

Review of the Draft 2024 ISP: A Roadmap in Need of Revision

Energy Grid Alliance extends its gratitude to AEMO for the valuable opportunity to contribute to the Draft 2024 Integrated System Plan (ISP). As an organisation dedicated to fostering collaboration and best practices in electricity transmission planning, we firmly believe that genuine community engagement is the linchpin for acquiring and maintaining a strong social licence – the cornerstone of a successful and sustainable energy transition.

Driven by the principles of IAP2 Australasia, Energy Grid Alliance champions meaningful engagement as a catalyst for better social, environmental, and economic outcomes. We advocate for open and transparent dialogue, where all communities are authentically informed, educated, and empowered to participate in decisions that impact their lives. We envision a future where collaboration, trust, and inclusivity pave the way for decision-making processes that truly reflect and prioritise the needs of the public, rebalancing the power dynamic between institutions and communities.

We are excited to delve deeper into the ISP and offer our insights on building a framework for social licence that fosters a just and equitable transition for all.

Executive Summary

The Draft 2024 Integrated System Plan (ISP) charts a vision for Australia's National Electricity Market (NEM) amidst rapid change and ambitious decarbonisation goals. While its aspirations warrant praise, the document suffers from limitations that compromise its credibility and effectiveness as a blueprint for the future. This critique delves into these concerns, drawing specific examples and references from the accompanying documents (*identified by document ID, page numbers or section labels, refer references below*) to illustrate the issues they raise.

Despite its ambitious vision, the Draft 2024 ISP falls short in several interconnected areas:

Unrealistic Assumptions (e.g., A1, p. 25,): Exaggerated forecasts for renewable energy growth, cost reductions, and climate change impacts inflate potential benefits and minimise challenges. This risks misleading policy decisions and potentially unsustainable financial burdens.

Inadequate Considerations: Critical factors like water scarcity (IASR Addendum, p. 32), demand-side management potential (A5, p. 18), and grid security resilience (A3, p.14) receive insufficient attention. This oversight paints an incomplete picture of the future, potentially exposing the NEM to unforeseen shocks.



Uneven Stakeholder Engagement: Vulnerable communities and environmental groups, who bear the brunt of energy decisions, feel neglected or marginalised in the ISP's consultation process (A1, p. 10). This lack of inclusivity erodes trust, threatens social sustainability, and undermines the legitimacy of the proposed plans.

Lack of Clarity and Accessibility: Technical jargon and opaque data analysis (e.g., A7, Figures 2-4) hinder public understanding and informed debate about the NEM's future. Clearer communication is crucial for building trust and public support.

Costly Transmission Expansion (Draft 2024 ISP, p. 41): The ISP proposes extensive and expensive transmission expansions without adequately justifying their necessity or exploring alternative solutions. This raises concerns about affordability, potential cost overruns, and social licence.

Grid Security and Innovation: Emerging threats like cyberattacks on the increasingly interconnected grid (A6, p. 28) and transformative technologies (A2, p. 12) receive limited attention. This lack of foresight leaves the NEM vulnerable to future disruptions and restricts its ability to embrace innovative solutions for a sustainable future.

These shortcomings collectively jeopardise the ISP's credibility and effectiveness as a roadmap for the NEM's transition. A comprehensive revision is urgently needed, prioritising transparency, cost-effectiveness, alternative solutions, robust community engagement, and social sustainability considerations.

1. Overly Optimistic Assumptions:

1.1 Renewable Energy Growth:

While the ISP's target of 70% renewable energy by 2050 (2023 IASR, p. 6) is ambitious, its optimism regarding the pace of growth deserves scrutiny. Recent data (A4, p. 3) highlights slower deployment due to grid integration challenges like congestion and limited transmission capacity. Ignoring these hurdles risks underestimating the need for:

- Enhanced grid infrastructure: Upgrading and expanding the grid will be crucial to accommodate the surge in renewable energy.
- Alternative generation sources: Gas peaking plants may be needed for grid stability during periods of low renewable output.
- **Potential cost and reliability impacts:** Underestimating these needs could lead to higher long-term costs and reliability concerns.



1.2 Cost Assumptions:

The ISP's expectation of cost reductions for battery storage and renewable energy technologies (IASR Addendum, p. 1) warrants caution. While cost declines are anticipated, the document lacks detailed sensitivity analysis to assess the impact of potential delays or disruptions in technological advancements. Over-optimism about cost reductions could lead to:

- **Inaccurate cost projections:** This could render future infrastructure investments financially unsound and unsustainable in the long run.
- **Overlooking alternative solutions:** Focusing solely on projected cost reductions may lead to neglecting potentially cost-competitive solutions like energy efficiency measures.

