BiTraDER
Project Progress Report

Rebecca Hassall-Lees

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Version

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Review

Name	Role	Date
Geraldine Paterson	Innovation Manager	05.12.22
Victoria Turnham	Head of Network Innovation	12.12.22

Approval

Name	Role	Signature & date
Victoria Turnham	Head of Network Innovation	Victoria Turnham 13.12.22
Rebecca Hassall-Lees	BiTraDER Project Manager	Rebecca Hassall-Lees 12.12.22

Contents

Glossary

Term	Definition
Active Network management	is the use of distributed control systems to continually monitor network limits, along with systems that provide signals to Flexible Resources to modify outputs in line with these limits[1].
Aggregators	Organisations that contract with a number of smaller organisations and use the collective capacity to trade in the flexibility market
Connectee	Any individual or company connected to the electricity distribution network
Constraint	A projected capacity or voltage greater than network ratings resulting in an area of the network needing to be actively maintained within limits.
Curtailment	Instructing connectees asset to turn up, turn down, system off or re-energise when a constraint is active.
Curtailment obligation	An obligation stated in a connection agreement for the connectee to turn down or turn off either their import or export in response to network constraints.
Distribution Network Operator	An organisation that own, operates and manages the electricity distribution infrastructure that delivers electricity from the transmission grid operated by National Grid, to end users (commercial and domestic properties). These regional companies are natural monopolies and are therefore regulated by Ofgem.
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 to the DNO, ESO, or 3rd party market 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 to the DNO, ESO, or 3rd party market 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)
Electricity System Operator	The Electricity System Operator (ESO) performs several important functions; from second-by-second balancing of electricity supply and demand, to developing markets and advising on network investments.
Flexible connection	Flexible Connections are Non-firm, connection arrangements whereby a customer's export or import is managed (often through real-time control) based upon contracted and agreed principles of available capacity. Flexible Connections typically allow quicker and cheaper connection to the network but have no defined cap on the extent to which a user's access can be interrupted.

[1] Definition provided as part of Open Networks: ON21-WS1A Open Networks Flexibility Connections Explainer and Q&A (19 Aug 2021).pdf (energynetworks.org)

Executive Summary

The Project

The BiTraDER project officially started on 15 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) and Merit Order Management systems, 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 flexible (curtailable) connections through reducing risk associated with curtailments
- Reduce barriers to uptake of renewable energy sources
- Address current operational and contractual conflicts between Distribution System Operation (DSO) 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.

Project Progress

This is the first Project Progress Report (PPR) for BiTraDER and covers the period from 15 December 2021 to 15 December 2022.

The project is currently on track to deliver the overall aims and deliverables. The first deliverable, 'BiTraDER Initial Report – Customer Engagement and Scenarios' was successfully completed on time. We are closely managing progress towards Deliverable 2 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' which is due in June 2023. The key activities as part of Deliverable 2 are currently undergoing in depth development but no significant issues are apparent. It is important to note at this stage, that the development of trading market rules has also taken more time than initially planned, however the impact of this delay is being managed by the Project Partners.

The key project milestones delivered during this reporting period are outlined in Table 1 below:

Date	Milestone
January 2022	Mobilisation of project team
April 2022	BiTraDER Project Partner contracts finalised
July 2022	Creation of BiTraDER website
July 2022	Project Kick off workshop
September 2022	Completion of Customer Engagement Plan
September 2022	Dissemination of BiTraDER at annual Energy Innovation Summit
November 2022	Completion of first deliverable 'BiTraDER Initial Report – Customer Engagement and Scenarios'

Table 1: key project milestones

The project's first deliverable 'BiTraDER Initial Report – Customer Engagement and Scenarios' details the learning from the customer 'onboarding' discussions, the first customer webinar and follow up survey. It also documents the eight core use cases we will be exploring and testing within the trials, along with the approach and process taken to identify and refine the use cases. This was successfully submitted to Ofgem on 30 November 2022 and uploaded to the project website. The project is now focused on the enabling activities associated with the second deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' which is due for completion on 30 June 2023. The deliverable is currently subject to in depth development works and to date no significant issues have arisen.

The project actual costs to date (7 December 2022) are £402,477. The estimated costs at completion is **7,698,448** which is in line with the project budget (including contingency).

Risks

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.

Over the last 12 months, three additional risks have been added to the risk log:

Incidence of energised flexible connections – there is currently a low incidence of flexible connections (non-firm connections) completing through to energisation in our area. This is a potential risk to the project learning if this group of customers are not adequately represented within the timeframes of the trials. The project team have mitigated this risk by extending recruitment from being focused exclusively on the ENWL licence area, to GB wide. As a result, this risk is now thought to be low.

Unanticipated complexity of market rules – the process for developing market rules has required a deeper understanding from project partners on ENWL's systems and processes than was initially anticipated at bid stage. As a result, the process has required more internal workshops, time and effort to develop market model principles, objectives and the initial building blocks. As the project has some

dependencies on the development of this activity, there are other activities that are at risk of delays. This includes technical requirements of the third party trading platform, Electron Connect.

The unanticipated complexity in developing trading rules and associated delay, may impact on the activities that are dependent upon the trading rules development. As such, the project team has identified activities relating to the technical requirements gathering, that are not dependent on trading rules and brought these forward. For example, this includes cyber security and interface with ENWL systems. This allows more time in Q4 to focus on activities that have dependencies on trading rule development.

Development of specifications in line with industry standards – since mobilisation, the Open Networks project has been developing industry standards relating to the use of APIs. This work may conflict with our design and build phases. The project will take the latest thinking and developments into the design and build phases, understanding that it may not have reached maturity. However, the Project Team is committed to ensuring that outputs, including the functional specifications and technical requirements, continue to be useful to wider industry. As such, the project is anticipating updates to affected deliverables following completion of the Open Networks work.

Learning and dissemination

The project is still in its early phases and has one deliverable to report. To date, project progress has been presented at the annual Energy Innovation Summit, in September this year and in webinars with Electricity North West connections customers, as well as those interested in Electricity North West flexibility tenders. The project was also referenced by National Grid ESO at the Net Zero & Energy Management Expo in November this year.

Project Managers Report

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 flexible connection arrangements for customers.

Flexible (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 flexible 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 flexible 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 flexible 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.

Project Partners

There are three project partners working collaboratively on the BiTraDER project; LCP Delta, AFRY and Electron. The partners each contribute a unique skill set and experience to the project. Table 2: Project Partner Table 2 below provides details of the partner's experience and role within the project.

Project Partner	Experience	Role on Project
Electron	Developed ElectronConnect platform which supports marketplaces for SSE, NG ESO and London Hydro, and will be used in BiTraDER. Specialists in digitally optimised marketplaces.	• 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
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 ESO and regulatory/policy changes. • Cost Benefit Analysis (CBA) of wider rollout based on observed outcomes.
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

Table 2: Project Partner role and responsibilities within the project

General

Following award of funding for BiTraDER, the project has been mobilised to establish contracts and structures within the wider team. Contracts with each of the project partners, were completed and mobilised by April 2022. The core project team was completed following appointment of the project manager in June 2022. Workstreams have been used to group and streamline the tasks required within the Project. Figure 1 shows a high-level snapshot of the project workstreams.

