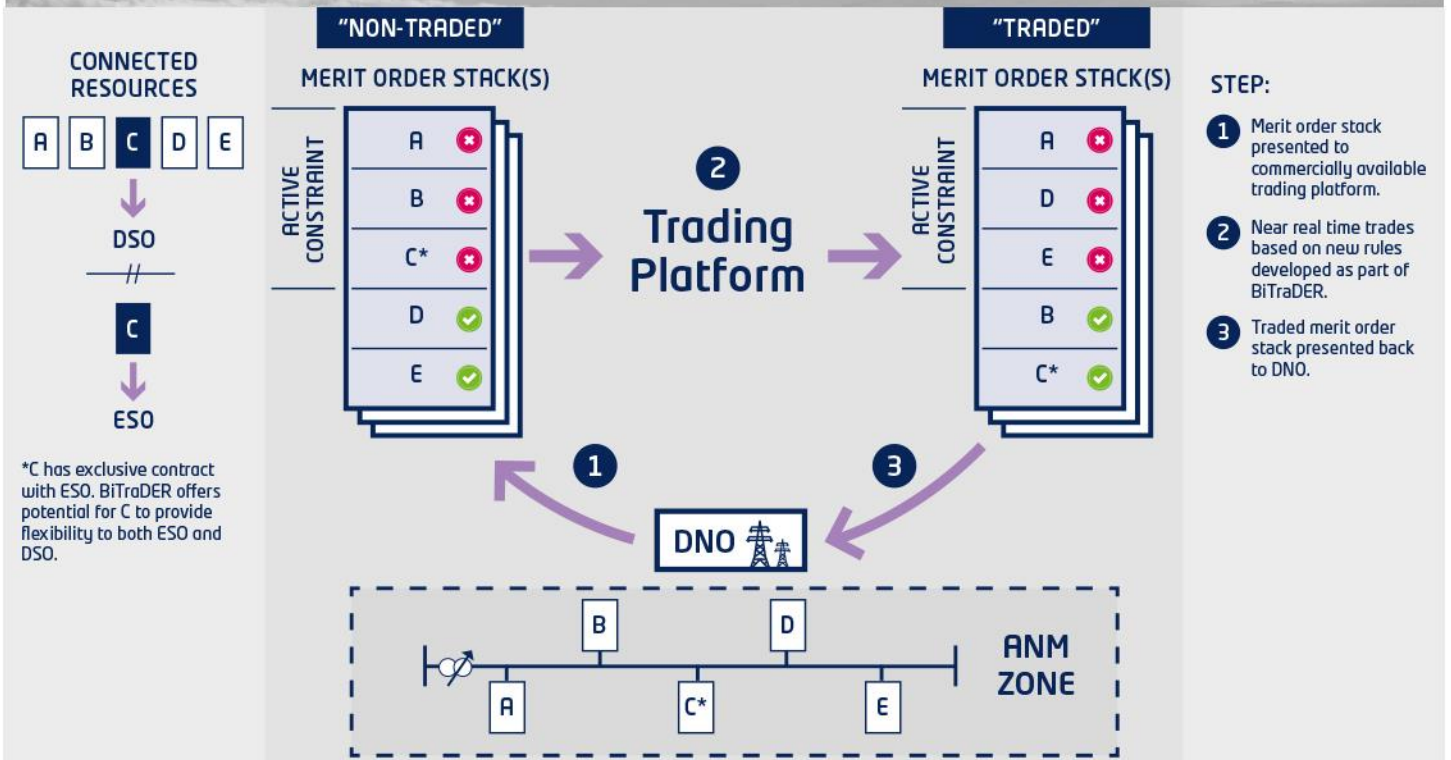


BiTraDER

Project Progress Report 2

15th December 2023



Project Partners



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Review

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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
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 the ESO, to end users (commercial and domestic properties).
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)
ENWL	Electricity North West Limited
ESO	Electricity 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. ESO is a natural monopoly in the flexibility market, acting as a neutral facilitator
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
Merit order list	A list of connectees in a specific order for the ANM system to action
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 Electricity System Operator (ESO),
- 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 ESO.

1.2 Project Progress

This is the second Project Progress Report (PPR) for BiTraDER and covers the period from 15th December 2022 to 15th December 2023.

The project is currently on track to deliver the overall aims and deliverables. The second deliverable, 'BiTraDER Trials Plan, Trading Rules, and Initial Specification' has been completed, uploaded to the ENWL website, and was submitted to Ofgem on 30th June 2023. This report details the market rules that will be used to inform the platform design. They are a set of innovative rules designed to benefit both buyer and seller by establishing a transparent, accessible and sustainable new market. The initial, high level trials plan has also been developed. To provide early learning and inform the future phases of the trials, we have introduced an additional mini trials phase to test the market rules with customers and determine a level of price discovery. This will be held as a one-day workshop in January 2024 along with a short review period afterwards to make any necessary amendments. The learnings from these mini trials will be taken forward to the simulation trials due to start in August 2024, preparations of which are now underway.

We are closely managing progress towards Deliverable 3 'BiTraDER Interim Report – Trading Platform Design' which is due in February 2024. The key activities as part of Deliverable 3 are the design of the end-to-end process including the trading platform, any upgrades required to ANM and the specification of the Application Programming Interface (API). There are currently no significant issues,

however it is generally agreed that going into the trial phase, learnings from each set of trials could alter the market solution and as part of the design workstream the project team are considering the necessary requirements of what is needed for the simulation phase only.

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

Figure 1: key project milestones

Date	Milestone
February 2023	Customer engagement workshop
April 2023	Mini Trials added in the project plan
June 2023	Completion of the second deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'.
July 2023	Project workshop and IT design kick off
October 2023	First draft of BiTraDER detailed design specification
November 2023	Dissemination of BiTraDER at annual Energy Innovation Summit
December 2023	Mini Trials run through with partners and preparation for workshop

The project actual costs to date (30 November 2023) are £1,677,103. 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 Electricity North West Limited (ENWL) risk management systems and processes which is audited and integrated in all aspects of day-to-day 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.

In this reporting period we have identified 8 new risks and closed 4 risks including one of the newly identified risks.

The complete risk register can be found in [Appendix 1](#).

The three main open risks for the project are:

1. **ANM system capabilities** – Although ENWL has started offering flexible ANM connections, it should be noted that the full capabilities of the ANM system are not yet mature and there is a concern that there may be a delay in starting the live network trials whilst the system is

established. The same concern also goes for the simulation trials however it has been discussed that for simulation trials we will be able to test the data exchanges from the ENWL system to the trading platform and to generate the different scenarios the NMS test system will be used. The NMS test system allows for additional flexibility for simulating network conditions on a more static basis. For the purposes of the live trials, the live NMS production system containing the dynamically changing network will need to be used alongside a fully functional ANM system. Although this poses no issue at this moment, this is a concern that will need to be monitored throughout the next reporting period.

