

## Identifying and Developing Regional Development Programme (RDP) Solutions

### Introduction

The zero-carbon ambitions of the UK energy sector, supported by favourable government policies, is accelerating change in the UK's electricity system. The energy landscape in the UK is witnessing large volumes of new connections to both the transmission, and distribution networks, with the mix of technologies becoming ever more complex. Many existing areas of the transmission and distribution networks now require significant reinforcement works to facilitate this growth. This is driving the need across the industry for new innovative solutions to be developed to facilitate connections more quickly.

RDPs were originally initiated to provide detailed analysis of areas of the electricity network which have attracted interest from large volumes of Distributed Energy Resource (DER) customers, and that have known transmission/distribution network issues in accommodating their connection. The output of RDPs is to create tactical solutions for a given part of the electricity system by pushing the boundaries of current processes and thinking, with a "design by doing" approach to resolve the observed issues.

The ESO, Transmission Owners (TOs) and Distribution Network Owners (DNOs) utilise opportunities to coordinate and apply innovation and best practice for connections throughout the year. It is through these channels and via interfacing with stakeholders and other industry groups that solutions are developed to advance connection dates, develop new policies and ways of thinking, and trigger wider industry change.

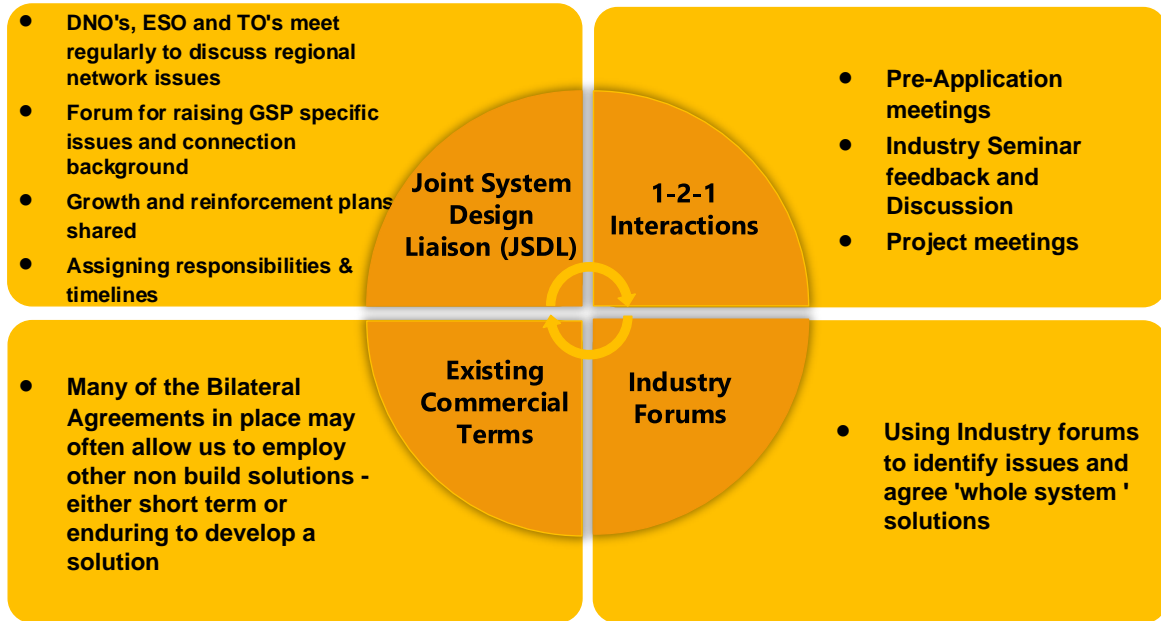
### RDP functionality

Currently RDPs are informing four areas of functionality:

- Market design for co-ordinated DER markets – including the broader roll out of tri-partite contractual arrangements as well as leveraging experience of facilitating market access for DER connected to Active Network Management (ANM) and Distribution Energy Resource Management (DERMS) schemes. This also includes how we can widen market access to RDP markets through the use of third-party platforms.
- Trialling GB primacy rule implementation – our MW Dispatch programmes will implement the first IT functionality in GB utilising primacy rules.
- Enabling communication pathways – establishing the protocols and systems that facilitate greater visibility of DER.
- Connection and design of future RDPs – embedding processes such as Appendix G and moving from a reactive process for RDP initiation to pro-active development.

### Routes to Trigger Solutions

Identifying problematic areas of the network and solutions to mitigate them don't just come from formal applications into the ESO, TOs and DNO's, they can often also be triggered via unrelated interactions and discussions that may lead to new solutions being developed to solve both very specific localised problems or more general system issues. Some of these triggers are detailed below.



## Optioneering

When a potential issue or problem has been identified caused by delivery timescales for transmission reinforcement works or wider system issues, the ESO will then go through a series of checks to 'triage' the problem, looking for potential solutions. Some of the key considerations in this early evaluation are detailed below:

- Do any existing or in flight ESO projects or initiatives already provide a solution?
- What is the classification of the assets at the GSP where the DNO is connected to the Transmission System? The classification of a site can often significantly influence what options might be available to advance the connection – for example if the site is classified as a 'Sole User' or Connection Asset site, existing ANM Schemes owned and operated by the DNO may be enhanced to receive signals from Transmission Assets and limits set to better manage overloads, both providing short term and enduring solutions.
- Presence of any existing RDP solutions in the region that can be extended and help mitigate system constraints – this could be a paid or unpaid service depending on the nature of the issue.
- Connections Reform – will this deliver an appropriate solution.

Where there isn't an existing mechanism or known remedy, a new solution is then developed in conjunction with the relevant TO and DNO, before being hardwired into Agreements.

## Agreeing a Solution

Reaching a solution that is economic, compliant, and agreeable for all parties sounds extremely simple but often has to take into account many factors before a final solution can be implemented – these can cover financial and commercial considerations, but also factors such as system security and operability. At high level some of the key considerations cover:

- Appraising all options against key criteria (System Security, Compliance, Cost) – this may include creating a Technical Proforma highlighting study outputs and other key considerations.
- Clearly define the scope of any new solutions taken forward, including creation of a Project Implementation Document where appropriate
- Use Cost Benefit Analysis (CBA) outputs and recommendations to inform and support decisions.
- Discuss and seek feedback on proposal, factoring in any associated governance or approval requirements to implement.

## Delivery

Once a solution or option has been agreed, the process of requirements gathering, rollout and testing can commence. All the existing RDP solutions have been developed and delivered in this way, with all the vital learning and experiences gained used to feedback into existing processes and procedures. They also provide us with vital 'tools' that are already developed and can be quickly deployed to both wider system issues and local GSP's between DNOs, TOs and ESO.

## High level process flow