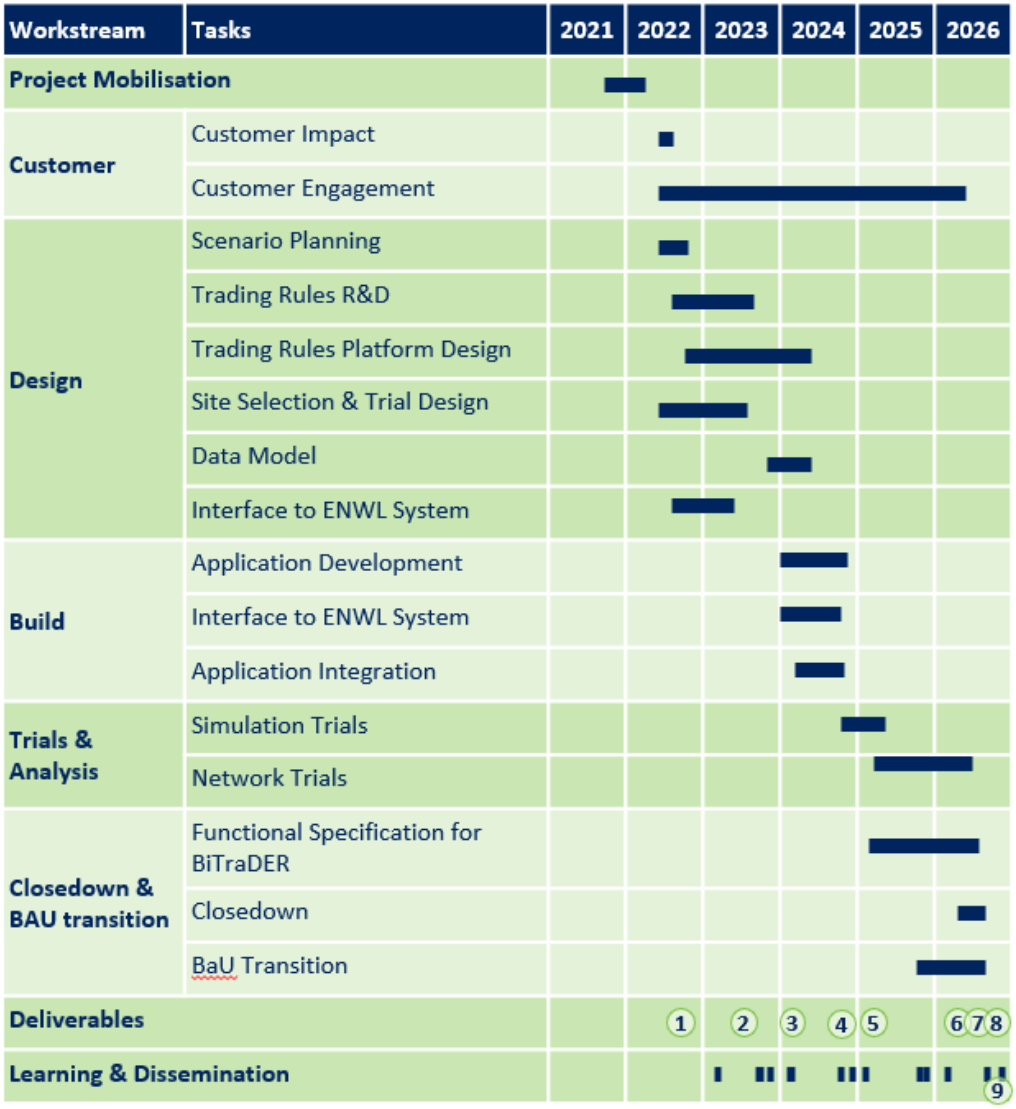

Figure 1: BiTraDER project workstreams

The project partners and ENWL project team met face to face at the initial project kick off meeting in July 2022, where we established understanding of the project and activities ahead. Subsequently, the team have continued to meet on a weekly basis in relation to activities within the workstreams and associated deliverables.

Project finances including bank accounts, partner contracts and initial purchase orders were set up to align with key activities and key deliverables both prior to and following the stage gate.

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:** following the initial project 'Kick off' meeting, regular weekly progress calls have been held with partners, 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 implemented Huddle as an online collaboration tool to share information on the workstreams between project partners. The portal is designed to support collaborative work on project deliverables, risk and issue management. The portal also holds the weekly meeting minutes and action logs. Project progress updates and actions are reviewed on a weekly basis with project partners, ensuring actions are clearly described, allocated responsibility, provided deadlines, and then followed up. Figure 2 provides a screenshot of the action tracker used by Project partners.

BiTraDER Action Tracker

Last Updated: 22.11.22
Updated by: RHL

Action	Assign	Assigned to ((	Date Assigne	Due Date	Prior	Status	Notes
Explore options for national promotion of project and wider recruitment	Delta EE	Matthew Myers	13-Jun-22		HIGH	Complete	Extending recruitment beyond ENWL network area due to low incidence of flexible connections (and interest within this group). Broadening out recruitment will boost recruitment progress and introduce greater levels of experience both with participation in flexible services, but also impact of curtailment on a flexible connection (both understood to be far more prevalent in other DNO areas). Recuitment now paused, with intention to re launch specifically for the live network trials
All project partners to review excel version of project plan and feedback on improvements	All	All	01-Aug-22	31-Oct-22	MED	Complete	Revisiting project planning due to delays identified in development of trading rules; exploratory work requiring more effort and time than anticipated and dependencies on technical requirements gathering.
Delta-EE to provide an overview of the type of customers recruited– type of company, size of portfolio, types of asset (sense of expertise, experience, focus they're bringing to the project) – no names/ or company names	Delta EE	Oliver McHugh	01-Aug-22	09-Aug-22	LOW	Complete	Provided via email on company basis
Afry to consider customer information required for trading rule development and impact of late landing feedback	AFRY	David Cox	01-Aug-22	29-Aug-22	HIGH	Complete	Provided input into customer webinar and feedback on post webinar survey questions
AFRY to consider any other dependencies required for trading rules development	AFRY	David Cox	01-Aug-22	31-Oct-22	HIGH	Complete	Extended period scoping out principles, objectives and building blocks. More complex process and more ifnormation required to feed into the process than anticipated
All to review market models (customer, network and trading perspective)	All	All	12-Sep-22	19-Sep-22	MED	Complete	Outputs to be tested with customers in October webinar to feed into next stage of the development process.
Planning session to assess impact and interdependencies of potential delays	AFRY	David Cox	03-Oct-22	05-Oct-22	MED	Complete	Discussion between AFRY and ENWL established activities with dependencies, and discussed mitigations to reduce risk.
Identify work activities that can be separated from trading rule development and started early	AFRY	David Cox	03-Oct-22	06-Oct-22	LOW	Complete	Established dependencies fall on activities relating to platform requirements and design; activities relating to integration with ENWL systems and cyber security are not dependent upon trading rules and can be kicked off early to reduce pressure on resource in Q4.
Electron to provide impact assessment of trading rule development delays	Electron	Emilis Srage	03-Oct-22	10-Oct-22	MED	Complete	established interface/integration and security activities can be initiated early to reduce impact on resources in Q4 next year ahead of D2.
ENWL to discuss Trade Validity & Effectiveness Factors and how they could work	ENWL	Rebecca Hassall-	10-Oct-22	28-Nov-22	MED	Underway	Initial workshops held, requires further internal discussions
ENWL to outline early thoughts on registration/verification	ENWL	Rebecca Hassall-	10-Oct-22	17-Oct-22	MED	Complete	Internal session with Flexible services manager provided useful feedback in relation to information we should/could capture at registration, industry standards we can use/adapt and potential pitfalls to avoid. Need to follow up with further discussions on how these principles are embedded into the platform and where the responsibilities lie.
OM to follow up all attendees on survey	Delta EE	Oliver McHugh	10-Oct-22	17-Oct-22	LOW	Complete	Chasing up on latest information

