

Mobilising Local Energy Investment

Cambridge County Council has been leading the Mobilising Local Energy Investment (MLEI) project, an award-winning local authority energy investment programme including four other LAs. MLEI has invested over £20mn in energy generation and energy efficiency, working with 40 schools, seven Council own sites, and has also delivered a 12MW solar farm built on Council-owned land.

The project uses tested solutions with new approaches to replicate delivery, working across electricity and heat production, building energy efficiency, and moving into the transport sector. The original project ran 2012 to 2015 with an aim of delivering €17mn (£15mn) of local energy investment, a target which was met in September 2015. MLEI continues, with new focuses on transport and heat.

It provides an example of how grant funding - in this case from the EU - can be leveraged into an ongoing and much broader project, attracting further public and private sector investment and building capacity over the medium term in an example of “learning by doing”.

1. Summary

The Council has leveraged funding provided by EU’s Intelligent Energy Europe (IEE) fund into a considerable and diverse ongoing pipeline of work, including dozens of MW of generation capacity, energy efficiency investments, a heat network and EV charging points. This work continues nearly four years after the completion of the original project. The developers have not been constrained by technology, though all projects are geographically in the Cambridgeshire or adjacent area, and the projects are currently only on Council-owned or affiliated sites.

Local Authority role in enabling low-carbon growth



Source: Cambridge MLEI report

2. Description

MLEI was targeted by the IEE to make investments of around £17mn into energy generation and efficiency projects, between commencement in March 2014 and completion in August 2015. A total of £18mn was invested, with pipeline completion bringing this to over £20mn currently. Installations used the Re:fit framework developed by Local Partnerships to provide clients with guaranteed energy bill savings, part of which could be used to fund the installations.

The project has deployed assets at 40 schools. Typical assets include solar PV generation, LED lighting upgrades, building energy management tools, insulation, and boiler upgrades. All upgrades were costed to establish that they were financial beneficial to the host and therefore the investment would pay back. Typical payback periods are in the 10-15 range.

Seven Council-owned buildings were also upgraded: Shire Hall, Amundsen House, Awdry House, Speke House, Scott House, March Library and Huntingdon Library. Energy conservation and generation measures included 183kWp of solar PV arrays, LED lighting and controls saving £10,000/year, insulation of exposed pipework, and building energy management systems. This programme cost £480,000 to undertake and will payback in 8.5 years.

In addition to these behind the meter investments, the project also developed a 12MW at Triangle Farm in Soham. This covers 70 acres of grade-3 agricultural land, and provides the council with income of around £1mn/year, with £10mn profit expected over the project lifetime and a payback period just over 11 years. The site achieved a subsidy under the Renewables Obligation regime.

Since achieving its £17mn target in August 2015, the project has moved on to look into many wider investments. Some are listed below.

- Babraham Park & Ride: Solar and Storage
 - Three sites under consideration - St Ives, Babraham and Trumpington
 - Solar carports with EV charging and battery storage, operated as an on-site mini-smart grid which will also store energy for lighting
 - £24mn returns over lifetime expected for the Babraham site
 - Avoids problems with the local distribution grid, which is at capacity in many places
 - Provides 100% renewable green energy to vehicles, while owners take public transport into the city
 - 25 year lifetime, though projected that the solar carports will remain at 80% efficiency at the end of this period

Babraham Park & Ride concept design



Source: Cambridgeshire County

- Swaffham Prior Community Heat Scheme
 - A heat network deployed in a Cambridgeshire village, providing low-cost, low-carbon heat. 70% of existing buildings use oil boilers - eligible in the village are 280 houses, primary school, swimming pool, two churches, pub, youth club and village hall
 - Replacing conventional heating with a district heat network running on renewables, probably ground-source heat pumps, but possibly water source heat pumps with plus gas backup or another technology
 - There will be no up-front costs for residents to join the project, with monthly bills including the capital cost of connections
 - A £20,000 feasibility study has been completed and more in-depth detailed technical economic feasibility studies are in progress
- Closed Landfill Energy Projects
 - Five County Council owned landfills which are now closed. Two near to Peterborough are considered the best for solar PV generation projects, being close to customers and electricity substations
 - 25-year project lifetimes over which £36.9mn profits will be realised
 - Stanground - 2.25MW solar array plus 10MW battery for DSR
 - Woodston - 3MW battery on a much smaller site
 - At the public outreach stage, very early in development
- North Angle Farm is close to the existing Triangle Farm in Soham and is being examined for an expansion of the existing solar development

3. Participants

The lead partner on this project was Cambridgeshire County Council. It partnered with four other regional local authorities: Cambridge City Council; Peterborough City Council; South Cambridgeshire District Council; and Huntingdonshire District Council.

Other key parties are Local Partnerships, which provided third-party governance, review, assessment, and supervision. Local Partnerships manages the Re:fit framework, which has provided a structure for assessing the economic merits of investments and provided guarantees to minimise participant risks for both investors and hosts.

Bouygues was selected as the Energy Service Provider through an OJEU-approved procurement process under the Re:fit procurement framework. It designs and installs the energy generation and efficiency assets for host organisations, as well as providing support for the Soham solar farm and various other projects. By securing a long-term (15-year) framework agreement, the Council could minimise re-procurements and work with a partner consistently. Energy Performance Contracts (EPCs) were provided to partners, meaning that savings or income was guaranteed, or Bouygues would be liable for the difference.

