



19 October 2020

Merryn York
Acting Chair
Australian Energy Market Commission

Lodged online: www.aemc.gov.au

Dear Ms York,

AEMC: COORDINATION OF GENERATION AND TRANSMISSION INVESTMENT (COGATI) – INTERIM REPORT

Origin Energy Limited (Origin) welcomes the opportunity to provide comments to the AEMC on the COGATI interim report.

Origin considers that the primary transmission-related challenges facing the market are due to the inefficient coordination of generation and transmission investment, that should be dealt with as a matter of priority. Despite its name the AEMC's COGATI model does not address these issues.

In addition, despite the recent changes made to the design features, the model remains complex while introducing additional risk and volatility that cannot be completely hedged. The proposed grandfathering arrangements while well intentioned are not sufficient given existing generators that cannot choose to relocate will still be exposed to added risks.

We also consider that the expected benefits as set out by NERA are significantly overestimated. The modelling exercise was theoretical in nature and did not appropriately capture the intricacies of how the market works in real life and ignores the existing locational signals generators face.

Origin does not support the implementation of COGATI and suggest that market bodies should instead:

- Focus on resolving coordination problems, including through the renewable energy zone (REZ) work and the continued development of the Integrated System Plan (ISP).
- Only consider broader changes to the access regime (including options other than COGATI) once coordination issues are resolved.

Should you have any questions or wish to discuss this submission further, please contact Sarah-Jane Derby at Sarah-Jane.Derby@originenergy.com.au or by phone, on (02) 8345 5101.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Steve Reid".

Steve Reid
Group Manager, Regulatory Policy

COGATI should only be considered once coordination issues are resolved

The AEMC proposes to introduce locational marginal pricing which would expose generators to a more granular price reflecting the demand/supply conditions at each node in the network. However, a fundamental weakness in the strength of locational signals is not the primary problem.

There are significant siting signals in the NEM, which investors incorporate into their decision making every day. The financial implications of poor marginal loss factors (MLFs) and of getting constrained off due to congestion provide strong signals for locational decisions.

In addition, new projects face incentives to locate in areas of the grid rich in renewables, due to environmental policies such as the state-based renewable energy targets (RETs). These signals may not be as pure and theoretical as a nodal pricing, but they are nonetheless powerful.

In recent years, some projects have experienced poorer-than-expected access outcomes such as higher curtailment rates, variable loss factors and connection delays due to stability issues such as system strength.

We consider that these access-related issues are symptomatic of the inefficient coordination of generation and transmission investment with network upgrades sometimes lagging generation. The proposal to introduce locational marginal pricing through COGATI addresses the wrong issue.

Market bodies should therefore be focusing on resolving coordination issues, as set out in our submission to the ESB on its post-2025 review. We consider the ESB should, in the immediate term, focus on resolving coordination issues by:

- Examining the factors that determine generator locational decisions (particularly renewables), such as state-based RETs and access to fuel, and their implications on siting signals and outcomes.
- Finalising existing projects, including assessing the impact of the Actioned Integrated System Plan (ISP) and continuing work on the renewable energy zone (REZ) framework.

The need for access reform should only be considered once coordination issues have been resolved.

Notwithstanding our comments above, we provide some specific feedback on the cost-benefit analysis, the proposed model and the AEMC's review in general below.

The cost-benefit analysis has major limitations

The NERA cost-benefit analysis (CBA) published alongside the interim report contains significant limitations which bring into question the validity of the outcomes of the modelling.

Given that, in theory and assuming a perfect market construct, the introduction of nodal pricing would improve efficiency, it is not surprising that the analysis finds net benefits if the model is built in such a way as to assume the status quo is significantly inefficient.

We consider that the model is theoretical in nature and does not appropriately capture the intricacies of the real world, such as how generators manage their portfolios and risks, including congestion risk. It also does not appropriately capture non-market drivers, such as the strong locational signals provided by state-based RET programs.

In our view, these limitations mean that the modelling is not fit for purpose when it comes to practical implementation for the NEM. We therefore consider that the estimated benefits are overstated and that the AEMC should not be relying on the results as a driver for introducing this change. We provide more detailed comments in the table below.