Figure 2: BiTraDER Action Tracker

BiTraDER Initial Report: Customer Engagement and Scenarios

Key activities undertaken by the project team within this reporting period was recruitment of the project participants, delivery of the first project deliverable, 'BiTraDER Initial Report – Customer Engagement and Scenarios' and development of work towards the second deliverable, 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' due for completion in June 2023.

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

- Meetings held to determine customer priority groups for targeted recruitment
- Recruitment of 15 project participants across GB, completed introductory calls with all, seven of which have also signed a 'letter of engagement'

- Meetings held with project partners to discuss trading use cases, including periodic reviews during development resulting in iterative improvements prior to customer testing.
- Preparation and hosting of customer webinar with recruited participants designed to test customers' feedback on our early trading principles and initial 'strawman' trading model
- Several workshops held between relevant partners on development of trading principles, objectives and options for potential market models
- A series of internal workshops with relevant project partners and suppliers on technical requirements, resulting in production of a comprehensive overarching market design detailing the technical requirements of the trading 'building blocks' agreed to date, along with agreed high level data schema and architecture drawings.
- Several sessions identifying cyber security requirements and considerations, resulting in a roadmap for development and early feedback on requirements towards Deliverable 2.
- Development of the first deliverable 'BiTraDER Initial Report – Customer Engagement and Scenarios', incorporating project partner full review and feedback

In the next reporting period, the second deliverable will have been submitted. Therefore, looking forward we anticipate the following outputs to be completed to support production of the deliverable:

- Finalisation of the end to end trading rules, including market model and principles
- Completed cyber security report, including design requirements
- Completed technical requirements for the trading platform, including functional and non-functional requirements and data architecture
- Trial plans for the simulation trials and early plans for the Network trials.

We note that there is parallel working within the ENAs Open Networks project (ON22-WS1a-P3) that includes development of industry standards for message payload specifications. The project will take into consideration the latest thinking on the industry specifications prior to beginning the build phase. However, as the Open Networks development may not complete prior to the build phase, the project will seek to update the BiTraDER specifications following completion of the product output. Any significant changes identified between the final output and Open Networks developments will be factored into our plans for transitioning BiTraDER into BaU.

Customer workstream

As set out in the Customer Engagement Plan, the project will engage with customers in three key phases:

1) Development of the trading rules, market principles and market model
2) Participation in the simulation trials, including participation in 'war games' and simulated trading and feedback
3) Participation in the live network trials, including real-world trading in response to a live constraint on our network (limited to customers specifically located in areas on our network).

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

- Development of a Customer Engagement Plan for the project, completed in September and published in October.
- Development of customer literature, including a 'customer journey' document and project information to support recruitment.
- Recruitment of 17 active project participants, providing a mix of customer types, asset portfolios, including demand and generation, technologies and size (MW).

- Hosting a customer webinar providing an introduction to the project, and presenting early thinking on market principles, followed by a group discussion on the proposed 'strawman' for the trading rules and worked examples.
- Development of an online quantitative customer survey, designed to capture customer preferences in trading options to feed into market model design
- 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. The full list of questions is provided in the published plan[2].

Learning and dissemination workstream

The project remains within its early development stage and has delivered one learning outcome to date. However, we have continued to push project dissemination across a number of channels.

The project website was developed and launched in July 2022. The website contains the original bid information, Customer Engagement Plan and project literature for customers. It allows speculative visitors to the site to register their interest in the project and in the phases of engagement outlined above.

ENWL attended and presented on BiTraDER at the annual Energy Innovation Summit (EIS) in September 2022. BiTraDER was the flagship project presented within the Flexibility session, which provided an overview of the project, objectives and benefits BiTraDER will bring to the industry along with an update on progress and wider project timescales. The project has also been presented at the Power Responsive Conference (July 2022) and referenced in National Grid ESO presentations at the Net Zero & Energy Management Expo (November 2022).

A dedicated webinar was hosted on BiTraDER for prospective connections customers (via Incentive on Connections engagement) and the project was also presented at our routine Flexibility Services webinar, in December. Internal updates on the project have also been shared with ENWL colleagues via our internal regular newsletter 'Newswire'.

The BiTraDER communications register details and evidences all communications to date and is available 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 our second deliverable and completion of the design phase.
- Update the BiTraDER website with the Project Progress Report 1 in December 2022, and second deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' in July 2023.
- Host a knowledge sharing event that could be either a webinar/workshop/conference and upload materials to the project website – planned in July/August 2023
- Attend the EIS 2023, which is currently scheduled for 31st October / 1st November 2023

[2] https://www.enwl.co.uk/globalassets/innovation/bitrader/documents/customer/customer-engagement-plan-final.pdf

Design workstream

The project has just entered the design phase and is on target to produce the second deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'. The key activities undertaken in the design workstream to date are summarised below:

- Developed set of core trading use cases through internal, project partner workshops and tested with customers and other Distribution Network Operators for feedback
- Held kick off project workshop on technical requirements
- Worked through a series of deep dive sessions on our internal Merit Order Management system and ANM system to facilitate integration requirement gathering
- Completed a literature review on existing projects and learning based on similar trading markets in the UK and Europe.
- Held a series of project partner workshops with ENWL subject matter experts to develop a set of market trading principles, objectives and 'building blocks' or options to test with project participants
- Held themed sessions exploring anticipated impact of trading on ENWL curtailment index and curtailment cap system.
- Held detailed workshops to identify data transfers required, preferred method of data sharing, anticipated volumes, format and storage, data schema, architecture required to support the end to end process, systems integration considerations and cyber security
- Completed analysis of feedback from in depth interviews, webinar discussion and follow up online survey on trading preferences and market platform functionality.

