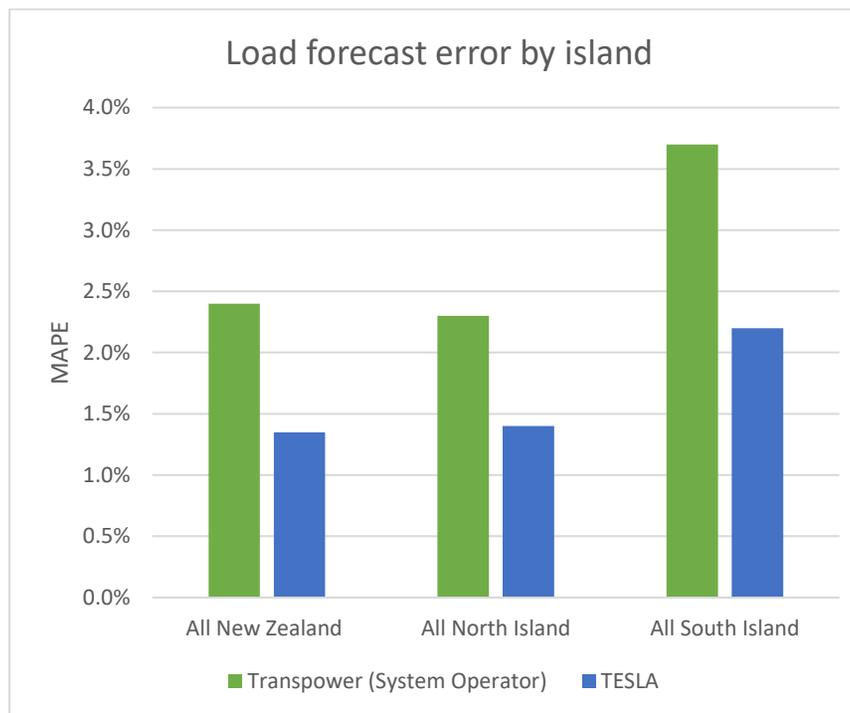


## TESLA load forecasts continue to outperform the System Operator's throughout the winter

This report compares both the load forecasts provided by TESLA via EMS' em<sup>6</sup> and the System Operator's load forecast (at 2.5 hours ahead of real-time) against actual load observations. As does the report released by Transpower, this report seeks to separate out the conforming loads for further analysis.<sup>1</sup> EMS provides a detailed load forecasting accuracy analysis to all Load Forecast users on a monthly basis.<sup>2</sup> The charts below compare the accuracy for July 2017.

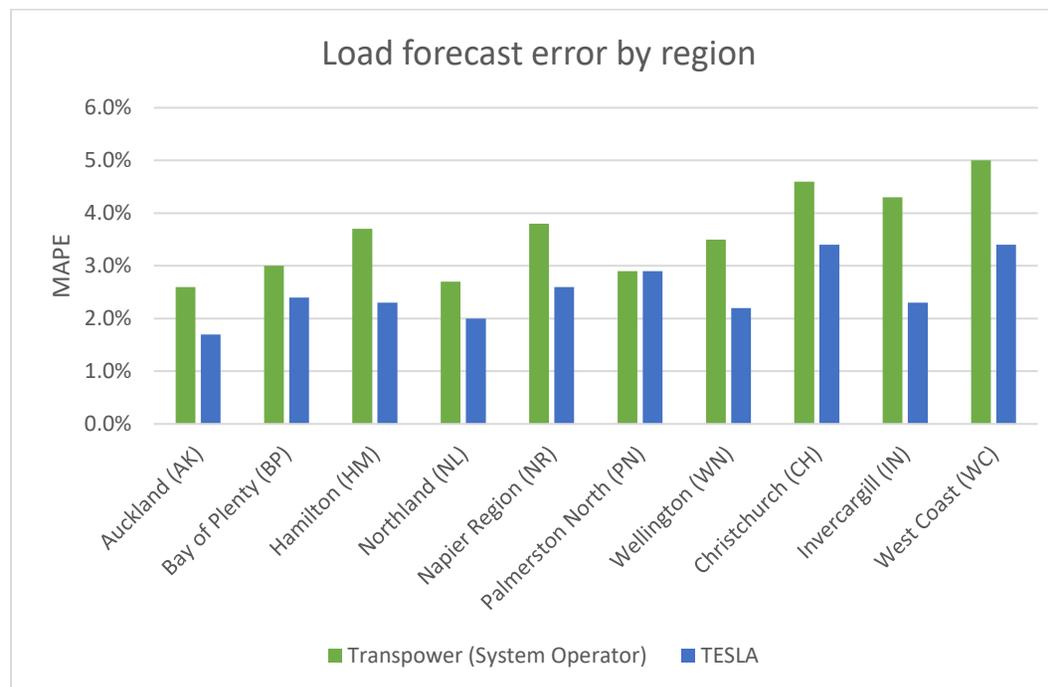


<sup>1</sup> The System Operator's load forecast accuracy report can be found here: <https://www.transpower.co.nz/sites/default/files/bulk-upload/documents/201707%20Load%20Forecast%20Accuracy.pdf>

