

# DISTRIBUTED STORAGE AND SOLAR STUDY (DS3)



## FACTS

RESEARCH AREA	Network Management & Flexibility and Demand-Side Response
START DATE - END DATE	Aug 2016 - Aug 2019
FUNDING MECHANISM	Network Innovation Allowance
ESTIMATED EXPENDITURE	£275,000
PROJECTS PARTNERS	Moixa, Energise Barnsley
MORE ON	<a href="http://www.smarternetworks.org/project/nia_npg_011">http://www.smarternetworks.org/project/nia_npg_011</a>

## CONTEXT

The growth in photovoltaics (PV) systems has the potential to increase thermal loading and cause voltage issues on low voltage distribution networks, particularly where these are installed in clusters. The removal of the requirement for those installing PV systems to pay for any reinforcement required, means that those projects that do go ahead may result in a reinforcement need, funded from future DUoS charges.

## EXPECTED OUTCOMES

This builds on the work undertaken in our Customer-Led Network Revolution project. It seeks to develop sufficient data to determine whether it would be appropriate for network designs to take into account the presence and impact of distributed residential energy storage when considering an application to retrofit significant amounts of PV, especially on clustered installations such as social housing schemes. It will also explore the extent to which such battery systems can be used to reduce the winter evening peak load.

## APPROACH

The use of residential storage allows owners to make more use of their PV panels and possibly, in the future, benefit financially from ToU tariffs and trading on frequency response and demand-side markets. These technologies are commercially available now and their use alongside PV is forecast to grow, initially as retrofits and eventually as part of the initial installation.

This project investigates the impact that distributed residential energy storage can have on a distribution network operator (DNO) network and whether this impact is sufficient to require additional design guidance on the connection of PV associated with storage – which may allow more PV to be connected to the network.

## LONG TERM PRIORITIES



Network Environmental Footprint



Network Reliability & Availability



Network Management & Flexibility



Demand-side Response



Network Planning & Design



Communication & Engagement



IT-enabled Process Improvements



Social Responsibility