



Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# Electricity and Energy Sector Plan

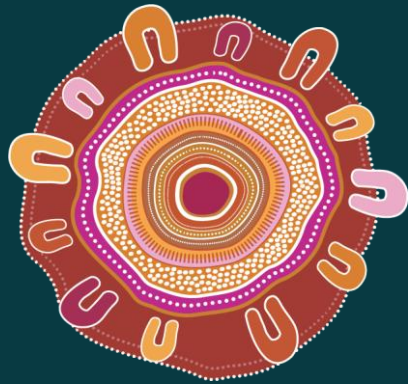
Discussion Paper  
Consultation Webinar

## Presenters

Adam McKissack (DCCEEW)

Emma Richardson (DCCEEW)





We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.



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# Our presenters today

**Adam McKissack** | *Chief Energy Economist - Office of Energy Economics,  
DCCEEW*

**Emma Richardson** | *Director, Electricity and Energy Sector Plan Taskforce,  
DCCEEW*

# Purpose of today's webinar



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1. Discuss key challenges and opportunities for the energy sector and Australians through the energy transformation.
  2. Focus on Discussion Paper topics.
  3. Hear from you and answer your questions.
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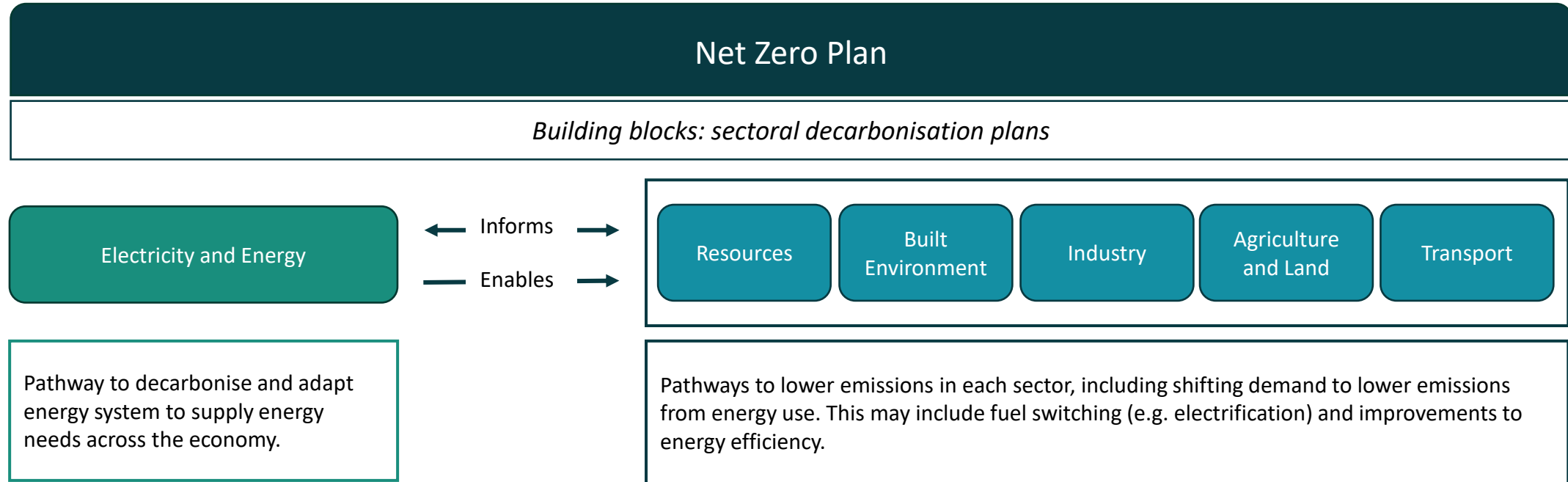
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# The Net Zero Plan will be underpinned by 6 sectoral plans



