Scottish & Southern Electricity Networks
TRANSMISSION

SIF Alpha Round 3 Project Registration

Date of Submission

Feb 2025

Project Reference Number

10130442

Initial Project Details

Project Title

REVISE – Revisiting and Evaluating Environmental Inputs on Line Ratings

Project Contact

Katie Fergus – Innovation Development Project Manager

Challenge Area

Whole system network planning and utilisation to facilitate faster and cheaper network transformation and asset rollout

Strategy Theme

Optimised assets and practices

Lead Sector

Electricity Transmission

Project Start Date

01/10/2024

Project Duration (Months)

6

Lead Funding Licensee

SSEN - Scottish Hydro Electric Transmission

Funding Licensee(s)

SSEN - Scottish Hydro Electric Transmission

Funding Mechanism

SIF Alpha - Round 3

Collaborating Networks

National Grid Electricity Transmission

National Energy System Operator

Technology Areas

Overhead Lines

Electricity Transmission Networks

Project Summary

The primary focus of REVISE is revisiting the current methodology for assigning overhead line ratings. The calculation process uses historical environmental data captured in the 1980s that is applied uniformly across the UK disregarding local/regional climate variations. The existing transmission network is increasingly constrained by system capacity limits exacerbated by rapidly increasing renewable integration. Improving understanding of line ratings, using latest generation high-resolution weather topographic data combined with the latest techniques for system modelling, will allow for improved targeted investment to ensure we meet demand for the connection of new renewables to the network, and deliver a secure energy system.

Add Preceding Project(s)

10101698 - REVISE - Revisiting and Evaluating Environmental Inputs on Line Ratings

Add Third Party Collaborator(s)

Energyline Ltd

Met office

University of Strathclyde

Project Budget

£433,149.00

SIF Funding

£389,725.00

Project Approaches and Desired Outcomes

Animal testing (not scored)

- ○ Yes
- ◉ No

Problem statement

Problem Summary

The transmission network is increasingly curtailed due to limited amount of electricity that can be transferred by existing circuits; with curtailment costs expected to peak at £1-2.5 billion a year by 2025. REVISE proposes a novel technique to cost-effectively minimise curtailment. Overhead line (OHL) circuits in the UK are rated using the TGN26 methodology, owned by National Grid Electricity Transmission (NGET), which uses static environmental parameters developed in the 1980s and applied uniformly across the UK. An OHL located in southern England would have the same rating if it was located in the Scottish Highlands despite the variation in climate. Therefore, for many places within the UK, environmental parameters used to calculate the OHL rating are divergent from those present in reality. This Project address challenges of revising line capacity in three key areas:

1. Examination of the current methodology and identification of factors with greatest impact on rating.

2. For the critical factors, determine the regional environmental parameters that can be obtained via modern meteorological methods.

3. Calculate the potential increase or decrease in rating.

Problem Evolution

The Discovery Phase identified key environmental parameters (ambient temperature, wind speed, solar radiation) averaged over half-hourly periods were likely to have the greatest impact on static ratings. The current methodology does not consider solar radiation with further aspects of the methodology being undocumented and thus having no explanation. This increases the need for the Project as these omissions are a risk to the safe management of the network and a barrier to innovative products such as novel conductors and conductor finishes. Additionally, inclusion of solar radiation allows for the option of day and night ratings which could offer increases during winter nights where demand is often high.

Examination of meteorological methods helped to further define the challenges. Notably, different environmental parameters need to be combined before regionalisation can occur. The static rating is given by these parameters in combination, with different combinations having the potential to give the same static rating. A range of weather scenarios need to be explored to identify the critical combinations. This process will benefit from better quality and coverage of modern datasets along with improvements in data processing compared to the 1980's. Windspeed was identified as a particular challenge as datasets tend to focus on the probability of high wind speeds occurring, not low wind speeds. Therefore, the Project will need to carefully consider the validation of low wind speeds.

