



It's time to set our own carbon budget in NSW

November 2021



Committee
for
Sydney



Australia should be leading on climate in Glasgow

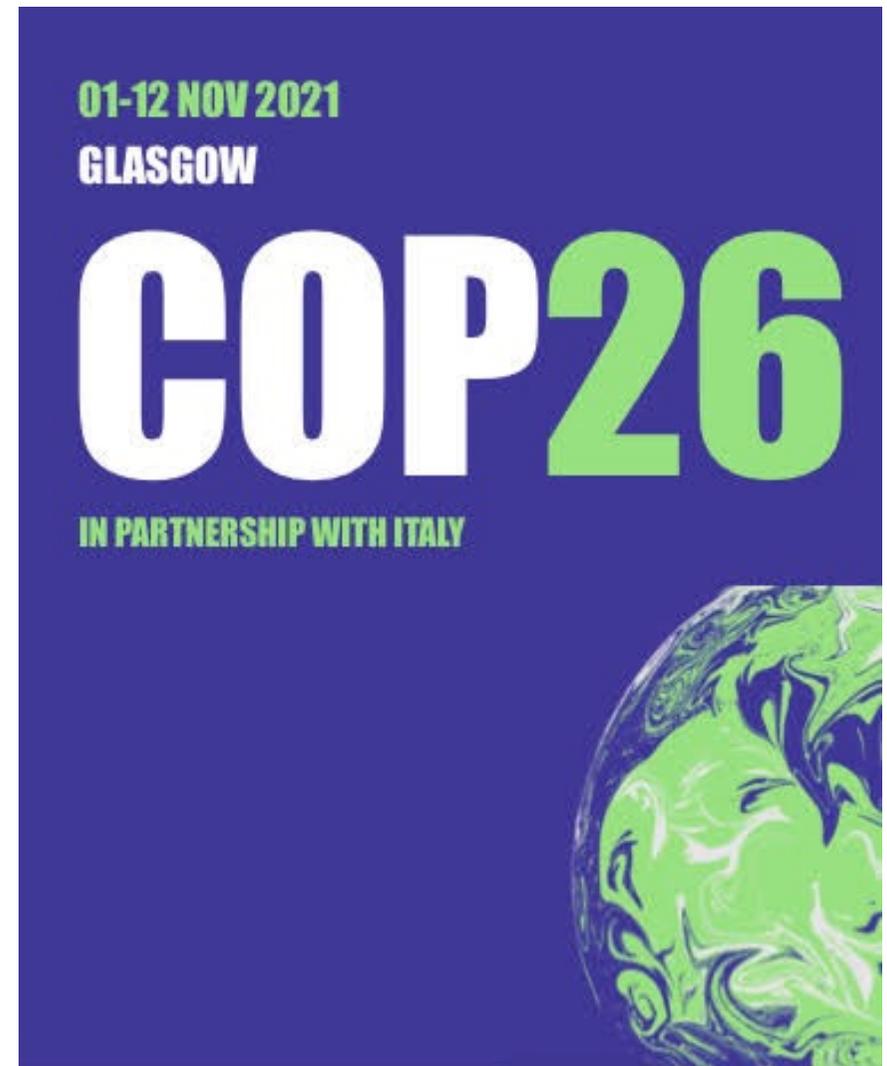
As the global climate change talks kick off in Glasgow, we remain hopeful that 197 countries will agree to effective targets for lowering their carbon emissions by 2030, in order to reach net zero carbon emissions by 2050.

Given the opportunities that abound for Australia in both a global and local shift to a net zero economy, we should be leading these developments.

Not least as Australia's per capita greenhouse gas emissions are currently three times the average of G20 countries.

The 2015 Paris Agreement represented the global community agreeing to work together to keep temperature rise below 2°C, and if possible below 1.5°C.

It established the use of carbon budgets to track aggregate commitments made by countries to reduce their emissions, matched with the amount of carbon that can be 'spent' over a specified period to stabilise warming at a particular level.

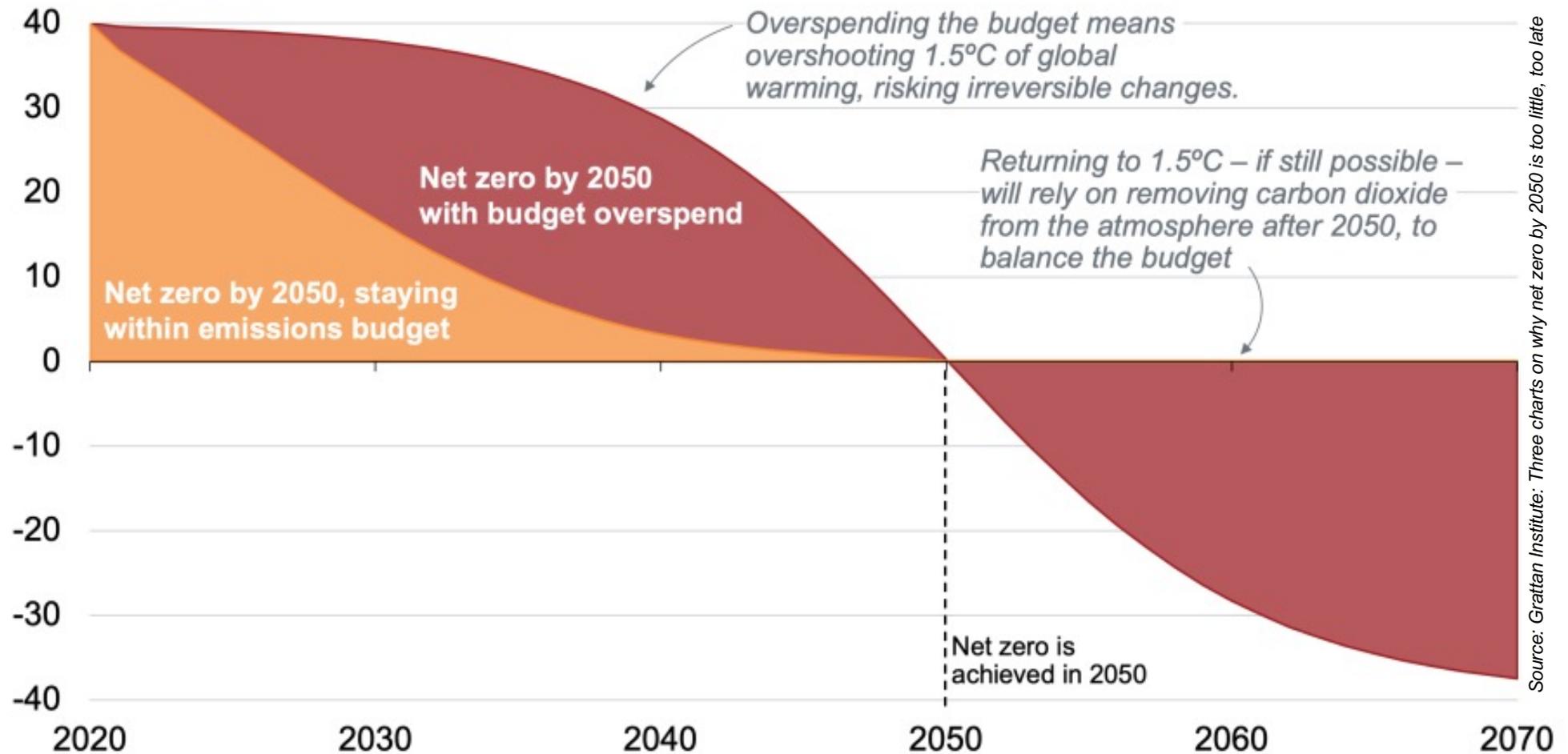


The 26th Conference of Parties runs 31 Oct – 12 Nov 2021.

It matters how we get to 2050

The world has an emissions budget to stay within the 1.5°C goal of the Paris Agreement

Global annual Co2 emissions (billions of tonnes)



Source: Grattan Institute: Three charts on why net zero by 2050 is too little, too late

Notes: Both pathways start at 40 billion tonnes in 2020. The total emissions for each pathway (the area under each curve) between 2020 and 2070 is the same – 400 billion tonnes, consistent with keeping warming below 1.5°C. Source: Grattan analysis of AR6 Climate Change 2021: The Physical Science Basis (IPCC, 2021).

