

# PRIMED FOR ACTION: A RESILIENT RECOVERY FOR AUSTRALIA

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# Key findings

## 1

**Politicians have listened to expert scientific advice on COVID-19 and acted. It is urgent they do the same with climate change.**

- › COVID-19 has shown that effective action is possible when politicians listen to scientific experts and act swiftly on their advice.
- › A co-ordinated response to COVID-19, with co-operation across all levels of government, has so far slowed the spread of the coronavirus. This kind of bipartisanship is needed in tackling climate change.
- › Governments must use economic stimulus measures to bring about rapid and permanent emissions reductions. If we miss this opportunity, we are bequeathing a dangerous world to our children and grandchildren.

## 2

**A resilient recovery from the coronavirus must prepare Australia for the next major threat - climate change. The potential for job creation in the renewables sector is substantial and can set our country up for the 21<sup>st</sup> Century.**

A goal of net zero emissions must include:

1. Replacing all fossil fuels with other energy sources or processes.
2. Meeting our energy needs with renewable electricity.
3. Stepping up as a global exporter of zero emissions energy, technology and expertise to help the rest of the world reduce their emissions with Australian power, products and services.
4. Taking action on the land and coasts to build future resilience to climate threats.

# 3

**Gas has no role to play in building a prosperous, resilient economy for the future. It is volatile, dangerous and unnecessary.**

- › Gas is price volatile, driving energy prices for Australians. Investing further in gas risks locking in huge investment losses, stranded assets and environmental harm.
- › Emissions from the extraction, processing and export of gas have been the main driver behind Australia's emissions staying so high. These emissions are likely underestimated.
- › Gas projects cannot provide sustainable long-term employment opportunities because of this volatility.

# 4

**Australians are already living with dangerous climate change having experienced record-breaking drought, the Black Summer bushfires and the third mass bleaching event of the Great Barrier Reef in the past five years.**

- › Australia is the world's 14<sup>th</sup> highest annual emitter of greenhouse gases. This means that 181 countries do less to drive global climate change each year than Australia.
- › Australia is one of the sunniest and windiest countries in the world and has a substantial competitive advantage.
- › The recovery from the COVID-19 crisis presents a once-in-a-lifetime opportunity to prime Australia to be a renewables-led powerhouse and to address climate change.

# THE FOUR PILLARS OF CLIMATE ACTION

## REPLACE ALL FOSSIL FUELS



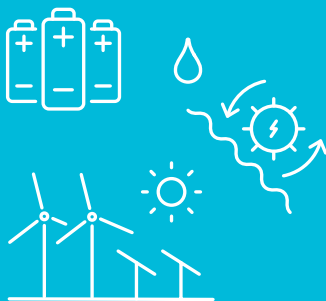
All energy sources or processes requiring fossil fuels, including all transport and off-grid energy use and the few uses of fossil fuels outside the energy sector, must be replaced.

## TAKE ACTION ON THE LAND & COASTS



Taking urgent action on climate change is our best bet at ensuring rural, regional and coastal communities have everything that they need to thrive in the coming decades.

## POWERING AUSTRALIA WITH RENEWABLE ENERGY



Meeting all our future energy needs, including demand added from replacing all existing fossil fuels, with renewable electricity. Renewable plans must aim higher than 100% of today's demand to meet this additional load.

## STEP UP AS A GLOBAL EXPORTER



As the sunniest and windiest inhabited continent, Australia has a central role to play in supplying zero emissions energy, products, minerals and services to our neighbours and the rest of the world.

# Introduction

COVID-19 has fundamentally reshaped the world we know, taking a horrendous toll on human health and the economy. While the response has not been perfect, Australia has so far managed this crisis far better than many comparable countries. Federal, state and territory governments have been relying on expert, evidence-based advice to lead their response to the crisis. This crisis is far from over. But another, more long-term crisis remains an urgent threat to humanity: climate change. Australians only need look back at the Black Summer of 2019-20, characterised by deadly bushfires driven by climate change. And while the world has been focused on the devastating public health crisis of COVID-19, the Great Barrier Reef has experienced its third major bleaching in five years.

