EIP120 – HV Phase Connectivity

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Tuesday 5th March 2024
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01

The Problem
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.
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.
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

Cost effective

Utilises existing data

Utilises existing methods
## Contacts

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<tr>
<th>Data</th>
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