Savills Energy also provided support on the Soham 12MW solar array project. It provided technical support, including reviewing the Bouygues Investment Grade Proposal; line by line cost assessments; negotiation support with the client; advice on call-off contracts; development and enhancement of specific terms; technology analysis; helping to meet challenging timescales; and ensuring performance guarantees could be met without undermining the business case not. This ensures the ability to alter the operation and maintenance arrangements in the future without impacting the guarantees on output and income.

Cambridgeshire was able to work with large numbers of small project partners through delivery, with low levels of knowledge. This would normally entail high transaction costs if managed at individual project level. By running many projects simultaneously and using frameworks for delivery, Cambridgeshire managed these costs and kept them to an efficient level while remaining within EU procurement rules.

4. Financials

The project was supported by grant funding from the European Regional Development Fund's (ERDF's) Intelligent Energy Europe scheme for a total of £840,000. This paid for 75% of the cost of running the project, alongside funding from the partner councils, for a total of £1.1mn. This supported an investment programme of £17mn (around £13mn) during the term of the project, which has since increased to over £20mn with additional projects completing.

This is forecast to return £1.7mn in profit over the lifetime of the project, with some this income earmarked by the Council to support an ongoing energy unit. This unit now gives the Council the technical and engineering skills to pursue further projects going forwards.

The investments themselves - around £20mn in total - have been underpinned by low-cost borrowing through the Council's capital budget. Public Works Loan Board funding can be obtained for 15-year terms, at a 3.05% rate. The low cost of capital reduces the hurdle rate, allowing more marginal projects to go ahead than would be allowed by commercial finance. Alternatively, the low cost of borrowing allows shorter payback periods.

The concept of taking on debt was new to some organisations, particularly schools. Their budgetary constraints also meant that the investments had to be cash positive from day one, which require structuring finance around this requirement. The EPCs provided also reassured partners that the projects would provide the forecast returns.

MLEI also provided the opportunity for host organisations to provide some of the funding themselves and thereby profit from the installations as well; this option was primarily of use to academy schools.

5. Replicability

The legacy of the MLEI project has been the EIU at Cambridgeshire County Council. This was commissioned to deliver further projects in the period since the end of the EU funding in 2015. It recently applied to the Council for nearly £1mn to continue and transform its work for the next three years and in this application noted that its annual costs were around £100,000.

However, the income derived from the work of the EIU is much higher than this cost (£1.7mn over project lifetimes or £155,000/year). Its transformation budget will enable it to deliver £100mn of income to 2040 and provide funding for the EIU to be flexible in undertaking and delivering projects, rather than seeking approval for each project individually.

This multi-vector project is more about building capacity in local authorities to deliver energy projects than any specific investment which the Council made through the project. By using small projects on sites primarily owned by the Council and its partners, the Council was able to use income from these successful projects to pay for growing capacity, allowing it to tackle larger projects over the longer term. The Re:fit framework would also support wider roll-out through the LA community.

All of the over 400 UK local authorities have access to low-cost long term finance, as well as significant estates in terms of offices, schools, libraries, leisure centres and other public buildings which would be suitable hosts for small-scale generation or energy efficiency projects.

This means that will an initial investment to “prime the pump”, and sufficient political will to make investments, similar Energy Investment Units could be established at many other local authorities to replicate this model. Consideration should also be made of the potential for local authorities to develop capacity to support other regional LAs, as Cambridgeshire County Council has done in this instance. This concentrates financial benefits in one authority but reduces total costs and allows more LAs to access cost-savings as a result of being host to energy projects.

6. Future outlook

The Council noted that development costs were high risk, with a high level of projects dropping out before investment, wasting time and resources and requiring a large pipeline to result in consistent delivery. It also highlighted the need to remain flexible and make changes iteratively as partners and the market develop. It is also important to start small and develop capacity over time to deliver bigger solutions.

With LA budget tightening and energy bills rising, many authorities are turning to energy investments in order to reduce bills and to derive income to spend on front-line services. The falling cost of many renewable generation and energy efficiency assets also points to greater potential in this area. Investors should however be cautious that Ofgem’s ongoing TCR and NAFLC SCRs are expected to change network charges by 2022. This may adversely affect the business case, especially for marginal projects or ones which rely principally on avoiding or minimising network charges for viability.

7. Lessons learned

In addition to delivering an experienced Energy Investment Unit, key lessons learned through the project were:

- An “energy vision” is not sufficient to pull together stakeholders; linking the energy agenda into transport, housing and digital agendas provide broader influence and buy-in
- Investable projects with a solid business case are the most important part of the strategy; potential projects are not the same
- Project development costs are an investment risk and there is high dropout risk for partners. Understanding when and why partners drop out will help to mitigate this risk - mostly drop outs occurred due to lack of institutional capacity, knowledge, and commitment of decision-makers, rather than poor economics of projects
- Start simple and refine later on an iterative basis, as projects and the evolving market dictate. Being open to change and adapting the model is crucial to ongoing success
- Equally, routemaps to success will not be apparent at the beginning of a programme, no matter how much programme managers wish them to be. Professional input can help here
- Accessing finance is not a major hurdle for LAs, despite initial perceptions. Equally, investment decisions should not be made solely on a financial basis. Investment can be delayed due to perceptions of falling technology costs, more profitable ways to invest capital, and lack of public understanding of goals