Countries around the world have upgraded their 2030 targets

The latest IPCC report suggests we have just six to 11 years of this carbon 'budget' remaining before we blow through the 1.5°C target – recent modelling, based on global carbon emission reduction targets, suggests we are on track for 2 to 3.4 degrees of warming by 2100 – with devastating social, economic and ecological consequences.

While 2100 is a long way off, Australia has already warmed by 1.44°C since systematic records commenced in 1910.

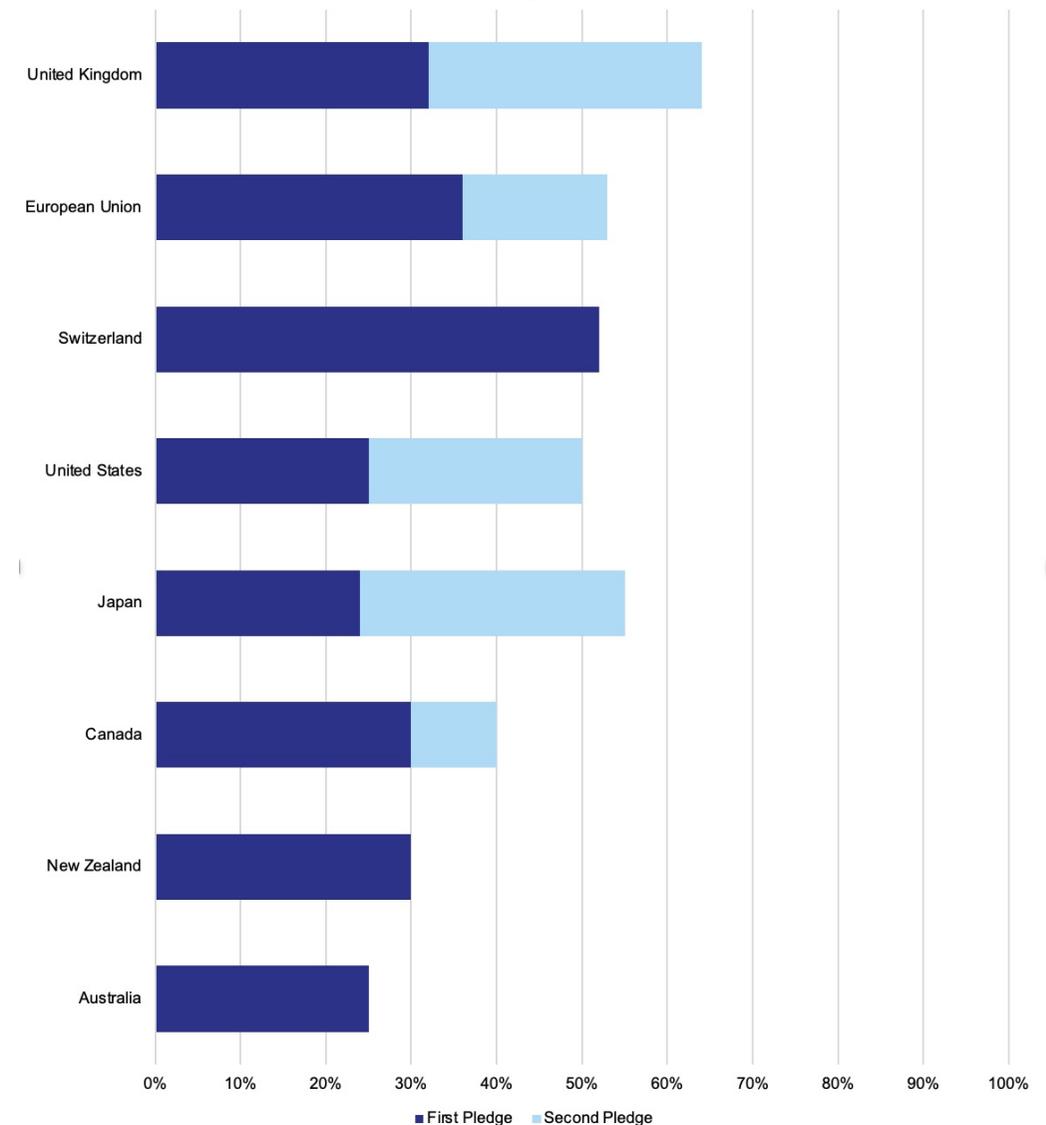
At the end of 2021, we have nearly reached the lower threshold of the Paris Agreement.

Increasing heat in our global climate mean the next 80 years will be increasingly bumpy, particularly if recent years are anything to go by.

This decade will determine the future of our climate, which is why countries around the world have been setting targets to halve their emissions by 2030.

Increase in 2030 Targets Since COP25

Pledged greenhouse gas emissions reduction in 2030 compared to 2005 levels



Source: The Climate Council. From Paris to Glasgow.

Australia is behind on action and ambition

By arriving in Glasgow with a target of 26-28% reduction of carbon emissions by 2030, compared to 2005 levels, and continuing a fossil fuel-based energy production (2019: 30% coal, 32% oil, 31% natural gas), Australia is missing an opportunity to share our remarkable renewable energy transition, but also to position Australia as a leader in how we are preparing our economy for a future that is rapidly approaching.

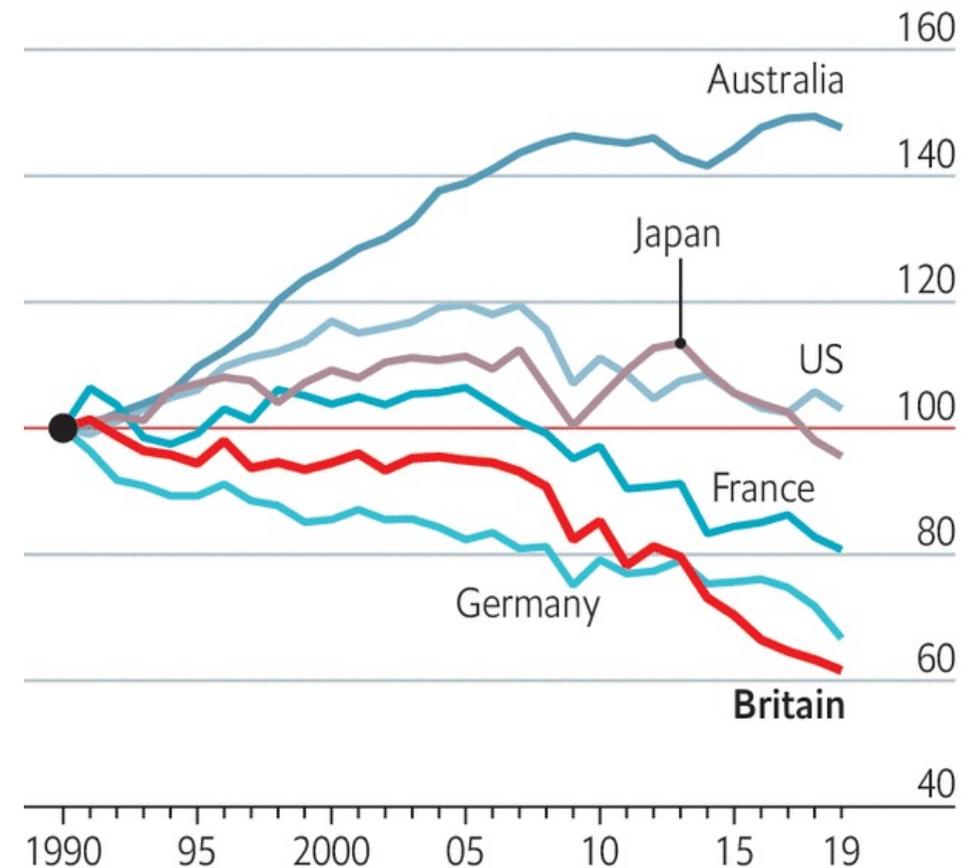
Compared to our G20 fellows, we are the only country that has no policy on how to phase out private fossil fuel cars, and fossil fuel heavy-duty vehicles and trains.

It is important to remember a quarter of our annual carbon emissions are generated in the transport sector.

Transport, energy, industry, agriculture, construction and other emission-intensive sectors are still increasing Australia's net carbon emissions while other countries have managed to reverse this trend.