<sup>2</sup> For more information on the em<sup>6</sup> Load Forecast: <http://ems.co.nz/portfolio/energy-information/loadforecast>

The chart below shows that TESLA outperformed the System Operator across all regions in July 2017. This is very promising as July has been a very cold month, with the country wide cold snap over the 12<sup>th</sup> to 15<sup>th</sup> resulting in the second highest demand in 20 years. Outliers like these are when our users really see high value in the forecast.

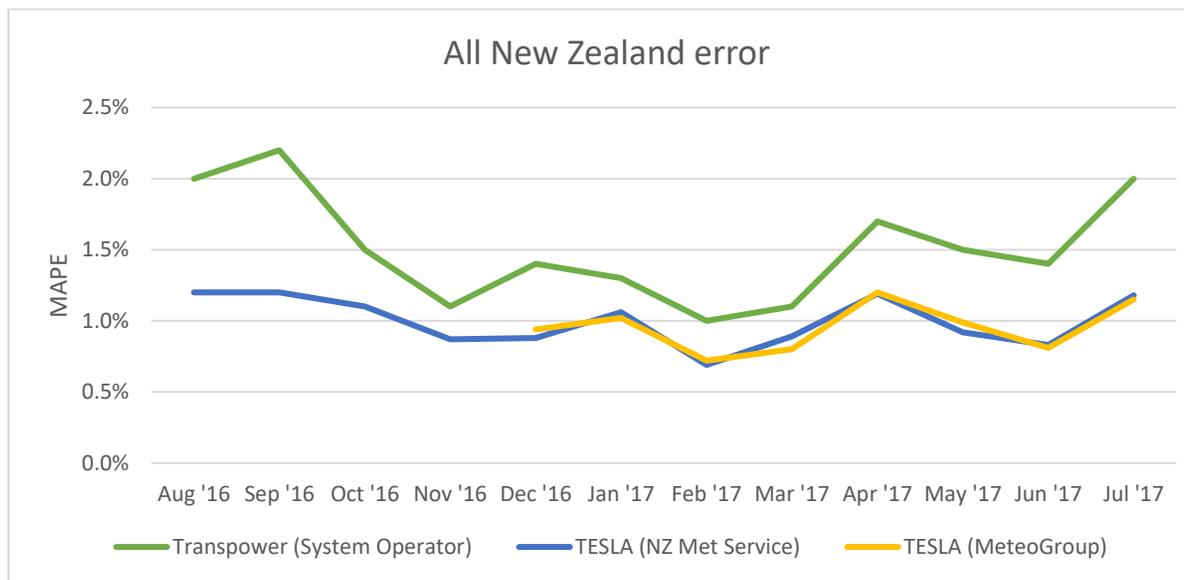
The 13<sup>th</sup> of July was a day of particular interest to many of our users. The TESLA model had a MAPE of 1.11% for 2.5 hours ahead while the System Operator was well over 3%. This illustrates how our users can confidently make decisions on days of high interest with the accuracy they've come to expect.



Load forecasting in the winter is particularly difficult in New Zealand as there is a significant amount of load management. This makes forecasting tricky as it clouds the typical relationships between weather and electricity demand.

There is potential for further improvement if demand response data become available to the public domain. Although the TESLA model currently uses data mining to learn when demand response events may occur, there is room for improvement if demand response data become an input to the model.

The graph below shows the comparison of the TESLA and System Operator load forecasts over the last year. The blue curve shows the MAPE of the TESLA forecast 2.5 hours ahead using weather forecasts provided by the NZ Met Service while the yellow curve shows that of weather forecasts provided by MeteoGroup. As the weather forecast is the primary input to the load forecast, it's good practice to observe how the resulting load forecasts vary under different weather vendors. Confidence will be high when the resulting load forecasts line up while further attention will be required when they diverge.



This report confirms that over all seasons, the TESLA load forecasts via em<sup>6</sup> significantly outperform the load forecasts published by the System Operator, particularly in the winter months.

A free trial is available for industry participants to assess the added value of the TESLA load forecasts over the System Operator's. Please contact TESLA Asia Pacific for more information: [asiapacific@teslaforecast.com](mailto:asiapacific@teslaforecast.com) +64 (0) 9 551 5039