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

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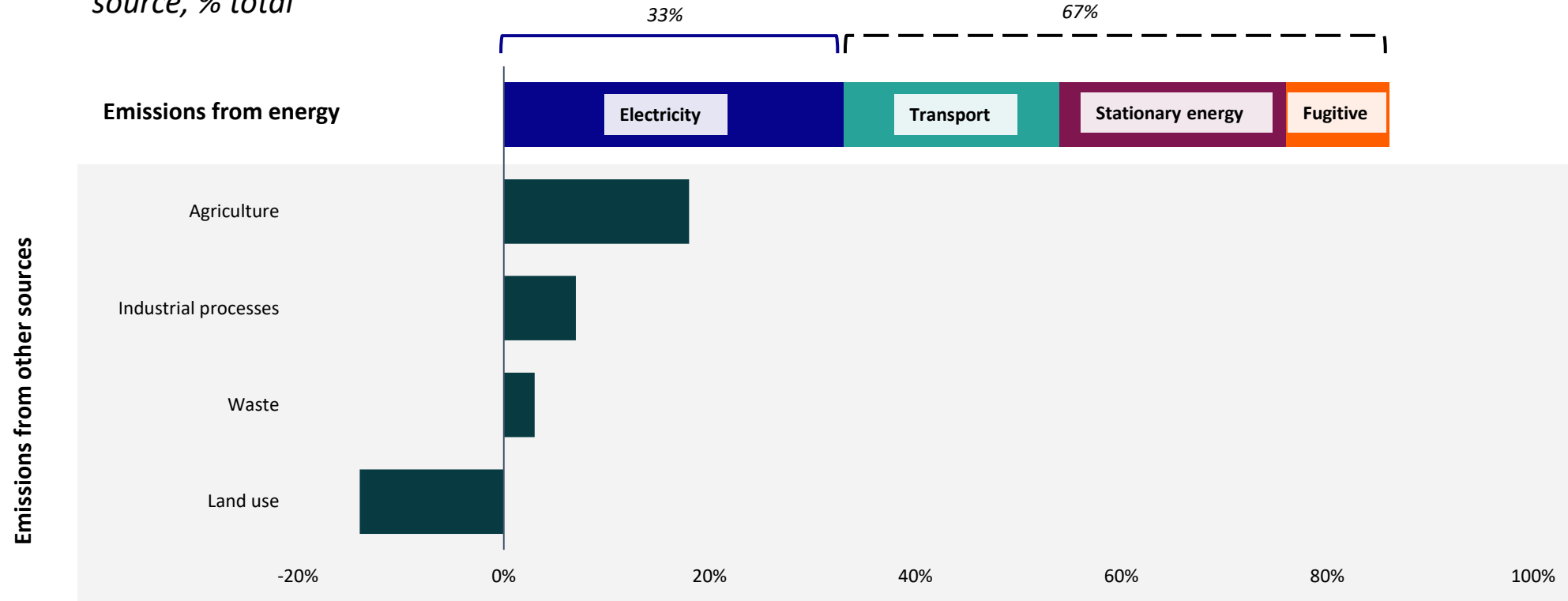




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# The role of the energy sector in Australia's net zero transformation

Australia's emission by source, % total



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

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

# The Plan will build on existing policy



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# The Electricity and Energy Sector Plan



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## 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



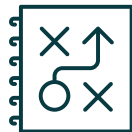
Affordable & equitable

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?
  - Preparing for a shift to a renewable 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?



