SP Electricity North West

BiTraDER

Project Progress Report 4

Version

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Approval

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Contents

Glossary

ANM	Active Network Management - The use of distributed control systems to continually monitor network limits and provide signals to curtailable connections or flexible services to modify outputs in line with these limits.
API	Application Programming Interface
BAU	Business As Usual
CMZ	Constraint Management Zone – An area of the network where ANM is used to manage local constraints
Connectee	Any individual or company connected to the electricity distribution network
Constraint	A demand greater than network ratings or voltage outside statutory limits. In this definition demand is used in the context of the load on the network (including generation).
Curtailable connection	Connection arrangements which allow Electricity North West to signal, in real time, a curtailment of demand or generation when there are network overloads or restrictions affecting the network local to the connectee whilst the network is operating in an intact, system normal state. Connectees will generally be given a curtailable connection where offering a non-curtailable connection would require network reinforcement which has cost and time implications on them being connected
Curtailment	The turning off, or down, of a connectee's import or export to alleviate a constraint based upon contracted and agreed principles of available capacity
Curtailment obligation	The requirement for a connectee to provide curtailment. The specific details of this requirement will be stated in their connection agreement
DNO	Distribution Network Operator – An organisation that owns, operates and manages the electricity infrastructure that distributes electricity from the transmission network operated by NESO, to end users (commercial and domestic properties)
DSO	Distribution System Operation – The systems and processes needed to operate energy networks in the net zero carbon future
Demand connection	An asset that is connected to the distribution network and requires import supply
Demand increase (flexible service)	A connectee providing a flexible service where the outcome is an increase in demand (this could be provided by either generator reducing export, or a demand connectee increasing import within their maximum import capacity limits)

Demand reduction (flexible service)	A connectee providing a flexible service where the outcome is a reduction in demand (this could be provided by either generator increasing export within their maximum export capacity limits, or a demand connectee reducing import)
SP ENW	Scottish Power Electricity North West
Flexibility	The modification of generation injection and/or consumption patterns, on an individual or aggregated level, often in reaction to an external signal, to provide a service within the energy system
FMAR	Flexibility Market Asset Register – A proposal by Ofgem to standardise flexibility market participant asset registration
FSP	Flexible Service Provider
Merit order list	A list of connectees in a specific order for the ANM system to action
NESO	National Energy System Operator – An organisation that monitors, controls and actively manages the power flows on the electricity transmission network to maintain a safe, secure and reliable electricity supply. NESO is a natural monopoly in the flexibility market, acting as a neutral facilitator
NIC	Network Innovation Competition
Non-curtailable	Under system normal conditions, a connection which is planned and operated such that it should not be curtailed; however, it may be curtailed in the event of the loss of any one or more elements (e.g. an overhead line route, a transformer, an underground cable)

1 Executive Summary

1.1 The Project

The BiTraDER project officially started on 15th December 2021 upon issue of the Project Direction by Ofgem and is due to be completed in July 2026. It will investigate and trial a new innovative method introducing a transparent trading market for connected resources to trade curtailment obligations bilaterally, within regionally aggregated stacks. The project will include the development of a market platform for peer-to-peer trading, integration with our Active Network Management (ANM) system, and development of functionality to send dispatch instructions to connected customers, with either curtailable or non-curtailable connections.

The project aims to:

- Boost acceptance of curtailable connections through reducing risk associated with curtailments,
- Reduce barriers to uptake of renewable energy sources,
- Address current operational and contractual conflicts between Distribution Network Operator (DNO) and the National Energy System Operator (NESO),
- Boost liquidity of the flexibility market through encouraging more customers to trade flexibly,
- Produce outputs that enable adoption across Great Britain (GB): functional specification, detailed requirements, market model and interfaces.

The project aims to improve constraint resolution through optimisation of the merit order stack, based on customer trades. This will enable effective risk mitigation of constraints, wider participation in flexible services and therefore wider availability of flexibility for the DNO and NESO.

1.2 Project Progress

This is the fourth Project Progress Report (PPR) for BiTraDER and covers the period from 15 December 2024 to 15 December 2025.

The project is currently on track to deliver the overall aims and deliverables. This period has seen the completion of the fifth deliverable, 'BiTraDER Simulation trials report' which has been completed, uploaded to the SP Electricity North West (SP ENW) website, and submitted to Ofgem on 30 June 2025.

The fifth deliverable report covers the framework for how the simulation trials were planned and delivered, along with the lessons learnt and how these were used to shape live network trial planning.

In the next reporting period, the sixth deliverable, 'BiTraDER Network Trials Report' will be submitted in May 2026. The seventh deliverable, 'BiTraDER Functional Specification Report' will be submitted in June 2026 and the eighth deliverable, 'BiTraDER Final Report' will be submitted in July 2026.

The key project milestones delivered during this reporting period are outlined below:

Figure 1: key project milestones

Date	Milestone
January 2024	Project workshop and build phase planning session
January 2024	Mini trials workshop
February 2024	Completion of the third deliverable 'Trading platform design'.
March 2024	Project workshop and build phase planning session 2
May 2024	Dissemination of BiTraDER at Utility Week Live
August 2024	Presentation on BiTraDER to the ANM curtailment working group
September 2024	Session with NESO on DNO/NESO conflict coordination
October 2024	Simulation trials initial workshop and kick-off
November 2024	Dissemination of BiTraDER at annual Energy Innovation Summit
December 2024	Completion of the fourth deliverable 'Architecture build lessons learned report'.
February 2025	Simulation trials final workshop and wrap-up
June 2025	Presented on BiTraDER at the Connecting Projects to the Grid Conference
July 2025	Presented on BiTraDER at the Reforming Grid Connections Conference
August 2025	Live network trials planning completed
November 2025	Presented on BiTraDER at the Energy Innovation Summit
November 2025	Live network trials initial workshop and first round of trading
December 2025	Second round of live network trials trading

The project actual costs to date (09 December 2024) are £4,237,754. The estimated cost at completion is £7,698,447 which is in line with the project budget (including contingency).

1.3 Risks

BiTraDER adopts the established SP ENW risk management systems and processes which is audited and integrated in all aspects of day-today operations. Taking learning from delivery of other Network Innovation Competition (NIC) projects, such as QUEST, the risk management approach has been applied at a more granular level. The practice of reviewing highest scoring risks has been embedded into monthly steering group meetings. In addition, the project has implemented a quarterly deep dive into risks and issues including both those identified at bid stage, and newly identified risks since mobilisation.

The complete risk register can be found in Appendix 1.

Most project risks have now closed following the commencement of the live network trials. The trading platform development is complete and has been fully integrated with SP ENW's IT systems, enabling reliable end-to-end live trading.

A key concern had previously centred on the capabilities of the ANM system. While some limitations remain, these are now largely attributable to the current lack of flexible connections and Constraint Management Zones (CMZs) rather than system configuration. Importantly, the ANM system is now live and can manage multiple CMZs to enable a market such as BiTraDER. For the purposes of the live trials, the ANM test environment was utilised to create a dedicated test network to connect participants together and enabling trading to take place.

Another area of prior concern was participant engagement. Recruitment proved positive, with strong interest generated through both regional university engagement and outreach to Electron's existing Flexible Service Provider (FSP) assets. Although some university campuses had limited asset volumes, Lancaster University emerged as a particularly valuable partner thanks to its larger rural campus and significant renewable generation portfolio. On the FSP side, five businesses committed to trial participation, each bringing sufficient MW-scale assets to support meaningful trades.

1.4 Learning and dissemination

SP ENW attended and presented on BiTraDER at the 2025 Energy Innovation Summit (EIS). BiTraDER was presented as part of the 'How do we encourage more customers to use flexible services' session. The presentation provided an overview of the project, its objectives and the benefits BiTraDER will bring to the industry along with an update on progress and wider project timescales. A video update from the project manager on how BiTraDER is progressing was also played on loop at the SP ENW stand. This has now been uploaded to the website.

SP ENW also presented on BiTraDER at the Connecting Projects to the Grid conference which aims to understand the progress with delivering connection reforms and what the new process means for future projects. Similarly, BiTraDER was presented at Utility Week's Reforming Grid Connections conference which brings together key stakeholders in the industry to find solutions to reduce the connections queue.

Throughout the year the project partners have been updating their respective LinkedIn pages with key project updates, specifically relating to the success of the simulation trials and progress on the live network trials.

Prior to the Energy Networks Association (ENA) Open Networks program transitioning to Elexon, regular updates were shared with the ANM curtailment working group. It is anticipated an update will be given to Elexon once the live network trials have concluded to provide them with learnings to help steer their strategy on facilitating secondary trading markets.

