

## Appendix 4

### Key definitions

#### **Independent Network Distribution Operators (IDNO)**

An Independent Distribution Network Operator (IDNO) is a company licensed and regulated by Ofgem, to own and operate local electricity networks. An IDNO network will be connected to the local power network, which is owned by the local Distribution Network Operator (DNO) in this case UKPN.

The connection to the DNO national grid is required to provide resilience and regulatory compliance.

The IDNO will be responsible for managing and operating their local network, including all future maintenance and fault repairs for the lifetime of the assets.

The IDNO as an investor is entitled to the recovery of the costs of the network including repayment of the capital to build the network, subject to OFGEM 'Relative Price Control' regulations.

The benefits of the IDNO are:

1. Local control of the network and future extensions,
2. Funded and developed by private capital and in this way the IDNO can deliver cost discounts that are not available to the DNO.
3. Local generation assets can be connected to an IDNO grid, in Otterpool's case solar PV panels and batteries.
4. The IDNO, using an Electricity Supplier Licence, can leverage electricity arbitrage opportunities to enhance the operating revenues e.g. import from the grid to top-up batteries if the cost is low enough, or conversely export from the batteries to the grid if the price is high enough or support UKPN if there are local power supply shortfalls.

#### **Smart Grid**

A smart grid is all about information and control. A smart grid is fitted with information and communications technologies (ICTs) across the electricity network to enable a real-time, two-way communication between suppliers and consumers, creating more dynamic interaction on energy flow, which will help deliver electricity more efficiently and sustainably and maintain a demand-supply balance on a second-by-second basis.

The deployment of low-carbon technologies will mean less predictable electricity production (e.g. from a solar farm) as well as changing load patterns (e.g. the use of electric vehicles and heat pumps) and a need to enable electricity flow in both directions, thereby requiring new, flexible ways of balancing supply and

consumption. The use of smart meters and digital sensors and controls are integral to a smart grid.

The benefits of smart grid are:

- Improved energy security, resilience, and reliability.
- Enabling the deployment of new low carbon technology in Otterpool this is solar PV and batteries, with the potential to deploy EV charging and heat pumps infrastructure.
- Acts as a gateway to wider system integration including optimised power generation, heat generation, community energy initiatives.
- Greater understanding of power flows, leading to optimisation and arbitrage opportunities for the IDNO
- Right-sized generation and network capacity that optimises capital costs and acts to future-proof the network.

[Smart Grid Vision and RoutemapFINAL.pdf \(publishing.service.gov.uk\)](#)