

NIA Project Registration and PEA Document

Date of Submission

Aug 2026

Project Reference Number

NIA_SSEN_0087

Project Registration

Project Title

ELEVATE - Enhanced Learning Environment for Virtual & Accelerated Training Excellence

Project Reference Number

NIA_SSEN_0087

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

August 2026

Project Duration

1 year and 4 months

Nominated Project Contact(s)

Brian Wann, Innovation Delivery Manager

Project Budget

£302,643.00

Summary

ELEVATE will design, develop and trial an immersive (VR) based training and assessment platform with intention to streamline workforce training and assessment procedures within SSEN: the ability to scale Low Voltage (LV) cable jointer capability safely and at pace. ELEVATE covers the effective upscaling of training facilities, instructors and personal mentoring to aid the Increasing LV reinforcement, connections and asset replacement activity through RIIO-ED2. The project will supplement existing training and live working with structured VR scenarios mapped directly to the ST1332 Cable Jointer standard, accelerating time to competency and improving consistency of portfolio. By validating an integrated operational readiness model across both modern and legacy cable jointing, ELEVATE will generate transferable learning for wider GB DNO community on how immersive methods can unlock workforce capacity efficiently.

Third Party Collaborators

Academii

Nominated Contact Email Address(es)

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Problem Being Solved

SSEN is seeking opportunities to modernise and optimise the development of LV cable jointing competencies through the application of innovative immersive training and assessment approaches. Current competency development relies on a combination of classroom instruction, supervised practical experience and portfolio-based evidence gathered across a range of operational activities. The pace at which individuals gain exposure to certain safety-critical and specialist jointing tasks can vary, creating an opportunity to improve

consistency, standardisation and efficiency within the competency development process.

As future network investment programmes increase in scale and complexity, enhancing workforce development methodologies will help ensure skilled resources can be deployed safely and effectively across the network. This will support improved productivity, strengthened operational resilience and more efficient delivery of network programmes, ultimately benefiting customers through a safe, reliable and cost-effective electricity network.

Method(s)

The project will develop and implement an immersive Virtual Reality (VR) training and assessment platform designed to complement existing classroom-based learning and live operational working arrangements. The methodology comprises the following key elements:

- **Baseline Learning Integration**

- Align VR training content with existing training programmes, apprenticeship requirements and operational procedures.
- Use VR as a supplementary learning tool, alongside classroom instruction and practical workplace experience.

- **Progressive Learning Modules**

- Develop a structured series of VR training modules that build knowledge and competence in a staged manner.
- Introduce increasing levels of complexity to support learner progression from foundational concepts to advanced operational tasks.

- **Configurable Operational Scenarios**

- Create realistic, repeatable and configurable VR scenarios that replicate operational environments and work activities.
- Allow scenarios to be adapted to reflect different network conditions, asset types and operational challenges.

- **Mentor-Guided Learning**

- Incorporate a 'mentor mode' that provides contextual guidance, decision prompts and feedback throughout training activities.
- Support reflective learning by encouraging learners to explain and justify operational decisions.

- **Integrated Assessment Framework**

- Embed assessment checkpoints throughout each learning module to measure knowledge, decision-making and procedural compliance.
- Capture objective performance data and learner responses during scenario execution.

- **Capstone Simulation**

- Develop an end-to-end operational readiness assessment that combines knowledge and skills acquired throughout the programme.
- Use a comprehensive simulation exercise to validate competence across multiple operational activities and decision points.

- **Evidence Collection and Auditability**

- Generate structured evidence outputs from training and assessment activities.
- Ensure evidence is directly aligned to the ST1332 apprenticeship framework and compatible with existing portfolio and assessment formats.
- Maintain auditable records of learner activities, decisions and assessment outcomes.

- **Data Quality and Assurance**

- Use controlled VR scenarios to ensure consistency and repeatability of learning and assessment activities.
- Apply standardised assessment criteria and checkpoints across all participants.
- Implement quality assurance processes to verify the accuracy, completeness and reliability of captured training data.

