Australian Conservation Foundation

Submission to: Better integrating gas into the ISP (Electricity)

Addressed to: Australian Energy Market Commission (AEMC)

Submission from: Australian Conservation Foundation
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AUSTRALIAN CONSERVATION FOUNDATION | Nature needs us, now

About the Australian Conservation Foundation

The Australian Conservation Foundation is Australia's national environment organisation. Since 1965, we've protected the nature we all love – our unique wildlife and our beautiful beaches and bush.

Driven by the power of people, we won World Heritage listing for the Great Barrier Reef and Kakadu National Park, and returned precious water to the rivers of the Murray-Darling.

We influence governments and businesses to protect the animals, rivers and reefs close to our hearts and hold decision-makers to account without fear or favour. Everything we do is evidence-based and helps nature and people thrive for generations to come.

We won't give up until Australia's nature is protected and regenerated.

The Australian Conservation Foundation acknowledges that First Nations Peoples of Australia hold unique knowledge and rights inherited from their ancestors and Country and have cared for this country since time immemorial. We pay our respect to First Nations Peoples of Australia, past, present and future. We respect their leadership in caring for Country and support their rights to continue to do so. We recognise that sovereignty was never ceded, and that colonisation was unjust, often violent and continues to adversely impact on First Nations Peoples today. As Australia's national environment organisation, we understand we have a responsibility to help right this historical wrong. We support their authority to speak for Country, right to self-determination and recognise that rightful recognition of and genuine reconciliation with First Nations Peoples is fundamental to protecting nature in Australia. We support First Nations-led campaigns that protect Country and seek win-win outcomes for our environment and for the rights, wellbeing and advancement of First Nations Peoples

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Introduction

ACF welcomes the opportunity to make a submission to the Australian Energy Market Commission's (AEMC) "*Better integrating gas into the ISP (Electricity)*" consultation on three rule changes proposed by the Hon Chris Bowen MP, Minister for Climate Change and Energy to amend the National Electricity Rules (NER) and the National Gas Rules (NGR) to enhance the Integrated System Plan (ISP).

The Energy and Climate Change Ministerial Council (ECMC) commenced a review of the ISP in October 2022 to ensure its scope and functions remain fit for purpose as the energy sector transitions to net zero. Following the review, this rule change request aims to implement three of the review's recommendations.

The rule changes aim to enhance the ISP by expanding its consideration of:

- Better integrating gas into the Integrated System Plan - gas market information;
- Improving consideration of demand-side factors in the Integrated System Plan - consumer energy resources (CER) and other distributed resources; and
- Better integrating community sentiment into the Integrated System Plan - earlier consideration of community sentiment.

ACF supports a more robust analysis of future gas markets and the role of CER in achieving emission reductions and least cost pathways to achieve net zero. ACF understands that, based upon the science of climate change and the role of the energy sector in decarbonising the Australian economy, the energy sector must aim to be net zero by 2035. To plan for this requires the Australian Energy Market Operator (AEMO) to access or undertake robust market analysis and modelling, considering all opportunities for alternatives to a fossil fuel based energy system and to plan for the fossil gas sector to phase down.

There are many sources of both fossil and renewable gas market data and analysis available to AEMO, which has to date nonetheless relied on the Gas Statement of Opportunities (GSOO), which is biased towards supply side analysis. Only a rule change, facilitating the ISP to access or complete more robust and independent modelling and analysis of the gas market and the opportunities for demand-side solutions would future proof the ISP and its Optimal Development Path (ODP).

We also note this analysis needs to include supply-side and demand-side analysis, including the role of CER and energy performance in providing energy services to homes, business and industry. AEMO needs to include robust modelling and analysis of both to ensure a fit for purpose ISP and ODP. We also recommend that whether these changes are made through rule changes or other means, that they are integrated and iterative.

While ACF considers that AEMO has done great work in developing the 2024 ISP, our starting point for developing the ISP should not be what is currently most likely, but planning for where the electricity system needs to be to achieve the National Energy Objectives (NEO), including critically Australia's emissions reduction targets. While the Delphi Panel agrees that the 2 degree aligned Step Change scenario is 43% likely (and only 1% more likely than the disastrous Progressive Change scenario), that is only an indicator of where we are heading, and only if all

the policy outcomes of the ISP, including those of Federal and state and territorial jurisdictions are realised. The narrow likelihood between the two worst case scenarios demonstrates there is little room for failure based on assumptions. Furthermore, the International Energy Agency (IEA) has been clear that achieving the objectives of the Paris Climate Agreement requires no new oil and gas developments. The ISP needs to provide more detail on the 1.5 degree aligned Green Energy Exports scenario and how it would optimise demand side solutions. As such, these rule changes need to mandate more robust data collection, modelling and analysis of potential future energy flows to ensure that the ODP of the ISP does in fact achieve a net zero energy system at the least cost.

The AEMC is asking for feedback on the materiality of the problems raised. ACF considers all three to be material to ensure the ISP is fit for purpose. The proposed rule changes are material with respect to the NEO and must consider emission reductions. The ISP must be evidence based and robust, ensuring least cost pathways, building community support and engagement (social licence), optimising the grid, and reducing the size of the build-out for new renewable energy and transmission.

Recommendations

Recommendation 1:
Update the National Electricity Rules and National Gas Rules to enable AEMO to complete and/or include existing modelling and analysis of the future gas market, including future demand and costs analysis, impact of new generation, storage and transmission infrastructure, likelihood or commercial feasibility of GPG projects in the ISP, and the impact of dem and side solutions.

Recommendation 2:
AEMO use existing powers and frameworks to access information for the purposes of the ISP and developing the Optimal Development Path.

