

Low Carbon Energy Futures Project

Building a 3D Architectural Model

Showing a typical Lake District community and various options for renewable energy and energy efficiency developments



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The Project

Many communities in the Lake District National Park have already expressed an interest in looking at renewable energy generation and energy efficiency measures within their communities, but many struggle to know how to take these ideas forward, often finding the enormity of the challenge overwhelming.

This project provided three communities in the Lake District National Park with the support and advice they need to progress through this initial stage, and help them take ownership of their own energy futures. It ended leaving each community with an action plan setting out what they need to do next, who they need to talk to, and where they can access funding and support to help take their ideas forward.

A key element of the project has been the design and creation of a 3D architectural model, showing a typical rural setting and renewable energy and resource efficiency opportunities. This will be used with communities to help them visualise what they could have in the future.

The project has been funded by CLASP (www.claspinfo.org); the Lake District National Park, and Cumbria Action for Sustainability through their Big Lottery Sustain Eden project.

The Model

The model has been built by Amalgam Modelmaking Ltd in Bristol and at a scale of 1:500. The base is 100cm x 80cm and is constructed from CNC machined MDF and light density model board which has then been art-worked and flocked to produce a realistic finish. The model cost was between £4,000 and £5,000.

Contents:

- Housing includes council housing, 1960s bungalows, 21st century affordable housing and more historic and listed buildings.
- A group of modern eco-houses, with additional glazing on the southern side and featuring a reed-bed drainage system, solar photovoltaic (PV) panels and ground source heat pumps.
- The council houses and adjacent school building share a district heating system fuelled by a biomass boiler
- A farm with rainwater harvesting on one of the barn roofs and a small-scale Anaerobic Digestion (AD) plant
- A second farm or converted farm with a small 15m wind turbine of 5 or 6 kw
- A run-of-river hydroelectric scheme, with weir and turbine house
- Isolated housing with a ground-mounted solar PV array
- A hotel with biomass heating and water source heat pump, indicated by red pipes entering the lake (in reality, these would be underground)
- A caravan site with a green or sedum or living roof on one of the buildings
- A small set of buildings with industrial use
- Three 12m wind turbines serving an isolated dwelling with a total combined capacity of 15kw.

Using the Model

The detail of each individual element of the model was carefully considered to ensure it gave an accurate picture of a Lake District Valley and to consider developments that would be possible in a National Park location.

The model will be used to inform work with community groups to help explain options for renewable energy and energy efficiency developments, and to help people visualise what these may look like in their communities.

An event was held in 2014 where those interested in using the model themselves could learn from those who developed it and who have used it with communities during this project. The 'train the trainer' event, shared experiences and good practice, so each community group / organisation wishing to make use of the model does not have to start from scratch in planning their events. The presentations are available for anyone to use alongside the model for a community event.

It is hoped that similar support can be provided to more communities in the National Park in the future, and discussions are ongoing as to how this can be provided.

Although the model is of a typical Lake District Valley, it is available for any community in the North West of England to use, once booked via the LDNPA. It is stored at the LDNPA offices in Kendal, Cumbria.

If you are interested in learning more about the project or booking the model, please contact Alison Lax at CAfS on 01768 210 276 or Sam Hagon at the LDNPA on 01539 724 659.



This document is part of a series of information about this project, including a guide to the process, 3D model used, and the resulting community Action Plans.

All documents can be downloaded from: <http://claspinfo.org/rural-low-carbon-futures>
