Queensland Conservation Council

PROTECT CONSERVE SUSTAIN

Submission on Changes to the ISP Methodology
1 May 2023

Thank you for the opportunity to comment on the proposed changes to the 2024 Integrated System Plan methodology. Queensland Conservation Council is the peak body for environmental groups in Queensland and has been supporting communities to protect their environment since 1969.

We campaign for a safe climate future for Queensland's communities and iconic environments such as the Great Barrier Reef and Wet Tropics World Heritage Area, which are already suffering climate impacts. The Great Barrier Reef has experienced four devastating bleaching events in just seven years, including in a La Nina cycle[1].In 2019, at the end of the last El Nino cycle, bushfire penetrated the Wet Tropics[2]. Thousands of Queenslanders are still rebuilding after destructive floods in 2021 and 2022.

We desperately need the Integrated System Plan to model the breadth of ways that we can reach our international obligations under the Paris Agreement to limit warming to 1.5 degrees, reclaim a future for the Great Barrier Reef and reduce climate impacts on communities.

We call on AEMO to make sure that the 2024 ISP includes at least two scenarios which are 1.5 degree aligned to explore different ways of reaching this goal, one focused on energy export and one focused on domestic decarbonisation.

The US Inflation Reduction Act and other international policies are creating rapid change in the development of hydrogen and other clean energy, so having the only 1.5 degree aligned scenario also be one that relies on Australia being able to be a renewable energy superpower is limiting. This is particularly concerning because the green energy exports scenario assumes a cross over of hydrogen into domestic use which is at best questionable and at worst unhelpful given the existing economics of electrification.

We call on AEMO to provide more opportunities to consult on the IASR in this rapidly changing environment. AEMO needs to outline how the scenario weighting process will be conducted in the absence of the Delphi panel.

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1 https://www.climatecouncil.org.au/resources/no-region-spared-reef-report-confirms-severe-bleaching-highlighting-need-for-rapid-emissions-reduction-this-decade/#:~:text=The%20science%20is%20very%20clear,2017%2C%202020%20and%202022).

2 https://www.theguardian.com/australia-news/2019/nov/24/world-heritage-queensland-rainforest-burned-for-10-days-and-almost-no-one-noticed

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Detailed answers are provided where QCC has an interest below:

Impact of fossil-fuelled generation on REZ transmission limits

4. Do stakeholders agree that the REZ transmission limit formulations should be updated to include fossil fuelled generation? If not, why not?

We agree that REZ transmission limit formulations should be updated to include fossil fuelled generation. We need to be managing development of renewable energy within existing transmission capacity as efficiently as possible. This includes managing the transition from fossil fuelled generation to renewables in a staged way. The closure of coal fired power stations is not a binary situation, where coal runs at full capacity until closure. Many coal fired power stations are progressively ramping down, even mothballing units, and freeing up space on the transmission network before closure.

5. Are there any alternative methods to accounting for fossil-fuelled generation in REZ transmission limits that AEMO should consider?

For greater transparency, AEMO should try to publish annual indicative use of capacity by the fossil fuelled generators within a REZ.

Network losses for REZs and sub-regions

6. Do stakeholders agree that the impact of network losses for REZs and sub-regions is worth quantifying in the modelling? If not, why not?

We agree that network losses for new REZ, and particularly changing loss factors as more renewable energy is connected, will be a material factor in determining optimal development and should be considered in the modelling.

7. What alternative methods could be considered for incorporating network loss impacts for REZs and subregions?

Renewable Energy Industrial Precincts (REIPs) should be modelled parallel to REZ to guide development of industry geographically, particularly in a green energy exports scenario. This will have significant impacts on the network losses.

Assumed renewable energy resource quality

8. Do you agree with the consistent use of land use data for screening potential VRE sites to both REZ resource limit and wind resource traces in the REZ trace development process? If not, why not?