Finally, the assumption for safe pre-fault and post-fault ratings requires an understanding of how often a circuit operates in a postfault condition. The Project will need to determine the likelihood of post-fault situations occurring on the network to generate safe pre- and post-fault ratings.

Innovation Challenge

REVISE meets Theme 1 by using digital simulation of weather data to enable the calculation of regional circuit ratings. This gives network planners a tool to increase ratings, without the need for any physical network change, helping to reduce constraints and potentially eliminate the need for some system upgrades.

Users

Primary users of the innovation are Transmission Owners (TOs) and the Electricity System Operator (ESO). Consultation in the Discovery Phase helped the Project understand their needs. In summary:

- They supported the need to update the methodology after circa 40 years without a full review.
- Implementation would need to include all mainland UK TOs and the ESO.
- The format and type of data shown on rating sheets needs to remain the same.

Other Funded Work

White paper review by The University of Strathclyde looking at line uprating tools and methods that other countries outside of the UK have deployed.

Innovation justification

The current methodology used to calculate OHL ratings is over 40 years old and reliant on data from a single test site in southern England. REVISE is seeking to modernise the methodology using the latest accepted practice and build a process/tool enabling OHL ratings to be based on regional environmental data. This has the potential to unlock additional capacity in OHLs in northern England, Wales, and Scotland without the need for physical modification. This increased capacity, assumed for now to be between 2-5%, could reduce/remove constraint or eliminate the need for upgrades resulting in a faster, more cost-effective network transformation.

The Discovery Phase identified core challenges that require innovative thinking and practices to overcome:

- The meteorological data needed to calculate ratings is atypical, complex, and contrary to what is often studied (i.e. most interest is in high windspeeds, not low windspeeds). Innovative thinking, processing, and validation is required to enable the use of current meteorological data to produce realistic OHL ratings.
- Identifying the critical combination of environmental parameters to give a statistically safe OHL rating, whilst also being flexible enough to allow for innovative products/practices used elsewhere in the world, such as conductor coatings or day and night ratings, will require extensive simulations and assessment. The current methodology ignored or oversimplified certain parameters to negate the need for this research and is subsequently inflexible.
- The current methodology, TGN26, is not fully defined, with key aspects not recorded. The industry relies on a spreadsheet to produce the ratings without an understanding of key calculations and their justification. An innovative statistical review of post-fault occurrence across GB transmission is required to address this gap.
- Changing climate has never been considered in the rating methodology and guidance for future changes/updates to the methodology to react to climate change will need to be created.

The innovative, risky, and collaborative nature of this Project means it cannot be funded through BaU activities as it requires input from all TOs and ESO to deliver. The complexities of incorporating the latest generation of high-resolution weather topographic data, with the latest techniques for system modelling and resolving the missing steps used by the current methodology requires significant experimentation to generate a practical approach. Finally, whilst REVISE could have national-level benefits, the benefits for an individual TO are much harder to define and thus justify the investment. The SIF fund is wholly appropriate for this Project as it brings together industry and academia, representing the entire network.

Readiness Levels

The TRL of revising line capacity ratings using environmental data accurate to a line's location is 9, as this is already BaU. However, the innovative aspect of this Project is harnessing this proven technology and pairing it with the latest generation high-resolution weather topographic data combined with the latest techniques for system modelling to implement the solution within GB.

Through engagement with key stakeholders at Discovery, IRL2 was achieved. This will be built upon in Alpha through further engagement with all three TOs and ESO and Energyline's objective to ensure that the methodology is usable, and implementation is possible. The cost-benefit analysis will be further developed pushing the CRL to 4.

Counterfactual Solutions

The total cost of managing power flow constraints on the GB transmission system in 22/23 was £1.1billion (£740m on SSEN-T network). Failure to implement an update to the current methodology will result in continued, potential underutilisation of capacity in parts of the network and increased risk in other areas, along with retaining a barrier to innovative products such as novel conductors and conductor finishes.

