

Consumer advocate – ISP Methodology Issues Paper verbal submission

Introduction

AEMO published the Integrated System Plan (ISP) Methodology Issues Paper on 23 October 2024. To support consumer and advocate involvement, AEMO held a verbal submission session for consumer advocates on 20 November 2024. This written record, approved by submitters, will be considered alongside other written submissions.

Submitters:

Name	Organisation	Name	Organisation
Heather Smith	Coalition for Community Energy (CCE)	David Strang	Lighter Footprints (LF)
Michael Dello-Iacovo	Energy Consumers Australia (ECA)	Glen Currie	Lighter Footprints (LF)
David Prins	Etrog Consulting (EC)	John Godfrey	Lighter Footprints (LF)

Submission topics

Consumer advocates submitted comments on the following topics.

1. Investigating gas
2. CER
3. Carbon emissions
4. Other

1 The expanding gas supply modelling

- **ECA** supports expanding the gas supply model and introducing gas development projections in the ISP, but we would like to see more clarity on how these changes could affect consumers with regards to gas infrastructure and exploitation investments. We expect that this change would give greater consideration in the ISP of how gas investments impact electricity investments. We note that this change would only apply to gas transmission, not distribution, but that it would include all gas load. We note that there is a need for greater spatial granularity in gas investments to appropriately address electrification from gas disconnections, but that this is likely out of scope for AEMO to address in the ISP.
- **CCE & LF**: Gas modelled in the ISP need to be “plausible” for domestic gas use. Since the gas industry competes for investment, they may provide information for other purposes. AEMO must test all information received about renewable gas and hydrogen transparently.
- **CCE**: “Willingness to invest” is an important element to consider to gauge reasonability of forecasts. The political entanglement of the gas industry may make it slower for infrastructure development to actually occur.
- **LF**: Gas should be investigated and there are many aspects to investigate in determining the required gas investment:
 - It can’t be done in isolation from domestic demand. Current gas infrastructure could possibly benefit from reduced domestic gas demand in Victoria, diverting gas for electricity generation.
 - The rush off domestic gas will create tight winter night electricity supply from 2035 ISP.

- Since gas generation will be used only at peak demand from as early as 2035, consider whether the ISP should, and how it can, encourage investment in sparsely used assets.
- Investigating a scenario where all hot water systems are electrified to see potential peak demand, or advocate for daytime hot water heating to soak up excess solar.
- The alternative to gas for peaking is less carbon intensive big batteries.
- **EC:** Batteries are the first line of defence for high demand and work best for short term peaks. Pumped hydro is longer term storage, but for even longer peaking requirements, gas is required. I support analysing the gas impacts, starting with availability, followed by network costs.
- **CCE:** Candidate development paths for gas need to also consider the concurrent investments occurring for decentralised options.

2 Consumer Energy Resources (CER)

- **ECA** supports developing an approach to analyse distribution network capabilities for consumer energy resources, which we define broadly to include energy efficiency as well rooftop solar, household batteries, electric vehicles, and demand flexibility, and other distributed energy resources. This would allow the ISP model to consider cost and benefits to facilitate increased export from CER and other DERs.

It's important to note that there are many ways to reduce distribution system constraints, and the lowest cost options often involve a combination of network, non-network, and consumer investments. Any analysis should not automatically lead to an assumption of direct DNSP investment to augment their network or increase their capital expenditure.

Consumers will play an increasingly large role in the future power system through their investment in CER, and the ISP projects large increases in CER uptake. This analysis is a critical part of ensuring that this projected and necessary uptake of CER can be achieved. Consumers should also be involved in this conversation, and any cost benefit analysis should be performed from multiple different perspectives, including all of society, all consumers and the participating consumers' perspectives. All these perspectives are valid, distinct, and overlapping. Multiple methodologies for cost-benefit analysis can help make more informed and better decisions.

We note that performing this analysis optimally may require a level of spatial granularity of data collection and modelling that is not feasible for the ISP, but that there is still value in performing this analysis without this optimal granularity.

- **EC:** The ISP should include the cost of investments required by consumers for CER. This will allow a more realistic co-optimisation of how people and the grid can work together.
- **LF:** CER coordination is the important aspect for the ISP, the central planner point of view. The success of largely uncoordinated Virtual Power Plants is crucial for the ISP's forecasts to be realistic given the framework, where distribution networks do not optimise for consumers. A CER taskforce should be set up to ensure CER targets are met. Without this, the ISP's expectations are too high. When assessing further transmission network augmentation, consider the impacts of decentralised energy on distribution networks.
- **CCE:** The key for attaining CER coordination is at the medium to low voltage levels but is too low level for the ISP and difficult to collect data on. learnings and constraints from the CER Roadmap should also be incorporated.
- **EC:** Modelling user level distribution is challenging, but AEMO should still attempt it.

- **EC:** Forecasts must include consumer input to be accurate and to capture the disincentives for consumer investment in CER.
- **CCE:** Surveys undertaken to understand consumers hesitation to invest in CER are not entirely accurate, since consumers do not consider energy use becoming flexible, which will be required for our energy future. The long term energy autonomy outweighs short term disincentives.
- **CCE:** The ISP should be clear on the limitations of the model, including market failures that can't be modelled like energy efficiency and flexibility.
- **EC:** Things that depend on consumers and end use customers to provide resilience will cause market failure if not done very well. There are also challenges in creating this resilience from deep within distribution networks. This is a reason that VPPs mightn't provide enough benefits.
- **LF:** Electric vehicles, and their charging patterns will become very important to back up homes at times of grid constrain and low reliability. They could be used as batteries to get through consecutive cold, still winter nights.
- **ECA:** On the proposed approach for addressing perfect foresight for storage devices in the time-sequential model, we note that any improvement to modelling storage such as utility-scale energy storage systems, virtual power plants, and vehicle-to-grid EVs are likely to result in benefits for consumers. We would like to see feedback from the energy storage industry in particular on the approaches, and to canvas their opinion with other stakeholders.

3 Carbon Emissions

- **CCE:** The Value of Emissions Reduction should be part of modelling and optimisation.
- **CCE & LF:** The ISP should include newly released information from the Australian Conservation Foundation on the carbon intensity of gas¹.
- **LF:** Carbon pollution costs should be included for all technologies, using the 20-year average, which includes the longer-term impacts of global warming gasses. Hydrogen also has a global warming impact too, so burning hydrogen does not solve carbon emissions.

4 Other

- **EC:** The wording used should be chosen carefully. In the Issues Paper glossary, the word "Committed" is used to define "Actionable Project" progressing under a jurisdictional framework, in terms of policy, which adds confusion to an NER defined term. "Committed" should not be used for non-rules-specific purpose.
- **ECA:** Regarding the change on testing for actionability at project proponents' timing, ECA would like to see evidence from AEMO that this change will result in the best interests for consumers in order to support it.
- **ECA** has no opinion on the methodology for separately modelling hydrogen electrolyser loads.
- **ECA** supports enhancing analysis of power system security but has no opinion on AEMO's proposal for achieving this.
- **ECA** supports the proposals for adding flexibility to better model candidate renewable energy zones.

¹ See: <https://www.superpowerinstitute.com.au/news/new-groundbreaking-satellite-monitoring-tool-shows-significant-underestimation-of-methane> and <https://openmethane.org/>

- **ECA** has no opinion on changing the process for take-one-out-at-a-time analysis for REZs but would support any change that leads to REZ benefits for consumers being considered more closely.