



LV Network Interventions

ENA Basecamp 2024 - Problem Statement EIP128

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About UK Power Networks



8.3M homes and businesses

28% of UK Total

9.3GW+ Distributed Generation Connected

32% of UK Total

16GW+ Peak Demand

28% of UK Total

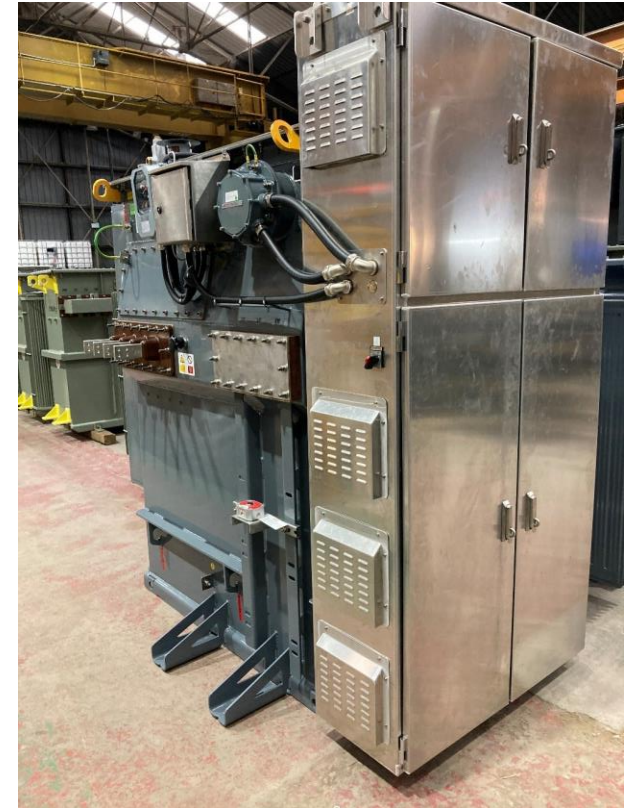
What is the problem?

- Low Carbon Technologies are being connected to our LV networks
- Both Overhead and Underground networks
- Our customers are better informed than ourselves
- Voltage constraints are occurring already
- Thermal constraints will eventually catch up

Solutions Electricity DNOs have tried

- Substation monitoring to prioritise investment
- ENW's Smart Street
- NGED's BEET demonstration in Boston Spa
- Energy storage solutions
- Voltage regulation solutions e.g. EcoVar
- Active Response – Capacity sharing
- Phase Switch System
- Stratus - AmpX 90kvar

- **Traditional reinforcement is a last resort**



What are we looking for?

- A full list of technical solutions to resolve voltage and thermal issues
- With a benefits case for each potential solution
- A decision tool to “fix once” approach with one, potentially more expensive solution or incremental improvement delivers best value

Things to consider

- This is a problem for all the DNOs
- LV networks are typically radial feeders
- Customers are distributed across three phases
- Some areas will face constraints earlier
- Solutions must be affordable

