transition

Moving to a smart future

Electricity Network Competition

SSEN005 TRANSITION

Project Progress Report

September 2021

Scottish & Southern Electricity Networks

1) Executive Summary

Overview of TRANSITION

The GB network continues to evolve, and there is a clear need for networks to adapt, become more flexible, enhance operations and allow new technologies and new market models (such as peer-to-peer trading) to emerge. The 'fit-and-forget' approach of traditional network operation relied on predictable energy use and production that matched that use. The transition to DSO (Distribution System Operator) has the potential to bring significant benefits to customers; however, it also brings a range of new complex challenges, unintended consequences and risks for market participants, new entrants and the network licensees themselves.

The ENA Open Networks Project (ON-P) is focussed on defining the DNO (Distribution Network Operator) transition to a DSO model and has been endorsed by the UK Government's Smart Systems and Flexibility Plan.

TRANSITION is an Ofgem Electricity Network Innovation Competition (NIC) funded project. Led by SSEN in conjunction with our project partners ENWL (Electricity North West Ltd), CGI, Origami and Atkins.

TRANSITION will inform the design requirements of a Neutral Market Facilitator (NMF) and Whole System Coordinator (WSC), develop the roles and responsibilities within the marketplace, develop the market rules required for the trials, and implement and test the concept of the systems by means of trials in Oxfordshire.

The TRANSITION NIC project gained Ofgem funding as part of a collaboration agreement between TRANSITION (SSEN project) and two other NIC projects; Electricity Flexibility and Forecasting System (EFFS) led by WPD and FUSION (SPEN project), all three collectively known in the industry as T.E.F.

In addition, the project is also an integral partner to the Local Energy Oxfordshire (LEO) project, a UK Industrial Strategy funded project. Both TRANSITION and LEO have objectives that are closely aligned and when combined, significantly, enhance the overall learning.

Progress within this Reporting Period

The project is split into two distinct phases; Phase 1: Requirements phase, and Phase 2: Deployment and Trial phase. During this reporting period the project has been in Phase 2.

The first half of this reporting period focused on finalising the detailed design for the NMF and WSC systems, as well as the development of commercial arrangement for trial deployment. The second half of this reporting period focused on preparation for trial period 1 which runs from November 2021 to February 2022.

The Project has made good progress over the last 12 months with one Project Deliverable submitted on schedule, see page 3 for further details.

During this reporting period, October 2020 to September 2021, the main focus of activity for the Project has been:

- Integration and Testing of the NMF and WSC, the output was captured in Ofgem Deliverable #5 "Platform Acceptance Testing"
- Detailed low-level design requirements of NMF and WSC systems.
- Development of a baseline tool, adopted for evolution by ON-P WS1A P7
- Developing the Commercial arrangements, Legal contracts, and Flexibility Services to trial.
- Developing "End to End" process providing visibility of the step associated with flexibility service life cycle.
- Trial site identification with our LEO partners.
- Installation of 91 LV substation monitors.
- Interfacing extensively with Project LEO, the T.E.F. project, ON-P and other stakeholders.
- Developing an operational network model, which will be used to inform the trials.
- Developing an operational forecasting tool to drive the network model.

1) Executive Summary

During the reporting period the main challenge has been the impact of Covid-19.

Both stakeholder engagement and dissemination activities were impacted. Due to the ongoing restrictions associated with Covid-19, the stakeholder face to face sessions planned for 2021 were not possible. It is expected to be a continuing challenge going into the next reporting period.

It should be noted however that the general acceptance and adoption of online webinars, conference and other virtual engagement methods has also opened new opportunities and the potential to reach wider audiences and reduce the carbon emissions generated by the project.

Secondly, the project found it challenging to install the low voltage (LV) monitoring units, progress on that activity was completed around six months behind schedule, however 91 units have now been installed in Oxfordshire.

Deliverables

The project has successfully completed the Project Deliverable which was due within this reporting period.

- The fifth deliverable, "WP7 Deployment – Platform Full Acceptance Testing", was submitted on 25th June 2021. The report has been published on the TRANSITION website, see link at end of this section.

- The next Deliverable, "WP8 Trials stage 1 Completion of one stage of trials"; is on schedule to be completed by 30th April 2022.

Dissemination

During this reporting period, dissemination of information, project progress and learning has taken place through various events, webinars and conferences with both internal and external stakeholders from inside and outside the industry.

This engagement has either been focused on TRANSITION alone, or alongside Project LEO with dissemination being jointly presented on both projects.

New social media accounts have been created focusing on.

- Communicating opportunities to take part in the Flexibility Market Trials
- Sharing links to TRANSITION reports and events
- Sharing news about the project

Project information has also been shared with both our internal and external stakeholders, through publications uploaded on the TRANSTION project website. In some instances, depending on the focus of the report these may be uploaded to the Project LEO website.

In addition to this we have published several project news releases over the reporting period, primarily to industry media outlets.

Significant work has been undertaken this year to develop new content on the TRANSITION website sharing information around the Flexibility Market Trials. The aim has been to provide simply written content explaining the trials in an accessible way to encourage participation and assist understanding.
www.ssen-transition.com/get-involved/flexibility-market-trials/

Further Details of dissemination activities are contained in section 2.

For more information, the TRANSITION project website address is: https://ssen-transition.com/

2) Project Manager's Report

Project Summary

The project is split into two distinct phases; Phase 1: Requirements phase, and Phase 2: Deployment and Trial phase. During this reporting period the project has been in Phase 2.

The first half of this reporting period focused on finalising the detailed design for the NMF and WSC systems, as well as the development of commercial arrangement for trial deployment. The second half of this reporting period focused on preparation for trial period 1, refer to "Trial Specification" for further details.

The Project is managed via seven work packages (WP). An update on the progress made on each work package during this reporting period is provided below.

Project Management – WP1

The project team regularly engage with our T.E.F. project partners, LEO project partners, ON-P Workstreams as well as other innovation projects.

During this period, contracts have been awarded for:

- NMF and WSC systems (Opus One).
- Project partner works to cover deliverables associated with work package WP4 (Origami).
- Consultancy support services for TRANSITION Baselining methodology (TNEI).
- Data Integration, Technical setup and Load Forecasting solution (Sia Partners).
- Support services for the development of Commercial Arrangements for peer-to-peer (Fraser Nash).
- System Planning support to develop a network model for Oxfordshire (RINA).
- Trial Planning, data requirements and end to end process support (CGI).
- Power system analysis (PSA) software application to support network model development (Digsilent).

Requirements, design, development – WP2

Progress within this reporting period:

- Activities related to Work Package 2 (Requirements, design and development) concluded at the end of Phase 1. Further design and development work which is identified will be managed in the relevant work package where appropriate.