Recommendation 3:
Update the National Electricity Rules and National Gas Rules to ensure AEMO incorporates analysis on the opportunity for energy performance and CER to displace gas powered generation. This analysis should include the investment required and the cost recovery, business models and finance mechanisms needed to optimise en ergy performance and stand alone and orchestrated CER technologies.

Recommendation 4:
AEMO should include modelling and analysis from independent stakeholders beyond the gas industry itself, and include input from all relevant industries including the green hydrogen, electric vehicle and battery storage and pumped hydro sectors, as well as independent financial and energy analysts, consumer representatives, universities and environmental and community organisations.

Recommendation 5:
Include carbon emissions and rejected energy in the analysis and clearly communicate this to stakeholders.

Recommendation 6:
Include analysis in addition to the Gas Statement of Opportunities to clarify uncertainties in the gas demand forecasts of the 2024 ISP, particularly the over estimation in gas demand and underestimation of CER.

Recommendation 7:
The rule change should only require AEMO to undertake "further analysis of future gas demand and pricing" if appropriate analysis is not already available.

Recommendation 8:
That AEMC ensure the analysis maintains its value to improve robustness and confidence in modelling and inputs into the ISP through requiring AEMO to include analysis to address supply and demand side solutions and accept input from a range of stakeholders .

Recommendation 9:
AEMO ensures it has procedures and agreements in place that prevents commercial sensitivity being a barrier to accessing or completing robust modelling and analysis.

Recommendation 10:
AEMO make use of both existing powers to access gas and energy market analysis from regulators and industry stakeholders, as well as publicly available gas and energy market analysis to inform the development of the ISP

Recommendation 11:
That AEMC rules in favour of amending the National Electricity Rules and the National Gas Rules to require AEMO to use existing analysis, and where unavailable, expand its analysis of gas market information rather than relying on alternatives that may be v oluntary in nature, underutilised, or otherwise not fit for purpose.

Recommendation 12:
Update Clause 5.22.10(5) of the NER with a specific requirement for AEMO to consider the demand - side developments that would need to occur to support its assumptions in the ISP about the uptake and orchestration of CER and distributed resources. This updat e should include enough direction to ensure the modelling and analysis is fit for purpose (i.e. lead s to emission reductions , are the lowest cost and meets equitab ility outcomes).

Recommendation 13:
AEMO be required to expand modelling and analysis of CER and distributed resources in the ISP, and that this be expanded to cover energy performance, such as efficiency, demand response and behaviour change. This should include modeling and analysis of ene rgy system and consumer costs, emission reductions, energy security and reliability.

Recommendation 14:
AEMO should be required to model and analyse the impact of inappropriate use of both network and retail tariffs paid by both DER owners and non -owners to ensure maximum uptake of CER and assist in identifying risks to uptake. This includes analysis of whic h customers are on related tariffs, who needs to be, and the consumer impacts and behaviours as a result.

Recommendation 15:
The proposed statement should include :

- detail on the assumptions behind how CER is contributing to the robustness of the Optimal Development Pathway, including energy system and consumer cost impacts, and its contribution to demand flexibility;
- how jurisdictional programs have been analysed;
- impact on displacing the use of gas;
- impact on reducing over-build of large scale renewables; and
- information on risks to orchestration and extensive take up not being achieved, including for example poor use of tariffs, split incentive, stop start policies and programs.

Recommendation 16:
The guidelines to DNSPs should provide detail on :

- how DNSPs support owners of the CER and broader consumer benefits;
- how DNSPs improve access to technologies;
- the risk that orchestration will not be optimized;
- cost recovery for CER integration;
- contribution to avoided generation; and
- any jurisdictional differences.

Recommendation 17:
The guidelines and DSPs responses be made publicly available and accessible.

Recommendation 18:
ACF suggests using regulation to ensure modelling and market analysis happens and that it is consistent and robust across all jurisdictions to provide data needed for the ISP to plan the future energy system.

Recommendation 19:
AEMO be explicitly required to consider community sentiment when developing the ISP, and this should occur as early as possible in the ISP process. TNSPs should also be explicitly required to share relevant information as part of the joint planning process, including to undertake community engagement to obtain this information if not already held.

Recommendation 20:
Expand the Assessment Criteria to ensure emission reductions, as now required by the NEO, are included in assessing how these rule change proposals promote the long-term interests of consumers through efficient investment, operation, and use of energy services.

Recommendation 21:
AEMO should include the *Reduced CER Coordination* sensitivity analysis in further scenarios under the ISP, including for the Green Energy Exports 1.5 degree aligned scenario.

Better integrating gas into the ISP

This first rule change request seeks amendments to the National Electricity Rules (NER) and National Gas Rules (NGR) requiring AEMO to expand its analysis of gas market information in the ISP. The rule change would allow AEMO to undertake an expanded consideration of gas generation, supply, and infrastructure, including costs, when preparing the ISP, and ensure that AEMO can access, use and disclose information gathered for NGR purposes to support such gas analysis in the ISP. The intention here being to improve the accuracy of the information that underpins gas development projections used in the ISP modelling process to inform required electricity infrastructure investments.

As with our submission to the Draft 2024 ISP,[1] ACF sees the strong need for AEMO to include analysis of the contribution that the electrification of households and industry, including demand response and storage could make to firming Australia's variable electricity system, thereby reducing the need for peaking gas, and enabling the ISP to provide an optimal pathway for the phasedown of fossil gas power generation.

Question 1: Should greater gas market analysis be required under the ISP?

Recommendation 1:

Update the National Electricity Rules and National Gas Rules to enable AEMO to complete and/or include existing modelling and analysis of the future gas market, including future demand and costs analysis, impact of new generation, storage and transmission infrastructure, likelihood or commercial feasibility of GPG projects in the ISP, and the impact of demand side solutions.