2. Climate Change Impacts Underestimated:

2.1 Extreme Weather Events:

While the ISP acknowledges the impact of climate change on renewable generation variability (Draft 2024 ISP, p. 4), it overlooks the potential of extreme weather events like heatwaves and droughts to significantly disrupt the grid. These events can:

- **Reduce hydropower generation:** Droughts decrease water availability, impacting hydropower output, particularly in vulnerable regions (A1, p. 5).
- **Lower thermal efficiency:** Heatwaves can reduce the efficiency of conventional power plants, further straining the grid during peak demand periods.
- **Increase grid instability:** The combined effect of reduced supply and increased demand can lead to more frequent and severe grid instability events.

2.2 Downplaying Water Scarcity:

The ISP's assessment of water availability for hydropower deserves caution. While acknowledging potential regional challenges (A1, p. 5), it may not fully capture the long-term impact of climate change on water scarcity. This could lead to an **overestimation of hydropower's future contribution** to the energy mix, potentially undermining grid reliability in drought periods.



3. Downplaying Demand-Side Management Potential:

3.1 Untapped Potential for Cost-Effectiveness:

While acknowledging the role of demand-side management (DSM), the ISP underestimates its potential to reduce peak demand by 10-20% and delay costly infrastructure investments (A6, p. 10). Studies suggest DSM can be significantly more cost-effective than building new transmission lines and generation capacity. This oversight risks missing out on substantial economic benefits and environmental improvements.

3.2 Policy Ambiguity Hinders Adoption:

The ISP lacks concrete policy recommendations for fostering key DSM initiatives like:

- **Smart grids:** These enable real-time demand response and optimise energy usage.
- **Distributed energy resources:** Solar panels and microgrids can reduce reliance on centralised generation.
- **Energy efficiency programs:** Incentives for energy-efficient appliances and building retrofits can significantly reduce overall energy demand.

3.3 Concrete Policy Needed:

The current ambiguity in policy creates uncertainty for investors and hinders the widespread adoption of these crucial solutions. This could slow down the transition to a more sustainable and resilient energy system.

4. Uneven Stakeholder Engagement:

4.1 Communities Left Behind:

The Draft 2024 ISP's consultation process appears to have neglected the concerns of vulnerable communities and environmental groups (A1, p. 5). These groups are often disproportionately impacted by energy decisions, yet their voices may have been insufficiently heard. This lack of inclusivity risks:

• **Unfair outcomes:** Decisions made without considering diverse perspectives can lead to inequitable distribution of benefits and burdens.



• **Unsustainable solutions:** Overlooking community concerns can undermine long-term social and environmental sustainability.

4.2 Opaque Decision-Making:

The ISP lacks transparency about how stakeholder feedback was integrated into the final document (A7, p. 5). This lack of clarity in the decision-making process raises concerns about:

- **Fairness:** It's difficult to assess whether different perspectives were given due consideration.
- **Public trust:** Without clear communication about how input was incorporated, stakeholders may doubt the responsiveness of the process, leading to decreased trust and buy-in for the ISP's recommendations.

5. Obscure Jargon and Missing Story:

5.1 Public Excluded:

The Draft 2024 ISP relies heavily on technical jargon and complex data presentations (A8, p. 3), creating a barrier for non-experts and hindering meaningful public participation in discussions about the NEM's future. This lack of accessibility can:

- Limit informed public debate: Crucial decisions regarding the NEM should be shaped by diverse perspectives, not just those of technical experts.
- Weaken legitimacy: When the public can't understand the reasoning behind proposed plans, it erodes trust and the perceived legitimacy of the recommendations.

5.2 Lost Opportunity to Inspire:

Beyond data and forecasts, the ISP lacks a compelling narrative or roadmap for the NEM's transition towards a sustainable future (Draft 2024 ISP, p. 1). This absence of a clear vision does a disservice to several crucial aspects:

• **Urgency and Action:** A compelling story can emphasise the urgency of tackling climate change and highlight the opportunities presented by the transition to a clean energy future, potentially boosting public support for necessary changes.



• **Shared Ownership:** A clear vision allows the public to feel invested in the NEM's future and fosters a sense of shared responsibility for making the transition a success.

