



17 January 2020

Mr Mark Feather  
General manager – Policy and Performance  
Australian Energy Regulator  
GPO Box 520  
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Lodged via [ISPguidelines@aer.gov.au](mailto:ISPguidelines@aer.gov.au)

Dear Mr Feather,

**RE: Issues paper “Guidelines to make the Integrated System Plan actionable”**

ENGIE appreciates the opportunity to comment on the “Guidelines to make the Integrated System Plan (ISP) actionable” issues paper as it is fundamental to generation development and delivery of consumer benefits.

ENGIE responds in detail to individual questions raised in the review in line with the following themes:

- Transmission and distribution assets are long lived, and costs are recovered from consumers (with the exception of shallow connection costs of generators). The level of uncertainty regarding technology advances and costs, economic conditions, consumer choices, and environmental policy are unprecedented. This makes consumer benefits very difficult to quantify with any degree of certainty over a longer timeframe. A robust scenario development process with a proven track record essential and needs to be stipulated in the AERs guidelines.
- For the cost benefit analysis (CBA) to produce meaningful insights, it is imperative that market-based modelling in addition to the cost-based modelling is undertaken. Without a market-based modelling approach, the output of the cost-based modelling alone is not representative of the market operation and stated benefits are counter-factual and typically overestimated.



- The counter-factual development path used to assess project benefits must not include discretionary expenditures as avoidance of these should not be incorrectly attributed to a prospective transmission project.
- The proposed dispute process risks being ineffective due to its restriction to process based issues and the potential latitude granted AEMO and the RIT-T proponents in the guidelines.

***Question 1: Do stakeholders agree with our proposed objective for the ISP guidelines?***

ENGIE considers the proposed objective for the guidelines as sensible and appropriate.

In addition, to deliver on this objective, it will be necessary to identify and manage risk effectively as the future is very unclear. This uncertainty will impact the process of maximising benefits to “all who produce, consume and transport energy”. Projects may deliver net benefits in some scenarios and result in net costs in others.

It is therefore essential that this uncertainty is quantified in the appropriate scenarios and reflected in the discount rate used to quantify any potential benefits and costs in the CBA analysis.

***Question 2: Do stakeholders agree with our proposed approach to flexibility and prescription for AEMO in the CBA guideline? Will this provide sufficient certainty and transparency to stakeholders?***

Providing AEMO with some degree of flexibility is necessary, however too much discretion may bias the selection of input parameters and analysis and make the dispute process ineffective.

Placing an obligation on AEMO to consult is useful to engage participants and to explore a range of views. However, AEMO will have the ultimate discretion in selecting modelling parameters. Therefore, there must be an effective obligation placed on AEMO to justify the selection (or rejection) of all specific parameters selected for the ISP analysis. To avoid “group think”, this process must avoid the “popular vote” approach.

There should be a separate obligation to report on the accuracy/relevance of the AEMO selected parameters as the future unfolds. This will be necessary to learn and improve the process over time.

The AER is also encouraged to consider including an independent audit of key parameters in the guideline, either at the time of the analysis, or ex post. An audit report would also need to be made publicly available to inform participants and to foster a culture of transparency and accountability.

It is imperative that sufficient details must be included in the CBA guidelines to enable participants to effectively assess the outcomes and where warranted, raise disputes.

**Question 4: What are stakeholders' views on our proposed approach to AEMO's development of reasonable scenarios? Are there additional principles we should consider?**

The scenarios/futures used in the ISP and RIT-T are fundamental in assessing risks and economic performance and need to be uniform across the processes. A methodology for developing scenarios/futures needs to be prescribed, rather than left to AEMO and RIT-T applicants. The scenarios/futures used in the ISP/RIT-T need to be:

- Relevant to the electricity sector
- Stretching yet believable (explore the full range of uncertainty)
- Cover the range of uncertainties (driving forces)
- Common to all ISP/RIT-T assessments

Specifically, scenarios should not be developed by the individual TNSPs on an ad-hoc basis to suit specific augmentations.

