

Green Investment Plan (GIP) Cumbria

Renewable Energy Roundtable - Tuesday, September 28 at 2 pm - 4 pm

Notes and Key Takeaways

- **How can we produce energy at scale and engage the community?**
- **What are transformative and targeted opportunities?**

Ciara Shannon (GIP project lead)

The session started with room introductions and Ciara, who chaired the session, began by mentioning that for all the talk of the energy transition the current 'panic at the pumps' was a sideshow to our dependence on the global gas market and raised important questions about how the energy transition is managed, energy security, storage, affordability and revealed how much our economy was still powered by fossil fuels. At the end of the session, she invited all participants to share any renewable energy investment ideas for Cumbria that they might want the project team to consider.

Nick Robins, Grantham Research Institute, LSE - (GIP chair)

Nick began his presentation by mentioning that there was a 'latent wall of money' looking for projects aligned to net-zero and those that are climate-resilient. The Climate Change Committee (CCC) estimates that net-zero investment needs to grow five-fold from c£10bn/year in 2020 to around c£50bn in 2030, before peaking in 2035. Finance must be deployed locally and nationally and be deployed at scale. For example, Manchester Metropolitan Authority has invested 5% of their total portfolio in the North West and the UK Infrastructure bank is an opportunity to crowd in capital and help support local economic growth connected to net-zero.

He discussed the '*just*' transition by considering how renewable energy can help enhance social justice by decreasing inequalities, recovering from COVID-19 and creating skills and jobs in vulnerable communities. He then identified five key themes for a just transition 1) maximising social benefits 2) mitigating social risks in communities affected by the transition away from fossil fuels 3) empowering communities through bottom-up (local, county and regional level) rather than top-down policies 4) anticipating future shifts and planning for economy-wide re-skilling and 5) mobilising money from the public and private sector. He also introduced the work of the Just Transition Alliance who are looking at business action, place-based action and policy action to support net-zero, deliver resilience goals to help a just transition.

Nick also presented the idea of local climate finance hubs to drive and unlock systematic investment. He concluded that there is no shortage of capital, however, the Government must think carefully about how this is delivered, in particular to local authorities who have demand for capital but struggle to attract investment.

Michael Osborne, Director at Arup (GIP team member)

Michael began by emphasising the scale of the decarbonisation challenge ahead. He went on to describe how energy systems are likely to become more complex by 2035 due to the increased diversification of the energy mix, which by 2035 is likely to include a greater percentage of offshore renewables, an increased role for hydrogen (including a repurposed gas network) and lower energy consumption as a result of greater energy efficiency measures and demand management.

Cumbria has significant potential to deliver low-carbon energy (particularly through offshore wind) for local, national and potentially international markets. The areas where he thinks there is most potential for emissions reductions are in the decarbonization of industry and transport.

Michael went on to say that a tenfold increase in offshore wind capacity is required for the UK to meet net-zero. The Crown Estates (owners of the seabed) are currently bidding for area 4 (Leasing Round 4) off the coast of Cumbria in the Irish Sea which presents an opportunity to develop a community-owned offshore wind farm proposal. This could be done jointly with a community group and a developer knowing there is a purchaser of power.

Finding green investment opportunities will require a 'coalition of the willing' - evidence of the need, leadership and multi-faceted mechanisms for support. Renewable energy, grid networks, hydrogen vectors, decarbonising industry and transport present some of the greatest opportunities for investment.

Michael also mentioned some technical barriers to scaling up renewables in Cumbria and feasibility studies will be required to understand the extent to which Cumbria has the capacity. Of particular importance is the upgrading of the grid network transmission systems (due 2027) which are currently the pinch points in the county. These will need to be improved as renewables increase.

Helen Seagrave, Community Energy Manager at Electricity North West -

Helen introduced Electricity North West which is the distribution network operator (DNO) for the north of England. They operate the cables, substations and associated assets which distribute energy. The company is not a supplier or seller of energy but must be engaged with when new energy demands are made (e.g. E V chargers and heat pumps). The role of Electricity North West has changed/ is changing as the energy landscape has moved from large generators flowing in one direction to homes to linking up different connections with low carbon technologies.

She presented the "Cumbrian Ring " network which loops around the national park and has 2 points of connection with the national grid in Harker, north Cumbria and in Hutton in the south. These are the pinch points for the amount of electricity that can be connected to the grid in terms of excess generation and are being upgraded with work due to be completed in 2027. In general, the Cumbrian network is tricky to manage and connecting low carbon technologies is difficult too. Cumbria already has the most amount of distributed generation already connected - in comparison to other areas in the region and Cumbria has more energy generation than demand. Domestic properties can still connect anything they want and generations below 1 MW isn't constrained and can still be connected. Since the year 2000, there has been a 4x increase in the amount of generation and there are 813 MW currently connected. She presented the generation mix in Cumbria which is predominantly gas and wind and three-quarters of the generation connected to Cumbria is already low carbon.

