Electricity Distribution

EIP120 – HV Phase Connectivity

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Contents

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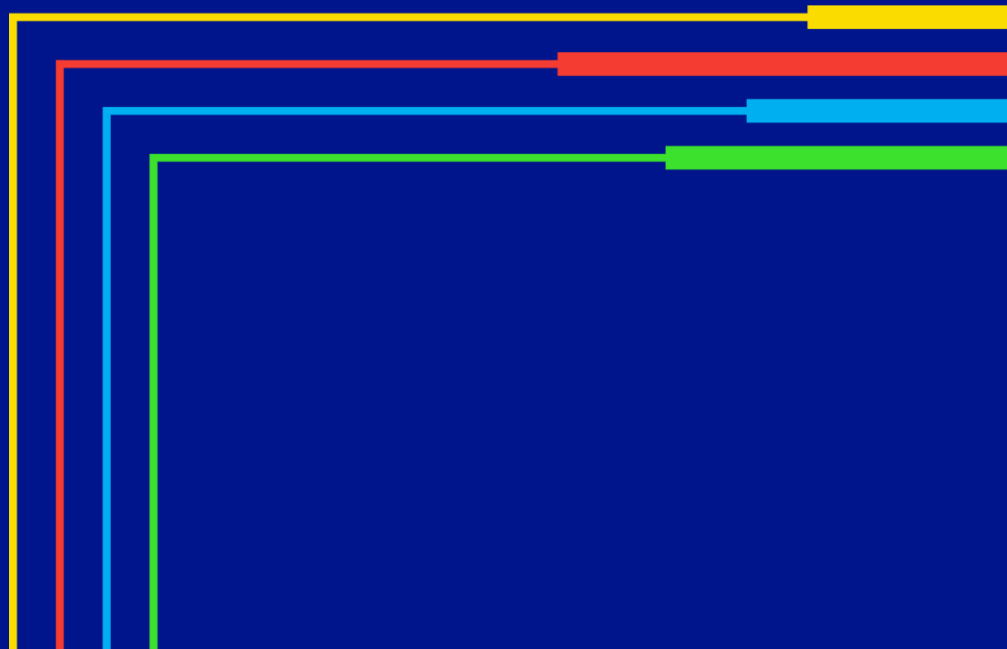
The Problem



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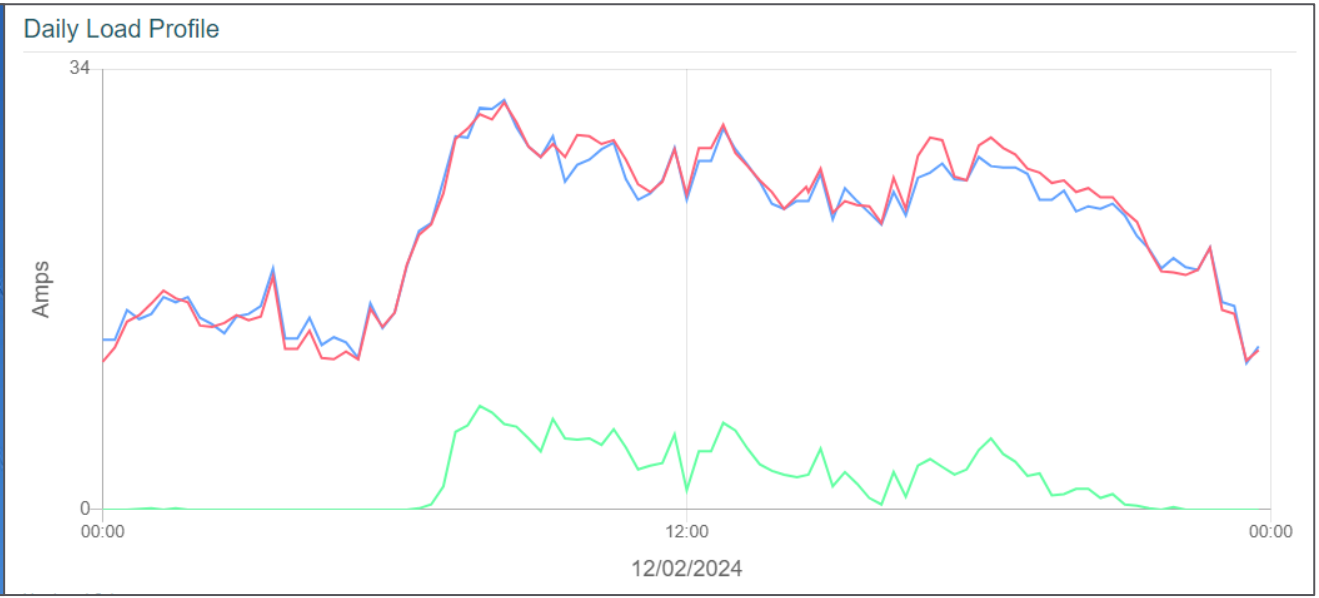
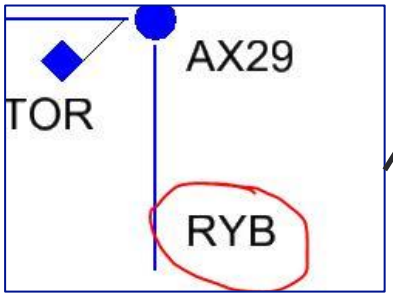
EIP120: Background