The BiTraDER communications register details and evidences all communications to date and is summarised in Appendix 6 - BiTraDER Dissemination log.

2 Project Managers Report

2.1 Project Background

As part of the UK's journey toward net zero, DNOs are experiencing an increase in requests by customers to connect low carbon, renewable energy sources to the network. To avoid the need for expensive, time-consuming, and disruptive network reinforcement, DNOs have introduced curtailable connection arrangements for customers.

Curtailable connections for customers offer access to the network subject to certain conditions. These conditions allow the DNO to curtail the connected customers' export (if a generation customer) or import (if a demand customer) to manage the operation of the network. This is known as a "curtailment obligation", which rests with the connected customer. The conditions on which the connection is offered, including curtailment obligations, are captured in the connection contract and are therefore a contractual obligation on the customer. By agreeing to a flexible connection contract, the customer is agreeing to operate flexibly within the real-time network capacity limit.

As these types of connections allow customers to connect without network reinforcement, they can connect faster and at lower cost when compared to a 'non-curtailable' (non-flexible) connection. However, in accepting a curtailable connection, they risk being interrupted and unable to operate normally which can carry commercial risk to the asset owner/operator. For some technologies, such as solar, customers need a high in-service utilisation factor to offset high upfront costs and are therefore sensitive to curtailment risks. As a result, many customers are hesitant to accept a curtailable connection, instead preferring to pay more, and wait longer, for a non-curtailable connection.

BiTraDER aims to allow new and existing connected customers to mitigate the risks associated with curtailment obligations. The project will investigate, design, build and trial a new market for connected resources to trade their curtailment obligations with other connected customers. The Project Team will explore customers' appetite for bilateral trading, data requirements, interfaces with DNO systems and the appropriate cyber security considerations.

BiTraDER will develop the bilateral market trading rules, determining what is and is not a valid trade, explore the market's ability to operate in near real-time, and determine the functionality required to return the output of the market to the DNO and NESO systems for execution in real time.

The market is intended to be completely independent of the DNO. Therefore, SP ENW will provide the necessary information to the market and platform to facilitate trading and receive the outputs following close of trading. As such, BiTraDER will also examine the role of the market administrator and propose who might be best placed to operate the market and why, and whether more than one market can exist.

Further details on BiTraDER can be found on the SP ENW website including the project overview and the customer journey.

2.2 Project Partners

There are three project partners working collaboratively on the BiTraDER project AFRY, Electron and LCP Delta. The partners each contribute a unique skill set and experience to the project.

Figure 2: Project Partner role and responsibilities within the project

Project Partner	Experience	Role on Project
AFRY	Expertise in engineering, design and consultancy. Provided support to Ofgem through the development of the RIIO-2 determinations.	• Development and design of market trading rules for the platform. • Ongoing monitoring, analysis and evaluation of trades and outcomes. • Interface with NESO and regulatory/policy changes. • Cost Benefit Analysis (CBA) of wider rollout based on observed outcomes.
Electron	Developed ElectronConnect platform which supports marketplaces for SSE, NESO and London Hydro, and will be used in BiTraDER. Specialists in digitally optimised marketplaces.	• Develop and provide market trading platform to enable DERs to trade their curtailment obligations via a neutral secondary market. • Develop a simulated version of the trading platform using modelled live systems to simulate real operations. • Transition the trading platform to enable a live network trial
LCP Delta	Have experience in projects involving DSO demand side flexibility, and expertise in research and consultancy specific to energy markets.	• Design of customer engagement process. • Conduct customer engagement on Project. • Support in design of Project trials. • Support in design of market trading rules. • Ongoing engagement and responding to customer queries

2.3 General

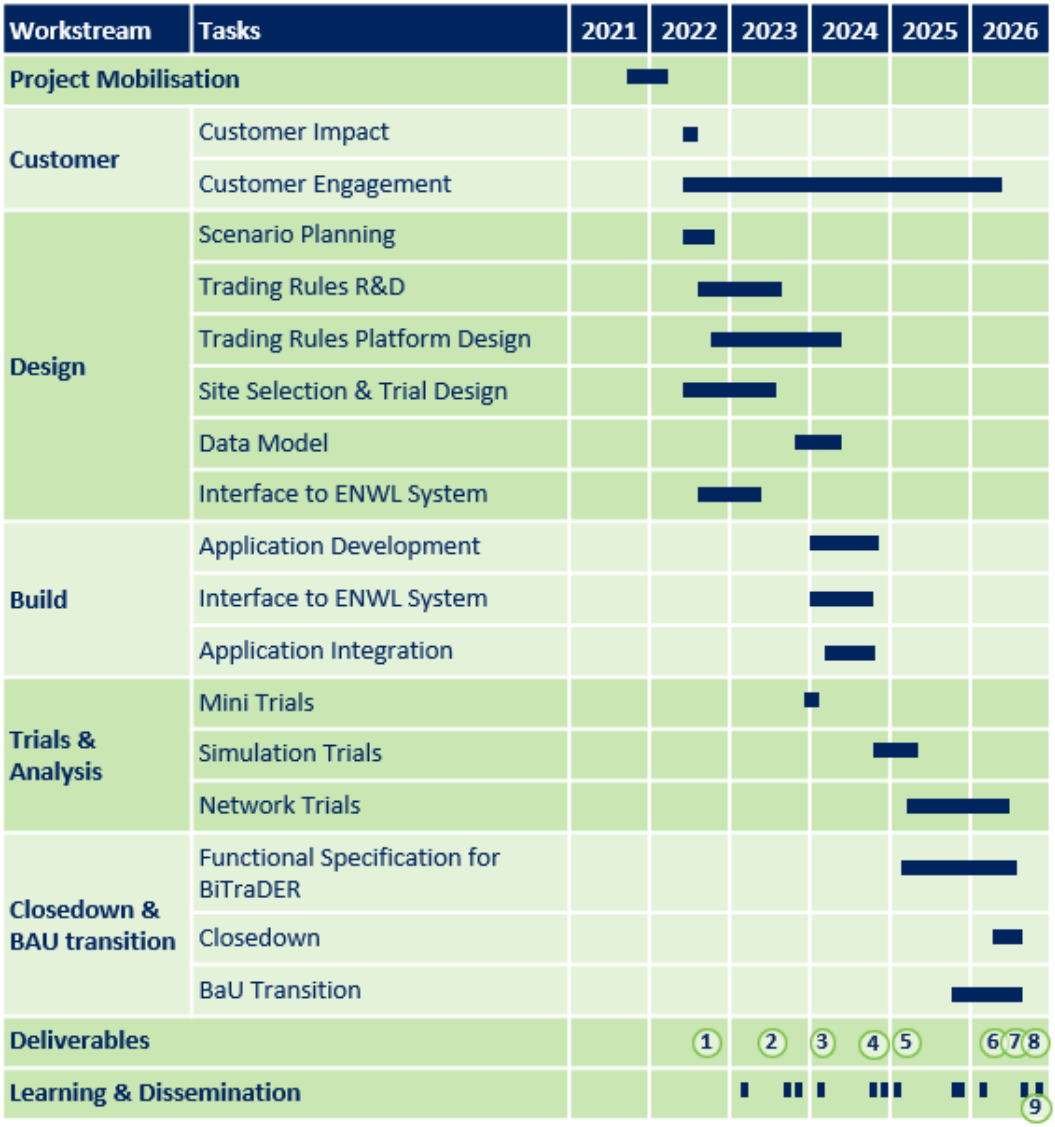
Following award of funding for BiTraDER, the project has been mobilised to establish contracts and structures within the wider team. Workstreams have been used to group and streamline the tasks required within the Project. Figure 3 shows a high-level snapshot of the project workstreams.

A stage gate was incorporated into the plan after the simulation trials to ensure that the live trial could be implemented in a practical and deliverable way within the boundaries of the approved

project. Insights gained from the simulation trials together with a review of the benefits case confirmed that the economic and forecasted advantages of the live trials remained valid, supporting progression beyond the stage gate. A formal request to proceed was submitted to Ofgem at the end of June and approval to move forward was granted.

During the final workstream 'Closedown & BAU Transition', a comprehensive CBA will be conducted to evaluate whether transitioning the project into Business As Usual (BAU) is justified and sustainable.

Figure 3: BiTraDER project workstreams



The project partners and SP ENW project team have continued to meet regularly in relation to activities within the workstreams and associated deliverables.