Forecasting and DSO data – WP3

Progress this period has included.

- Development of standard representation for network models from different voltage levels (132/33/11kV).
- Data cleansing, integration and technical setup required for Load Forecasting solution.
- Developing the specifications, and implementation of the design for an operational forecasting tool that will drive the WSC and PSA network model during trials.

Market Models – WP4

Progress within the reporting period has included.

- TRANSITION and FUSION jointly procured several deliverables led by Origami to develop Use Cases, Services and Products. The outputs were used to engage and consult with ON-P. Five reports have been produced, all of which have been reviewed and updated based on ON-P feedback. All of these are listed with details below: -

    - Product Catalog – the purpose of this work was to create a catalogue of services that exist or could exist in the ESO, DNO and peer-to-peer markets and provide proposals on standardisation.
    - Use Case report – this work created a use case template and used it to define the services being considered by both the FUSION and the TRANSITION innovation projects.

2) Project Manager's Report

- Service Descriptions - this created a common service description template and use it to define the services being considered by FUSION and TRANSITION.
- Service Alignment Report – this work summarised the T.E.F. projects, determined any overlaps and further established how the three projects can work together to maximise the overall learnings for ON-P.
- Common Terminology – this work reviewed the service definitions terminology used across the industry and proposed a standardised reference source which was shared with the ON-P.

- Work with consultants Fraser Nash to develop an initial methodology for peer-to-peer project trials. Business as usual connections agreement templates have been reviewed and revised for trials to allow peer-to-peer trading.
- Published 'Smart-Grid, Smart-Economics- TRANSITION and LEO Project Auctions" paper building on academic insight from Auction Markets to design a behaviourally driven auction market.
- Published "Smart-Grid, Smart Economics- The power of social norms on LV networks" paper building on academic insight into game theory to test social norms on LV networks.

IT framework – WP5

Work progressed within the period on this topic included:

- Significant progress has been made on the NMF and WSC. The tender evaluation period concluded with a contract awarded to Opus One for both systems. The project team has worked closely with Opus One to develop the detailed design for the first trial period, due to commence in November 2021.
- System integration – excellent progress has been made to design the requirement that will support Application Programming Interfaces (API) solution from the NMF/WSC to several other systems. These include the Piclo platform and our forecasting partner, Sis Partners.

Trial Specification – WP6

Progress within this reporting period.

- Published "LEO Trial Plan v1.1" report on the 26th February 2021. It is intended to act as a reference guide for the delivery of the agreed learning objectives through the trial phases of Project LEO. This plan will enable the LEO partner organisations to understand their respective roles in successful delivery of the LEO trials and delivering insights about the future decarbonised energy system and markets. This LEO Trial Plan is a living document and will evolve based on the emerging learning from each of the trial phases and related projects, both domestically and internationally.

The "LEO Trial Plan v1.1" splits the trial delivery phase into three distinct trial periods, details below: -

- Trial Period 1 (TP1) – November 2021 to February 2022.
- Trial Period 2 (TP2) – May 2022 to September 2022.
- Trial Period 3 (TP3) – November 2022 to February 2023.

A detailed trial plan for each of these trial periods will be produced in the next reporting period.

- Network Monitoring – to establish a baseline of network activity in Oxfordshire the project has installed 91 LV monitoring devices. In addition, the project has procured five portable HV devices to be installed in Oxfordshire.

- End to end process - working closely with CGI and LEO partners the project has developed an understanding of every stage of the "end to end" process in order to give everyone involved visibility of who is expected to do what and when during the complete flexibility service life cycle.

2) Project Manager's Report

Knowledge Dissemination – WP7

Opportunities to engage in person with our stakeholders have not been possible since March 2020 due to Covid-19. Therefore, we have focused on opportunities presented by the increasing use of virtual platforms to engage with stakeholders.

During this reporting period, dissemination of information, project progress and learning has taken place through various online events, webinars and conferences with both internal and external stakeholders from inside and outside the industry. Engagement activities have also taken place alongside Project LEO with dissemination being jointly presented on both projects.

In total TRANSITION has been represented in 32 virtual engagements during the reporting period.

Highlights of these activities include: -

- Two TRANSITION webinars for companies interested in taking part in the market trials (Dec 2020 and April 2021).
- Presentation given to the members of the Association of Decentralised Energy (ADE) (April 2021).
- Two separate presentations at SSEN's Distributed Generator Forum (South) (Oct 2020 & March 2021).
- Presentation on Market Trials at the Virtual Energy Networks Innovation Conference (ENIC) (Dec 2020).
- A weeklong programme of internal SSEN staff webinars covering LEO & TRANSITION (June 2021).
- Presentation at Utility Week Live (May 2021).
- Panel presentation at Ofgem Green, Fair Future: Delivering the Flexible Energy System of the Future.

In addition to this we have published news releases and social media to communicate key milestones and deliverables to our audiences with articles in relevant trade/industry press and local Oxfordshire news press.

Our news releases in the reporting period have been.

- SSEN awards Opus One contract to develop market flexibility and coordination solutions - https://www.current-news.co.uk/news/ssen-awards-opus-one-solutions-contract-to-develop-new-flexibility-market-solutions
- Oxfordshire's preparations for a net zero future supported with innovative new technology (LV monitors installation) –

  https://www.oxfordmail.co.uk/news/19039732.ssen-install-new-technology-help-electrify-oxfordshire/

- SSEN calls on Oxfordshire generators and asset owners to join innovative project replicating future energy system –

  https://agileenergy.net/ssen-calls-on-customers-to-signpost-interest-in-flexibility-services/

- SSEN calls for Oxfordshire businesses with just 50kW of flexibility to join market trials | New Power

  https://www.newpower.info/2021/05/ssen-calls-for-oxfordshire-businesses-with-just-50kw-of-flexibility-to-join-market-trials/

All project reports and other documents suitable for external audiences are published in the library on the TRANSITION website. In this period the following documents have been published.

- Value chain for flexibility providers – June 21
- Platform Acceptance Testing - June 21
- Service Description Report - April 21
- TRANSITION Service Conflict Resolution – War Games Report – March 2021
- LEO/TRANSITION Trial Plans Feb 21
- Use Cases and Services to Be Trialled Phase 1- Nov 2020

The project held further "War Games" in November 2020. In the previous reporting period these were held in person but in this period, these have been held virtually. These games have been held both within SSEN and with wider industry stakeholders. They focused on the ESO's Short Term Operating Reserve (STOR) flexibility service.
The output from the events were captured and shared with Open Networks and published here;

2) Project Manager's Report

https://ssen-transition.com/wp-content/uploads/2021/03/TRANSITION-2020-Service-Conflict-Resolution-War-Game-v1.0-CH.pdf

The project has engaged frequently with each of the companies who have expressed their interest in taking part in the trials through emails and virtual meetings, taking time to support their understanding of the trials and respond to their questions.

