Public Interest Advocacy Centre

Draft 2024 Integrated System Plan

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About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

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Public Interest Advocacy Centre

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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1. Introduction

PIAC welcomes the opportunity to respond to the Draft 2024 Integrated System Plan (ISP). We thank the Australian Energy Market Operator (AEMO) ISP team for their efforts and dedication in developing a plan for the transition of the National Energy Market (NEM) that is ambitious in terms of achieving Australia's various commitments relating to emissions reduction.

The planning needs of the NEM have evolved since the first ISP in 2018. At that time the ISP was intended to meet the need for greater national planning of electricity transmission networks. This was to ensure the NEM could successfully shift from one with large, centralised generation units to one based on distributed variable renewables, and thereby ensure emissions reductions.

The over-arching task remains constantt: charting the least cost path for the energy transition, while balancing the goals of reliability, safety, security, and now emissions reduction. But it is no longer appropriate that the planning task remains fixated on transmission. Transmission is no longer unambiguously the 'low hanging fruit' of enabling or accelerating the energy transition (if it ever was). Large transmission projects have turned out to be far more expensive and slower to build than we had anticipated, and this has increased the attractiveness of less transmission-centric strategies.

In addition, the major interconnectors that fall under the planning auspices of the national planner are now all but confirmed. Arguably the consequential planning decisions for the coming years will now fall to transmission network service providers (TNSP) and state planners. Increasingly the ISP is a plan for the gaps between state commitments in terms of transmission, generation, and storage. If it remains in this form, the role of the document as a central planning tool coordinating the actions of a vast array of stakeholders will diminish, and we will be left without an authoritative planner providing prescriptions from the specific perspective of maximising net benefits on a system-wide basis.

While AEMO is currently hamstrung by the rules and guidelines governing their production of the ISP, they are nonetheless empowered by the rules to do more than they are. Most importantly, in producing the optimal development path (ODP), AEMO is empowered to identify the investments needed for distribution assets, generation, storage projects and demand side developments. We argue this function is not being embraced in the ISP.

AEMO has engaged with generation, transmission and storage on a different basis from its engagement with other factors. System elements such as distributed energy resources (DER), demand response, and energy efficiency have been treated as inputs to modelling only. While this is broadly in accordance with the rules, this means development paths for these elements have not been co-optimised alongside the traditional 'core' elements of the energy system. The effect of this is to undermine the central finding of the ISP. AEMO state:

> With coal retiring, renewable energy connected with transmission, firmed with storage and backed up by gas-powered generation is the lowest cost way to supply electricity to homes and businesses throughout Australia's transition to a net zero economy.[1]

This is not a reasonable claim. Without comparing all the available alternatives to supply electricity to the NEM, it is not possible to say that this method is the lowest cost.

The credibility of the ISP is undermined by not taking a more holistic approach to orchestrating (or optimising) the transition path. This is only set to become more pronounced as we move into the middle years of the transition.

In this submission we provide detailed comments and feedback on the treatment of non-core elements, the choice of scenarios, treatment of planning risk, issues with the value of reliability and other issues highlighted in the Draft ISP, which we consider have material implications for future processes.

2. The NEM planning needs have evolved

The ISP is a valuable tool for coordinating the behaviour of a vast array of policymakers, planners, regulators, investors, consumers, and other stakeholders. Its scope to help maximise net value during the energy transition is enormous. It provides a whole of system viewpoint no other actor is incentivised to produce, and there is currently no other actor positioned to play this coordinating role.

However, AEMO can make recommendations only. It has no authority or budget to execute any of the recommendations it makes for investments or retirements of assets. The ISP provides informational and analytical input to a set of decisionmakers' actions. All of those decisionmakers can elect to pursue other actions and interests, notwithstanding any obligation that parties act on emissions reductions. AEMO and the ISPs capacity for coordination rests entirely on its analysis being trusted and convincing. In order for it to function effectively, the ISP must be both credible and authoritative. We contend that recent developments could threaten these credentials.

2.1 Credibility

The ISP must assess all options for an identified preference to be meaningful.
PIAC is concerned that a narrow interpretation of the ISP's remit is undermining the credibility of its findings. The central finding of the Draft 2024 ISP is that:

> With coal retiring, renewable energy connected with transmission, firmed with storage and backed up by gas-powered generation is the lowest cost way to supply electricity to homes and businesses throughout Australia's transition to a net zero economy.[3]

[1] Draft ISP 2024, 6.
[3] Draft 2024 ISP, 6.

