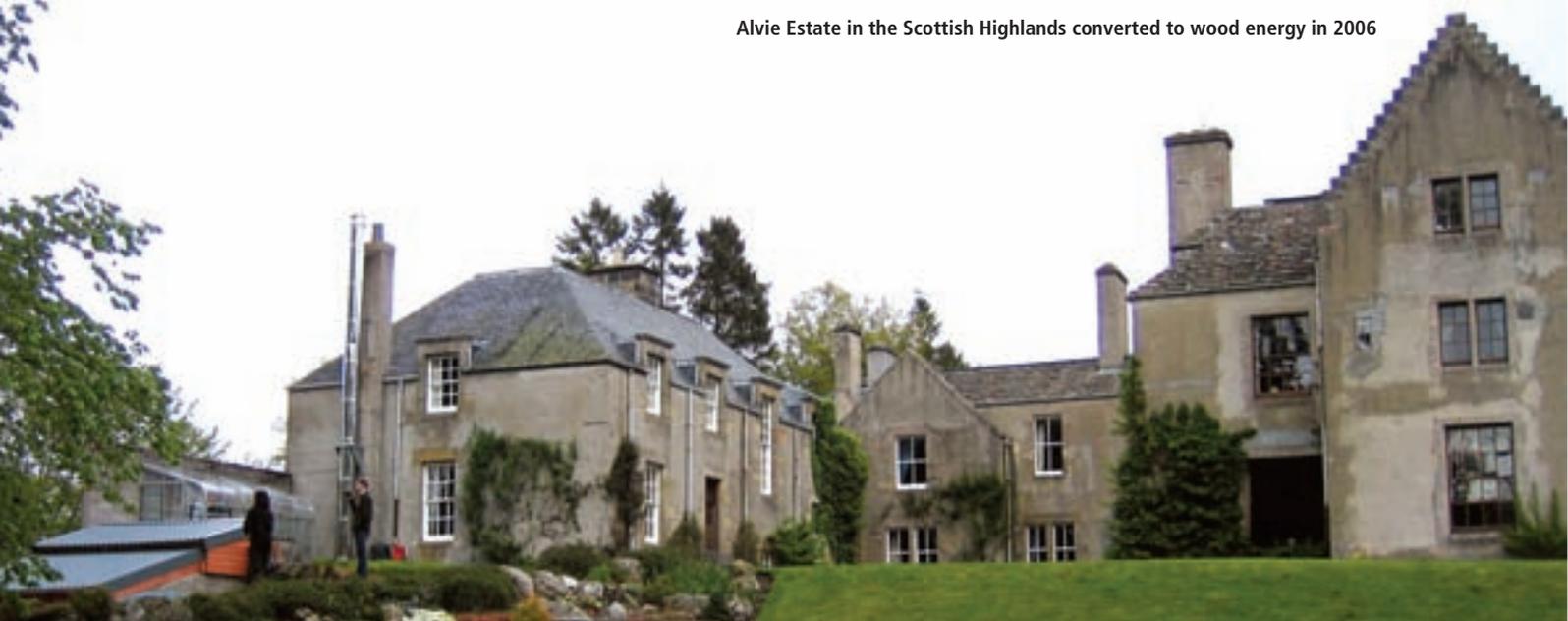


NWH - Three years of rapid development

Alvie Estate in the Scottish Highlands converted to wood energy in 2006



The Northern WoodHeat Project has built up sustainable wood supply chains, training and heat entrepreneurship in Finland, Scotland and Iceland over the last three years.

The three-year Northern WoodHeat Project (NWH) has considerably boosted the use of wood energy in all three of the project countries. Finland, Scotland and Iceland all intend to further exploit bioenergy over the coming years, to help reach targets set by the EU and in international climate agreements. The project has put wood energy newcomers from Iceland and Scotland into contact with experienced researchers and consultants from Finland, and particularly the eastern Finnish region of North Karelia, where many cutting edge wood energy technologies have been in commercial use for several years.

The three countries' woodfuel markets are also at varying stages of development. Finland already has well established supply chains, but is constantly seeking ways to further develop markets, particularly at the smaller scale. Scotland has a fledgling woodfuel industry currently facing problems with variable fuel quality, a lack of customer confidence in the security of supply, and entrepreneurial uncertainty concerning long term market development. In Iceland, wood energy is almost entirely undeveloped.

Scotland and to some extent Iceland already have rapidly growing but still underexploited forest resources. Studies during the Northern WoodHeat Project have surveyed these countries potential wood energy resources, examined the prospects for viable supply chains, and sought suitable locations for wood-fired heating schemes. Outdated preconceptions about wood heating and its implications for forestry are still widespread, so NWH has also been actively publicised the potential benefits of wood heating for energy users, forest owners and the environment. Feasibility studies and cost estimates have been made for various potential schemes and for regional economies. The project has at the same time helped Finnish participants to build up and enhance their international wood energy consulting and training services.

The involvement of North Karelia has been vital, as a region where project partners could come to obtain expert advice and see how viable wood energy businesses have been built up.