The key project management activities undertaken during this reporting period are summarised below:

- **Project monitoring and control:** the project has adapted processes developed and established as best practice during earlier NIC funded projects. These processes monitor and

control the delivery, ensuring that BiTraDER progresses in line with the project plan, budget and that outputs are high quality.

- **Regular engagement with project partners:** there has been regular bi-weekly project management meetings along with separate workshops specific to 'in-flight' activities with relevant partners and suppliers.

- **Management of wider project resources:** management of demands on project partner resources to ensure efficient use of the wider team, and timely production of deliverables.

Following best practice identified in other projects, we have continued using Huddle as an online collaboration tool to share information on the workstreams between project partners. The portal supports our collaborative work on project deliverables, risk, and issue management. The portal also holds the meeting minutes and action logs which are regularly reviewed with project partners, ensuring actions are clearly described, allocated responsibility, provided deadlines, and then followed up.

2.4 Project Deliverables and Workstreams

Following on from the completion of the fourth project deliverable 'Architecture build lessons learned report', in November 2024, the team's key activities during this reporting period were the completion of the fifth deliverable 'Simulation trials report' in May 2025. The 'Trials & Analysis' workstream remains in progress, with the live network trials now underway following successful stage gate progression. These are due to complete in May 2025 with the submission of the 'BiTraDER Network Trials Report'

A summary of the activities completed within the individual project workstreams during this reporting period, is provided below.

2.4.1 Customer workstream

The key activities undertaken in the customer workstream are summarised below:

- Organised a workshop to reach out and recruit potential participants for the live network trials. This session offered a key opportunity for interested stakeholders to learn about BiTraDER, provide feedback and shape how the live network trials would look.

- Submitted the year 3 customer engagement report which summarises the key activities carried out during the third year of the project (June 2024 – May 2025).

- Organised 121 meetings with parties interested in joining the live network trials to outline roles and potential benefits of participation. These sessions also involved collecting details of each asset participants intended to submit into BiTraDER and assessing how those assets could be positioned to deliver value for each business. This activity enabled the project team to move forward with planning the trial scenarios.

- Prepared and distributed a factsheet to live trial participants, providing a clear overview of how the trials would operate including a detailed timeline and review of the trading rules.

- Sent out a press release on the BiTraDER live trials covering how the market works and could help new renewable connections avoid curtailment. This was posted on LCP Delta's webpage and reshared by SP ENW's LinkedIn to maximise exposure.

- Worked with the BiTraDER team to develop a compensation mechanism for live network trial participants. This was created to encourage realistic trading whilst ensuring participants were fairly rewarded for their involvement. This was shared with each participant and refined until a mutually agreed arrangement was reached. A legal framework was then drawn up with a payment schedule for each business to secure the agreed compensation.

- Organised the initial live network trials workshop to enable participants to gain a greater of understanding of what to expect from the upcoming trials. This included trial logistics, timings and a demonstration of how to use the trading platform.

- During the live trial weeks, was on hand to provide support to participants and relay any issues to the BiTraDER team. After each trial week, set up a post-trial workshop gather thoughts and feedback. The feedback gained in the post-trial workshops would be used to inform the arrangement of future trial weeks.

2.4.2 Design workstream

The key tasks under the design workstream are now complete and can be referred to in both the second deliverable 'BiTraDER trials Plan, trading rules and initial specification report' and third deliverable 'Trading platform design'.

2.4.3 Build workstream

The build workstream has now largely been completed and can be referred to in the fourth deliverable 'Architecture build lessons learned report'.

Additional activities undertaken in the build workstream during this period are summarised below:

- Upgraded the ElectronConnect trading platform to enable dispatch and performance verification. To test the dispatching of an asset, a start and stop instruction was sent to an internal webhook. The instructions were subsequently confirmed upon receipt. To test performance verification, dummy baseline and metering data were uploaded to the platform's user interface and the delivery rate was calculated by the underlying algorithm.

- Created a settlement spreadsheet to calculate payments from the performance verification data. This was tailored to the live network trials methodology which provided a simple pro-rata adjustment to availability and utilisation payments for under delivery and no incentive for over delivery.

- Enhanced the trading platform to allow assets to opt-out of trading partial volumes when submitting an offer. This upgrade was necessary for the live network trial assets which could not perform a partial dispatch.

- Built the live network trial assets into the test ANM system. These could then be used to simulate the constraints in the ANM/MOM system that were matched during the live network trial events.

2.4.4 Trials and analysis workstream

The key activities undertaken in the trials and analysis workstream are summarised below:

Simulation Trials

The simulation trials concluded in February with a final workshop and introduction to the live network trials. This provided an opportunity for the project team to have a group demonstration of a final simulated scenario and explore in detail how different technology types respond to constraints. This was also the first instance where the performance and settlement logic was demonstrated in preparation for the upcoming live trials.

During the simulation trials and final workshop, one of the key challenges identified by the participants was the lack of market transparency and accessible data. This created uncertainty around which trades to submit for their simulated assets. For example, it was unclear about the underlying market conditions in which the simulated asset was assumed to operate in, making it difficult to determine a meaningful trade value to be submitted in BiTraDER. As a result, a wide range of trades were submitted, many of which failed to generate suitable matches. Clearer background market information is essential to justify trading positions, but this proved difficult to replicate in the simulation events given the dynamic nature of the wider NESO markets. This highlighted the importance of progressing to live trials with real assets, where trading behaviour can be tested under genuine market conditions.

Participants also raised concerns about contract standardisation between BiTraDER and other flexibility markets. Many were keen to avoid the administrative burden of re-registering details for additional secondary markets such as BiTraDER. Current initiatives led by the Energy Network Associated (ENA) aim to harmonise some of these processes including a standardised registration, common contractual terms, and aligned settlement methodologies. However, these are more focused on DNO flexible services so it will be important to extent the scope to secondary markets like BiTraDER to ensure consistency and ease of participation.

Live Network Trials

One of the key differences between the live network trials and simulation trials was that the assets participating needed to be in the SP ENW licence area and covered under a CMZ in the ANM system.

As anticipated, the number of assets on existing flexible connections was insufficient to create an 'ideal' live trading scenario. It was therefore necessary to strike a balance between running the 'ideal' scenario with live flexible connections and one which could still test and weigh up the benefits of live asset trading. By utilising existing assets that could be temporarily operated as flexible connections, the requirements to determine whether trading in BiTraDER is suitable could be tested.

The next step was to identify existing assets willing to participate in the trials. Two approaches were taken:

Engagement with Universities

SP ENW utilised its existing contacts across the region's universities, reaching out to four institutions. Following discussions with estate teams and a review of their assets and power

infrastructure, it became clear that there was a lack of volume that could be traded to support meaningful trades. Typical assets included chillers and heating systems, capable of only small trades up to a few of hundred kWs. In addition, there was a reluctance to change the output of these assets during term time which restricted trial windows. As a result, this approach was not taken forward. However, Lancaster University with its larger rural campus and more substation infrastructure, offered more suitable assets that could be utilised including a large wind and solar farm.

Use of Electron's FSP register

The second approach involved contacting existing assets listed on Electron's FSP register. Unlike the universities, these providers were more commercially focused and already had experience in operating assets in existing flexibility markets. This was more successful with five businesses expressing interest in exploring BiTraDER as a means of generating additional income and reducing curtailment risk. Their portfolios included assets in the range of MWs, providing sufficient volumes to enable suitable trades.

It was important to understand in detail the capabilities of the assets in each of the FSP's portfolios that would operate in the trials. The project team set up 121 meeting with each FSP, along with Lancaster University to explore specific use cases for different asset types and how they could benefit from participation in BiTraDER. For example, a renewable generator avoiding curtailment or a gas plant making additional revenue whilst reducing its carbon emissions.

Once the benefits of participating were clear, Electron's asset registration form was distributed. Participants then selected sites they believed were suitable and available for the trials. The form captured key asset details including information on how each asset could operate flexibly for example the level of capacity it could provide for turn down or turn up services.

Some of the FSPs operated as asset owners and some managed the assets on behalf of the owners. In the latter case additional time was required to secure permission from the owners before those assets could be included in the trials. The project team discussed compensation with each participant, outlining both a general incentive for taking part in the trials and additional incentives linked to individual trial events. These included covering any costs incurred when assets were dispatched, ensuring participants were fairly rewarded for their involvement.