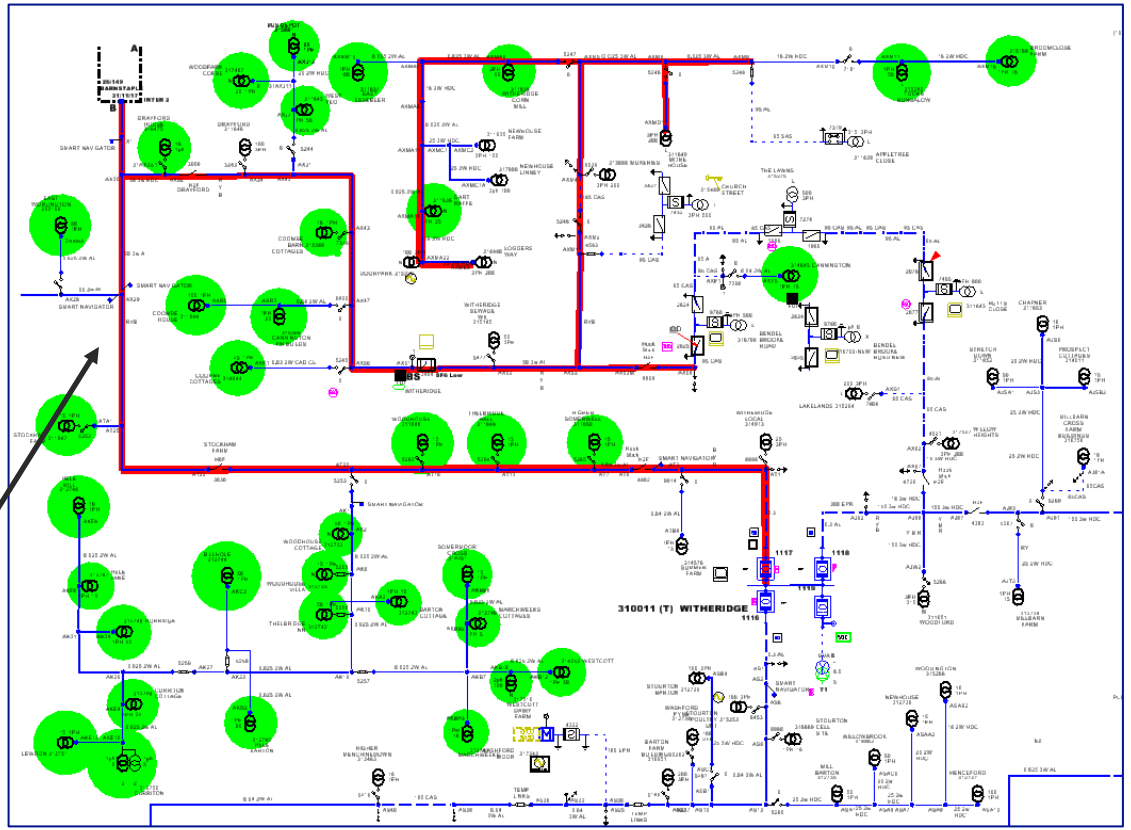
Monitoring equipment installed from our previous innovation project OHLPP has shown significant phase imbalance on some HV networks. Could this problem be much larger?