This short report, 'Primed for Action: A Resilient Recovery for Australia' outlines the Climate Council's response to the COVID-19 crisis. The measures that have been required to manage COVID-19 have proved themselves to be entirely justified, but they have not been without their consequences. As Australia reboots its economy on the other side of this crisis there is a remarkable potential for that economic recovery to occur through climate action. A gas-led economic recovery is poorly suited to the task at hand. A reorientation toward net zero emissions is a fundamental requirement of Australia's COVID-19 recovery to deal with the two crises of economic recovery and climate change. The Climate Council has also commissioned modelling work, which will be released in late June 2020.

In this short, thought leadership piece, we briefly describe how Australia is well primed for action and a resilient recovery from COVID-19. To embrace this opportunity, Australia must set its sights on recovery options that are oriented toward a global goal of net zero emissions as soon as possible.

For Australia, this will mean:

- › Replacing all fossil fuels with other energy sources or processes, including all transport and off-grid energy use, and the few uses of fossil fuels outside the energy sector.
- › Meeting all our future energy needs, including those needs created as a result of replacing all existing fossil fuel consumption, with 100% renewable electricity.
- › Stepping up as a global exporter of zero emissions energy, technology and expertise to help the rest of the world reduce their emissions with Australian power, products, and services.
- › Taking action on the land and coasts to build future resilience to climate threats and ensure that Australians can continue to have productive lives and livelihoods.

# 1. Early warnings

This past year of living in Australia has shown the critical importance of heeding early warnings. Australia's approach to COVID-19 has been marked by expert led policy, with decision makers and the community adopting recommendations from health authorities. So far, Australia's response has been successful in limiting the harm of COVID-19.

In April 2019, Emergency Leaders for Climate Action, 23 former heads of Australian fire and emergency services organisations—including the heads of fire services in all eight states and territories—warned the Prime Minister that the fire season of 2019-2020 was shaping up to be extremely dangerous (Emergency Leaders for Climate Action 2019). Their pleas to meet with the Prime Minister were rebuffed (Cox 2019).

Australia's Black Summer was unprecedented in scale and harm. Nearly 80 percent of Australians were affected either directly or indirectly by the bushfires (Biddle et al. 2020). Thirty-three Australians lost their lives and an estimated 417 more died from the burden of toxic smoke (Borchers Arriagada et al. 2020; Climate Council 2020a). At least one billion animals were killed by the bushfires, 800 million in New South Wales (University of Sydney 2020).

The 2019-20 season's unprecedented fires burned through more than 17 million hectares of the Australian mainland (AFAC 2020; Richards, Brew and Smith 2020). An unprecedented 21 percent of Australian temperate broadleaf and mixed forests was burnt (Boer, Resco de Dios, and Bradstock 2020), far more than the annual average two percent per year. The Gospers Mountain fire was the largest single forest fire ever recorded in Australia, burning more than 500,000 hectares. Catastrophic fire danger ratings were experienced at locations and times of the year where they have never occurred before (Climate Council 2020b).

But Emergency Leaders for Climate Action were not the first to make such warnings about escalating climate risks.

Respect for experts' early warnings is central to ensuring the safety of Australians.



