

Introduction to Renewables East

Renewables East is a not-for-profit organisation tasked and funded across the East of England to deliver services and support as the renewable energy agency. The agency was created by EEDA in 2003 with a £500k grant for our first three years of activity. Renewables East has grown in experience, capabilities and delivered a portfolio of successful endeavours mobilising significant public investment into the growth of renewable energy whilst simultaneously capturing regional economic benefit. We have grown, on average, 48% pa in terms of turnover. Some of our notable successes are :-

- secured £10m of public investment to build Orbis Energy in Lowestoft and secured its initial tenants
- enabled JDR Cables to win a £18m contract (single biggest UK component supply contract into a renewable energy project) to supply cables to the world's largest offshore windfarm, the Greater Gabbard.
- Collating and publishing the region's renewable energy statistics twice a year, that shows the region as the leading producer of renewable energy.
- funded and created a new national protocol (PAS 110) to enable the growth of anaerobic digestion.
- ran the BioRegen project which enabled the development of over £30m of new bio-energy projects in the region.
- delivering the £2.1m EEDA/ERDF funded Resource Efficiency East programme which is currently working with over 420 SMEs to improve their profits through reducing waste, energy and water usage.
- created the Low Carbon Development Initiative which has raised over £4m of public investment to create new low carbon developments in the region.
- Created the Anglian GoWarm programme which is currently aiming to support 50,000 dwellings in fuel poverty in the region to improve housing energy efficiency and lowering fuel bills.

Renewables East currently employs 22 team members from a commercial background enabling us to fill the gap between public aspiration for a low carbon economy and the commercial reality of it being a costly and risky undertaking.

Solar Photovoltaic Opportunities

Solar Photovoltaic (often referred to as Solar PV or just PV) technologies are based on a scientific principle called the photoelectric effect, whereby certain materials produce electrical current in the presence of electromagnetic radiation, most often sunlight. Over many years this photoelectric effect has been harnessed and developed so that applications in solar power are now increasingly seen to be an economic alternative to fossil fuels, particularly in areas of high solar energy or strong government (extra financial) support. Despite the UK possessing similar solar energy levels to Germany, growth in the deployment of Solar PV has been slow in the UK (unlike Germany) due to high cost of the equipment, limited financial incentives and subsequent low to no return on investment.

However from 1st April 2010 the UK Government introduced the Feed in Tariff to encourage the deployment of smaller scale technologies. This financial mechanism has been widely used in other countries, and to great effect in encouraging deployment of various technologies. The UK tariff is implemented at two levels (generation tariff and export tariff) across a wide range of technology types and has been calculated at such a level that project internal rates of return are commercially attractive.

The average domestic customer pays in the region of 12-15p per kilowatt hour (kWh) of electricity used. The FIT mechanism will pay the owner of a small scale PV system 41.2p (kWh) for all the electricity it produces, fundamentally changing the economics. It is anticipated that the FIT will stimulate 1.8m new installations by 2020.

Renewables East Briefing Note on potential solar electricity



Given the slow growth of PV in the UK to date this new opportunity has not yet been fully recognised across domestic, commercial and industrial sector. It is Renewables East position that leadership can be shown by a public body or local authority to secure benefits to itself and its local area and provide effective, timely and enabling engagements to aid rapid and significant deployment of solar PV. Depending on the means of engagement the benefits that can be realised are:-

- 1) Guaranteed cost of electricity below market rates (approximately 10%) index linked for the next 25 years. This de-risks the organisation against future energy price rises, OFEGM projects a 60% increase in electricity costs by 2020.
- 2) Project funders and owners can secure very low risk investments that will produce 10% internal rates of return, thereby bringing valuable and secure revenues into the organisation during a challenging period of funding.
- 3) If an organisation leads on the development and project financing, it is also possible to make a short term return through re-financing to other interested parties. (i.e. pension funds, where 10% IRR over 25 years is very interesting)
- 4) Creating and sustaining local jobs through the assembly, installation and servicing of solar PV.
- 5) Achieves clearly visible and responsible leadership recognition to authority or agency seen to drive these opportunities forward.