In broad terms, this is a true and reasonable statement. It is a claim backed by the CSIRO's GenCost reports, and it does not foreclose the possibility of governments and investors expanding the NEM's capacity in demand response, energy efficiency, etc. with positive net benefits.

However, it implies that alternative, less transmission-focussed transition paths are more expensive. This is not a claim that can be validated by the ISP, due to the limits placed on AEMO in terms of what they can include in the model as inputs and what they can co-optimise as an output.

Transmission is no longer the unambiguous 'low hanging fruit' relative to non-network options. Increasingly, demand-side and other options, including using the existing transmission and distribution capacity more effectively, are potentially cheaper and more easily progressed. Large scale transmission projects have turned out to be more expensive and have longer construction times than anticipated even a few years ago. The potential benefits of demand side options, stand-alone power systems (SAPs) and other non-network options are substantial. Moving forward, the 2026 ISP and beyond will need to engage more substantively with all the options available in order to provide a credible foundation for the claim that the final path identified is 'least cost' and 'optimal'.

There is a risk that if the ISP does not evolve to become a truly whole of system plan, its findings will be interpreted less as an outcome of analysis and more of political or planning intent. Given the mode of intervention the ISP rests on, this will result in a reduction in its impact, and so less coordination across the sector.

Inputs and assumptions must be credible in order for the outputs to be credible.
AEMO appears to be operating on the basis that all jurisdictional targets, commitments and committed and anticipated transmission projects are equally credible. This is despite concerns about social licence and supply chain issues, which may disrupt the delivery of the ODP, outlined in the executive summary of the Draft 2024 ISP.

If the ISP makes strong assumptions about the expected commissioning dates transmission, generation or storage projects that have already suffered significant delays (such as Snowy 2.0) and these are not widely believed due to concerns raised by AEMO or any other reasons, the credibility and efficacy of the ISP is compromised.

AEMO should suspend the practice of uncritically taking projections from jurisdictions and project proponents as inputs and use their own independent assessment of inputs to the ISP. There should also be a move to introduce new contingency planning[5] or sensitivities to the ISP to provide stakeholders with expectations of the impacts of delays to key projects.

[5] We return to this point in section 4 below.

Redundancy

A second risk to the efficacy of the ISP is any reduction in the confidence that it is an authoritative plan.

There is a risk is that the ISP's preeminence as the authoritative NEM plan diminishes due to the next wave of major transmission projects falling under the planning auspices of jurisdictions, namely Queensland and New South Wales. This leaves those projects potentially being progressed regardless of ISP assessment, leaving the ISP as an important, but not definitive instrument.

The growth in elements of the energy system that are not generation, storage, and transmission, and not in AEMOs purview, increases the scope and impact of things outside of the ISPs coordinating role. Charting the development in energy efficiency, consumer energy resources (CER), and demand response and management already fall to jurisdictional planners by default.

The combined impact of these developments is that the ISP provides the primary signals for less and less of the energy system's development, and the coordinating potential of the system-wide planner is increasingly unrealised.

It is important to note that as the transition progresses, the value of planning for transmission relative to the value of planning other areas of the energy system is falling. We have already arrived in 2024 at a point where there is much less uncertainty about the transmission projects that will and will not be needed in the next ten years, relative to the ISPs of 2018, 2020 and 2022.

If the ISP increasingly becomes an exercise in confirming what most stakeholders already believe to be the case, it will lose value. Importantly, we will lose the benefits of coordination, not through the ISP being incorrect, but through it becoming essentially redundant.

To avoid the risks outlined here, the ISP must evolve from a transmission plan into a truly whole of system plan. PIAC noted this in our our submissions to the recent ISP Review,[6] where we recommended options to progress this evolution.

2.2 The requirements of the existing rules

PIAC contends that the requirement to identify 'ISP development opportunities' provides AEMO with adequate scope to evolve the ISP into a more holistic system plan. To further enable this evolution, changes need to be made to the rules, the Australian Energy Regulator's (AER) cost benefit analysis (CBA) guidelines, and AEMOs ISP Methodology.

At present, National Electricity Rule (NER) 5.22.2 states:

6 PIAC submission to the Department of Climate Change, Energy, the Environment and Water's (DCEEW) stakeholder consultation plan on the Integrated System Plan, 1 December 2023.