Emissions creep

CO2 emissions, 1990=100



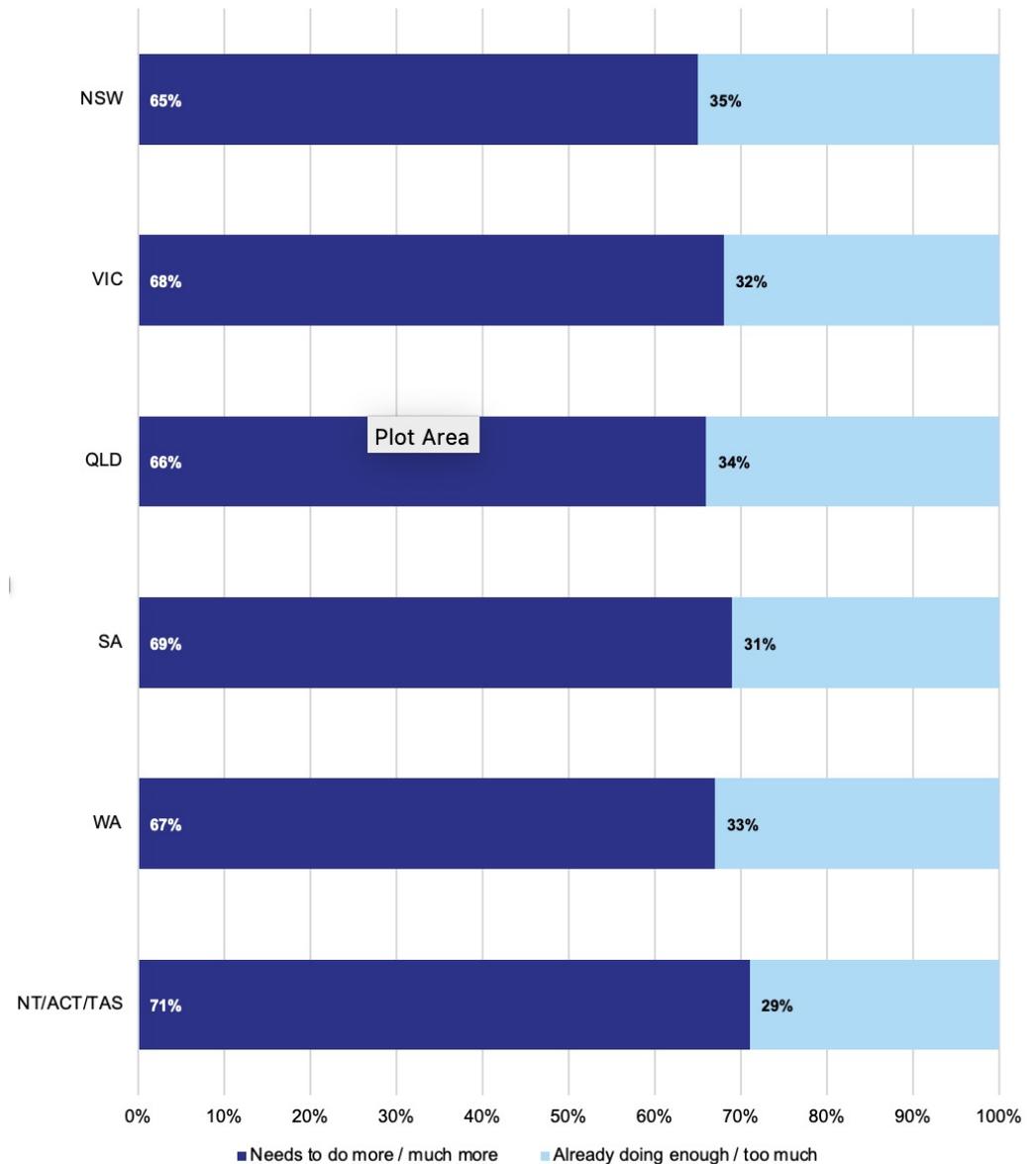
Source: The Economist – Our World in data

There is widespread support for further action on climate

Australian heavy industry and super funds are also charging ahead to reduce carbon emissions and cutting investment into carbon-intensive industries.

And with the vast majority of Australian citizens supporting action on climate change (more than 80%), domestic business on board, and investors demanding that companies reduce carbon emissions, the ingredients are in place for national leadership to build on the heavy lifting being done at the state level.

Do you believe the federal government needs to do more or is doing enough to address climate change?



Source: Australian Conservation Foundation.

NSW is keeping pace with global leaders

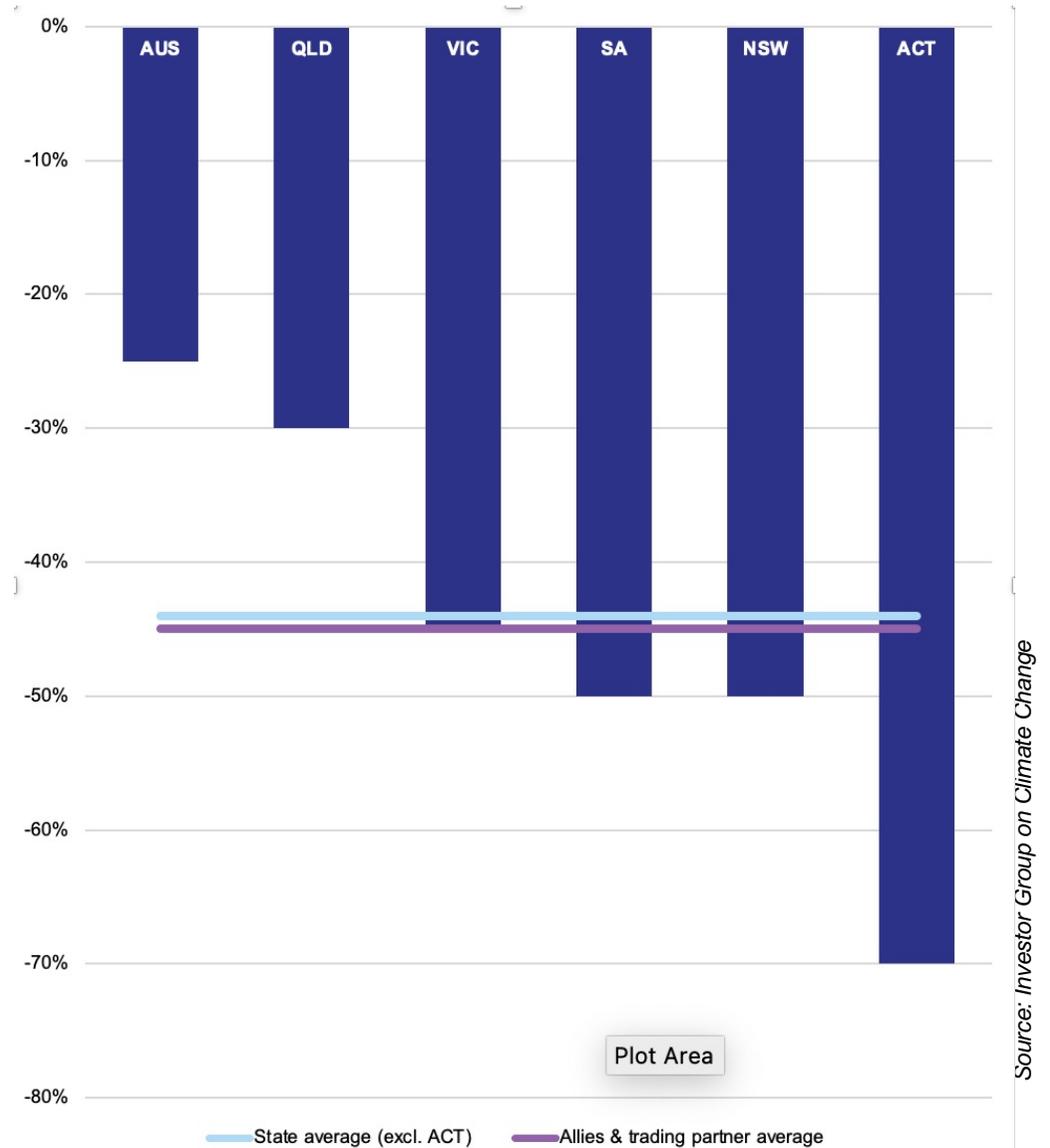
Globally, there has been significant ramping up of 2030 climate targets.

