Energy Innovation Basecamp 2026
Problem Statement EIP176

Future Workforce

The following problem statement has been developed by the innovation teams within the UK's Gas and Electricity Networks for the 2026 Energy Innovation Basecamp.

Theme: Net Zero Transitions Impact – Future Workforce

Network Areas: Electricity Distribution, Electricity Transmission, Electricity System Operator, Gas Distribution, Gas Transmission (Delete as Appropriate)

What is the problem?

What is the wider context of the problem described above? Are there any specific details to expand on? If the problem statement is phrased as a question, this section may end by posing that question back to the innovator.

The core problem is that the Distribution Network Operator (DNO) sector faces a strategic workforce challenge: customer demand for services is projected to outstrip the sector's ability to resource that demand using current ways of working. This means that, without significant innovation in recruitment and skills development approaches, the sector will struggle to deliver on its commitments, especially those related to decarbonisation ambitions. Key aspects of this problem include:

- **Ageing workforce** and limited capacity for effective knowledge transfer.

- **Shrinking talent pipeline**, worsened by reduced international mobility and ineffective relocation strategies. The sector is competing heavily with other large infrastructure markets for skills.

- **Evolving job roles** driven by AI, robotics, and data analytics, which are not yet reflected in current training or career frameworks.

- **Safety risks** in traditional field roles that could be mitigated through automation and immersive training technologies.

- **Disconnect between modern learner expectations** and traditional analogue work environments.

- **Need for massive network upgrades** to meet 2050 decarbonisation goals, requiring a skilled and adaptable workforce. Traditional hiring and apprenticeship models are not sufficient to meet future demand, partly because it takes up to four years for apprentices in craft roles to qualify and work independently. This creates a bottleneck in workforce capacity.

Wider Context of the Problem

This workforce challenge is set against a backdrop of rapid technological change and ambitious national goals:

- The sector is undergoing a whole-system transformation and technology will need to be used to reshape workforce models.

- There is an urgent need to accelerate the delivery of network interventions through AI and robotics.

- Critical engineering roles (e.g., Control Engineer, System Planning Engineer, HVDC Engineer) will evolve, requiring new career architectures.

- Safety and efficiency improvements are a priority, with automation and robotics expected to reduce risks and make the sector more attractive to new talent.

- The sector is keen to address social mobility, targeting talent in deprived communities and aligning with evolving apprenticeship models and government funding.

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What are we looking for?

What kind of solution do you want? What TRL are you looking for? Does the solution need to be operable at scale? Are you looking specifically for methods and techniques? Does the idea need to have been tested to a certain extent already? There may be A) and B) sections if there is a wider issue with different types of solutions being sought.

What kind of solution is wanted?

The challenge proposes an industry wide transformation of the Distribution Network Operator (DNO) workforce model. The focus is on leveraging AI, robotics, and immersive technologies to address workforce challenges, including recruitment, training, safety, and capacity. The aim is not just to evolve existing roles but to reshape the entire workforce structure to meet future needs, especially in the context of decarbonisation ambitions

Key solution areas include:

- Impact of technology on critical jobs (e.g., Control Engineer, System Planning Engineer, HVDC Engineer)
- Accelerating delivery of network interventions through AI and robotics
- Improving safety and training (automation, VR, AI agents)
- Promoting social mobility (targeting talent in deprived communities)
- Delivering tangible business value (cost avoidance, improved performance).

What TRL are you looking for?

We do not have an exact Technology Readiness Level (TRL). However, part of the challenge includes the need for AI-driven capacity release and the use of technologies such as GenAI, robotics, and immersive VR. There is an expectation that solutions should be robust enough to accelerate the delivery of fully trained, competent staff, and that traditional hiring alone is insufficient.

However the main crux of the challenge is the people and culture side; how do we ensure that we have the right workforce, in the right roles, with the right supporting technology to ensure that DNOs facilitate GB's economic and decarbonisation goals – and are not the blocker?

Does the solution need to be operable at scale?

Yes, a key part of the challenge is the need for solutions that can unlock capacity at scale. The emphasis is on scalable interventions that can address industry-wide challenges, not just isolated pilots.

Are you looking specifically for methods and techniques?

This challenge is open to a range of solutions, including methods, techniques, and technologies. We have no set solution in mind, however initiatives could include:

- Safe working on all jobs
- AI technical report agents
- PowerFactory optimisation agents
- Dynamic dashboards & emergency response
- Introduction of robotics for high-volume tasks

Does the idea need to have been tested to a certain extent already?

The challenge does not require that all ideas be fully proven, however there is a clear preference for solutions that are robust and have a fresh perspective.

What are the constraints?

There are no constraints. We appreciate it is a wide, far-reaching challenge, so are open to it being split up into more manageable chunks, but keeping the big picture in mind. One suggestion of breaking down the challenge is:

1. **Technological transformation of job roles:** Key engineering roles will evolve due to AI and robotics, requiring new career frameworks that anticipate future job architectures. This is a rare chance to not just alter existing job roles but look at whole system transformation of DNO job roles to meet the needs of the evolving low carbon network.
2. **Enhance safety and training:** Automation reduces risks in dangerous tasks; immersive VR and AI enable remote, tech-native training; how can robotics reduce risk.
3. **How do we recruit the volume of talent that we need to meet our decarbonisationtargets;** Can we use targeted recruitment that supports social mobility aligned with apprenticeship models and funding, helping to create jobs in our local communities. Do we start this talent pipeline now with school age children? How do we align this with forecast network development requirements and workload?

Who are the key players?

Who are the key stakeholders affected by this problem statement? Who will adopt this solution? Who benefits from the resolution? What sort of innovators are you trying to attract solutions from? Who is the target market for this problem statement?

Key Stakeholders

Distribution Network Operator (DNO) leadership and workforce — the challenge centres on a *industry wide transformation* of the DNO workforce model, so executives, functional leaders, planners, control room teams, craft/field staff, and enabling functions are all directly impacted.

Future Apprentices and trainees — long time-to-competence (≈4 years) and constraints on lone working put limitations on training capacity.

H&S (Health & Safety) stakeholders — safety risks in traditional field roles and the push to automate dangerous tasks make safety teams central.

Recruitment, Learning & Development, and workforce planning — the shrinking talent pipeline, evolving job roles, and modern learner expectations require new, attractive, training methods, and career frameworks.

Regulatory and performance stakeholders — benefits are framed against price control commitments and business delivery outcomes.

Target Market

We have no specific targeted innovators or market.

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

What are the links to previous or ongoing work? Where possible, please provide links to the SNP, individual pages on network websites describing similar work, etc. Are there any current or future dependencies? Are there any other enablers that innovators should reference or specifically build on in their proposals? Are there any solutions which have already been considered / trialled?

Where the challenge targets the workforce, there is interplay with a huge range of projects.

There are no specific enablers that innovators should reference or specifically build on in their proposals and there are no solutions which have already been considered / trialled.

Innovator submissions to this problem statement will be open on the Smarter Networks Portal from 4th February to the 13th March, 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 on 4th February 2026. More information on last year's Basecamp programme can be found on the Smarter Networks Portal.