2. **Delay in finalising design specification** – The ENWL IT team and the project partners are all working together to develop the trading platform design and associated upgrades to the ENWL systems. An API is required to integrate the systems together. The team agreed an internal deadline for the API specification of the end of November, but this had seen slight delays due to the complexity, and number, of data points. To minimise the delay, we held collaborative development discussions on how exactly the platform should be designed and what incremental changes may be needed to achieve each project phase requirements. The team have now agreed that the capabilities included in the current design is suitable for the simulation trial phase. However, this approach means that the design requirements may get more advanced and complicated as the project progresses to the live trials. We have allowed for further changes by employing an agile design process throughout the project which accepts that the requirements are likely to change after each trial phase. Therefore, the agreed approach is to design the platform for the simulation trials and then upgrade as necessary based on learnings gained from this phase before commencing live trials. Adopting this agile approach will allow us to minimise the complexity of the design and ensure we only design and build functionality that is required. One effect of this may be a delay starting the live trials as the design of the system may need to be upgraded but as we are planning for this now, this can be achieved within existing project timescales and budget.
3. **Engagement of non-curtable trial participants** – In preparation for the trials phase, the project team have been working hard to engage customers to come and participate in BiTraDER. In total there are 18 customers signed up who are interested and keen to participate in the BiTraDER trials. It has however become clear that most participants involved have curtable generation contracts. This is, in part, expected as these customers in the short term are set to benefit most from BiTraDER. In the longer term as the market matures it is expected that the desire for those customers on non-curtable connections will increase. For the purposes of the trials and testing the full set of trading arrangements, it will be vital to get additional non-curtable demand customers involved. In the lead up to the simulation trials in the next reporting period, additional rounds of customer engagement will be keenly undertaken to promote participation by existing non-curtable connectees. For the simulation trials this reduced number of non-curtable customers may mean that we are unable to adequately test all the trading options but this could be mitigated by asking customers to adopt different roles in different scenarios e.g. a battery operator could be a curtable generation, or non-curtable demand, customer. This risk may have greater implications for the live trials and we will continue customer engagement to ensure that we have the correct mix of customers in time for the live trials.

1.4 Learning and dissemination

ENWL attended and presented on BiTraDER at the 2023 Energy Innovation Summit (EIS). BiTraDER was presented as part of the 'How is the market evolving in 2024 and beyond session'. This 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 ENWL stand. This has now been uploaded to the ENWL website.

Throughout the year the project partners have attended and presented at events that involve discussions about BiTraDER. This includes the Smart Energy Summit in April 2023, the Eurelectric Power Summit in June 2023 and the University of Bristol in July 2023. Internal updates on the project have also been shared with ENWL colleagues via the internal regular newsletter 'Newswire'. An [external project newsletter](#) detailing progress and updates has also been shared with the participants signed-up to the project. In addition, LCP Delta posted a blogpost on LinkedIn.

ENWL presented on BiTraDER at the ENA ANM Curtailment Working Group. This group is part of Open Networks and its membership comprises all DNOs and ESO. This provided a technical overview of the project to ensure acceptability by other networks and offer an opportunity to challenge decisions made by the project team.

The BiTraDER communications register details and evidences all communications to date and is summarised in [Appendix 6](#).

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 ESO systems for execution in real time.

The market is intended to be completely independent of the DNO. Therefore, ENWL 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 ENWL 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.

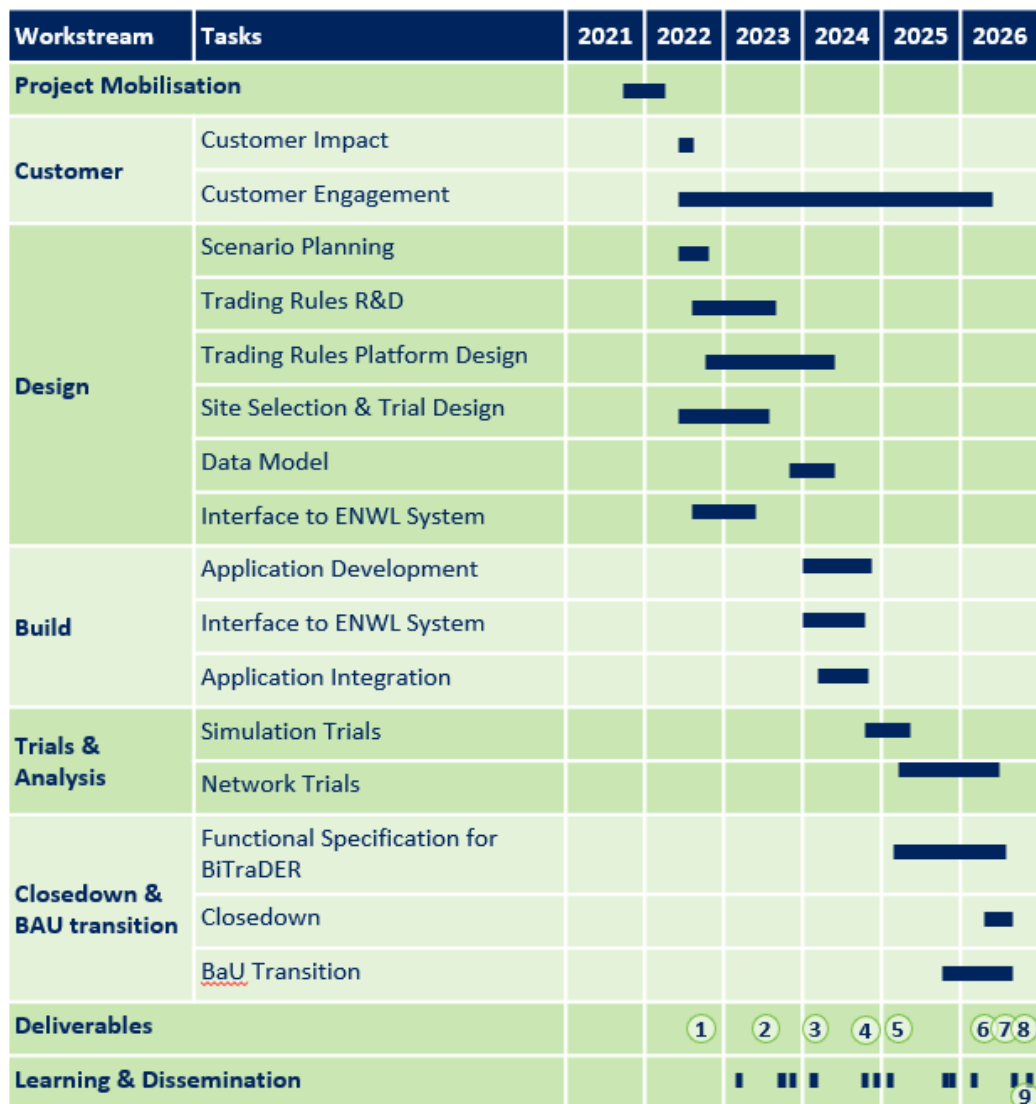
Figure 2: Project Partner role and responsibilities within the project

