

Notes of OREF meeting

6th March 2018

ICIT, Old Academy Business Centre, Stromness

Event:

Building innovation using renewable technology.

Presenters:

Alistair Morton (OIC)

Ian Johnstone (OREF Board Member)

Apologies:

Ian opened by tendering the apologies of two of the originally intended speakers (Mark Hamilton of Solo Energy and Stephen Kemp of Orkney builders who both had had changes of travel plans that now left them out of Orkney on this night. Both have indicated they would be delighted to present at a later date.

Presentations:

Alistair Morton outlined several projects underway as follows:

Warehouse Building.

This has a sea-source heat-pump based heating system. The collector comprising 12 number 1.2x 2.4m pallets of coiled pipe under the pier. Coefficients of performance (CoP) of 5.1 have been achieved (i.e. 1kW of pump has delivered 5.1kW of heat to the building). There have been teething troubles due to unknown debris under the pier resulting in punctures to the collector coils. The pipes have generally not abraded or corroded as they are plastic, but punctured by discarded reinforcement. The collectors are to be moved into deeper water shortly.

At present the building is running on electricity, but runs at only 12kW overall. It has been on this limit in the cold weather. The heat pumps work best if lightly loaded, so are deliberately over-sized.

New Care Home.

OIC had looked at a sea-source collector, but in the light of the teething troubles of the Warehouse had decided to go for ground sourced heat pumps. 30 boreholes will be sunk and hot water permeability tests have recently been concluded. The building is to be highly insulated and airtight with mechanical heat recovery ventilation. Windows will be able to be opened, but it is hoped this will be unnecessary. It is running a warm roof construction as this means that penetrations through ceilings are not an issue. In some other buildings with multiple services there can be as much as 10% of the ceiling insulation missing or left out leading to considerable heat loss into the roof void.

The site will house 30 people.

Children's Home, Kirkwall.

This too has a heat pump based heating system which delivers a CoP of around 3.8.

Picky Centre

The SHARK heat recovery project to heat the Picky has been shelved. This involved the extraction of heat from the main trunk sewer on Junction Road. The scheme was shelved when guarantees of performance at the high temperatures needed could not be given.

Stromness Academy.

The building is being systematically insulated. Air quality is being closely monitored and found to be OK. Further insulation is due to go in and a new plant room may well be needed.

Callisgarth

This has a wind turbine generating the electricity for the heat pump and is working very successfully.

Discussion:

There was discussion on a number of topics including:

Whether there was solar going onto some buildings? It was understood that the hospital has been allowed to connect new solar, when KGS has not.

Have OIC considered whole systems involving wind/batteries?

Ian Johnstone

Ian presented slides provided by Robert Leslie on smart meters and 'Our Power' a community interest energy supply company.

Smart Energy GB



- Arqiva installing communication network for Dedicated Communications (DCC)
- Plan to have second generation smart meters installed in Orkney
- SSE could now be pushed to have Smart meters
- Difficult to cover the whole area so need encouragement

Our Power



- Not for profit supplier
- Talking to Western isles council for there hebreidian energy company
- OIC also talking to them
- Alternative tariff for total heating total control tariff
- 75 customers in Orkney
- OHAL looking into changing

SMETS meter



- SMETS1 meters are nearly finished
- SMETS2 meters have to be installed after October 5th 2018
- Data could be used by third parties if they applied allowing them to identify house that are under-heating due to fuel poverty or spotting unusual patterns of usage