In the next reporting period, the 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' will have been submitted and as such, the following activities are anticipated to be completed:

- Development of simulation trial and early live network trial plans
- Documented end to end trading rules, developed with customer input
- Initial technical requirements and specifications for the Electron Connect trading platform
- Complete cyber security report on the end to end process

Project trial plan progress

The simulation trials will be designed to represent elements of the networks we manage in the north west alongside theoretical scenarios. This will allow the team to fully test the developed trading use cases and maximise the benefit of learning for extension in other DNO areas. The simulation trial will build on the response the project has received from customers across GB and build representative models of the geographically diverse assets. Although some degree of participant attrition is expected, this will allow the use cases to be tested across a more diverse set of customers, and asset sizes and types. Focus within this reporting period has targeted the configurable aspects of the platform that can be refined through the simulation trials and will be considered as part of our trial plans anticipated in Deliverable 2 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'.

Planning for the live network trials is anticipated in line with the project bid submission, however the team continue to review appropriate network areas as new constraints emerge.

Business Case Update

The Access Significant Code Review decision was published by Ofgem in February 2022 following the bid and project direction being issued for BiTraDER. This decision has the potential to impact on the benefits of accepting a flexible connection which is explored in this section.

Currently customers have an option to request a 'non-curtailable' connection or a 'curtailable' or 'flexible' connection. The former provides the customer with enduring access rights to the network based on their requirements and ensures an uninterrupted supply (with the exception of a significant fault on the network). This option is typically expensive, as the network is reinforced to ensure that in the event of a fault, there is sufficient infrastructure to provide back-up supply. The latter provides the customer with access rights to the network for their required capacity, subject to certain conditions. These conditions, which can vary on a daily, monthly or seasonal basis, effectively result in the connection being curtailed at certain times, to ensure the network remains within safe limits.

Early outputs from the Access Significant Code Review working groups have indicated that upon implementation (from April 2023) the cost for non-curtailable connections will be lower for certain types of connections, as a result of the change in the connection charging boundary and cost apportionment approach. This may result in fewer enduring flexible connections being applied for in the long term. However, we anticipate an increase in short term curtailable connections will emerge while strategic network reinforcement is completed leading to an increased 'pool' of potential customers actively trading in BiTraDER. Distribution Generation connection customers, will still be required to pay a proportion of the reinforcement required at the voltage level to which they would be connecting, and the costs for a firm connection could still be prohibitively high for many customers. Although the connection boundary is due to change, the cost apportionment rules that currently exist will not. The cost apportionment factors (either driven by security, fault or the high cost cap) set out in the Common Connection Charging Methodology will still require connection customers to pay a proportion of the costs for reinforcement works required to support their connection.

The Significant Code Review dictates that a date for connection must be provided, however the lead times for energising a connection can be significant due to requirements such as environmental impact assessments and land consents. Additionally, timescales can be impacted further by the extent of the reinforcement works required, either at distribution (and/ or) at transmission level. All of these factors can result in connection queues that can last several years.

Therefore, we believe the benefits in accepting a flexible connection even if it is short duration will continue to be as tangible under the new regime as today. Based on the decision, we anticipate that the demand for flexible connections, will continue, but will be regarded as an interim solution, whilst customers wait for a firm connection. As a result, we expect market participation for BiTraDER to be more dynamic and transient than originally expected, but the benefits to remain.

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.

Progress against Plan

The project plan is continually monitored, reviewed and updated in line with weekly 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.

Progress against the plan is currently showing minor delays in development of the trading rules and technical requirements, that are dependent upon the trading rule development. However, mitigations are in place and therefore they are not expected to affect delivery.

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

- The project plan submitted with the bid anticipated even distribution of customer engagement throughout the project. However on reflection, the team agreed that it was beneficial to the project to conduct more engagement upfront, allowing customers to have more ability to shape the trading rules and resulting platform. Therefore, since mobilisation the project team have carried out more engagement, earlier than anticipated, to ensure that the trading rules and market model captures customers' preferences and is sensitive to customers' concerns. This has resulted in drawing forward a proportion of the engagement effort from the build phase, into the design phase. However, the team are confident that in doing so, the outputs and deliverables will better reflect customer's needs and therefore be more successful to trial and eventually implement in BAU. A summary of the change in approach for engagement is provided in Figure 3.

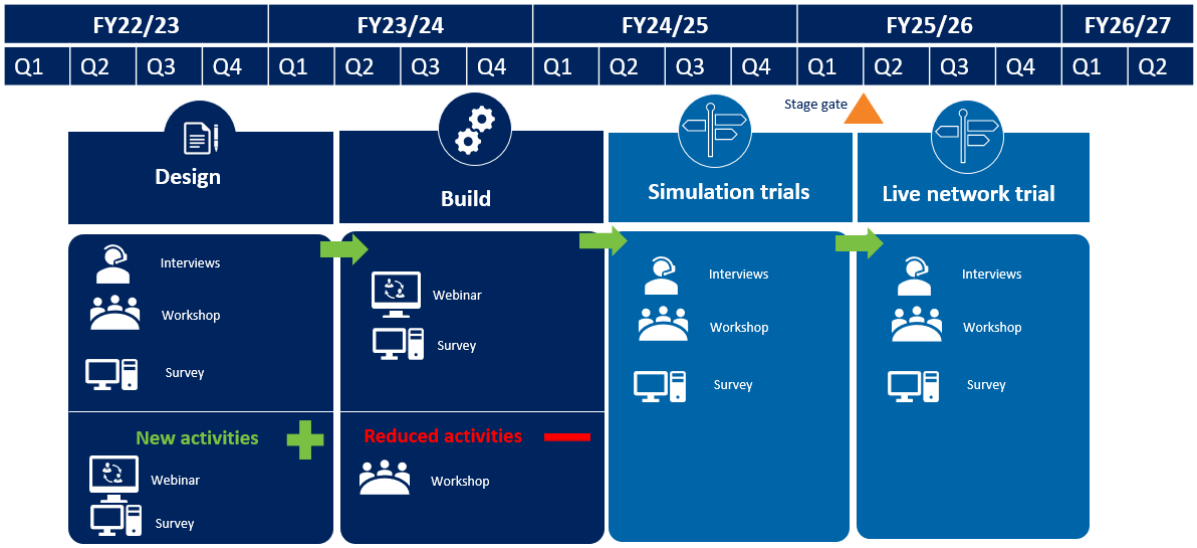

Figure 3: Summary of BiTraDER engagement revised approach

- The project partners are in the process of developing the 'building blocks' (i.e. options) around which the market will be governed and operate. This process has required more exploratory work than was initially anticipated and as such is showing minor delays against the project plan. As this activity is critical for some aspects of the technical requirements capture, the timing of these is also impacted. To ensure this delay does not impact the second deliverable, the team has identified and begun other work packages, earlier than planned, to mitigate the risk.
- Project Partners AFRY and Electron are currently working together with our IT department to identify the data schema, architecture and data flows necessary for the trading to function, cyber security considerations and selected aspects of trading platform configurations (i.e. in relation to registration, asset on boarding and settlement). A summary of revised timings for planned work packages is provided in Figure 4.

