UK100 Resilient Recovery Taskforce

Local path to Net Zero policy briefings: Smart Energy Communities

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Following the launch of the Resilient Recovery Taskforce in September 2020[1], UK100 convened a series of workshops with local authority members and experts from the clean energy sector to share insights on local on-the-ground delivery and to identify priorities for action.

Achieving Net Zero requires fundamental changes being made to the UK's energy infrastructure. The switch from being dependent on fossil fuels for transport, power and heat to renewable generation necessitates a new system, combining a mix of both large-scale power generation and local decentralised energy systems.

This briefing paper sets out the key policy priorities that will enable the UK to meet the scale of change required to transform the country's energy networks, as identified by Ofgem in July 2020[2].

The Covid-19 crisis has highlighted the fragility of our economic structures, their vulnerability to external shocks and the need to support people in our poorest communities. The action now needed to revive our economy must involve tackling climate change in ways that create benefits for people in the short term and build support for a rapid and fair transition away from dirty fossil fuels. Such an approach will enable us to reskill our workforce, create jobs, establish cleaner, healthier, safer places to work and live, and restore the nature upon which we all rely.

The UK Government needs to work with local leaders if it's to meet its legally binding Net Zero commitment by 2050. They understand the local context, are able to respond effectively to local crises, are engaged with communities and stakeholders, and have the democratic legitimacy to help their communities to bounce back. A group of twenty-four mayors and local leaders, representing twenty-five million people across the country, have established the Resilient Recovery Taskforce and have called on the Chancellor to commit to a 'New Deal for Green Skills and Growth'. Furthermore, UK 100 research in July 2020 recommended that the investment required to meet Net Zero would be delivered most effectively through a new Net Zero Development Bank, working in partnership with UK local authorities to mobilise private investment[3].

Participants in the workshop identified three key areas that need to be addressed in order to develop smart local energy systems: **Improved access and sharing of data, better regulation, and new powers and responsibilities for local authorities.**

Availability, accessibility and utilisation of data

In order to understand local Net Zero commitments, data sharing needs to be established between local authorities and other key stakeholders (especially DNOs) through data sharing agreements such as the Open Energy project[4]. Data accessibility is vital as it will allow decision makers to come together to make collaborative decisions and enable the development of local energy systems and support the delivery of Net Zero. Moreover, in order to improve data

sharing going forward, the Government should look to develop cross-sector data interoperability standards.

In order to develop smart local energy systems, there is a need for significant investment in data infrastructure - including a full roll out of smart metering. This is particularly important at a neighbourhood level where many of the new stresses on energy systems, such as EV charging, will be located.

So that data can be effectively utilised, processes need to be integrated and there needs to be consistency around how data is captured, the scale of data, and the shape of data sets. Currently data is being captured in different ways, which limits cooperation between stakeholders and across local authority boundaries.

A range of data sets will be needed from different sources to enable the development of local energy systems. These will include data on existing buildings, future land-use planning, and current and future transport usage and planning.

Better regulation

Clearer and more flexible national policies and frameworks are needed to allow more local energy generation and better systems management. This is particularly important considering that the two sectors that are the trickiest to decarbonise - transport and heat – are local.

Local authorities understand the needs of their areas and communities. New policies and frameworks should include a greater obligation and incentivisation for DNOs to work with local authorities. Local energy planning currently suffers from a siloed approach with limited interaction between stakeholders. Local authorities are not seen as strategically important to the development of local energy plans so engagement with them by the energy sector is often limited.

The current regulatory framework for energy is not fit-for-purpose and needs transforming in order to meet the Government's 2050 Net Zero target. It should facilitate and incentivise greater investment in and deployment of energy storage, smart local grids and decarbonised heat so that power can be generated and consumed locally, reducing costs.

Under the current framework, there is more that DNOs could be doing to enable the scaling-up of local energy infrastructure. There is significant capacity within the grid to develop local energy systems, and DNOs have the financial capacity to overcome local constraints where they occur. However, the current financial model for DNOs does not incentivise investment which is why the financial model needs to be refashioned.