We have created a range of simple animations which explain each of the flexibility services that we are testing, they can be seen here;
www.project-leo.co.uk/the-energy-challenge/flexibility-services/
These have been shared with Open Networks and we have received verbal feedback, praising the 'back to basics' approach shown in the animations.

- The TRANSITION Project outputs and learnings have been shared directly with the LEO project, and T.E.F. project partners during this reporting period, to avoid unnecessary duplication of effort and to maximise learnings for the industry. In addition, both EFFS and FUSION have shared learnings with the TRANSITION project in return.

- Finally, the T.E.F. project has engaged with the ON-P 2021 Project Initiation Document, in particular Workstreams WS1A (Flexibility Services), WS1B (Planning & Forecasting) and WS3 (DSO Transition), 2020 Project Initiation Document. The engagement ensured that the project remains aligned with the ON-P and identifies what outputs from the project will be shared with ON-P.

Deliverables

The project has successfully completed two Project Deliverables which were due within this reporting period.

- "WP7 Deployment Platform Full Acceptance Testing completed" – delivered on schedule in June 2021.

The next deliverable "WP8 Trials stage 1 Completion of one stage of trials"; is on schedule to be completed by 30th April 2022.

Next Reporting Period

This section provides a high-level outlook onto the next reporting period and describes the key issues and concerns that may be considered a challenge in the next reporting period:

The key focus in the next reporting period as the project progresses with trial phase are.

- Integration and testing of the NMF and WSC
- Development of a detailed trial plan, including ENWL.
- Completion and successful execution TP 1 from November 2021 to February 2022. The summary of which will be captured in "WP8 Trials stage 1 - Completion of one stage of trials" (Ofgem Deliverable #6).
- Development of TP2 and TP3 requirements for systems such as the NMF, WSC.
- Development and implementation of commercial arrangements for flexibility services
- Validation and maintenance of the PSA network model during trials
- Conduct season-ahead analysis to estimate long-term flexibility needs
- Development and deployment of WSC and NMF systems for stage 2 and 3 of trials.

Refer to "Progress Against Plan" section below for further details.

2) Project Manager's Report

Looking ahead to the next reporting period the project considers the key issues or concerns to be:

i) **Stakeholder engagement and dissemination activities impacted by Covid-19**: Due to the ongoing restrictions associated with Covid-19, the stakeholder face to face sessions planned for 2021 were not possible. The 2020 All Energy Conference was cancelled. ENIC did occur but is now a virtual event. It is expected to be a continuing challenge going into the next reporting period.

   It should be noted however that the general acceptance and adoption of online webinars, conference and other virtual engagement methods has also opened new opportunities and the potential to reach wider audiences and reduce the carbon emissions generated by the project. If appropriate this method of engagement will be used to communicate the outputs and learnings from TP1 (Ofgem Deliverable #6).

   Similarly, all our project meetings (and those with our LEO partners and T.E.F project) have continued to be held virtually. The project is considering the appropriate blend of face to face and virtual methods in order to maximise the opportunity for communication.

ii) **Defining the requirements for both the NMF and WSC**: The project is in the process of defining the requirements for both the NMF and WSC, however this is an ongoing evolving process based on project learnings, trial planning and industry direction. The project is prioritising resources to ensure that the requirements of these systems meet the objectives of the trial plan and are delivered in line with the associated trial periods. This proactive approach will de-risk the delivery of project deliverable #6 WP8 Trial stage 1 and #7 WP8 Trial Stage 2, due in April 2022 and November 2022.

iii) **Post Covid-19 industry landscape uncertainty:** There is the possibility that the landscape changes such that businesses fail, markets fail and/or demand reduces which may impact flexibility requirements. The recruiting of flexibility assets within Oxfordshire is ongoing and will continue in the next reporting period despite the restrictions associated with Covid-19. At this stage project deliverable #6, Trials stage 1, is on schedule for completion in April 2022.

3) Business Case Update

No changes have been made to the Business Case for the TRANSITION project, as described in the NIC Full Submission document.

4) Progress Against Plan

Summary of Progress

The Project has made good progress over the last 12 months with the fifth Project Deliverable submitted on schedule, and works are progressing well towards the sixth "WP8 Trials stage 1 Completion of one stage of trials" due in April 2022.

The project has been delayed in some areas due to the Covid-19 situation which started in March 2020 and is ongoing. In particular the project has found it challenging to install the LV monitoring units, therefore progress on that activity was completed around six months behind schedule.

Also, the procurement of the WSC and NMF was three months behind schedule, however the Acceptance Testing milestone due in 2021 was delivered on schedule.

In addition, stakeholder engagement and sharing of learning in a face to face environment has been on hold since March 2020. The project is utilising technology where appropriate such as conferencing software and webinars.

The Project remains on schedule to deliver its remaining Project Deliverables on time.

Focus in this Reporting Period

The focus over this reporting period has been on:

- Integration and Testing of the NMF and WSC – output was captured in Ofgem Deliverable #5 "Platform Acceptance Testing".
- Further development of the detailed low-level design requirements for the WSC and NMF with key supplier Opus One.
- Test and record learnings in LEO Minimum Viable Scheme (MVS) trials.
- Installation of the LV monitoring devices within Oxfordshire.
- Engaging extensively with the T.E.F. project and Project LEO.
- Joint work with Origami and FUSION to develop Use Cases, Service Descriptions and Common Terminology.
- Developing the resources to support the recruitment of companies and their assets into the market trials.
- Publicising the trials and positively engaging with potential participants.
- Disseminating learning from the market trials.
- Development of a baseline tool that uses the ON-P recommended historic data and nominated baseline methodology, alongside operational rules for the use of these baselines. The tool has since been adopted by ON-P WS1A Products 7.
- Completion of Commercial MVS 004 which required assets to forecast, monitor and deliver flex whilst the DNO baselined, applied settlement rules and tested payment to users in preparation for trials.
- Completion of Flexibility Services Contract, this adapted the ON-P WS1A P4 contract to reduce barriers to entry and act as a framework for the NMF platform as opposed to the bilateral format provided through ON-P. Learning is being fed-back to ON-P.
- Project team have utilised the ON-P WS1A P1 Common Evaluation methodology tool to evaluate its theoretical Willingness to Pay (WTP) for Flexibility across the 6 Bulk Supply Points (BSP's) in TRANSITIONs trial area.
- Project team have worked with LEO partners to model the Willingness to Accept (WTA) of different flex providers and asset types for flexibility. Data is currently limited so this piece will be built on as data grows through the project.
- Trial Plan Approach for peer-to-peer trading has been agreed with LEO partners and is being implemented. The learning from this will feed-in to ON WS1A P6. This includes waiver and load-flow processes noted in the last annual report.
- Trial Plan for TP1 is complete and will be implemented throughout the next reporting period.

