report 2018](#), Summary for Policy Makers, B.3
- ⁶ [IPCC Special Report 2018](#), Summary for Policy Makers, C.2
- ⁷ To stop acid rain, the US government amended its Clean Air Act in 1990 to phase out NOx and SOx emissions from energy plants. To protect the ozone layer, the international Montreal Protocol agreed to the phasing out of CFCs. Why did they both work? Because once a limit was set on the emissions that caused the problem, companies had a financial incentive to find a solution, which they did.
- ⁸ https://data.worldbank.org/indicator/en.atm.co2e.pc?view=map&year_high_desc=true
- ⁹ Australian Government, [Quarterly Update of Australia's National Greenhouse Gas Inventory: September 2018](#)
- ¹⁰ Geoscience Australia, [Solar Energy](#), accessed March 2019. In fact, Australia receives an average of 58 million PJ of solar radiation per year, approximately 10 000 times more than its total energy consumption.
- ¹¹ CSIRO and AEMO, [GenCost 2018](#) p 5
- ¹² About 1,070 people die in coal mining accidents around the world each year, and another 25,000 (no misprint) die from 'black lung disease'. In the US alone, 105,000 coal miners have died since 1900.
- ¹³ Batteries can respond to grid outages and peak demand immediately – gas and coal turbines, new and old, don't do the job half as well. Projects like the Hornsdale Tesla Battery have shown us the efficacy of renewables with storage in overcoming reliability issues.
- ¹⁴ Climate Council, [End of the Road for Coal](#), 2018 page 9
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- ³⁰ ABS 8415.0 - Mining Operations, Australia, 2014-15 state 39,000 people are employed in coal mining jobs. Since 75% of our coal is exported, that would make c.10,000 people mining coal for Australian energy generation. We have also allowed for an average 200 jobs at each of Australia's 21 coal-fired power plants.
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