

# Australian Conservation Foundation

**Submission to:** AEMO 2025 IASR Scenarios Consultation Paper

**Addressed to:** [forecasting.planning@aemo.com.au](mailto:forecasting.planning@aemo.com.au)

**Submission from:** Australian Conservation Foundation  
Level 1, 60 Leicester Street, Carlton VIC 3053.

**Contact details:** Ella Factor, Renewable Powered Australia Campaigner

E: [Ella.Factor@acf.org.au](mailto:Ella.Factor@acf.org.au) M: 0431 943 284

**Date:** 13<sup>th</sup> August 2024



**AUSTRALIAN  
CONSERVATION  
FOUNDATION**

**Nature  
needs us,  
now**



## About the Australian Conservation Foundation

The Australian Conservation Foundation is Australia's national environment organisation. Since 1965, we've protected the nature we all love – our unique wildlife and our beautiful beaches and bush.

Driven by the power of people, we won World Heritage listing for the Great Barrier Reef and Kakadu National Park, and returned precious water to the rivers of the Murray-Darling.

We influence governments and businesses to protect the animals, rivers and reefs close to our hearts and hold decision-makers to account without fear or favour. Everything we do is evidence-based and helps nature and people thrive for generations to come.

We won't give up until Australia's nature is protected and regenerated.

The Australian Conservation Foundation acknowledges that First Nations Peoples of Australia hold unique knowledge and rights inherited from their ancestors and Country and have cared for this country since time immemorial. We pay our respect to First Nations Peoples of Australia, past, present and future. We respect their leadership in caring for Country and support their rights to continue to do so. We recognise that sovereignty was never ceded, and that colonisation was unjust, often violent and continues to adversely impact on First Nations Peoples today. As Australia's national environment organisation, we understand we have a responsibility to help right this historical wrong. We support their authority to speak for Country, right to self-determination and recognise that rightful recognition of and genuine reconciliation with First Nations Peoples is fundamental to protecting nature in Australia. We support First Nations-led campaigns that protect Country and seek win-win outcomes for our environment and for the rights, wellbeing and advancement of First Nations Peoples

To find out more about the Australian Conservation Foundation's work visit [www.acf.org.au](http://www.acf.org.au)



**AUSTRALIAN  
CONSERVATION  
FOUNDATION**

**Nature  
needs us,  
now**





## Introduction

ACF welcomes the opportunity to comment on AEMO's draft IASR 2025 Discussion Paper, which will be used in AEMO's forecasting and planning publications for the National Electricity Market (NEM).

ACF is Australia's national environment organisation. We are 700,000 people who speak out for the air we breathe, the water we drink, and the places and wildlife we love. We are proudly independent, non-partisan and funded by donations from our community.

ACF believes Australia and the world face an unprecedented climate and mass extinction crisis caused first and foremost by digging up and burning fossil fuels like coal, oil, and gas.

The Inter-governmental Panel on Climate Change ('IPCC') emphasises that rapid and significant deployment of renewable energy, leading to a "substantial reduction in overall fossil fuel use", is an essential mitigation strategy under "all global modelled pathways that limit warming to 1.5°C".<sup>1</sup> In Australia, the greenhouse gas emissions associated with the electricity and stationary energy sectors accounts for 55% of total annual emissions.<sup>2</sup> Despite increased renewables uptake, Australia's energy system remains a source of polluting emissions that causes dangerous climate change, harming our ecosystems and communities.

Renewable energy is essential to Australia's future. We need a fast and fair transition, compatible with a 1.5°C pathway under the *Paris Agreement*, to a renewable energy grid with a capacity of 222 GW<sup>3</sup> of clean energy by 2030, shifting from around 40% renewable energy penetration in 2023<sup>4</sup> to at least 94% by 2030.

The following submission provides several high-level recommendations for the IASR as well as a suggested additional ISP scenario to better support an accelerated transition to a renewable energy grid. These recommendations are designed to address the critical need for a robust, reliable, and environmentally responsible energy system.