4) Progress Against Plan

- Data mapping is now complete and provides a framework for data analysis and market models to be tested in TP1.
- Market Stimuli Packages have been built using pricing from the WTP vs WTA analysis (alongside other market sources) and operational feedback from the LEO partnership. These are now published on the TRANSITION website.
- Initial LEO participants have completed their procurement, asset qualification and legal documentation required to start trials between September 2021 and October 2021.
- The project has set-up a settlement mechanism to test self-invoicing of flexibility customers on a monthly basis using settlement reports from the NMF. This process, alongside a disputes process will be tested in TP1.
- Fortnightly calls have been held with all LEO partners in order to educate, engage and improve on market design features. The output of this has shaped the market trials in TP1 including: routes to market (fixed price, auction, Market Stimuli, monitoring of assets, aggregation of assets, baselining, settlement rules, availability and utilisation, auction time horizons, contracts, procurement and access to market). This has been supported by a series of 5 commercial MVS's.
- Further development of the detailed low-level design requirements for a suite of platforms and tools e.g. WSC, NMF and PSA with key supplier/contractor Opus One.
- In conjunction with RINA Consulting contractor, extensive engagement with internal business as usual DNO colleagues in the system and network planning as well as operational planning teams, we have been developing a detailed PSA network model of the Oxfordshire trial areas which will be suitable for operational timeframe deployment. This model includes
    - Joint models of the EHV system at 132/33kV level as well as the distribution network at 11kV level, within the one tool, a relative first for SSEN DNO.
    - Detailed models of our 11kV network as well as Geographical Information System, in partnership with another SSEN project called Connectivity+. This has led to a functioning PSA model of the lower levels of the Oxfordshire area with proper connectivity tracked and included.
    - Development within a PSA modelling tool called Digsilent PowerFactory, which is a tool well suited to merging models of different voltage levels together as well as dealing with phase imbalance issues.
    - Creation of Common Information Model (CIM) compatible formats of this integrated EHV/HV/LV model which can then be transferred directly to other systems and tools such as the Opus WSC for deployment in real time flexibility market and system management.
    - Processes for specific LV and HV connectivity location tracking of potential flexibility resources so that their true network location can be factored into their potential contract selection and dispatch deployment for flex during trials.
- Developing the specifications, and implementing the design, for an operational forecasting tool in conjunction with Sia Partners that will drive our WSC and PSA network model during trials.
- Developing a dashboard for our operational users to visualise the Sia Partners forecasts and associated confidence intervals.
- Defining the detail that will support an API solution to several other systems. These include the LEO partner, Piclo platform and our forecasting partner, Sia Partners.
- Begin initial engagement around scoping of TP2, due to start in May 2022, ensuring lessons learnt from the TP1 development are captured and acted on.

4) Progress Against Plan

- We have extensively engaged wider industry via engagement and dissemination efforts of the project within the T.E.F. collaboration and the ENA ON-P, a key forum where all other DNOs, the ESO and BEIS/Ofgem network to create best practice standards for flexibility market deployment at national scale. Key activities of engagement, amongst others, where T.E.F. is contributing directly within the ENA ON-P relate to:
    - Service primacy rules for ESO/DSO Whole System Coordination (WS1A P5).
    - Non-DSO peer-to-peer Services (WS1A P6).
    - Baseline Methods for Flexibility (WS1A P7).
    - Operational Data Sharing (WS1B P6).
    - DSO Transition and Conflict of Interest/ Unintended Consequences Tracking (WS3).
    - Flexibility Workstream (WS1A).
    - Proposals for further research and implementation with respect to the ENA ON-P Project Initiation Document (PID) for the 2022 year.

Key Activities in Next Reporting Period

The Key Activities planned in the next reporting period are:

- Completion and successful execution of TP1. The summary of which will be captured in "WP8 Trials stage 1 - Completion of one stage of trials" (Ofgem Deliverable #6).
- Development and deployment of WSC and NMF systems for TP2 & TP3.
- Gain and monitor feedback of contracts in TP1 and iterations needed for TP2 &3.
- Develop visual content and an amination to engage with stakeholders, increase project visibility and participation in the trials. Also, continue to publicise the trials to targeted audiences as set out in our communication plan, to support participation and maximise trial learning.
- Carry out qualitative interviews with a cross section of asset owners registered on the NMF 'post auction', to identify human or behavioural blockers to them taking part in auctions and to otherwise learn from their experiences.
- Attendance and participation at ENIC and UN Climate Change Conference - COP26 and other opportunities to disseminate learning and engage with potential trail participants.
- Further develop the market trials focused content on the website and materials on it - taking on and acting on feedback from those accessing it. This includes new infographics that support understanding.
- Support the participants of the trials, from their initial expression of interest in taking part, through to their participation in the auctions and Settlement.
- Work with SSE IT to understand the security and non-functional testing needs for future releases of the NMF and WSC and ensure these are considered in project planning material.
- Work with both SSEN and Opus One to fully scope and design the requirements for TP2, ensuring clear goals are set for development of priority functions.
- NMF Platform terms and conditions v.1 provided for TP1 services.
- Development of new baseline methodology looking at regression baselining. This will build on the work on ON-P WS1A P7 with the support of a LEO baselining group. This work will also start to look at baselining of unpredictable assets (common of the 'small and many').
- Development of new Sustain Export, Secure and Dynamic Services into the NMF with new settlement rules (these rules will be captured through a LEO working group meeting monthly).
- Work with Piclo to test API links between the NMF and their platform. Piclo testing integrated into TP1 trial plans.
- Work with Sia Partners to test API links between the WSC and their platform for short term operational forecasting.