Impact and benefits (not scored)

Financial - future reductions in the cost of operating the network

Environmental - carbon reduction – direct CO2 savings per annum

New to market – processes

Others that are not SIF specific

Impacts and benefits description

Current Position

REVISE offers quantifiable benefits, including potential savings from wind constraint costs and associated indirect carbon savings due to increased renewable energy transfer through the network.

Financial - future reductions in the cost of operating the network

By 2025, total UK constraint costs are expected to peak at around £1billion to £2.5billion a year which is ultimately paid by consumers. The total cost of managing power flow constraints on the GB transmission system in 2022/23 was £1.1billion (£740million on SSEN Transmission network).

The potential cumulative discounted net financial benefit of rolling out REVISE across the whole of GB is estimated as £28million at the end of 2031, reaching £227million by the end of 2050 (lifetime). These are the estimated benefits from the potential reduction of constraints. We estimated the potential benefits up to 2050 to be aligned with the offshore wind curtailment data published in the Future Energy Scenarios (FES) “Leading the Way” by National Grid ESO.

REVISE could also reduce connection costs by allowing smaller, wood pole lines, 132kV circuits, etc., and less costly overhead lines to be viable for many new connection schemes. This benefit will be quantified when data on new suitable projects is available, through CBA development at Alpha. Further consideration will also be given to connected equipment, such as cables and switch gear, and the potential impact this may have on costs.

Environmental - carbon reduction – indirect CO2 savings per annum

Assuming with REVISE, the line rating limitation of current transmission lines will be increased by 2% to 5% enabling more renewable energy to be transferred and reducing wind curtailment by up to 5%, we estimated the environmental benefits of this project. Offshore wind curtailment from 2026 to 2050 is projected in FES "Leading the way".

Carbon savings regarding reductions of carbon intensity of power grid are included as indirect carbon savings. The cumulative indirect carbon emissions saving is estimated at 140k tCO2e with a carbon value £34 million by 2050.

Other qualitative benefits include:

- Alleviating the constraint on renewable generation reduces the partial reliance on fossil fuels used to offset the difference.
- Circuit rating increase can be achieved with no physical works and the associated embedded carbon involved.
- May enable smaller renewable schemes to connect without the need to wait for further infrastructure works, helping to progress the connection queue.
- May remove the need to upgrade/replace circuits following a connection request.

New to market - processes

The Project focusses on the implementation of an updated methodology for calculating OHL ratings into BaU deployment. This will replace the existing methodology (TGN26) that was developed in the 1980s and utilises data captured in one UK location (Leatherhead) over 40 years ago. The revision of updated input parameters to the rating calculations, as well as potential changes to seasonal periods and the potential adoption of a new regionalised approach, will be rolled out across the GB network.

Others that are not SIF-specific

REVISE will offer the opportunity to improve the reliability and safety of the network. Firstly, by identifying circuits that, using the current rating methodology, are at risk of exceeding their safe operating temperature, and thus may put the public and network at risk. Secondly, increasing the post-fault rating of circuits enabling the network to recover demand more quickly in the event of a

fault; compared to having to wait for a circuit under outage to be reinstated.

Overall, REVISE will lead to a more flexible and adaptable network.

The cost-benefit analysis will evolve during the Alpha Phase as we move into Beta Phase planning.

Teams and resources

SSEN-Transmission (SSEN-T) lead an exceptional team with five Partners to deliver this coordinated innovation. We have successfully collaborated with all Partners, building positive and productive working relationships from previous SIF and other large-scale projects, including the Discovery Phase of this Project. Partners are key players and leading experts within their field and are best placed to work on this Project.

Lead

SSEN-T is best placed to lead this Project because its network extends over some of the UK's most challenging terrain facing extreme weather and altitude. SSEN-T is focused on developing real-world solutions to support cost-efficient asset intervention planning and decision-making and is well placed to adapt into BaU at Project conclusion. SSEN-T will lead WP1, WP3, and WP7.

Project Partners

The **University of Strathclyde** is an internationally leading technological and research-intensive university with a substantial track record of successful collaborative research in areas of advanced electrical power systems, HV engineering, power electronics, energy conversion, and engineering data analytics. Strathclyde will lead WP6 and contribute to WP3.