EIP120: Background

- Green indicates single phase TX
- Red indicates 3 phase feeder
- Rotation of phases is all that is displayed.



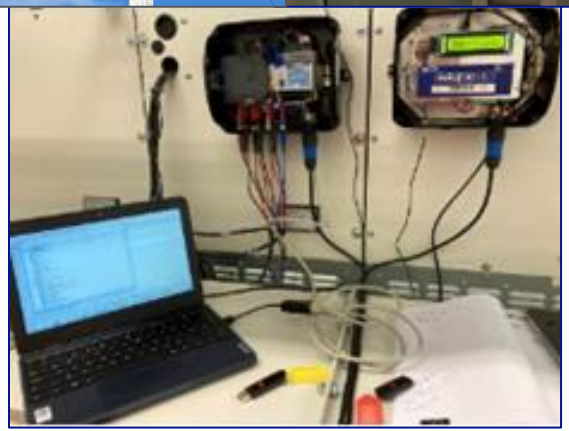


EIP120: Related Projects

Pre-Fix has examined availability of monitoring data available on HV networks and introduced further sophisticated data processing.

OHLPP has provided real time visibility of HV OH lines across all phases. Monitors connected directly to the conductors and offer real time visibility of Volts and Amps.

SMITN has identified LV connected customer phases using smart meter data.



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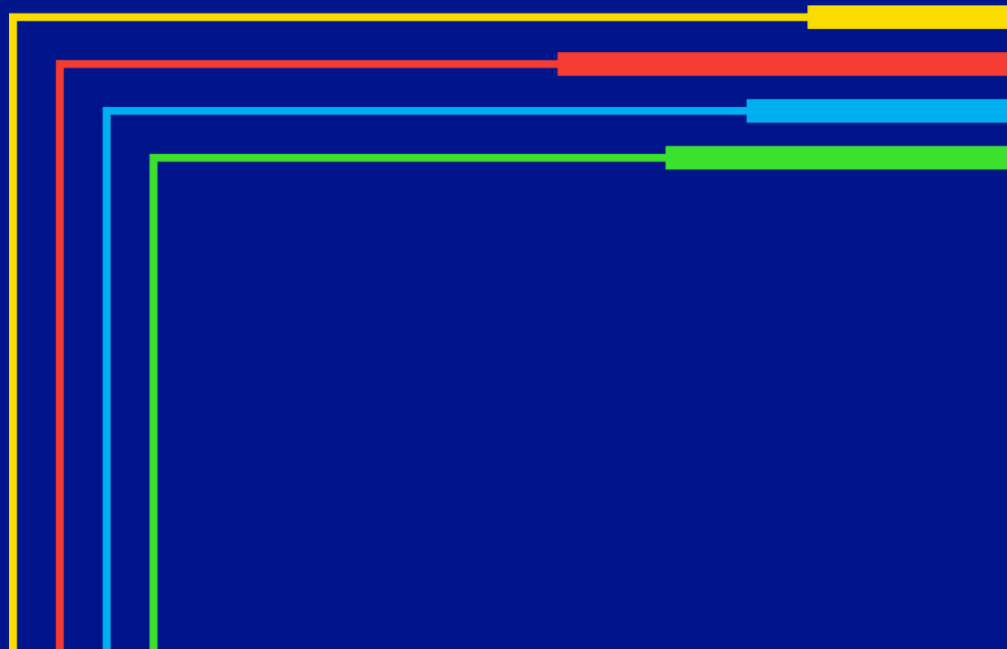
02

