Innovation Basecamp 2026

4th February 2026 – Park Plaza, London

Introduction

Keep the lights on
by operating our network assets effectively

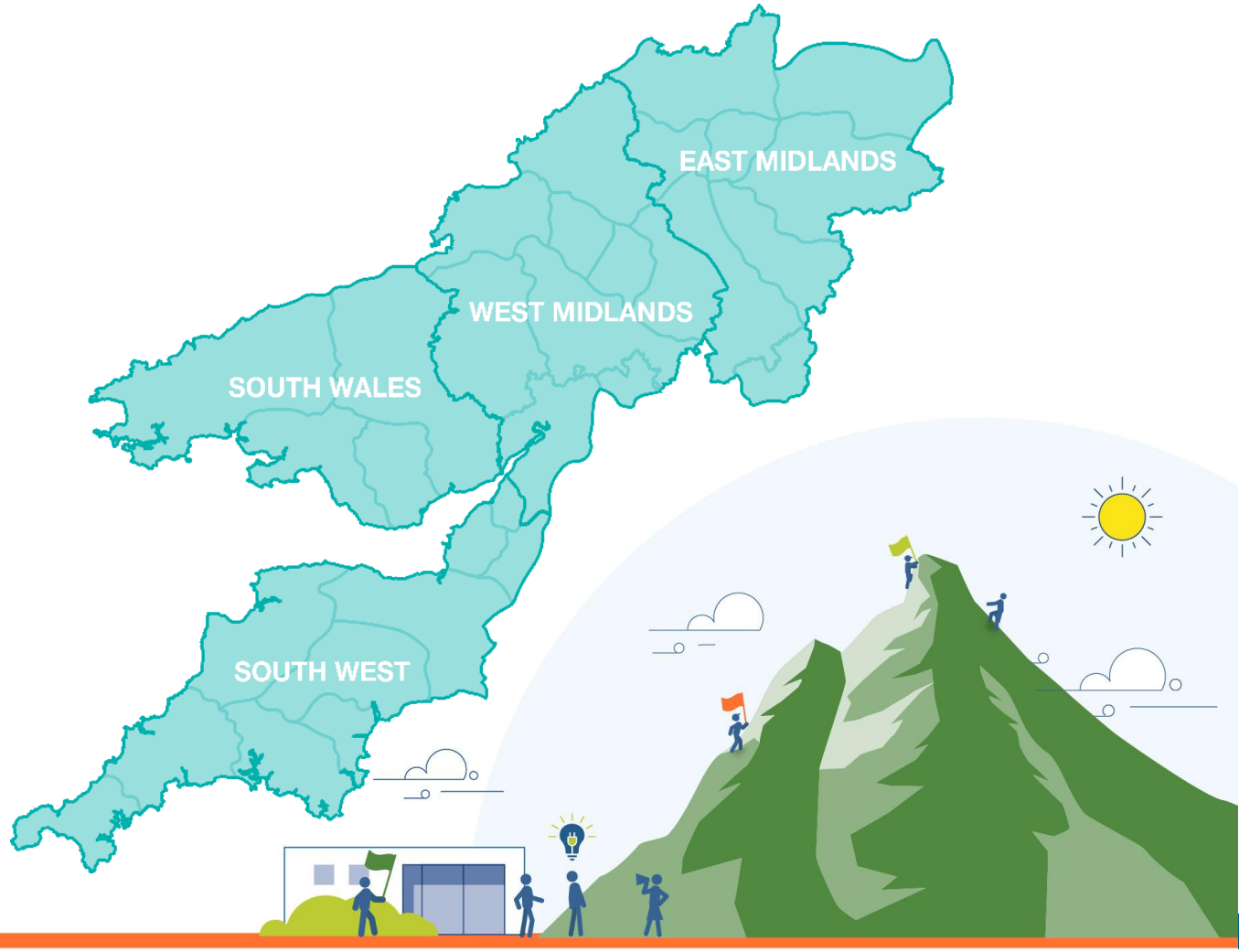
Maintain equipment
so that the network remains reliable