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.	<ul style="list-style-type: none"> • Development and design of market trading rules for the platform. • Ongoing monitoring, analysis and evaluation of trades and outcomes. • Interface with ESO and regulatory/policy changes. • Cost Benefit Analysis (CBA) of wider rollout based on observed outcomes.
Electron	Developed ElectronConnect platform which supports marketplaces for SSE, ESO and London Hydro, and will be used in BiTraDER. Specialists in digitally optimised marketplaces.	<ul style="list-style-type: none"> • Develop and provide market trading platform to enable DER 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.	<ul style="list-style-type: none"> • 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. There is a stage gate following the simulation trials providing the opportunity to ensure that the plan for implementation of the live trial is both reasonable and deliverable within the constraints of the approved project. Should the project pass the stage gate we will move to the live trial phase, otherwise we will progress immediately to project closedown and BAU transition.

Figure 3: BiTraDER project workstreams



The project partners and ENWL 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.
- **Change in Project Manager:** it should be noted that the project manager changed at the start of the reporting period. This transition was successful, and the new project manager has comfortably assumed their roles and responsibilities. Following an internal re-structure of the team and some internal recruitment we are in the process of transitioning to a new project manager. The future new project manager has been working on the project for 6 months and will continue to be supported by the existing project manager over the lifetime of the project.

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 first project deliverable, [‘BiTraDER Initial Report – Customer Engagement and Scenarios’](#), the team’s key activities during this reporting period were the completion of the second project deliverable in June 2023 and subsequent work on the development towards the third deliverable, ‘BiTraDER Interim Report – Trading Platform Design’ due in February 2024.

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:

- A [customer workshop](#) was held in February 2023 to give an overview of BiTraDER and demonstrate the conceptual model for the trading rules.
- A series of interviews and webinars was held with experienced traders to gather feedback from the trading rules.
- Customers were consulted regarding the API interface requirements to determine what equipment they have on site that we would need to use during the trials.
- Maintained customer engagement through active blogposts and newsletters resulting in additional customers signing up. There are now a total of 18 active participants that are keen to get involved in the project.
- Invites sent out for the mini trials, so far there are 7 customers attending the one-day workshop due to be held in January 2024.
- Actively recruited for participants to get involved in BiTraDER with the customer journey document sent out to over 30 businesses that could offer demand response.
- In depth phone interviews with customers, including development of qualitative discussion guides and analysis of feedback.

The [Customer Engagement Plan](#) outlines the broad range of research questions we aim to answer within the project, covering customers' understanding, requirements, and appetite for trading.

2.4.2 Design workstream

The design workstream has comprised the bulk of the work completed during this reporting period which has fed into completing the second deliverable '[BiTraDER Trials Plan, Trading Rules and Initial Specification Report](#)' and making significant headway with the third deliverable 'BiTraDER Interim Report – Trading Platform Design'.

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

- Designed and developed the [trading rules](#) that will be used in the BiTraDER market. These have been developed between the partners through ongoing weekly meetings from February to May and resulted in the finalised trading rules report submitted to ENWL at the end of May.
- A list of technical functional and non-functional requirements was created to enable the development of the ElectronConnect trading platform for BiTraDER.
- The end-to-end process was illustrated on process diagrams including asset registration, ANM interface, trade verification and settlement.
- To facilitate the API design, a data map was created which shows the flows of information between each entity involved.
- The requirements for upgrading the ENWL ANM system to enable integration to the trading platform were identified and will be implemented as part of the build workstream.
- A thorough Cyber Security risk assessment was carried out to determine the threat landscape surrounding the BiTraDER system.

In the next reporting period, the 'BiTraDER Interim Report – Trading Platform Design' will be submitted in February 2024. This will include writing up the tasks from the design workstream into a report and submitting to Ofgem.

During the next reporting period, the fourth deliverable, the 'BiTraDER Architecture Build Lessons Learned Report' is also due for submission in November 2024. As part of this deliverable the following activities are anticipated to be completed:

- Configuration of the BiTraDER trading algorithm into the ElectronConnect Trading Platform.
- Upgrade the ENWL ANM system with the requirements identified in the third deliverable.
- Build the API and integrate the ENWL system, trading platform and market operator together in preparation for trading taking consideration of cyber security requirements.
- Perform successful factory and site acceptance testing.

2.4.3 Build workstream

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

2.4.4 Trials and analysis workstream

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

Mini Trials

When developing the trading rules, value was recognised in testing some of the decisions made such as payment structure and price discovery. An additional cost neutral 'mini trials' phase was added to carry out this task and is due to be run as a one-day workshop in January 2024. These trials won't include the use of the trading platform and will be more of an informal hands-on exercise with active participation expected to demonstrate the market process.

There are currently 7 participants signed up to attend the event. For each scenario a participant will be assigned a role profile, and they will then choose a substation location on a printed out A1 size piece of network. The "market operator" will then send a constraint notification detailing the size of the constraint and what capacity is available to trade in a sealed envelope and in response the participants will return their sealed bids and offers.

The progress to date has seen the scenarios developed to enable feasible trading opportunities. These include some of the more difficult instances that were discovered during the design of the trading rules such as nested constraints and changes in network topology. The project team will shortly commence a 'dry run' of these scenarios to test the suitability of use for the mini trials.

Simulation Trials

The simulation trials are due to start in August 2024 and will last for 9 months. It is anticipated that a piece of pre prepared network will be created in the ENWL NMS test system. Various network constraints will be simulated on this network and any trading opportunities will be presented to the participants via the trading platform. This stage is the first opportunity to test the end-to-end process and will give each participant a feel for what it is like to trade in BiTraDER

The project team have met to discuss requirements for the simulation trials and what the learning outcomes should be. An introductory workshop will take place in August 2024 running through some example scenarios and ensuring participants are comfortable with the trading process. From this point a monthly scenario will be sent out. The scenarios will be built up from those used in the mini trials. At the end of each scenario a meeting will be held to announce the results of the trading and feedback will be requested. The key outcomes will be that the end-to-end process and core workflow enables successful trading to take place.

Live Trials

The live network trials provide the opportunity to test bilateral trading under real network conditions. Due to the uncertain nature of demand and generation it is impossible to guarantee constraints will manifest on the network and we may need to simulate them. However, it is important to note that even if the constraint is not real the actions and consequences will be, allowing customers to understand how trading impacts them and whether this affects their appetite to trade.