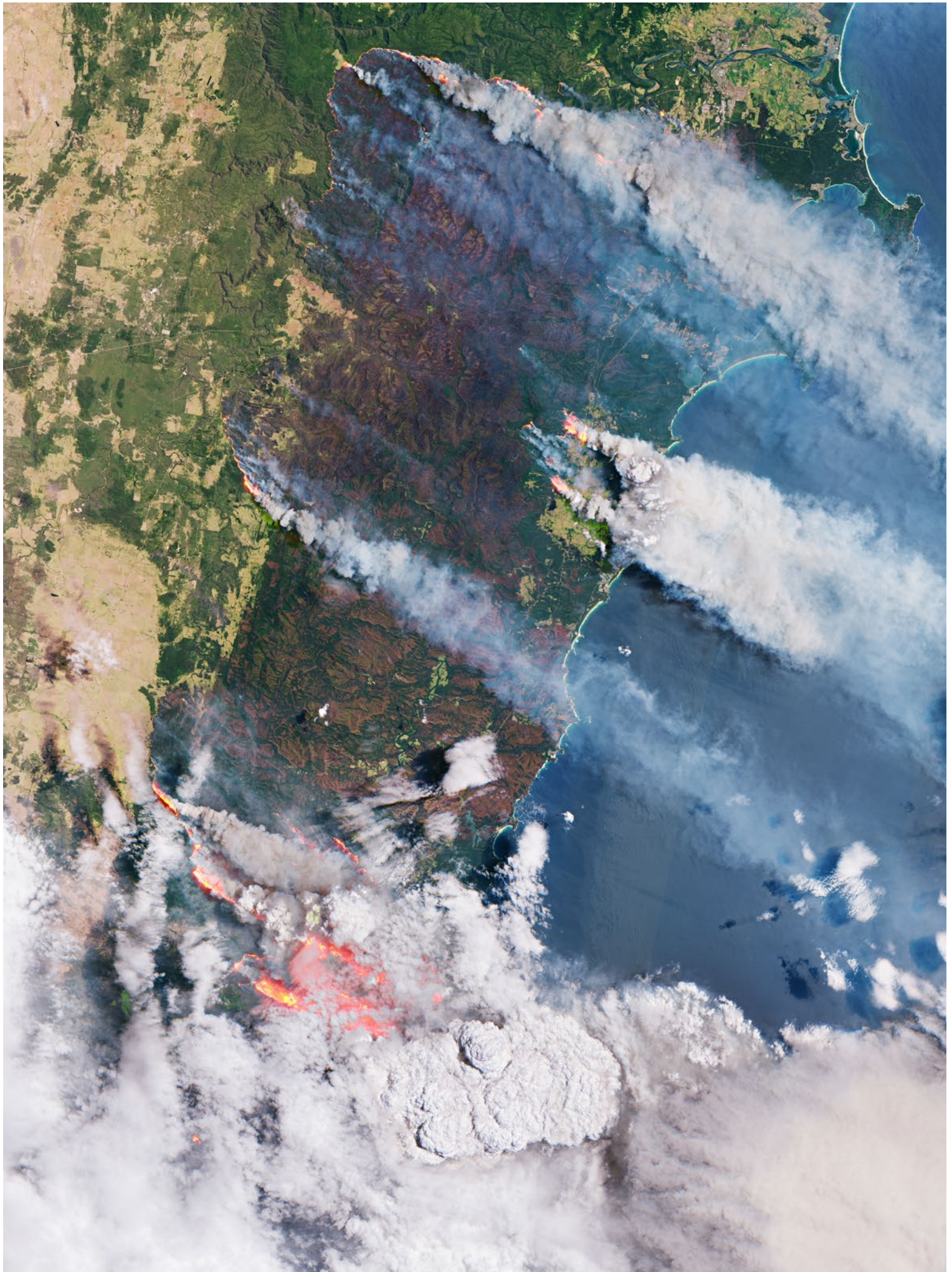


Figure 1: Aerial photo showing fires burning on the east coast of Australia, 31 December 2019.



The first warnings about the link between the burning of coal, oil and gas—dangerous fossil fuels—and its impact in elevating fire risk in Australia date back more than thirty years (Beer, Gill, and Moore 1988). These warnings of increased bushfire risk under climate change have been repeated in expert scientific reports to Australian state and federal governments over the decades since. This includes warnings from the most pre-eminent bodies, such as the Intergovernmental Panel on Climate Change.

Efforts to reduce greenhouse gas emissions from the consumption of coal, oil and gas—a central task in limiting future harm—have been totally insufficient. Where emissions have come down in an individual sector in Australia, like electricity, this has been more than offset by the growth in emissions from the extraction of fossil fuels (Department of Industry, Science, Energy and Resources 2020).