6. Economic Concerns Remain Unaddressed:

6.1 Jobs and Skills Gap:

The Draft 2024 ISP lacks a detailed analysis of potential job losses and skills gaps associated with the energy transition, particularly in communities heavily reliant on fossil fuels. This oversight hinders proactive planning and can lead to economic hardship and social unrest. Implementing reskilling and retraining programs alongside the transition roadmap would demonstrably support impacted communities and ensure a smoother adaptation.

6.2 Unequal Distribution of Costs and Benefits:

The ISP fails to explicitly address how the costs and benefits of its proposed plans will be distributed across different sectors, regions, and income groups. This omission raises concerns about potential economic disparities and unfair burdens. Ensuring equitable distribution through measures like targeted subsidies or investments in disadvantaged communities is crucial for maintaining public support and social sustainability.

6.3 Financial Feasibility Unclear:

While the ISP estimates costs for specific projects, it lacks a comprehensive assessment of the overall financial feasibility of its ambitious goals. Conducting a thorough cost-benefit analysis with diverse scenarios and incorporating potential uncertainties is essential. This would provide critical insights for responsible resource allocation, informed decisionmaking, and ensuring the long-term financial sustainability of the proposed plans.



7. Environmental Concerns Overlooked:

7.1 Biodiversity Blind Spot:

The Draft 2024 ISP lacks a comprehensive assessment of the potential impact of its infrastructure and energy generation plans on biodiversity and ecosystems (A4, p. 12). Omitting this crucial analysis jeopardises the document's claim to sustainability. Conducting rigorous environmental impact assessments prior to project implementation is essential for mitigating harm and protecting vulnerable species and habitats.

7.2 Water Management Gaps:

While acknowledging water scarcity for hydropower, the ISP focuses solely on quantity issues (2023 IASR, p. 5). This overlooks the potential impact on water quality and aquatic ecosystems, which can be equally significant. Integrating holistic water management strategies that consider both quantity and quality, as well as exploring alternative water sources for power generation, are crucial for responsible resource use and minimising environmental harm.

7.3 Land Use in Limbo:

The ISP lacks a clear framework for integrating land use planning and adequate setback distance considerations into its proposed infrastructure developments (A2, p. 9). This raises concerns about:

- Land acquisition: Addressing potential displacement of communities and fair compensation policies is crucial for social license.
- **Visual impacts:** Assessing and mitigating the visual impact of infrastructure on landscapes and cultural heritage is essential.
- Land use conflicts: Ensuring compatibility with existing land uses and minimising disruption to agricultural activities or protected areas is vital.

Ignoring these considerations can lead to environmental harm, public opposition, and delays in project implementation.



8. Policy and Regulatory Blind Spots:

8.1 Market Design and Regulation:

While outlining broad goals, the Draft 2024 ISP lacks concrete policy recommendations for adapting market design and regulations to effectively incentivise and manage the energy transition. This includes addressing:

- Market structure: Optimising market rules to ensure fair competition and transparency for new entrants, particularly renewable energy providers.
- Pricing mechanisms: Design of pricing signals that reflect the long-term costs and benefits of different energy sources, including environmental externalities.
- Regulatory hurdles: Streamlining permitting processes and reducing regulatory burdens for clean energy projects.

Without addressing these challenges, the ISP's ambitious goals risk remaining unfulfilled due to inefficient investment patterns and market distortions.

8.2 Innovation Lags Behind:

The document lacks a clear pathway for fostering innovation and accelerating the deployment of emerging technologies, which are crucial for achieving a sustainable energy future. This includes:

- **R&D support:** Establishing dedicated funding mechanisms and research collaborations to advance clean energy technologies.
- **Pilot projects:** Creating demonstration projects to test and de-risk promising technologies before large-scale deployment.
- **Commercialisation pathways:** Defining clear regulatory frameworks and market incentives to attract investment and facilitate the commercialisation of new technologies.

Neglecting innovation risks locking the NEM into outdated technologies and missing out on the immense potential of technological advancements for decarbonisation and grid modernisation.



8.3 Distributed Potential Untapped:

The ISP's focus on large-scale energy projects overlooks the significant potential of distributed generation and microgrids to enhance grid resilience and local energy security. This includes:

- **Policy support:** Establishing feed-in tariffs, net metering policies, and other financial incentives to encourage investment in rooftop solar and community-owned renewable energy projects.
- **Regulatory frameworks:** Simplifying permitting processes and grid interconnection rules for distributed generation and microgrids.

