Submission to the Australian Energy Market Operator's Draft 2022 Integrated System Plan

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About RE-Alliance
RE-Alliance works to deliver a renewable energy transformation in Australia filled with sustainable, long-term benefits for regional communities. We do this by listening to the needs of communities most impacted by the transition, facilitating collaboration across the renewables industry to deliver social outcomes and advocating for meaningful benefits for regions at a policy level.

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Introduction

RE-Alliance congratulates the Australian Energy Market Operator (AEMO) on its *Draft 2022 Integrated System Plan* (Draft ISP). The Draft ISP is excellent news for those hoping to see a fast transformation of the electricity generation sector and the broader economy.

For the first time, energy industry stakeholders, surveyed in the development of the Draft ISP, consider the *Step Change* scenario as the most likely scenario to eventuate by 2050. Under the *Step Change* scenario "domestic and international action rapidly increases to achieve the objectives of the Paris Agreement, to limit global temperature rise to well below 2° compared to pre-industrial levels".[1]

Under the Draft Optimal Development Path, by 2050 the National Electricity Market (NEM) will see:

- Double the delivered electricity to industry and homes per year to replace much of the gas and petrol currently consumed in transport, industry, office and domestic use.
- Existing coal plants retire two to three times faster than anticipated. Modelling suggests that all brown coal and over two-thirds of black coal generation could withdraw by 2032.
- Nine times the amount of wind and solar farms.
- Nearly five times the capacity of rooftop solar, and substantial growth in home batteries.
- significant investment in storage including big batteries, and pumped hydro.

The Draft Plan identifies 10,000 km of new transmission to connect renewable developments and deliver renewable energy to homes, schools and workplaces across the grid. Investment in new generation and transmission lines will deliver net market benefits of $29 billion to 2050.

These actionable and future ISP projects are essential for rapid decarbonisation and meeting our climate obligations.

Approximately $12.5 billion in transmission projects are identified as actionable with further significant expenditure foreshadowed for 11 future transmission lines starting after 2028.

[1] AEMO (2021a), *2021 Inputs, Assumptions and Scenarios Report* p.17 available at: https://aemo.com.au/-/media/files/major-publications/isp/2021/2021-inputs-assumptions-and-scenarios-report.pdf?la=en

Social Licence

As outlined in our report, *Building Trust for Transmission*,[2] RE-Alliance considers that failure to obtain social licence is one of the most critical challenges to the delivery of energy infrastructure, including transmission assets. Below, RE-Alliance suggests improvements to AEMO's ISP process. These changes will mitigate risks to major transmission projects including significant delay or not being built at all, due to their social and environmental impacts.

The Draft Plan recognises some important risks to timely implementation. It notes that regional communities will host the majority of the renewable energy infrastructure required, including solar, wind, storage and transmission. It states that "early community engagement will be needed to ensure investments have an appropriate social licence".[3]

To gain community support for projects the larger context of the energy transition needs to be communicated to communities impacted by new network infrastructure proposed by industry, jurisdictional planners and State governments. This includes both responding to the critical climate change threat and the imperative to build and connect new generation infrastructure to keep the lights on as older thermal generators retire over the next 20 years.

Taking the Western Victoria Transmission Line Project and Project EnergyConnect as examples, we note that there has been a lack of context and communication regarding the nation building nature of the projects and the energy transition more broadly. In addition, jurisdictional planners and State governments need to take a leadership role in communicating project objectives, processes and timelines. The lack of communication and community education regarding these factors has led to the emergence of significant social licence issues and opportunities for opponents of the project to 'fill the airwaves". We suggest that the critical nature of the build-out of this infrastructure is conveyed more clearly in the ISP, in REZ Design reports and jurisdictional planning reports and by Governments at all levels. It is also important that the benefits of such projects including economic development, job creation and possible benefit sharing are conveyed to communities.

Triple bottom line approach

RE-Alliance recommends that AEMO institute a triple bottom line approach to its planning processes for the ISP. Currently, the process is largely about the technical

[2] Building Trust for Transmission: Earning the Social Licence Needed to Plug in Australia's Renewable Energy Zones available at: https://www.re-alliance.org.au/launching_our_report_building_trust_for_transmission

[3] AEMO (2021b), *Draft 2022 Integrated System Plan* p. 89 available at: https://aemo.com.au/-/media/files/major-publications/isp/2022/draft-2022-integrated-system-plan.pdf?la=en

need for the infrastructure and the cost of providing that infrastructure. Infrastructure planning of this scale, and indeed any infrastructure planning, should consider both the financial and technical need for the infrastructure as well as its social and environmental effects.