Land use screening is extremely important for the modelling of Renewable Energy Zones and must include cultural and environmental vale. Historically the inclusion of a “land use penalty”

really only encompasses competing land uses which may be bought out, not the intrinsic value of cultural sites or threatened species habitat.

Due to the lack of land use screening, previous iterations of the ISP presented the Far North Queensland Renewable Energy Zone as very attractive for development. However, almost all the land in FNQ adjacent to the transmission lines, with high wind resource, is also home to threatened species and ecosystems, and in some cases significant cultural heritage sites. This has led to a concerted pushback against wind development in the region, evidenced by hundreds of submissions to the Chalumbin Public Environment REport and Apple pulling out of the Upper Burdekin Wind Farm. This risks not only the threatened species but also the roll out of renewables by eroding social licence.

We urge AEMO to utilise their Advisory Council on Social Licence to reflect the concerns about renewable roll out on the ground and incorporate land use mapping in the REZ development so that it does not, by default, encourage development in areas of inappropriately high biodiversity.

In Central, North and Far North Queensland, this need is urgent. Wind proposals currently threaten more than 15,000 hectares of vegetation. This would remove more than 1,000 hectares of habitat of each of 12 threatened species, including nearly 8,000 hectares of koala habitat. There is no assessment of the cumulative impacts of this on a regional scale, or consensus of whether this should qualify as an ecological constraint. Several of these proposals have already been approved and we are at risk of developing these definitions and guidelines too late.

9. Do you have a view on the proposed changes to the high wind and medium wind tranches, and the resulting capacity factors?
We support, in general, a more conservative view of capacity factors for wind in Queensland, given the operational results of the northern Queensland wind farms, which are less than the capacity factors used in ISP modelling. However, we would like to see this implemented not just as percentages chosen based on historical performance in future ISPs, but as a reflection of the resource and land availability informed by more detailed land mapping as recommended above.

<u>Potential inclusion of a value of carbon emissions</u>
10. Do stakeholders agree that the ISP Methodology should be updated to be flexible in response to near-term changes to the National Electricity Objective (NEO)? If not, why not?
We agree that the ISP methodology should be updated to be flexible in response to changes to the NEO. Changes to the NEO to explicitly value carbon are falling behind states, several of which have carved out different investment processes for new renewable energy zones and associated transmission to meet decarbonisation goals. The ISP will be left stranded if it does not have a mechanism to take into account changes to the NEO.

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11. Do stakeholders agree with AEMO's proposed approach to incorporate a value of carbon emissions? If not, what alternatives should be considered?
We strongly support the addition of a class of benefits that values carbon emissions. This was flagged in the consultation on the changes to the NEO so should be implemented by AEMO. This will help integrate emissions reductions targets and energy policy. These are only going to become more complexly linked over time, as the impacts of climate change grow, and efforts to reduce emissions accelerate. It is important that AEMO's ISP is able to reflect these changes to the long term development of the power system as soon as possible.

Even if there is not an explicit value of carbon in the Australian market, it is implicit in emissions reduction policies, and recent reforms in Europe and America make an effective international price on carbon more likely, so the modelling should be able to reflect these policies through valuing carbon emissions.

Consumer risk preferences

12. Do you agree with the proposed provision to apply evidence-based consumer risk preference metrics in the ISP? If not, why not?
AEMO should focus on modelling an ISP that is focused on the long term interests of consumers. The long term interests of consumers are dependent on effective emissions reductions policies that preserve a habitable environment and our natural environments like the Great Barrier Reef by limiting warming to 1.5 degrees. As climate change becomes more apparent and action more urgent, we will have to start considering consumer risk preference much more broadly. We recommend AEMO utilise the Advisory Council on Social Licence, as well as the Consumer Advisory Panel to reflect consumer and community preferences for climate action and impact mitigation appropriately.

13. What factors should be taken into account when preparing metrics to capture consumer risk preferences as they relate to the ISP?
Any application of consumer risk preference should consider the increased risk to consumers of climate change.

