

15 May 2015

Bryan Field  
Ministry of Business, Innovation and Employment  
Via email: [EDGS@mbie.govt.nz](mailto:EDGS@mbie.govt.nz)

### **Draft Electricity Demand and Generation Scenarios**

Mighty River Power appreciates the opportunity to comment on the draft Electricity Demand and Generation Scenarios (EDGS). Our responses to the consultation questions are outlined in the attached appendix. We particularly welcome MBIE publishing further modelling detail on projections of electric vehicle fleet size and solar photo-voltaic uptake to provide transparency around these assumptions.

Our main feedback relates to the modelling of electric vehicle uptake. Overall we consider that the uptake assumptions used in the modelling could be increased, especially for the medium uptake case which is reflected in seven of the eight scenarios. The high uptake assumption used for scenario four (global low carbon emissions) could also be revised upward.

The model cost assumptions are based on IEA reports from 2011 and 2012. These are likely to be out of date given how quickly the electric vehicle landscape is changing. For example the IES ETP 2012 New Policies cost data considers battery electric vehicles (BEVs) will be more expensive than gasoline internal combustion engines (ICEs) in 2050. Since 2011 lithium ion battery costs, the main cost component of BEVs, have fallen by around 22%, much faster than previous forecasts had predicted<sup>1</sup>. Recent announcements by Tesla for a distributed battery storage unit have provided a transparent reference point for the per KWh costs of battery technology (circa \$330 KWh) which suggest that BEVs are well on track to reach competitive parity with ICEs within the next decade.

The assumption that electric vehicle uptake in used vehicles lags five years behind new vehicles also would not seem to be supported by the current market. We would suggest a two year lag at most given that BEV's are readily available from the Japanese market within this timeframe.

We would support MBIE revisiting the assumptions around the various electric vehicle uptake scenarios in EDGS. One approach could be to consider the modelling undertaken by the New Zealand Smart Grid Forum. This group developed a scenario based on high uptake of new technology (electric vehicle and solar). These inputs could be used as the key input variations for scenario four in the EDGS and the current high uptake inputs could be reflected in the other seven scenarios replacing the medium electric vehicle uptake input.

Mighty River Power would be pleased to participate in any further discussions around these points. If you have any questions please contact me [nick.wilson@mightyriver.co.nz](mailto:nick.wilson@mightyriver.co.nz) 09 580 3623.

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<sup>1</sup> See <http://www.bloombergtv.com/articles/2015-04-08/clean-energy-revolution-is-way-ahead-of-schedule>

Yours sincerely

A handwritten signature in black ink, consisting of a horizontal line with a small dot at the end, and a stylized, cursive-like scribble below it.

**Nick Wilson**  
Manager Regulatory and Government Affairs

## Appendix 1 Consultation Questions

Question	Response
1. Do you agree with this description of the purpose of the EDGS, including the material in the appendix.	Yes
2. In the absence of regional and prudent peak demand projections being a part of the EDGS, the Ministry would like to ask for your feedback on the best way to independently verify regional and prudent peak demand projections.	While we have no specific suggestions on how to achieve it we support MBIE considering ways to independently verify regional and prudent peak demand projections. Assumptions on peak contribution of wind and solar will have an impact on scenario outcomes.
3. Do you agree that the key uncertainties identified in this section, and the proposed eight equally weighted scenarios, sufficiently represent overall uncertainty for the purpose of the EDGS?	No comment.
4. Do you have any specific feedback on the proposed EDGS capital cost assumptions which are sourced primarily from the PB generation data update 2011?	We consider the capital costs assumptions remain reasonable.
5. Is the variation in key assumptions consistent with the scenario design and future uncertainty?	See comments in the main part of our submission.
6. Given the current flat demand environment should we put more weighting on low demand growth scenarios?	Yes. As discussed at the 21 April workshop we consider the assumed rise in residential electricity demand per household back to historic levels in the high growth scenario is unlikely. The residential electricity demand per household in the base case also needs to be reviewed as it is likely too high.
7. Does the high uptake of EVs and Solar PV that are used in our Global Low Carbon Emissions scenario adequately reflect future uncertainty?	See our comments in the main part of our submission.
8. Should we put more weighting on the low gas availability option given the current level of oil prices?	No comment.
9. Does the range of retirement for the Huntly units across the scenarios adequately reflect	No comment.

the associated uncertainty?	
10. Are there any comments on the build schedules or other key results published in this document and the accompanying excel files?	No.