

## Sensitive Voltage Detector

The following problem statement has been developed by the innovation teams within the UK's Gas and Electricity Networks for the 2024 Energy Innovation Basecamp.

**Theme: Building Better, Faster and Safer**

**Network Areas: Electricity Distribution**

### **What is the problem?**

To achieve a safe method of working UK Power Networks uses a four-pin earth nest – compared to a single pin earth - to achieve a 50Ω impedance for the circuit main earth (CME).

This value was established to ensure that a circuit breaker would trip when the CME is applied to the overhead line.

There have been a few occurrences where a point of isolation, involving a disc insulator, has failed and hasn't fully de-energised the circuit, resulting in the circuit breaker tripping. The linespeople were not able to identify this due to the sensitivity of the voltage detector being used. Existing HV detectors detect down to 3.5kV.

We need a more sensitive HV voltage detecting device that can reliably detect the presence of voltage below 1kV avoiding circuit breaker operation.

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### **What are we looking for?**

A device to reliably carry out voltage detection tests below 1kVA with a more sensitive HV Voltage detector, or a innovator prepared to develop such a detector to an agreed specification.

### **What are the constraints?**

The solution must:

- Attach to insulated rods using a universal head
- Provide a visible and audible warning in the event it detects voltage.
- Be fully waterproof.

### **Who are the key players?**

This solution will be adopted by UKPNs frontline Network Operations staff. In gaining approval for the method, we will also work closely with our Health and Safety and Standards team to ensure it can be safely deployed.

### **Does this problem statement build on existing or anticipated infrastructure, policy decisions, or previous innovation projects?**

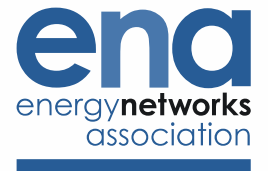
No.

### **What else do you need to know?**

No.

# Energy Innovation Basecamp 2025

## Problem Statement EIP145



Innovator submissions to this problem statement will be open [here](#) during March and April, but we encourage you to submit your response as early as possible, as networks will be able to review submissions as soon as they come in.

You can also use the virtual Q&A on the Smarter Networks Portal to ask for more information about this problem statement. Questions may be answered online or at the ENA Problem Statement Launch in March 2024. More information on last year's Basecamp programme can be found [here](#).