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To whom it may concern,

Transmission and access reform | consultation response

Edify Energy (**Edify**) is pleased to make this response to the Energy Security Board's (**ESB**) May 2022 consultation into transmission access reform. We welcome the inclusion of the Congestion Relief Market (**CRM**), as proposed by Edify in its P2025 Market Design consultation response, as a shortlisted option in the operational timeframes. Edify remains supportive of the CRM as a superior option to the ESB's Congestion Management Mechanism (**CMM**), particularly in its modified form, as outlined in the Clean Energy Council's (**CEC**) response to this consultation.

Since the CRM was first tabled, it has been the subject of considerable interest and scrutiny by the ESB (and its constituent energy market institutions), various market participants, consultants and peak industry bodies such as the CEC. In particular, the considerable work coordinated by the CEC and supported by consultants MarketWise Solutions and SW Advisory, in addition to continued input from members of the Edify team, has culminated in an evolved design of the CRM (the Modified CRM) that is well defined, considered, workable and effective in its objectives.

The CEC submission and its supporting documentation discusses this Modified CRM model at length, including its detailed specification and solutions to a number of the concerns raised by the ESB (in its consultation paper) and other stakeholders. Edify fully supports the findings and work outlined in the CEC submission. We therefore do not intend to replicate the conclusions from that work in this consultation response. Rather the focus of this consultation response is to discuss a number of related topics concerning the CRM and its distinction with the CMM, addressed here in turn.

Cost of capital as the key assessment metric

The consultation paper discusses the cost of implementation of the CRM as a key disadvantage and notes that any benefits that the CRM presents must outweigh any differences in implementation costs compared to the CMM. Although Edify does not dispute the concept that all-in costs and benefits should form the basis of assessment of the two options, we make the following points:

- The high implementation costs cited by the ESB do not appear to be well-substantiated, so should first be subject to detailed scoping and costing before conclusive comparative statements (such as those made in the consultation paper) are made. This is the subject of further and more detailed commentary in the CEC response, so will not be further elaborated here.



- When considering costs and benefits, differences between the cost of capital of the two models for all the future necessary investment in the sector should be a key focus of assessment, as even small differences in this value are likely to have a monetary consequence (and flow-through cost to consumers) that outweighs considerations such as implementation costs. Given that the majority of investment into new generation and transmission projects will be characterised by projects with high upfront but low ongoing cost profiles, the economics of these projects is particularly sensitive to changes in the cost of capital, so all reform efforts should be acutely focussed on driving this lower. Higher returns on capital invested will ultimately result in higher requirements to recover money from the market and therefore higher overall lifetime costs borne by end consumers.

In its experience developing and financing renewable and storage projects in the National Electricity Market (**NEM**), Edify is of the strong opinion that the CMM will serve to increase areas of uncertainty and therefore risk to projects, when assessing their value and bankability compared to the status quo and the Modified CRM. This will translate into increases in the cost of capital for projects, with consequential lifetime sector cost increases as alluded to above.

Long-term forecasts of captured power prices and Marginal Loss Factors (**MLFs**) already represent key areas of risk when assessing a project's value over its 30+ years of assumed operational life. They typically rely on the use of complex linear programming models and a myriad of input assumptions (e.g. commodity prices, demand profiles, technology costs, power flow approximations, and endogenous views of network and generation capacity evolution) to derive deterministic sets of outputs that are then stress-tested using scenario and sensitivity analysis. Given the uncertainty associated with both input assumptions and model formulation, investors accept considerable risk when deriving these long-term views of the fundamental basis of the revenue potential of projects. It is for this reason that offtake agreements (which essentially serve to transfer market risks from projects to offtakers), materially reduce the cost of capital for projects through a combination of more favourable debt terms and lower return expectations for equity investors.

The proposed CMM will substantially increase these market and forecasting risks by introducing an additional assessment variable and source of revenue uncertainty. It will necessitate views to be taken by project financiers (debt and equity) related to the magnitude of both the congestion charge and the congestion rebate, as well as how these variables may evolve over time as the capacity mix and power flows change (among other things). It will require modelling of a more complex nature again to those indicated above, where highly locational specific views (relying on increasingly spurious assumptions over time) will be needed to reasonably assess net settlement outcomes. It will create further dependency on third-party modelling consultants or a considerable investment into internal expertise and capability to form these views. The mandatory nature of this mechanism means it will require assessment by all projects, not just those seeking a congestion remediation option, with the increased uncertainty and cost of capital implications therefore being sector wide, not just contained to a subset of affected projects. Ultimately, the proposed CMM will result in increased volatility and risks in returns for both existing and future projects, which in-turn will increase the cost of capital for all projects from both an equity and debt standpoint.

The Modified CRM on the other hand is a voluntary scheme with changes to settlement outcomes being wholly dependent on participation in the market. So as a worst case (assuming zero participation) it will maintain a neutral risk position to the status quo and will not require any further assessment or modelling to be undertaken by prospective project proponents and financiers. It does however expand the suite of options available to those projects within constrained areas (either now or in the future). From an investment perspective, this line of sight to credible, but non-invasive, constraint remediation options will assist in remediating perceived risks concerning constraints (present or future) so serves to reduce the cost of capital to projects.

Edify therefore requests that a considered assessment is undertaken to determine appropriate cost of capital metrics to be used when assessing the long-term sectoral impact of each option and forming the basis of cost-benefit analysis.