The AEMO process of developing scenarios has changed several times over the last decade. Whilst it has recently improved, it tends to be somewhat “blinkered”, quite limited in scope and mainly reflects current policies and government ambitions. It is not particularly effective in capturing the key uncertainties and driving forces affecting the electricity sector and doesn’t capture more “stretching” scenarios.

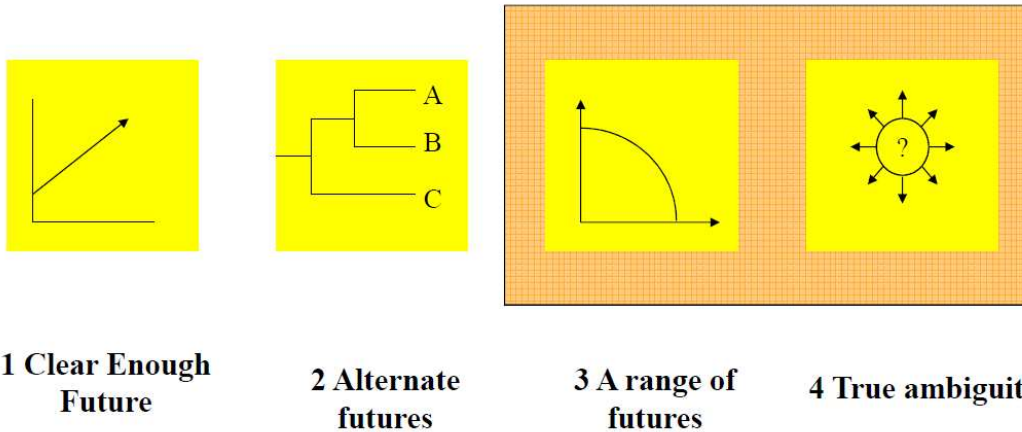
The resultant scenarios/futures can be best described as a single scenario/future, with a cluster of sensitivities as distinct from a range of truly stretching scenarios.

An additional problem is that the assumptions are not necessarily internally consistent within a sensitivity/scenario as different sources of detailed data are used in the process.

To deal with higher levels of uncertainty, a different approach is needed. Scenario planning, as pioneered by Shell, is considered more appropriate. The scenario planning process is a planning technique that produces a set of scenarios with a special set of properties. Whilst the technique provides a holistic approach to assessing strategic options, its scenario development attribute is advocated here.

The technique uses a rigorous process to identify key uncertainties and provides a framework for building them into an internally consistent scenario cut set.

The following diagram shows shaded areas where scenario planning is useful and appropriate when there is a large uncertainty, such as a range of scenarios/futures or true ambiguity (i.e. uncertainty levels 3 and 4). Uncertainty in the electricity sector maybe best described as level 3 or 4.



(Ref 20/20 Foresight, Hugh Courtney, McKinsey & Co)

There is a need to explore at least four “stretching” scenarios/futures to capture the full range of uncertainties. Each of these describes what a particular scenario/future would look like at the end of the planning horizon (typically 20-50years). As part of a specific scenario/future, there needs to be a “story line” to explain how the scenario/future develops over time to get to the end state. Such scenarios can then be used to “wind tunnel” test projects and strategies.

In addition to the “stretching” scenarios/futures, there needs to be a view of a “most likely / betting future” which forms the base case.

The ISP/RIT-T assessment can then be conducted using the base case and tested for robustness in the stretching scenarios/futures.

The AER should prescribe such a process and task AEMO with facilitating such a scenario planning process as part of the ISP. Participants must also be engaged in this process.

The application of these scenarios to the IPS and RIT-T must be mandated to ensure consistency and robustness of any resultant analysis.