> The purpose of the *Integrated System Plan* is to establish a whole of system plan for the efficient development of the *power system* that achieves *power system needs* for a planning horizon of at least 20 years to contribute to achieving the *national electricity objective*.[7]

A detailed definition of 'power system needs' is provided in Rule 5.22.3. The 'power system' is defined in the Glossary as:

> The electricity power system of the national grid including associated generation and transmission and distribution networks for the supply of electricity but excluding regulated SAPS, operated as an integrated arrangement.[8]

The definition of the 'power system' is therefore wider than the transmission network and includes associated generation, and also distribution networks.

Further, Rule 5.22.6 sets out in detail the required content of the ISP. Rule 5.22.6(a)(5), requires AEMO to –

> For the optimal development pathway, identify the actionable ISP projects, future ISP projects and ISP development opportunities.[9]

Rule 5.10.2 defines an 'ISP development opportunity' as -

> a development identified in an Integrated System Plan that does not relate to a transmission asset or non-network option and may include distribution assets, generation, storage projects or demand side developments that are consistent with the efficient development of the power system.[10]

PIAC is concerned that the AER CBA Guideline is unduly narrow, with the detailed economic analysis undertaken centring on transmission.[11]

The rules require AEMO to identify in the ODP not merely the transmission investments needed, but also the investments needed for distribution assets, generation, storage projects and demand side developments. The 2024 Draft ISP should be amended to address the topics of distribution assets, generation, storage projects and demand side developments more fully, notwithstanding any constraint in the AER CBA guidelines.

We acknowledge that Part B of the 2024 Draft ISP does address storage and generation. In the following sections we detail how this analysis could be improved. We consider AEMO is also required by the NERs to address the modernisation of distribution assets and demand side developments more fully in the ISP2024.

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7 Rule 5.22.2, NER.
8 Glossary, NER.
9 Rule 5.22.6(a)(5), NER.
10 Rule 5.10.2, NER.
11 AER CBA Guideline, July 2023, section 3.3.

3. Alternatives to transmission

PIAC does not oppose adding to the transmission capacity of the NEM. But the argument in the Draft 2024 ISP that more transmission is needed is insufficiently nuanced and implicitly overvalues the benefits of transmission. For example, it overvalues the amount of resilience new transmission adds to the network. It also undervalues the limitations and drawbacks of transmission, such as the prospect of (potentially indefinite) delays in commissioning projects and material cost over-runs, as well as the lack of agility relative to elements such as battery energy storage systems (BESS). It also devalues other elements of the energy system, and obscures the underutilized capacity in demand response, distribution networks, CER, energy efficiency, stand-alone power systems (SAPS) and microgrid options.

PIAC disagrees with the assertion that renewable energy connected with transmission firmed with storage and backed up by gas powered generation is definitively the lowest cost way to supply electricity. At best it is overly simplistic, and at worst forecloses without foundation the possibility that the lowest cost way to supply electricity through the transition is a combination of supply and demand side measures. While the ISP 'considers' these other elements, it does not co-optimise them.

3.1 Demand response

The ISP does not promote demand response adequately or integrate it into the candidate or optimal development paths. It is treated only as an input to the ODP, and even then appears in the executive summary only as an item merged with consumer owned batteries.

The main limits on demand response expansion are underdevelopment of the demand response market and the take-up of key technologies that are compatible with providing demand response – electric vehicles and electric water heaters. The ISP, and AEMO, have a key role to play in promoting both the Wholesale Demand Response Mechanism (WDRM) and the uptake of energy efficient technologies that provide this added benefit.

These opportunities should be added, and the significance of demand responses as a firming technology should be noted explicitly alongside pumped hydro, batteries, and gas-powered generation in the dot point on page 9.

3.2 Distribution networks

The ISP should include as an output a plan for the optimal use of sub-transmission distribution networks, including both the existing distribution lines and additional ones. Distribution lines are typically 66kV and higher, and some sections of the distribution network have higher capacity than certain transmission lines. Some sections of the distribution network function similarly to transmission but are not considered in ISP outputs as they are not owned by TNSP.