The Met Office is a world-leading meteorological organisation, responsible for UK weather observation data and forecasts and provides the global standard in climate change data. They have strong partnerships with other environmental data providers and a good understanding of its data users and their needs. Met Office will lead WP4 and WP5.

Energyline is an established multidisciplinary engineering consultancy in transmission and distribution design. With 20+ years of knowledge and experience of OHLs and underground cable design schemes, they have the expertise and skills to make a significant contribution to the Alpha Phase and will lead WP2.

National Grid Electricity Transmission operates the transmission network in England and Wales with extensive experience in leading innovation projects within areas of digitalisation, asset management, and network condition monitoring and will contribute to WP2, 3, 6 and 7.

National Grid ESO is the system operator for the GB Transmission System and have a large pool of electrical power system engineers, with a wide range of experience in the planning, operation, and performance evaluation of the GB Transmission System and will contribute to WP2, 3, 6 and 7.

The inclusion of NGET and NGESO as Partners means that this Project has a strong foundation to develop BaU integration with input from multiple Network Partners during Beta Phase.

Additional external parties

Scottish Power Energy Networks (SPEN) are observing this Project and have expressed interest in joining the consortium at the Beta Phase. SPEN's interest demonstrates sector-wide support for this Project, and strong alignment and buy-in from all GB transmission Network Owners.

Gilytics, one of the Discovery Phase partners, who offered their expertise across Discovery WP1 and WP2 will sit out of the Alpha Phase. It has been agreed that their expertise is likely to suit the Beta Phase better and therefore will be re-engaged during Beta planning. Through Alpha they will keep informed as a Project observer.

Project Plans and Milestones

Project management and delivery

Project Management Approach

SSEN-T will follow its well-established robust and proven Project Management processes successfully applied to all previous SIF Projects as well as other Innovation Projects. Alpha Phase Projects will be run by applying an agile, flexible, and adaptable approach throughout the Project. This process is audited and compliant with the SIF Governance document. We have a dedicated SSEN-T SIF process document (Internal reference:PR-NET-GOV-532) that has been refined by the results of a recent internal audit conducted by the SSE Group Audit Team and will be followed throughout SIF Projects.

The Project is divided into 7 work packages:

WP1: Project Management (Lead – SSEN-T) (SIF funding request: £97,498.83)

WP2: Moving Closer to Real-World Application (Lead – Energyline) (SIF funding request: £46,660.18)

WP3: Understanding and Evaluating Exceedance (Lead – SSEN-T) (SIF funding request: £28,172.92)

WP4 Understanding Worst Case Weather Scenarios (Lead – Met Office) (SIF funding request: £58,396.10)

WP5 Weather Data Validation (Lead – Met Office) (SIF funding request: £50,969.84)

WP6: Methodology Development (Lead – University of Strathclyde) (SIF funding request: £75,087.72)

WP7 Cost Benefit Analysis Development (Lead – SSEN-T) (SIF funding request: £32,940.83)

Risk Management

A list of risks has been compiled by the Project Partners within the Project Risk Register. Regular reviews will be held to track and update the Risk Register. The risks cover technical, management, and commercial aspects of the Project. The main risks and associated mitigation are:

- Not having alignment and buy-in from all the TOs and the ESO could impact the success of the Project. To mitigate this, the lead partner (SSEN-T) has continued collaboration with NGET and ESO, both remain partners on the Project for Alpha. SPEN were also approached and are participating in Alpha as a Project supporter and intend to join as a formal partner at the Beta Phase. This is key for Project success and roll out to business as usual to ensure that the updated methodology is well informed taking into consideration the specific requirements of each TO.
- It was flagged in the Discovery Phase stakeholder engagement that there is the potential reputational risk if it were to be asked why we haven't done this work sooner to review our line ratings. To mitigate this risk, the customer team at SSEN-T were made aware of the REVISE Project and there will be close collaboration in future Phases to ensure external messaging is considered and informed appropriately. The same is true for the other networks involved.
- Targeted data not being available or taking too long to access. To mitigate this risk key internal and external contacts will be identified and early contact will be made to request access/approval to access the data.

