The Eilean Eisdeal Green Streets Project

A brief summary of the project

Eilean Eisdeal is a community development organisation based on Easdale Island which lies off the west coast of Scotland near Oban. The volunteer group originally formed to develop the Community Hall, which successfully won funding for a full refurbishment and extension around seven years ago. The refurbishment updated the fabric of the building to include modern standards of insulation, while still maintaining much of the style and character of the original building.

However, despite complying with energy efficiency standards at the time the building is prohibitively expensive to heat during the winter. As a result of this the Community Hall has severely restricted opening times during most of the colder months.

Being a small island, Easdale has no connection to the gas grid, and so relies on electricity to heat the community building. This is both an expensive and a high-carbon method to heat the hall. This has led Eilean Eisdeal to investigate adding renewable electricity generation and a high efficiency heat pump heating system to transform the hall into a warm and sustainable community facility.

The proposed renewable energy solutions

micro Wind Turbine

- High wind resource in Easdale area
- 6kW micro-wind turbine produced by a Scottish manufacturer
- Predicted output 15,700kWh of electricity per year
- Majority of electricity expected to be generated in the winter
- Annual carbon savings of around 8.5 tonnes per year
- Around £4,500 feed-in tariff income per year and index linked for 20 years
- Proposed location : South West of the Stone Skimming Quarry.

Solar PV panels

- 3kW solar panel array
- Predicted output of around 2,400kWh of electricity per year
- Annual carbon savings of 1.3 tonnes
- Around £1,100 feed-in tariff income per year and index linked for 25 years
- Proposed location : Community Hall roof

Air Source Heat Pump

- A renewable source of heat for the hall
- Around three times as efficient as the existing electric heating system
- Over the course of the year the electricity required by the heat pump is expected to be 100% offset by the wind turbine and solar panel
- Will be eligible for proposed Renewable Heat incentive payments
- Proposed location : Beside Community Hall

"EMMA" Energy Management System

An intelligent energy management system will also be installed as part of the project. This will be able to optimise the demand for electricity with the rate at which is supplied by the renewable technologies. This will ensure that as much of the communities own energy generation as possible is used on-site.

"This project not only allows us to meet our energy requirements from our local natural resources, but will create a warm, more environmentally and financially sustainable community facility for everyone on the island all year round"

Anticipated annual benefits :

Annual Renewable Energy Generation	**37,000kWh**
Annual Carbon Savings	**20 tonnes**
Annual FiT / RHI 'Clean Energy ' income	**£6,500 (index linked, 20-25 yrs)**

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