Welcome to the Community Energy Conference 2018

#CEconf18
Afsheen Rashid
Chair, Community Energy England

#CEconf18
COMMUNITY ENERGY FORTNIGHT

Energised Communities

#CEF18

23 June – 8 July 2018
Hector Cruz
Chief Financial Officer, Co-op Energy

Growing co-operative and community energy under an energy price cap

#CEconf18
Emma Bridge
Chief Executive, Community Energy England

State of the Sector 2018

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How things looked in 2016
84,000 Community Members Engaged

Over 1,000 Energy Efficiency Upgrades Installed

202 GWh Energy Generated in 2017

71,000 tCO₂e Emission Reduced in 2017

168 MW Electricity Capacity

Annual Demand of 67,000 Homes

228 Community Energy Organisations

74 Energy Efficiency Projects

1.9 MW Heat Capacity

3.2 GWh Energy Generated in 2017

650 tCO₂e Emission Reduced in 2017

5 Low Carbon Transport Projects

20 Community-owned EV Charging Points

5 Community-owned EVs
Organisation Structure

Organisations Founded in

- Charity
- Co-operative
- Community Interest Company (CIC)
- Unregistered / Unincorporated
- Community Benefit Society (BenCom)
- Other

228 organisations established:
- Pre-2008: 31
- 2008: 6
- 2010: 17
- 2012: 23
- 2014: 33
- 2016: 13

Date founded unknown for 10 responding organisations.
Organisations

with over

Members

employing

Full Time Staff

supported by over

Volunteers
Low Carbon Activities

- Electricity Generation: 204
- Energy Efficiency / Demand Management: 76
- Heat Generation: 3
- Low Carbon Transport: 14
- Energy Storage: 5

Coop Energy
Electricity Generation

- Generating: 202 GWh in 2017
- Capable of powering: 67,000 UK Homes
- Reducing: 71,000 Tonnes CO₂e

Total Operational Capacity: 168 MW
New Capacity in 2017: 33.5 MW

- Solar PV
- Wind
- Hydro
Electricity Generation 2008 - Present

Cumulative Generation Capacity (MW)
- Solar PV
- Wind
- Hydro

15 new projects installed in 2017
Heat Generation

Total Operational Capacity: 1.9 MW

Generating: 3.2 GWh in 2017

New Capacity: 265 kW

Including: 2 District Heat Networks

Reducing: 650 Tonnes of CO₂e

Energy Sources:
- Biomass
- Ground Source Heat Pump
- Air Source Heat Pump
Energy Efficiency Activities

Advice & Support
- Advice on Appliances: 55%
- Energy Switching: 36%
- Energy Cafes: 30%
- Awareness Campaigns: 25%
- Educational Events: 22%

Services
- Energy Audits: 51%
- Energy Efficient Lighting: 46%
- Insulation: 37%
- Draught Proofing: 13%
- Heat Loss Surveys: 13%

Demand Management
- Smart Meters: 17%
- Energy Monitoring: 5%

Funding
- Grants: 18%
- Loans: 5%

Percentage of total respondents (76) who selected the above in a multiple choice survey question.
Project Funding & Finance

£299,000 Early Stage Funding in 2017

£40,000 Rural Community Energy Fund (RCF)

£81,000 Ynni Lleol (Wales)

£178,000 Other Funders

£14.3M Investment in 2017

£6,885,000 Loans

£3,467,000 Bonds / Debentures

£2,926,000 Community Shares

£977,000 Other (incl. Self Funding & Grants)

Legend:
- Green: Government Funding
- Orange: Other Development Funding
Community Outcomes

Community Benefit Funding worth £1.1 Million in 2017

Used for:
- Education Initiatives
- Community Assets
- Reduced Electricity Price
- Support Local Services
- Improving the local environment
- Donations
- Reducing Carbon Emissions
- Job Creation
- Reducing Fuel Poverty
Stalled Projects

66 Stalled Community Energy Projects

Due to:
- Change in Feed-in Tariff
- Planning Complexity
- Lack of Volunteers
- Engineering Issues
- Access to Capital Finance
- Local Opposition
- National Opposition

Categories:
- Pre-feasibility
- Feasibility
- Grid Connection
- Planning
- Legal
- Financing
- Pre-construction
- Operation
Future Support

In future, community energy organisations would like to see...

