

Langdale Estate, Lake District

Balancing tourism and the environment

Photo

The Langdale Estate provides a luxury Lake District Hotel & Spa, Timeshare and Self Catering Holiday accommodation. As a tourism facility situated in the heart of an area of outstanding natural beauty, The Langdale Estate management team is striving to balance the requirements of its visitors with the sensitivities of the local and wider environment. The Biomass boiler project is part of Langdale Estate's long term commitment to sustainability tourism and to being an ethical employer.

objectives

- To reduce LPG dependency and the high cost/volatility pricing that it entails and find alternative fuel source to heat hotel's leisure area, including swimming and spa pools; two restaurants; 10 bedrooms and conference facilities.
- Reduce 'Carbon Footprint'.
- To develop biomass usage and help create a sustainable tourism destination.

actions

- Replacing the hotel's four existing LPG boilers by installing one 250kw biomass fuelled boiler.
- Storage methods for the chip were assessed, leading to the existing boiler house and adjoining building being converted to accommodate not only the boiler but also a fuel bunker.
- Safe public access and viewing opportunities were also created.
- Building local supply relationships with local saw mills, local forestry and tree service companies, as well as larger forestry and forestry co-product companies. These suppliers can provide Langdale Estate with both chip and wood for processing.

achievements

- The Langdale Biomass project is anticipated to bring annual fuel cost savings, at current price levels, of between £35,000 and £40,000.
- The Langdale management team have taken a conscious decision to enable safe access for the purposes of demonstrating the various processes of taking raw timber and converting it into heat for the hotel. There is a safe viewing area in the wood processing/storage areas at Birch Hill Wood; viewing panels in the on-site fuel bunker and safe access to the main boiler for guided visits from any interested parties.
- Langdale's long term goal is to rely upon woodfuel processed on site. With this in mind, three members of their team have been through LANTRA's 'Ignite' wood fuel training course. They also have a number of local forestry contractors and biomass system operators with the necessary equipment (Heizohack chippers) to process wood to the required standards.

background

- The total Langdale Biomass project cost was approximately £150k. Approximately half was provided via a Carbon Trust loan and a Bio-energy Capital Grant.
- Project pay back is anticipated to be around 4 years; this takes into account the grant and uses 2007/8 average LPG prices.
- Langdale Estate are currently paying around 2p per kwh for the biomass heat.
- Initially, one or two LPG boilers will be maintained to cope with the peak demand for heat from the hotel. However, to reduce the frequency of their use alongside the biomass boiler Langdale Estate will also be installing a 3,000 litre accumulator tank.
- Langdale have developed close links with both the Forestry Commission Regional Woodland Officer and Cumbria Woodlands' Rural Development Officer with a view to the ongoing sourcing of timber for processing.
- They now have a capacity to store wood 'in the round' which is then chipped on site. They built a small wood yard which includes a large chip store. The boiler is served by a 30m³ bunker which holds approximately one weeks' fuel. Fuel for this is delivered by a lorry with tipper. Currently they empty the ash bins on a weekly basis. The boiler was specified to be as maintenance free as possible - it de-ashes and de-'soots' automatically. It will require an annual service.
- They have also utilised nearby space in the woods for additional wood storage. This enables them to store up to 8 weeks demand of chipped fuel, whilst also allowing the storage of wood prior to its processing into chip. They are able to hold a twelve month supply of round wood on the site.

quote

"The decision to use Woodfuel was initially brought about by the cost savings involved and a wish to reduce our reliance on LPG. The type of woodfuel we chose, chip rather than pellets, was motivated by a wish to use a locally sourced product that would reduce our Carbon Footprint further, whilst benefiting not only the local economy but also local woodlands and their biodiversity." Dan Visser, Langdale Estate

partners

Forestry Commission
Cumbria Woodlands
Carbon Trust
Bardon Biomass – local boiler supplier
LANTRA - training
Nomad Specialist Tree Services (local forestry and tree service companies)
UPM Tillhill (larger forestry and forestry co-product companies)

lessons learnt

- The Langdale Estate team have learnt that Biomass projects require patience, financial commitment and persistence, but are well worth the considerable effort involved.
- There is an abundance of information, education and support on woodfuel to be found within Cumbria. By educating themselves about the benefits of woodfuel, the Langdale Estate have enabled themselves to develop more balanced relationships with other suppliers.