With all registration forms submitted, suitable trading scenarios could begin to take shape. However, the selection of assets available were not located within the same area of SP ENW's network. As noted earlier, the 'ideal' live trading scenario would involve assets under a single CMZ. To address this, an additional allowance was introduced that incorporated a degree of simulation whereby the assets selected would need to be connected virtually onto a test network to create an artificial CMZ. This approach was considered acceptable because although the assets were not physically situated on the same part of the network, the trading behaviours of the participants would remain consistent. Crucially, the main outcome of assessing whether the BiTraDER market could operate in BaU could still be achieved under these conditions.

With the assets chosen, two scenarios were devised which incorporated both an import and export constraint. These both had a good mix of technology types including batteries, solar, wind and gas peaking plants with constraint volumes of over 20MW anticipated. The assets mainly operated within the wholesale and NESO markets but some also had contractual Power Purchase

Agreements (PPAs). The scenarios centred on the use case of keeping renewable buyers connected whilst curtailing non-renewable sellers.

Since the buyers would be on theoretical flexible connections, the decision was made to not dispatch any buyers, rather send an email confirmation letting them know that they would be curtailed or they have avoided curtailment should they have been on a true flexible connection. Sellers on the other hand were required to dispatch if capable to do so. Most of the sellers did opt for dispatch but wanted advanced notice of the curtailment instruction. In many cases an hour notice was suitable, but it was noted that this is longer than the real time dispatch that was designed for the BiTraDER market.

At the time of this report the project team is midway through the trials. The feedback from the latest post-trial meeting with all the participants has been generally positive. However, the liquidity of trades is an ongoing challenge. In some cases, bids and offers have been too far apart to secure a match. Encouragingly, as participants have become more familiar with the market, trading behaviour has begun to result in successful matches. This demonstrates that price discovery in the market is working and provided sufficient asset liquidity exists within a given network location, successful trades are achievable.

2.4.5 Closedown and BAU transition workstream

There is nothing to report for this workstream during this reporting period.

2.4.6 Learning and dissemination workstream

SP ENW attended and presented on BiTraDER at the 2025 EIS. BiTraDER was presented as part of the 'How do we encourage more customers to use flexible services' session. The presentation provided an overview of the project, its objectives and the benefits BiTraDER will bring to the industry along with an update on progress and wider project timescales. A video update from the project manager on how BiTraDER is progressing was also played on loop at the SP ENW stand. This has now been uploaded to the website.

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Throughout the year the project partners have been updating their respective LinkedIn pages with key project updates, specifically relating to the success of the simulation trials and progress on the live network trials.

Prior to the ENA Open Networks program transitioning to Elexon, regular updates were shared with the ANM curtailment working group. It is anticipated an update will be given to Elexon once the live network trials have concluded to provide them with learnings to help steer their strategy on facilitating secondary trading markets.

The BiTraDER communications register details and evidences all communications to date and is summarised in Appendix 6 - BiTraDER Dissemination log.

In the next reporting period, we anticipate the following dissemination activities to be completed:

- Publish press releases on the project, in association with completion of the sixth, seventh and eighth deliverable, which comprises of the live network trials, functional specification and final report.
- Update the BiTraDER website with the Project Progress Report 4 in December 2025, deliverable six in May 2026, deliverable seven in June 2026 and deliverable eight in July 2026.
- Host continuous knowledge sharing events that could be either a webinar / workshop / conference and upload materials to the project website.
- Attend the EIS 2026 (in November 2026) and any other relevant conferences.

3 Business Case Update

BiTraDER will produce an updated business case as part of the closedown report due in the next reporting period.

Ofgem in collaboration with Elexon are proposing to develop a standardised 'Flexible Market Asset Register' (FMAR) to enable market participants to register their assets once only and gain access to both local and national flexibility markets without the need to re-enter their details. It is therefore likely that the method of registering assets in BiTraDER will change in the future and may not be done on the ElectronConnect platform but rather through a national flexibility data sharing platform which would need to be integrated with the existing BiTraDER infrastructure.

Ofgem has appointed Elexon as the market facilitator for all local energy flexibility markets with the purpose of coordinating new and existing markets together to ensure that providers gain the most value and face no obstacles to participation. Once fully operational, BiTraDER could be scrutinised by the market operator and should any additional requirements be put forward, further developments or changes in the market rules may be necessary.

Whilst the above two points should be monitored closely, the likely timeline for these to be implemented will be after the project has finished so would only affect the BiTraDER market during the BAU stage.

4 Progress against Plan

The project plan is continually monitored, reviewed, and updated in line with the regular project progress meetings. These discussions also capture any changes to existing project risks, as documented in this report, as well as any newly identified risks and issues.

The progress against the plan in this reporting period has seen the fifth deliverable 'BiTraDER Simulation trials report' submitted on time.

In this reporting period, the following points are worth noting:

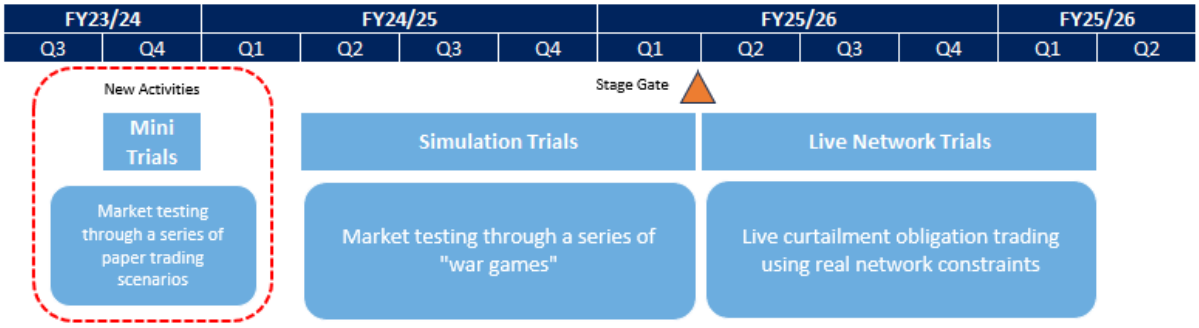
- The simulation trials were due to run from August 2024 to May 2025. These trials concluded earlier than expected as the learning outcomes of the trials were met ahead of schedule.

There were ten simulated constraints planned in, each to occur approximately every two weeks from November 2023 to April 2025. By February 2025 the limitations of the simulated assets were apparent. Participants found it difficult to understand the underlying market conditions and so the trades submitted were considered somewhat unrealistic and not necessarily reflective of trading behaviours in BaU. To achieve this, it would be vital to carry out trading with participants' real network assets and introduce a monetary element into the trading to give them more of a vested interest.

- Considering the above point, the BiTraDER team sought approval to proceed beyond the stage gate and commence delivery of the live network trials. The formal notification was submitted to Ofgem in June 2025. There were a couple of questions returned around who would be participating and how many participants there would be. Expecting these types of questions in advance, talks were already in progress with the region's universities and a handful of FSP providers. Hence there was a good idea of who would be participating and a reasonable high degree of confidence that live network trial liquidity could be met. Ofgem was happy with the responses and approval to proceed was received.

- The live network trials are due to run from May 2025 to May 2026. Planning for the trials commenced shortly after the end of the simulation trials in February 2025 following participant feedback. This involved updating the trading platform with the dispatch and performance verification modules and recruiting trial participants. The list of participants and their associated assets were agreed around August 2025 and a handful of trading scenarios were built around these. Since the trades now had a monetary value associated to them, contractual terms were put together for each trial participant. To incentivise participants to submit realistic trades they would be paid not only for their trade value but for their participation as a whole and for each trial event. The aim of this was to ensure that compensation in the trials was sufficient to exceed potential gains from alternative markets. Since the contracts passed between legal teams it took a couple of months to get everything signed and by November 2025 the first week of trials took place, along with a post-trial workshop to gather feedback. At the time of writing this report the second week of trials were taking place and further conversations to gather feedback will be obtained afterwards. Should it be required further trial weeks could be run up until May 2026. The full plan, timeline and outcome of the trials will be shared in the sixth deliverable, 'BiTraDER Network Trials Report' due in May 2026.