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# 5 key considerations shaping the future of energy



## **Mobilise investment**

*Capture global capital shift to net zero to decarbonise electricity generation and expand supply*

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## **Enable electrification**

*Support the transition of our energy networks to enable rapid electrification*

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## **Maximise outcomes for people and businesses**

*Get the best outcomes for energy consumers to improve equity and accelerate decarbonisation*

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## **Build the clean energy workforce & regional economies**

*Grow and diversify the workforce, create opportunities in regions*

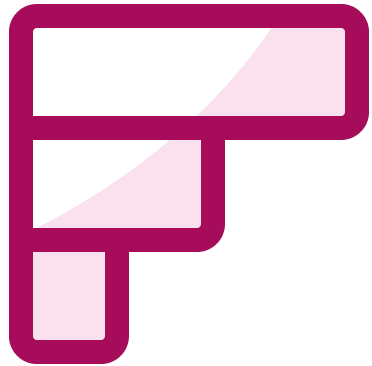
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## **Grow alternative low-carbon fuels**

*Enable the shift towards hydrogen, biomethane and low carbon liquid fuels while maintaining reliable and secure energy supply*

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**Please rank the 5 key considerations shaping the future of energy by order of importance.**

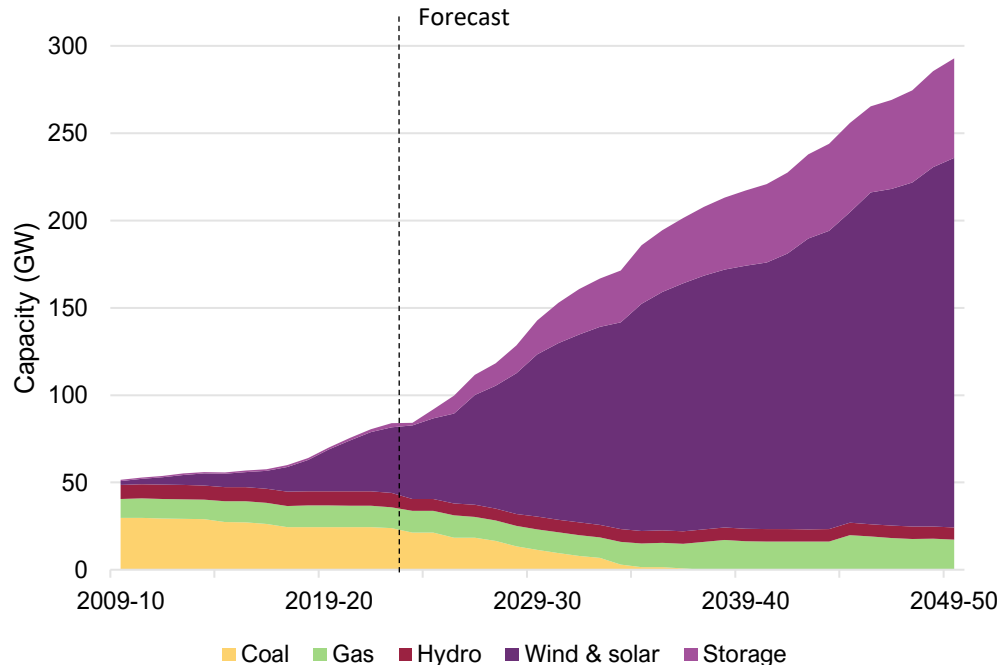
# Mobilise investment



**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

Generation capacity in the NEM, by source



## 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**



**What actions are needed to attract the required large scale private capital and household level investment in the energy transformation, with or without government intervention?**