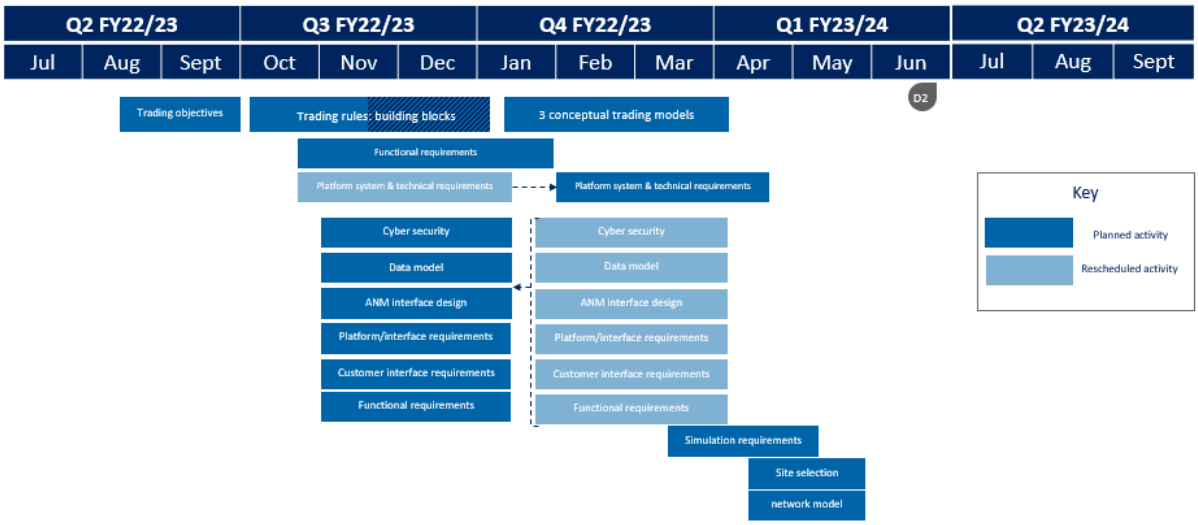

Figure 4:Summary of revised design work packages

- The first project deliverable 'BiTraDER Initial Report – Customer Engagement and Scenarios' was submitted to Ofgem and uploaded to the project website on 30 November 2022. The use cases documented in this deliverable are currently being used to support development of the technical requirements for the platform and trials plan. The deliverable will continue to be a 'living' document; the use cases 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.
- Since project mobilisation, the team have become aware of an industry-led activity to standardise industry APIs and data formats to support open data sharing across the sector. The activity is a product of the Open Networks project, co-ordinated and run by the Energy Networks Association. The project scope includes development of a non-SCADA vehicle for dispatch (such as an API), therefore the outputs from this workstream could impact on our second and fourth deliverables. The project will therefore adopt the latest thinking into the project deliverables at the time of submitting. However, the team will continue to monitor outputs and learnings from this workstream and will update affected deliverables once the solution and thinking amongst the industry has matured. This could be over the course of the project, at closedown or following implementation into BaU, depending on when outputs are produced.

There are two risks relating to delays in development of trading rules and associated technical requirements, that have been identified since project mobilisation that could impact the project plan in the short term. As a result, mitigations have been quickly identified and implemented. At this time, these risks are not expected to affect Deliverable 2 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'.

A screenshot of the revised project plan, taking mitigations into account can be seen in Figure 5.

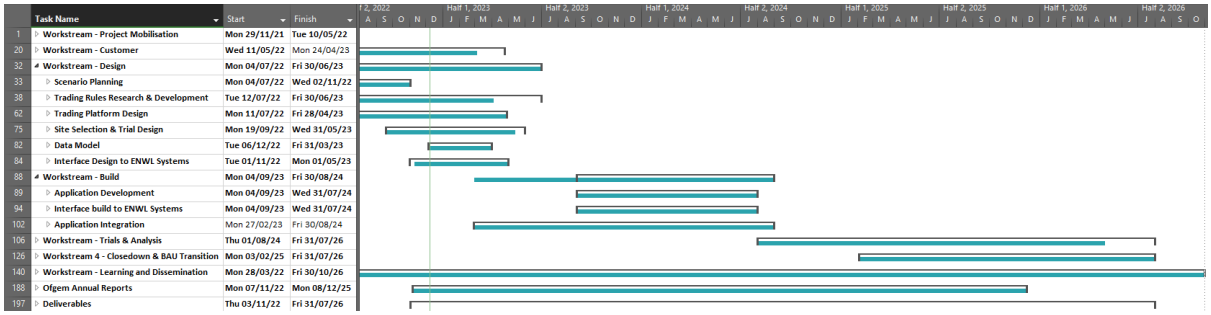

Figure 5: BiTraDER project plan

Progress against budget

The project budget as defined in the project direction is shown in Appendix 3, Project direction budget.

Actual spend to date compared to project budget is summarised in Table 3 below. The report includes expenditure up to and including 7 December 2022.

£'000s	Spend to date			Total Project		
Excluding Partner Funding / **Ofgem Cost Category**	**Actual**	**Plan**	**Variance**	**Forecast**	**Plan**	**Variance**
Labour	53,234	241,040	187,806	1,779,760	1,779,760	(0)
Equipment						
Contractors	103,594	380,303	276,709	2,747,933	2,747,932	(0)
IT	230,100	753,652	523,552	1,773,113	1,773,113	(0)
Travel & Expenses						
Payments to Users	0	15,474	15,474	400,782	400,782	(0)
Contingency	0	0	0	636,222	636,222	0
Decommissioning						0
Other	15,549	66,554	51,005	360,638	360,637	(0)
Total	**402,477**	**1,457,024**	**1,054,547**	**7,698,448**	**7,698,447**	**(1)**

Table 3: BiTraDER actual spend to date

The project is currently performing favourably relative to planned budget and there are no significant variances overall to the project budget to report. Project expenditure as of 7 December 2022 was £402,477 compared to cost baseline of £1,457,024.

Spend for Labour are below what was initially forecast at this stage. This is partly due to late recruitment of the BiTraDER project manager, in June 2022, following initial project mobilisation. Other variances across Contractors, IT and Payments to users are predominantly reflective of the

phased profiling of the project costs, which are not closely aligned with contract milestones and invoicing. Based on anticipated progress against the design phase, the variances for Contractors and IT are expected to be resolved in the next reporting period.

Bank account

The project bank statement is shown in Appendix 5. The statement contains all receipts and payments associated with the project up to 7 December 2022.

Project Deliverables

In this reporting period there was one deliverable due for submission 'BiTraDER Initial Report – Customer Engagement and Scenarios'. This was submitted on 30 November to Ofgem and uploaded to the project website.