Given these assets have the capacity to host new connections for generation and storage, the ISP may be failing to fully consider more cost-effective augmentations and opportunities, and instead only be selecting new transmission solutions to identified problems. The ISP should

consider distribution network service providers' (DNSP) sub-transmission assets on par with TNSP-owned assets to ensure they are optimised and integrated in the system.

3.3 Consumer energy resources

The CER development pathway should compare demand and supply side options, not be limited to comparison between different types of demand-side participation. The ISP should provide detailed analysis of the opportunities for CER and demand flexibility and how network investments affect the availability of CER.

Currently the ISP makes a clear distinction between energy demand from the grid and from behind-the-meter resources. A further distinction should be added differentiating the portion of energy generated behind the meter that is consumed by the generator from the portion that is exported from behind-the-meter resources and used by other consumers (as a portion of operational demand). In the context of the energy transition and the ISP, this latter portion, which can also be described as a portion of operational demand, is notable, as it:

- represents a growing portion of all energy consumption and operational demand, and is expected to increase markedly over time;
- provides unique benefits, including reduced demand on larger scale generation, reduced system losses, and potentially reduced reliance on transmission;
- presents unique challenges to the secure operation of the energy system, its networks and markets; and
- is increasingly a key feature of policy decisions and rules seeking to balance the interests of participating consumers, other consumers, market participants and the wider system.

3.4 Energy efficiency

The ISP should acknowledge the potential value of investments in energy efficiency, especially in the context of the significant load growth that the ISP forecasts out to 2050. Energy efficiency reduces costs throughout the supply chain, in the wholesale energy market, ancillary services markets, transmission, and – for households and businesses connected – in distribution.

Due to avoided thermal losses, each megawatt hour saved through energy efficiency saves about 1.1 MW hours of energy generated. In the future energy system where storage is prevalent, this figure will be even higher due to the avoided roundtrip efficiency energy savings and the gains born of increased consumption time-shifting capacity.

The ISP should not only provide detailed analysis of the opportunities for energy investment at different stages of the transition, but also examine questions of how the achievement of different standards of energy efficiency impacts the optimal development path and the value propositions of identified projects in it.

3.5 Stand-alone power systems and microgrids

A small but not insignificant number of existing energy users in regional and remote locations will be more cost-effectively supplied by predominantly renewable-powered stand-alone power supplies and microgrids that are independent of the distribution and transmission network. These options should be subject to the same process of identification and co-optimisation in the ISP as network options.

4. Choice of scenarios

The selection of an ODP begins with the construction of a series of scenarios as part of an extensive process that culminates in the Inputs, Assumptions and Scenarios Report (IASR). The Draft ISP2024 draws on three scenarios the *Green*, *Step Change* and *Progressive Scenarios*. However, it fails to copy across from the IASR sufficient details of these scenarios to allow lay readers to properly understand the underlying assumptions and inputs they are built on.

The Draft 2024 ISP states that all three scenarios match current government emissions commitments.[12] It states that *Step Change* is the scenario that "features an energy transition pace to less than 2°C and compatible with 1.5°C outcomes depending on the actions taken across other sectors." What is not stated anywhere in the Draft 2024 ISP is that the *Progressive* scenario matches a 2.6C temperature projected rise.[13] Consequently, it is not entirely clear how the Progressive Scenario can be compatible with government decarbonisation commitments when Australia has committed under the Paris Agreement to achieve a less than 2C temperature rise and best efforts to achieve a 1.5C temperature rise.

AEMO should carefully consider how the *Progressive* scenario is used throughout the 2024 ISP, including whether its use undermines meeting Paris Agreement commitments. We contend that 2024 ISP planning should be based on scenarios that achieve a less than 2C temperature rise and allow for best efforts to achieve a 1.5C temperature rise. Any use of the Progressive scenario should only be to stress test the ISP modelling outputs to confirm the system will remain reliable should this scenario come to pass.

The point that the *Progressive* scenario matches a 2.6C temperature increase should be in the executive report and used to highlight the importance of the federal and jurisdictional governments acting to achieve the targets they have committed to.

5. Management of planning risks

The prevalence of planning risks is under-examined and managed in the ISP. Planning risks refer to instances where plans do not eventuate as expected, either in terms of timelines or events. While the ISP identifies factors associated with planning risks, there is little analysis or contingency planning following this step.

[12] Draft ISP2024, pp.18, 40.
[13] See IASR, pp.20, 41.