We are concerned that AEMO's process to prepare metrics to capture consumer risk will be too narrow and request more transparency and consultation in the preparation of these. We cannot yet evaluate the full implications of developing "evidence based risk metrics" when it is not clear what these might be. We are concerned that there may be unintended consequences, such as prioritising the interests of traditional consumers, such as on the Consumer Panel, over a broader community representation across the NEM, or prioritising short-term transmission project costs over broader considerations, including longer-term access to renewable energy.

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Increasingly, consumer and community preferences cannot be captured under a 'willingness to pay', or value of customer reliability frame. We have to take a broader view of energy costs, weighing up the capital investment, long term electricity cost relief made possible by transmission and access to renewable energy, and community risk preferences to climate change.

However, we recognise that considering these broad and rapidly changing community preferences may not be possible or desirable within the ISP. These may be best analysed outside of and subsequent to the ISP process.

Dispatch behaviour of storage devices

14. Do you consider it reasonable for AEMO's ISP models to reduce the reliable contribution from storage devices (particularly shallow storage devices) to reflect imperfect foresight? If not, why not?

It is reasonable to reduce the reliable contribution of storage devices to reflect imperfect foresight, to the same degree that forced outage levels and ramp rates are applied to fossil fuel generators. In the last year in particular we saw fossil fuel generators suffering much higher than average forced outage rates, and also withholding capacity in a way which they would not have been modelled to, contributing to the suspension of the NEM in June 2022. We request AEMO to undertake a detailed review of whether the current application of constraints to fossil fuel generators was able to reflect the events of the last year and, if not, consider ways to increase the constraints applied to these generators, as well as considering derating storage.

15. Do you consider a limit on the storage capacity of storage devices, particularly on short-duration devices, to be the most appropriate way to restrict the performance of energy storage to approximate limited foresight and reservation of energy?

The storage capacity is the most appropriate way to restrict performance of short term energy storage as most batteries will be able to dispatch to full power, if not energy, when required.

16. In what other ways could AEMO reduce the 'perfection' of foresight in its time-sequential model to improve model accuracy?

AEMO should investigate more sophisticated ways to replicate the imperfect foresight which is not just based on a static derating but takes into account potential deviations from forecast wind, solar and demand traces.

17. Do you agree that an 'up to 50%' limit on storage capacity is an appropriate limit value? If not, what should the limit be, and what evidence can be used to support an alternative limit?

No, we believe that 50% is too high a derating factor on storage capacity. Historical performance of a nascent industry is not a good guide for 20 year ISP modelling. Currently, a significant amount of storage is optimising for FCAS. The operation of storage will change significantly as

more is introduced and focused on energy arbitrage. Applying a flat 50% derating limit through the ISP horizon also doesn't fulfil the goal to "*fully utilise the opportunities provided from existing technologies and anticipated innovations in Distributed Energy Resources (DER), large-scale generation, networks and coupled sectors such as gas and transport*" and is out of line with assumptions of technological improvement in other areas such as use of hydrogen in domestic gas networks, which is not currently technologically available.

Duration of demand-side participation response

18. Is the limitation of energy available for DSP for the reliability-response price band in the ISP modelling process reasonable? If not, why not?

As with the derating of storage, the historical performance of DSP should not be used as the basis for future modelling. As electricity demand grows, so does the opportunity for DSP to create the most efficient and effective electricity system. Limiting the participation of DSP to its historical levels won't value this effectively. We support a more detailed investigation of the value of DSP to the system as it grows which may involve iterative modelling runs. This would be able to guide policy and technical innovation to make more energy available for DSP.

Thank you for the opportunity to comment on the draft ISP methodology. We hope that AEMO will consider further opportunities for consultation on the IASR before it is finalised. We are happy to talk to any of the points raised here.

Yours sincerely,

Clare Silcock
Energy Strategist
clare.silcock@qldconservation.org.au