The second project deliverable, 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' is due in the next reporting period, by 30 June 2023. Table 4 shows the full list of deliverables to be completed and submitted throughout the project lifecycle.

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	In progress
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	On track for deadline

Reference	Project Deliverable	Deadline	Evidence	Status
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 • recommendations for any amendments required for network trials. • assessment of project readiness to move to network trials	On track for deadline
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: • 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

Reference	Project Deliverable	Deadline	Evidence	Status
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

Table 4: BiTraDER project deliverables

The current status of the evidence for all project deliverables is shown in Appendix 2.

Detailed development is currently on going for the key elements of deliverable 2 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'. The underlying importance of this work to the overall project has meant that all project partners have committed extensively to development work.

As detailed in the section above, there are delays on some activities relating to Deliverable 2. However, the project partners are working on mitigations to bring the progress back in line with the target deadline 30 June 2023. Progress of this, and other project deliverables against the project plan will continue to be monitored.

Learning Outcomes

In this reporting period, early activities focused on establishing the project; project mobilisation, governance and financial controls. In the last quarter, the focus has shifted to recruitment, engagement and identification of technical requirements to support the first key work packages on development of use cases, trials planning, trading rule development and requirements.

The first project deliverable 'BiTraDER Initial Report – Customer Engagement and Scenarios' was completed and submitted on 30 November 2022. This initial report introduced the project and use cases. The use cases will help to develop the design and architecture of the end-to-end system and platform, and to assess the success of our trials (both simulated and live). The report also provided an overview of the approach taken to refine these use cases and key decisions made in the process, based on stakeholder feedback. Finally, the report provides an overview of learnings from the customer engagement based on early recruitment and feedback via interviews, surveys and a project webinar.

In the next reporting period, it is anticipated that further learning will be generated from the development of the second deliverable 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report' due in June 2023.

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.

Risk management

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 (e.g. during weekly project meetings, monthly Internal Steering Group meetings and quarterly deep-dive reviews). Project risks are described in detail in Appendix 1.

As outlined above, there are some minor delays feeding into Deliverable 2 due to extensive development work being undertaken. The project has implemented mitigations and the impact of this will be assessed and reported in the next reporting period. However, based on current forecasts, the delays are not expected to have a negative impact on either the deliverable deadline, wider project plan or budget.

Consistency with full submission

Following project mobilisation, there have been three planned changes to the approach assumed in the original project bid submission. These have been driven predominantly by emerging requirements that were unanticipated at the time of the bid submission. One however is based on mitigating a new risk, as reported above.

Two of these changes have been related to customer engagement. The bid assumed that the project participants would be recruited from our customer base (i.e. those connected to the Electricity North West distribution network). However, early in the initial stages of recruitment we identified an opportunity to broaden the engagement to customers connected in other licence areas. Although this approach varied to that provided in the bid, recruitment continued to be targeted, through leveraging contacts through project partners.

The bid also assumed one large customer face to face engagement event per year over the duration of the project. Through the early stages of developing the trading rules, it emerged that this process would be far more complex than originally anticipated. As such it required more touchpoints with customers early in the project. This also benefitted the design phase of the project, allowing customers scope to shape the solution early on, rather than offering limited optionality part-way through the build phase. This revised approach still allows customers an opportunity to review and feedback remotely during the build phase, whilst adding more value to the development and design phase of the trading rules. The final change relates to bringing forward activities unrelated to trading rules development to mitigate the minor delays reported earlier.

Accuracy Assurance statement

This document has been reviewed by several Subject Matter Experts within ENWL. The project team and select members of the BiTraDER project steering group, including a member of the bid development team, have reviewed the report to ensure its accuracy. The narrative has also been peer-reviewed by ENWL's Head of Network Innovation.

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. Issue of the document has been approved by the Head of Network Innovation.

Appendices

1. Status of risks from the full submission

Project phase/ workstream	Risk summary	Risk detailed	Risk owner	Last reviewed	Mitigation	Update	Status	Probability	Impact	revised probability	Revised impact
Delivery	Covid-19	There is a risk that COVID-19 will impact delivery of the project if we experience further restrictions. This could have a significant effect, potentially causing delays to Project completion.	ENWL	07.12.22	We will monitor government advice both in the UK and Europe to identify any risks as early as possible.	No further restrictions anticipated and updated assessment provided	Open	2	3	2	3
Mobilisation	Mobilisation	There is a risk that the Project Partners are not able to mobilise their resources in time because of other commitments leading to a delay in achieving potential milestones which could have a Project reputational and financial repercussion.	ENWL	07.12.22	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.	Mobilisation complete	Closed	2	4	1	4
Customer engagement	Customer contracts and engagement	There is a risk that it takes longer than anticipated to agree contracts with customers involved in the trials.	ENWL	07.12.22	We will start the customer engagement early in the project and have ensured there is sufficient time in the project plan.		Open	3	5	1	5
Customer engagement	Low recruitment	There is a risk that there is insufficient interest from customers to sign up to take part in the network trials.	ENWL	07.12.22	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.	Achieved recruitment targets GB wide, and will refocus local recruitment ahead of network trials	Open	3	5	1	5

Build	Delayed integration with ENWL systems	There is a risk that the market build and integration takes longer than anticipated	ENWL	07.12.22	We have selected competent partners who have advised on the Project plan which allows sufficient time. Exploring option of local or 'production' ANM to reduce complexity of upfront integration activity	have brought some activities relating to technical requirements forward and begun early	Open	2	5	1	5
Build	Delayed Platform configuration	There is a risk that the configuration of the Trading Platform on BiTraDER takes longer than anticipated	ENWL	07.12.22	We have selected competent Partners who have advised on the Project plan which allows sufficient time.	Close working between Electron and AFRY to monitor proposed solution is workable in the platform; and beginning to discuss trial plans to ensure test configuations are practical in time allowed.	Open	2	5	1	5
Design	System undermined by Cyber security requirements	There is a risk that the cyber-security requirements will affect the performance of the integrated system.	ENWL	07.12.22	We have allowed time for appropriate cyber-security considerations and design in the Project plan.		Open	3	5	1	5
Simulation	Customer retention through trials	There is a risk that we lose participants due to lack of understanding on the aims of the market and the operation of the platform	ENWL	07.12.22	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.	Customer workshops are planned to involve customers in the development of the market and platform. Small contingency of recruitment budget retained for re-recruitment.	Open	3	5	1	5