Recommendation 2:

AEMO use existing powers and frameworks to access information for the purposes of the ISP and developing the Optimal Development Path.

The consultation paper acknowledges that AEMO already has powers to access information for other purposes to the ISP. ACF supports using this information for the ISP if relevant, especially if systems are already in place. If there are no legal or other barriers, there are no reasons why AEMO couldn't use this information in developing the next ISP and to begin this before a ruling on this rule change proposal is made.

Nonetheless, the consultation paper acknowledges that the ISP does not currently consider:

- costs associated with gas infrastructure investments;
- likelihood or commercial feasibility of gas-power generation (GPG) projects in the ISP; and
- availability of gas to service GPG in the quantity or price anticipated.

As noted below, to achieve emission reductions at the lowest cost possible, robust modelling and analysis of both the gas market (and demand side solutions) need to be completed as

[1] https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2023/draft-2024-isp-consultation/draft-submissions/australian-conservation-foundation.pdf?la=en

inputs into the ISP. The Final 2024 ISP suggests that under the Step Change Scenario, the NEM will require 15 GW of gas capacity, but that this will only be used for around 5% of its potential generation. This is unlikely to be financially viable, and will require significant investment, government subsidies or high consumer costs to support gas infrastructure.

The information paper suggests that "Gas, including renewable gases and hydrogen, will therefore continue to be an important energy source", and that the ISP will be enhanced by deeper and more explicit consideration of gas market conditions, including the cost and feasibility of gas projects and supply issues.

AEMO currently relies on the Gas Statement of Opportunities (GSOO) for its forecasts and analysis, with its CEO Daniel Westerman suggesting that gas production is likely to fall faster than demand in the next 20 years.[2] The GSOO however, only considers supply-side investments to address future gas supply shortfalls, without considering how these could be met cost-effectively through demand-side opportunities. AEMO should not just use forecasts as inputs without justification, and should either undertake its own modeling and analysis or make use of existing sources to ensure the ISP is able to plan for net zero and least cost energy system.

Energy analysts such as the Institute for Energy Economics and Financial Analysis (IEEFA), for example, suggest that AEMO overestimates gas demand while also underestimating the impact of more batteries and other energy storage solutions coming online to compete with gas peaking plants,[3] such as for peaking on cold nights. EV's and other CER such as heat-pump hot water systems and space heating and cooling would provide further opportunity for demand response that enables reductions in gas demand. The same article cites Climate Energy Finance (CEF) suggesting that while AEMO forecasts a decrease in gas demand, albeit not fast enough, it nonetheless suggests higher gas demand in 2040 than today, despite the greater potential for clean firming alternatives in the longer term. It should also be noted that GPG for electricity is declining faster than other gas demand, and this trend is likely to continue. With much of the gas being for residential peak demand, optimising residential demand shifting and demand reduction, along with industrial demand responses, should be a priority.

Recommendation 3:

Update the National Electricity Rules and National Gas Rules to ensure AEMO incorporates analysis on the opportunity for energy performance and CER to displace gas powered generation. This analysis should include the investment required and the cost recovery, business models and finance mechanisms needed to optimise energy performance and stand alone and orchestrated CER technologies.

A large contributor to the cost of gas to the end user is the networks to distribute it, representing 40-60% of cost depending on the jurisdiction .[4] This can only be expected to go

[2] https://reneweconomy.com.au/aemo-issues-another-gas-shortage-warning-but-analysts-question-why/

[3] https://reneweconomy.com.au/aemo-issues-another-gas-shortage-warning-but-analysts-question-why

[4] https://ieefa.org/resources/australians-overpaid-18-billion-gas-networks-now-theyre-being-asked-more

up, as discussed in Section 6.4 of the ISP, if the energy system relies on increased reticulation and storage of gas needed for peak times, especially if this is to include hydrogen ready infrastructure (that must be resilient to hydrogen leakage). Regarding the transmission of gas, it is unclear where this is coming from and the impact on both emissions and costs. This needs to be included in any modeling and analysis.

State based energy performance and CER programs could play an increasing role, including the federal, WA and NSW CER roadmaps, and Local Renewable Energy Zones in Queensland. While the ISP already includes state-based programs as a simple input, modelling and analysis of the investment required for these programs to be expanded and optimised to reduce the need for GPG (i.e. their impact in reducing gas demand) would provide a clearer idea of low emission and least cost gas future development pathways for the ISP.

Recommendation 4:

AEMO should include modelling and analysis from independent stakeholders beyond the gas industry itself, and include input from all relevant industries including the green hydrogen, electric vehicle and battery storage and pumped hydro sectors, as well as independent financial and energy analysts, consumer representatives, universities and environmental and community organisations.

The consultation paper states that the rule change would require AEMO to explicitly describe its assumptions about the future of gas and provide a consolidated gas industry view of what the future may look like in the various ISP scenarios (and therefore not just the 2 degree aligned Step Change scenario), and that this should be based on AEMO's engagement with industry. If broader data and analysis from third parties is available and AEMO has so far not included and communicated it, this represents a systemic failure that must be improved through the rule change.

ACF recommends that the rule change should require AEMO to provide consolidated independent energy analysis on opportunities to reduce gas demand and usage, alongside any consolidated industry view of gas use. This would ensure that AEMO consults with, and properly considers, a broader range of stakeholders and experts than just the fossil gas industry, including analysis from the green hydrogen, electric vehicle and battery storage and pumped hydro sectors, as well as third parties such as IEEFA, CEF and the Grattan Institute.