Fix the network
if equipment gets damaged or is faulty

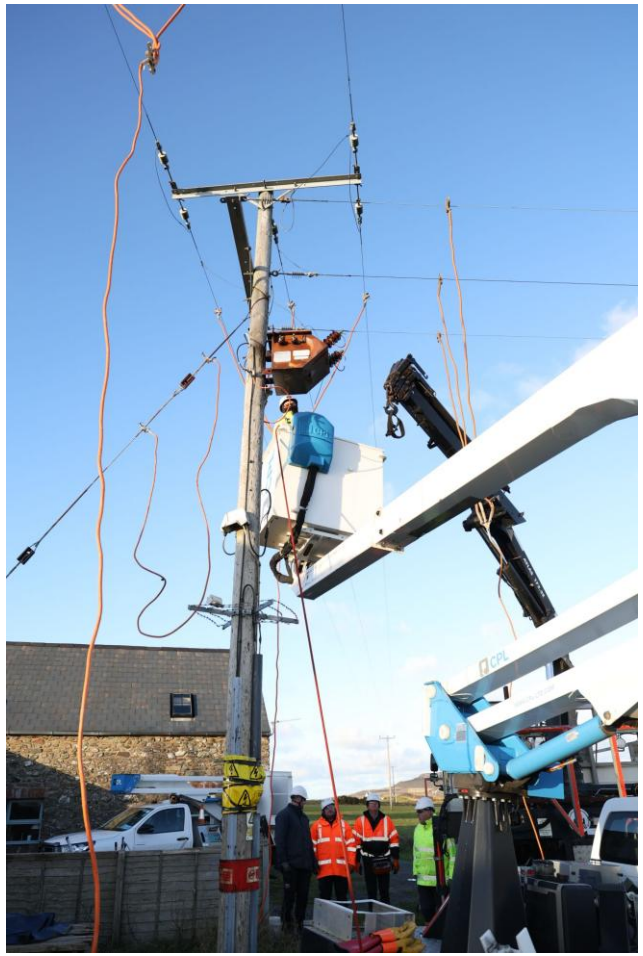
Connect customers
by upgrading existing networks or building new ones

Operate a smart system
by managing two way power flows and flexible services

We deliver electricity to eight million customers (27% of the UK population) over an area of 55,000km2 .



Background Information



We're seeing a trend of conductor drops and OHL joint failures where tree contact is not the cause across our 11kV and 33kV lines

Evidence suggests end-of-life deterioration is driving failures:

- **loss of mechanical strength, corrosion, fretting fatigue, legacy construction standards, ageing.**

Current methods (visual inspection + age-based modelling) do not provide direct, field-based evidence of mechanical condition.

What are the Problems?

Consequence of the evidence gap:

- can’t reliably identify highest-risk spans / jumpers / joints
- leads to unplanned outages, safety risk, and high emergency repair cost.

Relevant “what’s been tried / what exists already” (and the gap):

- Drone and OHL inspection trials: improved visibility, but still visual / geometry, not tensile integrity.
- LiDAR / high-res imagery: good for clearance/structure, not mechanical strength.
- Dynamic Line Rating: measures temperature/sag, not conductor/joint integrity.
- Predictive / analytical programmes (e.g., PROACTIVE): helpful prioritisation, but still lacking direct NDT-type inputs.
- Drone-based PD detection: electrical condition, not mechanical integrity.

Our Expectations

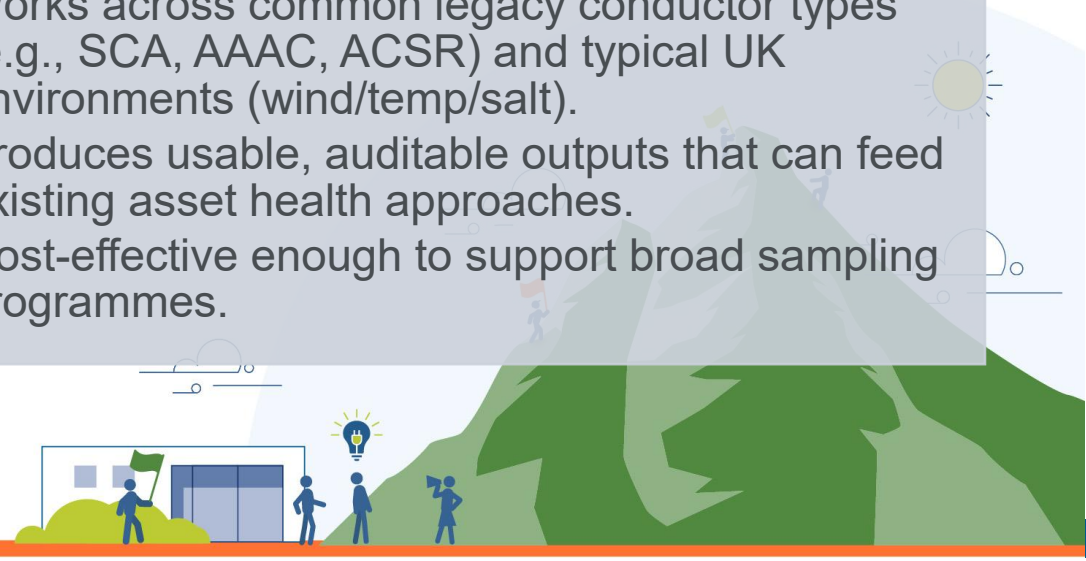
What are we looking for?