Late in the draft ISP, AEMO states that: "Collaboration between NEM participants and jurisdictions may be needed to:

- harmonise the infrastructure, policies and objectives across jurisdictions,
- leverage the REZ Design Report process in the NER to accelerate engagement with communities and land owners on developments planned for at least the next 12 years,
- consolidate an integrated approach to land use planning that optimises multi-purpose land use and aligns with local interests,
- broaden engagement to incorporate broader community and environmental benefits (including regional economic and jobs growth, emission reductions, and biodiversity habitat and corridors),
- systematically document local concerns and incorporate them in the ISP, REZ Design Report, and local planning processes,
- consolidate and align appropriate compensation mechanisms for affected land owners and communities, and
- ensure the design of transmission and VRE assets take advantage of available design and technology choices to minimise their impact on land use".[4]

RE-Alliance considers that these points are at the heart of the transition and should be included more prominently and earlier in the document.

We have consulted with some TNSPs and support their conclusion that the ISP should do more to ensure the projects considered for inclusion in the ISP (e.g. route corridors, solutions) identify major social, cultural and environmental barriers. They have suggested that the jurisdictional planner could conduct a preliminary constraint mapping and community engagement exercise that removes a transmission option, or amends its location, cost envelope or commissioning date, based on its deliverability.

Landholder Compensation

Late in the report, AEMO states that "collaboration between NEM participants and jurisdictions may be needed to consolidate and align appropriate compensation mechanisms for affected landowners and communities".[5] RE-Alliance considers that this is a critical point that deserves more prominence within the report, seeing as the completion of these essential transmission projects relies on the support of host communities. Currently, compensation arrangements are not transparent, inconsistent

[4] *Ibid*. p. 89-90.
[5] *Ibid*. p. 90.

between States, and may be inadequate to compensate for the adjustments farmers are required to make to farm around transmission lines.

We've previously argued through our report, *Building Trust for Transmission*,[6] that the national planning and investment framework for transmission lines should be expanded to enable improved landholder compensation and introduce community benefit sharing projects in affected communities.

The Australian Energy Market Commission and Australian Energy Regulator have recently indicated to RE-Alliance that increased landholder compensation payments could be allowed under the National Electricity Rules if enhanced landholder payments were required under state law.

As New South Wales and Victoria establish their own regulatory frameworks for planning and funding new transmission lines, they should include increased compensation for landholders, compensation for neighbours on adjacent properties where appropriate, and funding for community benefit sharing programs. This will ensure that landholders and local communities are able to share in the benefits that the broader community gain from the project.

The NSW Government has recently indicated that it is reviewing the compensation arrangements payable to landholders affected by new transmission infrastructure. This is important work and also needs to be undertaken by other states. As AEMO says, there is a need "to consolidate and align appropriate compensation mechanisms for affected landowners and communities".

Ensuring regional communities are involved in planning and have opportunities to share in the benefits from new wind, solar, storage and transmission projects is fundamental to the success of the ISP.

Community advisory body

RE-Alliance is involved with the Energy Charter initiative, where we have heard calls from the National Farmers' Federation amongst other landholder groups, for the establishment of an ISP landholder advisory body. This advisory body could be similar to the ISP Consumer Panel, but include community representation. This should include farmers, First Nations representatives, environmental representatives, local government representatives and importantly, community members likely to be affected by new transmission infrastructure. This advisory body would bring the views of the community directly to AEMO. Organised community consultation of this nature is presently missing from the ISP process.

[6] Building Trust for Transmission: Earning the Social Licence Needed to Plug in Australia's Renewable Energy Zones available at: https://www.re-alliance.org.au/launching_our_report_building_trust_for_transmission

Individual project recommendation

With regards to the VNI West project on page 12 of the draft ISP, we note that the VNI West transmission line is proposed to go from Kerang to Ballarat. We consider that the option from Kerang to Bulgana should be included in the network projects in the optimal development path, as it is optimal in terms of social licence and environmental impacts.

Closer collaboration between AEMO and State land use and planning agencies

It is critical that AEMO considers existing land use and biodiversity values when outlining proposed REZs. This includes impacts on areas of high biodiversity value and prime agricultural land. The REZ design reports process may be the way for closer collaboration between AEMO and State planning agencies to deliver AEMO's proposed REZs.