Promoting these decentralised solutions can democratise energy access, increase community engagement, and provide additional flexibility and redundancy to the grid, improving its resilience in the face of extreme weather events or disruptions.

9. Unforeseen Challenges and Untapped Opportunities:

9.1 Cybersecurity and Grid Modernisation:

The Draft 2024 ISP doesn't adequately address the growing threat of cyberattacks on increasingly interconnected and complex energy systems. This heightened vulnerability, potentially exacerbated by rising reliance on renewables, requires a comprehensive assessment and robust cybersecurity measures, including contingency plans for potential disruptions. Modernising the grid with resilient infrastructure and advanced monitoring systems is crucial for ensuring a secure and reliable energy supply.

9.2 Just Transition for Workers and Communities:

While acknowledging the energy transition's potential benefits, the ISP lacks a concrete plan for supporting workers and communities currently reliant on fossil fuel industries. Implementing reskilling and retraining programs, providing financial assistance during the transition, and ensuring equitable distribution of the economic benefits are critical for a just and inclusive transition. Neglecting these considerations risks social unrest and hinders public support for the ISP's goals.



9.3 Vulnerable Communities at Risk:

The ISP fails to acknowledge the disproportionate impact its plans could have on already disadvantaged communities, such as those facing energy insecurity, environmental hazards, and limited access to clean energy solutions. Ensuring equitable access to affordable clean energy and addressing existing vulnerabilities through targeted policies and community engagement are essential for a truly sustainable future.

9.4 Beyond Established Technologies:

The focus on existing technologies might miss the transformative potential of innovation and disruptive solutions. Exploring opportunities for advanced energy storage, groundbreaking energy efficiency breakthroughs, and carbon capture and storage technologies could unlock more sustainable and cost-effective pathways towards netzero. Fostering an environment that encourages research and development, pilot projects, and commercialisation of these emerging technologies is vital for staying ahead of the curve.

9.5 Geopolitical Shifts and Uncertainties:

The ISP doesn't sufficiently consider the evolving geopolitical landscape and its potential impact on energy resources, trade flows, and climate policies. Building a resilient and adaptable NEM requires integrating these uncertainties into the planning process and developing strategies to address potential disruptions, resource scarcity, or changes in global markets.

9.6 Governance and Regulation for Agility:

The document doesn't fully address the potential need for adapting governance and regulatory frameworks to effectively manage the complex challenges and opportunities of the NEM's transition. Streamlining regulations, fostering innovation with flexible frameworks, and ensuring efficient market mechanisms are crucial for achieving the ISP's ambitious goals and responding to future uncertainties.



10. Transmission Expansion in the Draft 2024 ISP: A Critical Look

The Draft 2024 ISP proposes significant transmission expansion as a key pillar of its vision for the NEM's future. However, the document offers limited and opaque explanations regarding the cost, need, and social license for these ambitious plans. Here's a critical analysis of this crucial aspect of the ISP:

10.1 Cost Considerations:

- Lack of Transparency: The ISP provides insufficient detail on the estimated costs of proposed transmission expansions (Draft 2024 ISP, p. 7). This lack of transparency raises concerns about potential cost overruns and the affordability of these projects for consumers.
- **Interdependent Costs**: The ISP overlooks the potential interdependencies between various transmission projects, which could lead to unforeseen cost escalation due to cascading effects (A8, p. 8). A more holistic cost analysis considering these interdependencies is necessary.
- Alternative Approaches: The ISP primarily focuses on large-scale transmission upgrades without adequately exploring cost-effective alternatives like distributed generation, demand-side management, and grid modernisation technologies (A6, p. 10). A comprehensive cost-benefit analysis comparing these options is crucial before committing to expensive transmission projects.

10.2 Need for Expansion:

- **Unclear Justification**: The ISP lacks a comprehensive and transparent justification for the specific scale and location of proposed transmission expansions (Draft 2024 ISP, p. 7). This raises concerns about potential overbuilding and inefficient allocation of resources.
- Scenarios and Sensitivity Analysis: The ISP doesn't adequately explore alternative scenarios and conduct sensitivity analysis to assess the need for specific transmission expansions under different conditions like slower renewable energy deployment or higher demand-side management uptake (IASR Addendum, p. 1). This limits the document's robustness and adaptability to unforeseen changes.
- **Grid Integration Challenges**: The ISP acknowledges grid integration challenges associated with high renewable penetration but doesn't fully explore alternative solutions like storage integration or smart grid technologies that could minimise the need for extensive transmission upgrades (A4, p. 3). A broader range of solutions should be considered before prioritising major transmission investments.



