

# Australian Conservation Foundation

**Submission to:** Question on Notice – Future Made in Australia Bill 2024 and the Future Made in Australia (Omnibus Amendments No. 1) Bill 2024 Inquiry

**Addressed to:** Federal Senate Standing Committee on Economics

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

**Contact details:** Annika Reynolds, National Climate Policy Advisor

[REDACTED]

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**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)



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## Response to Question on Notice

The Australian Conservation Foundation (ACF) welcomes the opportunity to provide additional information to the Senate Standing Committee on Economics Legislation’s *Inquiry into the Future Made in Australia Bill 2024 [Provisions] and the Future Made in Australia (Omnibus Amendments No. 1) Bill 2024 [Provisions]*. The Future Made in Australia Bill 2024 (Cth) and the Future Made in Australia (Omnibus Amendments No. 1) Bill 2024 (Cth), responding to the following question on notice:

*What opportunities are there to redirect funding from transmission to renewable energy generation and storage through the co-location of renewable energy industrial precincts with renewable energy generation and storage?*

ACF welcomes the question and emphasises the importance of early planning from government and the Australian Energy Market Operator (AEMO) to ensure that the design of Australia’s electricity system is compatible with the renewable energy requirements of green industry and households, while also co-locating energy and industrial infrastructure to reduce the ultimate project footprint of the grid.

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>1</sup> 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 222 GW capacity green energy grid (around 94% renewable energy).<sup>2</sup>

How Australian governments and regulators plan for the development of that green energy grid (as well as off-grid renewable energy infrastructure for industry and mining), will have implications for how orderly Australia transitions to renewable energy, and the costs versus benefits ultimately distributed among consumers at both an industrial and household scale. ACF emphasises that Australia’s electricity system must be planned in a manner that considers and seeks to minimise impacts on high conservation land, to ensure that renewables that are good for global biodiversity are also good for local nature.

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

<sup>2</sup> Climate Council, “Transform the Energy System”, (2022) <[The logo of the Australian Conservation Foundation, featuring a stylized green leaf inside a circular frame.](https://powerup.climatecouncil.org.au/transform-the-energy-system/#:~:text=By%202030%20our%20electricity%20sector,in%20buildings%2C%20transport%20and%20industry.></a>>.</p></div><div data-bbox=)

The following response provides ACF’s recommendations for future planning of the energy system that would contribute to the achievement of a more orderly transition to a renewable energy grid, the more efficient use of variable renewable energy through co-location of storage and industrial users and opportunities to plan for, and incentivise, renewables that are appropriately sited and generate biodiversity co-benefits.

## The Importance of Planning for a Green Energy Export Future

Currently, government policy and future grid planning relies upon the *Step Change* scenario modelled by the Australian Energy Market Operator (‘AEMO’) in its *2024 Integrated System Plan* (‘ISP’) for the National Electricity Market (‘NEM’), regarding the likely growth of renewables and electrification,<sup>3</sup> rather than the *Green Energy Exports* scenario. The *Step Change* scenario is considered the most likely future scenario for the NEM under current conditions (include policy directions), according to AEMO.<sup>4</sup>

However, the *Step Change* scenario is misaligned with two major policy directions and obligations of the federal government:

- First, the *Step Change* scenario is considered be “incompatible with 1.5°C pathways for the NEM”,<sup>5</sup> although it is expected to align with a less than 2°C pathway. ACF’s position is that the Australian government should be seeking to transition the electricity system at a scale and speed that is as close to a 1.5°C pathway as possible, in accordance with its obligations under the *Paris Agreement*; and
- Second, the *Step Change* scenario does not account for the rapid and significant growth of clean energy industries needed to achieve the government’s vision for Australia to emerge as a renewable energy superpower.<sup>6</sup>

In contrast, the *Green Energy Exports* scenario “reflects very strong decarbonisation activities domestically and globally to limit temperature increases to 1.5°C resulting in rapid transformation of Australia’s energy sectors, including a strong use of electrification, green hydrogen and biomethane.”<sup>7</sup> AEMO estimated there was a 15% chance that the *Green Energy Exports* scenario will eventuate, based upon current investment flows, policy signals and capacity constraints.<sup>8</sup> The *Green Energy Exports* scenario is also consistent with the IEA’s Net Zero Emissions by 2050 pathway, reflecting Australia’s own legislated net zero by 2050 target. Whereas the *Step Change* scenario is not.<sup>9</sup>

AEMO’s assessment that *Step Change* is the current most likely scenario for the NEM does not, and

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<sup>3</sup> See DCCEEW, *Electricity and Energy Sector Plan Discussion Paper* (March 2024), 8 and 20.