ACF strongly recommends against reliance upon, or engagement with, modelling undertaken by supply-side gas analysts or government entities, such as the Future Gas Strategy or the ACCC's Gas Inquiry 2017-2030 reports. Supply-side gas analysis is primarily directed at modelling future gas supply based upon relatively static assumptions about demand. Put another way, supply-side analysis provides detailed modelling about gas supply to meet assumed demand rather than opportunities to reduce gas demand in the electricity system or mechanisms to ensure adequate firming capacity in the electricity system from alternative renewable sources. For example, the federal government's Future Gas Strategy (2024) undertook no independent electricity system modelling in its analysis of future gas use in the electricity system, relying upon AEMO's GSOO.[5] Instead the Future Gas Strategy relied upon AEMO's GSOO as an input for its modelling on future gas supply projections, including to

[5] https://www.industry.gov.au/publications/future-gas-strategy-analytical-report

indicate government support for expensive new sources of gas supply that would have negative costs and emissions implications for Australians.

An over-reliance on gas industry analysis and supply-side modelling, risks locking in unnecessary, costly and polluting gas-powered generation and infrastructure, because AEMO will not have adequate access to modelling and analysis that demonstrates pathways to reduce gas use through other forms of firming capacity. It is essential that AEMO continually re-assesses the role and scope of gas in the electricity system as market dynamics change and emissions reduction targets ratchet up to 2050. ACF emphasises that AEMO is obligated to have regard to the NEO in developing ISPs (s 49(2) of the National Electricity Law), including, the achievement of Australia's emissions reduction target and to promote the efficient operation of electricity services to ensure affordability and reliability outcomes for consumers.

Recommendation 5:

Include carbon emissions and rejected energy in the analysis and clearly communicate this to stakeholders.

The analysis should include the carbon emissions of the different gases being used for GPG, distinguishing demand for both natural gas and green hydrogen to ensure the environmental integrity of the ISP. Furthermore, as Australian households and businesses electrify, there will be less energy being rejected due to inherent inefficiency in fossil fuel based energy systems. This should be clearly communicated though the use of a Sankey diagram.[6]

Question 2: Will the proposed solution support a more robust ISP by better integrating gas and electricity infrastructure developments?

The solution will only work (to provide a more robust ISP and ODP) if the analysis considers the full range of both the impacts on future gas demand and opportunities for alternatives. The rule change should also mandate AEMO to report why any analysis is rejected or where AEMO differs in its input in developing the ISP and its ODP.

Recommendation 6:

Include analysis in addition to the Gas Statement of Opportunities to clarify uncertainties in the gas demand forecasts of the 2024 ISP, particularly the over estimation in gas demand and underestimation of CER.

Much of the gas demand is itself due to gas production and manufacturing industries, and of course much of the gas production is for export (see Figure 1Figure 1). The analysis should include detail on the impact of closing gas generators themselves (with respect to reducing gas demand), and the impact of electrification of industry and households with respect to system costs, costs to consumers, emission reduction and reliability and security of supply.

[6] https://www.energy.gov.au/publications/australian-energy-update-2023/energy-flows

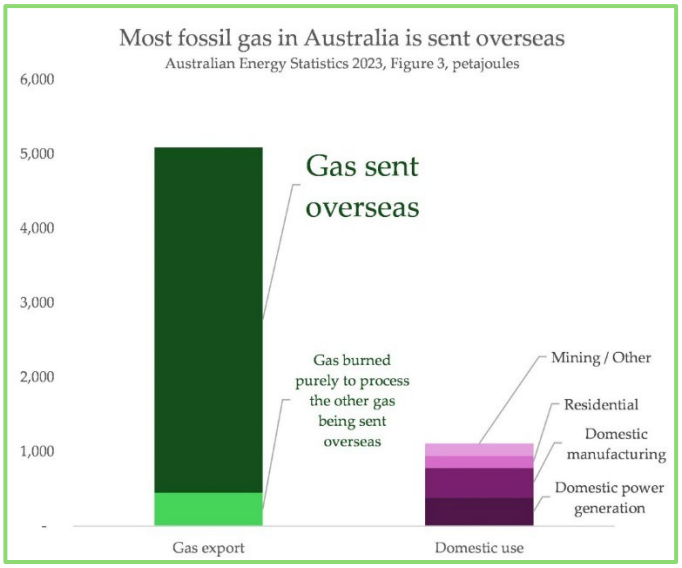

Figure 1: Where is the gas shortage and where does the demand come from (Source: Ketan Joshi) [7]?

The Final 2024 ISP (page 70) suggests that the increased peakiness of gas will test the current gas network (see Figure 2). Of particular concern is that the costs of this has not been assessed - "AEMO acknowledges the Draft 2024 ISP did not consider the additional costs associated with delivering fuel to GPG during peak periods and gas infrastructure limitations, as noted in the 2024 ISP Consultation Summary Report".[8] The rule change should require analysis to test the relative cost of demand peaks being serviced by gas (including new gas generation, storage and transmission), or by CER integration and improved energy performance, including system and consumer costs, and how best to realise these opportunities. This would be just one example of where greater market analysis may reduce unnecessary investment.

[7] https://www.linkedin.com/posts/ketanjoshil_one-of-the-most-head-spinning-but-largely-activity-7214853945821691905-1sge/

[8] https://aemo.com.au/-/media/files/major-publications/isp/2024/supporting-materials/2024-isp-consultation-summary-report.pdf