Figure 4: Trials Timeline and Activities



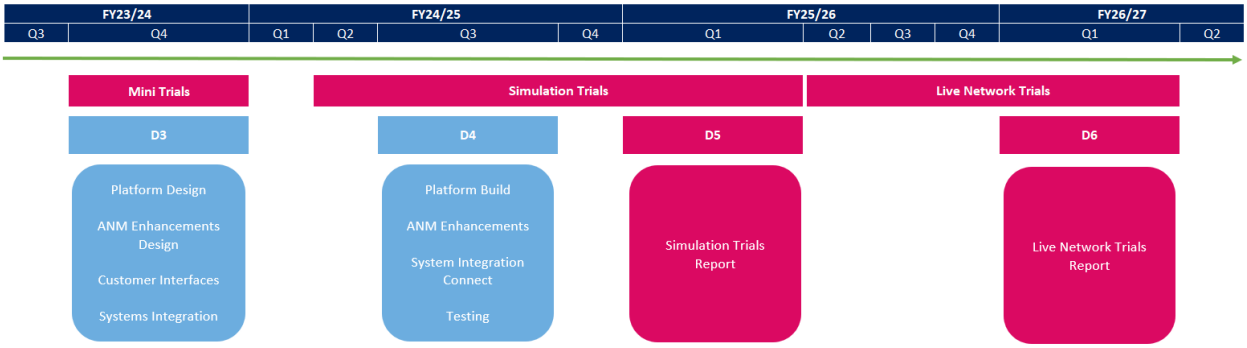
- Although SP ENW has started offering flexible ANM connections, it should be noted that the full capabilities of the ANM system are not yet mature. Originally when planning the live network trials, it was deemed necessary to commence trading with a set of assets covered under an ANM live CMZ. As expected due to the limited number of flexible connections and

active CMZ zones, it was not possible to plan the trials this way. The location of the selected live network trial assets differed within the SP ENW network. To enable these assets to trade with one another, a test network was created on the ANM system which connected the assets under a simulated CMZ. This would not affect the trading in any way and granted greater flexibility to get more asset types involved. Although the test ANM system is being used, provided it functions as expected it will demonstrate that the live system will also function effectively. Therefore, there are no drawbacks and the primary objective to determine whether the market will operate under BaU conditions can still be addressed.

- The fifth deliverable, 'BiTraDER Simulation trials report' has been completed, uploaded to the SP ENW website, and submitted to Ofgem on 30 June 2025. The learnings from this deliverable were used to feed into the planning and delivery of the live network trials.

In the next reporting period, the sixth deliverable, 'BiTraDER Network Trials Report' will be submitted in May 2026. The seventh deliverable, 'BiTraDER Functional Specification Report' will be submitted in June 2026 and the eighth deliverable, 'BiTraDER Final Report' will be submitted in July 2026. Currently there are no major risks to the timely submission of these deliverables. The Deliverable Timeline can be seen in figure 5. The phases shown in blue are the design phases and those shown in pink are the trial phases.

Figure 5: BiTraDER Deliverable Timeline



5 Progress against budget

The project budget is as defined in the project direction and is shown as a summary against actual spend in Appendix 3.

The detailed breakdown of costs against budget is shown below in Figure 6. This report includes expenditure up to and including 10 December 2025.

Figure 6: BiTraDER actual detailed spend to date

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to date			Total Project			% Variance to Plan
	Actual	Plan	Variance	Forecast	Plan	Variance	
Labour	1,374,720	1,431,542	56,822	1,779,760	1,779,760	0	0%
Contractors	1,950,883	2,411,979	461,096	2,762,928	2,747,932	(14,996)	-1%
IT	637,677	1,760,989	1,123,312	1,777,558	1,773,113	(4,445)	0%
Payments to Users	454	384,449	383,995	392,449	400,782	8,333	2%
Contingency	0	0	0	636,222	636,222	(0)	0%
Other	274,020	239,627	(34,393)	360,638	360,637	(0)	0%
Total	**4,237,754**	**6,228,585**	**1,990,832**	**7,709,555**	**7,698,447**	**(11,108)**	

Source: Ofgem Schedule to Project Direction - January 2021

The project spends to date show a fair level of underspend compared to the planned budget which needs to be explained in further detail. Project expenditure as of 10 December 2025 was £4,237,754 compared to cost baseline of £6,228,585.

The spend on internal labour for the project is relatively in line with the budget.

There has been a notable underspend on IT payments, primarily because the trials were conducted using the internal test component of the ANM system. Unlike the live ANM system, which would have incurred substantially higher costs from the manufacturer, the internal test environment offered greater flexibility, allowing modifications to support a wider range of tests. This approach proved far more cost-effective, as the adaptability of the internal system enabled adjustments at each stage of the trials. As different use cases and asset types were explored, the system could be tailored accordingly, maximizing the value of the trials. Hence the overall cost reduction in this category can be attributed to efficiency savings.

The payments to users category remains largely unspent, as this allocation is primarily intended to compensate participants in the live network trials. Since these trials only commenced last month, expenditure has been minimal to date. However, spending is expected to increase as the trials progress.

As the live network trials continue, there may still be system upgrades required in response to user feedback, so having additional funds available is necessary. It is expected that by the end of the project the overall budget will mostly be spent, except for a slight underspend anticipated in the IT and payment to users categories. The final figures, along with explanations for any variances, will be detailed in the project closedown report, due for submission in June 2026.

6 Bank account

The project bank statement is shown in Appendix 5 - Project bank account. The statement contains all receipts and payments associated with the project up to 15 December 2025.

7 Project Deliverables

In this reporting period there was one deliverable for submission, the fifth deliverable, 'BiTraDER Simulation trials report' has been completed, uploaded to the SP ENW website, and submitted to Ofgem on 30 June 2025.

In the next reporting period, the sixth deliverable, 'BiTraDER Network Trials Report' will be submitted in May 2026. The seventh deliverable, 'BiTraDER Functional Specification Report' will be submitted in June 2026 and the eighth deliverable, 'BiTraDER Final Report' will be submitted in July 2026.

Appendix 2 shows the full list of deliverables to be completed and submitted throughout the project lifecycle along with the status of the evidence.

The live network trials have now started and will run up to May 2026. Detailed feedback and learnings from trial participants will be shared and used as evidence to feed into the sixth deliverable. To enable active participation and discussion, there are ongoing Teams meetings and customer engagement with those involved in the trials to ensure that each party is getting value out of the project, and that it is fulfilling their expectations.

8 Data Access Details

There was no data gathered in this reporting period. It is anticipated that there will be data gathered on trading, constraint management and settlement as part of the trials which will be made available on the SP ENW website as part of the trial deliverables.

SP ENW's innovation data sharing policy can be found on our website.

9 Learning Outcomes

The work during this reporting period primarily falls under the trials and analysis workstream. During the first few months of the year the simulation trials were concluding and the resulting feedback was being consolidated to inform the methodology for the live network trials.

It was the outcomes from the simulation trials that provided the BiTraDER team with the reasoning to progress past the stage gate to the live network trials. Hence, this was requested mid-way through the year and a delivery plan was put in place.

It became apparent that the live network trials were needed prior to passing the stage gate so plans were set in motion early to reach out to potential businesses. An ample amount of time to prepare was necessary given some of the difficulties in customer recruitment for previous trial phases.

By late summer the plans for live network trials were largely complete. There was a minor delay in starting due to contracts being signed but the participants were comfortable with what to expect and were aware of the benefits BiTraDER bring to their organisations. At the time of this report the first trial week and post-trial workshop had concluded.

This period has seen the completion of one deliverable. The fifth deliverable, 'BiTraDER Simulation trials report' was uploaded to the SP ENW website, and submitted to Ofgem on 30 June 2025. This deliverable covers the framework for how the simulation trials were run, what lessons were learnt and what the next steps are.

The learnings outcomes from the simulation trials are:

- **Platform usability confirmed**: The BiTraDER interface was intuitive and easy for participants to use.
- **Need for realism**: Simplistic simulations limited real-world application, highlighting the importance of realistic market conditions and data.

- **Asset diversity insight**: Different asset types operate under varying business models, requiring tailored approaches in future trials.
- **Market information critical**: Lack of background data hindered decision-making. Realistic context must be provided in live trials.
- **Pricing guidance trade-off**: Guide prices supported participation but reduced realism, showing the need for balanced pricing mechanisms.
- **Market rules validated**: Rules proved robust, delivering successful trades and building participant confidence in BiTraDER.
- **Liquidity challenges**: Limited participants and biweekly trading reduced engagement, requiring adjusted timelines and frequency.
- **Proof of concept achieved**: Simulation trials demonstrated platform functionality and stakeholder appetite for peer-to-peer energy markets.

The live network trials are currently ongoing and learning outcomes will be consolidated and fed into the sixth deliverable 'BiTraDER Network Trials Report'. So far only one trial week has been run with the second week taking place during this report.