Solution expectations

- Non-destructive methods that can quantify degradation/mechanical health (examples welcome):
- magnetic flux leakage (ACSR), guided-wave ultrasonics, eddy current, acoustic emission, etc.
- Short-duration deployment (one-off measurement or temporary fit), ideally minutes not hours.
- Live-line / no planned outage operation.
- Deployment options that work in practice:
- drone-deployed clamp/payload, hot-stick/hot-glove, brief contact-on tests
- Applicable to legacy UK conductors and joints, not just new-build designs.

Non-negotiables

- Must directly measure (not infer purely from Artificial Intelligence/Machine Learning).
- Non-permanent install (no long-term fittings required).
- Must comply with live-working practices and relevant standards / ESQCR constraints.
- Works across common legacy conductor types (e.g., SCA, AAAC, ACSR) and typical UK environments (wind/temp/salt).
- Produces usable, auditable outputs that can feed existing asset health approaches.
- Cost-effective enough to support broad sampling programmes.



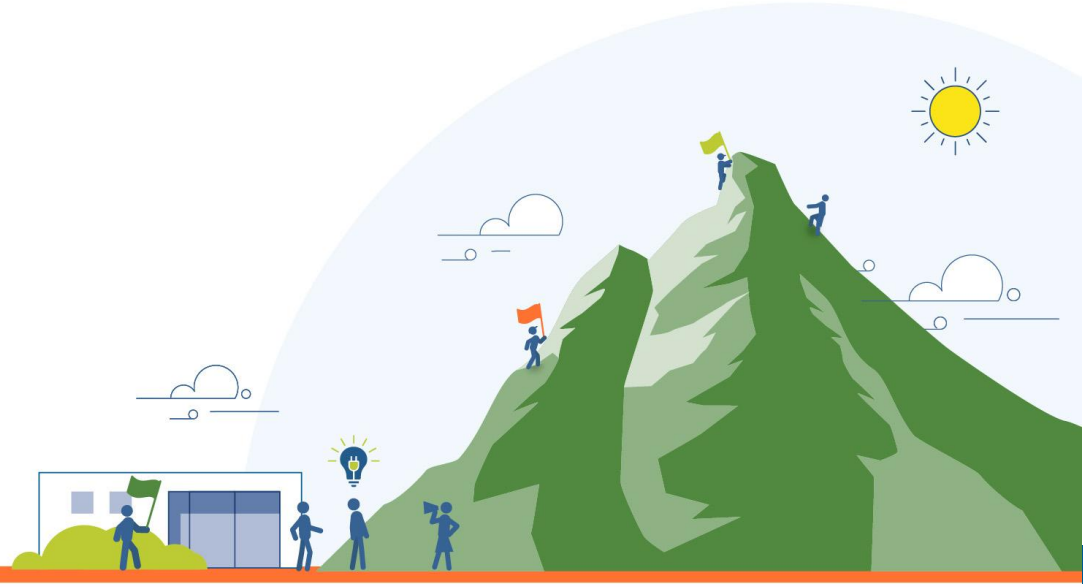
IMPORTANT

It is important for all innovators to note that we are looking for plans rather than just ideas as solutions.

Key Contacts:

- **For further information / Clarity:** nged.innovation@nationalgrid.co.uk

- **ANY QUESTIONS?**



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