Planned or unplanned supply interruptions

This Project will not lead to any planned or unplanned supply interruptions for consumers and therefore will not have a detrimental effect on the consumer and will not require access to the electricity or gas network.

Energy Consumers Interactions

Whilst there is no direct consumer contact anticipated, the Project will help to identify lines that can be uprated, and therefore increase capacity over existing lines contributing towards the transition to Net Zero, improving system efficiency and reducing connection delays. Conversely, it may highlight lines that require downrating which is equally important to promote a safer network and support longer-term system reliability by reducing future curtailment.

Key outputs and dissemination

Key Outputs

The top-level output of the Alpha Phase will be a revised methodology based on validated weather data that will be used to process a handful of lines, either in one region or one from each TO boundary, to determine the estimated change in line rating that will be achieved using the REVISE approach.

The outputs on a work package by work package basis are:

- **WP1:** An Alpha Phase that is completed as defined in the submission documentation and that meets the Project Direction (SSEN-T).
- **WP2:** An understanding of conductor heating and cooling rates, the limits of the parameter that are input into the heat balance equations. Design consideration to ensure that the REVISE methodology is pragmatic and can be practically deployed (Energyline).
- **WP3:** Identification of historical exceedances of existing overhead line ratings, and evaluation of the magnitude and frequency of exceedances on existing circuits across the GB transmission system (SSEN-T, NGET, ESO).
- **WP4:** An understanding of the worst-case weather events required for the calculation of static line ratings by producing a set of weather data plots and example data. This will be applied to up to four sites to understand spatial variability (Met Office).
- *WP5:* Validation of how well gridded modelled weather data captures worst-case weather scenarios developed in WP4. If there are deficiencies, then these will be corrected (Met Office).
- **WP6:** A proposed methodology for translating weather data into revised static line ratings and production of prototype line ratings for a representative number of sites or lines (University of Strathclyde).
- **WP7:** Cost estimate for REVISE solution plus a further developed CBA, compared to the version submitted as part of the Alpha application (SSEN-T).

Dissemination Opportunities

The methods for dissemination of the key outputs, shared as summary versions that respect commercial sensitivities, are:

- Each organisation has its own corporate website which is a platform for sharing the outputs of the Project.
- Alpha ‘Show and Tell’ Webinar, expected to take place following Project completion.
- Publication of key Project documents on the ENA Smarter Networks Portal which is publicly available.
- Energy Innovation Summit Autumn 2025: All networks would plan to attend this unique UK event to potentially present a poster showcasing the findings of the REVISE Alpha Phase.
- Attendance at industry and research conferences such as the IET and CIGRE conferences.
- University of Strathclyde (UoS) Research group newsletter.

The Project team will work collaboratively to ensure the key targeted outputs are delivered and the knowledge learned is disseminated via suitable routes and platforms.

Competitive markets

There are no activities or outputs in the Alpha Phase that will prevent other networks from procuring similar services from other parties.

Commercials

Intellectual property rights, procurement and contracting (not scored)

The Intellectual Property Rights (IPR) arrangements will be defined in the Alpha Phase Collaboration Agreement (CA), with the starting position being the terms agreed in the Discovery Phase. The latter is based upon those recommended in Chapter 9 of the latest SIF Governance document (v2.1). The CA includes a schedule where Background Intellectual Property is to be declared to help ensure there is transparency across the Partnership.

Any IP generated within the Alpha Phase will follow the terms laid out in the executed Collaboration Agreement. To reach a consensus on the Collaboration Agreement early in the Project, it will be issued before a funding decision has been announced to allow Partners time to review the document and provide feedback before the Project starts, should the application be successful.

All Partners will log any Background IP throughout the Alpha Phase.