The UK has committed to a target of 68% cuts by 2030, while the EU has pledged cuts of 55%, and put the target into legislation.

The US has announced cuts of 50-52%, compared with 2005 levels. However, legislation to enact this goal is proving challenging.

Domestically, NSW and South Australia have both set targets to halve emissions by 2030, while Victoria has set a 45-50% range, and Queensland 30%.

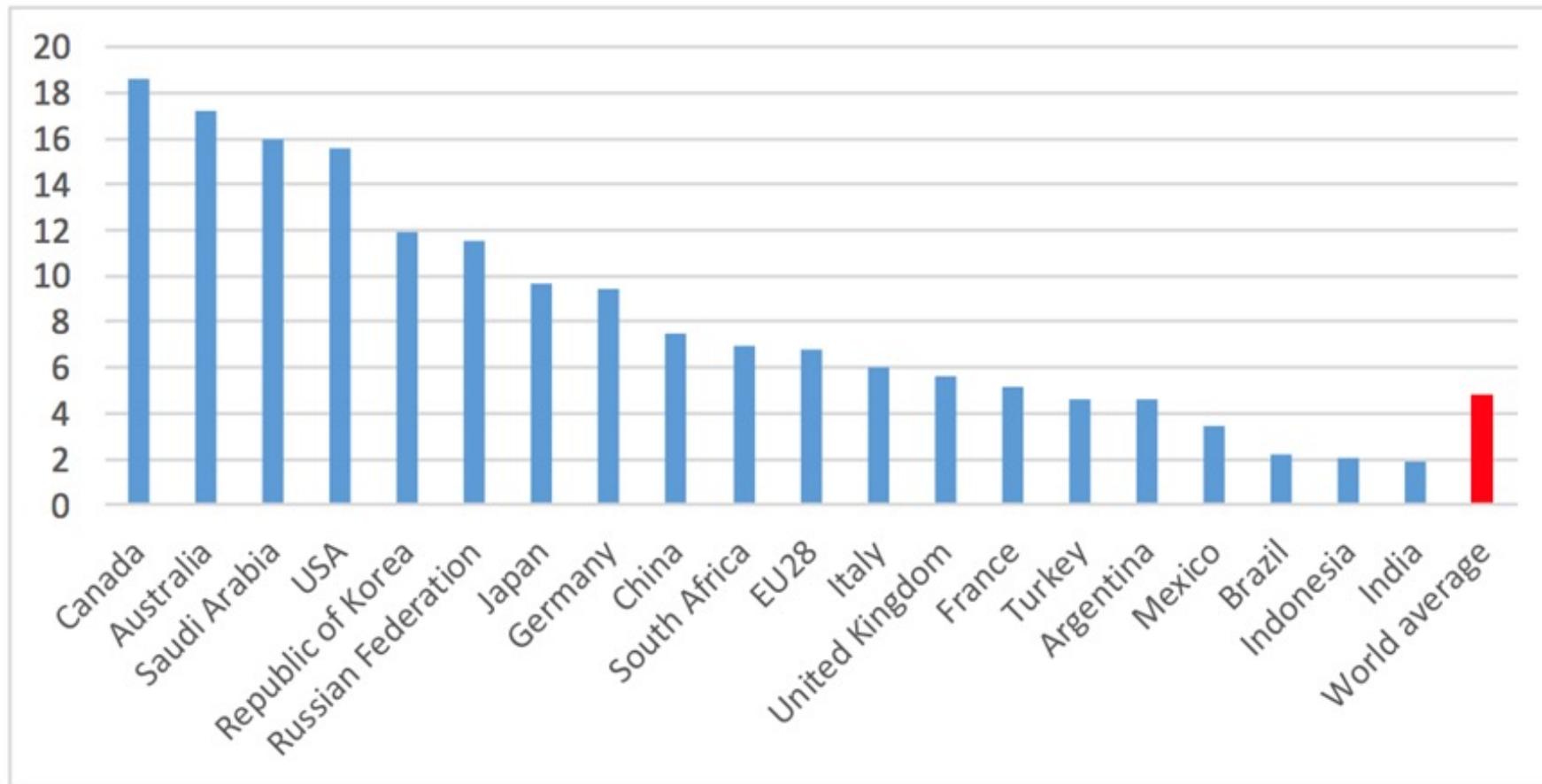
Australia's 2030 target vs state targets and average of our major allies and peers



Source: Investor Group on Climate Change

Australia should be a leader. Not in words, but in ambition and action

We currently have one of the highest per capita carbon emissions in the world, and we are the world's third largest coal exporter.



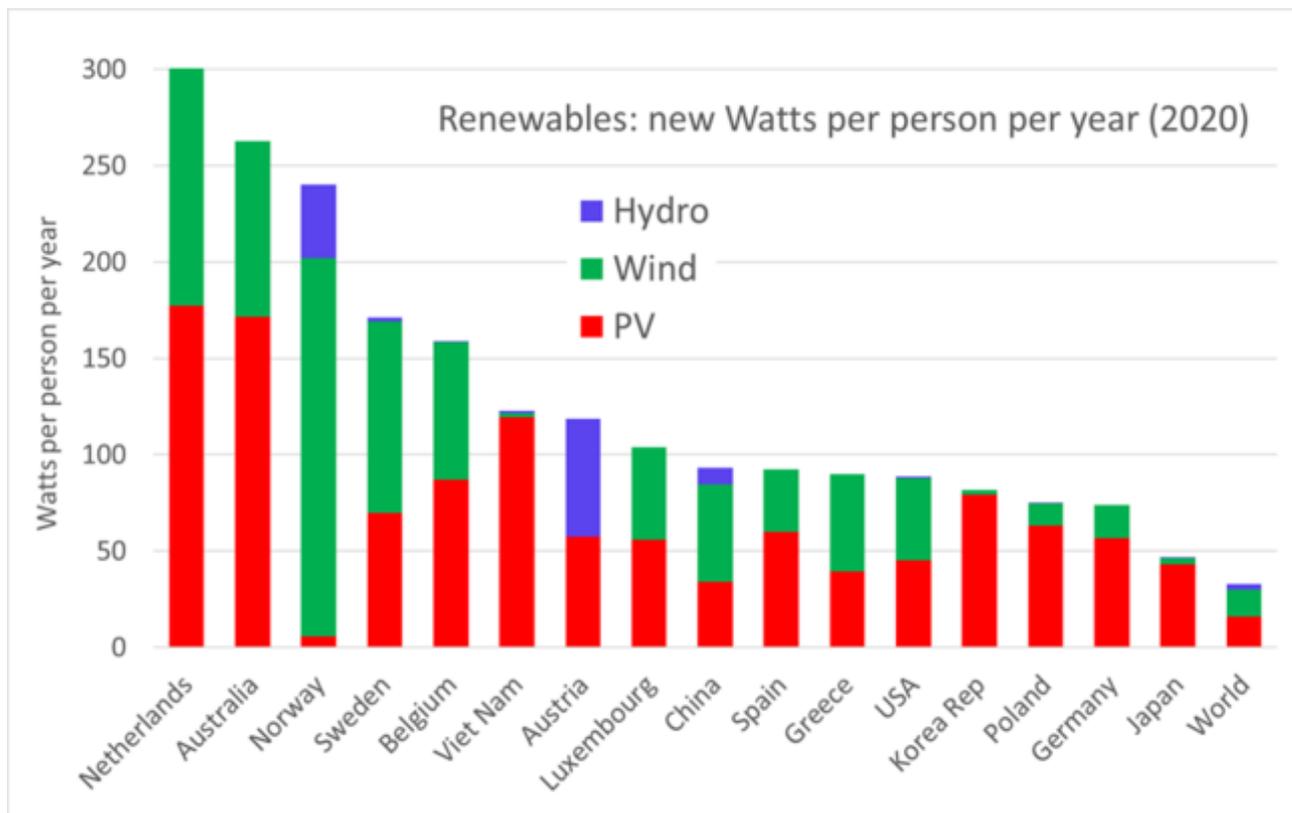
Source: G20 Insights

G20 Countries CO2 emissions per capita.