4) Progress Against Plan

- Work with University of Oxford to divide trial hypothesis and market model (competition, liquidity, reliability) testing/development. This work will be scoped and initial analysis delivered.
- Work with the University of Oxford to develop a process to share data and make data available to stakeholders where appropriate.
- Routine market operations carried out including auction operation, baselining, settlement reporting, payment to customers, customer interaction (cancellations, errors, disputes etc.)
- Operational testing of peer-to-peer processes both within SSEN and with LEO partners.
- Development of TP2 & TP3 trial planning. This will drive NMF and WSC development prioritisation and workload to ensure required functionality for TP2 and TP3 is delivered.
- Continued work with project and market participants to understand how best to model and display aggregated portfolios of assets in a trading and network modelling platform.
- Determine relevance of market models based on business direction and industry thinking.
- Integrate the operational network model which in the WSC will take account of the most up to date status of the network topology (e.g. faults, switching operations, etc) with the forecasting tool to support close to "real time" power flow and near term flexibility market decisions.
- Develop a fuller understanding of the applications of "power flow" and "optimal power flow" power system analyses within long term and short-term flexibility markets, Key implications relate to the trade-off between:
    - Model solution time, which may be limited in real-time situations.
    - Optimality of decisions for total contract value cost minimisation.
- Conduct season-ahead analysis to understand long-term flexibility requirements.
- Assess the accuracy of operational forecasting when the system is deployed in practice, with respect to different technology types and different time horizons, so that key learnings in this area can be garnered ahead of deployment at wider scale in future.
- Consider furthering the use case of probabilistic short-term forecasts in long-term flexibility assessments.
- Assess the user interface requirements and experiences of operational planning and control room colleagues when dealing with new systems, tools and user interfaces for forecasting, power system analysis and whole system coordination.
- Further development of PSA models to potentially account for very local nature of LV connected flexibility. Depending on data accuracy and technical complexities, this may include development of LV network models for integration directly to the flexibility market process chain.
- Further the stakeholder engagement and dissemination efforts of the project within the T.E.F. collaboration and the Energy Networks Association Open Networks Project (ENA ON-P) within the remainder of 2021 activities and further in to 2022.

5) Progress Against Budget

The table below details the spend to date against the Project budget for each cost category.

Cost Category	Total Budget	Spend to Date	Comment
Labour	£4,095,070.33	£2,341,756.85	On plan
Equipment	£1,117,393.84	£221,249.69	Lower than planed[3]
Contractors	£3,318,310.76	£1,865,899.05	On plan
IT	£3,136,925.86	£348,330.23	Lower than planned[3]
IPR costs	£0.00	£0.00	On plan
Travel & Expenses	£516,827.59	£24,710.55	Lower than planned[3]
Payments to users	£385,562.33	£0.00	On plan
Contingency	£0.00	£0.00	On plan
Decommissioning	£72,550.75	£0.00	On plan
Other	£0.00	£0.00	On plan
Total	**£12,642,641.46[2]**	**£4,801,946.37[1]**	**Outturn on schedule**

The table above provides details of the project spend to date up to the 31st August 2021. The Project Progress Report 2022 will contain Progress Against Budget information from 1st September 2021 to 31st August 2022.

Notes:

1. Up to 31st August 2021 the project spent £4,698,872.97 (which has been processed through the Project Bank Account, see Appendix 1 for details). In addition, the project has spent £103,073.40 which has yet to be processed through the Project Bank Account. The total Project spend to 31st August 2021 is therefore £4,801,946.37 (as detailed in the table above).

2. The project submitted a revised financial forecast as part of the Stage Gate documentation in February 2020. The revised project budget reduced from £12,791,541.46 to £12,642,641.46. Refer to the 2020 Project Progress Report or the Stage Gate submission for a detailed explanation. The total budget figure in the table above is based on the reduced value.

3. The project spend has been affected by the restrictions associated with Covid-19. Specifically, the tendering process and associated contract award for the NMF and WSC which was circa three months later than planned. In addition, the installation of LV monitoring was circa six months later than planned. As a result, the project had spent less on “Equipment” and “IT” than originally planned. Consequently, “Travel & Expenses” are also underspent compared to plan. However, the project is forecasting an overall outturn on target.

6) Bank Account

A copy of the current project bank account statement is provided in Appendix 1 (Confidential).

7) Project Deliverables

Project's Deliverables update.

The TRANSITION Project identified seven deliverables which are strongly linked to the objectives and span the lifecycle of the project. In addition, "Common Project Deliverables" were identified in the Project Direction, dated 28th September 2018. Project progress within the reporting period was delivered as planned with Project Deliverable #5 Platform Acceptance Testing submitted on schedule in June. In addition, the overall project progress is on schedule.

Notes:

1. In order to align with the trial periods, the project intends to change the date of delivery for both Project Deliverable # 6 and #7, as described below. In accordance with Electricity Network Innovation Competition Governance Document v3 the change in delivery date does not constitute a material change (ref 8.31 and 8.32) as the date of the Project Deliverables is delayed by less than one year.

   The trial periods for the project are detailed in section 2 > "Trial Specification – WP6". In order to sufficiently capture the monitoring and analysis results from the trials and disseminate learnings with stakeholders the associated reports will be published after the end of each trial period.

Revised dates for Project Deliverable #6 and #7

Deliverable	Current Deliverable date	New Deliverable date	Trial Period dates
6	31/01/22	31/04/22	Trial Period 1 - November 2021 to end February 2022
7	30/09/22	30/11/22	Trial Period 2 - May 2022 to end September 2022

The following table lists each deliverable in chronological order and details the project's progress towards their achievement.

7) Project Deliverables

Deliverable	Due	Description	Evidence	Status
1	31/03/19	WP6 Trial specification Produce and apply the site selection methodology and select the Trial networks.	1. Publish on the TRANSITION website a report detailing the site selection methodology, and a map of Trial areas. 2. Selection of networks to install monitoring (if required).	**Completed – deliverable met.** **The following report was published on the TRANSITION project website on 29th March 2019.** **"TRANSITION Site Selection Methodology"**
2	31/05/19	WP2 Requirements design development Data exchange requirements and updated data governance processes specified.	1. Publish report detailing learning from relevant international DSO experience relating to trial objectives. 2. Functional specification for connectivity model, data exchange and governance requirements.	**Completed – deliverable met.** **Reports published on the website 31st May 2019.** **"Best Practice Report – Market Facilitation for DSO"** **And** **"Neutral Market Facilitator Data Exchange and Governance"**
3	29/02/20	Stakeholder feedback event (Stage Gate)	1. Stakeholder feedback event to disseminate and gather feedback on outputs from WP 2-6	**Completed – deliverable met.** **The "T.E.F. Stage Gate 2020 – Main Document v1.0" was submitted on schedule.** **Stage Gate approval letter was published on 4th May 2020.**
4	31/07/20	WP7 Deployment Develop appropriate commercial arrangements and contract templates for flexibility services. Network adaptation for trial deployment.	1. Publish contract templates for flexibility services and commercial arrangements learning 2. Publish equipment specifications and installation reports	**Completed – deliverable met.** **Two reports published on the project website:** **"Network adaptation for trial deployment"** **"Oxfordshire Programme Commercial Arrangements"**