---

<sup>1</sup> IPCC, *2022: Summary for Policy Makers* (2022, P.R. Shukla et al, Cambridge University Press), [C.2].

<sup>2</sup> Department of Climate Change, Energy, the Environment and Water, *Australia's Emissions Projections 2023* (November 2023).

<sup>3</sup> Climate Council, *Seize the Decade: How we empower Australian communities and cut pollution by 75% by 2030* (March 2024), iv.

<sup>4</sup> Clean Energy Council, *Clean Energy Australia 2024* (March 2024).





## Recommendations

### **Recommendation 1: Accelerated Decarbonisation of the electricity sector**

Decarbonising Australia's electricity system by 2030 is imperative to support the electrification of the broader economy throughout the 2030s. This ambitious target will position Australia as a leader in climate action. The ISP scenarios should focus on the near-term pathway to decarbonising the electricity grid by 2030, not merely reducing electricity sector emissions to net zero by 2050.

### **Recommendation 2: Normative Scenario for Near Zero Emissions.**

AEMO should incorporate a normative scenario that mandates near-zero emissions by 2035, utilizing commercially proven technologies. This scenario should include a strategic plan for renewable energy (RE) sufficient to support manufacturing and industry growth.

### **Recommendation 3: The ISP as the National Renewable Infrastructure Construction Plan**

The ISP presents an opportunity to develop a comprehensive plan for large-scale renewable infrastructure. This will facilitate informed targeting of public and private investment and support the growth of domestic renewable manufacturing industries through place-based precinct planning.

### **Recommendation 4: Biodiversity Integration**

Biodiversity mapping should be integrated into the National Renewable Infrastructure Construction Plan to ensure environmental considerations are central to energy infrastructure development.

### **Recommendation 5: Exclusion of Non-Viable Solutions.**

The ISP should exclude technologies such as carbon capture and storage (CCS) from its strategic planning. These solutions have not proven to be effective at scale and may divert resources from more viable, sustainable alternatives. ACF strongly urges the government to explicitly exclude false emissions reduction activities from the scope of the ISP. In particular, carbon capture and storage should not be included as an emissions reduction strategy for electricity sector emissions associated with coal and gas combustion.

### **Recommendation 6: Gas Power Phasedown.**

A clear model for the phasedown of gas power is essential. This will facilitate the transition to a cleaner energy mix and ensure alignment with global decarbonization efforts. ACF recommends that AEMO specifically model the phasedown pathways for gas power plants and gas peaking power to ensure an orderly transition to a fully renewable electricity system by the mid-2030s.



**Since the 2023 IASR publication, what changes (such as environment, social, policy) do you consider most impact scenario development for the 2025 IASR scenarios?**

### **Recommendation 1: Accelerated Decarbonisation.**

Several significant changes are observed that should significantly influence the development of the 2025 IASR scenarios. Environmental considerations have become increasingly central, with a heightened focus on sustainability and the integration of renewable energy sources. The urgency to address climate change has intensified, with more frequent and severe weather events highlighting the need for a resilient and sustainable energy system. Socially, there is a growing public consensus on the importance of transitioning to renewable energy, which is reflected in the increasing consumer demand for green technologies and sustainable practices. Social shifts towards greater community engagement and consumer empowerment in energy choices have emerged, necessitating scenarios that reflect these participatory trends.

The Climate Change Authority's 2023 Annual Progress Report<sup>5</sup> highlights a critical juncture for Australia's environmental policy. Despite setting emissions reduction targets and policies, the actual decrease in emissions has been insufficient, with a slight increase noted in the year leading up to June 2023. The report underscores the importance of meeting or exceeding the 2030 targets to facilitate the achievement of more ambitious goals in the future. It acknowledges the significant risk of not meeting these targets and emphasizes the necessity of collective action and willingness to implement the required changes.