We have enviable renewable energy potential

We have a burgeoning local renewable sector businesses, from household and grid scale batteries to vehicle and bus charging infrastructure, solar production and installation, and electric bikes, motorbike and vehicles.

All of which can create jobs, increase energy independence, and soften the transition from fossil fuel industries which is coming faster than expected.



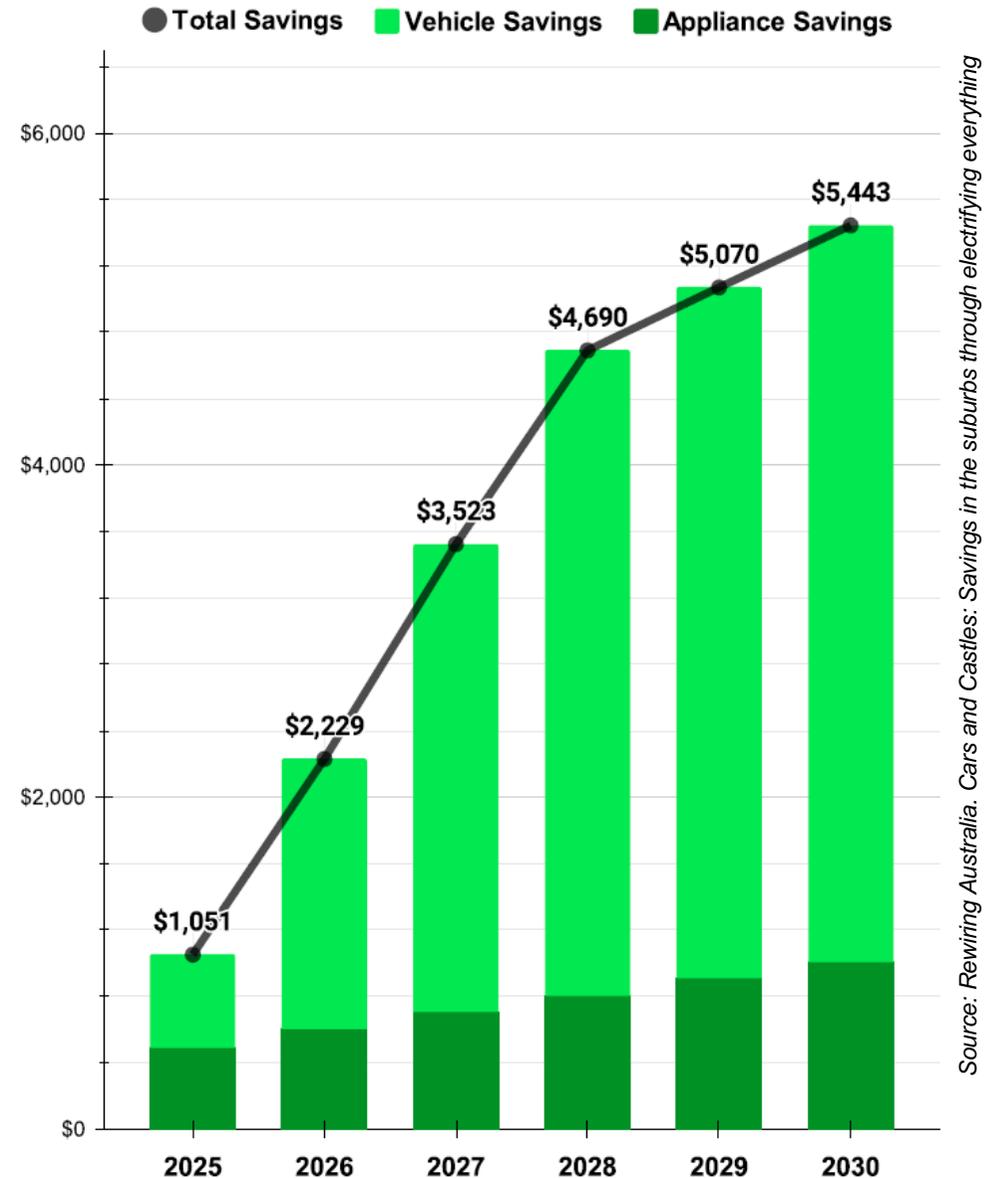
Source: International Renewable Energy Agency; Clean Energy Regulator

Renewable energy capacity installations per capita

And untapped efficiency dividends

By improving the energy efficiency of our houses, buildings and vehicles – electrifying everything – we can reduce household bills, business overheads, and improve health outcomes.

Household savings from 2025 with electrification of average Australia household.



Source: Rewiring Australia. Cars and Castles: Savings in the suburbs through electrifying everything

So what would a real national climate action plan look like?

- It manages to a **carbon budget** – setting the amount of carbon that can be spent over a specified period to stabilise warming at a particular level
- It develops a range of **scenarios for transitions, sector by sector** – this would establish trajectories and targets for each sector – buildings, transport, energy, waste – so we know what we are aiming to achieve
- It has a **plan for achieving the needed reductions for each sector** – laws that need to be passed, money that needs to be spent, programs that need to be run, and the skills and capacity needed to deliver the transition
- It involves frequent **measurement and recalibration** to ensure sufficient progress is being made at a sufficient pace.

The UK has been developing carbon budgets since 2008



The UK is an example we can learn from

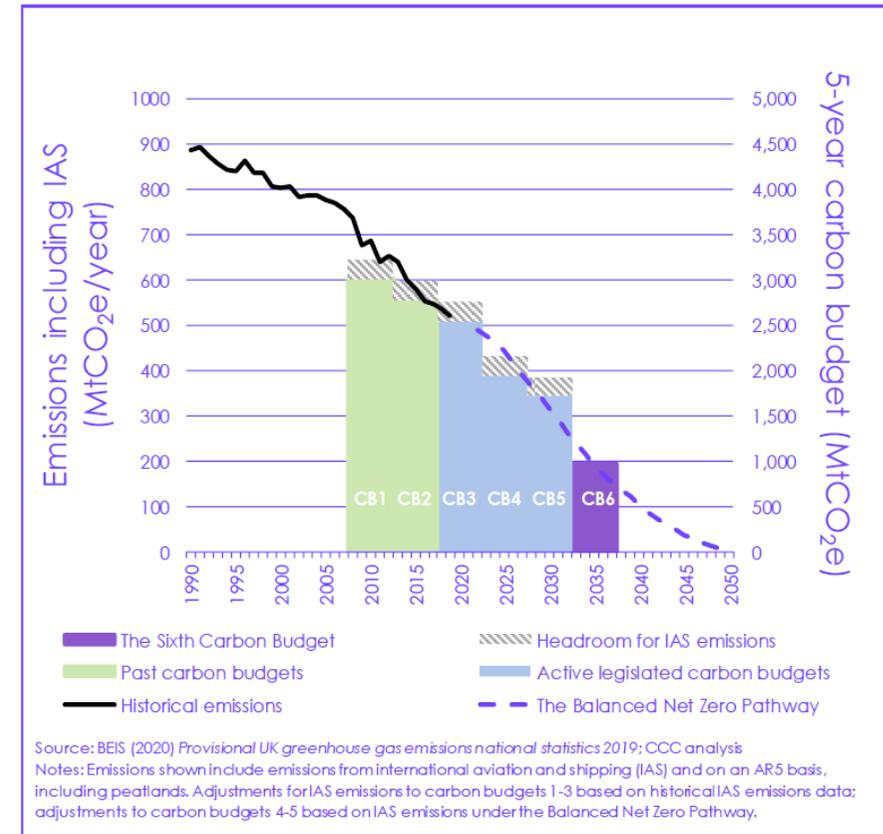
The UK Committee on Climate Change is a good example, which would fit well with Australia's version of the Westminster system.

An independent, statutory body, established under the UK's Climate Change Act 2008, its purpose is to advise the UK and devolved governments on emissions targets, and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.

What it achieved:

- Committed the UK to net zero emissions by 2050
- Established five-year carbon budgets (which must be set 12 years in advance, currently run through 2032)
- Led the UK Government to prepare policies to meet emissions reduction budgets.