7) Project Deliverables

Deliverable	Due	Description	Evidence	Status
5	30/06/21	WP7 Deployment Platform Full Acceptance Testing completed	1. Publish interface and configuration specifications and commissioning reports.	**Completed – deliverable met.** **The following report was published on the TRANSITION project website on 25th June 2021.** **"Platform Acceptance Testing"**
6	~~31/01/22~~ 31/04/22	WP8 Trials stage 1 Completion of one stage of trials	1. Publish monitoring and analysis results for Trials on TRANSITION website. 2. Stakeholder dissemination event showcasing learnings.	**See note 1 above – No planned progress within this reporting period.**
7	~~30/09/22~~ 30/11/22	WP8 Trials stage 2 Completion of second stage of trials	1. Publish monitoring and analysis results for Trials on TRANSITION website 2. Stakeholder dissemination event showcasing learnings.	**See note 1 above – No planned progress within this reporting period.**
Common Project Deliverable				
N/A	End of project	Comply with knowledge transfer requirements of the Governance Document.	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.	**2020 Project Progress Report was submitted on schedule. 2021 Project Progress Report is on schedule for submission in September 2021.** **No planned progress for the Close Down Report.** **TRANSITION presented at the 2020 ENIC Conference.**

Completed (Deliverable met)	Emerging issue, remains on target	Deliverable completed late
On target	Unresolved issue, off target	Not completed and late

7) Project Deliverables

The main challenges expected in the next reporting period are as follows: -

i) **Stakeholder engagement and dissemination activities impacted by Covid-19**: Due to the ongoing restrictions associated with Covid-19, the stakeholder face to face sessions planned for 2021 were not possible. The 2020 All Energy Conference was cancelled. ENIC did occur but is now a virtual event. It is expected to be a continuing challenge going into the next reporting period.

It should be noted however that the general acceptance and adoption of online webinars, conference and other virtual engagement methods has also opened new opportunities and the potential to reach wider audiences and reduce the carbon emissions generated by the project. If appropriate this method of engagement will be used to communicate the outputs and learnings from TP1 (Ofgem Deliverable #6).

Similarly, all our project meetings (and those with our LEO partners and T.E.F project) have continued to be held virtually. SSEN will consider how this may change during the next period as a blend of virtual and in person meetings may provide an appropriate balance.

ii) **Defining the requirements for both the NMF and WSC**: The project is in the process of defining the requirements for both the NMF and WSC, however this is an ongoing evolving process based on project learnings, trial planning and industry direction. The project is prioritising resources to ensure that the requirements of these systems meet the objectives of the trial plan and are delivered in line with the associated trial periods. This proactive approach will de-risk the delivery of project deliverable #6 WP8 Trial stage 1 and #7 WP8 Trial Stage 2, due in April 2022 and November 2022.

iii) **Post Covid-19 industry landscape uncertainty**: There is the possibility that the landscape changes such that businesses fail, markets fail and/or demand reduces which may impact flexibility requirements. The recruiting of flexibility assets within Oxfordshire is ongoing and will continue in the next reporting period despite the restrictions associated with Covid-19. At this stage project deliverable #6, Trials stage 1, is on schedule for completion in April 2022.

8) Data Access Details

Information gathered as part of this project can be provided to interested parties upon request. The form of the information will be in accordance with the SSEN Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure, reference PR-NET-ENG-020, Revision 1.00, published on the SSEN website.

Please email future.networks@sse.com for more information.

9) Learning Outcomes

The following learning objectives have been set for the TRANSITION project:

a) **Identify the data requirements and data exchanges** for DSO functions, informed by Open Networks. Map this against current technology (service provider) capabilities and develop requirements for future technologies.

b) **Using the outputs from Open Networks, test and validate the market model options being proposed.** Understand the requirements to create a sustainable market that can facilitate competition based on whole system needs.

c) **Build on learnings from previous and ongoing projects, as well as collaboration opportunities such as T.E.F. and LEO**. This will help develop understanding of a range of areas where a collaborative approach will be beneficial, including monitoring and modelling requirements to provide network data, connectivity and constraint data in sufficient detail to let the market operate in different network types.

d) **Establish system processing and visualisation requirements, including data protection and information security.** This will ensure that cyber security risks are effectively identified and managed.

e) **Develop and test DSO Use Cases that will be tested within the project** on different network configurations as well as the market/trading rules and timeframes to allow a neutral market to develop. This will remove barriers to new technology and markets allowing the increased use of market-based solutions as alternatives to reinforcement.

f) **Evaluate stakeholder experience of DSO trials.** Comprehensive stakeholder consultation will include discussion with licensees, aggregators, statutory authorities, consumer groups, community energy groups and engagement with the supply chain.

g) **Understand and communicate the requirements of an NMF/WSC Platform and the commercial mechanisms** that will be required for market participation to trial ways in which energy markets can evolve.

h) **Present the commercial interactions required for a DNO to transition to a DSO, develop and demonstrate NMF Platform tested on different network configurations** that will accelerate the transition from DNO to DSO. This will demonstrate the true value or flexibility from a whole system perspective. Maximising access to existing markets alongside new markets and being able to stack revenue across them.

i) **Understand the network modelling and forecasting requirements needed by the WSC platform to calculate the flexibility needs for different timeframes.** This will also inform the dispatch of flexibility assets to relieve constraints in specific parts of the network for different timeframes (e.g., week-ahead, season-ahead).

j) **Understand the additional functionality that can be provided by the NMF and WSC platforms with the use of integrations to outside partners and systems.** This will inform how we work with third parties for the purpose of integration both in best practice for internal design of the NMF and WSC, and in building a streamline methodology of collaboration with future integrations.

These learning objectives will be met as the TRANSITION Project progresses through Trial phase. Due to the nature of the project these objectives may not remain static and will be reviewed on a regular basis, and where applicable, revised.

9) Learning Outcomes

Learning during this reporting period

During this reporting period the TRANSITION project has produced several Deliverables, Reports, Shared Learnings and engaged with relevant groups. The specific learnings from these activities have been categorised against the project's learning objectives below.

a) Identify the data requirements and data exchanges.

- Monitor Data Uploads, despite providing a data template for recording flexibility dispatch and baselining, the data provided for initial tests has seen a variety of formatting issues and data errors. As a result, the project has produced firmer data rules for TP1 to ensure the DNO received the data it requires in a strict format to allow the market to operate effectively.