The report calls for increased support from all levels of government and communities to boost the development of renewable energy sources and infrastructure, as well as to encourage emissions reductions across all sectors of the economy. The current pace of emissions decline is not aligned with the trajectory needed to meet the Paris Agreement's target of a 43% reduction from 2005 levels by 2030. With Australia's emissions at 467 million tonnes of CO2 equivalent in the year ending June 2023, which is 116 million tonnes above the desired level for 2030, there is a clear need for a more aggressive approach to decarbonization, requiring an average annual reduction of 17 million tonnes of CO2 equivalent.

The report serves as a call to action, urging for immediate and effective policy implementation to translate targets into tangible outcomes. It is a reminder that while policies may set the direction, it is the actual reduction in emissions that counts towards combating climate change.

The Australian Government's broad climate policy agenda is a step in the right direction, but the report makes it clear that more needs to be done to ensure these policies result in the necessary emissions reductions. The challenge laid out by the authority is not just to set ambitious targets, but to commit to the actions needed to achieve them, thereby ensuring a sustainable future for Australia and contributing to

---

<sup>5</sup> [2023 Annual Progress Report \(climatechangeauthority.gov.au\)](https://climatechangeauthority.gov.au)



global efforts to mitigate climate change.

The commonwealth government has responded to this call to action by embarking on an economy wide sector decarbonisation planning process, as have state and territory level governments. The governments have also worked collaboratively via ECMC to develop and implement regulatory reform to ensure that energy planning and governance reflects the decarbonisation ambitions and international commitments of the Paris agreement to accelerate Australia's decarbonisation to ensure we utilise no more than our fair carbon budget to stay in line with a below 2-degree warming pathway and strive towards a 1.5-degree pathway. Along with the necessary regulatory changes, ECMC have given a clear direction that the next, 2026, ISP should be supercharged to ensure it is a robust and useful plan to achieve near zero emissions for our electricity sector.

The transition of the electricity sector to near zero emissions is indeed a critical component of broader decarbonisation strategies. The integration of the Integrated System Plan (ISP) with whole-of-economy decarbonisation efforts emphasizes the urgency of this transition. As the electricity sector evolves, it can catalyse the decarbonisation of other sectors by providing clean energy, which is essential for reducing overall carbon emissions. Accelerating this transition is not only vital for meeting climate goals but also for ensuring that the decarbonisation of other sectors is not hindered. Delays in the electricity sector's transition could have a cascading effect, impeding the progress of decarbonisation across the economy. Therefore, a concerted effort to expedite the shift to a low-emission electricity sector is imperative for achieving net-zero targets and facilitating a sustainable economic transformation.

The ISP, while required to consider government policies including legislated commitment to whole-of-economy Net Zero by 2050, should not be framed as a pathway to net zero by 2050 for the electricity sector. **ACF's position is that Australia's electricity system must be decarbonised by 2030, to underpin electrification across the rest of the economy throughout the 2030s.** Furthermore, a rapidly decarbonised electricity grid is a necessary precondition for the realisation of Australia's renewable energy superpower ambitions.<sup>6</sup>

ACF also emphasises that, according to the IPCC, the rapid deployment renewables at scale, leading to a "substantial reduction in overall fossil fuel use", is an essential mitigation strategy under "all global modelled pathways that limit warming to 1.5°C".<sup>7</sup> In Australia, the greenhouse gas emissions associated with the electricity and stationary energy sectors accounts for 55% of total annual emissions.<sup>8</sup> Despite increased renewables uptake, Australia's energy system remains a source of polluting emissions that causes dangerous climate change, harming our ecosystems and communities.

The International Energy Agency ('IEA') calls for the 2020s to be "the decade of massive clean energy expansion" to ensure deep cuts to global electricity sector emissions and to underpin the electrification of industry.<sup>9</sup> ACF urges AEMO to develop an ISP that supports governments to position Australia at the forefront of the race to renewables across advanced economies, such that Australia meets and beats the

---

<sup>6</sup> See J Sewell, *Beyond Zero Emissions' Response to an Inquiry into Australia's Transition to a Green Energy Superpower* (30 November 2022, BZE Submission), 1. Australia's aspiration to become a renewable superpower is also set out by the government at: DCCEEW, *Electricity and Energy Sector Plan Discussion Paper* (March 2024), 10.