In 2020 the UK released its most recent Five Year Carbon Budget



Source: Committee on Climate Change, December 2020

NSW has made a nation-leading start

1. The **Electricity Infrastructure Roadmap** sets out to transform our electricity system into one that is cheap, clean and reliable
2. **Renewable energy zones** are enabling private sector investment in grid-scale battery, solar and wind capacity, and de-risking transmission infrastructure
3. The nation-leading **Electric Vehicle Policy** is encouraging the uptake of personal and fleet EVs, and shifting all buses to electric by 2030
4. The **Waste and Sustainable Materials Strategy** accelerates the transition to a circular economy that uses less and recovers more
5. The **NSW Hydrogen strategy** focusses on how we transition hard to shift industries like steel, while providing a pathway for skills transition from fossil fuel production.

But there is more to do.



Department of Planning, Industry and Environment

Net Zero Plan Stage 1: 2020-2030 Implementation Update

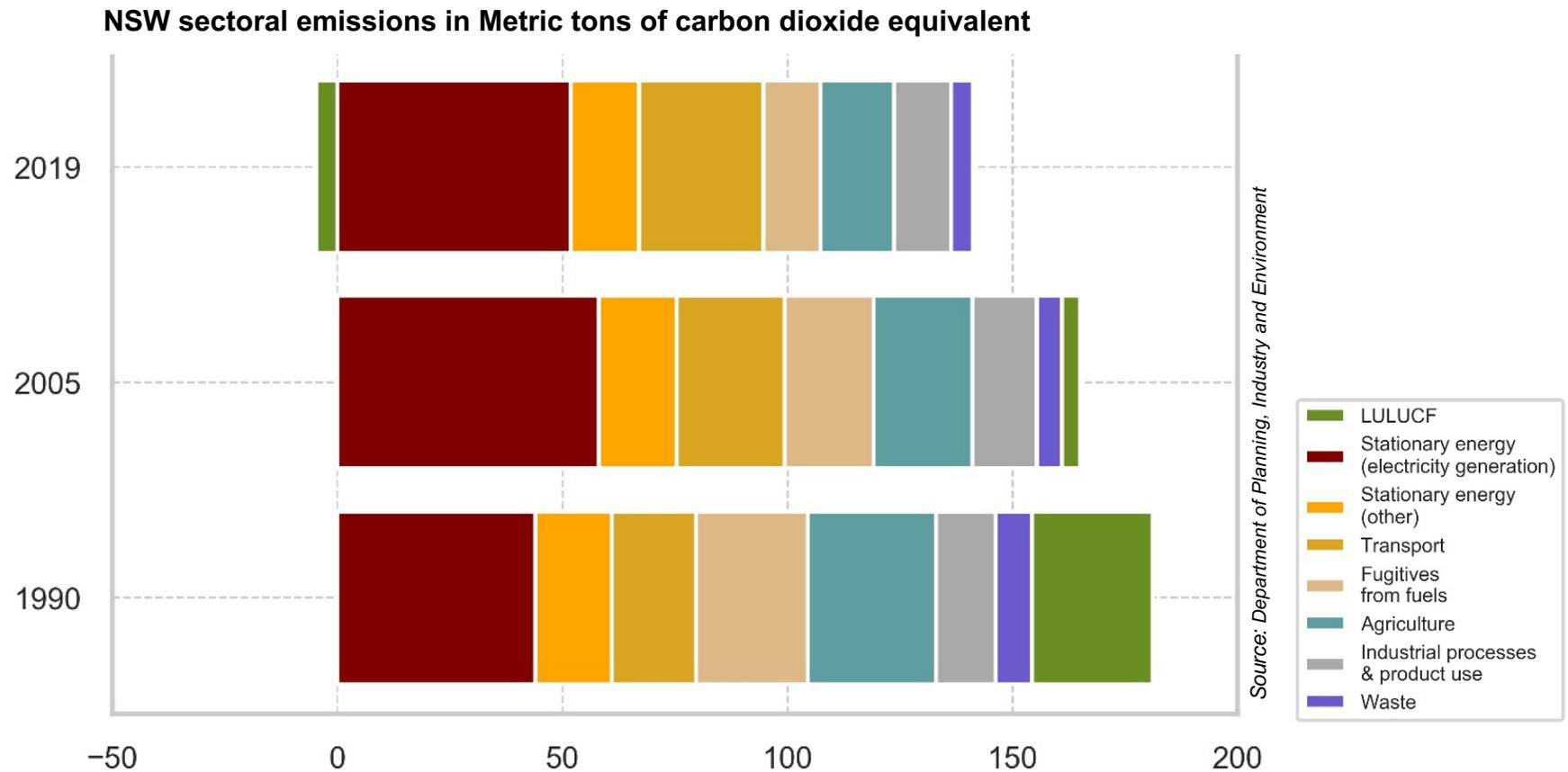


Source: Department of Planning, Industry and Environment

NSW Net Zero Plan Stage 1: 2030-2030 Implementation Update.

1. Adopt a carbon budget and sectoral trajectories

NSW needs to adopt carbon budgets and sectoral trajectories, the importance of which is recognised in the NSW Net Zero Plan. Carbon budgets and trajectories have been prepared for WA, Queensland and Victoria, and, at a high level, for Australia, providing a clear methodology for tracking emissions from individual sectors within the economy.



2. Create a strategy for each sector

By creating sector-specific strategies across government, which map to an overall carbon budget, and provide transparent trajectories to achieving targets, this will provide clarity to policy and decision making across the bureaucracy.

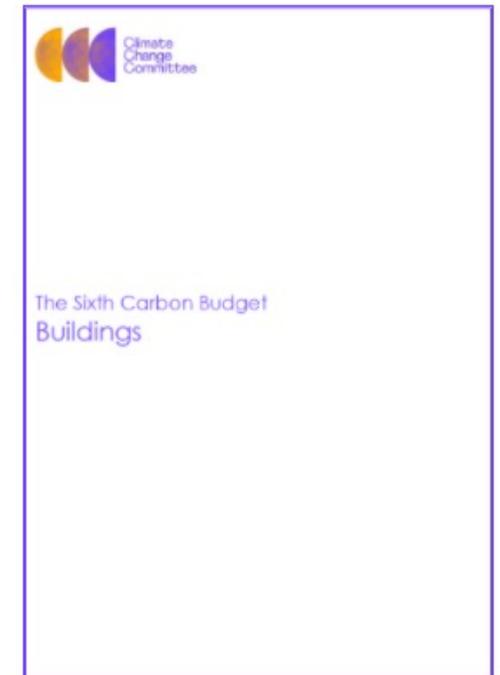
Example:

- Achieving net zero requires all sectors of the economy to contribute.
- Sectoral strategies development by the **UK Climate Change Council** include the different options that are available within each sector on the transition to net zero, and the impacts of the choices made in each sector on investment requirements, cost savings and the wider co-impacts on society.