The learnings outcomes so far from the live network trials are:

- **Curtailment risk drives pricing:** Revenue and willingness to pay in BiTraDER depend on curtailment probability and BaU earnings.
- **Market timing impacts value:** Current trading windows limit efficiency. Earlier participation and faster result publication could improve outcomes.
- **Liquidity challenges:** Low participant numbers and overlapping constraints reduce efficiency, highlighting the need for stronger engagement and participation.
- **Pricing strategies evolve:** Proactive use of market information improved competitiveness and realism.
- **Opportunity cost shapes behaviour:** Asset types (batteries, gas, solar) respond differently to market conditions.
- **Process improvements identified:** Standardised baselining and more transparent pricing information would support consistency and confidence.

10 Intellectual property rights

SP ENW is following the default IPR arrangements. No IPR has been generated or registered during the reporting period. The IPR implications of forthcoming project deliverables are currently being considered and will be reported in the next project progress report.

11 Risk management

BiTraDER adopts the established SP ENW risk management systems and processes which is audited and integrated in all aspects of day-to-day operations. Taking learning from delivery of other NIC projects, such as QUEST, the risk management approach has been applied at a more granular level. The practice of reviewing highest scoring risks has been embedded into monthly steering group meetings. In addition, the project has implemented a quarterly deep dive into risks and issues including both those identified at bid stage, and newly identified risks since mobilisation.

There are currently no uncontrolled risks that could affect the delivery of planned project deliverables or cause the project to deviate from the original bid submission. Project risks outlined in this report have mitigations in place and are controlled to ensure no impact on planned deliverables and deadlines.

The risk register included with the bid submission has been transferred into the BiTraDER project risk register and continues to be reviewed on a regular basis. The risks associated with project delivery are described in detail in Appendix 1. The project team will update the risk register when necessary and review the risk at each project management meeting to check progress and assess mitigations. If it is clear that any risk is delaying the project, measures will be put in place to bring the project back on track.

Most project risks have now closed following the commencement of the live network trials. The trading platform development is complete and has been fully integrated with SP ENW's IT systems, enabling reliable end-to-end live trading.

A key concern had previously centred on the capabilities of the ANM system. While some limitations remain, these are now largely attributable to the current lack of flexible connections and CMZs rather than system configuration. Importantly, the ANM system is now live and can manage multiple CMZs to enable a market such as BiTraDER. For the purposes of the live trials, the ANM test environment was utilised to create a dedicated test network to connect participants together and enabling trading to take place.

Another area of prior concern was participant engagement. Recruitment proved positive, with strong interest generated through both regional university engagement and outreach to Electron's existing FSP assets. Although some university campuses had limited asset volumes, Lancaster University emerged as a particularly valuable partner thanks to its larger rural campus and significant renewable generation portfolio. On the FSP side, five businesses committed to trial participation, each bringing sufficient MW-scale assets to support meaningful trades.

12 Accuracy Assurance statement

The financial information has been produced by the BiTraDER project manager and the project's finance representative, who review all financial postings to the project each month to ensure they are correctly allocated to the appropriate project activity.

This document and associated finances have been prepared, reviewed and approved in line with SP ENW's Data Assurance processes. These processes have been developed to comply with the Ofgem Data Assurance Guidelines and apply to all submissions / publications.

13 Consistency with full submission

There have been no material changes during this reporting period.

14 Other

There is nothing further to report in this period.

List of Appendices

Appendix 1 – Risk register

Appendix 2 – Project deliverables

Appendix 3 – Project direction budget

Appendix 4 - Project bank account

Appendix 5 - BiTraDER dissemination log

Appendix 1 – Risk register

Number	Project phase/ workstream	Risk summary	Probability	Impact	Risk owner	Mitigation	Revised probability	Revised impact	Last reviewed	Status	Update
1	Delivery	Covid-19	2	3	SPENW	We will monitor government advice both in the UK and Europe to identify any risks as early as possible.	1	3	05/12/24	Closed	No further restrictions anticipated and updated assessment provided
2	Mobilisation	Mobilisation	2	4	SPENW	Suitable partnership agreements that ensure collaborative working, value for customers' money and achievement of learning objectives in a timely manner have been identified for all Partners. A project initiation document will be issued to the Project Partners to ensure that all parties are ready.	1	4	07/12/22	Closed	Mobilisation complete
3	Customer engagement	Customer contracts and engagement	3	5	SPENW	We will start the customer engagement early in the project and have ensured there is sufficient time in the project plan.	1	5	11/12/25	Closed	Contracts have been signed and the live trials have now commenced.
4	Customer engagement	Low recruitment	3	5	SPENW	A patch of our network in Cumbria fed from Harker Grid intake has been chosen for the trials through preliminary site selection. This will provide a large pool of customers from which to sign up the trial participants.	2	5	01/07/25	Closed	We will not be using the Harker/Hutton area for live network trials as there is insufficient customers in that area that have signed up. We will instead be creating a virtual network to connect FSP assets on the SPENW network onto. Risk replaced by 4.01.

5	Build	Delayed integration with SPENW systems	2	5	SPENW	We have selected competent partners who have advised on the Project plan which allows sufficient time.	1	5	11/12/25	Closed	Integration testing is complete and the live trials have now commenced.
6	Build	Delayed Platform configuration	2	5	SPENW	We have selected competent Partners who have advised on the Project plan which allows sufficient time.	1	5	11/12/25	Closed	Platform is configured and the live trials have now commenced.
7	Design	System undermined by Cyber security requirements	3	5	SPENW	We have allowed time for appropriate cyber-security considerations and design in the Project plan.	1	5	11/12/25	Closed	The build process is now complete with robust cyber security requirements to ensure the systems remain safe.
8	Simulation	Customer retention through trials	3	5	SPENW	We will start the customer engagement early in the project and sign up more participants than needed. We will involve the participants in the design of the platform and simulation trials as meaningful collaborators. We have ensured there is sufficient time in the Project plan the simulation phase.	1	5	01/07/25	Closed	Customer engagement is ongoing, 7 customers signed up to attend the simulation trials. The team are monitoring engagement during the trials and will change the format as necessary to maximise the retention of the customers.
9	Network Trials	Lack of network constraints	3	5	SPENW	Our preliminary site selection, which included a review of constraints, has selected the network in Cumbria fed from the Harker Grid intake substation as the trial area. If required we will artificially create constraints to ensure scenarios are tested (reimbursing affected customers)	2	5	11/12/25	Closed	Artificial constraints for the live trials were needed. The trials have now commenced.

10	Network trials	Lack of participant understanding affecting testing	2	4	SPENW	We have significant customer engagement planned throughout the project to educate participants in the benefits and risks associated with obligation trading.	1	4	11/12/25	Closed	The live network trials are mid-way through and participants have had the opportunity to feedback which has been generally positive. 121 meeting were also set up with each participant to ensure that they understand the requirements. Each participant involved in the trials has submitted a trade.
11	Network trials	Limited support/involvement from ESO	2	4	SPENW	We are currently seeking to secure a contract for consultancy services	1	4	11/12/25	Open	Need to reengage with NESO and shared learnings once the live network trials have concluded.
12	Learning & Dissemination	Dissemination affected by low attendance	2	3	SPENW	SPENW will choose dissemination channels optimised to achieve maximum reach and coverage.	2	3	05/12/24	Closed	BiTraDER has been disseminated at the yearly EIS and Utility week live, all of which have had good attendance.
13	Closedown	Change in Ofgem governance	3	3	SPENW	Communication channels from Ofgem will be monitored and any updates to such requirements identified as early as possible.	1	3	11/12/25	Open	No significant changes identified in publication of Final Determinations, but we will continue to monitor changes throughout the project
14	Mobilisation	Outstanding contracts	3	3	SPENW	Started this work early in the mobilisation phase	2	3	07/12/22	Closed	All critical path contracts agreed
15	Design	Developing specifications and requirements	2	3	SPENW	Internal technical peer review of requirements and specifications as they develop; potential external peer review via open networks WS1a P6.	1	3	11/12/25	Open	Open networks now transitioned to Elexon.
16	Customer engagement	Low incidence of flexible connection agreements in our area	4	5	SPENW	Extending recruitment to other DNO areas initially for trading rules development and simulation trials. Long-term strategy to be developed for recruiting these customers in SPENW area (in time for live trials in 2025-26)	2	5	11/12/25	Closed	Recruitment for live trials complete and trials now commenced.