REZ Design reports

RE-Alliance supports the new inclusion in the National Electricity Rules Chapter 5 of REZ design reports and REZ planning. We hope that this step may go some way towards rectifying the problems of inadequate consultation with affected landholders and local communities on new transmission projects which have been identified by a range of stakeholders including RE-Alliance. Figure 32 on page 95 identifies 18 REZs which require coordination in the medium term, including 9 which should prepare a REZ design report. We support REZ design reports being prepared for these REZs.

As previously stated in our submission to the AEMC's *Transmission Planning and Investment Review* we suggest that governments could potentially underwrite the pre-planning of all the proposed transmission lines in the ISP. By undertaking the pre-planning work immediately it would provide more time for community engagement and to get route selections right, while also reducing the timelines for transmission projects potentially by several years. With the pre-planning done, transmission investment decisions could then be accelerated when they are needed rather than the later dates given in the draft 2022 ISP.

We note that "three REZ's in New South Wales are identified as requiring coordination of generation and transmission in the medium term (shaded turquoise), but are not flagged for potential REZ Design Reports because similar activities are already progressing under the New South Wales Government's Electricity Infrastructure Roadmap".

RE-Alliance is a strong supporter of the NSW Government's Electricity Infrastructure Roadmap, but it should be noted that the development of new regulatory and

planning processes are taking some time. In the first declared REZ, the Central West Orana REZ, there has been no regulatory investment for transmission (RIT-T) completed and there is no sign of the NSW Government's alternative proposed transmission efficiency test.

Following the NSW Government's announcement that they will use a contestable process for delivery of transmission infrastructure, it is uncertain who will build the infrastructure. The NSW Government has recently announced that EnergyCo NSW is now leading the development work for the new transmission infrastructure, including community and stakeholder consultation, property negotiations and environmental planning approvals. The Department of Planning, Industry and Environment's website states that "during 2022, EnergyCo NSW will undertake a competitive procurement process to appoint a Network Operator to design, build, finance, operate and maintain the new REZ transmission infrastructure".[7]

RE-Alliance is keen to ensure that appropriate community consultation, as envisioned by the REZ design reports process does actually occur. The advantage of the REZ Design report process is that the NER and the ISP specify the consultation that should occur and the date by which the REZ design report must be completed. Similarly, for actionable ISP projects identified in the final 2022 ISP, the relevant TNSP must assess the project under the RIT-T.

For three critical actionable network investments in NSW, AEMO comments, "this project could proceed under the alternate planning arrangements under the NSW Government's Electricity Infrastructure Roadmap". These arrangements are currently unclear. For example, the draft ISP has brought forward the New England REZ transmission link from a future ISP project to an actionable ISP project to commence immediately with a RIT-T Project Assessment Draft Report deadline of 8 December 2023 with the transmission proponent being Transgrid. Given that the NSW Government has announced that it will be using a contestable process for the Central West Orana REZ, it also seems uncertain whether Transgrid will necessarily be the chosen proponent for the New England REZ.

RE-Alliance urges AEMO to work closely with the NSW Government to deliver certainty and appropriate consultation processes as soon as possible.

Biodiversity and renewable energy development

In Australia, the potential for conflict between sites which are suitable for renewable development and areas of high biodiversity value and ecological significance is

[7] NSW Government Renewable Energy Zones available at: https://www.energy.nsw.gov.au/renewables/renewable-energy-zones

increasing. This presents a particular challenge to areas such as the far North Qld REZ and also to several of the REZs in Tasmania.

In the Far North Qld REZ, areas identified in the Draft ISP as having good wind resources and grid connection potential border world-heritage listed rainforest, some of the most ecologically rich places in Australia.

Ecological tourism to the Tablelands, the Daintree, the mountains, waterfalls and the nearby reef is a huge industry in Cairns and the surrounding region, and as such the local community strongly identifies with the environment and has strong ecological values.

RE-Alliance notes recent media commentary[8] on the impacts of land clearing for several Queensland wind farm developments. Local community members and groups are already protesting against the levels of land clearing seen at projects such as Kaban Wind Farm. Planned projects such as the Chalumbin Wind Farm have already attracted widespread opposition, including from some environmentalists.

It is important that AEMO considers existing land use and biodiversity values when outlining proposed REZs. The Draft ISP mentions biodiversity once. The passage on pages 89-90 under the heading "Securing social licence for VRE, storage and transmission" is, we believe, one of the most important passages in the document and should be significantly expanded in the Final 2022 ISP.