<sup>7</sup> IPCC, 2022: Summary for Policy Makers (P.R. Shukla et al, Cambridge University Press), [C.2].

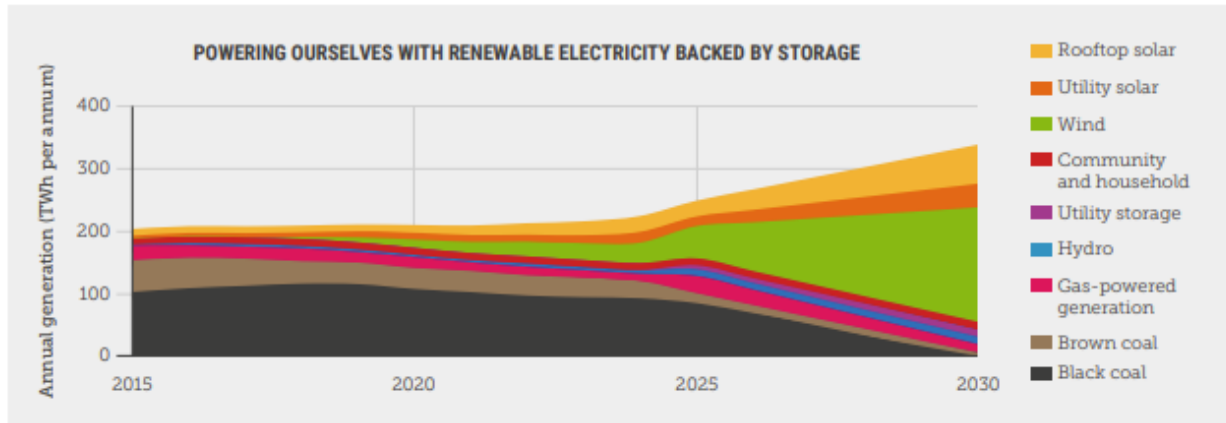
<sup>8</sup> DCCEEW, *Australia's Emissions Projections 2023* (November 2023).

<sup>9</sup> IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (May 2021), 14.



milestones modelled by the IEA for the global transition.

Similarly, the Climate Council's *Seize The Decade* report demonstrates that it is feasible to transition Australia's electricity grids to 94% renewables by 2030, and to further scale-up the grid to reach 222 GW of capacity by the end of this decade. The Climate Council's modelling shows that rapid deployment of renewables can generate enough electricity to enable coal fired power stations to close by 2030, and to allow for gas peaking power to be reduced in preparation for phaseout (see Figure 2 below).<sup>10</sup>



Source: Generation refers to the NEM only. Historic generation based on AEMO (2023a); projected generation based on Climate Council and ISF analysis.

Figure 1: Pathway to 94% Renewable Electricity Generation by 2030, Climate Council

The Climate Council's analysis is not the only modelling that demonstrates the feasibility of close to 100% renewable electricity grid by 2030.<sup>11</sup> For example, the Net Zero Australia study, which published its modelling in 2023, found in all modelled scenarios that electricity generation from fossil fuels rapidly declines to 2030 by around 80%.<sup>12</sup> Similarly, the results of Climateworks Centre's modelling shows that "it is cost effective for Australia to rapidly replace fossil fuel generated electricity" and "go beyond its current target of generating 82 per cent of its electricity from renewables by 2030."<sup>13</sup> Under the AusTIMES model, Climateworks Centre expects renewables to represent up to 90% of generation by 2030.<sup>14</sup>

### Recommendation 1: Accelerated Decarbonisation of the electricity sector

Decarbonising Australia's electricity system by 2030 is imperative to support the electrification of the broader economy throughout the 2030s. This ambitious target will position Australia as a leader in climate action. The ISP scenarios should focus on the near-term pathway to decarbonising the electricity grid by 2030, not merely reducing electricity sector emissions to net zero by 2050.