**Question 5: What are stakeholders' views on our proposed CBA steps for the ISP? Are the amended steps from the RIT-T application guideline applicable to the ISP analysis? Are there particular areas where a worked example would be helpful in providing this guidance?**

The role of the ISP and the RIT-T needs to be considered as complementary, with the ISP providing the context and framework for the RIT-T. It is important that the methodology and key parameters used in the modelling are consistent (although they may not be identical due to different timing of the processes).

The RIT-T proponent may use more refined project costs, but other parameters and frameworks, such as a suite of modelling input parameters and specific scenarios as selected by AEMO should be common for both analyses.

***Question 6: What are stakeholders' views on our proposed approach to AEMO's selection of development paths for assessment? Are there additional principles we should consider?***

The principles describing the development paths are pragmatic and reflect the different ways to reduce costs to consumers, promote competitive neutrality and to mitigate against the risk of inefficient network investment.

ENGIE supports the proposed approach.

***Question 7: What are stakeholders' views of characterising the ISP counterfactual development path? Should replacement and small augmentation expenditure be included or excluded?***

As a matter of principle, the counterfactual development path must include any discretionary expenditures. If discretionary expenditure were to be included, its avoidance may then be attributed as a benefit of a particular network path development.

It is therefore suggested that the counterfactual development path should not contain any discretionary network augmentation or existing asset replacement.

It is quite possible that due to distributed generation and storage, some network elements may become redundant or may not need to be replaced “like-for-like” in size and location.

It is therefore important not to attribute the avoidance of any asset replacement to a specific network augmentation as it may simply be the outcome of a status quo scenario/future.

In addition, it should be noted that when a high discount rate is selected to reflect the high level of uncertainty of the future, this will in part reduce the impact of the counterfactual assumptions.

***Question 8: What are stakeholders' views on quantifying costs and market benefits? What market benefits do stakeholders consider need to be estimated using probabilities?***

Modelling of scenarios and sensitivities to quantify the economic benefits of specific projects is time consuming and expensive. Whilst it is desirable to minimise complexity and reduce project assessment costs, it is paramount that modelling methodology is not simplified to the point where it becomes ineffective and/or misleading (ie “It should be made as simple as possible but not simpler”).

The process employed in the ISP and RIT-T utilises time series modelling using cost-based bidding or some form of least cost modelling. These modelling techniques are used as they are simpler and non-controversial since cost assumptions are generally agreed across the industry.

This type of modelling would be suited to a “central planner” or a “common owner” approach, not a competitive electricity market such as the NEM.

Cost based modelling results in dispatch and congestion patterns that are substantially different to real market outcomes.

The result is that incorrect levels of congestion can be identified while other congestion issues in the NEM are missed, either in part or entirely.

Historically, this has led to some network augmentation benefits being overstated, and some costs of augmentation understated, as some elements contributing to the congestion in the NEM were missed. Specifically, inter-regional congestion crippled by intra-regional constraint was missed due to different dispatch patterns.

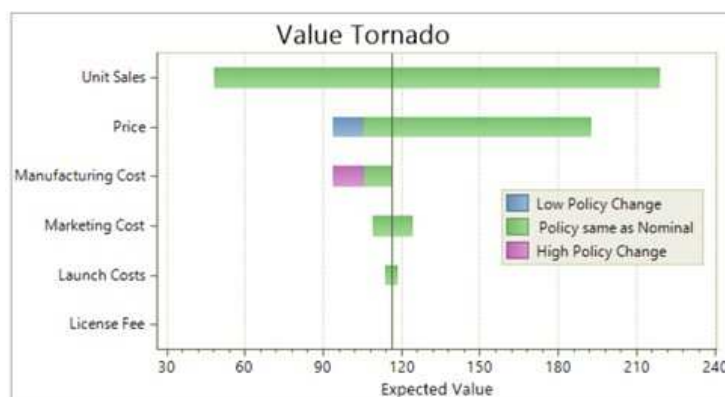
ENGIE urges the AER to place an obligation on AEMO and the RIT-T proponents to conduct market modelling that is more representative on the NEM outcomes and behaviours. The market modelling could then be compared with the cost-based modelling and used to indicate additional risks that are evident in delivering project benefits. In practice it is likely that the market benefits will be reduced as participant actions and behaviours are included.