The UK Climate Change Council has created 11 sector strategies



Surface transport



Buildings

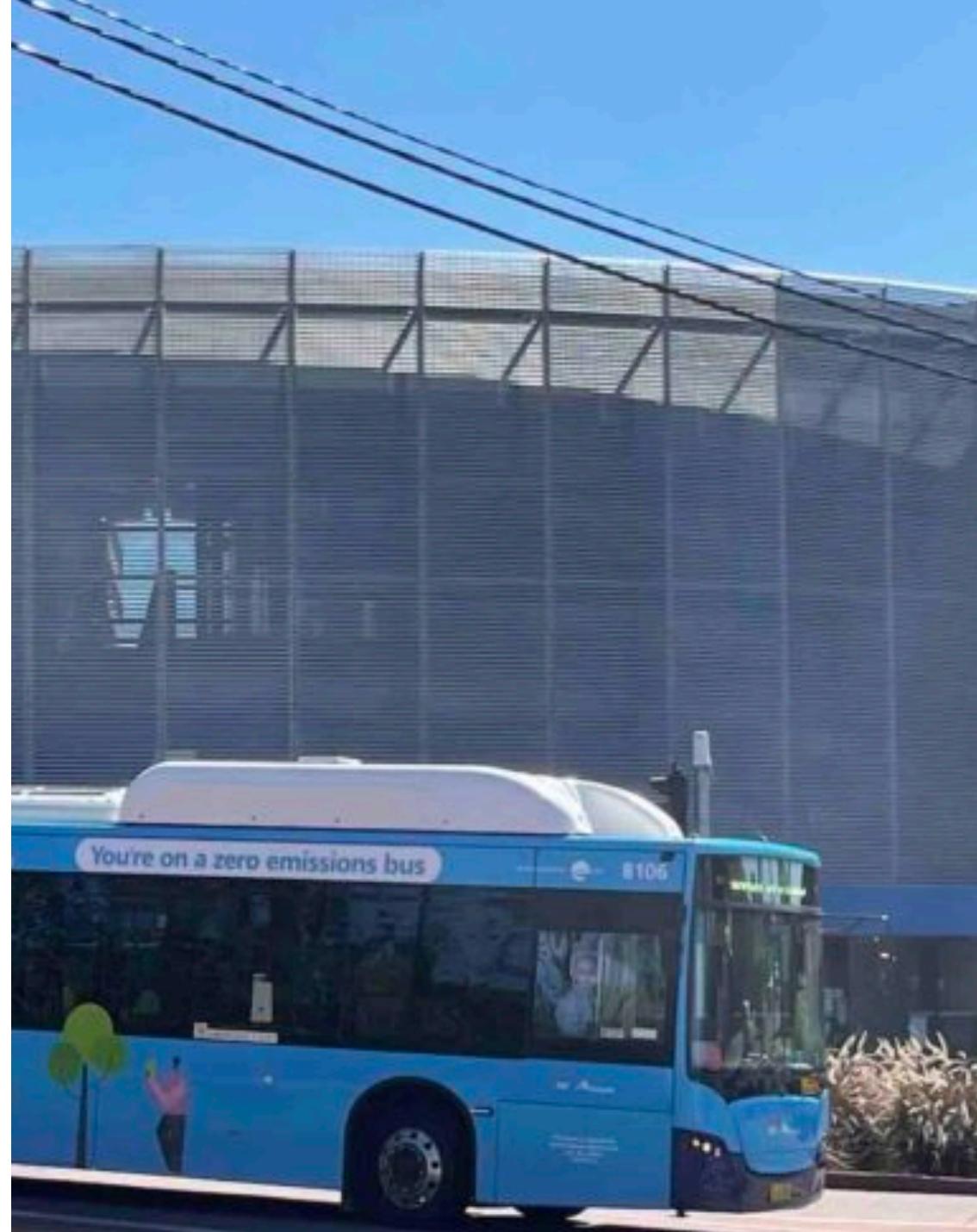
Source: UK Climate Change Council

3. Leverage procurement to grow local industry

Use government procurement policies, incentives and industry partnerships to support local industry to best use and reuse local materials, and enhance local skills and capacity.

Example:

- Australia's biggest **electric bus depot** – a \$40 million project, which is part of the NSW government's plan to electrify all of the city's 8,000 buses, will create a "next-generation" electric bus depot that integrates electric vehicles, chargers, solar generation and batteries with the electricity grid.



The electric bus facility – located in the Sydney suburb of Leichardt – will be big enough to power 40 electric buses.

4. Focus on buildings and precincts

Incentivise choices at the business and household scale to ‘electrify everything’ by raising efficiency requirements for buildings, transport, heating, cooling and cooking.

The National Construction Code is key to this, as is enacting the 2016 Draft Plan to Save NSW Energy and Money.

Example:

- The **Greater Sydney Commission** set out objectives to create low carbon precincts to increase renewable energy generation, and energy and water efficiency – another tangible and actionable goal that should be enacted.

Greater Sydney Region Plan Objective 33: A low-carbon city contributes to net-zero emissions by 2050



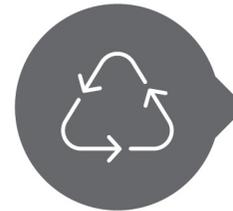
Improved building efficiency



Building and precinct scale renewables



Increased public transport, lower parking rates, car sharing, electric and shared autonomous vehicles, car pooling and vehicle efficiency



Waste diversion from landfill

Source: Greater Sydney Commission

5. Leave no one behind

The transition to a net zero economy should leave no one behind.

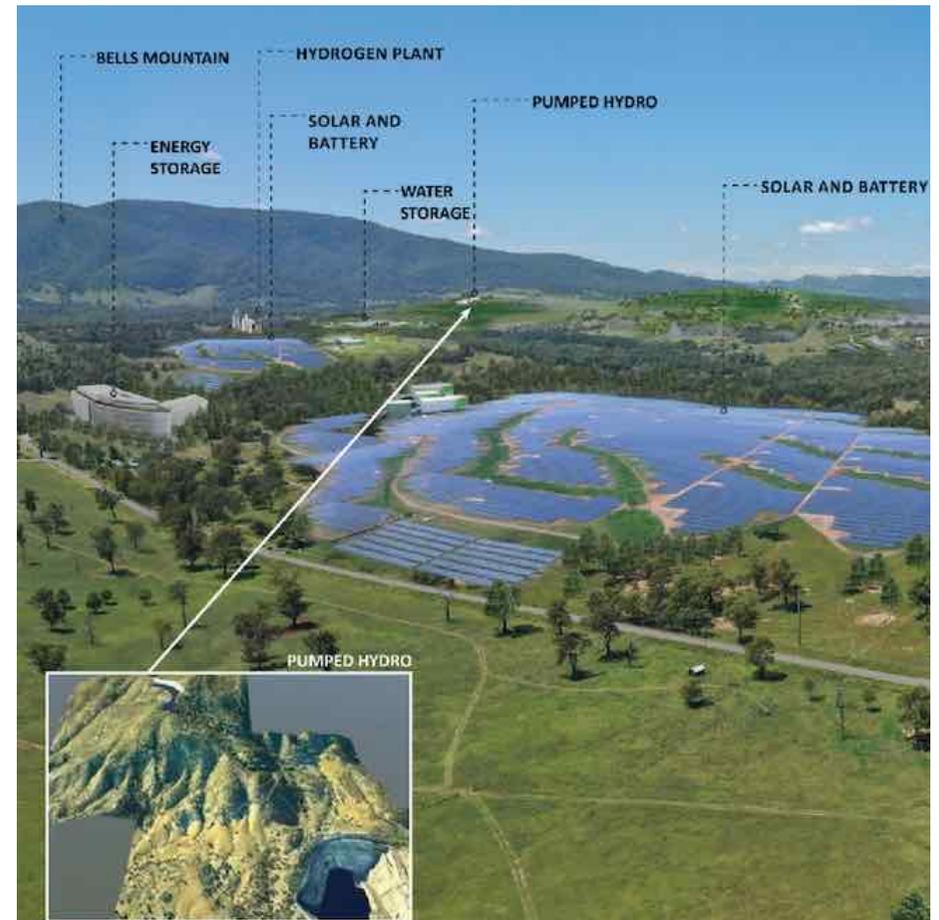
Australia is the third largest exporter of coal, meaning we are responsible for just under 10% of the world's carbon dioxide. Equally, 11% of NSW emissions are fugitive (underground gas leaks) from coal mining, meaning we will need to address these emissions to achieve net zero.

We are in one of the most significant economic transitions in the state's history, and each investment choice NSW makes should consider the future of those who are engaged in our fossil fuel economy, and their future, particularly preparing mining communities changing employment opportunities.

Example:

- Plans to repurpose Australia's oldest open-cut mine at Muswellbrook coal mine in the NSW Upper Hunter region could create a **renewable energy precinct**, potentially adding solar, battery storage and green hydrogen.

A plan for renewable energy at Muswellbrook Coal Mine



Real action is needed by cities and regions

In short, there is much work that NSW can get on with, building on the support of the community, business, global capital and renewable energy investors.