- Feed-in Tariff Review: 37%
- Clearer Government Strategy: 25%
- Increased Grant Funding: 21%
- Investment Support: 19%
- Expertise Support: 17%
- Support for Local Supply: 15%
- Local Authority Support: 13%
- Improved Loan Rates: 8%
- Reduced Planning Complexity: 8%
- Lower Grid Costs: 7%
- Renewable Heat Incentive Review: 4%
- Innovation Support: 3%
- Publicity Support: 3%
- Reinstate Tariff Pre-registration: 2%
- Support for Storage Technologies: 2%
Where next?
Putting people at the heart of the energy system

Join us to make our voice stronger
COMMUNITY ENERGY FORTNIGHT

Energised Communities

23 June – 8 July 2018
The future of community energy – a network perspective

Steve Cox
Engineering and technical director
Agenda

- Introduction
- Drivers for change
- DNO to DSO
- Role of community and local energy
Introducing Electricity North West

- **4.9 million** customers
- **2.4 million** homes
- **25 TWh** of electricity

- **56,000 km of network**
- **£12.3 billion assets**

- 19 grid supply points
- 363 primary substations
- 66 bulk supply substations
- 33,000 transformers
Drivers for change

Energy
- Wind, Solar, Storage
- Nuclear
- Interconnectors

Transport
- Electric Rail
- Metro-link
- EV cars, vans, buses, HGVs

Heat
- Heat pumps
- Heat recovery
- Insulation
- Fuel Cells

Big Data
- Smart meters
- Flexible devices
- EV charging points
Network operator challenges

The network operator ‘Trilemma’

Reliability

Smart Solutions

Sustainability

Affordability

Customers can help us deliver
What used to be relatively simple...
...is becoming far more complex and multi-directional
From DNO to DSO

Old Distribution Network Operator model
- Low numbers of connections
- Relatively easy to connect more demand
- Limited customer engagement
- Reactive management
- Network sized to cope with peak winter demand
- Very little renewable generation

New Distribution System Operator model
- Energy flows in multiple directions
- Huge increase in number of renewable connections
- Increasingly complex to manage supply and demand
- Need to build relationships, and facilitate competition and innovation
- Much higher use of electricity for electric vehicles and heat

Electricity distributors will need to play a more sophisticated role
Guiding principles

In an uncertain world we need a direction of travel that is supported by our stakeholders

Forecasting

Customer pay for networks and should be central to solving any problems

No regrets

We don’t need to know everything
Agree what is definitely needed and make that happen

Responsive & flexible

Stay close to our regional stakeholder’s needs, listen and act
Opportunities for community and local energy

Customer involvement is key: Community groups have great networks of interested stakeholders

Greater participation in energy efficiency and low carbon energy is required: Community energy groups are already doing this

DSOs will provide new market opportunities at a local level: Community energy is adaptable, flexible and potentially at the right scale
Forging links with community and local energy organisations

We will search for locations on our network where community and local energy can be deployed for the benefit of the network.

We will be responsive to customers’ needs and deliver a stakeholder engagement plan that enables us to develop those relationships.

We will create new mechanisms for community and local energy groups to engage with us.
Challenges – as we see them

- Maintaining momentum
- Scaling up developments to increase impact
- Maximising on community engagement
- Developing new business models
Keep up to date
Sign up for our newsletter and view previous editions on our website.
Visit the community and local energy section of our website.

www.enwl.co.uk/communityandlocalenergy

Get in touch
If you have any comments on this strategy or how we should develop our actions please get in touch.
If you are developing a community or local energy project please get in touch to discuss your plans.

Contact details
Helen Seagrave, Community Energy Manager, Communityandlocalenergy@enwl.co.uk
Financing Community Energy

Dr Carly McLachlan
Dr Tim Braunholtz-Speight
Tyndall Centre for Climate Change Research, University of Manchester
What’s finance got to do with community energy?

