

EXECUTIVE SUMMARY

The threat of climate change, declining resources and the need for greater energy security has highlighted the need to reduce our reliance on fossil fuels. It is widely accepted that this will require greater energy efficiency and a shift to renewable forms of energy. To date, UK progress has been slow, suggesting potential underlying problems with our approach. The evidence from pioneering countries such as Denmark and Sweden is that a different approach is required – one based on genuine opportunities for democratic control, community engagement and economic participation.

Against this background, the Urban and Economic Development Group (URBED), with the support of Co-operatives^{UK}, co-ordinated a DTI Global Watch Mission to Denmark and Sweden. The aim was to investigate the role co-operatives have played in the successful delivery of renewable energy projects. Co-operatives are independent, democratically controlled enterprises. They are owned and governed by their members, with the aim of meeting common social, economic and environmental needs.

Denmark has the strongest co-operative energy sector in Europe, and Danish co-operatives have unique experience with a range of sustainable energy technologies. Sweden has led the way in its development of a strong bio-energy sector, with co-operation between stakeholders having enabled strong growth.

The specific objectives of the mission were therefore to:

- **Investigate** the unique benefits that can be attributed to a range of co-operative models in enabling and delivering renewable energy projects
- **Understand** the co-operative role in delivery, and the strengths/weaknesses of the chosen co-operative structures, in relation to a number of different technologies
- **Explore** the potential for sectors of the UK co-operative movement to adopt Danish project structures and delivery mechanisms
- **Pursue** partnerships and technology transfer in order to learn from Danish experience and avoid 're-inventing the wheel', particularly in financing and developing projects

The mission also aimed to cover several different types of co-operative: consumer, agricultural, investor and secondary. The mission visited six co-operative enterprises, three co-operatively owned enterprises and five related support bodies – including a secondary co-operative and two major trade associations. Each visit was chosen to illustrate how co-operatives had delivered different energy technologies:

- Community-owned wind power
- Consumer-owned district heating
- Consumer-owned electricity supply
- Farmer-owned biogas production
- Farmer-owned biomass production and heating
- Farmer-owned biomass services

The mission provided valuable insight into two mature renewable energy sectors in which small-scale distributed energy generation and energy co-operatives play an important role. Whilst there are clearly difficulties in directly transferring some of what we saw to the UK context, there are nonetheless some clear lessons. We have distilled these down into four themes, with associated recommendations:

- Energy policy
- Co-operative culture
- Energy market
- Co-operative models

Energy policy

Sweden and Denmark have both put in place policy frameworks that have provided comprehensive and sustained support for efficient and renewable energy technologies. The two main drivers for these policies have been reduced reliance on fuel imports and sustainable development. These favourable conditions – sustained over nearly 25 years – have enabled a range of investors, including co-operatives, to make the long-term investments necessary.

Energy taxes and feed-in tariffs can be seen to have created an overall driver, with the revenue raised being used to support a range of technologies. The enabling powers of the planning system have also been extensively used to support infrastructure investment. Denmark has directed investment into district heating, creating heat markets which have enabled fuel flexibility and enhanced the viability of combined heat and power (CHP).

Recommendations

- Government should identify fiscal measures which would allow it to play a stronger role in enabling community energy projects

- Support should be made available for demonstration projects using co-operative models
- Local government should play a more proactive role in identifying and enabling projects; using planning powers, establishing co-operatives and helping to underwrite investments
- The co-operative movement should take a proactive role in developing community-owned energy projects

Co-operative culture

Denmark and Sweden's energy systems are characterised by a large number of small power stations. This distributed form of power generation means that projects must be located in many more 'back yards' – both urban and rural. This is important because it enables more efficient energy use, and wider benefits to be distributed to local communities.

To enable this to happen, a fundamental change in the perception of projects has been achieved at a local level. Key to this has been distribution of benefits to communities through co-operative ownership. The planning system also supports the aim of sustainable development, with local authorities playing a significant supporting role.

