

## QCC Response to the ISP

Queensland Conservation Council (QCC) welcomes the opportunity to respond to AEMO's draft 2022 Integrated System Plan (ISP).

QCC is the peak environmental body for conservation groups in the state of Queensland. Since 1969, we have worked with groups and communities to restore and nurture the environment, leading state-wide campaigns and supporting local and regional campaigns. QCC believes that Queensland needs to be entirely powered with renewable energy by 2030 to avoid the worst impacts of climate change and unlock future economic opportunities.

We welcome the increased speed of the energy transition and scale of ambition modelled in the 2022 ISP, compared to the 2020 ISP. The 202 ISP was outstripped by renewable energy development, particularly from rooftop solar, almost as soon as it was released. We are pleased that the Step Change scenario is recognised as the most likely scenario in the 2022 ISP.

However, to meet Australia's international commitments, we still need to move faster. We welcome the carbon budget approach in the Hydrogen Superpower and Step Change scenarios. We note that the carbon budget in the 1.5 degree scenario is only to achieve a 50% chance of limiting global temperature increase to 1.5 degrees and we ask AEMO to model a 66% chance carbon budget in line with the 2 degree budgets. Despite this, the carbon budgets show the urgency with which we need to act to even have a 50% chance at meeting 1.5 degree commitment under the Paris Agreement, particularly in regard to coal closures.

But there are a number of ways that we could replace fossil fuel generation and build our new economies. We urge AEMO to consider further scenarios that meet a 1.5 degree pathway.

### **Recommendation: strong electrification scenario becomes the standard Hydrogen Superpower scenario**

We urge AEMO to adopt the High Electrification sensitivity as the standard in the Hydrogen Superpower scenario to reflect a truly transformative and ambitious climate scenario to electrify domestic demand and develop hydrogen and other clean export industries. A Hydrogen Superpower does not have to include hydrogen in Australian buildings or transport. In fact, we are concerned that focusing on switching to hydrogen in these domestic settings will delay the renewable energy transition, and lock us into higher costs and emissions through continued fossil gas usage.

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We have the technology we need now to electrify heat and transport, safely and cost effectively. There are greater safety risks with burning hydrogen safely in buildings and the pathway to replace gas with hydrogen in the distribution system is also not clear.

In the transport sector, battery electric vehicles are already much cheaper than hydrogen alternatives for light vehicles and even up to buses. There are promising developments in heavy battery electric vehicles as well. Developing a primarily electrified transport system will also minimise costs required in hydrogen fuelling infrastructure and will allow politicians, retailers, network operators and AEMO to focus on developing the infrastructure, regulations and tariffs required to ensure electric vehicles can be used to support the grid.

Including domestic hydrogen use in the one scenario which otherwise paints an achievable pathway to a decarbonised and prosperous economy dilutes the signal to industry and consumers to invest in electrification and risks slowing the transition.

**Recommendation: provide more info on Queensland transmission needs**

Queensland has no actionable ISP projects, based on the optimal development path. However, we believe this masks a potential bottleneck of projects in the medium term. In the Hydrogen Superpower scenario, there are nine large scale transmission projects with a capital cost of \$4.7 billion in the next ten years.

Even the step change scenario would require five projects with a capital spend of nearly \$2 billion over ten years. In their 2023-27 Revenue Determination, Powerlink were approved for a spend of \$860m of primarily non-load driven expansion and replacement<sup>1</sup>. The 2028-32 Revenue Determination period would require this to be increased by more than 150% by \$500m of investment in REZ expansion and the Gladstone Grid Reinforcement in the Step Change scenario. The following revenue period would include a QNI upgrade as well as major works to the FNQ REZ and upgrades to the Central Queensland flow paths.

It is difficult for Powerlink to adequately plan their workforce and recruit enough new workers to meet this demand and source materials. We ask AEMO to consider the least cost route for scheduling to achieve these transmission upgrades as well as the costs of avoided generation.