The Harker/Hutton area of the ENWL network has been preliminary selected and in anticipation of this, there has been significant customer engagement carried out in this area with over 30 businesses contacted that could offer demand response services.

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

We have continued to push project dissemination across several channels during this reporting period.

ENWL attended and presented on BiTraDER at the 2023 Energy Innovation Summit (EIS). BiTraDER was presented as part of the 'How is the market evolving in 2024 and beyond session'. This 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 ENWL stand. This has now been uploaded to the ENWL website.

Throughout the year the project partners have attended and presented at events that involve discussions about BiTraDER. This includes the Smart Energy Summit in April 2023, the Eurelectric Power Summit in June 2023, and the University of Bristol in July 2023. Internal updates on the project have also been shared with ENWL colleagues via the internal regular newsletter 'Newswire'. An external project newsletter detailing progress and updates has also been shared with all the participants signed-up to the project. In addition, LCP Delta posted a blogpost on LinkedIn.

ENWL presented on BiTraDER at the ENA ANM Curtailment Working Group. This group is part of Open Networks and its membership comprises all DNOs and ESO. This provided a technical overview of the project to ensure acceptability by other networks and offer an opportunity to challenge decisions made by the project team.

The BiTraDER communications register details and evidences all communications to date and is summarised in [Appendix 6](#).

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 our third deliverable, fourth deliverable and completion of the design phase.
- Update the BiTraDER website with the Project Progress Report 2 in December 2023, the third deliverable 'BiTraDER Interim Report – Trading Platform Design' in February 2024 and the fourth deliverable 'BiTraDER – Architecture Build Lessons Learned Report' in November 2024.
- Host continuous knowledge sharing events that could be either a webinar / workshop / conference and upload materials to the project website.
- Attend further meetings of the ENA Open networks ANM Curtailment Information working group to present BiTraDER and gain feedback from the other networks.
- Attend the EIS 2024 and any other relevant conferences, which is currently scheduled for 29th October / 30th October 2024.

3 Business Case Update

Apart from the Access Significant Code Review decision articulated in the first Project Progress Report, the project team are not aware of any other developments that have taken place since the issue of

the BiTraDER project direction that affect the business case for the project. However, the customer engagement conducted has highlighted a number of areas which can be considered when updating the business case including the impact of trading on a development’s business case, operational impact during planned shutdowns, impact on the investment value of a site/asset, potential revenue opportunities, as well as understanding how trading would fit with Elexon submissions/obligations and balancing regimes.

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.

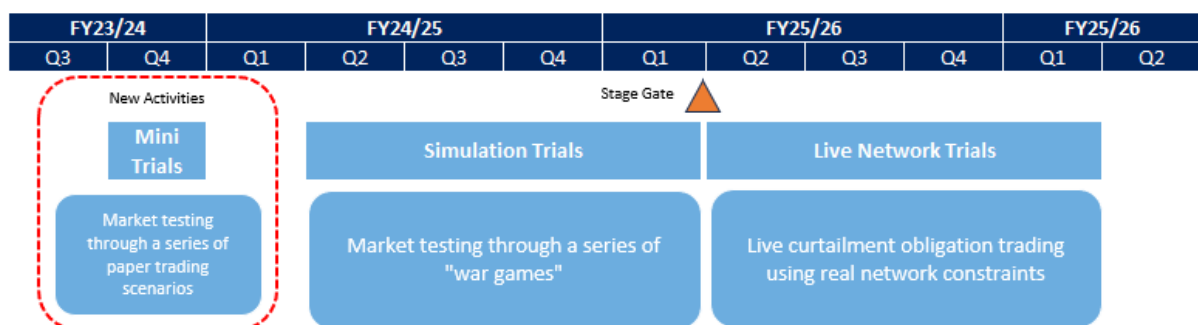
The progress against the plan in this reporting period has seen the second deliverable ‘BiTraDER Trials Plan, Trading Rules and Initial Specification Report’ submitted on time.

During the work for the third deliverable ‘BiTraDER Interim Report – Trading Platform Design’, there was an initial risk of a delay in the ANM system development due to an experienced member of staff leaving the business however this has now largely been rectified with active input from their replacement. There is however a wider risk of delay as decisions are made on what is required from the trading platform and API design at various future stages of the project, this is further covered in the points below.

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

- The mini trials workshop and trading rules review has been added into the project plan. This will form part of the trials and analysis workstream and will take place between 4th January 2024 to 29th March 2024. The decision to include the mini trials was formed when discussing the design of the trading rules. It was deemed valuable to test out the market and price discovery prior to progressing onto more advanced trial stages. The learnings from the mini trials will be taken forward to the simulation trials due to start in August 2024. To compliment the mini trials, additional engagement has been carried out with the onboarded customers and there are now 7 participants that are attending the one-day workshop towards the end of January 2024.

Figure 4: Trials Timeline and Activities



- Although ENWL has started offering flexible ANM connections, it should be noted that the full capabilities of the ANM system are not yet mature and there is a concern that there may be a delay in starting the live network trials whilst the system is established. The same concern also goes for the simulation trials however it has been discussed that for simulation trials we will be able to test the data exchanges from the ENWL system to the trading platform and to generate the different scenarios the NMS test system will be used. The NMS test system

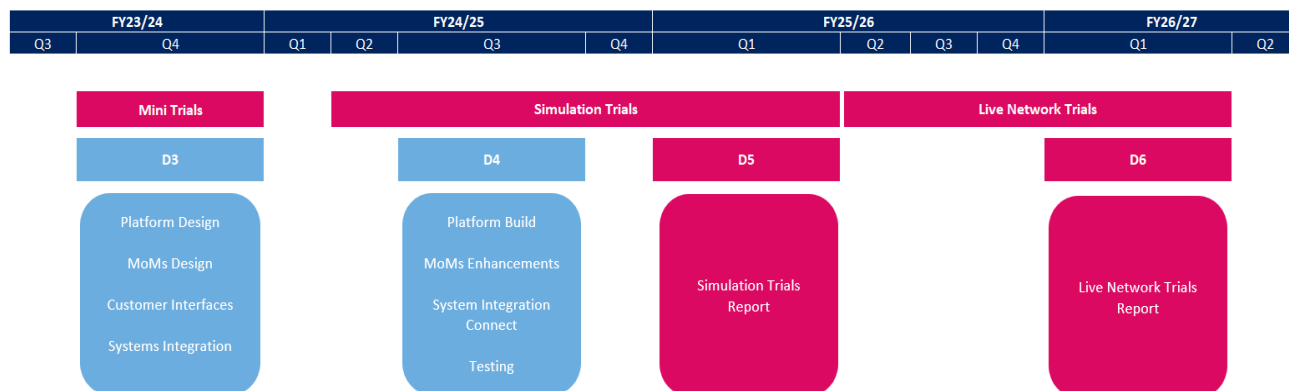
allows for additional flexibility for simulating network conditions on a more static basis. For the purposes of the live trials, the live NMS production system containing the dynamically changing network will need to be used alongside a fully functional ANM system. Although this poses no issue at this moment, this is a concern that will need to be monitored throughout the next reporting period.

