The Community and Local Energy role in the Delivery of Net Zero across the Scottish Islands- A Contribution to the proposed Islands Energy Strategy

Introduction

The Scottish Government made a commitment to develop an Islands Energy Strategy in the Local Energy Policy Statement published in January 2021.[1] The purpose of this strategy will be to "support Island communities in their journey to decarbonisaton". This paper is a contribution to the development of that strategy, focusing specifically on the role of community and local energy development in the decarbonisation process.

In this paper Community Energy Scotland consider the role for communities and local energy, the success factors and limiting factors as well as the drivers and innovations that have enabled successful developments and the degree to which these are transferrable. This paper aims to stimulate discussion and invites communities, support organisations and individuals to comment on the role of community and local energy in the delivery of Net Zero targets.

From a review of existing energy audits and reports the islands energy picture includes high dependence on imported fossil fuels for heating and transport, higher energy costs than other parts of Scotland, drastic levels or fuel poverty and extreme fuel poverty, no scope for new renewable connections, inefficient and old housing stock, and some of the highest per capita emissions of CO2.

Success factors affecting Community and Local Energy Development

Islands can claim some of the most impressive success stories due to:

- Traditions of self-reliance and project development
- Strong sense of belonging and community empowerment
- Voluntary and social enterprise activity
- Community Land Ownership movement
- Experience of support provision and service delivery
- Historical high levels of community cohesion and strategic partnerships
- Pioneering community owned energy projects
- Innovative and ground-breaking projects
- Significant experience and skills development
- Vast renewable resource

Limiting Factors

Islands also have a specific range of factors which can impact on their ability to develop:

- Constant need for revenue to fund operations
- Level of knowledge and expertise in the electricity system 'smart' transition eg provision of flexibility services & demand aggregation

[1] https://www.gov.scot/publications/local-energy-policy-statement/documents/

- Lack of support for young people to remain, move or return to islands
- In-migration of retirees
- Community groups usually have multiple interests – energy is just one demand of their time
- Lack of employment, training, higher education & training opportunities. Lack of education provision with 40minutes of some settlements
- Complexity & delays in decision-making – eg with developments on common grazings
- Poor quality internet – speed & reliability
- High proportion of holiday & second homes
- Higher construction costs owing to distance from main markets (and supply of expertise)
- Maintenance services limited / remote
- Greater tendency to experience extreme weather

Innovation

The history of C&LE in the Scottish islands is a history of innovation in practice, where there have been many obstacles to overcome. Broadly speaking, island communities are adept and pragmatic at overcoming practical obstacles, but the some technical, policy, regulatory, commercial & market decision-making have been harder to overcome. Refer to Appendix 1 for examples, and CES would welcome further thoughts on innovative solutions being developed across islands.

Upcoming opportunities for islands

In the journey to reach Net Zero there are various initiatives which are in the process of being worked through and which could make a big difference to the support and provision afforded to islands to make real and lasting change. These include the Island Growth Deal (for the Outer Hebrides, Orkney and Shetland) and within that the Island Centre for Net Zero, the Outer Hebrides Net Zero Hub and the Shetland Clean Energy Project.

It is also important to recognise the importance of the Carbon Neutral Islands Project and the exciting opportunities afforded to the initial pilot islands, and in turn other islands as the project progresses. The Scottish Government's proposed Climate Hubs could also offer support and opportunities for the islands to progress to Net Zero once these are defined.

Barriers and their significance

Some of the most challenging barriers to date for community and local energy include:

- Removal of capital grants for community energy projects,
- The removal of subsidies and their replacement with the Contracts for Difference (CfD) regime suitable only for large-scale projects left community energy projects without a financeable route to market.
- Severe technical limitation on new generation
- Higher use of system charges
- Regulatory challenges associated with establishing local supply arrangements effectively block any new community electricity generation projects.
- Barriers mean that the knowledge, experience & commitment of community energy groups across the islands might be dissipated

At this point it is worth considering what is different and significant about community energy activity and, therefore, why it is worth pursuing:

- Widespread and deep energy use change is required to address the climate emergency: community groups are uniquely placed to influence and help people in their community respond – and can play an important role in promoting behaviour change;
- Community groups – especially in the Scottish islands – play a significant role in society and reach people who corporate bodies and centralised organisations struggle to reach;
- Although there are limits on what can be expected of volunteers, their actions add considerable value to limited resources, meaning that the impact of funding is magnified;
- Community groups that have taken forward an energy project have typically accrued considerable knowledge of many aspects of project development, which is transferrable;
- The detailed knowledge of the local area and the issues it faces can be invaluable; and
- Typically, local anchor organisations are multi-functional, responding to a range of local needs. Supporting their role on energy issues helps strengthen their overall role, promoting community resilience.