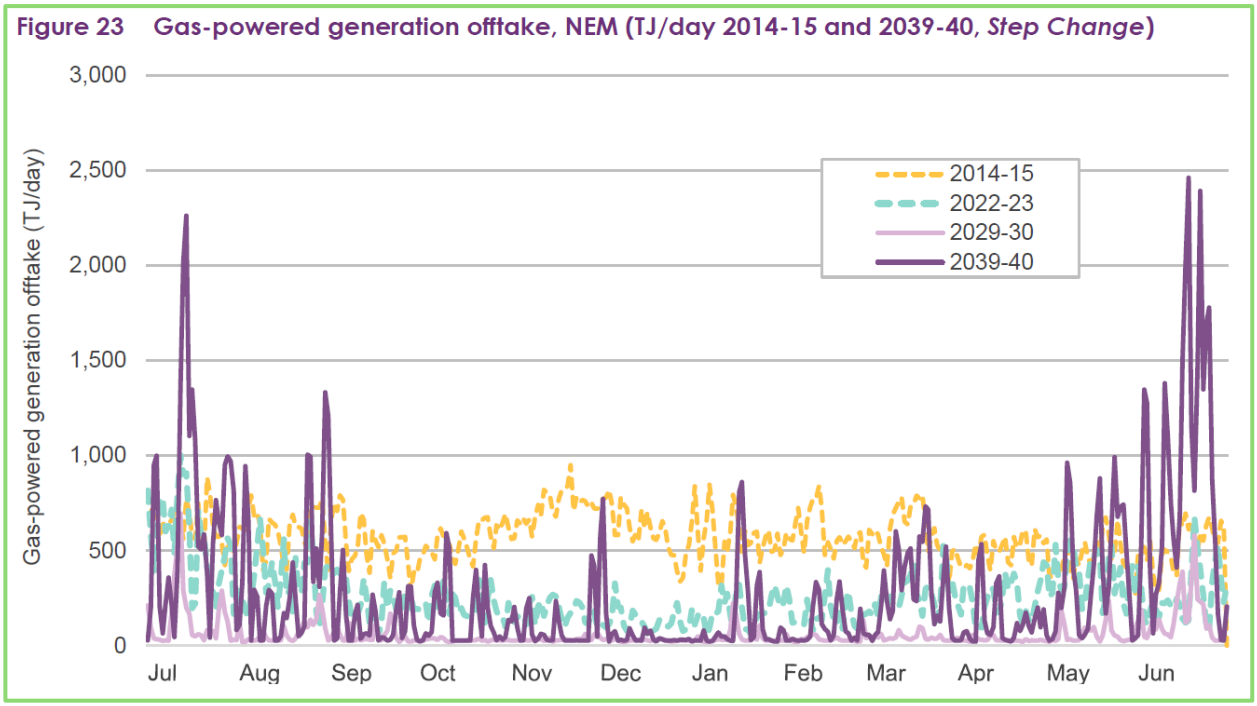

Figure 2: Increased peakiness of gas powered generation (GPG) (source: 2024 Final ISP)

Question 3: What are your views on the costs and benefits of requiring AEMO to undertake additional gas analysis in the ISP?

As noted in the consultation paper, analysis should include " further analysis of future gas demand and pricing ", and this should include the impact of gas on wholesale and peak pricing, accelerated depreciation (and its equity impacts), the costs of building new generation storage and transmission infrastructure, and comparing this to the counter narrative of pricing impacts of increased orchestrated and passive CER, and that this should be considered in connection to the second rule change proposal.

Recommendation 7:

The rule change should only require AEMO to undertake "further analysis of future gas demand and pricing " if appropriate analysis is not already available .

ACF cautions against a strict requirement to include " further analysis of future gas demand and pricing " if this analysis can be sourced elsewhere. The intent should be to ensure AEMO is using robust modeling and asses sment that is fit for purpose , i.e. to improve robustness and confidence in modelling and inputs into the ISP. AEMO may be able to achieve this more efficiently by accessing existing analysis , and only then complet ing new analysis if needed.

Recommendation 8:

That AEMC ensure the analysis maintains its value to improve robustness and confidence in modelling and inputs into the ISP through requiring AEMO to include analysis to address supply and demand side solutions and accept input from a range of stakeholders.

We also note that the value of this analysis will be eroded if it is supply -side only. It must

include demand-side analysis of the role of CER and energy performance in providing energy services to homes, business and industry. We also re-iterate that the analysis should include input from a range of stakeholders, not just the gas industry. Failing to do this may also erode the value of any analysis.

Question 4: What implementation considerations need to be considered?

Recommendation 9:
AEMO ensures it has procedures and agreements in place that prevents commercial sensitivity being a barrier to accessing or completing robust modelling and analysis.

Recommendation 10:
AEMO make use of both existing powers to access gas and energy market analysis from regulators and industry stakeholders, as well as publicly available gas and energy market analysis to inform the development of the ISP

ACF notes the concerns around commercial sensitivity, but emphasises there are existing options and arrangements around maintaining confidentiality while undertaking regional or system-wide modelling and analysis. AEMO already does this in the current ISP, such as recognising the commercial confidentiality of the Borumba Dam as noted in the 2024 ISP Consultation Summary Report.[9] As a principle, commercial sensitivity should not outweigh community benefits of emission and cost reduction, which are of course both in the NEO.

ACF supports the proponent's preference that the rule be in place to inform the 2026 ISP. As noted above, AEMO already has access to some market data under the NER for other functions. There are also several analyses publicly available as referenced throughout this submission. Much of this modelling and analysis could be used before a decision is made on this rule change.

Question 5: Are there alternative ways in which further analysis can be included within the ISP instead of the proposed rule change?

Recommendation 11:
That AEMC rules in favour of amending the National Electricity Rules and the National Gas Rules to require AEMO to use existing analysis, and where unavailable, expand its analysis of gas market information rather than relying on alternatives that may be voluntary in nature, underutilised, or otherwise not fit for purpose.

ACF is not currently aware of alternatives in addition to using existing data and analysis mentioned in previous sections of this consultation. We do, however, note that mandating the deeper analysis (or use of existing analysis) in a rule change is likely to ensure it happens and is used as a matter of course. Australia has had a decade of inaction on climate change. Putting these actions into the NER and the NGR acts as insurance for science based action to achieve our commitments under the Paris Agreement.