The long term goal of Electricity North West is to balance energy demand and generation as more low carbon technologies are added to the system.

Anne Chapman, Independent Consultant (and GIP team member). Anne began by saying that the UK's first community energy project was in Cumbria - the pioneering Harlock Hill near Ulverston (1996). Anne then spoke about various community energy schemes in Cumbria including Energy4All based in Barrow which was founded and financed by the Baywind Community in 2002 - a co-op whose members are 30 renewable energy societies. They help communities set up a range of renewable energy schemes (initially wind). She also said that Community Energy Cumbria set up in 2015 by Phil Davies (CAfS) now

has 30kW hydro from the Killington Reservoir installed by Ellergreen Hydro (based in Burneside) and a 30kW solar PV system on the roofs of the LDNPA in Kendal which was funded by a £330,000 community share offer. Further examples of community energy projects in Cumbria can be found in Anne's slides on the Green Investment Plan's website (see events page).

Anne gave an overview of some of the technicalities of Community Shares - which are withdrawable share capital issued by societies (registered by the FCA) that do not increase in capital value. The share offers are unregulated and these shares are a cross between an equity and a bond that have no recourse to the Financial Services Compensation Scheme or ombudsman service (so the cost of doing offers is low). Investors are paid share interest which must be no more than is needed to 'attract and retain the capital' and as there are no dividends and they are unregulated, they are relatively cheap. The Community Benefit societies must have an asset lock. Anne also said community shares can raise several million and investors are keen to invest in projects which will help deliver a just transition.

Charlotte Eddington, Investment Director at Abundance

Charlotte gave an overview of how renewable energy projects were financed, using examples of wind and anaerobic digestion. She presented the project development curve which starts with 1) looking at the feasibility 2) looking at securing the site, securing planning and looking at grid inputs and outputs (how secure these depend on how much debt can be brought into the project) and offtake 3) the construction partners and how the risk is managed between these 5) constructing the project 6) operation. Throughout this process, the financial viability is assessed and this will dictate how much equity and debt can be bought in. Debt tends to come in the later stages.

The types of risks investors look at include; technology, feedstock, deliverability, financial robustness, regulation and the site. Financing renewables requires examining these key risks and reducing and mitigating them. If this is not possible then different financing is required. More detail is available on the slides.

Charlotte then discussed the barriers and processes for developing offshore wind farms and anaerobic digestion:

- Lack of security in relation to assets (need strong record as technology developer supplier and operator and this is problematic) heavily dependent on project cash flows. They tend to be funded through equity and re-financed through debt.
- Project finance can be difficult for new projects as operations of AD are often problematic. This is not straightforward technology
- The only subsidies that become available are gas to grid projects. Some plants have the potential for hydrogen production.

Charlotte also presented some of the ways of generating community finance including;

- Crowdfunding
- The potential for the LA to invest in offshore wind farms and raising funds from residents
- Raising funds for a distinctive element of a project (e.g. hydrogen production from renewables)
- Investment in smaller-scale projects e.g. single turbines, Ad so that they are easier to finance
- Identifying large off-takers in a community and using that as a lever to open up community investment or involvement
- Look at opportunities for investment via the UK gov (e.g. NS&I; NIC etc) or policies that might insist on xx% of investment coming from a local community.

Charlotte ended by saying there are *many* ways for a community to break into the renewable energy market and that the focus should always be on engagement.

Mark Cropper, Chairman of James Cropper PLC:

Mark is the Chairman of a publicly listed and family-run paper business. He has set ambitious sustainability goals for the company, hoping to achieve net-zero and zero waste by 2030. Mark discussed the various approaches he was taking to increase the business' sustainability

More broadly, Mark discussed current and future trends for renewables in the industry. He noted that the success of Solar PV and Wind was attributable to government subsidies. Whilst there is significant potential for energy storage and green hydrogen to be used in industry, more support is required at the early stages to develop these technologies. Currently, there is not enough support in place from the government. Whilst the market can do some of the work, we cannot rely on it to do everything. Therefore, there is an urgent demand for further government investment in new and untested technologies until they gain traction.