- Data Protection – Where aggregators offer flexibility from a range of assets the DNO needs to know the location of these assets so that it can check the asset will alleviate a constraint, and model the asset and its impact on power flows. This is typically done through MPAN's, for domestic or sole trader assets this data is considered personal and so unless a third party has acceptance from the customer to share this data it cannot be shared by the DNO. The DNO must therefore estimate an assets location through a non-personal identification such as postcodes or latitude and longitude dimensions- this is subject to errors and so DNO's encourage 3rd parties to obtain necessary consent when engaging flex providers.

- Significant extensive learnings for data gathering and integration from a myriad of sources have been progressed within the technical PSA and Forecasting model development task. This includes:
    - Integration of EHV and HV model data sources for SSEN system and network planning.
    - Using the most up to date versions of network connectivity by trialling and integrating the outputs of a parallel project Connectivity+.
    - Best practice for tracing and correcting understanding of generator and customer connectivity to precise locations within the 11kV and LV areas of our network.
    - Packaging all this network data together via the CIM file format for optimal transferability of models between tools and platforms.
    - Development of specific unique user identifications (UUIDs) for data integration between the forecasting tool and the PSA model, so that precise locations of demand and generation/customer forecasts can be merged within the network model.
    - IT integration processes and standards for the passing of the forecasting data to the WSC have been developed and aligned with consultants Sia Partner and Opus One.

b) Using the outputs from Open Networks, test and validate the market model options being proposed.

During the reporting period significant learnings have been generated on the back of using outputs from the ENA ON-P but also significant learnings have been fed back in from the TRANSITION project to ON-P, for example some particular highlights are as follows:

- The flexibility market price ceilings in TRANSITION have been informed by the use of the WS1A P1 Common Evaluation Methodology (CEM) tool from Baringa Partners.
- TRANSITION has informed WS1A P2 work on procurement timeframes, and the complexities of processes that may relate to closer to real-time flexibility market procurement which are not yet BAU implementation level in DNOs.
- The WS1A Product 4 FSA contract was adopted as a basis for TRANSITION, with versions 1, 1.1 and 1.2

9) Learning Outcomes

of the FSA have informed the use of the contracts applied. Recently, TRANSITION has fed back learnings on the adaptation of the standard contracts for applicability to the small and many potential flexibility sources at the grid edge, as well as flex market operational process efficiencies that can be gathered by using machine-readable file format information when contracts are set between the DNO and the industry actor providing the flexibility.

- Though the full extent of ESO and DSO service coordination will be explored in Trial Period 3 of TRANSITION in 2022, the involvement of TRANSITION in the discussions related to WS1A P5 on service primacy has further informed the ENA about service conflict scenarios and the potential means to mitigate.
- TRANSITION has informed the WS1A P6 Non-DSO Services Product, by provision of learnings around how to design a WSC and NMF to support peer-to-peer trading of capacity services.
- The baseline tool that is being used within TRANSITION has been informed by the learnings and best-practice conclusions from the 2020 WS1A P7 report from the ENA, and subsequently the ENA have decided to co-develop and adopt the tool developed by TRANSITION for further use more widely by the industry. This is evidence of significant synergy and learnings shared between TRANSITION and the ENA to date.

c) Build on learnings from previous and ongoing projects, as well as collaboration opportunities such as T.E.F. and LEO

- The project regularly engages with and shares learning with the T.E.F. project during the monthly Project Delivery Board meetings. This provided an opportunity to share the new knowledge and collaboration activities to date, for example baselining, trial planning and data cleansing.
- Facilitating LEO MVS/MVS+ trials provided an opportunity to develop some early experience ahead of this winter's full trials, in particular including aspects of baselining, procedural practice and commercial arrangements.

d) Establish system processing and visualisation requirements, including data protection and information security.

- The wider project team and internal stakeholders within SSEN have developed their knowledge on the IT security requirements of the NMF and WSC, specifically within the testing strategy.
- As a result of the LV network monitoring installation work, the data collected from the 91 installed units helped to develop our understanding for system processing and data protection, experience that was further fed back to the wider LEO project partners.

- Our extensive engagement with potential participants in the market trials have also provided learnings through the sharing of their experiences from other similar projects or activities. This has helped us to, for example, understand how other similar projects have dealt with the sharing of personal identifiers such as MPANS.

e) Develop and test DSO Use Cases that will be tested within the project

In November 2020 the project ran a "War Game" with National Grid ESO to test conflict management between a DSO and ESO. Key learnings from the event were: -

- Considering use case/situational scenarios of service conflict between ESO and DSO
- Proposing a means to manage service conflict via improved data sharing and coordination /collaboration between the ESO/DSO.
- Considering relative scarcity of services in markets as a means to drive priority of service.
- Creation of a summary report and updates to the Basic Market Rules to try and reflect the outcomes of the workshop to encapsulate those learnings.

9) Learning Outcomes

f) Evaluate stakeholder experience of DSO trials.

The Project LEO also carried out quarterly and annual interviews with different individuals within the collaboration. It is also expected that these will pick up feedback from the owners of the LEO assets in the trials.

We have been engaging with potential trial participants as well as with the LEO partners and this feedback has been used to influence the way we are communicating and engaging with these stakeholders. This has been a factor in.

- The priorities for the website development and its content.
- Removing a 50kW 'cut off' for access to participation in the trials.
- Developing our processes and understanding around the participation of commercial Aggregators and specifically in ensuring we comply with data sharing legislation and restrictions.
- The building of an FAQ section of the website built from the questions asked by the stakeholders.
- Changes made to the forms used for the qualification of companies and their assets.
- Refer to c) above for learnings generated as part of the LEO MVS trials.
- Published "LEO Trial Plan v1.1" report on the TRANSITION website in February 2021. The knowledge collated in the report further helped to develop a strategic approach for trial deployment in the near future.

- The TRANSITION project presented at ENIC Virtual Conference in December 2020. The dissemination presentation covered "Tailoring flexibility to the needs of the market". The video from the presentation can be seen here: ENIC 2020 TRANSITION on Vimeo

g) Understand and communicate the requirements of an NMF/WSC Platform and the commercial mechanisms.

- Bid / Offer Terminology - The terms bid and offer have a very clear meaning in wider energy markets (bid to buy or decrease generation/increase demand and offer to sell or increase generation/reduce demand). This terminology gets confused when implementing peer-to-peer transactions where you can be a buyer of capacity, but this then does not hold in terms of the flow of energy side of the definition. Likewise when creating legal contracts an 'Offer' in legal terms has a unique meaning (and in the market context can be used to represent a bid or offer), this could cause confusion and the DNO should look to learn from more advanced trading markets to build simplicity into this process.