Network Trials	Lack of network constraints	There is a risk that no constraints occur on the network during the trial phase	ENWL	07.12.22	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)		Open	3	5	1	5
Network trials	Lack of participant understanding affecting testing	There is a risk that participants may not trade if they do not understand the benefit and risks of trading, or they are waiting for others to start the trading.	ENWL	07.12.22	We have significant customer engagement planned throughout the project to educate participants in the benefits and risks associated with obligation trading.	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	Open	2	4	1	4
Network trials	Limited support/involvement from ESO	There is a risk that ESO will not input into the development of the trading rules or platform.	ENWL	07.12.22	We are currently seeking to secure a contract for consultancy services, as ESO	ESO engaged and feeding into development	Open	2	4	1	3
Learning & Dissemination	Dissemination affected by low attendance	There is a risk that attendance at events may be low due to other dissemination events/current restrictions preventing attendance. Learning may be inhibited due to stakeholders having different interests and learning styles.	ENWL	07.12.22	ENWL will choose dissemination channels optimised to achieve maximum reach and coverage.	We are currently planning a blend of face to face and remote engagement to boost interest	Open	2	3	2	2
Closedown	Change in Ofgem governance	There is a risk that new obligations and guidance will be released on key deliverables, such as the closedown report leading to a longer preparation and review period required.	ENWL	07.12.22	Communication channels from Ofgem will be monitored and any updates to such requirements identified as early as possible.	No significant changes identified in publication of Final Determinations, but we will continue to monitor changes throughout the project	Open	3	3	3	3

Mobilisation	Outstanding contracts	There is a risk of certain activities being impacted due to late agreement of contracts.	ENWL	07.12.22			Closed	3	3	2	3
Mobilisation	Project Plan under development	There is a risk of activities not being identified in advance based on exploratory nature of the project.	ENWL	07.12.22	Taking a rolling approach with near-time planning, allocating more detail for upcoming activities than those in 2+ years.		Open	3	3	2	3
Design	Developing specifications and requirements	There is a risk that specifications and criteria are developed out of sync with industry developments	ENWL	07.12.22	Internal technical peer review of requirements and specifications as they develop; potential external peer review via open networks WS1a P6.	Open Networks is developing industry standards relating to API development; will require continued monitoring and anticipation of adjustments in transition to BaU	Open	2	3	1	3
Customer engagement	low incidence of flexible connection agreements in our area	There is a risk to recruitment providing enough customers on flexible connection contracts based on low incidence in our area (and assuming not all will be interested in participating). There is also a risk to wider project conclusions and outcomes if we are not able to provide a variety of customer feedback and interaction in the trials.	ENWL	07.12.22	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)	Sufficient representation of customers on flexible connection contracts now achieved through extending recruitment to GB	Open	5	4	5	2
Design	Delay in development of market design rules	There is a risk that the delayed development of market rules impacts on delivery of outputs relating to requirements for the platform design and specifications	ENWL, AFRY	07.12.22	Activities without dependencies on trading rules have been brought forward and started early		Open	3	3	2	2
Design	Delay in development of technical requirements	There is a risk that delayed development of technical requirements will impact on Deliverable 2 'BiTraDER Trials Plan, Trading Rules and Initial Specification Report'	ENWL, Electron	07.12.22	Project activities shifted to allow additional time to develop trading rules without affecting wider project timeline and deliverable deadlines	Bringing forward other, non-dependant, IT activities to smooth resource in Q4 (reduce risk of overloading resource to meet deliverable deadline).	Open	3	3	2	2

2. Project deliverables

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (%, must add to 100%)
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.	10%
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	15%
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	10%
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.	15%
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	15%

Reference	Project Deliverable	Deadline	Evidence	NIC funding request (%, must add to 100%)
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**	15%
7	BiTraDER Functional Specification	30/06/26	Final functional specification for BiTraDER, including: • Trading rules • Interface requirements • Data requirements • Platform design	10%
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.	10%
9	Comply with knowledge transfer requirements of the Governance Document.	End of Project	4. Annual Project Progress Reports which comply with the requirements of the Governance Document. 5. Completed Close Down Report which complies with the requirements of the Governance Document. 6. Evidence of attendance and participation in the Annual Conference as described in the Governance Document.	N/A

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

Spend to date

£'000s Excluding Partner Funding Ofgem Cost Category	
Labour	**53,234**
Labour - Project Management	53,234
Labour - Functional Specification for BiTraDER	-
Contractors	**103,594**
Contractors - Project Management	-
Contractors - Customer Engagement	103,594
Contractors - Trading Rules Research & Development	-
Contractors - Trading Platform Design	-
Contractors - Data Model	-
Contractors - Application Development	-
Contractors - Simulation Trials	-
Contractors - Network Trials	-
Contractors - Functional Specification for BiTraDER	-
Contractors - Closedown	-
Contractors - Learning & Dissemination	-
IT	**230,100**
IT - Project Management	-
IT - Trading Platform Design	230,100
IT - Interface Design to ENWL Systems	-
IT - Interface Build to ENWL Systems	-
IT - Application Integration	-
Payments to users	**-**
Payments to Users - Customer Engagement	-
Payments to users - Payments to users	-
Contingency	**-**
Other	**15,549**
Other - Accommodation	9,350
Other - Learning & Dissemination	6,199
Total	**402,477**

4. Detailed project expenditure

£'000s Excluding Partner Funding Ofgem Cost Category	Spend to date			Total Project		
	Actual	Plan	Variance	Forecast	Plan	Variance
Labour	**53,234**	**241,040**	**187,806**	**1,779,760**	**1,779,760**	**0**
Labour - Project Management	53,234	241,040	187,806	1,691,956	1,691,956	0
Labour - Functional Specification for BiTraDER	-	-	-	87,804	87,804	-
Contractors	**103,594**	**380,303**	**276,709**	**2,747,933**	**2,747,932**	**(0)**
Contractors - Project Management	-	62,702	62,702	426,020	426,019	(0)
Contractors - Customer Engagement	103,594	109,930	6,336	488,110	488,110	-
Contractors - Trading Rules Research & Development	-	199,318	199,318	476,730	476,730	-
Contractors - Trading Platform Design	-	-	-	170,000	170,000	-
Contractors - Data Model	-	-	-	59,500	59,500	-
Contractors - Application Development	-	-	-	399,500	399,500	-
Contractors - Simulation Trials	-	-	-	331,500	331,500	-
Contractors - Network Trials	-	-	-	93,500	93,500	-
Contractors - Functional Specification for BiTraDER	-	-	-	51,000	51,000	-
Contractors - Closedown	-	-	-	197,186	197,186	-
Contractors - Learning & Dissemination	-	8,352	8,352	54,886	54,886	-
IT	**230,100**	**753,652**	**523,552**	**1,773,113**	**1,773,113**	**(0)**
IT - Project Management	-	11,330	11,330	79,333	79,333	(0)
IT - Trading Platform Design	230,100	300,000	69,900	300,000	300,000	-
IT - Interface Design to ENWL Systems	-	442,322	442,322	548,039	548,039	-
IT - Interface Build to ENWL Systems	-	-	-	735,991	735,991	-
IT - Application Integration	-	-	-	109,750	109,750	-
Payments to users	**-**	**15,474**	**15,474**	**400,782**	**400,782**	**(0)**
Payments to Users - Customer Engagement	-	15,474	15,474	112,000	112,000	(0)
Payments to users - Payments to users	-	-	-	288,782	288,782	-
Contingency	**-**	**-**	**-**	**636,222**	**636,222**	**-**
Other	**15,549**	**66,554**	**51,005**	**360,638**	**360,637**	**(0)**
Other - Accommodation	9,350	18,514	9,164	109,983	109,983	0
Other - Learning & Dissemination	6,199	48,041	41,842	250,655	250,655	(0)
Total	**402,477**	**1,457,024**	**1,054,547**	**7,698,448**	**7,698,447**	**-1**

