



Australian Government

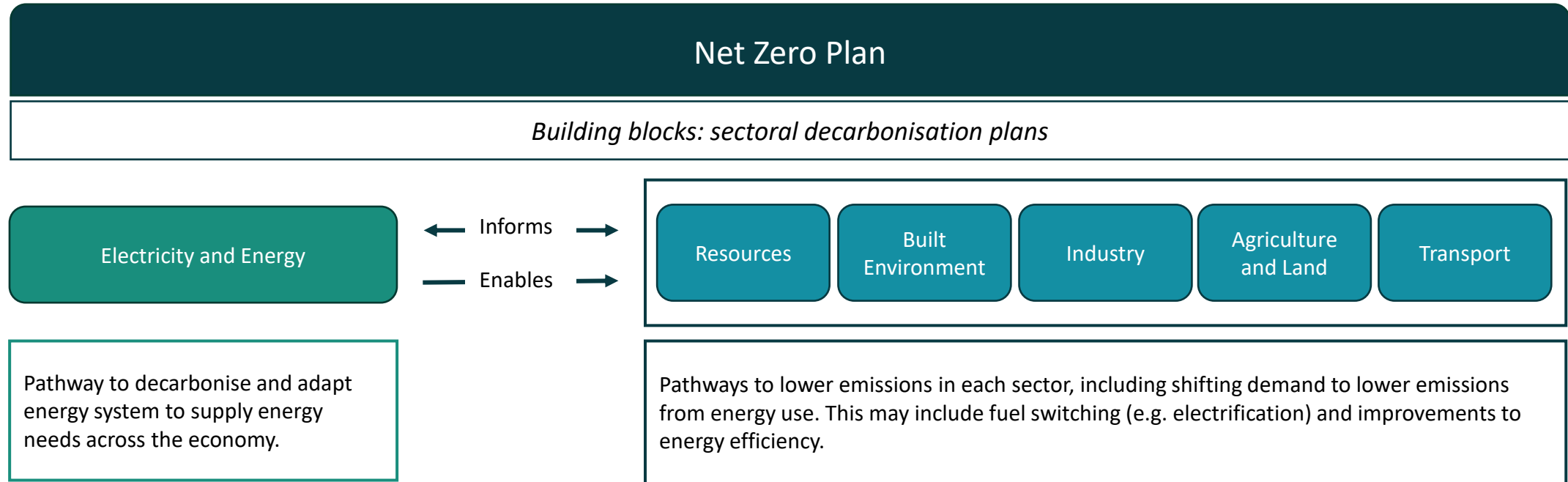
Department of Climate Change, Energy,
the Environment and Water