New powers and responsibilities for local authorities

Local authorities have democratic accountability. As such, they're able to operate at a scale that requires communities and stakeholders to be engaged in order to establish political consensus on the long-term changes needed to meet Net Zero targets. By adopting integrated systems-thinking, they can solve more than one problem at a time - from job creation and economic growth, to saving residents money and improving the wellbeing of local communities. UK100's leading members are exceptional in their decisions to invest in energy knowledge and capacity over a long period. The ways in which the energy system is regulated and policy is designed, however, can mean that even our members can struggle to devise and deliver the vision they have of integrated smart energy communities at scale.

"There is a lack of clarity as to what is required from different stakeholders – DNO, grid, local authority, business and the public – around the development of local energy networks." Oxford City Council

Without that local commitment and capacity, the vast majority of local authorities find that their ability to engage and shape local energy decisions is even more limited. Moreover, work on energy is not a statutory obligation for local authorities, so it's vulnerable to being deprioritised when budgets are tight - despite demonstrable climate ambitions. This results in a limited capacity to engage with the energy sector or set a vision for clean energy.

There is currently a lack of clarity around the role and responsibility of local authorities in meeting Net Zero. UK100's research 'Power Shift' (due for publication early 2021) analyses what powers exist and what is limiting the ability of local authorities to use them to the best effect. The current definition for Local Area Energy Planning focuses on residential heat, something that needs expanding as the local planning of transport and power are also important.

New models of financing need to be developed to enable the monetisation of co-benefits such as poverty reduction, improvements in health and wellbeing, and local job creation. Currently the development of smart energy communities requires financial input that does not always generate market returns. Some local authorities have decided that investing in cleaning up energy is a public good and therefore a justifiable investment. They have been able to secure some funding to support some projects such as district heating and EV charging infrastructure, but these are not necessarily 'smart' or integrated. Without a market return, developing further projects at scale will be difficult.

A certainty of funding over the long-term is essential in order to effectively develop smart energy communities. The Local Energy Hubs are providing a significant amount of support to small projects but could do more with longer term secure funding. Work around the development of local energy systems is currently focused primarily on project grant funding, which isn't currently at the scale required. Applying for funding is competitive and time consuming - with no guarantee of success. Even where funding is obtained, such as through the Social Housing Decarbonisation Fund[5], it is often short-term which means the effectiveness of work is limited.

"As part of plans for local energy systems there is a need for long-term local finance packages which would provide certainty and security for larger scale investment." Innovate UK

Changes to the regulations and the policy environment that make the most of cross-vector, place-based, smart approaches to energy systems optimisation are therefore desperately needed.

Funding for smart energy solutions needs to recognise the varied challenges faced by different communities. What works in an urban setting is unlikely to be appropriate for rural communities. Local energy systems that support energy demands need to be designed with the different resources available across the country in mind; solar and wind energy, for example, varies in intensity across the UK. In order to achieve the scale necessary to leverage additional private investment, local authorities working in partnership will need to be able to aggregate projects.

Workshop participants

Bath and North East Somerset Council
Belfast City Council
Birmingham City Council
Cambridge City Council
Cambridgeshire County Council
Climate KIC
Cornwall Council
Department for Business, Energy and Industrial Strategy
Energy Systems Catapult
EnergyRev
Greater South East Energy Hub
Green Finance Institute
Imperial College London

Innovate UK
Leeds City Council
Leicester City Council
Mott Macdonald
Northern Power
Nottingham City Council
OFGEM
Oxford City Council
Public Power Solutions
Sheffield City Council
Siemens
SSE
University of Edinburgh
West of England Combined Authority

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2. Ofgem proposes £25 billion to transform Great Britain's energy networks, Ofgem, July 2020. www.ofgem.gov.uk/publications-and-updates/ofgem-proposes-25-billion-transform-great-britain-s-energy-networks
3. Accelerating the Rate of Investment in Local Energy Projects, UK100, July 2020. www.uk100.org/publications/accelerating-rate-investment-local-energy-projects
4. Open Energy. https://icebreakerone.org/energy
5. Social Housing Decarbonisation Fund Demonstrator, September 2020. www.gov.uk/government/publications/social-housing-decarbonisation-fund-demonstrator