Future Developments

As part of the options appraisal being carried out by the Scottish Government it is important that there are goals and development options for community and local energy. It is assumed that some of these could include:

- Local electricity supply for smart space and water heating
- Development of EV-based community transport
- Re-powering of existing projects
- Community Buying Schemes
- Community partnerships with commercial energy service companies.
- Community installation companies

As part of this work we hope to hear more from communities and local energy projects about what they see as the best future developments to enable islands to progress to Net Zero.

Conclusion

We concluded that there is “a core dilemma: that the centralised advice and delivery model has gone a good way to achieve the ‘easy wins’ but ….. a more localised, collective and finely- tuned approach, which is demonstrably more effective at changing behaviour, mobilising voluntary action and encouraging uptake of measures, is more complex to organise – and could be more expensive”.

Islands are home to some of the most established and experienced organisations in the country and therefore have a strong start on the road to Net Zero. However, they also have some of the most challenging environments and barriers to overcome. This paper aims to support people to really think about what role island community and local energy projects can have in instigating and sustaining change, and how the greatest impact can be achieved to enable islands and Scotland to reach Net Zero.

Appendix 1

Table: C&LE Innovations and their transferability

Heat Smart Orkney	Partnership project which has live-matching otherwise curtailed energy output from community wind turbine to local domestic space and water heating	Highly transferrable and relevant to most island situations where any new generation must be matched to local load. Local community group lead.
Hebridean Housing Partnership	Bulk purchase and installation of air source heat pumps	Local housing association directly addressing fuel poverty through installation of heat pumps at scale.
SMILE Project	EU - funded multi-partner project. Real-life testing of heating and vehicle charging equipment in Orkney linked to the state of the local grid and local generation especially with heat batteries, heat pumps and hot water tanks.	Highly transferrable practical lessons on installation, costs and performance of 'smart' heating and charging equipment.
ReFLEX Orkney	A large-scale public-private project designed to provide 'flexibility services' to the Orkney grid through smart linkage of electric vehicles, domestic heating, battery storage and local generation	Piloting an alternative approach to loans – leasing agreements for EVs, domestic batteries and electrical heating equipment. The revenue from leases and smart utilization of tariffs and aggregation services ('stacking' value) to the grid is expected to enable a financially viable delivery model at scale.
Urras Oighreachd Ghabhsiann – Galson Estate Trust wind farm	This community wind farm successfully raised over £700,000 through a share offer through a community benefit society (Galson Energy Ltd).	Demonstrates the scale of interest and practicality of creating an opportunity to invest in local energy projects if they have a route to market.
Hebrides Energy?	Local initiative established initially as a white label supplier – now on hold owing to demise of Our Power	Aim was to ultimately supply electricity from local windfarms. Although paused, there are potentially useful lessons from its development so far.
THAW Affordable Warmth Project	This community-based charity in Orkney tackles fuel poverty through a number of projects.	Very well connected locally, but struggling to fund its activities.
Eigg Electric Maximum Use Limit	With the islands electricity supply dependent on its renewables-powered grid, it was necessary to apply a maximum use limit of 5kW for each household	Eigg has shown that it is possible to operate an off-grid renewables based system with a domestic use limit which depends on voluntary adherence to usage limits, using simple electricity consumption meters.
Eigg & Fair Isle : Integration of wind power, battery storage, solar PV and hydro (Eigg only)	These systems demonstrate the real-life feasibility of integrated renewables grids and show in microcosm what the future of electricity supply will be like.	Integrating different renewables and storage into a grid is technically feasible but equally important is how consumers respond.