Table 1: Comments on the cost-benefit analysis

| Aspect of the CBA | Comments |
|-------------------------------------|--|
| Methodology, inputs and assumptions | <ul style="list-style-type: none"> • The model does not incorporate other significant market design changes currently being contemplated (e.g. the reforms being examined by the ESB through the Post-2025 work program and the REZ framework) that should have at least been included as sensitivities. Given the access changes are part of suite of measures that the ESB is examining, modelling one part of the reform separate from all others appears to be a significant oversight. • The model does not appropriately capture all REZs as it only includes projects from the draft ISP, while the final ISP includes additional actionable transmission build. There have also been significant announcements in the past few months which would likely diminish the benefits of the access changes. These include new REZs and other policy announcements (e.g. Victorian RET II). • The 'no reform' (i.e. status quo) case does not appropriately capture the impact of existing locational signals, (such as MLFs and the risk of being constrained off) on siting decisions. More broadly, the model does not capture the more "behavioural" aspects of decision making, such as how generators manage risk or contract. This makes the outcomes of the model unrealistic for real-world applications. • The treatment of storage only as a peaking generator seems contradictory to the role that the technology is expected to play in the NEM in the next 20 years i.e. a flexible resource with multiple purposes. • Some model outcomes are unrealistic. For example, the wholesale price distribution remains low in the 'reform' (i.e. COGAT1) case initially, that would most likely result in some early retirements. However, the model assumes coal plant retire as per expected closure dates. |
| Benefits | <ul style="list-style-type: none"> • It is unclear why NERA has included "wealth transfers" in its calculation of net benefits. Typically, wealth transfers are not included in these types of analyses as they generally do not provide any net economic benefit. In this case, the transfer is a cost to generators and a benefit to consumers, cancelling each other out without any efficiency gains. • A large proportion of the efficiency gains calculated by NERA relates to the removal of race-to-the-floor bidding. As we have noted in previous submissions to the AEMC, not all race-to-the-floor bidding is evidence of gaming. However, we understand that the 'no reform' case assumes that it is and that its use is widespread, which implies that the 'reform' case overestimates the benefits. • Generally, we consider the benefits are overestimated due to the modelling inputs as discussed in the previous section. For example, the 'no reform' case assumes inefficient price signals drive higher-than-optimal generation build. Therefore, the 'reform' case shows significant benefits from locational pricing, due to lower generation build. • A large proportion of consumer benefit arrives between 2036-2040 after large amounts of coal retirement, which is partly replaced by gas. The long-term gas price of \$12/GJ appears to be on the high end and can result in an over estimation of fuel cost savings (i.e. in benefits). It would be appropriate to include sensitivities for lower gas prices. |
| Costs | <ul style="list-style-type: none"> • Getting an accurate picture of implementation costs across participants and AEMO is important. However, implementation and change-related costs are not included in the NERA modelling. |

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| | <ul style="list-style-type: none"> • The preliminary estimates provided by HARD Software have significant limitations that understate the true scale of costs (e.g. it does not capture the complexity of the latest proposal). • The COGATI proposal could also lead to higher cost of capital (for example, due to higher contracting costs and financing requirements). However, the model does not include any sensitivities for such rises in costs. • We agree with the AEMC that more work needs to be done with industry participants to understand the true costs of the model. However, the AEMC should have included a broader analysis of costs before publishing its final CBA results. |
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Concerns around the proposal remain despite the changes made

Despite the updates made to the COGATI design features, we consider that it would still introduce price risk, in addition to volume risk. The need to purchase financial transmission rights (FTRs) would likely put pressures on costs, while residual basis risk would also add to uncertainty. These issues are unlikely to be solved by tweaks to the design features.

On specific design features:

- **Dynamic loss factors:** Dynamic losses are likely to increase volatility at a time of significant uncertainty and change in the NEM. While they may be more accurate, this needs to be balanced against the additional complexity and uncertainty that they would introduce, without any ability to hedge against those movements.
- **FTRs:** While the changes made by the AEMC mean that the FTRs are firmer, they are unlikely to be completely firm unless any revenue shortfall is further backed by consumers. While we are not advocating for this, the AEMC should continue to consider how else to improve firmness.
- **Volume weighted average price (VWAP):** Replacing the regional reference price (RRP) with the VWAP would create additional uncertainty and disruption. Contracts and power purchasing agreements (PPAs) would need to be renegotiated as they are based on the RRP, which adds to the cost of the reform.
- **Pre-defined nodes for FTRs:** We are not convinced that having fewer trading routes for FTRs while maintaining locational marginal pricing at all nodes would necessarily reduce complexity. It may also prove more problematic if the incorrect routes are chosen, leaving even more basis risk exposure in the market. A better approach would have been to simplify the entire model, i.e. introduce (additional) zonal pricing with zonal FTRs.
- **Grandfathering arrangements:** The proposal to allocate free transitional FTRs to incumbents for five years, with sculpting beginning after one year is not significant enough to appropriately compensate generators who cannot relocate. We consider that at least 10 years of grandfathering is needed, with a slow sculpting of allocated FTRs.

More information is needed on the implications of the proposal

If the AEMC proceeds with its proposal, we suggest that more information is needed for stakeholders to properly assess the implications of the reform.

For example, while the simplified model of nodal pricing provided by the AEMC was useful, it would also be helpful to provide an overview of what the real-life outcomes of introducing nodal pricing in 2026 would be.

This could take the form of a geographical representation of the NEM, with the publication of information for each node, i.e. LMPs, amount of generation and load and potential for local market power. It could also show what the VWAP would be given these LMPs, the likely implications for network capacity to be auctioned off for FTR purposes and any competition issues.