A culture of co-operation is also nurtured, starting in the education system and forming part of their enterprise culture. Co-operatives therefore represent a familiar model for projects – particularly at a community scale and for farmers. Government also provides direct support for co-operative development, and industry has also been directly engaged, creating mutual economic benefit.

Recommendations

- Wider education and awareness-raising is required to promote co-operatives as a viable business model and overcome outdated perceptions
- Greater support is needed for membership-based associations which provide mutual support and information sharing 'on the ground', whilst lobbying to overcome institutional barriers
- The co-operative movement should engage its members and stakeholders in the development of new co-operative energy projects and community investment opportunities
- Existing co-operative development agencies should work with local authorities, energy agencies and community renewables initiatives (CRIs) to develop co-operatives

Energy market

Co-operatives are able to deliver a range of benefits for consumers and producers – creating value for their members and the wider community. Key benefits can be grouped under two main themes:

- **Engagement and accountability** – they are responsive to the concerns and needs of local communities by virtue of their directly accountable structures. This reduces costly delays and risk caused by objections, and enables the efficient targeting of investment. Co-operatives can also raise awareness of and harness demand for local action on climate change.
- **Economic development** – the creation of new opportunities and the delivery of direct economic benefits for their members. Co-operatives can play an

important role in co-ordinating relationships between stakeholders, enabling projects and raising investment.

However, recent energy market liberalisation has created a narrower focus on energy prices. This now favours larger scale projects and investors. This raises the question of whether a different view of the market is needed – one in which price is not the only driver, and wider social, economic and environmental benefits are valued.

Recommendations

- Government needs to shift the emphasis from price to the valuing of wider community benefits; captured through direct engagement and ownership by consumers and producers
- Greater attention should be focused on overcoming the barriers to the development of smaller scale, community-owned projects – for both generators and suppliers
- The co-operative movement should work with Danish and Swedish trade associations to learn from the experience of co-operatives in liberalised energy markets

Co-operative models

A range of co-operative models were seen in action, and each project was well suited to this approach. Each project was pragmatic rather than utopian, and co-operatives are a recognised structure for an energy business. The majority of the co-operative models ran on a non-profit or 'more-than-just-profit' basis, instead aiming to deliver direct benefits to their members. This creates a strong focus on service quality and re-investment. Where dividends were paid, this has been vital in mobilising equity from the wider community to finance projects.

Each model was specific to the needs of a project, reflecting the stakeholder relationships and level of engagement required. Five broad models were seen:

- **Community-led investment** – projects such as Middelgrunden wind farm were established by citizens wanting action on environmental issues, successfully mobilising people's time and money
- **Consumer-owned utilities** – utilities such as Høje Taarstrup (heat) and SEAS (electricity) deliver efficient, cost-effective and accountable public services, making long-term infrastructure investments
- **Farmer co-operatives** – Farmarenergi and Hashøj Biogas enabled their members to successfully respond to changing market conditions and regulations, improving their economic position and delivering wider community benefits
- **New ventures** – co-operatively owned Naturbränsle and Agrobränsle brought together industry stakeholders to develop the biomass supply chain
- **Trade associations** – member-based organisations such as the Danish Association of Wind-power Guilds (DV) and the Federation of Swedish Farmers (LRF) broker co-operation between co-operatives in order to share experience and knowledge, and develop specialised support services

These are all tried and tested models of co-operation in the UK. However, there is relatively little experience of using them to deliver energy projects, suggesting a need for more practical demonstration projects.

Recommendations

- Tailored support should be available for those wishing to establish new co-operatives, with general information available on different models
- Government support should be provided to promote model rules and 'best practice' guidance based on experience from the UK, Danish and Swedish co-operative movements
- Government should establish new investment vehicles which can be used to mobilise equity for projects from the wider community
- Partnerships with Danish and Swedish co-operatives should be developed in order to facilitate technology transfer, and share knowledge and expertise
- The co-operative movement should act as a catalyst for projects involving a range of stakeholders such as local authorities, farmers, property managers and the wider community
- The co-operative movement should establish renewable energy investment funds, including risk funds, to take projects up to planning, and these should be used to support new co-operatives