- The IT teams at ENWL and the project partners are all working together to develop the trading platform design and associated ENWL systems. An API is required to integrate the systems together. An API is required to integrate the systems together. The team agreed an internal deadline for the API specification of the end of November, but this had seen slight delays due to the complexity, and number, of data points. To minimise the delay, we held collaborative development discussions on how exactly the platform should be designed and what incremental changes may be needed to achieve each project phase requirements. The team have now agreed that the capabilities included in the current design is suitable for the simulation trial phase. However, this approach means that the design requirements may get more advanced and complicated as the project progresses to the live trials. We have allowed for further changes by employing an agile design process throughout the project which accepts that the requirements are likely to change after each trial phase. Therefore, the agreed approach is to design the platform for the simulation trials and then upgrade as necessary based on learnings gained from this phase before commencing live trials. Adopting this agile approach will allow us to minimise the complexity of the design and ensure we only design and build functionality that is required. One effect of this may be a delay starting the live trials as the design of the system may need to be upgraded but as we are planning for this now this can be achieved within existing project timescales and budget.
- The second project deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' was submitted to Ofgem and uploaded to the project website on 29th June 2023. The trading rules and trials plan documented in this deliverable are currently being used to support development of the technical requirements for the platform design. The deliverable will continue to be a 'living' document; the trading rules and trials plan will be reviewed and updated in line with customer feedback and learning from the wider industry (i.e. from other in-flight innovation projects) over the course of the project.
- In preparation for the trials phase, the project team have been working hard to engage customers to come and participate in BiTraDER. In total there are 18 customers signed up who are interested and keen to participate in the BiTraDER trials. It has however become clear that most participants involved have curtailable generation contracts. This is in part expected as these customers in the short term are set to benefit most from BiTraDER. In the longer term as the market matures it is expected that the desire for those customers on non-curtailable connections will increase. For the purposes of the trials and testing the full set of trading arrangements, it will be vital to get additional non-curtailable demand customers involved. In the lead up to the simulation trials in the next reporting period, additional rounds of customer engagement will be keenly undertaken to promote participation by existing non-curtailable connectees. For the simulation trials this reduced number of non-curtailable customers may mean that we are unable to adequately test all the trading options but this could be mitigated by asking customers to adopt different roles in different scenarios e.g. a battery operator could be a curtailable generation, or non-curtailable demand, customer. This risk may have greater implications for the live trials and we will continue customer engagement to ensure that we have the correct mix of customers in time for the live trials.

In the next reporting period, the third deliverable 'BiTraDER Interim Report – Trading Platform Design' will be submitted. Currently there is no major risk to the timely submission of this deliverable at the

end of February, pending the relevant points above do not create additional barriers. The fourth deliverable 'BiTraDER Architecture Build Lessons Learned Report' is due for submission in November 2024. There is also no major risk to the submission of this deliverable, pending the relevant points above do not create additional barriers. 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 in [Appendix 3](#).

Actual spend to date compared to project budget is summarised in Figure 6 below with the detailed breakdown shown in [Appendix 4](#). This report includes expenditure up to and including 30 November 2023.

Figure 6: BiTraDER actual 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	342,464	609,676	267,212	1,779,586	1,779,760	174	0%
Contractors	861,148	1,086,747	225,599	2,751,817	2,747,932	(3,885)	0%
IT	381,109	977,031	595,922	1,773,599	1,773,113	(486)	0%
Payments to Users	0	42,000	42,000	400,782	400,782	0	0%
Contingency	0	0	0	636,222	636,222	0	0%
Other	92,382	121,751	29,369	360,637	360,637	0	0%
Total	1,677,103	2,837,204	1,160,102	7,702,642	7,698,447	(4,196)	

Source: Ofgem Schedule to Project Direction - January 2021

Project expenditure as of 30 November 2023 was £1,677,103 compared to cost baseline of £2,837,204. The project spend to date shows a level of underspend compared to the planned budget which is explained in further detail below.

The change in Project Manager and delayed recruitment of a Technical Lead at the start of this reporting period resulted in an underspend on Labour cost.

Contractors Project Management and Trading Platform design shows a slight overspend and underspend respectively due to the phasing of the payments from month to month. The profile assumed as part of the bid differs to that agreed in the partner contracts. As the project progresses towards completion expenditure is expected to become more closely aligned to budget.

The agile approach taken for the Trading Platform design, whereby an initial design taking the project to simulation trials will be followed by further upgrades to take the project to live trials and BAU has resulted in a slight underspend to the IT budget. The variance in budget will be able to accommodate these extra design upgrades later in the project when required.

The actual IT spend is significantly under budget compared to plan. The main reason for this is that we have taken a decision to integrate the trading platform to an ENWL internal system rather than directly to the Scheider Network Management System. This allowed us to simplify the IT architecture and by reducing complexity we could progress the design in a timely manner. The budget saved in design can then be used in the build phase to modify the internal systems.

There has been realignment of costs between the cost categories IT-Project Management and IT-Interface Design to accurately reflect activities undertaken within this reporting period and changes appropriately made to the finance systems.

The IT-Project Management is forecast to spend within budget whilst the IT-Interface Design spends are anticipated to be higher yet still underspent compared to budget due to the reasons stated above.

The Payments to Users category – Customer Engagement has resulted in an underspend due to a re-profiling of the customer engagement tasks. This re-profiling allows us to run the additional “mini trials” scheduled for 31 January 2024 without incurring any additional spend on the overall project budget.

Despite the delays and changes stated above, the programme remains on budget and the completion date of July 2026 is unaffected.

6 Bank account

The project bank statement is shown in [Appendix 5](#). The statement contains all receipts and payments associated with the project up to 30 November 2023.

7 Project Deliverables

In this reporting period there was one deliverable due for submission ‘BiTraDER Trials Plan, Trading Rules and Initial Specification Report’. This was submitted on 30th June 2023 to Ofgem and uploaded to the project website.

The third project deliverable, ‘BiTraDER Interim Report – Trading Platform Design’ is due in the next reporting period, by 28th February 2024. [Appendix 2](#) shows the full list of deliverables to be completed and submitted throughout the project lifecycle along with the status of the evidence.

Detailed development is currently on going for the key elements of deliverable 3 ‘BiTraDER Interim Report – Trading Platform Design’. The underlying importance of this work to the overall project has meant that all project partners have committed extensively to development work.