**Question 9: What are stakeholders' views on whether and how AEMO should conduct sensitivity analysis in its ISP process?**

Sensitivity analysis can be beneficial if used sparingly on a case-by-case basis but can result in a confusing volume of modelling runs.

It is considered highly desirable to indicate the sensitivity of the output (ie net benefits) to various input parameters. In this way a focused effort can be directed at perfecting the most important input parameters instead of treating all inputs as equally important.

Tornado diagrams present an elegant way of determining what's most important. For a given change of input variables, the change in model output is arranged from the most to least sensitive. A simple illustration of this concept is presented below:



ENGIE encourages the AER to place an obligation on AEMO to examine the feasibility of using tornado diagrams when examining the output of the reliability modelling.

***Question 10: What are stakeholders' views on our proposal to provide AEMO with the flexibility to choose its decision-making approach(es) to determine the optimal development path, subject to consultation and justification? Does this satisfy the draft rules requirements and sufficiently mitigate the risks of over-investment, under-investment, premature or overdue investment?***

ENGIE recognises the difficulty in selecting an optimal development path under a high degree of uncertainty about the future.

Whilst some qualitative assessment by AEMO may be appropriate, it shouldn't be a substitute for sound analysis of the costs and benefits.

As a matter of principle, decisions in the context of future uncertainty should be made to minimise the quantum capital committed to a project and to delay expenditure until more certainty about the future is gained. Optionality should be maintained without physical commitment.

The AER should specify some additional parameters for AEMO to integrate into the ISP planning process as follows:

- Specify the minimum return on investment that a project must deliver which is commensurate with the level of uncertainty. (ie projects that are insufficiently favourable in terms of the NPV should not go ahead)
- Specify the maximum downside allowable in any of the scenarios tested for a project to be selected. (ie projects that show significant negative returns in any of the scenarios should not proceed as such projects are too risky for a consumer to underwrite)

***Question 11: What are stakeholders' views on our proposed approach to describing the identified need to be used by TNSPs in applying the RIT-T for an actionable ISP project?***

ENGIE agrees with the suggested approach of articulating the objective but not prescribing a particular solution to allow for better alternatives to be considered.

***Question 12: What are stakeholders' views on how AEMO should take option value into account in the ISP, and TNSPs in RIT-Ts for actionable ISP projects?***

ENGIE considers option value as an integral component of the CBA which should be included in the ISP analysis.

However, when analysing option value, it is essential that there is a common view of the potential scenarios/futures in the ISP and RIT-T. The process needs to ensure that it looks after long term interests of the consumers and any view of the future must be free from potential bias from RIT-T proponent interests.

Should the RIT-T proponent find more attractive scenarios/futures for their investment than were documented in the ISP, they can convince AEMO as part of the ISP development process. Should they fail to do so, the RIT-T proponent should then be prevented from using their own assumptions for the RIT-T analysis.

***Question 13: What are stakeholders' views on our proposed guidance on non-network options in the CBA guideline***

ENGIE considers the replication of guidance currently under the RIT-T to the ISP projects as sensible and pragmatic in facilitating response from non-network option proponents.

***Question 14: What are stakeholders' views on our proposed approach to RIT-T application guidance for actionable ISP projects and non-ISP projects?***

ENGI supports the proposed approach for actionable ISP projects and non-ISP projects. However as previously articulated, there must be an obligation on the RIT-T proponents to use the ISP input data and scenario/future assumptions. This is irrespective of the project being ISP actionable or non-ISP actionable.