- **Learning Evaluation and RIIO-2 Reporting**

- Use training performance data solely for learning evaluation and programme effectiveness purposes.
- Analyse learner engagement, progression and assessment outcomes to inform continuous improvement of training delivery.
- Provide structured reporting outputs that support RIIO-2 innovation project evaluation requirements while maintaining alignment with existing organisational processes.

Data Quality Statement (DQS): -

The project will be delivered under the NIA framework in line with Ofgem, ENA and SSSEN internal policies. Data produced as part of this project will be subject to quality assurance to ensure that the information produced with each deliverable is accurate to the best of our knowledge and sources of information are appropriately documented. All deliverables and project outputs will be stored in our internal systems with appropriate backup and version management. Relevant project documentation and reports will also be made available on the ENA Smarter Networks Portal and dissemination material will be shared with the relevant stakeholders.

Measurement Quality Statement (MQS): -

The methodology used in this project will be subject to supplier quality assurance regimes and the source of data, measurement process and equipment as well as data processing will be clearly documented and verifiable. The measurements, designs and assessments will also be clearly documented in the relevant deliverables and final project report made available for review.

Scope

The scope includes the development of:

- A suite of progressive VR learning modules aligned to operational procedures and the ST1332 Power Network Craftsperson apprenticeship standard.
- A mentor-guided learning environment incorporating decision prompts, coaching interventions and reflective learning opportunities.
- Embedded assessment functionality capable of capturing objective performance evidence throughout the learner journey.
- An integrated capstone simulation designed to validate end-to-end operational readiness and competence.
- Structured reporting and evidence outputs compatible with existing apprenticeship portfolio and competency management processes.
- Data collection and evaluation processes to assess learning effectiveness, training efficiency and scalability of VR-enabled workforce development.

The project will focus on demonstrating how immersive technologies can improve learning outcomes, standardise training delivery and provide robust evidence of competence without increasing operational risk or requiring additional live network exposure.

Benefits for Consumers

ELEVATE is expected to deliver benefits to electricity consumers through improved workforce capability, operational efficiency and network reliability.

Reliability and Service Benefits

- Increased exposure to realistic fault and emergency scenarios will improve workforce readiness and response effectiveness during network incidents.
- Faster competency development will strengthen workforce resilience and support the transition of new entrants into operational roles.

Safety Benefits

- Learners can practise high-risk jointing scenarios in a safe virtual environment before working on the live network.
- Improved procedural compliance and decision-making capability are expected to contribute to safer network operations.

Environmental Benefits

- Reduced travel requirements associated with some elements of conventional training delivery.
- Reduced reliance on physical training facilities and operational assets for scenario-based learning.
- More efficient use of resources through digital delivery and repeatable training environments.

Financial Benefits

ELEVATE is expected to generate financial benefits to the electricity distribution network through:

- **Reduced Training Costs:** Decreasing the requirement for repeated use of operational training sites, specialist equipment and instructor-led practical exercises.
- **Improved Training Efficiency:** Enabling more learners to access consistent training content without being constrained by operational asset availability.
- **Accelerated Competency Achievement:** Reducing the time required for apprentices and trainees to reach defined competency milestones and become productive members of the workforce.
- **Reduced Operational Errors:** Improved decision-making and procedural adherence are expected to reduce the costs associated with rework, incidents and operational inefficiencies.
- **Scalable Workforce Development:** Providing a platform that can be reused across multiple cohorts and operational disciplines, creating long-term efficiencies and reducing the cost of future training provision.

Objective(s)

- Develop and deploy an immersive VR learning platform for Power Network Craftsperson training.
- Accelerate competency development through structured VR learning pathways.
- Increase learner exposure to realistic operational and safety-critical scenarios.
- Enhance decision-making and procedural compliance through guided immersive learning.
- Implement a robust digital assessment framework capturing objective performance evidence.