The key contingencies relating to planning risk in the ISP are the possibilities that "social licence and supply chains are not secured for project delivery"[14] and that "critical energy assets and skilled workforces are not being secured".[15] We propose adding to this list of events that demand contingency plans, substantial delays to the strategically significant interconnectors or deep storage projects.

There is a need first to provide analysis of the impact of each of these events on the candidate and optimal development paths, as well as the impact of each on other key projects. The second task is to identify clearly the contingency plans for these events – what elements of the ODP would be impacted and how – and to stipulate trigger points for the contingency plans to become active.

The ODP is selected on a basis of resilience, among other credentials. The production of more discrete contingency plans for these events is a more pertinent signal to investors and policymakers on how to act, and what preparation is needed now to be ready to switch to an alternate course of action when the pre-agreed upon trigger occurs.

There may also be value in providing analysis of how these events may impact the value propositions of other elements in the ODP. For example, it is quite conceivable that a delay to Snowy 2.0's expected commissioning date of December 2028 (a) will occur and (b) will have a substantial impact on the value of Humelink. This would convert Humelink's razor-thin net benefit into a net disbenefit. Given this, consumers may be better served by moving the commissioning date of Humelink back in the ODP. It may allow the cost blowouts of the project to be reduced, and/or investing earlier in BESS options that boost system resilience and boost planning agility by dint of being modular and scalable. Given that the ISP does not provide analysis on the impacts of such contingencies as a further delay in Snowy 2.0, it is difficult to say with any confidence that the ODP is the path that maximises expected consumer benefit.

A subsection should be added to the section titled 'Risks to delivery of the ODP and to the energy transition' starting on page 14 detailing planning risks. This would include the risks described above, as well as the implications of the risks of forecasting and prediction errors, specifically as they apply to significant factors in the ISP, such as energy demand, the development of various markets, and the cost paths of various technologies.

6. Other matters

6.1 The absence of a Value of Emissions Reduction

We note with concern the continued failure of the Department of Department of Climate Change, Energy, the Environment and Water's (DCCEEW) to produce an interim value of emissions reduction (VER) or to begin a more substantial consultation process to produce an ongoing VER. The evaluation of generation, storage, transmission, development opportunities, and candidate

[14] Draft 2024 ISP, 15.
[15] Draft 2024 ISP, 16.

development paths will be more robust once a VER is produced and integrated into the relevant processes for these tasks in the ISP.

6.2 Back-up and firming

The distinction made between firming and back-up is an overly binary one, particularly considering the Draft 2024 ISP's own definitions of storage by depth and duration (page 62). This causes the ISP to take an overly narrow view of the technologies with the capacity to offer either service. On page 9, for example, it refers to 'firming technology' as generation and storage used to 'smooth out the peaks and fill in the gaps' from variable renewable energy (VRE). This rejects out of hand the capacity of undeveloped technologies such as demand response or long-term fluid fuel storage to deliver either or both services.

Secondly, while the Draft 2024 ISP addresses the need for backup of renewables during protracted periods of low wind and solar generation, there is little mention of the need to back up increasingly old and unreliable coal generation. This is despite the increased risk posed by an unplanned outage of one or more coal units as the coal generators approach their retirements.

Additional sections should be added to the sections on the need for back-up speaking to the specific needs of the system to ensure backup for sudden and unexpected coal outages.

6.3 Resilience

The assertion that increased transmission increases resilience is overly simplistic. All else being equal, additional transmission will strengthen the energy system, but all else is not equal. Most importantly, the choice to invest in transmission options comes with opportunity costs, some of which may improve resilience more.

For example, given that the NEM currently provides an exceptionally high level of reliability, the improvement in resilience to many consumers resulting from adding a unit of behind the meter resources (either generation or storage) is much greater than that resulting from a marginal unit of transmission.

Overall, the message that more transmission gives more resilience, made on pages 11, 44, and 51 should be replaced with the message that more diversity gives more resilience. Specifically, we must have a mix of the three types of diversity:

- Locational diversity - transmission (and other networks) can help provide this when they stimulate more investment in new generation and/or relieve substantial existing curtailment of generation.

- Temporal diversity - transmission can help with this but batteries and a mix of generation are the 'main game'.

- Energy source diversity – this includes diverse types of renewable and dispatchable energy, supported by batteries; transmission can help support this.

This framing includes the resilience benefits of transmission but conveys a more accurate account of the needs of the NEM and does not mislead the lay reader.