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 ENWL website as part of the trials deliverables.

Electricity North West’s [innovation data sharing policy](#) can be found on our website.

9 Learning Outcomes

In this reporting period, the tasks carried out were within the scope of the design workstream. The first half of the year focused on the research and development of the trading rules and the second half focused on the design elements of the end-to-end process including the trading platform, ANM and API.

The work completed during the first half of the year enabled the second project deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' to be successfully completed and submitted on 30th June 2023. This report details the trading algorithm that will be used for BiTraDER. The trading algorithm encompasses the matching process for the different payment structures that we will be trialling during the trials & analysis workstream. Hence, this plays a big part into how the BiTraDER market will work. The market rules are also necessary for the trading platform design, the work of which is well underway. The second deliverable also details preliminary plans for the trials. As indicated at several points within this document, the mini trial phase was added in to test the market rules developed and determine a level of price discovery. These trials are due to take place as a one-day workshop in January 2024 followed by a two-month review phase. From the mini trials the project team are expected to generate important learning outcomes going into the next reporting period. The customer feedback from these trials could result in an update to the existing market rules and a change in the direction of the methodology for carrying out the simulation trials.

In the next reporting period, it is anticipated that further learning will be generated from the development of the third deliverable 'BiTraDER Interim Report – Trading Platform Design' due in February 2024.

The learnings outcomes during this reporting period are:

- Having a connection agreement does not automatically mean that customers agree to be contacted for the purposes of innovation and research. DNOs may wish to consider introducing a clause in connection agreements giving the ability to contact connecting customers for the purposes of research and innovation.
- Some customers have noted a preference to remain anonymous in the project, both in terms of the engagement workshops and in press releases. DNOs may need to consider introducing virtual means of engagement to provide better options for anonymity for those who need it.
- Customers have brought a variety of different perspectives for their interest in BiTraDER including the impact on a development's business case, operational impact during planned shutdowns, impact on the investment value of a site/asset, potential revenue opportunities, as well as understanding how trading would fit with Elexon submissions/obligations and balancing regimes. The project team will consider these areas when developing the business case.
- Early engagement with customers on the trading rules at the workshop held in February provided positive feedback which informed the trading rules proposed for the trials and will hopefully reduce any modifications required.
- The project team held interviews with participants to inform various aspects of the design from the platform user interface to the APIs required for dispatch and settlement. Gaining customer input for the elements of the project which directly affect them at an early stage will ensure the design is fit for purpose and reduce the need for modifications during and after the trials.

- In last year's Project Progress Report, we reported on a delay in the design of the trading rules. To mitigate the delay, we reviewed the process and implemented content-based project team meetings which allowed us to make the most of the different expertise across the project partners. These meetings proved crucial to moving forward the design of the Trading Rules and allowed us to publish the trading rules design on time. Similar projects developing complex rules would benefit from adopting these types of meetings as early in the process as possible.

10 Intellectual property rights

ENWL 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 ENWL risk management systems and processes which is audited and integrated in all aspects of day-to-day 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.

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.

The three main open risks for the project are:

1. **ANM system capabilities** – Although ENWL has started offering flexible ANM connections, it should be noted that the full capabilities of the system are not yet mature and there is a concern that there may be a delay in starting the live network trials whilst the system gets up and running. The same concern also goes for the simulation trials however it has been discussed that for simulation trials we will be able to test the data exchanges from the ENWL system to the trading platform and to generate the different scenarios the NMS test system will be used. The NMS test system allows for additional flexibility for simulating network conditions on a more static basis. For the purposes of the live trials, the live NMS production system containing the dynamically changing network will need to be used alongside a fully functional ANM system. Although this poses no issue at this moment, this is a concern that will need to be monitored throughout the next reporting period.

2. **Delay in finalising design specification** – The ENWL IT team and the project partners are all working together to develop the trading platform design and associated upgrades to the ENWL systems. An API is required to integrate the systems together, the team agreed an internal deadline for the API specification of the end of November, but this had seen slight delays due to the complexity, and number, of data points. To minimise the delay, there we held collaborative development discussions on how exactly the platform should be designed and what incremental changes may be needed to achieve each project phase requirements. The team have now agreed that the capabilities of the current design is suitable for the simulation trial phase. However, this approach means that the design requirements may get more advanced and complicated as the project progresses to the live trials. We have allowed for further changes by employing an agile design process throughout the project which accepts that that the requirements are likely to change after each trial phase. Therefore, the agreed approach is to design the platform for the simulation trials and then upgrade as necessary based on learnings gained from this phase before commencing live trials. Adopting this agile approach will allow us to minimise the complexity of the design and ensure we only design and build functionality that is required. One effect of this may be a delay starting the live network trials as the design of the system may need to be upgraded but as we are planning for this now the learning can still be gained within existing project timescales and budget.
3. **Engagement of non-curtable trial participants** – In preparation for the trials phase, the project team have been working hard to engage customers to come and participate in BiTraDER. In total there are 18 customers signed up who are interested and keen to participate in the BiTraDER trials. It has however become clear that most participants involved have curtable generation contracts. This is in part expected as these customers in the short term are set to benefit most from BiTraDER. In the longer term as the market matures it is expected that the desire for those customers on non-curtable connections will increase. For the purposes of the trials and testing the full set of trading arrangements, it will be vital to get additional non-curtable demand customers involved. In the lead up to the simulation trials in the next reporting period, additional rounds of customer engagement will be keenly undertaken to promote participation by existing non-curtable connectees. and until more non-curtable connections are added. For the simulation trials this reduced number of non-curtable customers may mean that we are unable to adequately test all the trading options but this could be mitigated by asking customers to adopt different roles in different scenarios e.g. a battery operator could be a curtable generation, or non-curtable demand, customer. This risk may have greater implications for the live trials and we will continue customer engagement to ensure that we have the correct mix of customers.