17	Design	Delay in development of market design rules	3	3	SPENW, AFRY	Activities without dependencies on trading rules have been brought forward and started early	2	3	31/07/23	Closed	Trading rules now agreed
18	Design	Delay in development of technical requirements	3	3	SPENW, Electron	Project activities shifted to allow additional time to develop trading rules without affecting wider project timeline and deliverable deadlines	2	3	31/07/23	Closed	D2 deliverable published on time
19	Design	Delay in development of functional requirements	3	3	SPENW, Electron	Project activities shifted to allow additional time to develop trading rules without affecting wider project timeline and deliverable deadlines	2	3	31/07/23	Closed	D2 deliverable published on time
20	Design	Delay in development of detailed technical requirements	3	5	SPENW, Electron	Workshops held to discuss the detailed technical requirements and ensure that they meet the needs of all the systems	3	5	31/11/23	Closed	We have now implemented an agile design methodology to reduce the complexity needed for the simulation trials
21	Design	Delay in development of Customer Interface to SPENW	4	5	SPENW, LCP Delta	Continued engagement with customers to set up discussions with their IT teams and recruitment of additional customer underway. If required, we will install RTUs at customer premises to enable the trials.	2	5	18/04/24	Closed	We now have a much better understanding of the ENA definition for the API and are more certain in terms of what needs to be produced. Proposed one way communication to inform customers of where the API definition is going
22	Build	Delay in configuration to meet Cyber Security requirements	4	5	SPENW, Electron	We will hold workshops and meetings to ensure everyone understands the requirements and look to assign specific resource. Workshops also need to cover cyber security approval process (by SPENW) to speed up	1	5	11/12/25	Closed	Cyber security requirements complete and live trials now commenced.

						the trading platform's configuration process					
23	Build	Delay in system integration testing	4	5	SPENW, Electron	We will book access to the test system and we will create a sandbox environment for the test data.	1	5	11/12/25	Closed	Systems integration carried out for live trials and have now commenced.
24	Design	Delay in design of MoM system updates	4	5	SPENW	We have started to engage with the new team responsible for the MoM system and will hold workshops / meetings to ensure that all the requirements are understood.	3	5	31/11/23	Closed	The new team have fully engaged and the design process is on track
25	Trials and Analysis	Insufficient data from the trials	3	5	All	Early engagement with customers to ensure participations across the different network users.	2	5	01/07/2025	Closed	Simulation trials complete.
26	Delivery	Limited/short term flexible connections	3	5	SPENW	Although a date of connection is provided, the lead times for energising a connection can be significant due to requirements such as environmental impact assessments and land consents. Therefore, the benefits in accepting a flexible connection even short term will continue to be tangible under Access SCR.	2	5	11/12/25	Closed	Non curtailable customers have had to be assigned as buyers. Live trials now commenced.
27	Build	Delay in configuring the solution for the simulation trials	3	4	Electron	The project team has already agreed rough timelines. We will plan internal workshops to finalise the build phase timelines, with emphasis on the build timing of interfaces between	1	4	01/07/25	Closed	Simulation trials complete.

						MOMs and ElectronConnect					
28	Build	Solution doesn't meet the simulation trials needs	3	4	Electron	We have engaged with market participants to understand their preferences for the simulation trials. Further to that, we will hold internal workshops with the project team to align on the needs and expectations	2	4	01/07/25	Closed	Simulation trials complete.
29	Simulation	Resource	3	4	SPENW	Ensure project plan is communicated to resource teams and a close watch is kept on availability - endeavour to keep resources engaged even if only in a limited capacity.	2	3	01/07/25	Closed	Simulation trials complete.
30	Simulation	External market forces	2	3	SPENW, Electron	Ensure project team is aware that any changes to the energy market could impact our simulation trials.	1	3	01/07/25	Closed	Simulation trials complete.
31	Simulation	Windows 11 upgrade	2	2	SPENW	Seek dispensation to remain on windows 10	1	2	05/12/24	Closed	Simulation trials complete.
32	Simulation	OpenShift upgrade	2	3	SPENW	Communication with the OpenShift project PM ensuring we are kept informed of timelines and the move to the later version does not impact our schedule.	1	3	05/12/24	Closed	The upgrade to OpenShift 4 has completed and the transition did not cause any issues.
33	Simulation	SPOF - Key resource	3	3	SPENW	Speak to the Line Manager for said employee and secure his time on the project for the next 6 months. Discuss if there are options we could consider	2	3	11/12/25	Open	Live trials ongoing.

						backfilling in other areas should the need arise.					
34	Network Trials	Lack of live trial participants	3	5	SPENW	Clarify expectation of FSPs early on and provide continuous engagement to gauge interest levels. If necessary, re-run the recruitment or have a backup list of potential participants. Provide adequate compensation to encourage participation and secure legal/non-legal agreements once decided.	2	5	11/12/25	Closed	Live trials ongoing and participant engagement has been positive.
35	Network Trials	Delay in configuring the internal IT/trading platform to enable the live trials.	3	4	SPENW	Provide clear milestones of when the upgrades need to be built, tested and deployed for the trials. Teams to be kept aligned and updated at weekly IT meetings. If the trials are not ready to commence in September, there is space to push them back as the completion deadline is not until May next year.	2	4	11/12/25	Closed	Internal IT/trading platform configured and live trials have now commenced.
36	Network Trials	IT Resource	3	3	SPENW	Early plans to replace resource put in place with adequate coordination between existing IT architect and new resource to understand design requirements.	2	2	11/12/25	Closed	New IT architect participating in project.

Appendix 2 - Project deliverables

Reference	Project Deliverable	Deadline	Evidence	Status
1	BiTraDER Initial Report – Customer Engagement and Scenarios	30/11/22	Document introducing the Project and detailing the BiTraDER scenarios and initial findings from the customer engagement.	Completed and submitted 30/11/22
2	BiTraDER Trials Plan, Trading Rules and Initial Specification Report	30/06/23	Document explaining Project progress including the following outputs: • End to end trading rules • Cyber security report • Technical requirements for the trading platform • Simulation trial plan • Network trial plan	Completed and submitted 30/06/23
3	BiTraDER Interim Report – Trading Platform Design	28/02/24	Document detailing Project progress to date including the requirements and design of the following: • Connected resource interfaces • Data formats • Data flows • Trading platform • ANM interface	Completed and submitted 27/02/24
4	BiTraDER Architecture Build Lessons Learned Report	29/11/24	Document detailing the lessons learned from the build of the BiTraDER system including build and integration of the trading platform with SPENW's real-time systems.	Completed and submitted 29/11/24
5	BiTraDER Simulation Trials Report	30/06/25	Document detailing the results from the simulation trials including • recommendations for any amendments required for network trials. • assessment of project readiness to move to network trials	Completed and submitted 30/06/25
6	BiTraDER Network Trials Report	30/05/26	Document detailing the final results from the network trials.	On track for deadline

7	BiTraDER Functional Specification	30/06/26	Final functional specification for BiTraDER, including: • Trading rules • Interface requirements • Data requirements • Platform design	On track for deadline
8	BiTraDER Final Report	31/07/26	Report on the conclusion of the BiTraDER Project including all the lessons learned and detailing the next steps, including BaU transition.	On track for deadline
9	Comply with knowledge transfer requirements of the Governance Document.	End of Project	1. Annual Project Progress Reports which comply with the requirements of the Governance Document. 2. Completed Close Down Report which complies with the requirements of the Governance Document. 3. Evidence of attendance and participation in the Annual Conference as described in the Governance Document.	On track for deadline

Appendix 3 - Project direction budget

ANNEX 1: PROJECT BUDGET

Cost Category	Cost
Labour	
	1,779,760.19
Equipment	
	-
Contractors	
	2,747,932.14
IT	
	1,773,113.04
IPR Costs	
	-
Travel & Expenses	
	-
Payments to users	
	400,782.00
Contingency	
	636,221.64
Decommissioning	
	-
Other	
	360,637.50
Total	7,698,446.51