Expectations



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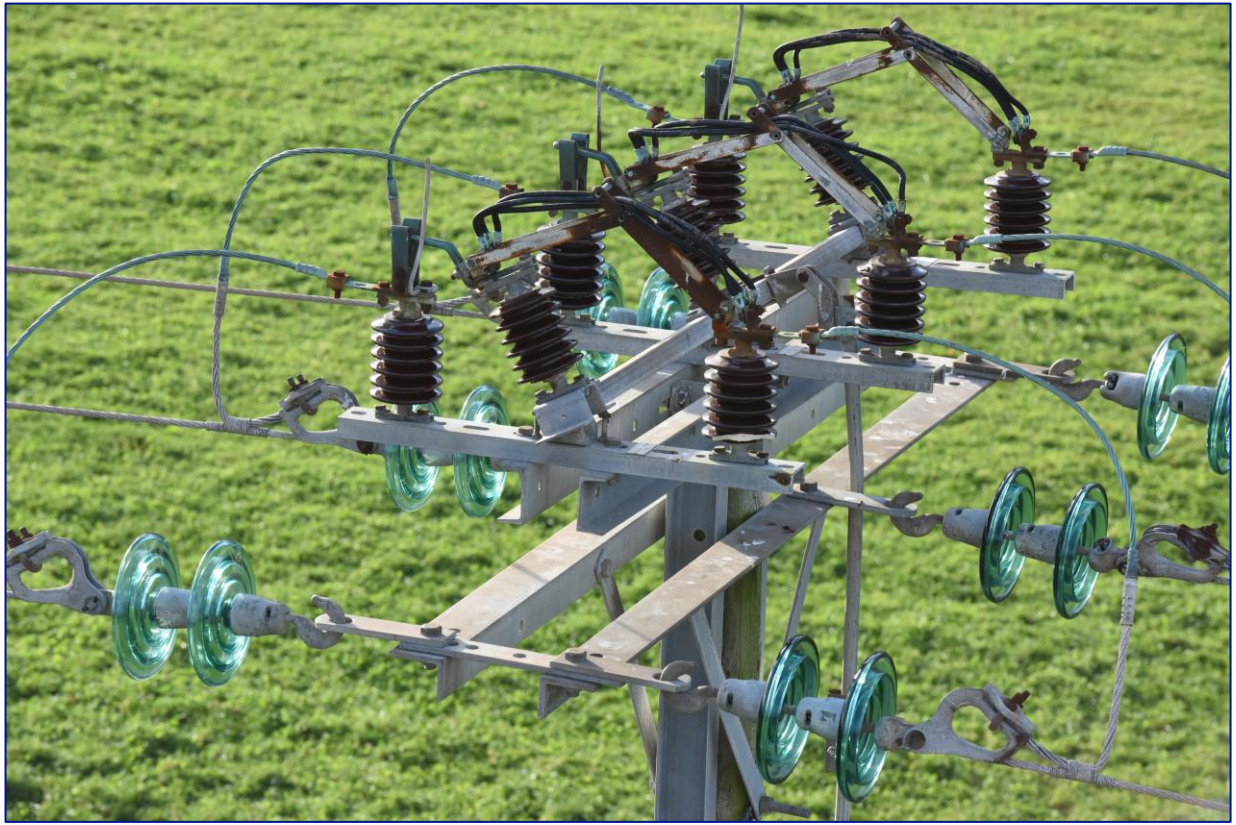
EIP120: Solution Expectations

- LiDAR
- Aerial Photography
- Satellite Imagery

EIP120: Solution Expectations

Example of high resolution image taken from one of helicopters on a routine patrol.