- Validate operational readiness through immersive end-to-end competency assessments.
- Improve training consistency and quality through standardised VR experiences.
- Generate auditable evidence aligned to apprenticeship and competency standards.
- Increase training efficiency and scalability while reducing dependence on physical resources.
- Establish an evidence base for future adoption of immersive learning technologies.

Consumer Vulnerability Impact Assessment

See Figure 1 - there is no need to take mitigation measures

Success Criteria

Based on the previously defined objectives we can evaluate the success.

- Accelerate competency development through structured VR learning pathways - This will provide an alternative form of exposure for the learning to increase confidence in operational activities.
- Increase exposure to realistic operational and safety-critical scenarios - Key scenarios identified by SME will be implemented to improve realism to help solidify methods in a high-pressure environment.
- Improve decision-making and procedural compliance in a safe learning environment - Incorporate multiple scenario options and related outcomes to help the learner understand the importance of correct decision justification.
- Capture objective, auditable competency evidence through digital assessments - Map current evidence records to a digital solution based the learners immersive training behaviour.
- Validate operational readiness using immersive end-to-end assessments - Replicate current assessment protocol onto the immersive space allowing the assessor to score the learners understanding based on the virtual performance.
- Standardise training delivery to improve consistency and quality - Ensure the current training material is replicated, incorporating specialist trainer and mentor knowledge ensuring that each learner will exposure to the same resources.
- Align learning and assessment with apprenticeship and competency standards - Ensure that the immersive platform abides the ST1332 Cable jointing specification to ensure the same standard is met.
- Improve training efficiency, scalability, and use of resources - Identify best practice of roll out to ensure immersive learning is incorporated into learners current learning rota.
- Establish evidence to support future adoption of immersive learning technologies - Produce BAU transition plan and design blueprint of pipeline that can be standardised and integrated into operational learning scenarios.

Project Partners and External Funding

This project involves Academii Ltd as an external project partner. They are responsible for delivering and trialling the immersive platform, followed by evaluating the resulting analytics to assess performance, user engagement, and overall effectiveness.

Several SEN teams will be involved in the development and delivery of ELEVATE, including Training and Development, Learner management and Operational teams.

Potential for New Learning

The project will generate learning on the effectiveness of immersive training in accelerating technical competence, integrating simulation generated evidence into formal portfolio assessment, and scaling immersive methods across workforce development challenges. Learning will be disseminated through NIA reporting and industry forums.

Scale of Project

The project is intended to be rolled out in both SEPD and SHEPD Training schools. Although both regions have alternative requirements, essentially the need for new connection and fault remediation remains at high demand in both regions.

If the project only focussed on one region (either SEPD or SHEPD), the project risked unnecessary duplication costs for the same purpose and equally will aid with a smoother roll out process.

By executing a larger scale trial, we risk increasing the risk of uncertainty. By managing a smaller trial, we would have better controls over dependant variables and could better mitigate unforeseen external risks.

The project will focus on the current cohort of trainees entering the business, which will allow the project team to control timelines to suite the roadmap of the trainees. Timelines are adjusted to end the project after trainee assessment so results can be evaluated and presented by the team in line for BAU roll out to the next cohort of trainees.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

The project will be delivered within SSEN’s SEPD and SHEPD license areas, with training activity based at SSEN training facilities. Specifically, the trials will be split between Perth Training school in the North and Thatcham training school in the South.

Revenue Allowed for the RIIO Settlement

There is no funding available within the RIIO-ED2 settlement period to carry out this activity outside of NIA.

Indicative Total NIA Project Expenditure

The total project expenditure is expected to be £302,643.

Project Eligibility Assessment Part 1

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations

Please answer **at least one** of the following:

How the Project has the potential to facilitate the energy system transition:

This project facilitates energy system transition by streamlining the workforce pipeline to help accommodate a diminishing jointer market. ELEVATE enables increased LV reinforcement, connections and asset replacement required to support electrification and the energy system transition.