It is clear to RE-Alliance that the social licence for large renewable developments in biodiverse and ecologically rich areas such as the Far North Queensland REZ is under serious threat.

There are a number of mechanisms that could strengthen environmental protections that will be required for development to continue in sensitive areas like this.

AEMO should continue to work closely with State Governments and jurisdictional planners when designing the REZs and associated transmission infrastructure and look to include high-level assessments of natural and biodiversity values in REZ planning.

Reform of a number of State legislative instruments including State-wide land clearing legislation, various State Wind and Solar Guidelines is likely to be necessary, as well as comprehensive local community stakeholder mapping. This should include the input of local First Nations and environmental groups, who can advise the department on whether there are sites that should be excluded from development due to cultural and

[8] ABC Radio National Background Briefing : The giant wind farms clearing Queensland bush available at: https://www.abc.net.au/radionational/programs/backgroundbriefing/giant-wind-farms-clearing-queensland-bush/13670398

ecological significance.

RE-Alliance support the following recommendation made by the Environment Defenders Office Qld in their submission to the draft Queensland solar farm guidelines:

> *"We recommend that the Queensland Government transparently maps the best areas of Queensland for the development of renewables, having regard to the ideal siting for solar projects (and wind farms) next to grids etcetera, but also having regard to our good quality ag land and areas of environmental value. This mapping should be implemented as statutory mapping in our planning framework.*
>
> *These areas could be protected as 'Key Resource Areas' (KRA) under our State Planning Policy and regional plans, much like KRAs are provided for fossil fuel resource activities. This will ensure that renewable energy projects can access the best sites for their operations, while avoiding inappropriate zones where conflicts with other important land uses may arise. It will also ensure consistency in dealing with energy resources our state relies on, particularly given that we will need to rely much more heavily in the future on renewables".*[9]

It would be helpful if AEMO worked with jurisdictions to clarify the difference between REZ Design reports as defined in the NER and REZ Management Plans as described in the Queensland Government's recent Consultation on the model for QREZ design and access Technical Discussion Paper.

Screen REZ projects on environmental impact

Criteria for selection of projects at the REZ Development Plan stage must screen out projects that will require excessive land clearing and/or be objectionable on environmental or cultural grounds. Criteria can be designed to select proposals with the least environmental footprint and which commit to best-practice environmental impact mitigation practices.

Stakeholder mapping and screening REZ projects alone may not be sufficient since they will not apply to projects already in the planning pipeline; local residents will not distinguish between REZ projects and other projects in the region.

We recommend that renewable energy developments are precluded from highly sensitive ecological areas and/or conservation areas. We also recommend that appropriate care and consultation is taken with local First Nations community members and that appropriate restrictions are placed on renewable energy developments impacting First Nations cultural heritage.

[9] EDO Qld, Submission to the draft Queensland solar farm guidelines: Practical guidance for communities, landowners and project proponents. May 2018.

Agriculture and prime agricultural land

As noted above, RE-Alliance considers that it is important that AEMO considers existing land use when outlining proposed REZs and REZ infrastructure. This includes impacts on prime agricultural land. Energy and agriculture are both state significant priorities. With a changing climate putting pressure on farming, it's critical to balance the needs of food production, with the need for clean, cheap energy and with the benefits that large scale renewables bring to host landholders and regional communities.

RE-Alliance strongly supports that if high value agricultural land is used for renewable energy developments, that dual use with farming continues. For example, this might include enabling farming to continue under solar panels or wind turbines or offering agistment to allow sheep grazing as a minimum.

RE-Alliance supports the use of agricultural land mapping but we consider that it should not be the only tool used when assessing the value of land, especially to local communities. We support 'on the ground' consultation with local landholders, neighbours and the community when identifying the agricultural value of land. This will help build strong social licence for projects.

We support the use of Agricultural Impact Assessments. These should include consultation with neighbours of host landholders as a minimum and other parties impacted by the development.

Greenfield development

When considering the design approach for proposed transmission projects AEMO prefers existing corridors and is less inclined to consider greenfield options. Over time existing corridors may have changed considerably and have become densely populated making them less suitable for a new transmission line. A new transmission project may face less resistance in a greenfield broad acre agriculture area with fewer residents. A recent example of this is the Western Victoria Transmission Network Project and the proposed terminal station north of Ballarat.