But even before Australia could recover from the 2019-20 bushfire crisis, another crisis arrived in the form of the novel coronavirus, SARS-CoV-2. Globally, millions have been infected, and hundreds of thousands have died (Johns Hopkins University 2020). The necessary response to limit harm from this public health crisis has been to put entire economies on hold to slow the spread, and to varying levels, this has been done across the world and in Australia.

Australia's early, expert-led approach to managing COVID-19 has meant that so far, the country is managing well compared to many other countries. While the response has not been perfect anywhere, a co-ordinated, largely bipartisan approach, with co-operation across all levels of government, has slowed the spread, with Australia's infection and mortality rates relatively low thus far.

Australians are paying the price of governments' failure to act on decades of scientific warnings about climate change and the escalating bushfire threat.

The actions taken to meet this goal have been drastic. The social distancing measures put in place to slow COVID-19 will have permanent effects. These measures have been necessary, proportionate and effective in response to the immediate and serious threat posed by the virus.

It is important not to make too much of the similarities between coronavirus and the crisis of a supercharged climate, but there are important parallels and we can learn from them.

To make the best decisions under both crises, expert advice informed by decades of research isn't simply nice to have. It is essential. Further, while understanding of both threats rests on more than a century of scientific knowledge, successfully dealing with these crises requires learning by doing and deep engagement with experts. Their expertise should be used to design precautionary, collective and evidence-based action, co-ordinated with other trusted leaders in their community across business and civil society and all levels of government.



Figure 2: Social distancing measures under COVID-19 have been necessary to slow the spread of the virus. Here, Western Australian police are escorting new international arrivals to hotels for 14 days of mandatory isolation.



Under COVID-19, Australians have seen promising signs of what is possible from its leaders. Respect by decision-makers for the best available science is exactly what is required to limit the future harm of climate change. It must become a permanent feature of government policy formulation.

During coronavirus, and in the coming years, Australian governments—federal, state and territory, and local—will be forced to spend heavily to restart economies, creating historically-large debts to be repaid in the future.

It is vital that we invest in solutions that meet not only our immediate needs but also those of the future generations who will be repaying these debts. If we miss this opportunity during times of economic stimulus to bring about rapid, immediate and permanent emissions reductions, designed to reach global net zero emissions as soon as possible, then we are bequeathing a harsh and hostile world to our children and grandchildren.

**Figure 3:** The Great Barrier Reef is under strain after facing its third mass-bleaching event in five years (2016 (below), 2017, and now 2020).



These same children and grandchildren will be the ones who are required to repay the debts being incurred to tackle COVID-19. It would be unconscionable for these stimulus investments to be made in industries and infrastructure which exacerbate emissions and increase the 21<sup>st</sup> century climate change challenge.

The effects of burning coal, oil and gas are already with us. Australians have experienced these effects via the record-breaking drought which peaked across vast swathes of the continent through 2019, made worse by a superheated climate (Abram et al. 2020; Hannam 2019), the unprecedented fires of the Black Summer, and the third mass bleaching event of the Great Barrier Reef in only five years (James Cook University 2020).

It is essential that, as one of the world's most climate-vulnerable developed nations, we invest now for the future. We must not squander this historic opportunity to invest in a clean and safe future.

It is critical that investments made to reboot the Australian economy as a result of COVID-19 do not increase emissions, but rather achieve deep and lasting emissions reductions, as well as delivering immediate and sustainable employment.

**Figure 4:** It is critical that investments made to reboot the economy achieve deep and lasting emissions reductions, as well as delivering immediate and sustainable employment.



We have a unique  
opportunity to invest in  
a clean and safe future.