How the Project has potential to benefit consumer in vulnerable situations:

The project looks to reduce the time taken for SSEN to react to remedial network rectification which will ultimately benefit all customers (including vulnerable customers) by providing a more reliable and responsive supply.

Requirement 2 / 2b

Has the potential to deliver net benefits to consumers

Project must have the potential to deliver a Solution that delivers a net benefit to consumers of the Gas Transporter and/or Electricity Transmission or Electricity Distribution licensee, as the context requires. This could include delivering a Solution at a lower cost than the most efficient Method currently in use on the GB Gas Transportation System, the Gas Transporter's and/or Electricity Transmission or Electricity Distribution licensee's network, or wider benefits, such as social or environmental.

Please provide an estimate of the saving if the Problem is solved

n/a

Please provide a calculation and/or description of the expected benefits of the solution

Most benefits of this project derive from the estimated reduction of failures per cohort from 6 to 4. This allows us to make a prediction on savings of failed end point assessment to include assessor, materials, trainee travel, trainee down time, admin time, and support to prepare for reassessment.

So based on this:

- Trade test assessment with average of 2 day saving per learner = 8 day saving of assessor time
- Craft trainer cost at top range 7 = £41.15 per hour including 30% on cost total saving = £2436 (an 8-day saving ultimate reduces trainer cost reduces the total cost of trainer time by 30%.)
- Material cost circa = £600 per learner per LV assessment = 4 x £600 = £2400
- Saved assessor time manually reviewing portfolio evidence I think can be justified if we replace a proportion of this with activities which will be automatically marked – 2 days per learner = circa 40 x 2 days = 80 days saving = £24,360
- Savings for avoiding trainees overstaying the 2-year programme – if there are circa 40 per year and 10% overstay by 6 months – which results in unproductive time.

This allows us to forecast an overall saving of £3,574,040 over 10 years.

Please provide an estimate of how replicable the Method is across GB

This project aims to prove alternative training methods can supplement training methods and reduce time to competency. Also considering most to all DNO covering GB follow same or similar training processes, proving a successful trial, other DNO's can incorporate a personalised version of this workforce pipeline to best fit their systems. This will ensure a wider reach nationally of this new approach to training workforce.

Please provide an outline of the costs of rolling out the Method across GB.

The cost of rolling the method out across GB is dependent on the operation and maintenance arrangements of the rest of the GB network. An estimate of the roll out costs will be provided as part of the project outcomes.

Requirement 3 / 1

Involve Research, Development or Demonstration

Projects must have the potential to have a Direct Impact on a Network Licensee's network or the operations of the System Operator and involve the Research, Development, or Demonstration of at least one of the following (please tick which applies):

- ☐ A specific piece of new (i.e. unproven in GB, or where a method has been trialled outside GB the Network Licensee must justify repeating it as part of a project) equipment (including control and communications system software).
- ☐ A specific novel arrangement or application of existing licensee equipment (including control and/or communications systems and/or software)
- ☐ A specific novel operational practice directly related to the operation of the Network Licensees system
- ☐ A specific novel commercial arrangement

Involve Research, Development or Demonstration - Please select all that apply

- ☐ A specific piece of new equipment (including monitoring, control and communications systems and software)
- ☐ A specific piece of new technology (including analysis and modelling systems or software), in relation to which the Method is unproven
- ☒ A new methodology (including the identification of specific new procedures or techniques used to identify, select, process, and analyse information)
- ☐ A specific novel arrangement or application of existing gas transportation, electricity transmission or electricity distribution equipment, technology or methodology
- ☐ A specific novel operational practice directly related to the operation of the GB Gas Transportation System, electricity transmission or electricity distribution
- ☐ A specific novel commercial arrangement

Specific Requirements 4 / 2a

Please explain how the learning that will be generated could be used by the relevant Network Licensees

This project aims to prove the immersive training can be rolled out adjacent to practical learning to help streamline workforce capability. The learning generated through ELEVATE will provide valuable evidence and practical guidance that can be adopted by other Electricity Network Licensees facing similar operational and strategic challenges. The project will demonstrate the effectiveness of the proposed methodologies, technologies and processes in a live network environment, generating insights into technical performance, implementation requirements, operational impacts, customer benefits and cost-effectiveness.

n/a

Is the default IPR position being applied?

