

# Democratic, Decentralised & Decarbonised Energy Systems with WPD

Nottingham

13 February 2018



# Agenda

- 13:30 **Welcome and introductions from the chair**  
Jodie Giles, senior project manager, Regen
- 14:00 **Working with WPD on innovation**  
Yiango Mavrocostanti, innovation and low carbon networks engineer, Western Power Distribution
- 14:30 **Interactive workshop**
- 15:30 **Refreshment break and networking**
- 16:00 **Project SCENe**  
Dr Lewis Cameron, The University of Nottingham  
Charles Bradshaw-Smith, SmartKlub
- 16:10 **Community involvement in local flexibility markets**  
Ben Aylott, Carbon Co-op
- 16:20 **Local flexibility market platforms**  
Rachel Stanley, Open Utility
- 16:30 **Panel debate**
- 17:00 **Networking drinks**
- 17:30 **Close**

# Events

## **Democratic, Decentralised and Decarbonised Energy Systems with WPD**

**Date:** 20 February

**Location:** Cardiff

## **Democratic, Decentralised and Decarbonised Energy Systems with WPD**

**Date:** 1 March

**Location:** Birmingham

## **Community Energy Spring Gathering**

**Date:** 9 and 10 March

**Location:** Devon

We'll be meeting at the beautiful Dartington estate in Devon for a two-day, fun filled residential, including walks, talks, films, fantastic food and collaborative discussion themed around community energy innovation and consolidation.



# State of the Sector Report

Community Energy England, Community Energy Wales & Scene are currently accepting responses for the most detailed assessment of the Community Energy sector in England & Wales.

**Deadline: 23 February**

Please participate to make it as comprehensive as possible & guide our political asks over the next year.

[www.communityenergyengland.org](http://www.communityenergyengland.org)



## COMMUNITY ENERGY STATE OF THE SECTOR

A study of community energy in England, Wales  
and Northern Ireland

*Full Report*

Community  
Energy  
England



# Business models post FIT ...



**Working with three community energy groups to explore post-FIT business models that can be replicated nationwide:**

- Storage
- Community owned heat
- Microgrid or virtual private network

**2 year project funded by Friends Provident Foundation**

**Due to report via the [Community Energy Hub](#) early March 2018**



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# Workshop



# What DSO means for customers ...

For large energy users	For distributed energy users	For smart technology providers	For vulnerable customers	For local communities
<ul style="list-style-type: none"> <li>• Price signals for electricity network usage may be derived from more market-based mechanisms rather than forward-looking charges, as at present.</li> <li>• The difference in costs between network charges at high and low periods may drive large energy users to flatten out their energy consumption or shift their consumption in time.</li> <li>• There will be clear routes to directly benefit from altering consumption patterns.</li> <li>• Flexibility is valued as a service and the response created by demand turn up or down may be valuable.</li> <li>• Users may be drawn to different areas due to more beneficial network access charges.</li> <li>• Access to NETSO stacking.</li> </ul>	<ul style="list-style-type: none"> <li>• The ability to bid for transmission balancing services is available to more market participants.</li> <li>• Secondary trading markets for distribution network capacity may be created, allowing customers to trade their network access peer to peer.</li> <li>• Flexibility is valued as a service and the response created by generation turn up or down may be valuable.</li> <li>• Certain areas of the network will become unattractive for new build generation, particularly if the existing generation is increasing distribution network costs.</li> <li>• Access to NETSO stacking.</li> </ul>	<ul style="list-style-type: none"> <li>• Networks will be seeking non-traditional alternatives that are able to provide new capacity or maintain existing equipment quicker and more economically than the traditional reinforcement or network build solutions.</li> <li>• Communications between parts of the energy infrastructure will become more critical than ever before.</li> <li>• Data will drive decisions and have an increased importance.</li> </ul>	<ul style="list-style-type: none"> <li>• The number and length of interruptions will continue to decrease, providing customers with an even higher reliability supply.</li> <li>• Smart metering will allow customers to see their usage in real time.</li> <li>• Structured tariffs will incentivise off-peak usage.</li> <li>• The definition of off-peak usage will vary depending on the make-up of adjacent network load.</li> <li>• There will be greater roles for social landlords in helping vulnerable customers to participate.</li> <li>• Access to NETSO stacking.</li> </ul>	<ul style="list-style-type: none"> <li>• Stronger locational signals for distribution network charges may result in demand or generation being attracted to a specific location due to the complementary nature of the existing customers connected to the network.</li> <li>• Local communities may be able to structure new markets and provide local investment opportunities in new assets, resources or services.</li> <li>• Access to NETSO stacking.</li> </ul>

## Open Networks DSO definition

“A Distribution System Operator (DSO) securely operates and develops an active distribution system comprising networks, demand, generation and other flexible distributed energy resources (DER). As a neutral facilitator of an open and accessible market it will enable competitive access to markets and the optimal use of DER on distribution networks to deliver security, sustainability and affordability in the support of whole system optimisation. A DSO enables customers to be both producers and consumers; enabling customer access to networks and markets, customer choice and great customer service.”

[http://www.energynetworks.org/assets/files/electricity/futures/Open\\_Networks/DSO%20Definition%20and%20RR\\_v7.0.pdf](http://www.energynetworks.org/assets/files/electricity/futures/Open_Networks/DSO%20Definition%20and%20RR_v7.0.pdf)



# A day in the life of a domestic prosumer in the low carbon future

Night - Wind speeds were high and a lot of power was generated.

Flexible demand on the network was procured through the local balancing platform, including EVs and battery storage, was used to decrease the imbalance between local supply and demand.

Morning – work starts and EVs are unplugged for school run/commuting. ANM system predicts increased PV generation, so an export constraint is likely, the community energy project puts a bid into the local balancing platform,

Afternoon - the local balancing market shows there is likely to be a surplus of flexibility in the distribution network that evening. The DSO submits a bid to the national market platform to provide balancing services to the national system.



# Workshop questions

- what the shift from DNO to DSO means to you
- how we can best work together to achieve a more democratic system
- what would you like WPD to support you with in future