## BOX 1: A NEGATIVE RECOVERY THROUGH GAS

While economic shocks from coronavirus were inevitable, these shocks have been exacerbated by an oil price war between Saudi Arabia and Russia (Padilla 2020). A strategic play between the major producers over how to manage declining demand for their fossil fuels has seen these countries break apart their informal cartel, and drastically ramp up supply to price each other, and any other country, out of the market for oil.

Australia is one of the countries being pushed out. By carbon content, Australia is the world's third largest fossil fuel exporter (Swann 2019). It is also the world's largest exporter of liquefied gas (Office of the Chief Economist 2020).

Paired with the collapse in oil demand under coronavirus constraints, this price war has had major consequences for the Australian gas market because where the price of oil goes, the price of gas follows. The sale price of most Australian gas export contracts is linked directly to the price of oil, with the delivery price for gas adjusting along with the price of oil at any given time (Office of the Chief Economist 2020). This means that as the price of oil has collapsed, so too has the revenue of Australia's major gas exporters.

The oil trade war has shocked the world's fossil fuel exporting companies to their core.

In the past two months, three of Australia's largest oil and gas companies—Woodside, Santos and Oil Search—have all been forced to drop planned expansions (McDonald-Smith 2020; Toscano 2020a; 2020b). Origin Energy has likewise been forced to stall exploration in the Northern Territory's Betaloo Basin (Robertson 2020).

Even setting aside the climate dangers of economic growth through gas, it is an unreliable and unnecessary path to getting the Australian economy back on its feet. Gas-driven industrial projects cannot provide sustainable long-term employment opportunities. Now that it is exposed to the global market, the Australian gas industry will continue to be affected, over and over, by the same volatile forces that are currently creating havoc in the industry.

Australia does not have a competitive advantage in the global market for gas because its gas must be compressed and shipped, making it relatively expensive. There is no prospect of reducing greenhouse gas emissions by increasing fossil fuel production (Stockholm Environment Institute et al. 2019). Industries built on gas and gas-fired electricity will have higher ongoing operating costs than those built on renewables, even before considering their exposure to future gas and oil price spikes or supply disruptions (Graham et al. 2018).

**The oil trade war has shocked the world's fossil fuel exporting companies to their core.**

The high energy prices in Australia in recent years are a result of the growth in Australia's fossil gas sector (Long 2020; Sandiford 2016; Llewellyn-Smith 2020). To date, the increase in gas extraction, and increased exposure to the international market has driven energy prices up for Australians. The recent price war has caused these prices to crash again. This demonstrates just how unreliable gas is as a source of jobs and energy. It is a shaky foundation on which to reboot a fragile economy.

Meanwhile, CSIRO analysis has shown that renewables backed by storage are the cheapest way to build new electricity generation infrastructure (Graham et al. 2018).

But we cannot forget about the urgency of the climate crisis. Gas is a fossil fuel and is driving up Australians' exposure to the climate impacts we are already seeing. To make matters worse, emissions from the extraction and processing of gas are vastly under-estimated (Lafleur et al. 2016). Even when you accept the official data at face value, the growth of the gas industry is a core reason why Australia's official emissions figure are yet to fall (Department of Industry, Science, Energy and Resources 2020; Kelly 2019). Once these under-estimated sources

are considered, they could eliminate any benefit of the transition from coal to gas (Baxter 2020; Climate Council 2017).

While emissions in the electricity sector continue to decline as a result of record deployments of renewable energy, this is being more than offset by continual increases in emissions from fossil gas expansions (Department of Industry, Science, Energy and Resources 2020).

Australia cannot continue to throw good money after bad: gas is driving up prices of energy for Australian households and businesses while locking in huge investment losses, stranded assets and colossal environmental harm. There is no argument for a gas-led recovery in Australia that makes sense in the 21<sup>st</sup> century.

The response to coronavirus, when it comes time to restart the Australian economy, must set Australia on a path to a positive and resilient recovery that reorients the country toward net zero emissions as fast as possible.