- Baselining feedback from certain LEO partners/asset types, in particular storage assets around the issues that historic baselines provide for their asset. This concern has been discussed with partners and evidenced in the delivery of MVS trials. For this reason, the project also introduced a nominated baseline, however this can be resource intensive especially for small flexibility providers. The project has created a baseline working group to meet monthly and will introduce new baselines as trials progress.

- Identify and provide relevant training to the LEO partners as part of the ongoing development of the NMF. With the completion of release 2 in June 2020, the TRANSITION project produced a training manual and accompanying video as part of training provisions for both the SSEN business team and our LEO partners. A key learning from this initial session was that arranging training sessions and material as quickly as possible is key to allow for proper dissemination to partners and an opportunity to provide feedback to SSEN and Opus One to improve as the platform is developed. The feedback from

9) Learning Outcomes

both the SSEN team and LEO partners on the user manuals and training sessions provided by Opus One, which will be incorporated into the next set of training provisions with release 3 and 4.

h) Present the commercial interactions required for a DNO to transition to a DSO, develop and demonstrate NMF Platform tested on different network configurations

TRANSITION is working closely with a wide range of industry stakeholders to understand the commercial interaction required for a complete "end to end" flexibility service definition and procurement approach. The project has also worked closely with ENWL and others to ensure that any learnings and conclusions from TRANSITION are as technology-neutral and solution-agnostic as possible, are transferable to other networks where appropriate, and can be deployed on different system configurations. Some examples of specific learnings under this objective category are:

- An understanding of the commercial framework for service stacking was developed, requiring data input and software integration.
- The theoretical benefits of dynamic auctions for service stacking are now better understood, reported and ready for testing prior to trials.
- NG-ESO service parameters are better understood and reflected in the TRANSITION contract and market development (i.e. penalty mechanisms and feasibility mechanism support in black start markets).
- Peer-to-peer charging requirements were scoped, though continued development will be needed to understand the DSO role in peer-to-peer charges.
- Initial learning has been developed for the DSO processes required to help better understand the flexibility market, for example pre-procurement processes and auction mechanisms. Also, we gained a better understanding of where it would be beneficial to stimulate competition with extra short-term support (i.e. Capex support) for cost-effective long-term operation.

i) Understand the network modelling and forecasting requirements needed by the WSC platform to calculate the flexibility needs for different timeframes

In particular, with respect to this learning objective, we have developed a much clearer understanding of:

- The importance of good quality operational and historical data recording systems, for appropriate DSO modelling and analysis activities to be supportable, has been understood. Not only do individual data recording elements need to be delivered in a reliable manner, but a means of mapping them together in a coherent and interoperable manner needs to be developed. This will be essential to coherent forecasting and network modelling activity going forwards. Examples of different databases could include network data, connections data, customer data and settlement data.
- The criticality to develop network models that integrate several hierarchy layers of the system and network together has been understood. As a result of much of the TRANSITION flexibility sources being connected at LV or HV level, but potentially being aggregated up to solve network issue at EHV level, then combined EHV, HV and LV models have been developed in a single framework, to allow accurate technical analysis in support of DSO functions.
- It has been better understood that network models suitable for power flow studies within operational timeframes of flexibility market implementation will need certain specific features (i.e., live representation of switching state, unlike a planning model, the operational model will need to run continuously using forecasts of load and generation and the real-time network configuration).
- The need for a standard representation for network models from different voltage levels (EHV/HV/LV)

9) Learning Outcomes

to avoid compatibility issues and to develop a platform-agnostic network model has been understood – as a result, the CIM model data format has been tested and deployed by the project.

- An understanding of the complexities of modelling flexibility assets connected to the lower voltages of our network, where there is limited monitoring available, has been developed.
- Learnings associated with automation of tasks that might otherwise require human intervention have been taken with respect to the potential scaling up the activities of TRANSITION project to broader application more widely within the DNO to support DSO transition
- Better understanding of the impact of network upgrades and/or rearrangements in the development of forecasts: in particular, the importance of historical network connectivity has been better understood, and as a result, improvements in processes have been suggested to other teams in the business to allow more efficient generation of this data in future
- Supporting flexibility market implementation in near-real time, which is a stated goal of the ENA ON-P to explore, then the importance of operational forecasts that account for forecasting error and uncertainty with respect to time horizon, has been understood. As a result, this is a key requirement that has been built in to the scope of the forecasting tool being developed for TRANSITION by Sia Partners.
- Established processes and visualisation requirements for our operational forecasting dashboard have been learned, which can be used to inform the flexibility analysis and improve the operational awareness.

j) Understand the additional functionality that can be provided by the NMF and WSC platforms with the use of integrations to outside partners and systems.

This will inform how we work with third parties for the purpose of integration both in best practice for internal design of the NMF and WSC, and in building a streamline methodology of collaboration with future integrations.

- Integration with Piclo Flex to test Neutral Market Facilitation, the project has defined the requirements for a series of APIs between the NMF and Piclo. Following open discussion between SSEN, Opus One and Piclo, with the objective of identifying the technical integration requirements between Piclo Flex and the NMF, identifying the technical hurdles in the way of meeting these requirements and providing technical solutions that ensured the integration will be completed within budget and on time to meet the needs of both TRANSITION and LEO. The integration will be functioning in the next reporting period.

10) IPR

No relevant IPR has been generated or registered during this reporting period, and none is forecast to be generated or registered in the next reporting period.

11) Risk Management

Risk Management Plan

The Project risk register is regularly reviewed by the Project team and the key project risks are highlighted and discussed at project partner meetings, where mitigating actions are agreed.

Risk Register

The current Project Risk Register is provided in Appendix 2 (Confidential).

12) Accuracy Assurance Statement

Project Progress Report Preparation Steps

To ensure that the information contained in this report is accurate and completed, the following steps have been taken, the report has been:

- Prepared by the Project Manager;
- Reviewed by the Project Team;
- Reviewed by the Steering Group; and
- Approved by the Project Director and Regulation.

Sign-off

As the senior manager responsible for the TRANSITION Project, I confirm that the processes in place and steps taken to prepare this Project Progress Report are sufficiently robust and that the information provided is accurate and complete.

Melanie Bryce **Date 24/09/21**

Oxfordshire Programme Director

Scottish and Southern Electricity Networks

13) Material Change Information

In reference to the Electricity Network Innovation Competition (NIC) Governance Document version 3.0, the project can confirm that no material change has occurred within the reporting period.

14) Appendices

Appendix 1

Project Bank Account Statement

Appendix 2

Risk Register

transition

Moving to a smart future

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