6.4 Reliability

The treatment of reliability risks and the treatment of the reliability standard in the Draft 2024 ISP are not appropriate.

- We object to the claim on page 14 that the risk 'that replacement generation is not available when coal plants retire… must be avoided'. Few risks can be avoided altogether – including this one – and the long-term interest of consumers is not best served by simplistic proclamations of this nature.

  The possible solutions to coal plants retiring are not limited to replacement generation. There are instances where using existing storage, transmission and generation differently is a viable option, as well as the introduction or expansion of demand-side measures as noted above.

  The sentence should be changed to 'the risk of *shortage of capacity* when coal plants retire … must be *managed*'.

- We object to the claim on page 36 that 'balancing reliability and affordability is a matter of judgement'. The reliability standard should determine the level of reliability the system is planned for in the ISP, and the VCR should determine the maximum operational costs incurred in avoiding outages. Both of those are determined independently of AEMO – by the AEMC Reliability Panel and AER respectively – reflecting the value consumers place on reliability.

  The point that the balance between reliability and affordability is a matter of judgement is true, but stated in the way it is here gives the impression to a lay reader that it is a value open to contestation the way other matters of judgement are. This is not the case. It is for the purposes of the ISP, settled and externally given.

- Also on page 36, the Draft 2024 ISP states that "… the NEM must be operated over the year so that there is enough supply to make sure that demand is met at least 99.998% of the time." We object to the use of the word 'operated' here. The reliability standard is a planning standard for AEMO's purposes, not an operational standard.

6.5 Curtailment of generation

The Draft 2024 ISP notes in the section titled '*Risk that markets and power system operations are not yet ready for 100% renewables*', on page 15 the evolution of energy markets, networks and operations will need to accommodate high proportions of renewable energy, and the work AEMO is doing to this end.

Additional paragraphs should be added here setting out expectations regarding the curtailment of energy generation at times of excess supply.

Realistically, as the capacity of VRE approaches levels estimated in the ISP in coming years, most generators will be curtailed and some – particularly solar in some locations – may have the majority of their potential generation output curtailed for a number of months each year. This will be an issue at all levels of the energy system: transmission, distribution and behind-the-meter.

Minimising curtailment requires much more than the locational diversity afforded by transmission. All types of storage described on page 62, including deep, infrequently cycled energy storage, will need to be deployed to shift as much energy as possible from times of excess generation to times of excess load, if the goal is to minimise curtailment.

6.6 Consumer needs

PIAC supports AEMO's attempts in the Draft 2024 ISP to engage with the issue of consumers being diverse and having different preferences and needs. However, the approach taken to this is unhelpful.

The subsection titled 'We rely on a complex power system' on page 22 identifies three types of consumers: heavy industry, business and households. It differentiates them on the basis of their needs. However, it does not explain what these different needs are.

We contend that there is no meaningful difference, and the distinction between these three groups should be removed. They share a common need, which is in fact identified at the top of page 22: "[a]ll must have secure, reliable and affordable supply, and be confident it will be there when they need it." We would submit as an aside that there are two redundancies in this statement – security, meaning the stability of the system, is an input to reliability, and 'being there when and where they need it' is a less concise way of saying 'reliability'. We propose that the sentence could be changed to "[a]ll must have reliable (or dependable) and affordable supply."

More substantially, there are differences between consumers. However, the differences between the consumers within these three groups are much larger than the differences between these groups. We would prefer the schema be removed so as not to obscure the differences between consumers within each group.

7. Conclusion

We commend the work of the ISP team on producing this substantial document. We have made comments here both with a view to improving the 2024 ISP and beginning work to direct the evolution of the planning exercise in future iterations to protect the centrality and authority of the ISP. The production of a system-wide viewpoint that coordinates the actions of policymakers, regulators, investors, consumers, and others is enormously valuable, and the risks of the ISP losing credibility or authority must be proactively managed. The best way to do this is to allow the ISP to become a truly whole of system plan.

Co-optimising the developments of the demand and supply sides of the energy system is also the best approach to ensure that energy is supplied most efficiently for consumers over the course of a faster transition.

Continued engagement

We welcome the opportunity to meet with AEMO and other stakeholders to discuss these issues in more depth. Please contact Michael Lynch at mlynch@piac.asn.au regarding any further follow up.