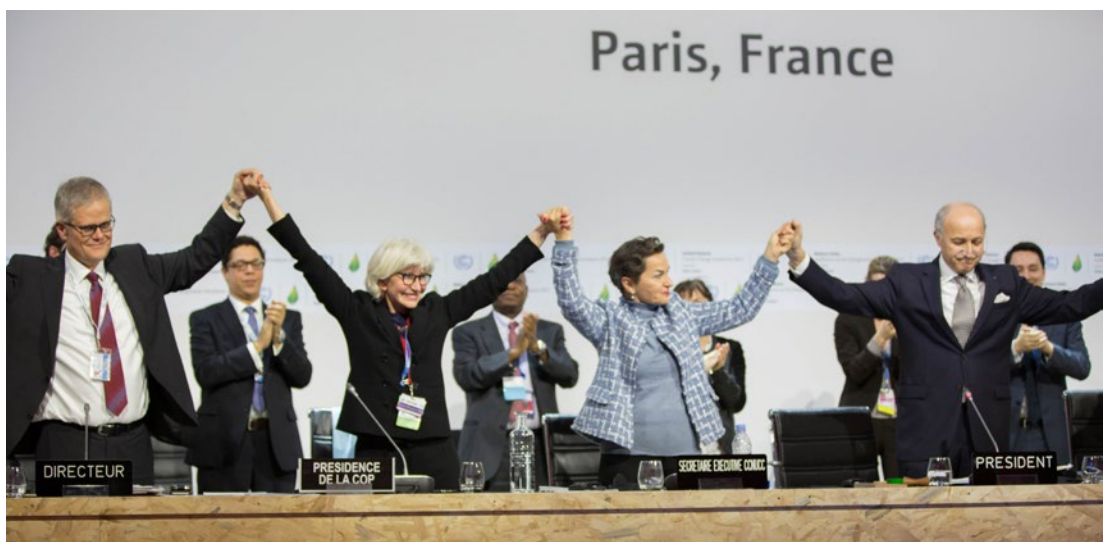
**Investing in more gas will lock in investment losses, stranded assets and environmental harm.**

## 2. The climate challenge for Australia

**Failure to heed warnings and act on scientific advice has disastrous consequences.**

For decades, the international and Australian scientific communities have been warning about the climate impacts that will be felt if Australia, along with the rest of the world, does not move away from the consumption of coal, oil and gas for energy (Houghton, Jenkins, and Ephraums 1990; Pearman 1988).

Over that time, Australian consumption of fossil fuels for energy has dramatically increased, virtually uninterrupted, year-after-year (Global Carbon Project 2020). While there are no developed countries where fossil fuel consumption is reducing fast enough to meet the goals of the Paris Agreement (United Nations Environment Programme 2019), most developed countries have made far greater progress than Australia (Burck et al. 2019).



**Figure 5:** The Paris Agreement was met with great fanfare, but its goals for limiting climate change will very soon become impossible without immediate action.

There are also very few developed countries that are as vulnerable to failure to meet internationally agreed temperature goals as Australia (Climate Council 2018). The impacts on Australia are set to intensify.

Through the Paris Agreement of 2015, the international community agreed to limit global temperature increase to well below 2°C above the world's average temperature before wholesale consumption of coal, oil and gas began in the 1700s, while pursuing efforts to limit these increases to 1.5°C.

The climate impacts experienced today, such as escalating extreme weather events and sea level rise, have been as a result of 1.1°C of global temperature increase since developed countries began burning coal, oil and gas in earnest (World Meteorological Organization 2020).<sup>1</sup> Having a chance to meet the international goal of limiting the superheating of the global climate to 1.5°C—significantly hotter and far riskier than today—means global emissions must drop 7.6% per year, every year, for the next decade (United Nations Environment Programme 2019). Escalating emissions over the past decade means that it is now nearly impossible to achieve the immediate, precipitous, ongoing emissions reductions needed to meet this goal (Rogelj et al. 2018). Even a remote chance of meeting the Paris 1.5°C target would thus take a global transformation of human societies at a speed and magnitude never achieved before.