Community energy is about much more than money

But it needs money
  ▪ to operate
  ▪ to distribute, or spend on doing things for free

Financial viability shapes what gets done
  ▪ why there’s more renewables projects than retrofit or advice, for example
Financing Community Energy research project

2015 - shocks to the existing business model

2016 - Financing Community Energy – working across UK to establish
- Where has the money come from?
- What business models have been used?
- And what finance and business models does community energy need in the future?
Financing Community Energy research project

WP1: Mapping the evolution of the UK community energy sector

WP2: Survey – business model and financial analysis

WP3: Case study analysis

WP4: Synthesis, engagement & co-developing pathways for the sector
Survey - emerging results

Data from

• 48 organisations
• 143 ‘projects’
• wide range of activities, scales, organisation structures
• across UK – every nation and English region
• On energy generation (if applicable), costs, financing, revenues, benefits

Analysis in progress!

• this presentation = preliminary indications
Survey - emerging results

Electricity generation capital expenditure by technology

Average capital expenditure (£ per kWp)

- Hydroelectric
- Solar PV - groundmount
- Solar PV - rooftop
- Wind
Survey - emerging results

Revenues from electricity generation by technology

Average annual revenue (£ per kWp)
**Survey – emerging results**

Returns from electricity generation by technology

<table>
<thead>
<tr>
<th>Technology</th>
<th>Average Annual Return on Capital Expenditure (ROCC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroelectric</td>
<td>0.06</td>
</tr>
<tr>
<td>Solar PV - groundmount</td>
<td>0.10</td>
</tr>
<tr>
<td>solar PV - rooftop</td>
<td>0.12</td>
</tr>
<tr>
<td>Wind</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Average annual return on capital expenditure (ROCC)

Pence of annual revenue per £ capital expenditure
Survey – emerging results
Responding to change – finding energy customers

Proportion of project revenue from price scheme
(FITS, RO, RHI etc)
Survey – emerging results

What price do community energy groups get for their energy?

Average energy price per kWh

<table>
<thead>
<tr>
<th>Type of customer</th>
<th>Average price per kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy company</td>
<td>5.00</td>
</tr>
<tr>
<td>Community or third sector</td>
<td>7.00</td>
</tr>
<tr>
<td>Other company</td>
<td>7.00</td>
</tr>
<tr>
<td>Public sector</td>
<td>8.00</td>
</tr>
</tbody>
</table>
Survey – analysis to come

That was just a taste… much more to come

Including

- More sophisticated measures – IRR etc
- Multi-factor analysis – isolating key factors for financial viability
- Business models taxonomy – patterns of projects
- Bringing the two together – how do different business models perform?

…watch the Hub, or contact us
Visions and pathways
What will community energy be in the future?

What
- More of the same?
- New technologies and activities?
- New business models?
- New relationships?
- What scale? What structure?

When is the future?
- Steps to take in the next two years
- The longer term vision
Visions and pathways
Feeding in to the policy process

- Manchester Mayor’s Green Summit
- Community energy listening event
- Community energy in the final Summit declaration
Visions and pathways

Elements of the visions so far...

• A national independent energy agency setting long term targets...
• Regional energy agencies setting long term targets, regional energy system plans and facilitating collaboration and access to assets
• Public sector pension funds divesting from fossil fuels and investing in local and community energy
• New technologies and combinations - integrated community systems– power, heat, transport, waste and housing
• Community energy aggregators
• Community and local energy innovation zones with derogations from Ofgem
• Building confidence for individual, corporate and public sector investors
• Retrofit and renewables installers – a supply of skilled local people
• Scale and professionalisation of the sector
Visions and pathways
What do we need next? Taking community energy from surviving to thriving

• 11.50 – 1.00
• What policy and regulatory support do we need as a sector? Right now, and longer term?
• What should our campaigning priorities be?
• And what are the different futures where community energy thrives despite or because of policy and regulatory support?
• Community Energy England, 10:10, REScoop Tyndall Centre
• Build collaborative robust and plausible future visions that address the challenges you face now and help the sector to thrive
• Hope to see many of you there!
Community Energy Conference 2018

Questions & Answers

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How can we build sustainable models for delivering energy efficiency?  

What do we need next? Taking community energy from surviving to thriving  

The transition from DNO to DSO – what could it mean for community and local energy?  

Storing and charging - diversifying into new markets