Implications of the CMM for incumbent projects

The mandatory nature of the CMM has a number of implications for incumbent projects in the NEM, two of which will be touched on here:

- The consultation paper alludes to the criticism directed at the CMM concerning existing long-term contractual positions and the introduction of basis risk, but suggests that renegotiation or impacts will be limited. Edify does not agree to this limited impact view. For instance, most offtake agreements will contain clauses that oblige the generator to maximise generation (typically above a negative price threshold or when otherwise under direction to withhold generation). The post-dispatch settlement nature of the CMM means that projects will remain obliged to maximise generation, even in instances where they will be penalised with congestion charges, but will be liable for the cost of this congestion charge while still settling with the offtaker under a fixed-floating price swap (where the floating price is the Regional Reference Price (**RRP**)). Where Change in Law clauses are triggered with the introduction of the CMM, the balance of power in any negotiations will rest with the offtaker as to how (if at all), it is willing to share the cost of congestion charges (and share in any rebate) or whether it is open to amending maximise generation obligations to remedy the project's newfound basis risk. The Modified CRM on the other hand, being a voluntary market, is far more conducive to constructive and mutually beneficial negotiations between projects and offtakers (without a clear balance of power resting with a single party) to take opportunity of the presence of a local congestion relief provider and whether submitting bids into the CRM and at what price / volume is in the interests of both parties.
- Another key set of contracts are financing agreements, where items that structurally affect the revenue or risk basis of projects are likely to trigger financing covenants under these agreements. This at a minimum will prompt a reforecasting of a project's cashflows, accounting for the congestion charges and rebates and in the worst case could trigger financial defaults, which could result in cash sweeps, recapitalisation or solvency concerns. This is likely to be highly disruptive to the sector and will erode confidence for all incumbent investors in the market related to the willingness for regulators to amend rules, which have the potential to affect legacy investments in ways that could not have been contemplated at the time of investment. The Modified CRM does not have this issue as, being voluntary, it at worst maintains the status quo and at best presents an opportunity to improve a project's revenue position.

Mechanisms to value power system stability services

Edify, in its original submission of the CRM in response to the ESB's P2025 April 2021 options paper, outlined a methodology for how the CRM could value power system stability services. This methodology involved providing a mathematical equivalence for energy that is curtailed due to thermal limits and the expansion of stability related limits. On subsequent consultation with SW Advisory through the CEC, the technical advice has been to proceed with the Modified CRM, which resolves deviations from energy dispatch only. It was identified that Hydro Tasmania's rule change request for a Synchronous Services market has superior integration features with the existing NEM dispatch engine (**NEMDE**) and is therefore a better market mechanism to dynamically value power system stability services.

We also note the potential for the use of non-market ancillary service (**NMAS**) contracts to value system stability services through more static bilateral contracts, where the framework for awarding these contracts should be transparent and aligned with the sector's interests.

Investment timeframe considerations

Edify generally takes a view that raising the information and knowledge base of the sector is the best initial reform option, prior to any interventions or changes to market design. In respect of the options tabled in the investment timeframe, our views are consistent with this principle. Edify supports the position set out by the CEC, in terms of introducing practical information measures, such as greater transparency on network



opportunities by NSPs or mandating congestion studies (that meet a minimum set of assessment requirements) as part of the connection process to force informed views being taken by investors pertaining to curtailment risks prior to investments being made. In Edify's opinion, such simple measures will go most of the way in achieving the overarching objective of limiting investment in inopportune areas of the network that do not provide an accretive benefit to the market's capacity or generation base, particularly for projects and developers that are inadvertently (not knowingly) causing this issue.

In situations where a sophisticated project developer identifies an opportunity (through the careful examination of the coefficients of constraint equations) to connect to a part of the network (say on a radial line) with the intent to deliberately displace the generation of a nearby project (as would be its right in a pure open access regime), it is in Edify's opinion that this developer will also understand two things that should inform the risk of such an investment:

- Its project will be equally susceptible to a subsequent project connecting and displacing its generation in an identical way; and
- Over a 30+ year project life / investment horizon and the profound changes expect to take place in power flow dynamics, this project will also remain susceptible to a reversal of flows on the line, and the consequent rebasing of constraint coefficients and potential reversal in the project with displaced generation.

More generally speaking, coefficients of constraints on some transmission lines may favour the location of a project in one location, however constraints in other sections of the local network will not favour that project's location. This can be observed in highly meshed networks as is seen throughout the NEM. The constraint equations which ultimately curtail a project are subject to where congestion physically occurs in the local network, and this is subject to change over a project's life. These complex dynamics will be well understood by sophisticated developers and investors, and should become evident with a greater information base for those that are less so.

With this understanding (combined with a raising of the information base), this should result in a preservation of the investment of projects that are the first to claim the hosting capacity within network areas.

Fundamentally, Edify is of the opinion that a suitably informed investment community will, in the majority of cases, not seek to invest into areas of the network with pre-existing constraints that are correlated to the project's generation profile. Reforms that alter the market's design should therefore not be considered to address isolated incidences of this issue.

We look forward to continuing to work with the ESB and other stakeholders on transmission access reform and continuing to develop and implement the Modified CRM. Should there be questions on any aspect of this consultation response, please contact Manas Choudhury in the first instance on +61 434 630 939 or at manas.choudhury@edifyenergy.com.

Yours sincerely

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