<sup>10</sup> Climate Council, *Seize the Decade: How we empower Australian communities and cut pollution by 75% by 2030* (March 2024), 12-13.

<sup>11</sup> Noting that gas peaking power is expected to play a minor firming role into the early 2030s to support grids otherwise composed of 100% renewable energy generation and clean dispatchable power generation.

<sup>12</sup> Net Zero Australia, *Final modelling results* (April 2023), 36.

<sup>13</sup> Climateworks Centre, *Decarbonisation scenarios 2023: Australia can still meet the Paris Agreement* (November 2023), 12.

<sup>14</sup> Ibid, 13.

## Recommendation 2: A Normative Scenario for Near Zero Emissions.

The transition to a low-carbon economy is a multifaceted challenge that requires coordinated action across all sectors. The electricity sector, in particular, plays a pivotal role as it is both a significant source of emissions and the potential enabler of decarbonisation across the board. The ISP is instrumental in this transition, providing a strategic roadmap for the evolution of the electricity grid to meet future needs, including the integration of renewable energy sources.

The Commonwealth Government's commitment to decarbonisation is evident in its development of comprehensive plans that encompass every sector of the economy. These plans are complemented by state and territory-level initiatives, with the aim of creating a robust framework for achieving a sustainable and resilient energy future. The focus on the ISP highlights the necessity of a reliable and adaptable electricity network that can support the increasing demand for clean energy in the rest of the economy.

The role of the ISP in facilitating the whole of economy decarbonisation mission would be strengthened through the development of an accelerated decarbonisation scenario that provides guidance on lifting ambition regardless of costs.

The Integrated System Plan (ISP) serves as a strategic roadmap for the evolution of the electricity market, guiding investments and policy decisions. The scenarios within the ISP, while not prescriptive, offer a range of plausible futures, each with its own set of assumptions about economic, technological, and environmental variables. These scenarios are instrumental in understanding the potential impacts and trade-offs of different energy strategies. The "Step Change" scenario, identified by the Delphi panel as the most probable, anticipates a transformation in the energy sector, driven by technological advancements and policy shifts. However, it is crucial to recognize that while these scenarios are valuable for planning, they may not fully encapsulate the urgency of transitioning to a low-carbon economy.

The call for a normative scenario—one that mandates the achievement of near-zero emissions without over-reliance on carbon capture and storage (CCS)—reflects the growing scientific consensus on the need for more aggressive action against climate change. Such a scenario would set a more definitive course, compelling stakeholders to innovate and adapt to meet stringent emission targets. It would also send a clear signal to the market, potentially accelerating the adoption of renewable energy sources and the development of new technologies.

Incorporating a normative scenario into the ISP could serve as a catalyst for change, challenging the status quo and fostering a more proactive approach to decarbonization. It would align with global trends towards more ambitious climate goals and reflect the increasing public and political will to address climate change head-on. Moreover, it would provide a benchmark against which the effectiveness of current policies and investments could be measured, highlighting areas where additional effort is needed.

The 2024 ISP outlines a roadmap for transitioning the National Electricity Market (NEM) to a system capable of meeting future energy needs while moving towards net zero emissions by 2050. This plan includes the identification of essential infrastructure and the optimal development path for generation, storage, and network investments. It is an approach that considers the cost-benefit analysis of various strategies and the integration of renewable energy zones.





Ultimately, the inclusion of a normative scenario outlining a roadmap for transitioning the National Electricity Market (NEM) to a system capable of meeting future energy needs while moving towards net zero emissions by 2035 in the ISP would not only reflect a commitment to environmental stewardship but also ensure that the planning process remains relevant and responsive to the evolving landscape of the energy sector. It would encourage a more holistic view of the energy transition, one that prioritizes sustainability and investing in the well-being of future generations. As the world grapples with the challenges of climate change, such forward-thinking strategies will be vital in shaping a resilient and sustainable energy future.