***Question 15: What are stakeholders' views on what network development should be included in the base case of the RIT-T for actionable ISP and non-ISP projects? What are stakeholders' views on what generation (and other) development should be included in the base case of the RIT-T for actionable ISP and non-ISP projects?***

ENGIE appreciates the challenge of choosing the most rational set of assumptions for the ISP and RIT-T; especially as the choice of network augmentation paths is not independent of the new generation project assumptions.

The AER proposed approach is considered as pragmatic and ENGIE supports the augmentation of the guidelines in accordance with the outworking of the CoGaTi review.

ENGIE also suggests that close monitoring of potential issues is undertaken and the AER adopts a principle of “continuous improvement” as more experience is gained in these processes.

An AER review of the processes conducted in synchronism with the ISP process is considered highly valuable in this context.

***Question 16: What are stakeholders' views on the scenarios to be considered in RIT-Ts for actionable ISP projects? Would the 'feedback loop' help to overcome any misalignment between the ISP and RIT-T?***

ENGIE understands the need for some refinement (increased granularity of modelling if necessary) and considers additional scenarios/futures as offered by the RIT-T proponent as helpful. However, the CBA process must not be



reduced to a single AEMO planning scenario, which amounts to a “point forecast” and will always be wrong with the benefit of hindsight.

The CBA process must encompass the uncertainty of potential scenarios/futures by considering all of the ISP scenarios.

As the RIT-T proponent refines augmentation options and firms up costs, these will inadvertently differ from those initially considered by AEMO in the ISP. Clearly benefits (or detriments) need to be analysed in all the scenarios initially considered in the ISP.

The concern regarding time required for this analysis could be drastically reduced by:

- Clearly stipulating the modelling requirements for both the IPS and RIT-T processes (terms of reference)
- Sharing the ISP modelling data (ie only need to refine the ISP modelling and not start from scratch; “don’t reinvent the wheel”)
- Considering use of the same modelling provider platform/provider for the ISP and RIT-T. A contract for modelling services could be awarded to an external party provided sufficient oversight was put in place.
  - Efficiencies could be gained from
    - competitive tendering
    - avoidance of duplication of effort between entities
    - time savings as starting from scratch could be avoided

***Question 17: What areas of the ISP do stakeholders require further transparency and/or consultation to engage effectively in the process?***

ENGIE has raised the issue of incomplete documentation in several submissions to AEMO and the AER. The modelling process documentation and the methodologies for input data preparation and output data interpretation must be complete and must include reference to relevant documents from consultants/experts. These need to be available in a timely manner, ahead of the ISP release.

Issues and recommendations made by participants as part of the consultation process need to be published, together with full reasoning why a recommendation was/wasn’t adopted. An issues register is recommended.

The consultation process needs to be inclusive and transparent. Timing of information and publication release by AEMO should be progressive and as early as possible rather than all at once at the end.

***Question 18: What are stakeholders' views on our proposed guidance on dispute resolution in the RIT–T and ISP processes? What specific guidance on dispute resolution would stakeholders value?***

There is a significant risk that unless the AER prescribed processes and procedures are specific and detailed, participants will be practically unable to raise or prosecute a dispute. There is an issue with the RIT-T under current arrangements and the proposed approach is likely to reduce participants ability to raise a dispute.

Therefore, any flexibility allowed for AEMO and the RIT-T proponent must be quite limited and well documented, with appropriate checks and balances put in place.

The current approach is alarming and risks the consumer being trampled in a rush of transmission investments. ENGIE encourages the AER to reconsider the proposed approach in light of these concerns as well as the need to maintain the NEO.

***Question 19: Do stakeholders agree with our proposed approach to compliance and enforcement of the rules and binding guidelines?***

ENGIE supports the proposed culture of fostering compliance to minimise the need for enforcement.

ENGIE trusts that the comments provided in this response are of assistance to the AER in its deliberations. Should you wish to discuss any aspects of this submission, please do not hesitate to contact me on, telephone, 0417343537.

Yours sincerely,

**David Hoch**  
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