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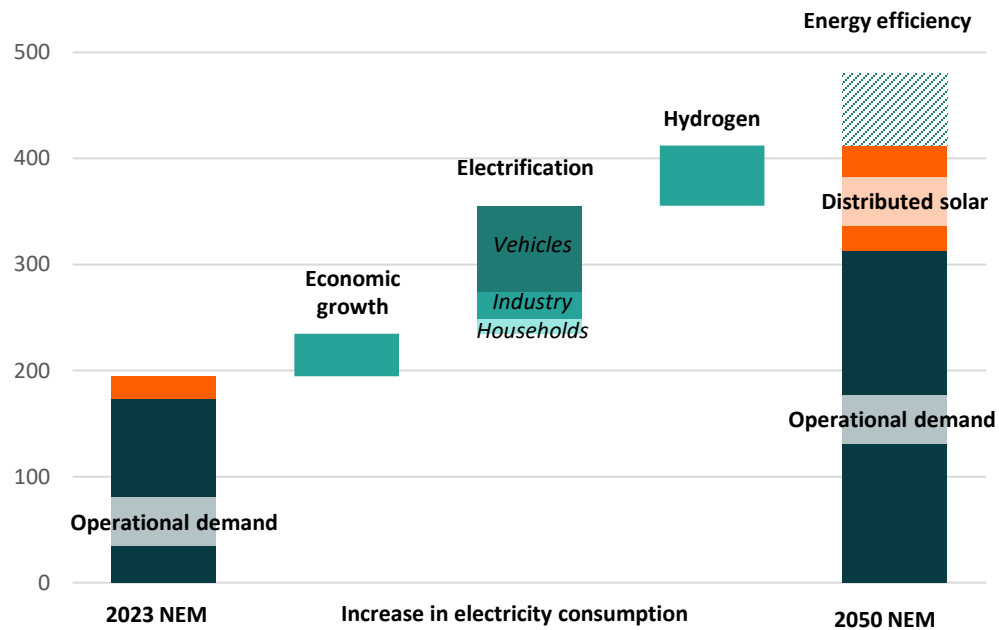
# Enable electrification across the economy



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

Change in electricity consumption across the NEM to 2050, TWh



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

## > Electrification will 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 supply will need to grow and adapt 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

The National Energy Transformation Partnership was established for state, territory and Commonwealth governments to collaborate on reforms to support a smooth transformation of Australia’s energy sector.



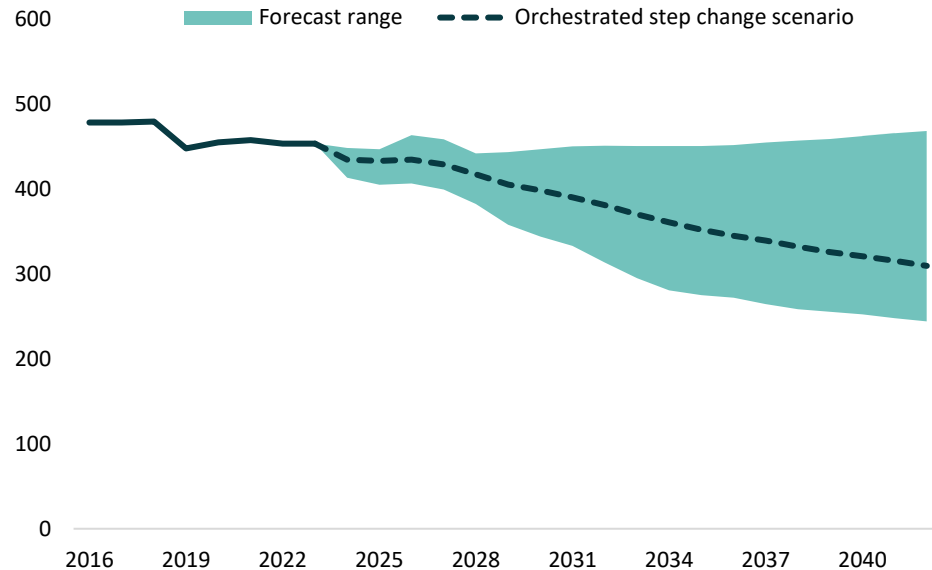
# Grow alternative low carbon fuels



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

Forecast range for domestic natural gas consumption (PJ)



## 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 a low-cost abatement opportunity – 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.

Source: AEMO Gas Statement of Opportunities, 2023.  
Note: AEMO's forecasts are not government forecasts.

# Building Australia's clean energy workforce



Australia will need a large skilled workforce to deliver the transition, and the demand for some skills is already increasing. Early action is needed to 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

## The potential for skill shortages is a challenge, but there are opportunities too

### > The demand for certain skills is already increasing rapidly

Jobs and Skills Australia estimates that demand for critical clean energy occupations (such as electricians) 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.