[9] https://aemo.com.au/-/media/files/major-publications/isp/2024/supporting-materials/2024-isp-consultation-summary-report.pdf

Improving consideration of demand-side factors in the ISP

The Final 2024 ISP shifts gears from the draft and previous ISPs in that it more clearly identifies the important role that the consumer-led energy transformation will play in the efficient decarbonisation of the electricity sector. The final 2024 ISP identifies that $4.1 billion of additional grid-scale investment would be needed without effective coordination of consumer batteries, and the ISP explicitly makes the assumption that this extensive co-ordination will occur.

This second rule change aims to improve demand projections and identification of the lowest cost development pathway for the electricity system. As noted by AEMO (ISP, page 71, footnote), the ISP modelling is an energy-only model and does not consider the co-optimisation of batteries for both their energy dispatch and system service role, as it expects FCAS markets to remain of finite depth and quickly saturate as more battery projects connect. There are other benefits that should be modelled, such as the role energy performance and CER could play in both carbon free generation and demand response, optimising the use of existing large- and mid-scale solar, such as the System Integrity Protection Scheme (SIPS). Consideration of demand side includes both how much of the range of demand side options is needed and how they are used (and optimised).

This second rule change proposal would require AEMO to expand its analysis of the update and availability of orchestrated CER and distributed resources and provide greater details about the assumptions that underpin the analysis, and seeks to inform analysis on the impact of distribution network constraints on CER and distributed resource take up.

Question 6: Should AEMO be required to expand consideration of CER and distributed resources in the ISP?

Recommendation 12:

Update Clause 5.22.10(5) of the NER with a specific requirement for AEMO to consider the demand-side developments that would need to occur to support its assumptions in the ISP about the uptake and orchestration of CER and distributed resources. This update should include enough direction to ensure the modelling and analysis is fit for purpose (i.e leads to emission reductions, are the lowest cost and meets equitability outcomes).

Recommendation 13:

AEMO be required to expand modelling and analysis of CER and distributed resources in the ISP, and that this be expanded to cover energy performance, such as efficiency, demand response and behaviour change. This should include modeling and analysis of energy system and consumer costs, emission reductions, energy security and reliability.

The ISP notes that AEMO assumes that CER orchestration will take place, but nonetheless acknowledges there is a risk it will not. The consultation paper, however, notes that there is no specific requirement for the ISP to include, or for AEMO to consider, the demand-side developments that would need to occur to support its assumptions in the ISP about the uptake and orchestration of CER and distributed resources. There is a clear and urgent need to remedy this as the 2024 ISP identifies orchestrated CER and distributed resources as being

critical to provide flexibility and reliability to the system in the future.

It is currently unclear what the assumptions are behind CER and distributed resources in the 2024 ISP. A clear criticism from several stakeholders has been that it is based on jurisdictional programs and policies, and does not include modelling or analysis of emission reductions, costs, comparison to the cost and role of GPG, demand management, solar sponges etc. There is also a need to broaden what is considered in demand side solutions to cover energy performance, such as efficiency, demand response and behaviour change.

ACF supports increased transparency and analysis from AEMO to identify and communicate the necessary development of critical demand-side actions that would support the uptake and availability of orchestrated CER and distributed resources. This should be extended to energy performance, electrification and demand response.

The consideration of CER and distributed resources should not be a general requirement, but one that specifically ensures the modelling and analysis is fit for purpose (i.e. lead to emission reductions at the lowest cost and achieve equitability outcomes). This includes analysis of system and consumer costs and impacts (for those with and without CER) and must include energy performance and demand response.

A further failure of the ISP process is to include modelling of the cost reductions expected for CER. IEEFA for example, has previously found that regarding the above “gas shortage”, it would be more economically efficient and lower cost to make use of demand side solutions, as demonstrated in Figure 3 below.[10]

[10] https://ieefa.org/resources/reducing-demand-better-way-bridge-gas-supply-gap