### **Recommendation 2: Normative Scenario for Near Zero Emissions.**

AEMO should incorporate a normative scenario that mandates near-zero emissions by 2035, utilizing commercially proven technologies. This scenario should include a strategic plan for renewable energy (RE) sufficient to support manufacturing and industry growth.

## **Recommendation 3: The ISP as the National Renewable Infrastructure Construction Plan**

The ISP's practical contribution to the net zero transition extends beyond mere observation and consideration of government policy, to actively informing and advising policy decision making. A critical aspect of this advisory role is the identification of energy infrastructure needs into the future. This practical contribution could be expanded to give the ISP even greater utility for all stakeholders, with particularly helpful contribution of forming an evidence base for targeted government interventions.

The Integrated System Plan (ISP) should provide a model for the creation of a National Renewable Infrastructure Construction Plan. This plan would serve as a blueprint for the development and deployment of renewable energy infrastructure across the nation. Modelling for this plan would identify strategic initiatives to accelerate the construction of renewable energy assets, ensuring that the transition to a low-emission economy is both efficient and equitable. The plan would prioritize investments in renewable energy sources that are commercially proven and have the potential for wide-scale deployment, such as solar, wind, and hydroelectric power.

Expanding the ISP remit to model a National Renewable Infrastructure Construction Plan would enable the evidence-based identification of targeted opportunities for public investment to accelerate and de-risk the energy transition in the best long-term interests of consumers and Australian taxpayers. For example, the ISP could be used to identify the needed common user infrastructure that presents the largest financial challenges, such as prohibitively high initial capital expenditures with low or delayed return on investment (ROI). Additionally, the ISP should highlight infrastructure that could potentially lead to monopolistic practices in energy pricing, necessitating public investment or intervention in ownership and governance to prevent price gouging and ensure fair access to energy resources.

In summary, this proposed proactive policy advisory role of the ISP would be geared towards a sustainable and equitable energy future. The emphasis on commercially proven RE technologies and the strategic guidance on infrastructure investment and governance are pivotal in achieving the dual objectives of



economic viability and environmental responsibility. The long-term vision encapsulates not only the immediate financial implications but also the broader societal benefits of a clean energy transition.

The National Renewable Infrastructure Construction Plan would be a cornerstone of the ISP's recommendations, emphasizing the importance of a coordinated and well governed approach to renewable energy infrastructure development. It would highlight the need for significant investment, both public and private, to achieve the near-zero emissions target by 2035. The plan would also consider the economic and social benefits of such an investment, including job creation, energy security, and the long-term cost savings for consumers.

Incorporating this plan into the ISP's remit would demonstrate a commitment to actionable and practical steps towards a sustainable energy future. It would provide a clear path forward for policymakers, industry stakeholders, and the public, aligning with the overarching goal of transitioning to a clean energy economy with minimal environmental impact and maximum societal benefit.

### **Recommendation 3: The ISP as the National Renewable Infrastructure Construction Plan**

The ISP presents an opportunity to develop a comprehensive plan for large-scale renewable infrastructure. This will facilitate informed targeting of public and private investment and support the growth of domestic renewable manufacturing industries.

### **Recommendation 4: Biodiversity Integration**

All stakeholders in the energy transition must proactively protect Australia's biodiversity and ecosystems to ensure that the green industrial revolution does not repeat the mistakes of previous industrial development. This requires government guidance on the appropriate siting of renewables projects across Australia, and further, explicit government interventions that ensure project developers are in a race to the top in regard to the nature protection and restoration co-benefits achieved by their renewables projects.