Key Points On The Discussion About The Proposed Community Offshore Windfarm

- The need for early consultation with the community to increase community buy-in. The importance of willingness and leadership locally and then co-operating with a developer willing to take on the risk and sell this back to a community organisation.
- Offshore wind is a highly competitive industry. Large projects are usually bid on through auctions, which generally attract significant interest from private sector players (including energy companies, institutional investors, investment banks and corporates). For example, BP bid huge amounts for the Round 4 Leasing for their Irish Sea development. Communities have previously been outbid for offshore wind.
- Generally, wind farm developers are chosen following an auction - which is often very competitive and oversubscribed and the land (sea-bed) used for offshore wind farms is owned by Crown Estates.
- The development of a community wind farm would require us to write a compelling business case to Crown Estate to get their buy-in to sell land to the community rather than other companies and could form part of an offer to crown estates to lease to a community scheme. It would also be beneficial to make this case early on in the process.
- An off-shore wind farm could help with the development of transmission systems in Cumbria. If Cumbria is to scale up renewable energy generation in the next decades it will also require improvements in the transmission system. An off-shore wind farm drives investment in the transmission system and would enable further renewable energy projects to come forward.
- Need to move away from binary thinking of projects as either being privately owned or community-owned - we need something in between. What is perhaps more important is the need for community benefit in the forms of profits, procurement, jobs and supply chains.
- What is increasingly clear is that both community, private, third sectors and private organisations will all be needed. Crucially, there must be leaders who can get a foot in the door with the right people.
- Organisations such as Energy4All have developed a unique community energy model where they could come into a community and set up a local co-op that would raise the money for the share offer to buy a share of the revenue from the wind turbines.

Eight Points Discussed Generally

1. Significant and Targeted Opportunities

There is significant potential for the scale-up of renewable energy generation in Cumbria. Maximizing this potential opportunity will require a balance of both targeted and transformative projects.

2. Financing is Fundamentally about Risk

There is an interplay of debt and equity involved in renewable energy projects, the balance between the two depends on the level of risk entailed. The greater the risk, the greater the level of equity. The overall perceived risk is determined by a variety of factors. The level of risk generally reduces during the course of the project, allowing higher levels of debt to be brought in (often at lower interest rates).

3. Balancing Local Energy Projects with Potential Export Opportunities

Balancing energy between local demands and potential export opportunities is an important consideration. Local area energy plans, which are already in the pipeline and coming out with local government and LEPS, are an opportunity to balance local energy generation and potential export opportunities. Ensuring that the communities are involved presents an opportunity to make sure that revenue can be redirected into the community to deliver a just transition. Local energy plans are also an opportunity to identify funding mechanisms, particularly if government subsidies are not reliable.

4. Subsidies To Help Support the Development and Adoption of New Technologies Such as Hydrogen and Energy Storage

The current competitiveness of renewable energy technologies (such as solar PV and wind) is in large part attributable to the support provided by governments (particularly Denmark) through subsidies. Whilst there is a significant opportunity for the scale-up of energy storage and green hydrogen (particularly in the industrial and transport sectors), the market needs support in the early phases of growth. As such, there is an urgent need for government investment/subsidies to facilitate the development and adoption of these new green technologies.

5. The Importance of Creating an Energy Portfolio

Locally, Burneside is a good example of a local level community energy 'portfolio' as the energy projects there have been developed using multiple energy sources. Mark Cropper discussed how Croppers has been involved with the Burneside scheme and is currently considering developing net-zero community housing in the community that could link with community energy and supply.

6. Abundant Finance Opportunities Versus A Shortage of Projects

A few participants mentioned the importance of closing the gap between the 'latent' wall of money and the shortage of projects. However, one problem is finding willing partners that will provide assets (e.g. buildings or land to install solar panels or wind turbines). Not enough project ideas are being proposed and there need to be more local authorities going to community groups or third parties (e.g. Abundance and Triodos) and proposing projects which need community finance and could deliver community benefit.

7. Opportunities in the Reorganisation of Local Government

The reorganisation of local government in Cumbria might be a potential barrier as it will be difficult to find willingness and leadership to explore offshore wind at the current time. Others also saw this reorganisation as a big opportunity to make much-needed changes.

8. A Food Waste Collection System that Integrates Anaerobic Digesters and Green Hydrogen

An alternative idea that was raised involved a food waste collection system using anaerobic digesters and collection vehicles which were powered by green hydrogen. The rationale for this idea was that Cumbria currently has no viable, sustainable solution for dealing with food waste. There is an urgent need to design a viable solution for food waste disposal, as by 2023 all households in the UK will receive weekly food waste collections. This is part of efforts by the government to cut down on landfill waste.