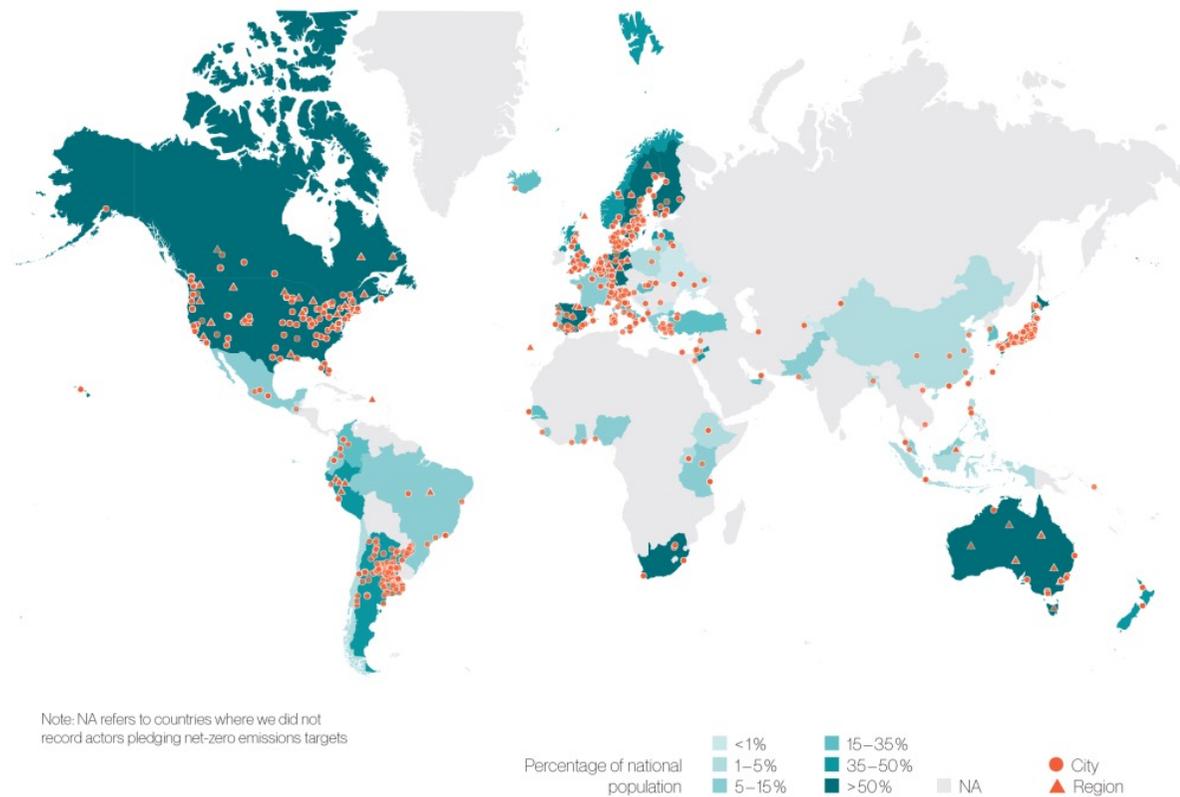
And every fraction of a degree of warming we can prevent counts.

But it will take bold leadership and detailed planning to unlock these economic opportunities and efficiency gains across the city and state.

We want to see global agreement on reducing emissions at COP26. However, where nations fail to lead, cities and states can pick up the mantle as they have been doing on climate for nearly a decade.

700+ cities in 53 countries have now committed to halving emissions by 2030 and reaching net zero by 2050.

Map of cities and regions pledging some form of net-zero emissions target



Source: Data-Driven EnviroLab (2020).

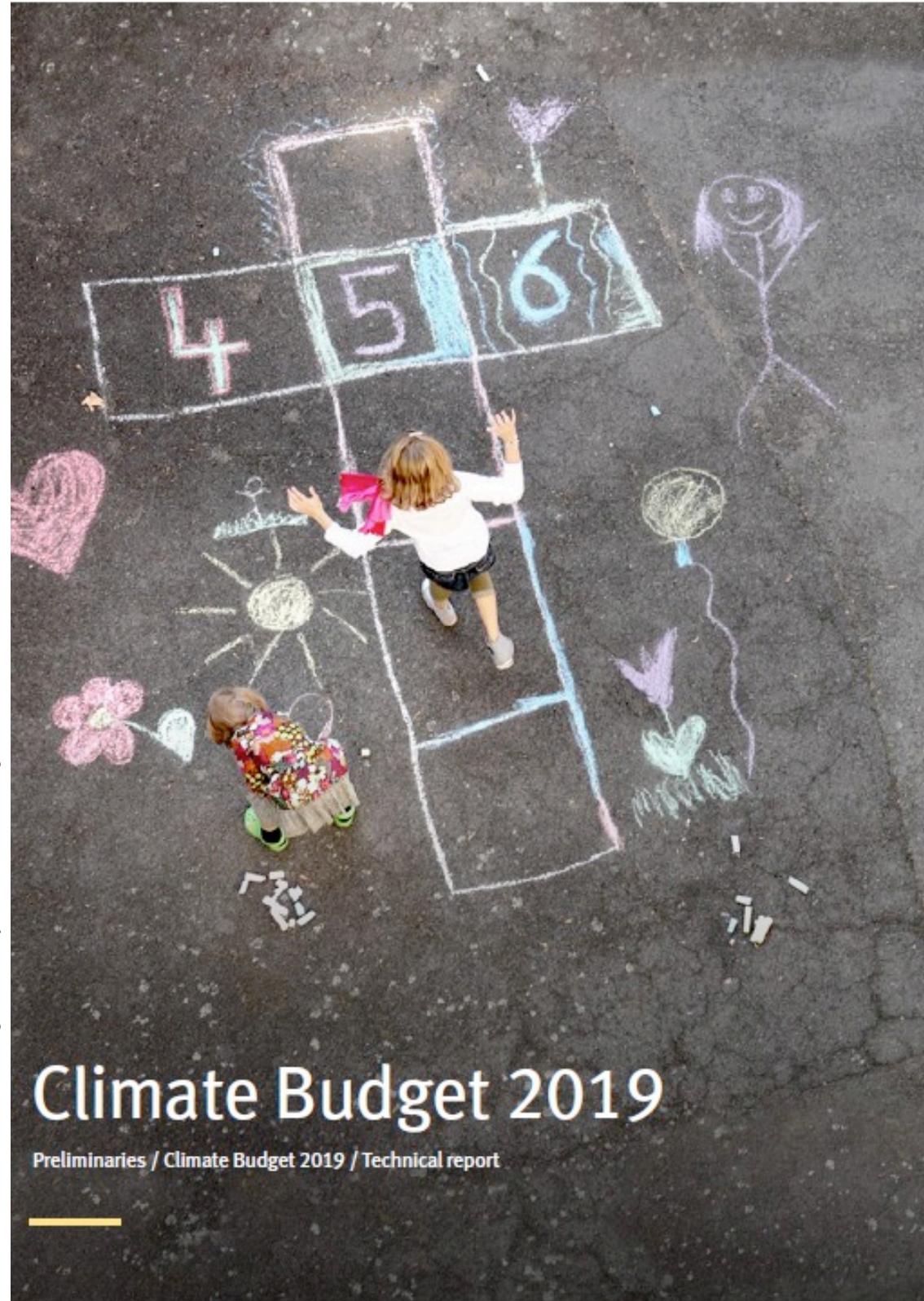
NSW needs to set its own carbon budget

Around the world, cities and states are following the example of the UK Climate Change Council and setting carbon budgets.

Now is the time for NSW to set its own carbon budget.

To show that we are managing our own backyard fairly, and enabling a transition to a net zero economy that manages reductions to sectoral trajectories, reduces per capita emissions, builds resilience in our energy systems, and creates the jobs of the future.

Source: C40 Knowledge Hub – City of Oslo climate budget.



Climate Budget 2019

Preliminaries / Climate Budget 2019 / Technical report

Innovation Fund Partners

We would like to thank our Innovation Fund Partners for their support of the Committee for Sydney's research.

Our Innovation Fund Partners are future focused, and outcome driven. They are leaders of change.

Their combined investment underpins our annual research program and together with our members, enables us to grow our impact and output – striving to create a better Sydney that offers unparalleled opportunity and quality of life for everyone.

We are proud to work with our Innovation Fund Partners Dexus, ICC Sydney, McKinsey & Company, Western Sydney University and Campbelltown City Council.

dexus



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The Committee for Sydney is the city's peak advocacy and urban policy think tank.

We are advocates for the whole of Sydney, developing solutions to the most important problems we face.

Our goal is to help Greater Sydney be the best city in the world.



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This report is part of the Committee for Sydney's Resilience Program. The program is focused on:

- Opportunities for innovation and economic growth as we **transition to net zero**
- Investing to avoid **disruption from infrastructure failure** and cascading failure across the city.
- Building on lived experience to **reduce direct risks to life and productivity**, now and in the future
- Enabling utilities and businesses to grow the capacity to **manage and transfer residual risk**.