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 ENWL 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 - Detailed project expenditure

Appendix 5 - Project bank account

Appendix 6 - BiTraDER dissemination log

Appendix 1 – Risk register

Number	Project phase/ workstream	Risk summary	Probability	Impact	Mitigation	Revised probability	Revised impact	Last Reviewed	Status	Update
0.1	Delivery	Covid-19	2	3	We will monitor government advice both in the UK and Europe to identify any risks as early as possible.	1	3	31/11/23	Open	No further restrictions anticipated and updated assessment provided
0.2	Mobilisation	Mobilisation	2	4	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
0.3	Customer engagement	Customer contracts and engagement	3	5	We will start the customer engagement early in the project and have ensured there is sufficient time in the project plan.	1	5	31/11/23	Open	Current advice is that we don't need any specific contracts for the trials.
0.4	Customer engagement	Low recruitment	3	5	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.	1	5	31/11/23	Open	We have a list of customers and are now working on obtaining the relevant contact information and permissions
0.5	Build	Delayed integration with ENWL systems	2	5	We have selected competent partners who have advised on the Project plan which allows sufficient time.	1	5	31/11/23	Open	Specific risks on the build and integration added to this log
0.6	Build	Delayed Platform configuration	2	5	We have selected competent Partners who have advised on the Project plan which allows sufficient time.	1	5	31/11/23	Open	Trading rules agreed and discussions on trial plans underway to inform the platform configuration

Number	Project phase/ workstream	Risk summary	Probability	Impact	Mitigation	Revised probability	Revised impact	Last Reviewed	Status	Update
0.7	Design	System undermined by Cyber security requirements	3	5	We have allowed time for appropriate cyber-security considerations and design in the Project plan.	1	5	31/11/23	Open	The initial Cyber review has been completed and the requirements could lead to more configuration delaying the build process - specific risks added to this log to cover this.
0.8	Simulation	Customer retention through trials	3	5	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	31/11/23	Open	Issued a customer newsletter containing a "you said, we did" and next steps to help with retention and LinkedIn posts published to increase awareness of project
0.9	Network Trials	Lack of network constraints	3	5	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)	1	5	31/11/23	Open	
0.10	Network trials	Lack of participant understanding affecting testing	2	4	We have significant customer engagement planned throughout the project to educate participants in the benefits and risks associated with obligation trading.	1	4	31/11/23	Open	Customer engagement is already identifying information customers will need to be able to value and set a price for trading. This engagement work is feeding into the requirements gathering activities
0.11	Network trials	Limited support/involvement from ESO	2	4	We are currently seeking to secure a contract for consultancy services	1	4	31/11/23	Open	Contract signed, waiting on appropriate ESO contact

Number	Project phase/ workstream	Risk summary	Probability	Impact	Mitigation	Revised probability	Revised impact	Last Reviewed	Status	Update
0.12	Learning & Dissemination	Dissemination affected by low attendance	2	3	ENWL will choose dissemination channels optimised to achieve maximum reach and coverage.	2	3	31/11/23	Open	We are constantly seeking appropriate events to disseminate on BiTraDER
0.13	Closedown	Change in Ofgem governance	3	3	Communication channels from Ofgem will be monitored and any updates to such requirements identified as early as possible.	1	3	31/11/23	Open	No significant changes identified in publication of Final Determinations, but we will continue to monitor changes throughout the project
1.01	Mobilisation	Outstanding contracts	3	3	Started this work early in the mobilisation phase	2	3	07/12/22	Closed	All critical path contracts agreed
1.02	Design	Developing specifications and requirements	2	3	Internal technical peer review of requirements and specifications as they develop; potential external peer review via open networks WS1a P6.	1	3	31/11/23	Open	Open Networks is developing industry standards relating to API development; will require continued monitoring and anticipation of adjustments in transition to BaU
1.03	Customer engagement	Low incidence of flexible connection agreements in our area	4	5	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 ENWL area (in time for live trials in 2025-26)	2	5	31/11/23	Open	CP Delta and ENWL have been actively reaching out to new customers. One new customer signed up to participate and so far 5 customers have signed up to the mini trials workshop.
1.04	Design	Delay in development of market design rules	3	3	Activities without dependencies on trading rules have been brought forward and started early	2	3	31/07/23	Closed	Trading rules now agreed
1.05	Design	Delay in development of technical requirements	3	3	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

Number	Project phase/ workstream	Risk summary	Probability	Impact	Mitigation	Revised probability	Revised impact	Last Reviewed	Status	Update
2.01	Design	Delay in development of functional requirements	3	3	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
2.02	Design	Delay in development of detailed technical requirements	3	5	Workshops held to discuss the detailed technical requirements and ensure that they meet the needs of all the systems	3	5	31/11/23	Open	We have now implemented an agile design methodology to reduce the complexity needed for the simulation trials
2.03	Design	Delay in development of Customer Interface to ENWL	4	5	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	31/11/23	Open	Calls held with 3 customers, including second follow up call with one customer.
2.04	Build	Delay in configuration to meet Cyber Security requirements	4	5	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 ENWL) to speed up the trading platform's configuration process	2	5	31/11/23	Open	Electron is investigating the scope of the required cyber security work. The approval (to proceed with the systems' integration) needs to be clarified and agreed.
2.05	Build	Delay in system integration testing	4	5	We will book access to the test system and we will create a sandbox environment for the test data.	2	5	31/11/23	Open	
2.06	Design	Delay in design of MoM system updates	4	5	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

Number	Project phase/ workstream	Risk summary	Probability	Impact	Mitigation	Revised probability	Revised impact	Last Reviewed	Status	Update
2.07	CBA	Insufficient data from the trials	3	5	Early engagement with customers to ensure participations across the different network users.	2	5	31/11/23	Open	
2.08	Delivery	Limited/short term flexible connections due to Access SCR increasing reinforcement and reducing BiTraDER liquidity	3	5	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	08/12/23	Open	

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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Connected resource interfaces • Data formats • Data flows • Trading platform • ANM interface 	On track for deadline
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 ENWL’s real-time systems.	On track for deadline
5	BiTraDER Simulation Trials Report	30/06/25	Document detailing the results from the simulation trials including <ul style="list-style-type: none"> • recommendations for any amendments required for network trials. • assessment of project readiness to move to network trials 	On track for deadline