Electricity and Energy Sector Plan

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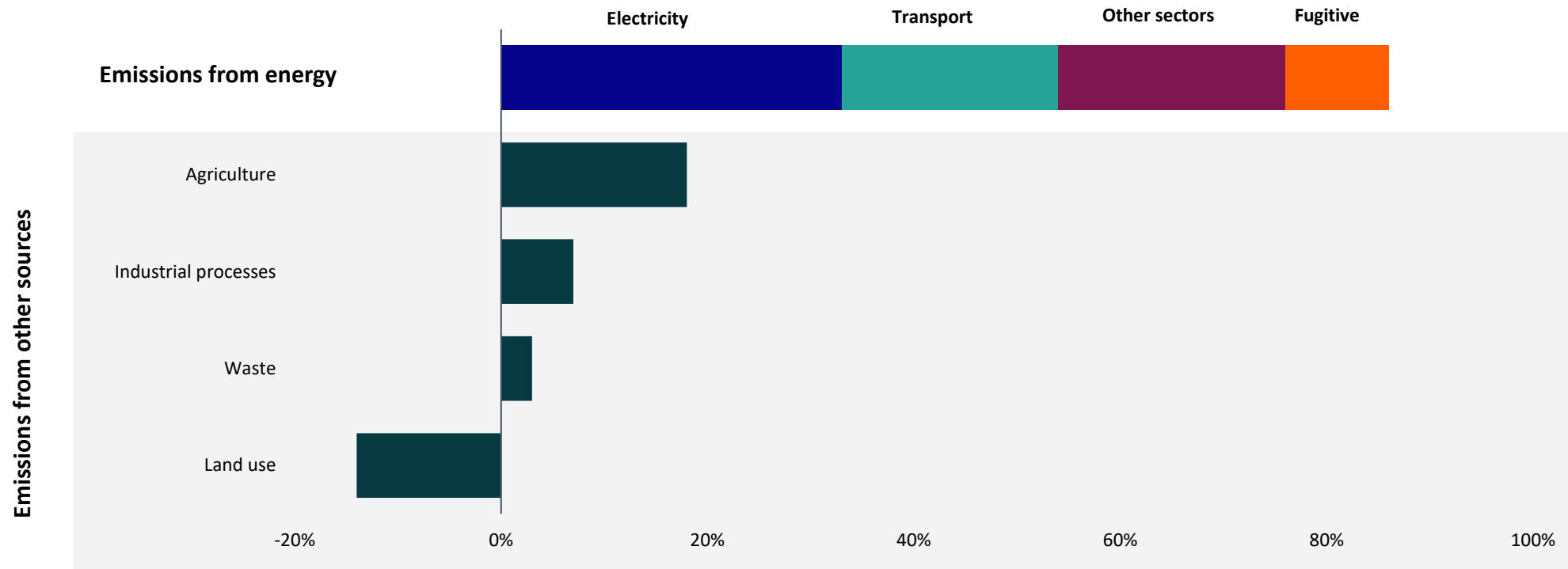
The Net Zero Plan will be underpinned by 6 sectoral decarbonisation plans



These sectoral plans will map out pathways to decarbonise each sector by 2050 while maximising the benefits of climate action across the economy.

The role of the energy sector in Australia's net zero transformation

Australia's emission by source, % total



Source: Department of Climate Change, Energy, the Environment and Water (DCCEEW), [Australia's emissions projections 2023](#), November 2023.

Decarbonising electricity and energy supply is critical to achieve a net zero economy

The Electricity and Energy Sector Plan

Vision ► A future of clean, affordable, reliable and secure energy

Purpose



A credible pathway to 2050 to support emissions reduction, investment in renewables, switch to low carbon fuel, and increase energy performance while delivering affordable, equitable, reliable and secure energy.

Objectives



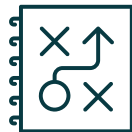
Affordable & equitable

Reliable and secure

Low emissions

High performance

Strategic Priorities



Invest in renewables

Maximise opportunities

Guide the transition

- Increase renewable electricity – 82% by 2030
 - And beyond to 2050
 - A whole of economy shift

- How can Australia maximise the opportunity of the global shift to net zero emissions?
- Posturing for a shift from a fossil fuel superpower to a clean energy superpower

- How do our laws, regulation and systems that shape the supply of energy in Australia need to change to deliver the objectives over the long term?

