



Chairman: Warren McNabb,
warren.mcnabb@altimarloch.com
Secretary: David Inch, david@nzenergy.co.nz

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Energy Modelling Team
MBIE Energy & Resources Markets
Ministry of Business, Innovation and Employment
PO Box 1473
Wellington 6140

By email: energyinfo@mbie.govt.nz

Dear Energy Modelling Team,

RE: Consultation Document: Electricity Demand and Generation Scenarios 2023

The Independent Electricity Generators Association Incorporated (IEGA) welcomes the opportunity to submit on the proposed assumptions for modelling the Electricity Demand and Generation Scenarios 2023.¹

The IEGA represents members that operate or are investigating/building renewable generation assets across the spectrum of renewable fuels.

Our feedback is high level so we have not addressed the questions in the submission template. The IEGA has also not engaged in this topic previously.

Duplicating effort?

We understand the EDGS has an explicit role for the Commerce Commission in the investment test for approving Transpower's proposals under the Transpower Capital Expenditure Input Methodology (Capex IM). However, recent changes to the way Transpower recovers the cost of the transmission grid, in particular Major Capital Projects (MCP), means Transpower undertakes detailed market modelling including making assumptions about the timing and technology of new generation investment as well as different demand scenarios.

Is it appropriate for an MCP to be assessed / approved by the regulator using one 'model' and the associated costs to be allocated to transmission customers using another 'model'? Is this duplication of effort efficient?

¹ The Steering Committee has signed off this submission on behalf of members

Transpower's consultation in December 2022 on its 'Net Zero Grid Pathways 1 Major Capital Project (Staged) Investigation Appendix D: Scenarios & Modelling Report'² included the results of consultation and Transpower's analysis to amend the 2019 EDGS information. *Is MBIE starting with this updated information or from scratch in this 2023 EDGS consultation?*

For example, the information on many of the projects listed in Appendix A does not include a commissioning date. However, Transpower may have already made assumptions about when these generation projects are likely to come online.

As well as MBIE and Transpower developing assumptions about the outlook for electricity generation and demand, the Business Energy Council with EECA has a model of the system as well as the Climate Change Commission.³

Overall, the IEGA suggests it would be easier to comment on MBIE's assumptions about new generation capacity if the information was presented in a [spreadsheet](#) like that published for the 2019 EDGS – in the same format as Transpower and the Climate Change Commission. *Is it clear why forecasts from different agencies differ and are the different perspectives adding value?*

It is difficult to tell if MBIE is assuming any decommissioning of thermal plant and the timing of this.

The generation stack results rely on assumptions about \$/MWh for each generation technology. We suggest it would be good to understand the capacity cost as well. For example, it may be lower cost to do a stored hydro compared with wind generation plus battery. *Does MBIE consider capacity costs?*

What is in and out of MBIE's assumptions?

We note (at page 15 of the consultation paper) that:

We include the following plants in our GEM modelling system:

- Plants which are directly connected to the national grid.
- Large (20 MW+) partially- or fully-embedded plants.
- Peaking plants, regardless of capacity.

Plants which do not fall under one of the above categories are modelled in **SADEM**. All peaking plants are included in GEM to ensure that security of supply is maintained throughout the forecast horizon.

Some hydro plants may also not appear on this list as we lack the hydrological data required to properly model them in GEM.

The IEGA is interested in understanding the consequences of the approach MBIE takes to not include partially or fully embedded generation plant less than \$20MW. *How does SADEM (as opposed to GEM) treat this generation output? Are the demand forecasts net of the generation output of embedded plant?*⁴

² https://tpow-corp-production.s3.ap-southeast-2.amazonaws.com/public/uncontrolled_docs/NZGP1%20MCP%20ATTACHMENT%20%20-%20SCENARIO%20%26%20MODELLING%20REPORT.pdf?VersionId=wt97ozdmYWlpNhdB4HSzMxrQR_KFRcfS

³ EECA and the Business Energy Council also has the NZ Energy Scenarios TIMES-NZ 2.0 <https://www.eeca.govt.nz/insights/data-tools/new-zealand-energy-scenarios-times-nz/>

⁴ MBIE's approach is not revealed by reading the 2019 EDGS <https://www.mbie.govt.nz/dmsdocument/5977-electricity-demand-and-generation-scenarios-report-2019-pdf>

We note there are a number of projects listed in the Appendix A proposed, potential and generic tables that are below 20MW. *Is MBIE modelling these generation plant? Are they assumed to be grid connected?*

There are numerous potential embedded generation projects⁵ with economic LCOE. The lack of transparency of these projects in MBIE's energy modelling in effect devalues this potential distributed energy resource.

At page 17 of the consultation paper:

It is important to note that we do not include grid-scale Battery Energy Storage Solutions (BESS) as part of our generation stack. These are separately modelled.

There is no information about existing, proposed, potential or generic grid-scale BESS in the Appendix A tables. *Is MBIE seeking any feedback about how it is modelling grid-scale BESS?*

We welcome the opportunity to discuss with you the questions we have raised in this submission.

Yours sincerely



Warren McNabb
Chair

⁵ For example, see the report commissioned by MBIE on embedded hydro generation <https://www.mbie.govt.nz/assets/embedded-hydro-generation-opportunities-in-new-zealand.pdf>