The goal of limiting global heating to well below 2°C is still within reach, but only with immediate, rapid and permanent reductions of global greenhouse gas emissions. The

## A remote chance at meeting 1.5°C would require unprecedented action.

focus must be on those emissions linked to the consumption of coal, oil and gas, which make up a far greater share of the problem than any other. Current production of fossil fuels is more than capable of tipping the world past global goals (Stockholm Environment Institute et al. 2019).

While Australia is extremely exposed to these ever-worsening climate impacts, the Australian Federal Government is at the back of the pack when it comes to taking the necessary action required to deal effectively with climate change. An annual analysis by the New Climate Institute of close to 60 of the world's biggest emitters has consistently rated Australia's climate policy as either last or near last since its inception. (Burck et al. 2019). The effect of this can be seen in Australia's continued high emissions (Department of Industry, Science, Energy and Resources 2020).

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<sup>1</sup> The World Meteorological Organization uses the average temperature of the years 1850 to 1900 as its baseline temperature for this comparison.

Australia must become one of the key players in this global effort, given the escalating risks of a super-charged climate to our nation, our massive fossil fuel exports and our lack of effective action on domestic emissions. In 2019, Australia was the world's largest liquefied gas exporter, the world's largest metallurgical coal exporter, and the world's second largest thermal coal exporter (Office

of the Chief Economist 2020). By total impact on the climate, Australia is the world's third largest fossil fuel exporter, behind only Russia and Saudi Arabia (Swann 2019).

But it is not just Australia's fossil fuel exports that have been causing harm. Australia is a very large emitter both in terms of the total greenhouse gas emitted in its borders and emissions per person.

Even before considering exports, Australia is the world's 14<sup>th</sup> highest annual emitter of greenhouse gases (Gütschow et al. 2019). Of the world's 195 countries, this means 181 countries do less to drive global climate change each year than Australia. The full list of countries emitting less each year than Australia includes the birthplace of the industrial revolution, the United Kingdom, and Pakistan, one of the world's largest countries, with a population well over eight times the size of Australia's. As with the COVID-19 response, climate change is a problem that requires collective action. There is no such thing as too small. Every country must play its part, especially a relatively large emitter like Australia.

On a per person basis, again even before considering its fossil fuel exports, Australia is the largest emitter of all developed countries and the largest emitter of all large countries.<sup>2</sup> (Gütschow et al. 2019).



Figure 6: Australia's emissions are stubbornly high through a failure to act to reduce fossil fuel consumption.

Like COVID-19, climate change is a problem requiring collective action.

<sup>2</sup> Here, a 'large' country is any country with a population above 10 million people.



# 3. Australia's climate advantage

Australia is well placed to benefit from taking action on climate change. As the world's sunniest continent, and the windiest inhabited continent, Australia has everything it could ever need to reduce emissions to zero and benefit from the transition (Garnaut 2019). Achieving this goal, given Australia's world-leading mineral and energy resource potential (Geosciences Australia 2018; 2019), could see Australia become a true energy superpower in the zero emissions world (Kuper 2019).

Achieving this vision requires political will and courage, just as has been shown through the COVID-19 crisis. Embracing the path to a resilient, prosperous and healthy Australia means taking concrete steps along the path to net zero emissions. There is no path through fossil fuels such as gas to a resilient future. The impact of continued growth in gas extraction on global temperatures would make Australia incapable of realising its renewable potential.

Figure 7: As the world's sunniest and windiest inhabited continent, Australia has everything it could ever need to reduce emissions to zero and benefit from the transition.



Australia has seen crises before. The country will almost certainly overcome the trials of COVID-19. But how the nation does this will determine its own future, as well as playing a major role in the future of the planetary environment.

If Australia slips back into business as usual after this crisis, then the nation will be propping up a failing fossil fuel industry at its own peril and the peril of our children and grandchildren (O'Malley 2020). There is no more time for locking in the continued extraction of coal, oil, or gas. Planned fossil fuel developments are more than enough to tip the world past globally-agreed temperature goals (Stockholm Environment Institute et al. 2019).