The Plan will build on existing policy



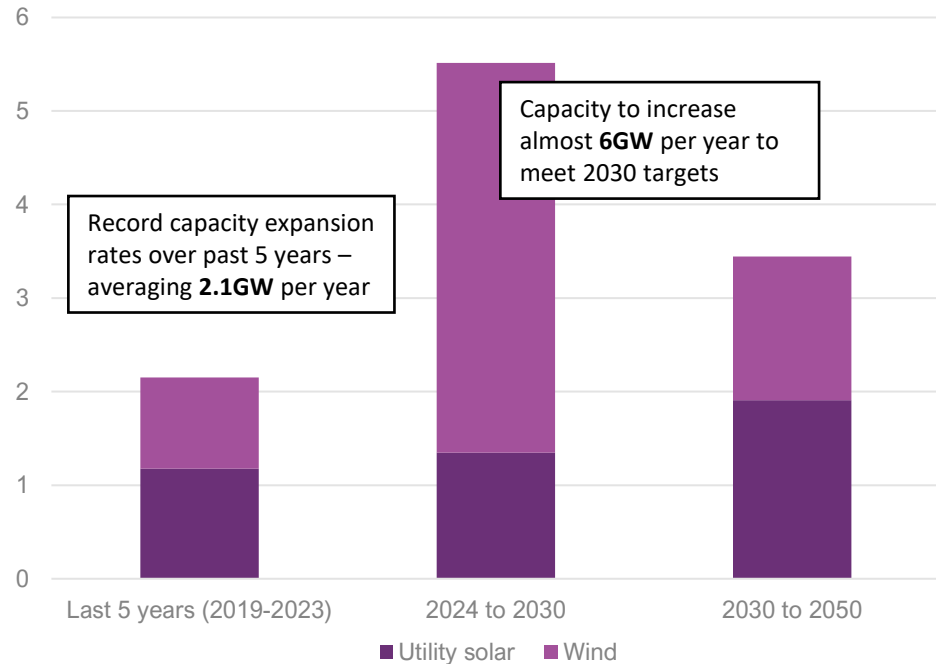
Five areas of focus for Government action

1	Mobilise investment	<i>Capture global capital shift to net zero to decarbonise electricity generation and expand supply</i>
2	Enable electrification	<i>Manage energy networks to enable rapid electrification</i>
3	Empower consumers	<i>Get the best outcomes for consumers to improve equity and accelerate decarbonisation</i>
4	Build the clean energy workforce & regional economies	<i>Grow and diversify the workforce, create opportunities in regions</i>
5	Grow alternative low-carbon fuels	<i>Enable the shift towards hydrogen, biomethane and low carbon liquid fuels while reliable and secure energy supply</i>

Mobilise investment

Accelerating firmed renewable energy capacity with transmission network expansion will require significant investment from both government and industry at a time of international competition for green finance.

Accelerating renewable capacity will require significant investment



There are challenges to attracting and retaining capital on this scale

> **Global investment in clean energy is increasing – but competition is fierce**

Global investment in the energy transition increased 17% in 2023 – to \$1.8tn – but demand for capital is high. Australia will need to compete internationally to attract investment.

> **Renewable generation is changing the way markets operate**

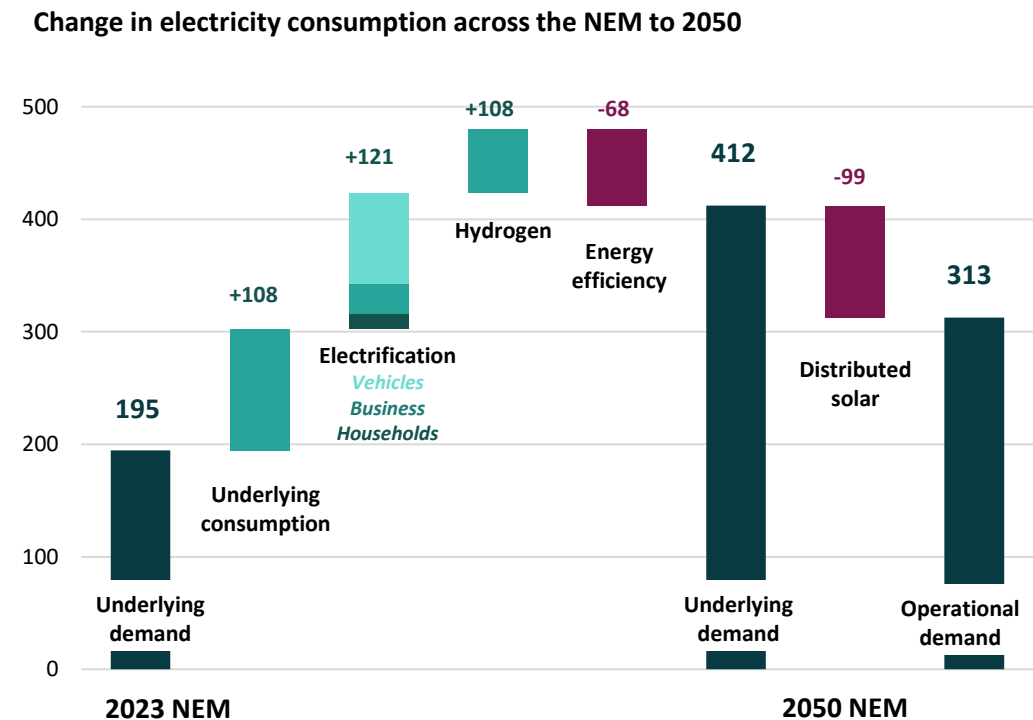
Renewable generation has changed market pricing. Clear market settings and price signals are needed to incentivise efficient investment.