Appendix 4 – Detailed project expenditure

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to date			Total Project			% Variance to Plan
	Actual	Plan	Variance	Forecast	Plan	Variance	
Labour	**1,374,720**	**1,431,542**	**56,822**	**1,779,760**	**1,779,760**	**0**	**0%**
Labour - Project Management	1,374,720	1,431,542	56,822	1,691,956	1,691,956	0	0%
Labour - Functional Specification for BiTraDER	-	-	-	87,804	87,804	-	0%
Contractors	**1,950,883**	**2,411,979**	**461,096**	**2,762,928**	**2,747,932**	**(14,996)**	**-1%**
Contractors - Project Management	380,007	388,708	8,701	438,527	426,019	(12,508)	-3%
Contractors - Customer Engagement	348,396	439,109	90,713	486,959	488,110	1,152	0%
Contractors - Trading Rules Research & Development	254,804	476,730	221,926	476,731	476,730	(0)	0%
Contractors - Trading Platform Design	170,000	170,000	-	170,000	170,000	-	0%
Contractors - Data Model	59,500	59,500	-	59,500	59,500	-	0%
Contractors - Application Development	399,500	399,500	-	399,500	399,500	-	0%
Contractors - Simulation Trials	307,940	331,500	23,560	335,140	331,500	(3,640)	-1%
Contractors - Network Trials	-	44,625	44,625	93,500	93,500	-	0%
Contractors - Functional Specification for BiTraDER	-	51,000	51,000	51,000	51,000	-	0%
Contractors - Closedown	-	-	-	197,186	197,186	-	0%
Contractors - Learning & Dissemination	30,735	51,306	20,571	54,886	54,886	(0)	0%
IT	**637,677**	**1,760,989**	**1,123,312**	**1,777,558**	**1,773,113**	**(4,445)**	**0%**
IT - Project Management	65,122	67,208	2,087	78,912	79,333	421	1%
IT - Trading Platform Design	305,100	300,000	(5,100)	305,100	300,000	(5,100)	-2%
IT - Interface Design to ENWL Systems	224,860	548,039	323,179	548,037	548,039	2	0%
IT - Interface Build to ENWL Systems	42,595	735,991	693,396	735,760	735,991	231	0%
IT - Application Integration	-	109,750	109,750	109,750	109,750	-	0%
Payments to users	**454**	**384,449**	**383,995**	**392,449**	**400,782**	**8,333**	**2%**
Payments to Users - Customer Engagement	454	95,667	95,213	103,667	112,000	8,333	7%
Payments to users - Payments to users	-	288,782	288,782	288,782	288,782	-	0%
Contingency	-	-	-	**636,222**	**636,222**	**(0)**	**0%**
Other	**274,020**	**239,627**	**(34,393)**	**360,638**	**360,637**	**(0)**	**0%**
Other - Accommodation	69,458	96,372	26,914	109,983	109,983	0	0%
Other - Learning & Dissemination	204,562	143,255	(61,307)	250,655	250,655	(0)	0%
Total	**4,237,754**	**6,228,585**	**1,990,832**	**7,709,555**	**7,698,447**	**-11,108**	**0%**

Appendix 5 - Project bank account

LLOYDS BANK

Balance and Transaction Report

15-Dec-2025
10:03:36 AM
Page 1 of 1

Client ID: 14121616
Reporting Period: 01-Dec-2024 to 15-Dec-2025
Bank Name: Lloyds
Account Number / Name / Currency Code: 308012-23165960 / ELECTRICITY NORTH WEST LIMITED-BITR / GBP
Closing Ledger Balance As At: 06-Dec-2024 **Closing Ledger:** 6,335,317.86

Posting Date	Type	Details	Debits	Credits	Ledger Balance
09-Dec-2024	Interest Payment	INTEREST (GROSS)		12,635.92	6,347,953.78
10-Dec-2024	Inter Account Transfer	P9-12, 24, P1-8 TO 02749020 300002	1,439,188.86		4,908,764.92
09-Jan-2025	Interest Payment	INTEREST (GROSS)		10,839.63	4,919,604.55
10-Feb-2025	Interest Payment	INTEREST (GROSS)		9,798.77	4,929,403.32
10-Mar-2025	Interest Payment	INTEREST (GROSS)		7,941.07	4,937,344.39
08-Apr-2025	Inter Account Transfer	IAT P9-12 TO 02749020 300002	311,346.59		4,625,997.80
09-Apr-2025	Interest Payment	INTEREST (GROSS)		8,486.17	4,634,483.97
09-May-2025	Interest Payment	INTEREST (GROSS)		7,999.25	4,642,483.22
12-May-2025	Inter Account Transfer	P1, FY26 TO 02749020 300002	30,320.76		4,612,162.46
09-Jun-2025	Interest Payment	INTEREST (GROSS)		8,229.57	4,620,392.03
09-Jul-2025	Interest Payment	INTEREST (GROSS)		7,974.92	4,628,366.95
11-Aug-2025	Interest Payment	INTEREST (GROSS)		8,407.14	4,636,774.09
09-Sep-2025	Interest Payment	INTEREST (GROSS)		6,815.42	4,643,589.51
09-Oct-2025	Interest Payment	INTEREST (GROSS)		6,297.47	4,649,886.98
10-Nov-2025	Interest Payment	INTEREST (GROSS)		8,644.97	4,658,531.95
09-Dec-2025	Interest Payment	INTEREST (GROSS)		14,731.17	4,673,263.12
12-Dec-2025	Inter Account Transfer	1154958008 TO 02749020 300002	5,003.69		4,668,259.43
12-Dec-2025	Inter Account Transfer	1154957933 TO 02749020 300002	73,994.52		4,594,264.91
12-Dec-2025	Inter Account Transfer	1154957808 TO 02749020 300002	28,185.18		4,566,079.73
12-Dec-2025	Inter Account Transfer	1154957712 TO 02749020 300002	374,864.88		4,191,214.85
12-Dec-2025	Inter Account Transfer	1154957615 TO 02749020 300002	121,206.79		4,070,008.06
12-Dec-2025	Inter Account Transfer	1154957424 TO 02749020 300002	132,326.25		3,937,681.81
12-Dec-2025	Inter Account Transfer	1154952908 TO 02749020 300002	44,213.17		3,893,468.64
		Totals	2,560,650.69	118,801.47	
		End of Report Ledger Balance			3,893,468.64

Appendix 6 - BiTraDER Dissemination log

Date	Activity	Audience
10/12/21	Award of funding announcement in company newsletter	All SP ENW employees
19/01/22	Award of funding announcement in stakeholder newsletter	All SP ENW registered stakeholders
27/01/22	Project overview article in company magazine	All SP ENW employees
24/06/22	Announcement of project start in stakeholder newsletter	All SP ENW registered stakeholders
13/07/22	Power Responsive Seminar	All registered attendees (approx. 200)
21/09/22	EnergyXNorth	All registered attendees (approx. 75)
29/11/22	Energy Innovation Summit 2022	All registered attendees
14/12/22	SP ENW DSO Functions: Data and Flexible Services webinar	All registered attendees
19/04/23	SmartEn – Distributed Flexibility: Maximising Local Optimisation	All registered attendees
19/06/23	Meeting with European Commission – DG Comp	Damien Columb Matt Wieckowski
20/06/23	Eurelectric – Eurelectric Power Summit: Private Roundtable	All registered attendees
18/07/23	Weather and Climate Research for highly renewable power systems – University of Bristol	All registered attendees
12/09/23	Newsletter update sent to all signed up customers	All BiTraDER participants / customers

Date	Activity	Audience
29/09/23	LCP Delta published blogpost and posted on LinkedIn. Blogpost included an update on the project progress and a call for new customers to sign up to be involved in the project	LinkedIn audience
01/11/23	Energy Innovation Summit 2023	All registered attendees
06/12/23	Project overview and progress video used at the SP ENW stand at the Innovation Summit uploaded to the SP ENW website and YouTube.	SP ENW website / YouTube audience
07/12/23	Presentation to ENA ANM Curtailment Working Group	All WG members – DNOs and NESO
05/02/24	Project update LinkedIn post from Electron following the mini trials.	LinkedIn audience
09/02/24	Article in Connect – SP ENW's weekly internal comms newsletter about mini trials workshop	All SP ENW employees
12/02/24	LinkedIn post about the mini trials.	LinkedIn audience
19/04/24	121 BiTraDER project overview with NGED	NGED employee who attended the meeting
15/05/24	Article on flexibility markets in Modern Power Systems magazine	Modern Power Systems magazine readers
21/05/24	Presentation on BiTraDER at Utility Week Live	Attendees on the flexibility stage at UWL 2024
14/08/24	LinkedIn post on the simulation trials to update on the project and recruit new customers	LinkedIn audience
23/08/24	Presentation to ENA ANM Curtailment Working Group	All WG members – DNOs and NESO
29/10/24	Energy Innovation Summit 2024	All registered attendees
12/11/24	LinkedIn post on simulation trials following first successful trade	LinkedIn audience

Date	Activity	Audience
26/06/25	Presentation on BiTraDER at Connecting Projects to the Grid Conference	Conference attendees
03/07/25	Presentation on BiTraDER at Reforming Grid Connections Conference	Conference attendees
06/11/25	Energy Innovation Summit 2025	All registered attendees
02/12/25	BiTraDER Press Release	All article readers