Hydrogen Superpower scenario

RE-Alliance notes that the hydrogen superpower scenario entails "strong international decarbonisation ambition, with faster actions enabling the achievement of the ambition of the Paris Agreement, limiting global temperature rise to 1.5ºC by 2100 over pre-industrial levels. This is matched domestically with strong economy-wide actions that lead to the fastest decarbonisation requirement in the NEM across the scenarios.

To achieve this temperature goal, economy-wide net zero emissions is expected before 2050".[10]

Whilst the hydrogen superpower scenario was not chosen as the most likely scenario to occur in the draft ISP modelling, RE-Alliance considers that it is vitally important that consideration of scenarios including the hydrogen superpower are modelled. Such scenarios are likely to be important for future planning. Scenarios such as slow change are becoming increasingly unlikely as the pace of the energy transition accelerates.

RE-Alliance congratulates AEMO for the use of carbon budgets for the electricity sector - that is, the NEM's contribution to reducing Australia's emissions to net zero by 2050 - in the draft ISP.

We note that the ISP has found that under the hydrogen superpower scenario the NEM would require an eight-fold increase in capacity and that AEMO states that "in Hydrogen Superpower, the scale of development can only be described as monumental. To enable Australia to become a renewable energy superpower as assumed in this scenario, the NEM would need approximately 256 GW of wind and approximately 300 GW of solar – 37 times its current capacity of variable renewable energy (VRE). This would expand the total generation capacity of the NEM 10-fold. Australia has long been in the top five of energy exporting nations. It is now in the very fortunate position of being able to remain an energy superpower, if it chooses, but in entirely new forms of energy."

RE-Alliance notes AEMO's findings that total net market benefits of the hydrogen superpower scenario are $70 billion by 2050-51, and agrees that this scenario offers by far the highest net market benefits of the scenarios modelled and is the most closely aligned with the environmental imperative of restricting global warming to 1.5^{o}C.

RE-Alliance notes that in the Hydrogen Superpower scenario, modelling indicates 20 GW of the current 23 GW of installed capacity is likely to retire by 2030, in response to the ambitious decarbonisation objectives, and all coal (as well as mid-merit gas) would retire by 2050. This is in spite of the increase in demand for electricity for hydrogen production.

We suggest that this only further underlines the importance of our social licence related reforms above as, if existing generation should retire earlier than currently stated, both new generation and transmission projects would need to be built significantly more quickly than is currently envisaged.

[10] AEMO (2021a), *2021 Inputs, Assumptions and Scenarios Report* p.18 available at: https://aemo.com.au/-/media/files/major-publications/isp/2021/2021-inputs-assumptions-and-scenarios-report.pdf?la=en

Offshore Wind

We note AEMO's finding on page 37 of the Draft 2022 ISP that "offshore wind has great potential due to resource quality, possible lower social licence hurdles, and proximity to strong transmission, but the economics are not yet proven. It is therefore not currently projected to play a large role in the future energy mix at current forecasts of future costs, unless land use considerations limit onshore development. Further cost reductions could see offshore wind feature more prominently in future ISPs".

Appendix 3 of the Draft 2022 ISP details each of the 39 REZs, including four offshore wind zones (OWZs), considered in the ISP. AEMO states that without significant cost reductions, no offshore wind development is projected in any scenario.

RE-Alliance notes that there are numerous offshore wind projects proposed off the Australian coast. The Blue Economy Cooperative Research Centre (CRC) with CSIRO, UTS and the Maritime Union of Australia published a report last year that showed that "in Australia, there are currently more than 10 projects proposed with a combined capacity of over 25 GW".[11]

Globally, the cost of offshore wind is falling rapidly; high capacity factor wind can diversify clean energy generation; and it can connect into the network and displace current coal-based generation across regions (Newcastle/Hunter, Bass Strait/Latrobe Valley) to utilise existing infrastructure.

The development of offshore wind can support a just-transition by redeploying workers from the coal, oil and gas sectors. The Star of the South project is the most mature offshore wind project in Australia and it alone is estimated to provide 2.2 GW with an energy profile distinct from onshore wind.

RE-Alliance encourages AEMO to investigate the offshore wind projects more closely in the Final 2022 ISP report. In light of the number of projects proposed and the dramatic cost reductions demonstrated to date by the offshore wind industry in the UK and Asia, we see significant potential for the technology to make significant contributions and alleviate some of the pressure to construct such a large volume of projects onshore.

[11]The Blue Economy CRC, Offshore Wind Energy In Australia Final Project Report, July 2021 p. 2. available at: https://blueeconomycrc.com.au/projects/offshore-wind-potential-australia/