> **Government has an important role in attracting and retaining capital by providing a positive investment environment**

Enable electrification across the economy

Electrification is a low-cost way to reduce emissions across the economy and support equity. This will require substantial changes to Australia’s electricity and gas networks, including improvements to efficiency and energy performance.

The profile of electricity demand will change as electrification increases, clean energy industries emerge and distributed solar continues to grow



Australia’s energy systems will need to adjust to these changes

> **Electrification will dramatically increase and change electricity demand**

AEMO expects electricity consumption across the NEM to double by 2050, largely driven by electrification and new industries such as hydrogen. Daily demand patterns will change with increased uptake of consumer energy resources like electric vehicles.

> **Economy-wide electrification will require careful planning and be supported by improved energy efficiency**

Australia's future electricity network must facilitate enough supply to meet increased demand for electricity - supported by increased demand flexibility

> **Coordination across Governments, industry and others is critical to maximise emissions reduction while ensuring reliable energy supply**

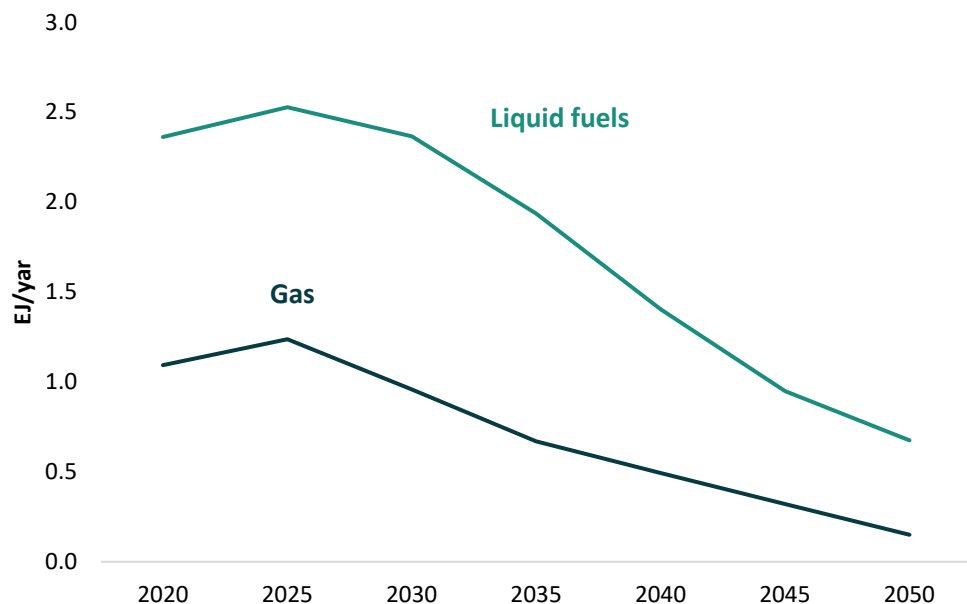
Each sector plan will need to prioritise electrification as widely as practical

Grow alternative low carbon fuels

To complement electrification, low-carbon fuels can be developed to decarbonise industries that are difficult to electrify, while transition risks and fuel security challenges are managed.