Reference	Project Deliverable	Deadline	Evidence	Status
6	BiTraDER Network Trials Report	30/05/26	Document detailing the final results from the network trials. **This deliverable will be produced if we pass the Stage Gate**	On track for deadline
7	BiTraDER Functional Specification	30/06/26	Final functional specification for BiTraDER, including: <ul style="list-style-type: none"> • 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	<ol style="list-style-type: none"> 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	342,464	609,676	267,212	1,779,586	1,779,760	174	0%
Labour - Project Management	342,464	609,676	267,212	1,691,782	1,691,956	174	0%
Labour - Functional Specification for BiTraDER	-	-	-	87,804	87,804	-	0%
Contractors	861,148	1,086,747	225,599	2,751,817	2,747,932	(3,885)	0%
Contractors - Project Management	376,724	165,247	(211,477)	430,283	426,019	(4,263)	-1%
Contractors - Customer Engagement	226,924	222,349	(4,575)	487,734	488,110	377	0%
Contractors - Trading Rules Research & Development	136,000	476,730	340,730	476,730	476,730	0	0%
Contractors - Trading Platform Design	121,500	170,000	48,500	170,000	170,000	-	0%
Contractors - Data Model	-	29,750	29,750	59,500	59,500	-	0%
Contractors - Application Development	-	-	-	399,500	399,500	-	0%
Contractors - Simulation Trials	-	-	-	331,500	331,500	-	0%
Contractors - Network Trials	-	-	-	93,500	93,500	-	0%
Contractors - Functional Specification for BiTraDER	-	-	-	51,000	51,000	-	0%
Contractors - Closedown	-	-	-	197,186	197,186	-	0%
Contractors - Learning & Dissemination	-	22,670	22,670	54,884	54,886	2	0%
IT	381,109	977,031	595,922	1,773,599	1,773,113	(486)	0%
IT - Project Management	121,009	28,658	(92,350)	79,819	79,333	(486)	-1%
IT - Trading Platform Design	230,100	300,000	69,900	300,000	300,000	-	0%
IT - Interface Design to ENWL Systems	30,000	546,077	516,077	548,039	548,039	0	0%
IT - Interface Build to ENWL Systems	-	102,295	102,295	735,990	735,991	0	0%
IT - Application Integration	-	-	-	109,750	109,750	-	0%
Payments to users	-	42,000	42,000	400,782	400,782	-	0%
Payments to Users - Customer Engagement	-	42,000	42,000	112,000	112,000	-	0%
Payments to users - Payments to users	-	-	-	288,782	288,782	-	0%
Contingency	-	-	-	636,222	636,222	-	0%
Other	92,382	121,751	29,369	360,637	360,637	0	0%
Other - Accommodation	30,861	43,742	12,881	109,983	109,983	(0)	0%
Other - Learning & Dissemination	61,521	78,009	16,488	250,654	250,655	0	0%
Total	1,677,103	2,837,204	1,160,102	7,702,642	7,698,447	-4,196	0%

Appendix 5 - Project bank account



Balance and Transaction Report

03-Jan-2024
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Client ID: 14121616
Reporting Period: 15-Dec-2022 to 15-Dec-2023
Bank Name: Lloyds
Account Number / Name / Currency Code: 308012-23165960 / ELECTRICITY NORTH WEST LIMITED-BITR / GBP
Closing Ledger Balance As At: 14-Dec-2022 Closing Ledger: 4,969,402.86

Posting Date	Type	Details	Debits	Credits	Ledger Balance
15-Dec-2022	CHAPS Payment	F/FLOW NATIONALGRI NO.PROJECTPAYMENT9 ROC/7300031796		565,808.91	5,535,211.77
09-Jan-2023	Interest Payment	INTEREST (GROSS)		4,636.71	5,539,848.48
16-Jan-2023	CHAPS Payment	F/FLOW NATIONALGRI NO.PROJECTPYMT10 ROC/7300035518		565,809.12	6,105,657.60
09-Feb-2023	Interest Payment	INTEREST (GROSS)		6,620.40	6,112,278.00
15-Feb-2023	CHAPS Payment	F/FLOW NATIONALGRI NO.NICBITRADERPRO ROC/7300040055		565,809.12	6,678,087.12
16-Feb-2023	Inter Account Transfer	1088181324 TO 02749020 300002	81,809.87		6,596,277.25
09-Mar-2023	Interest Payment	INTEREST (GROSS)		7,360.18	6,603,637.43
15-Mar-2023	CHAPS Payment	F/FLOW NATIONALGRI NO.BITRADERPROJECT ROC/7300044082		565,809.12	7,169,446.55
21-Mar-2023	Inter Account Transfer	1090208589 TO 02749020 300002	65,070.49		7,104,376.06
11-Apr-2023	Interest Payment	INTEREST (GROSS)		9,703.57	7,114,079.63
13-Apr-2023	Inter Account Transfer	1091766615 TO 02749020 300002	98,197.64		7,015,881.99
09-May-2023	Interest Payment	INTEREST (GROSS)		8,615.58	7,024,497.57
11-May-2023	Inter Account Transfer	1093547351 TO 02749020 300002	89,556.20		6,934,941.37
09-Jun-2023	Interest Payment	INTEREST (GROSS)		9,427.85	6,944,369.22
27-Jun-2023	Inter Account Transfer	PERIOD 2 TO 02749020 300002	37,772.82		6,906,596.40
10-Jul-2023	Interest Payment	INTEREST (GROSS)		13,946.20	6,920,542.60
31-Jul-2023	Inter Account Transfer	NIC PROJECT TO 02749020 300002	112,006.56		6,808,536.04
09-Aug-2023	Interest Payment	INTEREST (GROSS)		15,275.06	6,823,811.10
11-Sep-2023	Interest Payment	INTEREST (GROSS)		17,181.05	6,840,992.15
09-Oct-2023	Interest Payment	INTEREST (GROSS)		14,694.08	6,855,686.23
09-Nov-2023	Interest Payment	INTEREST (GROSS)		16,303.39	6,871,989.62
11-Dec-2023	Interest Payment	INTEREST (GROSS)		16,869.32	6,888,858.94
12-Dec-2023	Inter Account Transfer	IAT P08 BITRADER TO 02749020 300002	363,201.64		6,525,657.30
12-Dec-2023	Inter Account Transfer	IAT P04 BITRADER TO 02749020 300002	96,339.83		6,429,317.47
12-Dec-2023	Inter Account Transfer	IAT P07 BITRADER TO 02749020 300002	65,141.57		6,364,175.90

Transaction and balance information is correct as at the date and time stamp printed at the top of this report but may be subject to change. Lloyds Bank plc Registered Office: 25 Gresham Street, London EC2V 7HN. Registered in England and Wales no. 2065. Telephone: 0207 626 1500. Authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority under Registration Number 119278. Eligible deposits with us are protected by the Financial Services Compensation Scheme (FSCS). We are covered by the Financial Ombudsman Service (FOS). Please note that due to FSCS and FOS eligibility criteria not all business customers will be covered.

Posting Date	Type	Details	Debits	Credits	Ledger Balance
12-Dec-2023	Inter Account Transfer	IAT P05 BITRADER TO 02749020 300002	137,052.31		6,227,123.59
12-Dec-2023	Inter Account Transfer	IAT P06 BITRADER TO 02749020 300002	51,882.68		6,175,240.91
		Totals	1,198,031.61	2,403,869.66	
		End of Report Ledger Balance			6,175,240.91

Appendix 6 - BiTraDER Dissemination log

Date	Activity	Audience
10/12/21	Award of funding announcement in company newsletter	All ENWL employees
19/01/22	Award of funding announcement in stakeholder newsletter	All ENWL registered stakeholders
27/01/22	Project overview article in company magazine	All ENWL employees
24/06/22	Announcement of project start in stakeholder newsletter	All ENWL 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	ENWL 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 ENWL stand at the Innovation Summit uploaded to the ENWL website and YouTube.	ENWL website / YouTube audience
07/12/23	Presentation to ENA ANM Curtailment Working Group.	All WG members – DNOs and ESO