The increase in the frequency and severity of extreme events that we have seen so far is difficult to bear. To improve resilience to future disasters, Australia must do more than simply restore its economy to its previous state. It must step up to its role as a global clean energy superpower. This will require the Australian Government to

invest in renewing the nation's future, rather than locking in future harm to Australian lives, livelihoods and property through the continued burning of coal, oil and gas.

This will require the same co-ordinated leadership displayed through the coronavirus period so far, where states and territories are empowered to work alongside the federal government with a common purpose and with all work being informed by the best available expert evidence.

Australia's best bet for the future is to shift away from the price volatile and exposed fossil fuel industry and reorient the country toward net zero emissions as fast as possible. Even on conservative estimates, the potential for job creation in the renewable sector dwarfs anything that is on offer from the fossil fuel industry (Hepburn et al. 2020).

To embrace this opportunity, Australia must set its sights on recovery options that are oriented toward a global goal of net zero emissions as soon as possible.

How Australia recovers  
from COVID-19 will  
determine its future.



In the long term, for Australia this will mean:

- › **Replacing all fossil fuels:** All energy sources or processes requiring fossil fuels, including all transport and off-grid energy use and the few uses of fossil fuels outside the energy sector must be replaced. Most uses of fossil fuels can be replaced through electrification—such as heat pumps for space heating and electric vehicles. Where electrification isn't viable—such as in some high-energy industrial uses and aviation—green hydrogen and biofuels should be used. These latter steps will take time, making electrification of other fossil fuel uses all the more urgent.
- › **Powering Australia with renewable energy:** Meeting all of our future energy needs, including those needs created as a result of replacing all existing fossil fuel consumption, will require that Australia's high emitting electricity sector be brought to zero emissions as soon as possible. However, it is crucial that the deployment of renewables aim beyond 100% of today's electricity demand. The electrification of virtually all energy will increase demands on the grid and will require far more electricity supply.
- › **Stepping up as a global zero emissions exporter:** As the sunniest and windiest inhabited continent, Australia has a central role to play in supplying zero emissions energy, products, minerals and services to our neighbours and the rest of the world. This will bring immense opportunity to Australia as the world reorients to zero emissions.

**Figure 8:** The potential for job creation in the renewable sector dwarfs anything that is on offer from the fossil fuel industry.



- › **Action on the land and coasts to build resilience:** Taking urgent action on climate change is our best bet at ensuring rural, regional and coastal communities have everything that they need to thrive in the coming decades. The jobs created through taking these actions will themselves bring immense benefit to regional Australian workers and economies.

Taking these steps will boost Australia's resilience to future geopolitical, environmental and public health shocks, with Australia's status as a direct exporter of renewable energy—whether through high voltage undersea cables, green hydrogen, or any other means—ensuring that the Australian economy has the strength to ride the wave of future economic difficulties, whether global or domestic.

The solutions exist to bring about this vision, and the need to create a positive recovery for Australia provides a point of leverage to shift Australia away from its past poor performance and toward net zero emissions (Garnaut 2019). It is in Australia's

interests to ensure that the economic recovery is positive and deploys solutions to the country's climate vulnerability. The core feature must be reducing Australia's impact on global temperature both domestically, through its own high emissions, and abroad, through its exports, which are fuelling the climate crisis.

By following this path to recovery, the country stands the best chance of avoiding the very worst economic impacts. With jobs to be found in new and growing industry and cheaper energy prices, Australia will also finally step up to meet the far greater crisis of unmitigated climate change.

Australia would not be walking alone toward a net zero emissions future after COVID-19, should it choose to go down that path, with several countries across Europe and Asia aiming to walk that same path (Farand 2020; Krukowska 2020).

The recovery from this crisis presents a once-in-a-lifetime opportunity to prime Australia to be a renewables-led powerhouse.

The solutions exist and this is a once-in-a-lifetime opportunity to put Australia on a path to net zero emissions.



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