5. Project bank account

LLOYDS BANK

Balance and Transaction Report

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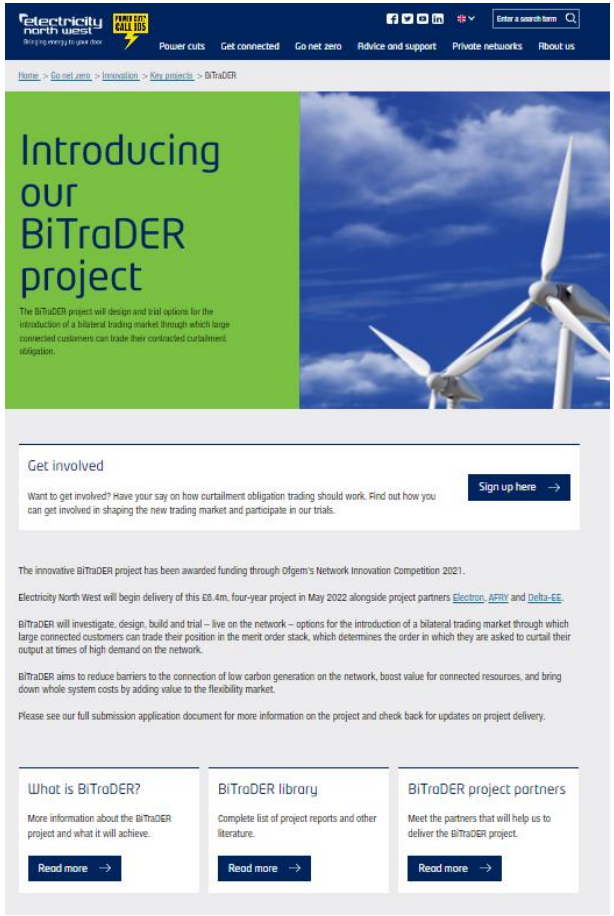
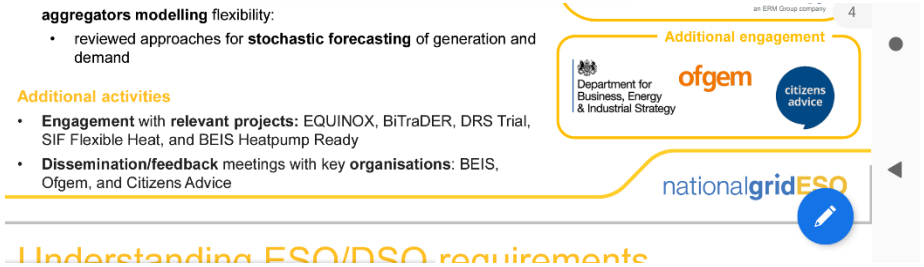
Reporting Period: 08-Dec-2021 to 08-Dec-2022
Bank Name: Lloyds
Account Number / Name / Currency Code: 308012-23165960 / ELECTRICITY NORTH WEST LIMITED-BITRADER / GBP
Closing Ledger Balance As At: 13-Apr-2022 **Closing Ledger:** 0.00

Posting Date	Type	Details	Debits	Credits	Ledger Balance
14-Apr-2022	Inter Account Transfer	ENWL COMPULS CONTR,FR 02749020 300002		845,406.46	845,406.46
20-Apr-2022	CHAPS Payment	F/FLOW NATIONALGRI,NO.PROJECTPAYMENT1,ROC/7300001882		565,809.15	1,411,215.61
16-May-2022	CHAPS Payment	F/FLOW NATIONALGRI,NO.ELECTRICITYNORT,ROC/7300005582		565,809.15	1,977,024.76
15-Jun-2022	CHAPS Payment	F/FLOW NATIONALGRI,NO.PROJECTPAYMENT3,ROC/7300009378		565,809.15	2,542,833.91
15-Jul-2022	Payment	NG ESO LTD ,1135 7300012995 K		565,809.15	3,108,643.06
15-Aug-2022	CHAPS Payment	F/FLOW NATIONALGRI,NO.PROJECTPAYMENT-,5 ROC/7300017256		565,809.15	3,674,452.21
13-Sep-2022	Inter Account Transfer	BITRADER AUG22 ,TO 02749020 300002	16,601.56		3,657,850.65
15-Sep-2022	Payment	NG ESO LTD ,1135 7300021168 K		565,809.15	4,223,659.80
18-Oct-2022	CHAPS Payment	F/FLOW NATIONAL GR,NIC BITRADER PROJE,CT PAYMENT 7 B		565,809.15	4,789,468.95
20-Oct-2022	Inter Account Transfer	1080450981 ,TO 02749020 300002	255,246.34		4,534,222.61
15-Nov-2022	CHAPS Payment	F/FLOW NATIONALGRI,NO.NICBITRADERPRO ,ROC/7300027172		565,809.15	5,100,031.76
16-Nov-2022	Inter Account Transfer	1082205308 ,TO 02749020 300002	40,306.86		5,059,724.90
08-Dec-2022	Inter Account Transfer	1083769292 TO 02749020 300002	90,322.04		4,969,402.86
		Totals	402,476.80	5,371,879.66	
		End of Report Ledger Balance			4,969,402.86

6. BiTraDER Dissemination log

Date	Activity	Audience	Evidence
June 2022	BiTraDER webpage created	All stakeholders	 https://www.enwl.co.uk/go-net-zero/innovation/key-projects/bitrader/bitrader-library/customer/

Date	Activity	Audience	Evidence
Sept 2022	BiTraDER presentation at Energy Innovation Summit 2022	All stakeholders	 https://www.enwl.co.uk/go-net-zero/innovation/key-projects/bitrader/bitrader-library/learning-and-dissemination/
Nov 2022	Presentation including BiTraDER by National Grid ESO at The Net Zero & Energy Management Expo	All stakeholders	How the GB Electricity System Operator (ESO) is leading the way by enabling small scale flexible technology access to markets for the first time – EMEX Seminars & Conference (emexlondon.com) 

Date	Activity	Audience	Evidence
Dec 2022	Webinar presenting BiTraDER via Incentive on Connections Engagement	New and existing connections customers	 (https://www.enwl.co.uk/globalassets/innovation/bitrader/documents/learning-and-dissemination/ice-introduction-to-bitrader-final.pdf)
Dec 2022	Webinar presenting project to customers interested in ENWL flexibility tender	New and existing flexibility services customers	 (https://www.enwl.co.uk/globalassets/innovation/bitrader/documents/learning-and-dissemination)