ACF has previously endorsed shared principles for nature positive renewable energy and clean industry,<sup>15</sup> which relevantly included principles to avoid or minimise the local nature impacts of renewables as follows:

- Prioritise environmentally disturbed sites and those with complementary uses for delivery of new renewable energy and clean energy infrastructure;
- Make ecosystems with high conservation value, high cultural value and/or high carbon storage potential clearly off-limits;
- Apply the mitigation hierarchy when assessing projects so that avoiding harmful impacts is the top priority; and
- Require upfront planning to manage full project footprint impacts over their lifetime.

#### **Integrating biodiversity regional mapping into the National Renewable Infrastructure Construction Plan**

First, the federal government must proactively plan for the siting of renewable infrastructure across Australia through a National Renewable Infrastructure Construction Plan (see Recommendation 3 above)

---

<sup>15</sup> Climate Council et al, "Shared principles for nature positive delivery of renewable energy and clean industry", (letter to the Hon Tanya Plibersek MP, 5 February 2024).

and ensure that biodiversity mapping and outcomes are embedded in that plan. To date, the most comprehensive renewable infrastructure mapping, which is undertaken by AEMO in its biennial ISPs, has been largely blind to the biodiversity values of different siting scenarios. This must change.

Regional planning mechanisms developed in collaboration with State and Territory governments should be used to identify and map biodiversity and cultural values across a region, particularly biodiversity values that are matters of national environmental significance such as critical habitat for threatened species and Ramsar wetlands.

In identifying suitable locations, high conservation values must be avoided and cumulative impacts on nature and communities should be avoided wherever possible, and minimised. Ongoing monitoring of impacts on species and habitats should be undertaken and used to inform an adaptive approach to the maintaining and updating of planning mechanisms; ensuring unforeseen impacts are addressed and impacts can be responded to in real time to ensure protections of species and habitats are maintained over time. The regional mapping must clearly identify and delineate boundaries for renewable energy projects, to ensure that high conservation land is protected.

Finally, the federal government must prioritise the precautionary principle when undertaking biodiversity mapping and determining the boundaries of renewable sites under the National Renewable Infrastructure Construction Plan.

#### **Recommendation 4: Integrate biodiversity mapping into the ISP as a National Renewable Infrastructure Construction Plan**

Biodiversity mapping should be integrated into the National Renewable Infrastructure Construction Plan to ensure environmental considerations are central to energy infrastructure development.

### **Recommendation 5: Exclusion of Non-Viable Solutions.**

#### **False solutions like CCS have no role in Australia's future energy system**

CCS is not a climate solution. CCS does not work at scale,<sup>16</sup> and it is almost exclusively advocated for by polluting fossil fuel producers and burners to justify their continued pollution.<sup>17</sup> The IASR should not include CCS as an emissions reduction measure.

CCS is unproven both in terms of the percentage of CO<sub>2</sub> actually captured, and the permanence of storage. It is also comparatively expensive and therefore unnecessary compared to other decarbonisation technologies, namely, electrification. As such, **ACF is of the firm position that CCS has no role in decarbonising Australia's electricity or energy systems and that CCS must not be used to justify the expansion of the coal, oil or gas sectors.**

<sup>16</sup> B Robertson and M Mousavian, *Gorgon Carbon Capture and Storage: The Sting in the Tail* (April 2022, Report).

<sup>17</sup> Z Rempel, L Cameron and O Bois von Kursk, *Unpacking Carbon Capture and Storage: The technology behind the promise* (2023, Explainer report by International Institute for Sustainable Development).