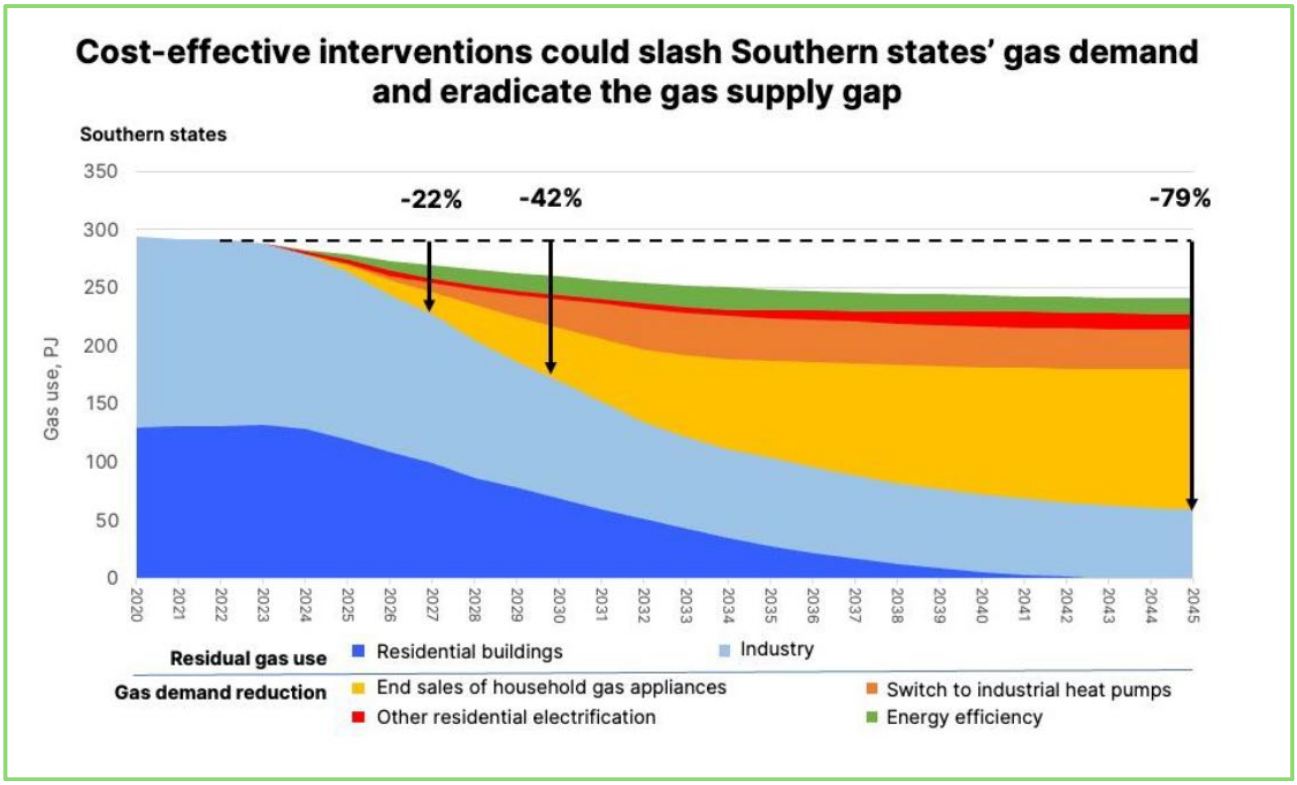

Figure 3: Alternative options for gas reduction (Sou rce: IEEFA - Reducing demand – A better way to bridge the gas supply gap)

Question 7: Will the proposed solution address the issues raised by the proponent and improve the robustness of the ODP?

This second rule change would require AEMO to :

- include a statement in the ISP on the expected development and operational behaviour of CER and distributed resources; and
- develop guidelines (in close consultation with the AER) for collecting information from DNSPs on anticipated network constraints and electrification pathways.

Providing greater detail of both the technical and non-technical assumptions that underpin the expanded analysis would allow greater identification of the likelihood that orchestration does not occur.

Recommendation 14:

AEMO should be required to model and analyse the impact of inappropriate use of both network and retail tariffs paid by both DER owners and non -owners to ensure maximum uptake of CER and assist in identifying risks to uptake. This includes analysis of whic h customers are on related tariffs, who needs to be, and the consumer impacts and behaviours as a result.

Recommendation 15:

The proposed statement should include :

- detail on the assumptions behind how CER is contributing to the robustness of the Optimal Development Pathway including energy system and consumer cost impacts, and its contribution to demand flexibility ;

- how jurisdictional programs have been analysed;
- impact on displacing the use of gas;
- Impact on reducing over-build of large scale renewables; and
- information on risks to orchestration and extensive take up not being achieved, including for example poor use of tariffs, split incentive, stop start policies and programs.

In terms of the proposed statement in the ISP (S3.2.1 of consultation paper) aimed at informing market participants, regulators, and policy makers regarding the expected development of orchestrated CER and distributed resources, this should include analysis around the extent and distribution of households and businesses that need to be on such tariffs, and the poor outcomes from inappropriate and poorly communicated assignment from retailers. Specifically, the statement should include information on risks of that not being achieved, e.g. poor use of tariffs, split incentive, stop start policies and programs. This statement needs to incorporate CER in the widest sense, and include the full gamut of demand side solutions, including energy efficiency, electrification, demand response, smart appliances, and the diversity of CER being optimised.

The failure of retailers to appropriately assign tariffs to optimise CER and communicate these opportunities for commercial and residential consumers has damaged community support and the willingness of businesses and households to trust regulators and stakeholders at the precise time trust is needed. Not all consumers need to be on these tariffs for them to work across the energy system. They can, for example, be targeted at big users, customers with peaky demand profiles, and those with the capacity the change or benefit from one of more tariff structures available. As such, AEMO should include information on how distribution networks are recovering costs and how retailers are passing those through, including analysis on the impact of community support for CER orchestration.

Recommendation 16:

The guidelines to DNSP should provide detail on :

- how DNSPs support owners of the CER and broader consumer benefits ;
- how DNSPs improve access to technologies ;
- the risk that orchestration will not be optimized;
- cost recovery for CER integration ;
- contribution to avoided generation ; and
- any jurisdictional differences .

Recommendation 17:

The guidelines and DSPs responses be made publicly available and accessible.

In terms of the proposed Guideline for DNSPs in the ISP (S3.2.1 of consultation paper), ACF agrees the guideline should :

- support AEMO's analysis of the impact of system constraints on demand side factors ;
- inform and integrate demand-side factors with supply-side planning, including the development of the ODP ; and
- support other decision-making to address issues around network availability and other system constraints.

ACF supports creating a new mandatory requirement for DNSPs to publicly disclose the information set out in AEMO's guidelines, and for the guidelines to be publicly accessible. Transparency of the content and how data, modelling and analysis is being used helps stakeholders form evidence based positions and contribute effectively to the development of the ISP.

In addition, ACF suggests the guidelines should ensure DNSPs support owners of CER and integrates broader consumer benefits into their analysis, such as collecting data on consumer impacts for cost recovery and tariffs, community impacts of network batteries (all scales, ownership and operational control) and access to technology (e.g. renters and apartments). The guidelines should enable DNSPs to present the risk that orchestration won't be optimised, e.g. through inappropriate tariffs (as we're already seeing this). Data should enable DNSPs to include information and analysis on network and retail tariffs themselves, such as impacts on consumer outcomes and choices. While having a consistent approach across jurisdictions is important, the guidelines will need to consider jurisdictional differences, such as support frameworks like the Local Renewable Energy Zones in Queensland.

