INNOVATION GATEWAY

Challenge Selection
Round 1, 2019

Innovator Briefs – Renewables

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Domestic PV

The challenge

The Partners would like to investigate ways to improve the business case for installing new domestic PV on their properties in the face of Feed-in Tariff cuts.

They have a large number of existing installations, on both domestic and commercial properties. There are commitments to install a set number of systems within the next two years, and at the moment the business case is prohibitive.

The challenge is to find innovative PV technologies which support the Partners' bids for funding or make a viable business case for self-funded projects.

The solutions we are seeking

The Partners are seeking low cost, low carbon energy, particularly for tenants in council-owned housing stock. In addition, innovative funding and trading models could be of interest.

There is also interest in packaged solutions, including battery storage (whether at an individual or communal level) into any funding bid.

The system would need to demonstrate ease of integration with existing systems, including online energy use platforms (e.g. EMIG) and safety systems e.g. lightning protection and fire alarms.

Further information

One solution already known to the Partners involves a hybrid inverter and lithium battery system, which would help reduce the cost of adding on battery storage, and they would be interested in exploring this further.

The Partners have also briefly looked at peer to peer trading of energy which could be an interesting solution.

Installation could either be performed by the Partners or by the innovators themselves.

The solar-produced energy is used in a variety of ways for different Partners:

- In case of seasonal tenancies, 95% of the power is used during periods the property is occupied, but exported during quiet times e.g. the summer.
- In case of permanently-inhabited properties, the majority of solar-produced energy is exported as tenants are not at home during the day to use it.

Selection criteria

- A proven 5% ROI is desirable.
- Improve business case for installing domestic PV.
- Can be implemented at scale, potentially in the 1,000s of 10-200kWp installations.
- Preferably the solution will be available in the short term, i.e. market ready. However, there is the potential to fund the installation of a solution that is not quite at this stage.

Urban wind

The challenge

The Partners would like to identify innovative wind turbine technologies which could be deployed in an urban environment.

These solutions may be used in combination with mapping exercises which look at wind patterns and speeds at different strata to identify optimal locations to site wind technologies.

The challenge is to find innovative small-scale urban wind turbines that combat the traditionally bad reputation of such solutions when it comes to efficiency, planning permissions and maintenance requirements.

The solutions we are seeking

A successful outcome would be the trial of one or more new concepts which can be easily installed in the urban environment. Trialled solutions should deliver efficient energy generation to be used in the Partners' buildings, or to power street lighting or similar.

We have interest from Partners who have very strict planning requirements, and who have not been able to install wind solutions previously due to risk of radio interference. A successful solution must be able to demonstrate the ways in which it can combat these problems.

There are no output requirements to make a solution appealing, but all electricity generated will be used to cut costs and deliver carbon savings.

Ideally, technologies will achieve a 5%-10% ROI over their lifetime.

Further information

The Partners are flexible on whether a solution is market ready – the stage of innovation would correlate with the size of the installation.

Selection criteria

The technology should be:

- Deployable in the urban environment.
- Compliant with planning laws.
- Low maintenance, where possible.
- Able to generate electricity efficiently to deliver a 5%-10% ROI over its lifetime (inclusive of maintenance costs).
- The Partners would consider trialling early stage technology as long as it has been thoroughly tested.