Procurement/Contracting

No procurement or subcontracting will be needed for delivery of the Alpha Phase.

Commercialisation, route to market and business as usual

The REVISE Project's overarching aim is the implementation of an updated methodology of calculating overhead line ratings into business as usual across all GB transmission parties. The revision of updated input parameters to the rating calculations, as well as potential changes to seasonal periods and the potential adoption of a new regionalised approach, needs to be rolled out across the whole GB network.

Agreement to adopt the new methodology will be required between the System Operator; National Grid Electricity System Operator (NGESO), and the three GB Transmission Owners; Scottish and Southern Electricity Networks Transmission (SSEN Transmission), Scottish Power Energy Networks (SPEN), and National Grid Electricity Transmission (NGET).

Within the Discovery Phase, Work Package 3 focussed on stakeholder engagement with key identified teams within NGESO, NGET, and SSEN Transmission. Agreement across all GB transmission parties on the rollout and adoption of a new methodology was a common theme from the engagement and seen as critical to a successful transition to business as usual.

NGESO, NGET, and SSEN Transmission are all partners on the REVISE Project. An action that emerged from the stakeholder engagement work package in the Discovery Phase was to engage with SPEN for Alpha and Beta. SPEN have subsequently provided a letter of support for the REVISE Project. They will join the Project in an advisory capacity during Alpha and intend to join the Project as a formal partner for the Beta Phase. Having all relevant transmission parties involved in and supporting the Project in the Alpha Phase will ensure that any potential barriers to the updated methodology being adopted across GB are flagged and addressed in the Project.

Senior Stakeholders/Sponsor Involvement

Senior Stakeholders at SSEN-T who lead functions across the business including Asset Management, Operations, Project Engineering, Project Development, Finance, IT, and Systems Planning have been involved in the internal review process for gaining approval to submit this application. They have shared their feedback and expertise which have been accounted for during the creation of the application for this Project. Peter McKessick, Head of Project Development is the named Senior Sponsor for REVISE and is in support of this application.

Policy, standards and regulations (not scored)

All Transmission Owners and the System Operator need to agree to the new methodology in order for the REVISE Project to progressed to business as usual, and this should be done through the rollout of a new or updated methodology document.

TGN 26 is owned by NGET and is the current methodology for how overhead circuit ratings are calculated. This methodology will need to be updated in order for this Project to be progressed to business as usual. This is not a national standard but is common

practice that all TOs utilize this methodology.

If an agreement from all transmission parties is not reached and therefore a revised methodology document is not developed and published, then there will not be a successful outcome from this Project to business as usual.

NGESO, NGET and SSEN Transmission are Partners on this Project, and SPEN are joining the Project at Alpha Phase in an advisory capacity. This will help mitigate the risk identified above. All TOs in agreement that TGN26 requires updating and the intention is to do this collectively, however, each TO has the discretion to adopt their own version of this guidance based on the outcomes of REVISE. The ownership of TGN26 may also sit better with Energy Networks Association as opposed to NGET. This is something REVISE will fully address in the Beta Phase as part of new work package on implementation.

Moreover, within Work Package 3 from the Discovery Phase, stakeholder engagement, it was indicated that not having clear and consistent documentation could be a barrier to implementing a new methodology to business as usual. To mitigate this, work will be well documented, clear and will take a consistent approach. In addition, the format of any new methodology as well as updated rating sheets will be a consistent format where possible.

There will be no change to the conductor's maximum operating temperature (MOT) as a result of the updated methodology for calculating overhead line ratings. Therefore, no change to any standards, such as Health and Safety Executive (HSE) standards or Electricity Safety Management Regulations (ESMR) standards, would be required. However, fears around an increase in MOT were raised by stakeholders during the Discovery Phase. This misunderstanding will be formally addressed during Alpha Phase and closed out.

Value for money

Project Costs

The total Project cost for the Alpha Phase is £433,149. The Project is requesting £389,726 of funding (90% of the total cost), with the remaining £43,423 (10%) being provided by internal contributions, demonstrating commitment to this highly innovative Project, satisfying the minimum 10% compulsory contribution and leading to outcomes that provide value for money to the consumer.

