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Australian Energy Market Operator
Level 22, 530 Collins Street, Melbourne, 3000

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To whom it may concern

The World Wide Fund for Nature-Australia (WWF-Australia) welcomes the opportunity to provide a submission to the Australian Energy Market Operator (AEMO) on the Draft 2022 Integrated System Plan (Draft ISP).

Our submission focuses on:

- The importance of moving to the speed and scale of energy transition set out in the Hydrogen Superpower Scenario
- The need to expand the focus of the Hydrogen Superpower Scenario, and
- Key issues that need particular focus, specifically nature, social licence and who pays of transmission.

Hydrogen Superpower Scenario – Speed and Scale

WWF-Australia welcomes the inclusion and the higher weighting of the Hydrogen Superpower Scenario. As the only scenario in reach of a 1.5°C climate target, it is important that greater weighting, credence, and planning be undertaken to help create the conditions to move to the scale and speed of renewables, storage and infrastructure build set out in the Hydrogen Superpower Scenario as quickly as possible. Doing so means the difference between 70-90% and 99% of the Great Barrier Reef in decline, more than doubling in the number of days of extreme heat that we experience, crop yields declining by a further 2.3 times and many more impacts according to the PCC Special report on 1.5 degrees from 2018.

In addition, WWF-Australia's analysis of the Hydrogen Superpower Scenario is that it is a pathway to ~700% renewables for the NEM. It is WWF-Australia's position that for Australia to prosper in a world that acts on climate change, that Australia must not only decarbonise its own total energy needs (electricity, transport, buildings and industry including feedstocks) through renewables and storage but must use our world-class renewable resources to also grow clean manufacturing and export industries. To make this possible, and unlocking new jobs and industry, WWF-Australia's¹ analysis and the analysis of Accenture² and Transgrid³ suggests Australia needs to move to an electricity system powered by renewables that is five to seven times the scale of our current electricity system.

WWF-Australia recommends AEMO further develop the Hydrogen Superpower Scenario and make it a significant part of the Draft ISP.

Hydrogen Superpower Scenario – Expand the Focus

While WWF-Australia is supportive of the scale and speed of renewables build set out in the Hydrogen Superpower Scenario, we have concerns about the detail of the actual scenario.

¹ WWF-Australia (2021) [Behind the Scorecard Technical Report, Second Edition](#) See Part 2 – 700% renewables trajectory

² Accenture (2021) [Sunshot: Australia's \\$89B clean energy export opportunity](#) – a report commissioned by ACF, BCA, WWF and the ACTU.

³ Transgrid (2021) [Energy Vision: a clean energy future for Australia](#)

Firstly, the scenario assumes an over-reliance on hydrogen for domestic (household) purposes - for example, home appliances. Hydrogen usage should be targeted to end uses that are hard to electrify such as heavy industry and heavy transport (chemicals, steel, metal refining, shipping fuel etc). Therefore, the Hydrogen Superpower Scenario should include greater electrification of light transport and buildings.

Secondly, it is likely that the Hydrogen Superpower Scenario over-states the renewable hydrogen export potential, while understating the potential of other renewable exports – for example, using renewables and renewable hydrogen to grow manufacturing industries in Australia such as green steel, green aluminium, critical mineral refining, battery manufacture and more. See the Sunshot Report (Attachment 1) by Accenture – commissioned by WWF-Australia, the Business Council of Australia, the Australian Council of Trade Unions and Australian Conservation Foundation - for an alternative suggested mix of clean export opportunities, that requires a similar scale of renewables build to the Hydrogen Superpower Scenario.

Paying for transmission

WWF-Australia welcomes AEMO's proposal that early works be undertaken for all actionable transmission projects, to protect consumers against the risk of faster than anticipated coal retirements, project delivery delays and the need to accelerate the build of renewables in line with the climate science. Given the cost benefit analysis shows a net benefit to consumers of recovering the cost of these early works through consumer bills, WWF-Australia is supportive of this approach. However, we are concerned about the lack of actionable transmission projects in Queensland, given the huge urgency to unlock new renewables in that state. As such, we recommend that early work commence, not just preliminary works, for Future ISP projects, particularly in Queensland.

Given as the Draft ISP sets out that transmission projects also provided broader benefits including “including regional economic stimulus, jobs growth and lower emissions,” that are not currently valued in the regulatory framework, WWF-Australia believes that firstly the regulatory framework requires upgrading, but so too does the cost recovery model for transmission. Indeed, it is WWF-Australia's position that the development of new transmission and distribution infrastructure should no longer be looked at simply in terms of providing affordable, reliable electricity to domestic customers. But also, as an investment in Australia's future economic prosperity and in climate action. As such, the revenue model for transmission projects requires a fundamental re-think. Climate action, industry policy and economic diversification are the responsibilities of government, and as such we believe there is a much greater role and need for direct government funding for new transmission infrastructure. Due to our progressive tax system, this would be a more equitable approach to paying for infrastructure that is in the public good, compared to the full recovery of costs through consumers' electricity bills.

One way to accelerate the necessary upgrades and additions to the electricity grid would be for governments to underwrite the pre-planning of all Future ISP transmission lines identified in the AEMO Integrated System Plan. Beginning the pre-planning work immediately gives greater time for community engagement and to get routes right, avoiding environmentally sensitive areas, while also reducing the timeline of transmission projects by up to 2 years. With the pre-planning done, transmission investment decisions could then be actioned as soon as the infrastructure is needed rather than when the Draft ISP predicts they could be needed.

Social licence and nature impacts

Speeding up the build rate of transmission infrastructure needs to include the perspectives of local communities and conducting rigorous environmental impact assessments and much better land-use planning. In fact, improving public consultation and avoiding negative environmental impacts is essential because community opposition to new transmission infrastructure will slow down the approval and construction process.

RE-Alliance is a specialist not-for-profit organisation that works with regional communities to ensure renewable energy developments deliver positive local benefits. WWF-Australia supports

the recommendations made by RE-Alliance in their recent report '[Building Trust for Transmission](#)'⁹ including that:

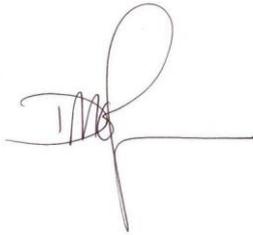
- Community engagement should start early in the Regulatory Investment Test process and include a wide range of local interest groups, especially First Nations peoples;
- Developers should actively collaborate and empower local communities to develop genuine benefit-sharing solutions;
- Delivering community benefits and fairer landholder compensation should be accepted as part of the cost of transmission infrastructure.

In addition, the distribution grid needs upgrading so communities at the heart of renewable energy zones and transmission corridors can directly benefit from and participate in renewable energy projects they host.

From a nature perspective, early consideration of the siting of both transmission corridors and Renewable Energy Zones to minimise environmental impacts is critical. At the very least, greater mapping and consideration of the best locations for energy infrastructure from an environmental perspective should be undertaken, as part of an environmental overlay of AEMO's energy system planning.

We would welcome the opportunity to discuss this submission with AEMO further. For more further information please contact WWF-Australia's Energy Transition Manager, Nicky Ison on 0402 0345 80 or nison@wwf.org.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Dermot O'Gorman'. The signature is stylized with a large loop at the top and a horizontal line extending to the right.

Dermot O'Gorman
CEO – WWF Australia