Demand for gas and liquid fuels will decline, but not disappear

Australia's primary energy consumption from gas and liquid fuels to 2050 under a rapid electrification scenario



The transition for these fuels will be complex, with risks to manage

> Electrification will displace a significant share of gas and liquid fuel use

Electrification can represent low or negative cost abatement opportunities – especially for residential uses and light passenger + commercial transport vehicles.

> Not all processes can be electrified – low carbon fuels will be required to meet net zero

Hydrogen and bio-energy fuels can support decarbonisation for hard-to-electrify processes, but these technologies remain nascent.

> Energy security and equity will need to be managed as Australia & the global economy shift away from fossil fuel use

Ongoing access to gas and liquid fuels will be essential for fuel security through the transition.

Building Australia's clean energy workforce

Australia will need a large skilled workforce to deliver the transition, and some skills shortages are already emerging. Early action is needed to address harness manage risks and harness opportunities.

Australia's net zero transition will require a large and diverse workforce



Snapshot

Australia's clean energy workforce needs

38

critical occupations across trades, technical and professional occupations

32k

more electricians needed in the next seven years

240k

additional workers needed across the clean energy industry by 2030

50%

of technical and trades worker occupations across the economy are already in national shortage

Skill shortages are a challenge, but there are opportunities too

> There is an emerging shortage of people with the skills needed to deliver the energy transition – and this shortage will grow

We are already facing shortages of technical skills such as electricians and Jobs and Skills Australia estimates that demand for critical clean energy occupations will grow 15% over the next 7 years.

> We have an opportunity to build a more diverse, equitable clean energy workforce

Employment diversity in energy is low – the energy transition presents an opportunity to diversify the workforce.

> Regional labour market impacts will need to be managed carefully

Clean energy activities will be regionally located, with implications for regional economies and labour markets.

Maximising outcomes for people and businesses

Households and businesses will play a critical role in the energy transition and need support to engage effectively. Careful policy design and consideration of social license issues is necessary to deliver the best outcomes for energy consumers.

Households can save money and support the transition by investing in energy upgrades



\$2.5 billion savings passed to consumers

Energy efficiency could lower total system costs, **avoiding \$2.5 billion in costs that would otherwise be passed on to consumers.**

\$8-\$18 billion in value generated by 2040

Demand flexibility reduces the need for supply and firming capacity. ARENA estimated that **flexible demand could generate \$8-\$18 billion in value by 2040.**



\$1000 saved per year for new all-electric homes

There are clear financial benefits for households that switch from gas to electric appliances. **Electric homes could save ~\$1,000 a year on energy bills (\$2,200 a year with solar installed).**

Government policy can empower consumers to engage with the transition

> The transition is changing the way that households and businesses interact with energy markets

Consumer energy resources (CER) allow consumers to interact with the energy market in more dynamic ways. Co-ordinating CER can deliver more affordable and secure energy while reducing emissions.

> Supporting consumers to participate in the transition can improve outcomes and accelerate decarbonisation

Households that are low-income, renters, culturally diverse and/or located in remote areas may not be able to easily access transition benefits. Empowering these consumers will improve equity and accelerate uptake of CER.

> Public support for the transition depends on affordable and reliable energy supply

Energy affordability can be enhanced by the deployment of renewable energy.

Consultation process

The Australian Government will be consulting on these five areas to inform the Electricity and Energy Sector Plan.

The consultation will go live in late March. Feedback received to develop the Electricity and Energy Sector Plan and inform the Net Zero 2050 Plan.

Your views and input will help develop an Electricity and Energy Sector Plan that is ambitious, achievable and accepted by Australians.

For more information, visit [Net Zero – DCCEEW](#) or email energyandelectricitysectorplan@dceew.gov.au.



Any questions?