SSEN-T costs are £66,983 to lead this Project and manage the delivery of work. SSEN-T is requesting £60,284 of funding and will contribute £6,699 (10%). SSEN-T will lead (WP1) Project Management, (WP3) Understanding and Evaluating Exceedance, and (WP7) Development of Cost Benefit Analysis and Beta Application.

The University of Strathclyde's costs are £90,622, with a funding request of £81,560, and a contribution of £9,062 (10%) to lead the Methodology Development (WP6) and contribute to WPs 1, 3 and 7.

Energyline costs are £53,400, with a funding request of £48,060, and a contribution of £5,340 (10%) to lead Moving Closer to Real-World Application (WP2) and contribute to WP6.

National Grid costs are £28,229 with key inputs in WPs 1, 3 and 7, with a funding request of £25,406, and a contribution of £2,823 (10%).

National Grid ESO costs are £27,734 with key inputs in WPs 1, 3 and 7, with a funding request of £24,960, and a contribution of £2,774 (10%).

The Met Office costs are £166,181 with a funding request of £149,455, and a contribution of £16,726 (10%) to lead Understanding Worst Case Weather Scenarios (WP4) and Weather Data Validation (WP5). This is the highest cost as it involves significant and complex data modelling across two work packages.

Value for Money

The spread of costs across the Project Partners is proportionate to the amount of work they are delivering. SSEN-T and the Project Partners' rates are competitive and consistent with previous SIF Innovation Projects and in full accordance with the terms set out in the UKRI costs guidance. Therefore, these are cost rates without profit that offer more competitive rates than standard industry rates that the Partners would apply to commercial work.

REVISE is an ambitious Project and will bring together a consortium of leaders within their fields. The consortium has carefully prepared the Alpha Phase Project plan and work packages, using their expertise to define each deliverable and ensure Project

REVISE fulfils the scope and delivers quality output and value for money for the consumer, by:

1) Providing a cost-effective solution to network reinforcement, reliability and stability.

2) Maximise the potential to connect new energy Projects more efficiently and effectively.

3) Avoid duplication of effort by bringing together key players.

We are confident that the estimated benefits of the Project significantly outweigh the cost. The benefits to the consumer of the Project have been calculated as part of the Alpha Phase through the development of a Cost Benefit Analysis. Currently, curtailment costs are expected to peak at £1-2.5 billion a year by 2025. The estimated potential benefit of implementing REVISE across the whole GB network is £28m by the end of 2031, projected to reach £227million by the end of 2050, providing excellent value to the consumer.

Alpha and future Beta Phase are realistic and achievable and will aim to realise solutions ready for adoption as BaU by Network Owners to significantly improve operations and resilience delivering value for money.

Any use of pre-existing assets or facilities

The Met Office will be utilizing Site Observation Data for WPs 4 and 5, which includes sensors, and SSEN-T will be utilising historical exceedance data from Overhead Line sites, providing value for money.

Associated Innovation Projects

- (•) Yes (Please remember to upload all required documentation)
- ( ) No (please upload your approved ANIP form as an appendix)

Supporting documents

File Upload

REVISE_Show and Tell_Alpha_April2025.pptx - 7.4 MB
REVISE-SSE-WP03-01 (Rev.01).docx - 380.1 KB
REVISE_alpha_phase_WP4_report_final (1).pdf - 3.4 MB
REVISE_Alpha___WP6 Final_Report.pdf - 1.1 MB
90SS1354-REP-003 - WP6 Wind Farm Connection SLR Issue01 20250405 (1).pdf - 3.9 MB
90SS1354-REP-002 - Alpha WP2 - Moving Closer to Real World Issue 1 20250418.pdf - 3.3 MB
SIF Alpha Round 3 Project Registration 2025-02-20 3_15 - 96.2 KB

Documents uploaded where applicable?

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