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<https://www.powerlink.com.au/sites/default/files/2021-01/2023-27%20Powerlink%20Queensland%20Revenue%20Proposal%20Overview%20-%20January%202021.pdf>

**Recommendation: REZ Design reports should be prepared for DD, FNQ and Fitzroy**

We agree with the ISP's identification of Darling Downs, Far North Queensland and Fitzroy as the three REZ in Queensland that require a REZ design report. Capacity within these three REZ was identified in the Queensland Government's 2021 QREZ Technical Discussion Paper<sup>2</sup> but they have not been formally declared REZ, nor has Powerlink or any other body been instructed to prepare a design report or management plan.

However, renewable development is already racing ahead in these areas causing conflict with environmental values in areas of high wind resources in FNQ. Concern over environmental issues and land use conflict is also growing in Fitzroy and the Darling Downs. The loss of social licence for generation or transmission through these projects would severely hinder the renewable energy transition in Queensland. AEMO has identified social licence as a major risk for future development. AEMO should recommend that Governments and transmission companies give greater consideration to the siting of REZ and transmission lines in relation to environmentally sensitive ecosystems and high value land uses.

There is an opportunity to minimise or even avoid these conflicts through proactive local engagement and mapping of REZ. We are calling on the Queensland Government to use their proposed REZ Management Plans as an opportunity to assess land use and significant natural habitats and cultural values inside each REZ and identify areas of natural, cultural or social significance unsuitable for renewable energy (or associated) development in consultation with stakeholders. This process can also identify areas preferred for renewable development where conflict with existing land uses will be minimal or renewable energy could even play a role in regenerating degraded or underutilised land.

We urge the final ISP to definitively require REZ design reports for these three REZ with time frames for delivery to keep Queensland's renewable energy development on track.

**Recommendation: explore export opportunities beyond hydrogen**

The hydrogen superpower scenario limits itself by name. WWF, ACF, ACTU and BCA have identified five other key clean export opportunities<sup>3</sup>:

- Critical minerals
- Education
- Green metals
- Battery and electrolyser manufacturing

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<sup>2</sup> [https://www.epw.qld.gov.au/\\_\\_data/assets/pdf\\_file/0022/19138/qrez-technical-discussion-paper.pdf](https://www.epw.qld.gov.au/__data/assets/pdf_file/0022/19138/qrez-technical-discussion-paper.pdf)

<sup>3</sup> <https://www.wwf.org.au/what-we-do/climate/renewables/resources/clean-energy-exports#gs.oggw4z>

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- Engineering and consulting

The WWF report requires a similar scale of renewables build but diversifies Australia's economy further and provides a better foundation for the decarbonised future economy. We recommend AEMO explore and identify Renewable Energy Industrial Precincts to host these export opportunities and be developed in tandem with REZ.

**Recommendation: provide more detail on the flexibility of load required in the modelling**

The demand curve shapes given in Figures 20 and 23 show a huge impact of distributed storage, including electric vehicles, in changing the shape of demand throughout the day. This is critical to allowing the amount of wind and solar to be deployed into the grid and maintain system adequacy and reliability.

We appreciate the working group already set up between AEMO, Energy Networks Australia (ENA) and network operators. We urge AEMO to incorporate as many insights from this group into the 2022 ISP as possible and task the working group to deliver public recommendations on a timeline between the 2022 and 2024 ISP so that the work to increase acceptance and uptake of coordinated DER can be progressed as rapidly as possible.

Flexibility on at the large scale will also be hugely important. The ISP modelling assumes that electrolysers operate "strongly during periods of excess supply such as during the day where solar production is strongest", but there is as yet limited real world experience in the cost and operability of flexible electrolysers. The hydrogen demand should be separated in the results so that the scale of flexibility that hydrogen producers are aiming for is known.

We look forward to the final 2022 ISP providing further guidance on how the NEM can navigate the rapid transformation and decarbonisation we need.

Yours sincerely,

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