UK Regulatory Framework
The UK Grid
Key players

- Transmission network run by **National Grid**, a privately owned company
- Distribution network operated by regional **distribution network operators** (DNOS)
- Network regulated by independent regulator **Ofgem** which gets its mandate from Parliament
- **Price controls**, set by Ofgem limit how much DNOs can charge users of the grid and are used as a tool to incentivise investment
The current UK regulatory framework

Customer connecting to the network pays:

- the **cost of the assets required to make the connection** that will be used only by the new facility;
- a **share of wider costs if network reinforcement is required** (unless the connection cost is above a high cost threshold of £200/kW, in which case the customer pays the full reinforcement costs over that threshold).
- Any **remaining reinforcement costs are spread among all customers** and recovered through electricity bills.
- Connection offers made on a first come first served basis
Current UK regulatory framework

% of connections requiring no network reinforcement 2011-2013

- No network reinforcement required
- Network reinforcement required
Problems with current system
Stretched to capacity

- Grid designed for old model of large scale centralised generation
- Grid now reaching capacity in many areas and requires reinforcement
- Without major reinforcement will struggle to take more power from distributed renewable generation
- Existing framework not adequately incentivizing anticipatory reinforcement – DNOs waiting for connection requests rather than being proactive
- Poor visibility of network needs
- Lack of strategic plan to guide investment
- Queue management is poor making grid constraints worse
Case Study: Western Power Distribution
Case Study: WPD

- One of the most critical 132kV routes in the South West is now up to its full capacity. This route is referred to as F-route.
- Connects generation in any part of Cornwall, Devon, Dorset, Somerset and Bristol Docks.
- WPD building new 400kV double-circuit route between Hinkley Point and Seabank which will elevate.
Case Study: WPD

• But…..
• Current forecasts are that works won’t be finished until 2020 at earliest so in the meantime…
• New grid connection offers subject to delays of 3-6 years
• 90% of current grid connection offers not taken up – getting capacity back into the system is critical whilst bigger reinforcement works take place
Specific issues for community groups

- **Cannot move** to areas where the grid is not constrained

- **Unlikely to have significant finance** available for the early stages of project development making upfront grid costs potentially prohibitive

- **Less likely to have expertise** in grid connections and find complex application process hard to navigate
Specific issues for community groups

• Projects take longer to develop meaning not in a position to respond as quickly as a commercial developer when capacity does become available

• Lack of engagement and support from DNOs to overcome information barriers
Solutions
Solutions to issues affecting all DG

- Sweating capacity of existing assets
  - Low Carbon Network Fund
  - £500m funding to support DNO projects to trial innovative new technologies, operating and commercial arrangements

- Incentivising anticipatory reinforcement
  - Ofgem consultation considering alternatives to current cost model
    - Full/partial socialisation of grid costs
    - Upfront socialisation with cost recovery from “second comers”
    - Consortium funding
Innovating to share costs

Box 6: Street and Bridgwater consortium

Regen SW, a not-for-profit regional centre of expertise in sustainable energy, is working with a collection of community energy groups, renewable energy developers and Western Power Distribution to trial a consortium model for a shared reinforcement in the Street and Bridgwater areas of Somerset. The consortium would share the cost of connecting to a new ‘hub’ for generation connections, which no single site could fund alone.

The trial is assessing if there is sufficient potential at the chosen location to enable a grid reinforcement collaboration. It will share its learning once complete. So far it has been enabled by close working between Regen SW and Western Power Distribution, the region’s DNO. The engagement of community energy projects in the reinforcement relies on developers volunteering to make capacity available.

Regen SW have now launched a collaboration service, supported by local DNOs, which brings together any distributed renewable projects to reduce connection costs, and Scottish Power and Community Energy Scotland are collaborating on a similar initiative.
Removing grid barriers for community energy
Solutions to community specific issues

• Grid working party established made up of community energy groups, distribution network operators (DNOs), advisory bodies, government and the regulator.
• Exploring how to make grid connection easier for community energy groups
• Submitted report to Secretary of State in July 2014
Solutions

• Short term
  • Customer engagement
  • Enabling smart connection offers
  • Managing the cost of connection

• Long term
  • Socialisation of costs
  • Priority grid access for community groups
  • Reserved capacity for community groups
  • Body to make strategic network investments for community groups
Solutions – what next?

• Range of small scale solutions already being implemented as result of report
• Short and long term solutions included in two consultations published by Ofgem:
  • New models of cost allocation for anticipatory reinforcement
  • Staggering connection costs
  • Queue management
• Adjusting the regulatory framework to accommodate NTBMs
What’s missing?

• Strategic plan to guide investment to create grid that is fit for new energy system
• Visibility of network constraints to guide strategic plan
• Regulator with a mandate to consider wider benefits to consumers of community energy
Role of Forum for the Future
Our vision for Farm Power in 2020

By 2020, UK farms and rural communities will be making a significant contribution to a resilient, low-carbon energy system.

We believe that:

- Despite the pioneering efforts of some, the considerable potential of farms and rural communities to contribute to the energy system remains largely untapped;
- This potential can be realised in a manner that enhances food production and a variety of other societal goals, including:
  - the provision of essential ecosystem services, such as improved carbon, biodiversity, water and land management, and
  - job creation and rural economic development;
- These broader goals -- and the potential for energy investments to support them -- must be explicitly factored into decision-making around the UK’s energy future (yet are currently largely ignored);
- The income provided by energy production will increase the economic resilience of farms -- and thus the UK food system;
- Farm-based energy provides an opportunity to strengthen the relationship between farmers and their communities through mechanisms such as shared ownership and jointly-constructed community energy plans;
- Investment in sustainable farm-based energy is a means to kick-start the inevitable transition to a smart, dynamic, and increasingly decentralised, energy system.

To achieve this vision, the Farm Power Coalition will:

- Help farmers make informed choices about the best technologies and options for their businesses;
- Work with Government and business to:
  - Break-down the barriers that are stifling investment in sustainable farm-based energy;
  - Put in place a supportive regulatory, planning and financial environment;
  - Ensure that energy assets are located appropriately, and are designed to maximise co-benefits;
- Strive to create markets for sustainable farm-based energy, both within local communities, and along the corporate agricultural supply chain (and beyond);
- Work to ensure that farms and rural communities have easy, fair and affordable access to the grid.
Any questions?

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