



INFORMATION

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Transmission Access Reform: Updated Technical Specifications and Cost-Benefit Analysis

Updated technical specification and quantitative analysis has been published

On 7 September 2020, the ESB published its post-2025 market design consultation paper. The post-2025 market design incorporates seven different market design initiatives. Transmission access and coordination of generation and transmission investment is one of these market design initiatives, with the AEMC taking the lead on this workstream.

Also on 7 September 2020, the AEMC published an Interim report on Transmission access reform, along with the accompanying consultant reports, setting out:

- updated technical specifications of the access reform model, reflecting significant stakeholder input over the past several months; and
- quantitative analysis of both the benefits and costs of the reform, in response to stakeholder requests for these items.

These reports are published for stakeholder consultation and feedback.

Why is reform needed?

The proposed transmission access reform model has been developed in response to the transition that is currently underway in the electricity system. The NEM will replace most of its current generation stock by 2040. The electricity system of the future is likely to be characterised by many relatively small and geographically dispersed renewable generators, connecting to windy or sunny parts of the network, which historically have not needed large amounts of transmission capacity.

The access reform model proposed has two core elements: locational marginal pricing and financial transmission rights. This approach, while new to Australia, has been successfully in place for decades in many parts of the world including New Zealand, North America and Singapore.

How does the proposed reform fit in with the ESB's 2025 reform plan

The proposed transmission access reforms are designed to form part of the ESB's roadmap to provide a complete set of congestion management arrangements that promote the long term interests of consumers. The changes in this roadmap are:

1. The actioning the ISP work, which was recently completed by the ESB, with the rules in effect. The ISP rules are designed to streamline the regulatory processes and support the implementation of key projects identified in the ISP, whilst retaining a cost benefit assessment.
2. The model for transmission access reform (i.e. the subject of this interim report), which would supplement the work of the ISP and improve locational signals to generators. This means that the existing and yet-to-be-built transmission infrastructure can be used more efficiently. The new access arrangements will also assist in the management of congestion on the grid and provide generators with a means to better manage the related risks to their revenues.
3. Given the transmission access reform will take some time to be implemented, the ESB is considering interim arrangements for priority REZs recognised in the ISP. Stage 1 of the

REZ work seeks to build on the planning arrangements in the ISP, with a consultation paper recently published on this.

The implementation time of the proposed access reform model is to be coordinated with other reforms arising from the ESB's post-2025 market reforms, in the order of four years from the time any final rules are made.

Updated transmission access reform design specifications

The interim report sets out updated design decisions for the two core design features of LMP and FTRs, including details on:

- the formulation of the regional price at which non-scheduled participants (ie, the majority of load) will be settled
- how losses should be reflected in the wholesale electricity price
- whether FTRs will be used to manage risks associated with losses
- how long in advance FTRs are available for
- from what location FTRs will be available for purchase, and
- the length and nature of transitional FTRs that will be provided for free to existing participants at the start of the regime.

This incorporates significant stakeholder feedback that we have received over the start of this year. For example, in response to stakeholder feedback the design has been amended to:

- make the FTRs firmer, benefiting both generators, but also consumers given that they value of the FTRs will be higher
- make the tenure on which FTRs are available longer, and
- simplify the model by only having available option FTR instruments and FTR routes relating to a subset of potential price pathways.

Overview of Cost Benefit Analysis of Access Reform

In response to stakeholder feedback requesting this analysis we have also undertaken quantitative assessment of the reform.

Cost Benefit Analysis of Access Reform by NERA Economic Consulting

NERA were engaged to assess the benefits of introducing LMP and FTRs into the NEM. The key conclusions are:

- The benefits (excluding implementation costs) of introducing the reform are substantial. The total consumer benefit estimated by NERA is between **\$6.2 and \$8.2 billion** over 15 years operation of the NEM from 2026 to 2040, in net present value terms.
- The benefits relate to a number of effects from the introduction of transmission access reform: from changes in how power is dispatched in real time; how investments are located over the medium to longer term; how prices are likely to settle with the move to LMP; and competition benefits to the extent that FTRs allow for increased competition across different regions in the NEM. There are also additional benefits from the adoption of dynamic loss factors.
- The rate of accrual is correlated with the rate of change in the NEM. The more retirement of existing plant expected, the earlier this occurs, and the greater the rate of investment in new generation and storage assets, the greater the benefit from locational signals that better indicate where investment would best be located on the network.
- The findings are consistent with long-lasting, practical international experience of LMPs and FTRs.

An indication of the information technology costs of nodal pricing by Hard Software

Hard Software were engaged to develop preliminary cost estimates of implementing the reform. Over the course of Q4 2020, we plan to engage with industry and AEMO to gain more precise estimates of the direct implementation costs associated with the reform.

Hard Software suggests that a well-planned implementation in the NEM could cost in the order of \$60-\$70 million for AEMO's costs alone. The Commission considers that these

figures are on the lower side of what a more detailed assessment of the cost of implementation is likely to reveal. However, they are an order of magnitude below the estimated benefits of the reforms.

Background

In March 2020, a detailed technical blueprint for the proposed access reform model was published, which set out details on what a revised transmission access framework would look like. The blueprint was based around implementing locational marginal prices and financial transmission rights in the NEM, and incorporated stakeholder feedback received to date. It also had an accompanying NERA Economic Consulting report that assessed the costs, benefits and learnings from the introduction of similar reforms in overseas jurisdictions.

In March 2020, following the publication of the technical blueprint and update paper, the ministerial forum of Energy Ministers (formerly COAG Energy Council) asked the AEMC to continue designing the access reforms as part of the ESB's post 2025 market design process. This interim report forms a key part of this work. We anticipate providing core elements of a rule change package by the end of the year, coordinating with the ESB's 2025 reform.

Next Steps

We anticipate developing core elements of a rule change package by the end of the year, coordinating with the ESB's 2025 project. To help develop this package, the Commission welcomes feedback from stakeholders on the matters discussed in our Interim report and the consultant reports. Stakeholders are invited to provide written submissions to the Commission by **19 October 2020**. In addition, we:

- continue to encourage stakeholders to contact the project team to engage bilaterally, and
- will be holding two public forums with stakeholders in September 2020 regarding the work that NERA has done, with further details on these available on our website.

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