EIP120: Solution Expectations

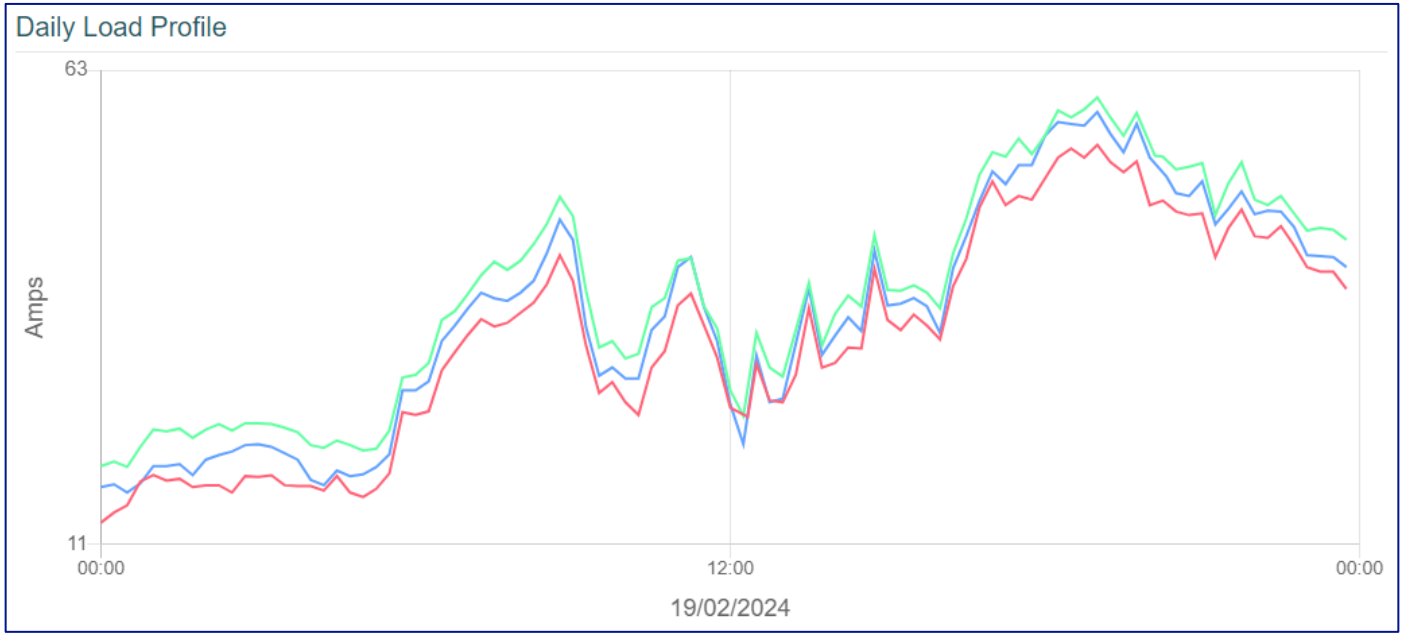
Example of single phase spur connected to a 3 phase system, using these high resolution images, we can clearly see the connection points on the two outer conductors.

EIP120: Solution Expectations

Example of a single phase transformer connected to a 3 phase OH line, again, on the two outer conductors.

EIP120: Solution Expectations

Using new techniques to identify how to distribute load evenly across the HV network to create a more balanced system.



EIP120: Solution Expectations

Balanced System =

- Increased network capacity
- Speed up connections
- Reduction of Losses
- Deferment of reinforcement
- Enabling LCTs in rural areas

EIP120: Solution Expectations

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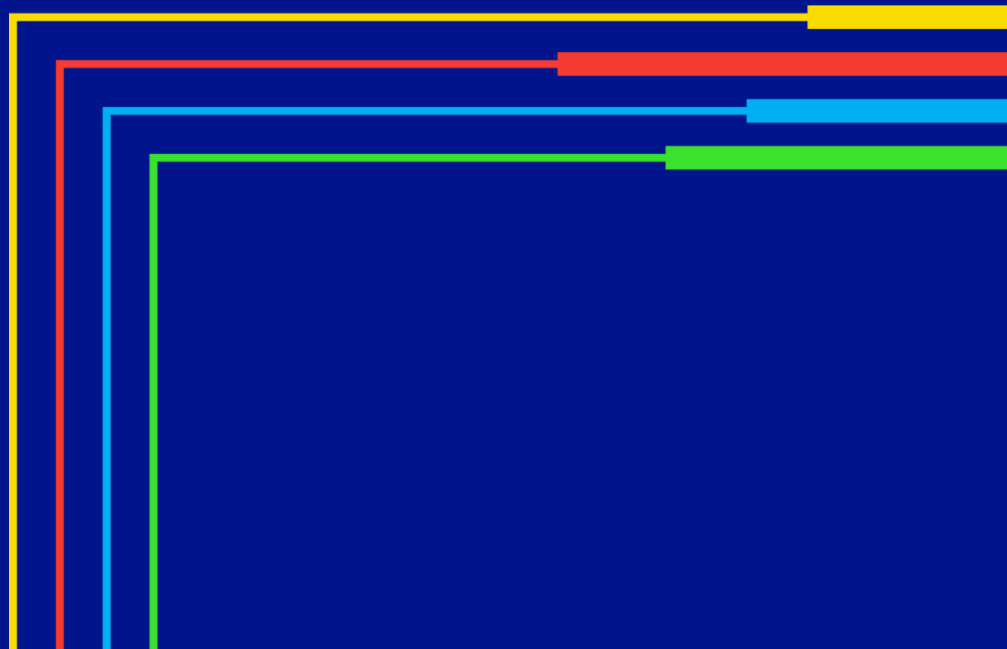
03

Contacts



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