At a global scale, high-CCS pathways towards net zero by 2050 – where CCS is significantly relied upon to mitigate emissions – is far more expensive than alternatives. Indeed, one study found that high reliance on CCS would cost the globe **USD \$30 trillion more** than low reliance on CCS.<sup>18</sup> That study concluded:

*High-CCS routes will waste trillions of dollars compared with low-CCS routes, with low-CCS routes being in addition more feasible, secure and sustainable. The logic of both climate change and economics encourages as a central priority the rapid build-out of renewables, grids and flexibility during the coming decade, an increase in the rate of energy-efficiency improvements, and rapid electrification...*<sup>19</sup>

The costs and risks associated with CCS are already playing out in Australia, with serious consequences for our climate. Chevron’s Gorgon CCS Project has continued to overrun budgets and underdeliver emissions reductions. Chevron received AUD\$60 mill in government funding to support its CCS project, under the Low Emissions Technology Demonstration Fund,<sup>20</sup> yet in the six years since export of LNG commenced from the Gorgon Project, out of the 20.4 million tonnes of CO<sub>2</sub> that was extracted as reservoir emissions only 6.5 million tonnes has been stored under the island.<sup>21</sup>

### **Recommendation 5: Exclusion of Non-Viable Solutions.**

The ISP should exclude technologies such as carbon capture and storage (CCS) from its strategic planning. These solutions have not proven to be effective at scale and may divert resources from more viable, sustainable alternatives. ACF strongly urges the government to explicitly exclude false emissions reduction activities from the scope of the ISP. In particular, carbon capture and storage should not be included as an emissions reduction strategy for electricity sector emissions associated with coal and gas combustion.

### **Recommendation 6: Gas Power Phasedown.**

In relation to natural gas (more accurately termed fossil gas), ACF emphasises that climate polluting methane has no role in Australia’s future electricity and energy systems. **Fossil gas is not a transition fuel, it is just as, if not more climate polluting than coal.**

Indeed, the production and use of fossil gas represented 21% of Australia’s greenhouse gas emissions in 2020-21, a fifth of total emissions. Its utility for residential purposes and as dispatchable capacity during times of peak demand will only be over the short term, while electrification accelerates and clean dispatchable energy options come online. Replacing fossil fuels – including oil and gas – is critical for Australia to be compliant with the IEA’s Net Zero by 2050 pathway.

#### **Modelling for a Gas Power Phasedown**

Gas generation and peaking power plants have a limited transitional role in Australia’s electricity and energy systems. AEMO should specifically model the phasedown pathways for gas power to ensure an orderly

<sup>18</sup> A Bacilieri, R Black and R Way, “Assessing the relative costs of high-CCS and low-CCS pathways to 1.5 degrees”, (2023, Oxford Smith School Working Paper 23-08), 3.

<sup>19</sup> Ibid, 49.

<sup>20</sup> Chevron, “Gorgon carbon capture and storage fact sheet”, (2022), < <https://australia.chevron.com/-/media/australia/publications/documents/gorgon-co2-injection-project.pdf>>.

<sup>21</sup> Chevron, *Gorgon Gas Development and Jansz Feed Gas Pipeline: Environmental Performance Report* (2022), 44-49.

transition as soon as possible, without proper modelling over investment in gas power is a genuine risk and may result in costly stranded assets in the 2030s.

For Australia’s electricity sector pathway to net zero to be compliant with a 1.5°C pathway, Climate Analytics emphasises that the phasedown of fossil gas power generation needs to be “front-loaded” such that fossil gas power usage declines rapidly as a portion of Australia’s electricity generation by 2030 and is completely phased out by 2035.<sup>22</sup>

Right now, Australia does not have a plan for the management and phasedown of its gas power assets, or to appropriately scale-up clean dispatchable capacity solutions to fully replace gas peaking power. This risks a disorderly and delayed transition of those assets in the 2030s, and ultimately higher costs to consumers.

### **Recommendation 6: Gas Power Phasedown.**

A clear model for the phasedown of gas power is essential. This will facilitate the transition to a cleaner energy mix and ensure alignment with global decarbonization efforts. ACF recommends that AEMO specifically model the phasedown pathways for gas power plants and gas peaking power to ensure an orderly transition to a fully renewable electricity system by the mid-2030s.

---

<sup>22</sup> Climate Analytics, *What is Australia’s pathway to limit global warming to 1.5C?* (December 2022).

