



Whakamaru Power Station on the Waikato River

Mercury's Retail Portfolio forecasting accuracy

With the promise of much higher forecasting accuracy of their retail portfolio, Mercury quickly accepted TESLA Forecasting's free trial and put them to the test.

About Mercury

Mercury is a New Zealand electricity generation and electricity retailing company. Mercury has about a 15 percent share of New Zealand electricity sales and supplies all segments of the market. All of the company's electricity generation is renewable.

TESLA's Involvement

Mercury's decision to take on TESLA Forecasting was a simple one. Mercury's Buddhika Rajapakse, Trading Analytics Team Leader, said:

"If TESLA could deliver on their promise of more accurate load forecasting, then the money saved through better trading decisions would more than pay for TESLA's services. With a free, no obligation trial of the full system on the table, the risk of trying TESLA's services was all but eliminated."

IT overhead to support a new system was the key expenditure during the trial period. However TESLA's standard solutions to dramatically reduce this cost were to:

- Receive data from Mercury in CSV files, in a format that suited Mercury.
- Hosting of the solution to produce the load forecasts in TESLA's datacentre (with parallel redundancy in another datacentre).
- Produce load forecast files in a format that suited easy assimilation.



"One of the key things TESLA has going for them is that they became a part of the team and provided an ongoing service. They never stop trying to improve their accuracy."

Buddhika Rajapakse

Trading Analytics Team Leader
Mercury

With a rapid turnaround of a few weeks TESLA fully developed and implemented the models and system. As a result, Mercury were able to trial TESLA's accuracy over the tricky autumn and winter period, where TESLA's accuracy proved itself.

Post Trial

After a successful trial period, Mercury signed up to TESLA's services. The development didn't stop there. TESLA continued to work with Mercury's staff to trial different aggregations of the regions forecasted to see if further accuracy could be achieved.

Due to the successful results of the trial, Mercury's trading analytics team were able to focus on wider business matters.

"As TESLA fully developed and constantly maintain the models, this meant our team were freed from the grind of producing and maintaining retail load forecasts. We were able to easily apply the more accurate forecasts to improve Mercury's trading outcomes and move on to focus on other priorities."

TESLA's accuracy during the trial highlighted that the error in the forecasting was mostly eliminated from the load forecasting models themselves and that most of the remaining error came from weather forecast accuracy. Again, TESLA offered a solution for further improvement by introducing another weather vendor into the equation.

Going the Extra Mile

TESLA and Mercury are currently working together to further improve accuracy by integrating Mercury's smart meter data with the TESLA load forecasts. These data updates will allow TESLA's economists to calibrate the models daily. The data will also allow for the utilisation of the second stage of the TESLA model; an autoregressive component that uses the most recent observed load to sharpen intraday accuracy.

Benefits

- **More accurate** load forecasting
- **Lower cost** than dedicating staff to producing load forecasts
- **Minimal overhead** to trial and implement
- **Easy Integration** with existing systems

*"TESLA's service and accuracy have been **top-notch**, which is the reason why we've been re-signing with them every year."*



Kawerau Geothermal Power Station
Owned and operated by Mercury

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