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NIA Project Annual Progress Report Document

Date of Submission

Jul 2023

Project Reference Number

NIA2_NGESO012

Project Progress

Project Title

COMMANDER – Coordinated Operational Methodology for Managing and Accessing Network Distributed Energy Resources

Project Reference Number

NIA2_NGESO012

Project Start Date

October 2022

Project Duration

1 year and 4 months

Nominated Project Contact(s)

Matthew Rivett (ESO), Stuart Fowler (WPD)

Scope

To ensure DERs can provide flexibility services to multiple entities, efficient coordination between the ESO and DSOs is critically important when accessing DERs for flexibility service provision. At present there is a lot of uncertainty in relation to the roles and responsibilities of the ESO and DSO's in this new smart energy world.

This project seeks to build on the work of the Open Networks and the Regional Development programmes by researching the current international trends in this area and defining a roadmap for the practical implementation of the schemes across GB. With WPD as a project partner, it will give greater insight into the challenges from both a system operator and DNO perspective.

The ESO/DSO coordination schemes will have a focus on maximising the use of flexibility provided by DERs with respect to enabling them to participate equally alongside other flexibility and balancing service providers, including conventional and renewable transmission connected assets as well as interconnectors.

Enabling efficient access to DERs through streamlined ESO/DSO coordination will deliver:

- Opportunities for customers to realise value from services and new technology
- More sustainable energy markets and networks
- Reduced costs to consumers through more optimised use of services
- Enhanced security of supply
- Transition to net zero at the lowest overall cost for customers

Objectives

The project aims to:

- Identify and define alternative ESO/DSO coordination schemes for accessing and managing DERs with respect to their qualification, procurement, dispatch, and settlement. In particular, the roles and responsibilities of the key actors involved, their interfaces across different timescales and information exchanges as well as key market arrangements to facilitate the process;

- Quantify and assess the techno-economic feasibility of alternative ESO/DSO coordination schemes for accessing and managing DERs for service provision at operational timescales; and
- Develop an engineering-based roadmap and recommendations for the practical implementation of the preferred ESO/DSO coordination scheme.

Success Criteria

The project will be classed as successful if the following criteria is met:

- There is a greater understanding of the latest national and international trends on ESO/DSO coordination schemes and how they could potentially be applicable to the GB system.
- There is a detailed techno-economic feasibility and analysis of each ESO/DSO coordination scheme.
- There is a developed roadmap which outlines the physical deployment of the preferred ESO/DSO coordination schemes.
- To operationalise the findings from this project, further functional workstreams will have been identified, which encapsulates all of the technological, commercial, regulatory and operational change required at granular organisational level.

Performance Compared to the Original Project Aims, Objectives and Success Criteria

National Grid Electricity System Operator (“NGESO”) has endeavoured to prepare the published report (“Report”) in respect of COMMANDER – Coordinated Operational Methodology for Managing and Accessing Network Distributed Energy Resources NIA2_NGESO012 (“Project”) in a manner which is, as far as possible, objective, using information collected and compiled by NG and its Project partners (“Publishers”). Any intellectual property rights developed in the course of the Project and used in the Report shall be owned by the Publishers (as agreed between NG and the Project partners).

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The project aims are to:

- Identify and define alternative ESO/DSO coordination schemes for accessing and managing DERs with respect to their qualification, procurement, dispatch, and settlement. In particular, the roles and responsibilities of the key actors involved, their interfaces across different timescales and information exchanges as well as key market arrangements to facilitate the process;

COMPLETED

- Quantify and assess the techno-economic feasibility of alternative ESO/DSO coordination schemes for accessing and managing DERs for service provision at operational timescales; and **ONGOING**
- Develop an engineering-based roadmap and recommendations for the practical implementation of the preferred ESO/DSO coordination scheme **ONGOING**

Success Criteria are:

- That there is a greater understanding of the latest national and international trends on ESO/DSO coordination schemes and how they could potentially be applicable to the GB system. **ACHIEVED**
- There is a detailed techno-economic feasibility and analysis of each ESO/DSO coordination scheme. **ACHIEVED**
- There is a developed roadmap which outlines the physical deployment of the preferred ESO/DSO coordination schemes. **ONGOING**
- To operationalise the findings from this project, further functional workstreams will have been identified, which encapsulates all of the technological, commercial, regulatory and operational change required at granular organisational level. **ONGOING**

The project remains on track to achieve its aims and success criteria. The key to COMMANDER remains that we are looking to establish what the future might need to look like for T/D coordination to work in a way that maintains security of supply and that the system remains value for money to customers.

Required Modifications to the Planned Approach During the Course of the Project

There has been one modification to the project cost, an additional £25k was required (the Smarter Networks Portal has been updated to reflect this). This was required as the Project Lead left NGED and additional external support was required to continue delivering the

project.

Lessons Learnt for Future Projects

Some key learning points to date are:

- This is a complex area and to that end clarity at the start of the project can be challenging
- Having good partners that are able to adapt to changing priorities or views is extremely helpful when trying to establish projects like this.
- Business engagement is vital and continuity in personnel throughout helps in that regard
- There is a lot of information out there if you know where to look
- The IWES model has proved during this initial phase to be extremely adaptable to changing industry dynamics and produced some interesting results when broken down across GB into geographical areas

Note: The following sections are only required for those projects which have been completed since 1st April 2013, or since the previous Project Progress information was reported.

The Outcomes of the Project

The following milestones/outcomes have been achieved so far:

- Enhanced the current whole electricity system model to represent the developed ESO/DSO coordination schemes at operational timescales
- Defined whole electricity system use cases against which to assess the coordination schemes. These will consider particular geographic locations of the networks, specific types of flexibility services, different technology types of flexibility services, etc.
- Modelling and analyses of Scheme 1
- Modelling and analyses of Scheme 2

The project remains on target to meet all of its deliverables within the timescales planned.

Data Access

Details on how network or consumption data arising in the course of NIA funded projects can be requested by interested parties, and the terms on which such data will be made available by National Grid can be found in our publicly available “Data sharing policy related to NIC/NIA projects” and www.nationalgrideso.com/innovation.

National Grid Electricity System Operator already publishes much of the data arising from our NIC/NIA/SIF projects on the Smarter Networks Portal (www.smarternetworks.org) and National Grid ESO Data Portal (data.nationalgrideso.com). You may wish to check these websites before making an application under this policy, in case the data which you are seeking has already been published.

Foreground IPR

The team continues to make progress in accordance with the plan to develop the following documents which form the basis of Foreground IPR:

- Report on national and international trends on ESO/DSO coordination schemes.
- Report on the developed ESO/DSO coordination schemes.
- Report on the techno-economic feasibility assessment of the developed ESO/DSO coordination schemes at operational timescales.
- Report on the impact assessment of the ESO/DSO coordination schemes.
- Report on the roadmap for the physical deployment of the preferred ESO/DSO coordination scheme.

All of the outputs will be shared as part of our dissemination activities and published on the [Smarter Networks Portal](http://www.smarternetworks.org).