10.3 Social License Considerations:

- **Community Engagement**: The ISP consultation process regarding transmission projects may not have adequately engaged affected communities and addressed their concerns about land use, visual impacts, and potential health risks (A1, p. 5). This could result in opposition and delays in project development.
- **Transparency and Trust**: The lack of detailed information about the ISP's assumptions and methodologies for transmission planning hinders public trust in proposed projects (A7, p. 5). Increased transparency and community engagement are crucial to securing social license for these large-scale infrastructure developments.
- Just Transition: The ISP doesn't address the potential impact of transmission projects on existing communities and their livelihoods, particularly in areas undergoing significant land-use changes (Draft 2024 ISP, p. 1). Measures to ensure a just transition and mitigate negative impacts are necessary to garner public support.

Refer to separate submission with respect to Appendix A8, Social Licence.

Conclusion:

The Draft 2024 ISP lays out a vision for the National Electricity Market's future, but its path is fraught with blind spots and stumbles. Embracing its ambition without addressing these shortcomings risks not just a bumpy transition, but a potentially perilous journey towards an unsustainable and unreliable energy future.

Ignoring the unrealistic assumptions about growth and cost reductions can lead to crippling financial burdens, while underestimating climate change impacts like extreme weather events could cripple the grid's resilience. Downplaying the potential of demand-side management and neglecting concerns of impacted and vulnerable communities' risks hindering innovation, exacerbating social inequities, and jeopardising public trust.

An opaque transmission expansion plan shrouds billions in potential costs and lacks transparent justification. This, coupled with the neglect of alternative solutions like distributed generation and grid modernisation, could lead to an inefficient and expensive infrastructure build-out, ultimately borne by consumers through higher electricity prices.

The absence of a compelling narrative and a roadmap for a just transition for impacted communities not only weakens public support but also risks social unrest and hinders the transition's progress. The silence on cybersecurity vulnerabilities and the need for agile



governance leaves the NEM exposed to future disruptions and hinders its ability to adapt to rapidly evolving challenges.

The consequences of inaction are clear:

- **Stranded assets:** Overestimated renewable energy growth and cost reductions could lead to investments in unnecessary infrastructure, wasting both public and private resources.
- **Grid instability:** Overlooked climate change impacts and inadequate grid modernisation could create a precarious future of blackouts and disruptions, jeopardising economic stability and public safety.
- **Social unrest:** Failure to address the concerns of impacted and vulnerable communities and ensure a just transition could lead to resistance and hinder the entire transition process.
- Erosion of trust: Opaque decision-making, lack of transparency, and unaddressed cybersecurity vulnerabilities will erode public trust in the NEM's governance, jeopardising its legitimacy and public buy-in.

To avert these pitfalls and navigate towards a secure and sustainable future, the ISP needs a decisive transformation:

- **Rigorous analysis:** Replace optimistic assumptions with realistic scenarios and sensitivity analysis to inform robust and cost-effective decisions.
- **Inclusive engagement:** Prioritise open communication, transparent data analysis, and meaningful engagement with all stakeholders, especially vulnerable communities.
- Holistic approach: Explore a broad range of solutions, including demand-side management, distributed generation, and grid modernisation, before committing to expensive transmission expansion.
- **Innovation and resilience:** Foster a culture of innovation and invest in emerging technologies while building a resilient grid that can withstand future disruptions.
- **Just transition framework:** Develop a comprehensive plan to support workers and communities transitioning away from fossil fuels, ensuring a fair and equitable distribution of the costs and benefits of the transition.
- Adaptive governance: Implement flexible regulatory frameworks and agile decision-making processes to navigate uncertainties and respond effectively to evolving challenges.



The Draft 2024 ISP offers a starting point, but the journey towards a sustainable and resilient NEM demands bold revisions and a commitment to continuous improvement.

Embracing transparency, fostering collaboration, and prioritising well-rounded solutions are not just sound recommendations; they are the very cornerstones upon which the NEM's future depends.

Let this be a call to action, not just for policymakers and industry leaders, but for all Australians who have a stake in shaping a secure and sustainable energy future for generations to come.

Thank you for the opportunity to participate in this consultation process and offer this contribution to the discussion about the NEM's future.

Sincerely

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