

## PREPARING NETWORKS FOR THE FUTURE

Many utilities are investigating the benefits of improving their digital and analytics capability, to ensure that their LV network has sufficient capacity to meet future demands. Customers will, in future, wish to connect electric vehicles, rooftop solar and batteries to the grid, which a utility has to consider in their network strategy. ETEL see using data from online monitoring as an effective strategy to manage forthcoming constraints and improve decision making.

A growing uptake of electric vehicles (EVs) is expected into the future. For the utility, the uptake rates are uncertain, along with where and when EVs will be charged, and the diversity of home charging. Our principal engineer Dr Dan Martin has been collaborating with Russell Watson, a principal engineer at Northpower, to show how distribution transformer analytics will improve the management of electric vehicle charging.

Earlier this year they presented to Engineering NZ on “*How distribution substation engineering is evolving to meet the challenges of decentralisation and electric transport*”. This turned out to have among the highest number of registrations (566) recorded for an Engineering NZ event. This exceptional level of interest confirms the significance of the topic to industry. In the talk, Dan spoke about distribution substation engineering and effects of charging cycles on transformers, while Russell talked about the engineering problems and potential solutions which are being explored by the utilities.

A second presentation was given at the EEA conference in September on “*Reducing Barriers to Public EV Charger Installation by Improving the Utilisation and Monitoring of Distribution Transformers*”. The key takeaway was that a cyclic rating can be used for peak ride through if the transformer is given time to cool down after charging. In certain circumstances, with effective monitoring and control, capacity upgrades can be deferred, saving the utility.

At present the proportion of EVs on New Zealand’s roads is very low, only about 1%. Therefore, it makes perfect sense to delay asset upgrades as much as possible until there is more comprehensive information on where and when vehicles will charge. The advantage of monitoring is that it provides the data to analyse and understand the available capacity, constraints and opportunities in networks as more EVs are connected.

We are always interested to understand your needs or thoughts on this subject and welcome further discussion, for more information please don’t hesitate to contact Dan Martin on [dan.martin@eteltransformers.co.nz](mailto:dan.martin@eteltransformers.co.nz) or 09 820 6110.



# ETEL MANUFACTURED SMALL POWER TRANSFORMERS

ETEL's manufacturing facility in Indonesia recently built a 24MVA ONAF Power Transformer for Unison Networks in Hastings.

The transformer was installed at Unison's Irongate site and energised in February 2022.

This was ETEL's first supply of a small power transformer into New Zealand and we learnt a lot. It's an exciting new phase for ETEL and we are keen to share our learnings and show what we can offer in this space.

Unison has since purchased a further four power transformers, 28MVA ODAF. All four are due to be installed and energised in 2023.



## PARTNERING WITH TMC TO SUPPLY CAST RESIN TRANSFORMERS

ETEL have partnered with TMC Transformers in Italy for the supply of customised solutions for cast resin transformers.

TMC manufacture cast resin transformers both with standard and reduced losses to get high efficient dry type transformers. Their products are designed and manufactured to offer long term reliability, minimum maintenance and in accordance with all relevant standards.

Cast resin transformers are the ultimate in fire safety, and are an ideal solution for critical infrastructure where reliability is paramount.

ETEL offers a full repair, service and testing service or maintenance program with extended warranty, we will also consider maintaining and managing your current fleet of transformers.



*For more information about ETEL's latest product and service offerings, contact our sales team on 09 820 6110 or email [sales@eteltransformers.co.nz](mailto:sales@eteltransformers.co.nz)*

## ETEL HOSTS GRADUATES FROM ERGO CONSULTING

ETEL recently had the privilege of hosting five graduate engineers and Chris Turney, Technical Director - Power Systems from ERGO Consulting at our manufacturing facility in Auckland,

ETEL's Principal Engineer, Dr Dan Martin, conducted a tour of the manufacturing facility, identifying the key processes and highlighting the importance of using the correct type of materials as they went.

The graduates were very engaged and asked a number

of questions at the end of the tour, an in depth discussion was held on the FM Global standards. Chris Turney emphasised how important it is for young engineers to get opportunities such as this as it helps understand what goes into a transformer and will help when specifying what the requirements for a transformer should be.

ETEL would be happy to host your team members at our manufacturing facility - if this is something of interest to you, please get in touch.