<sup>4</sup> AEMO, *2024 Integrated System Plan for the National Energy Market* (June 2024), 7-8.

<sup>5</sup> AEMO, *2023 Inputs, Assumptions and Scenarios Report* (July 2023), 4.

<sup>6</sup> DCCEEW, *Electricity and Energy Sector Plan Discussion Paper* (March 2024), 10.

<sup>7</sup> Ibid.

<sup>8</sup> AEMO, *2024 Integrated System Plan for the National Energy Market* (June 2024), 41.

<sup>9</sup> AEMO, *2023 Inputs, Assumptions and Scenarios Report* (July 2023), 20.



should not, preclude the federal government from nonetheless planning for the *Green Energy Exports* scenario. It is essential that government plan early for the significant scale-up of renewable generation and dispatchable capacity that will be required to support clean energy industries and scale, and the export of green energy products.

## Ensuring that Energy Grid Investment Incentivising Co-Location of Infrastructure and Dual Use Land

ACF emphasises that government should undertake planning for the *Green Energy Exports* scenario in a manner that recognises the particular requirements for the efficient decarbonisation of existing regional industrial centres, as well as the most effective mechanisms for developing new renewable energy industrial precincts. An important aspect of this planning will be the co-location of green energy industries with renewable energy generation and storage, and the dual use of land to the greatest extent possible (for example, leveraging shaded car parks for solar generation, or incentivising flexible demand responses from major industrial facilities to achieve demand management outcomes).

In 2022, the Australian Renewable Energy Agency commissioned research to guide the decarbonisation opportunities in regional Australia.<sup>10</sup> That report, undertaken by Climateworks Centre and Climate-KIC Australia reviewed the best possible decarbonisation pathways for the Pilbara, Kwinana, Gladstone, the Hunter and the Illawarra, and found the following common themes across all industrial centres:

- The need for large-scale investment and deployment of renewable energy, infrastructure and measures that improve energy system efficiency and flexibility, to ensure affordability and reliability of decarbonised energy systems;
- The need for enhanced coordination across multiple dimensions of the system and for collaboration between entities; and
- The need to act now: setting transformative changes in motion now by laying the groundwork for deployment of mature, not yet commercial and emerging technologies.<sup>11</sup>

The report emphasises the importance of renewable energy generation, noting that across the five regions, industrial decarbonisation would require over 100% of the renewable energy generation currently available across Australia's entire electricity grid, but co-locating that generation within those industrial regions would reduce transmission costs.<sup>12</sup>

Similarly, Beyond Zero Emissions have recommended the co-location of Renewable Energy Industrial Precincts ('REIPs') with renewable energy zones where possible, to maximise co-location efficiency

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<sup>10</sup> Climateworks Centre and Climate-KIC Australia, *Setting up industrial regions for net zero* (commissioned by ARENA, final report, June 2022), <https://arena.gov.au/assets/2022/06/setting-up-industrial-regions-for-net-zero-report-2.pdf>.

<sup>11</sup> Ibid, 57.

<sup>12</sup> Ibid, 58.

outcomes and reduce the need for transmission lines.<sup>13</sup>

To achieve the most effective co-location of infrastructure will require the integration of both top-down and bottom-up approaches for the planning and development of REIPs across Australia. Namely:

- **Top-down or whole of system modelling:** which models the optimal development of the electricity system at a national-scale, such as AEMO's ISP, focused on optimising energy costs but may not consider other factors, such as regional-specific economic or industrial needs; and
- **Bottom-up modelling:** which focuses on a specific region and is able to collate granular data, including stakeholder consultation, about potential future industrial pathways for the region including energy needs. The modelling and consultation should be utilised to develop a REIP development plan, which may be commercial in confidence, but should be accessible to key national-scale systems modellers (such as AEMO).

The two modelling approaches should inform each other in a feedback loop. Bottom-up modelling taking into account the top-down model for Australia's electricity system, and, critically, AEMO should be empowered to access bottom-up modelling and take it into account in the development of future Integrated System Plans to better consider and represent the future energy needs of REIPs.