- ☒ Yes

Project Eligibility Assessment Part 2

Not lead to unnecessary duplication

A Project must not lead to unnecessary duplication of any other Project, including but not limited to IFI, LCNF, NIA, NIC or SIF projects already registered, being carried out or completed. Networks must explicitly mention similar projects that they have considered and how these differ.

Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

A review of registered innovation projects has identified no existing project addressing LV jointer workforce scalability through immersive, assessment integrated training.

This project significantly differs from the below SPEN-led projects in maturity, scope, and future direction.

- XR Facilitating Training and Operations (X-FacTOR) (https://smarter.energynetworks.org/projects/nia_spen_0085/)
- X-FacTOR Stage 2 (https://smarter.energynetworks.org/projects/nia_spen_0099/)

X-factor identified a number of targeted improvements through trial activities. While the project demonstrated value, further development and validation was required before full implementation.

ELEVATE is expected to achieve a higher Technology Readiness Level (TRL) through delivery of a complete proof of concept (POC), bringing together the VR training platform and supporting analytics into a single workforce integration solution. The project aims to demonstrate the potential for wider deployment while improving training assessment processes and broader workforce integration activities. In doing so, ELEVATE is expected to provide a strong foundation for operational adoption and support the long-term digital transformation of workforce training through AI-enabled capabilities.

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

Not applicable

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

This project has been explicitly designed to meet the Network Innovation Allowance (NIA) criteria and to avoid duplication of previously funded NIA activity. A review has been undertaken of projects registered on the Smarter Networks Portal.

Addresses a Clearly Defined Network Problem

- ELEVATE focuses on streamlining the workforce pipeline to help accommodate the pace of LV jointing requirements.
- Workforce capability and availability are critical enablers of safe, reliable network operation and delivery of RIIO-ED2 outputs.

Not Business as Usual (BAU)

Traditional jointer training relies on classroom learning, physical training facilities and opportunistic live work experience. The proposed use of immersive (VR based) simulation, embedded assessment and workforce progression analytics represents a step change from current practice. This approach carries technical, delivery, and learning risk that would not be funded through BAU training budgets, making it appropriate for NIA support.

Relevant Foreground IPR

The relevant foreground Intellectual Property Rights (IPR) we expect to generate in the project will be the methodology/methodologies that are deemed most suitable for digitally and remotely achieving the objectives of the project. We will ensure this is shared with all DNOs in a bid to have it benefit customers across all licence areas.

Data Access Details

For information on how to request data gathered in the course of this project, see SSEN Distribution's Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure at <https://ssen-innovation.co.uk/innovation-strategy/>

Please identify why the Network Licensees will not fund the project as a part of it's business and usual activities

Currently there is no room for funding this project in a BAU scenario due to budget constraints. However, once we have proved this Proof of Concept (POC) can be successfully developed, we will implement into BAU and use BAU funding. Expanding the capability of this form of immersive training proposes some risks which is not justifiable with BAU funding.

Please identify why the project can only be undertaken with the support of the NIA, including reference to the specific risks (e.g. commercial, technical, operational or regulatory) associated with the project

The project explores new analytic techniques based on Virtual Reality platforms which although initial feasibility studies have proved to be useful to accelerate learners, it still presents technical and commercial risks in development and deployment. This is derived from the current lack of training infrastructure to support this form of learning withing the training remit.

This project has been approved by a senior member of staff

☒ Yes