Isle of Eigg

The isle of Eigg is an important example of how to design an autonomous energy supply for a little community located in an isolated and cold area. The requirements for the population of this isle are: heating system during the winter and electricity during the summer for the high touristic electricity demand.

Eigg uses three renewable sources: hydro, wind and solar. These three sources are integrated into high-voltage underground grid that remains stable during all the year. The designer of this system is John Booth. The electrical system consists of four wind turbines, some solar panels and a small hydro-power plant. The four wind turbines are located on a cliff below the 1,289ft (390m) peak of An Sgùrr and they produce up to 24 kW. The photovoltaic panels face south in an angle of 30 degree to catch any sunlight that might break throught the clouds during the non-summer months. During the spring and summer, those photovoltaic panels provide a big amount of energy covering around the 25% of the energy production.

Due to the meteorological conditions, during the winter there is an overproduction so they use that excess for heating the community hall, pier lobby and two churches automatically.

There are several problems that the community needs to take into account when using the electricity from the grid. They voted that the usage for every house was going to be 5 KW, and if any house uses more than that amount of energy, the electricity goes out. Then, the solution for using the electricity fairly was to incorporate a system in every house showing with green colour that the amount of electricity is correct and red if the amount of electricity is low and then, people should reduce their consumption.