Finally, ACF also notes that a barrier to a fully green iron and steel sector is the renewable energy rollout, which is required at scale to both underpin the energy needs of the green iron and steel sector and to deliver an appropriately low levelised cost of energy.<sup>14</sup> The federal government should continue to invest in and accelerate the rollout of large-scale renewables, clean dispatchable capacity and consumer energy resources to get Australia on track for AEMO's *Green Energy Exports* pathway.<sup>15</sup> ACF urges the government to embed additionality requirements Future Made in Australia supports for the green metals sector (either direct supports for green metals or via the Green Hydrogen Production Tax Credit), to ensure green metals projects drive investment in additional renewable energy generation and green hydrogen. The government should also consider planning mechanisms that ensure green metals projects are co-located within renewable industrial hubs and near existing energy infrastructure to avoid transmission loss and minimise the need for additional electricity infrastructure.

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<sup>13</sup> Beyond Zero Emissions, *Safeguarding Our Future: Why Funding Renewable Energy Industrial Precincts is the Smart Investment* (September 2023).

<sup>14</sup> See further, A Reynolds, *Submission to the Electricity and Energy Sector Plan Discussion Paper* (May 2024, ACF Submission), <[https://assets.nationbuilder.com/auscon/pages/23620/attachments/original/1714962594/ACF\\_-\\_Electricity\\_and\\_Energy\\_Sector\\_Plan\\_submission.pdf?1714962594](https://assets.nationbuilder.com/auscon/pages/23620/attachments/original/1714962594/ACF_-_Electricity_and_Energy_Sector_Plan_submission.pdf?1714962594)>.

<sup>15</sup> AEMO, *2024 Integrated System Plan for the National Energy Market* (June 2024) and AEMO, *2023 Inputs, Assumptions and Scenarios Report* (July 2023), 4.



## Avoiding and Minimising Potential Biodiversity Impacts of Renewable Energy Projects

Australia is in the midst of an extinction crisis, with more than 2,000 plants and animals on the federal threatened species list. The two greatest threats to biodiversity in Australia are climate change and habitat destruction. ACF urges the government to ensure that, in tackling the former, the latter is not exacerbated.

ACF commends the federal government for accelerating the rollout of large-scale renewable energy projects to transition Australia's electricity system to renewables, and to reduce the significant greenhouse gas emissions associated with the use of fossil fuels. Climate change represents an existential threat to many of the unique species and ecosystems that call Australia home, including globally significant ecosystems like the Wet Tropics of Queensland and the Great Barrier Reef.<sup>16</sup>

However, projects that harm high value ecosystems and habitats should not be allowed. Where biodiversity impacts are unavoidable, these should be minimised, it is essential that renewables that are good for nature, are also good for the local environment. Intact natural ecosystems not only provide the clean water, fresh air and healthy food that Australians need to survive, but they also provide habitat for our wildlife and a critical carbon store. The integrity of Australia's carbon sinks is an essential aspect of reaching and maintaining net zero by 2050.

Current environmental permitting requirements, pursuant to State and Territory legislation and/or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act') are insufficient to ensure that renewable energy projects avoid unacceptable impacts on biodiversity to the greatest extent possible. In particular, the EPBC Act has been ineffective at conserving Australia's matters of national environmental significance. Furthermore, the Climate Change Authority has identified the need for improvements in the efficiency and effectiveness of EPBC Act assessment and approval processes as a priority. The Authority recommended in its *2023 Annual Progress Report* (emphasis added):

### 10. RECOMMENDATION

*Build on the recommendations in the Samuel Review to prioritise and expedite the EPBC Act assessment process for large-scale renewable energy generation projects, **while maintaining rigorous consideration of environmental impacts.***<sup>17</sup>

The Albanese government's commitment to overhauling Australia's national nature laws (the Nature Positive Plan) contains several important commitments that would contribute to the more effective and efficient assessment and approval of renewable energy projects. These commitments, based upon the recommendations of the Samuel Review of the EPBC Act, include clearer upfront protection of threatened species habitat and other environmental values, outcomes-oriented national

<sup>16</sup> UNESCO, *Policy Document on Climate Action for World Heritage*, UNESCO RES 24 GA 8, 3 November 2023, [5].

<sup>17</sup> Climate Change Authority, *2023 Annual Progress Report* (October 2023), 13 and 75.



environmental standards, regional planning, and a commitment to improve public trust and confidence in national environmental laws. These reforms are well behind schedule, the government's recent announcement of "stage 2" of the reforms does not include any time frame for completing the promised overhaul.<sup>18</sup>

The federal government must proactively protect Australia's biodiversity and ecosystems and plan the renewable transition to ensure that the green industrial revolution does not repeat the mistakes of previous industrial development. This means 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 urges the federal government to adopt a two-tiered approach to siting and investing in renewables that are good for local nature, as follows:

- **Integrating biodiversity regional mapping into the National Renewable Infrastructure Construction Plan:** the federal government must proactively plan for the siting of renewable infrastructure across Australia through a National Renewable Infrastructure Construction Plan 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. In identifying suitable locations, high conservation values must be avoided and cumulative impacts on nature and communities should be avoided wherever possible, and minimised. 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. 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; and
- **From appropriate siting to a race to the top of local biodiversity co-benefits:** the government should further incentivise the private sector to prioritise the biodiversity co-benefits associated with their renewable development, especially if government investment contributes to a project. This would go beyond siting a project on a dual use or disturbed site, to leveraging renewables infrastructure to generate additional biodiversity conservation and restoration outcomes. It would position the renewables industry to race to the top on biodiversity, rather than a business-as-usual approach that treats environmental impacts or benefits as an

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<sup>18</sup> B Sydes, "What nature needs from the Albanese government", (26 October 2023, ACF) <<https://www.acf.org.au/what-nature-needs-from-the-albanese-government>>.



externality. An explicit nature protection and restoration merit criterion should be included in government funding and procurement processes for renewable energy and transmission projects. The criterion should be to enable the government to assess, and prioritise, projects that have: (a) avoided and minimised biodiversity impacts beyond a company's legal requirements under environmental laws and (b) taken steps to generate biodiversity co-benefits from the project. For example, community participation in land use planning and/or co-use of land for agriculture.<sup>19</sup>

The recently released *Better Practice Renewables and Biodiversity: Opportunities for Collaboration Guide*, supported by RE-Alliance and the Energy Charter, outlines important environmental interventions at every stage of a large-scale renewable energy project's lifecycle to minimise environmental impacts and maximise biodiversity co-benefits.<sup>20</sup> Overseas examples may also be useful, including the OECD's *Mainstreaming Biodiversity into Renewable Power Infrastructure* guidelines.<sup>21</sup>

### Ensuring the Timely Rollout of Critical Common User Infrastructure

However, ACF emphasises that as Australia's grids shift from centralised polluting coal power to diversified clean energy sources, like wind and solar, the grid infrastructure that connects our sources of energy to our homes and businesses will also need to expand and diversify. Australia's renewable energy future is deeply connected to the expansion of Australia's grid, underpinned by major transmission projects.

AEMO estimates that, under the *Step Change* scenario, an additional 10,000 km of transmission lines will need to be connected by 2050, although half of that should be in place by 2030 to support further grid decarbonisation.<sup>22</sup> If Australia is to realise its renewable superpower ambitions (the *Green Energy Exports* scenario), the amount of transmission needed rises to 26,000 km by 2050.<sup>23</sup> This would require both an increase in transmission projects, as well as an acceleration of the approval and construction of lines.

ACF does caveat this analysis, noting that significant distributed energy resources penetration would reduce transmission line needs in either the *Step Change* or *Green Energy Exports* scenarios. Nonetheless, the government should consider and prioritise policies to ensure the timely approval and construction of critical common user infrastructure, like transmission lines.

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<sup>19</sup> See further, Community Power Agency, *Incentivising Best Practice Renewable Energy Development* (March 2024), 2 <[https://cpagency.org.au/wp-content/uploads/2024/03/2024\\_CPA\\_Incentivising-Best-Practice-Renewable-Energy-Development.pdf](https://cpagency.org.au/wp-content/uploads/2024/03/2024_CPA_Incentivising-Best-Practice-Renewable-Energy-Development.pdf)>.

<sup>20</sup> RE-Alliance and The Energy Charter, *Better Practice Renewables and Biodiversity: Opportunities for Collaboration Guide* (February 2024).

<sup>21</sup> OCED, *Mainstreaming Biodiversity into Renewable Power Infrastructure* (2024, OECD Publishing).

<sup>22</sup> AEMO, *2024 Draft Integrated System Plan For the National Electricity Market: A roadmap for the energy transition* (December 2023), 55.

<sup>23</sup> Ibid.



## Further information

ACF also directs the Committee's attention to previous submissions and reports we have made that have particular relevance to this question on notice:

- [\*Sunshot: Australia's Opportunity to Create 395,000 Clean Export Jobs\*](#) (October 2021) and [\*Sunshot: Achieving global leadership in clean exports\*](#) (September 2023) reports;
- [Submission on the Electricity and Energy Sector Plan Discussion Paper](#) (3 May 2024);
- [Submission to the Implementation Design Paper: Capacity Investment Scheme](#) (25 March 2024);  
and
- [Submission on the Inquiry into Australia's transition to a green energy superpower](#) (30 November 2022).