A further key risk to the transformation of the energy system is the slow build out of transmission. Critically, the less transmission there is, the more firming capacity is needed. This can in part be addressed through successful orchestration of CER, particularly storage, EVs and demand response. Appropriate analysis of, and subsequently energy sector investment in, the role of CER in addressing peak demands also has the benefit of reducing the need for peaking GPG, achieving both a low-cost ODP and emission reductions.

Question 10: Are there alternative solutions to those proposed in the Demand-side factors rule change request?

Recommendation 18:

ACF suggests using regulation to ensure modelling and market analysis happens and that it is consistent and robust across all jurisdictions to provide data needed for the ISP to plan the future energy system.

Similar to gas market analysis, ACF is not currently aware of alternatives in addition to using existing data and analysis mentioned in previous sections of this consultation. We do, however, reiterate that mandating the deeper analysis (or the use of existing analysis) in a rule change is likely to ensure it happens and is used as a matter of course. Australia has had a decade of inaction on climate change. Putting these actions in the NER acts as insurance for science based action to achieve our commitments under the Paris Agreement.

Better integrating community sentiment into the ISP

This third rule change clearly speaks to the significant need to address community support for projects and the transition more broadly. The information paper acknowledges that public sentiment and concerns can have a significant impact on the cost and timing of transmission, generation and storage developments. ACF would add the risk of projects not going ahead if these are not addressed.

The third rule change would require AEMO to:

- consider known community concerns or sensitive locations in developing transmission expansion options; and
- require transmission network service providers to provide AEMO with community sentiment information (where already held) under joint planning arrangements.

The intention of this rule change is to ensure that AEMO can improve the accuracy of the ISP by ensuring community sentiment and local concerns are considered earlier in the development of the ISP, improve the ISP's cost benefit analysis, and improve the assessment of the feasibility, cost, and timeframes of the ODP.

Question 11: Do you consider that the current process for developing the ISP is creating uncertainty and inconsistency in how community sentiment is incorporated in the ISP?

Recommendation 19:

AEMO be explicitly required to consider community sentiment when developing the ISP , and this should occur as early as possible in the ISP process. TNSPs should also be explicitly required to share relevant information as part of the joint planning process , including to undertake community engagement to obtain this information if not already held.

Social License has emerged as a clear challenge for many ISP projects , particularly transmission line planning , which requires rural and regional communities to agree to host large scale energy infrastructure in landscapes that have not traditionally hosted heavy industry . Communities are being asked to accommodate this infrastructure without seeing the direct benefits of that infrastructure in their lives . While support for climate action remains high, the tangible impacts of infrastructure construction can turn communities away from engaging with the energy transition directly, especially if projects do not appropriately manage local biodiversity impacts or engage in proper benefits -sharing. Much of this has been exacerbated by poor practice of project proponents , lack of clear information , and insufficient opportunities for communities to have their say.

Many people in transition impacted communities therefore feel that the negative impacts of the transition have been frontloaded onto rural and regional communities, while the benefits are either intangible, or se en as profits for corporations not people. These genuine concerns and information gaps have subsequently been weaponised by bad faith actors (deliberately spread as disinformation against all projects). Part of the problem is a failure of the planning system and State-based instruments not being fit for purpose. It may be possible for the ISP to model outcomes of ISP projects and the ODP i f best practice were used in community engagement and planning and assessment (including nature assessment and cultural heritage assessment).

To address this, AEMO needs to be explicitly require d to consider community sentiment when developing the ISP . This should occur as early as possible in the ISP process. TNSPs should also be explicitly required to share relevant information as part of the joint planning process . The rule change proposal suggests TNSPs should provide AEMO with community sentiment information (where already held) under joint planning arrangements. ACF recommends strengthening this, requiring TNSP s to undertake community engagement to obtain this information if not already held by those entities .

ACF further emphasises that there is clear community sentiment on climate action, phasing out all fossil fuels in the electricity system (including methane gas), and increasing the penetration of CER, electrification and energy performance more broadly to achieve climate ambition. A recent Essential Poll, for example, found than most Australians (63%) support the use of renewables over fossil fuels (and nuclear) to achieve net zero by 2050.[11]

Assessment Criteria and the National Energy Objectives

Question 16: Assessment framework

Recommendation 20:

Expand the Assessment Criteria to ensure emission reductions, as now required by the NEO, are included in assessing how these rule change proposals promote the long-term interests of consumers through efficient investment, operation, and use of energy services.

Pages iii and iv of the consultation paper lists 4 proposed criteria to assess the rule change proposals against. Those criteria fail to include the greenhouse gas emissions reduction objectives in each of the three National Energy Objectives (NEO), which govern and guide the AEMC in all its activities under the relevant national energy legislation. Without including the emission reduction criteria of the NEO, the AEMC is failing to support a key objective of the ISP. ACF urges the AEMC to ensure that each proposed rule change is also assessed against the AEMC and AEMO's obligations to contribute to the achievement of Australia's emissions reduction targets.

A note on scenarios

Recommendation 21:

AEMO should include the *Reduced CER Coordination* sensitivity analysis in further scenarios under the ISP, including the Green Energy Exports 1.5 degree aligned scenario.

ACF notes the $4.1 billion missed opportunity from the *Reduced CER Coordination* sensitivity, is for the Step Change scenario only, and is in reference to Virtual Power Plants. The analysis should be replicated as a sensitivity analysis for the ODP needed to achieve the Green Energy Exports 1.5 degree aligned scenario. AEMO should also expand this analysis to non-VPP storage, i.e. passive stationary CER storage and distribution scale storage. Stakeholders need to see exactly what is needed if we were to fully align with the *Paris Agreement*.

[11] https://essentialreport.com.au/questions/better-way-to-achieve-net-zero-by-2050