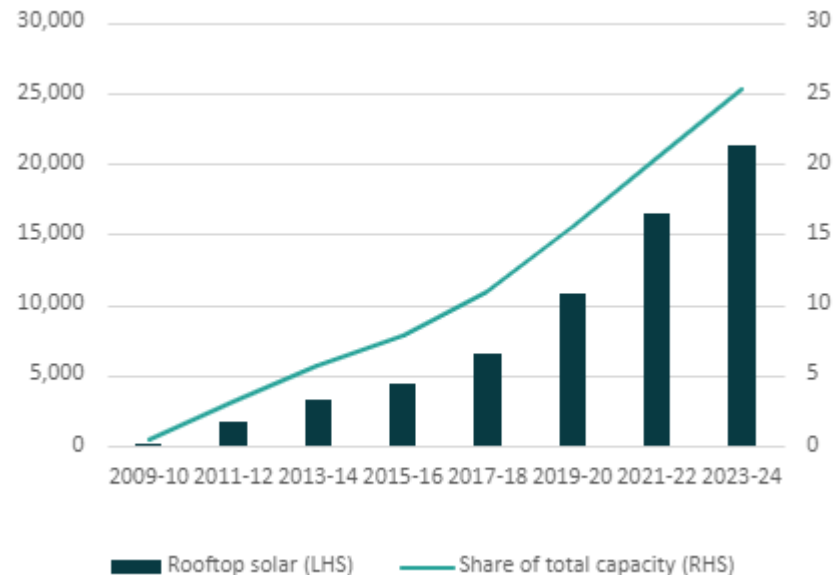
# Maximising outcomes for people and businesses



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.

## People and businesses are central to the energy transition

Rooftop solar capacity in the NEM has been increasing



## Government policy can empower and enable energy 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**

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

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

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**What do you believe will be the three most important outcomes of the Plan?**

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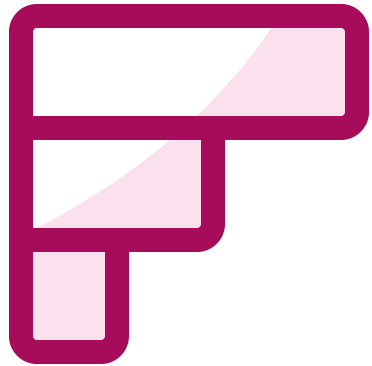


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# Consultation process

- Extensive consultation will be undertaken with the community, industry, experts and unions. State and Territory governments will inform the development of the Plan.
- Submissions for the **Discussion Paper** close on 26 April.
- Your input will help develop a Plan that is ambitious, achievable and accepted by Australians.
- The Plan will be delivered by the end of 2024.
- For more information, visit [Net Zero – DCCEEW](#) or email [energyandelectricitysectorplan@dcceew.gov.au](mailto:energyandelectricitysectorplan@dcceew.gov.au).





**Please rank the 5 key considerations shaping the future of energy by order of importance.**



**What actions are needed to attract the required large scale private capital and household level investment in the energy transformation, with or without government intervention?**



**What do you believe will be the three most important outcomes of the Plan?**



# Q&A

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## Audience Q&A Session

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# Have your say

Have your say on the Electricity and Energy Sector Plan Discussion Paper – by 5:00pm AEST, **26 April 2024**

Submit your feedback through the department's **Consultation Hub** at: <https://consult.dccew.gov.au/electricity-and-energy-sector-plan-discussion-paper>

The Department of Climate Change, Energy, the Environment and Water looks forward to hearing from you and receiving your feedback on the plan.

**Contact us:** if you have questions, you can email the team at [EnergyandElectricitySectorPlan@dccew.gov.au](mailto:EnergyandElectricitySectorPlan@dccew.gov.au)

# Contact us

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