Stimulating Solar Development opportunities – two options

Renewables East investigations in this area have highlighted two potential approaches with each providing two potential means of engagement that present different risk/return profiles:-

Project Development

- **Low Risk, no direct investment from Public Agency / Local Authority.** In signing a partnership agreement with the public funded and not for profit organisation Renewables East, we would go forward and develop the project with investment partners that would own and operate the Solar PV modules installed on your building (local authority owned housing, offices, building etc) at no cost to you, the host. In effect you would be leasing the roof space / land in return for our partnership delivering you renewable electricity into your site(s) at a rate guaranteed to be at least 10% below market rates. As the FITs are index linked and guaranteed for next 25 years, we would be able to guarantee this benefit for 25 years. Renewables East would assume the development risk (approximately £100K) on the basis that it had the exclusive agreement in place to develop Solar PV at a suitable locations with the public / local authority / housing partner. Renewables East would procure the technology (we are currently concluding an OJEU for the technology), contract the installation and operation and maintenance contracts and raising the project finance. Renewables East deploys the highest levels of public procurement protocols. Renewables East would recoup its costs through an investment partner, secured through an appropriate process (likely to be OJEU). We are currently installing 500 air source heat pumps across the region at a total cost of £3.25m in local authority housing having deployed the same approach.
- **Low Risk, approx £60k investment required.** Renewables East is running the Low Carbon Development Initiative (LCDI), which is part-funded by European Regional Development Fund (ERDF). For a public / local authority investment of £60k we likely be able to match this with £40k from ERDF to bring forward low carbon development. This intervention would allow for the partner to have a stake in the deployment of the PV on its buildings, housing and land and thereby facilitate greater control of the final delivery mechanism. This provides the potential to re-invest funds into the development of further low carbon activities. The investment would be made in three stages that offered the opportunity to

review the activities. Stage 1 would be a formal feasibility (approx £10k), stage 2 would be the development of the full business plan (£40k) and the stage 3 (£50k) would be the selection process of the final the solution. It should be noted that these costs take an optimistic look at the potential legal costs, which it is assumed are shared across 3 or 4 public / local authority partners. If Renewables East only secures one partner it is assumed that the stage 3, including the legal costs, would be £120k (i.e. an additional £70k).

Capital Investment

- **Capital investment return.** If option 1 or 2 are followed, the public /local authority may also wish to exercise the option to invest capital funding to purchase and own the completed and deployed Solar PV asset. This doesn't require the public / local authority to manage the assets as this would likely be already contracted to a supply partner. Renewables East and Ernst and Young have co-developed a Solar PV financial model which details project IRR's of 9-11%. The public / local authority could use either its pension funds, available capital fund or use its ability to raise funds at very low interest rates that would see it achieve a guaranteed return on investment over 25 years providing useful revenue into the organisation. This can be summarised as a low risk, low return model of capital investment.
- **Project purchase.** Through its wider solar development aspirations, Renewables East anticipates developing a portfolio of larger scale solar PV projects. These will be developed and constructed and when completed will be offered to the wider market (including public/local authorities) as a suitable investment vehicle. It may also contribute to an organisation's overall CSR and low emission positioning.

Timely Intervention

There are a number of reasons why urgent consideration and mobilisation of activity is required to achieve best results:-

- 1) the FITs are structured so that the FIT rate declines on an annual basis. In order to secure the best return the PV will need to be installed by Dec 2011.
- 2) The early mover advantage will secure significant profile and enable a shaping of the market through being an early leader.
- 3) Job and money. In order to secure the best opportunities into the region we need to be the region driving forward.

Why partner with Renewables East

The East of England continues to benefit from the unique structure of having a regional renewable energy agency. During its 7 years of existence Renewables East enabled and delivered an impressive array of exemplar activities filling the space between public aspiration for low carbon and the commercial reality. In working with Renewables East you are guaranteed an independent view of the options and opportunities to realise the best return for your organisation.

Renewables East would welcome all enquires on large scale solar projects and these should be directed to James Beal Managing Director of Renewables East via email at jamesbeal@renewableseast.org.uk