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Wood energy schemes are springing up rapidly across Scotland and Iceland with the help of Finnish expertise.

Practical achievements:

Tools for wood energy planning

A lot of information and planning is needed before investments can be made to launch practical wood energy schemes. Crucial factors include the extent of the premises to be heated, other heat demands, the scaling of boilers, possible fuel alternatives, the structures of supply chains, and cost estimates. Various tools have been developed during the NWH project to provide this vital information, including user-friendly computer programmes devised on the basis of Metla's research findings. Thanks to Metla's wide-ranging international research, clients from countries with quite different physical and socio-economic conditions can benefit from Finnish wood energy expertise.

MyBioHeat

One example of such tools is "MyBioHeat" which is a decision support

spreadsheet designed to enable clients to:

- scale wood-based heating systems appropriately
- estimate investment costs and fuel costs
- focus on crucial factors when making decisions

A first forestry plan for Iceland

Iceland's first forest management plan was drafted during the Northern WoodHeat Project by Finnish postgraduate researchers. The study involved the testing and adaptation of modern forestry planning methods in larch plantations in Hallormsstarid, Eastern Iceland, and resulted in a forest management system complete with instructions for rotation and thinnings.

The forest management methods commonly used in Finland – where growing forests are thinned out and the resulting wood is used for energy – are quite new to Iceland and Scotland. Both of these countries have

surplus wood which has not yet been widely exploited as a source of bioenergy. Woodfuel has often been seen as a dirty, laborious and problematic option, but spreading the right information and setting up working schemes can help to wipe out such prejudices.

Intensive courses, training materials and international thesis works

During NWH the North Karelia University of Applied Sciences has developed innovative training programmes and materials for clients interested in planning their own wood energy schemes. In addition, the project has facilitated eight international thesis works by BSc students from the North Karelia University of Applied Sciences and a MSc student from Lappeenranta Technical University.

The NKUAS and its partners organise tailor-made forest energy training courses held in the target country, focusing on the entire wood energy chain from fuel procurement potential to practical heating issues. Participants obtain basic information on how to set up a wood heating scheme, with an emphasis on potentially problematic issues.

Such training has already been provided twice in Scotland and also through a series of video lectures transmitted from Finland, with altogether fifty participants so far. Online training materials and a freely available web-based wood energy information service have also been set up to facilitate self-planned or guided studies. The North Karelia University of Applied Sciences now aims to use and enhance materials developed through NWH to transfer Finnish know-how to other international regions with promising potential for wood energy.





Study Tours – wood energy at work

The municipality of Eno, in Eastern Finland, with its three woodchip-fired district heating schemes and unique energy co-operative, provides an excellent example of wood energy at work. Eno attracts many groups of wood-energy-minded visitors every year from Finland and abroad. Over the last three years Eno has particularly been visited by Scottish NWH participants, including a group of wood energy trainers in November 2007.

Such site visits have become a more integral part of all wood energy visits to Finland thanks to NWH. The experiences of people who work every day with practical schemes complement the inputs of expert researchers. Such entrepreneurs are well placed to point out possible pitfalls. Their experiences typically encourage interested visitors by proving that wood energy businesses can really work.

About a dozen wood energy facilities around North Karelia regularly receive such visits, and informative info-cards designed for international visitors are available on all of these sites. Excursions can be tailored according to participants' needs to take in the most useful sites from harvesting areas to pellet plants and heating schemes. Seven such tailored excursions were arranged during the NWH Project for visitors from Scotland and Iceland. Four alternative excursions were organised in connection with the Wenet Wood Energy Solutions Conference in June 2006. NWH has enabled Wenet to get many more contacts around Europe. A three-day study tour was also arranged recently for a group from Canada who wanted to see for themselves the working wood energy schemes featured on Wenet's info-cards.

Scotland's first wood energy schemes up and running

The most obvious results of NWH are the wood energy schemes springing up around the Scottish Highlands. Over the three years of the project the number of woodchip heating schemes across Scotland has risen from less than 40 to more than 80, with 20 more already on the way.

Scotland and Iceland have both benefited by applying the knowledge gained from their Finnish partners to establish fuel supply chains and heating plants in their own national contexts. In many cases the people responsible for decisions to launch wood energy schemes have personally come to North Karelia to see working schemes, and also received training and advice from Finnish experts.

Finnish expertise covers issues from inventories of forest resources through fuelwood supply strategies to assessments of the need for heating capacity and the choice of technical heating systems. Concepts like heat entrepreneurship, the commercialise of wood energy and tailored heating tariffs are already well established in Finland. Wood energy can already compete with oil and gas in many circumstances, and this climate-friendly form of energy will truly take off when know-how and expertise of the installers, fuel suppliers and users will improve.

Making the most of good old firewood

Traditional firewood can still be an easy and effective way to warm homes. Stoves heating a single apartment and wood-fired central heating boilers are still widely used in Finland. To make heating as efficient as possible, it's important that firewood is properly cut, stored and burnt. The ways fires are built, lit and stoked all affect the rate and purity of combustion. The best results are obtained when firewood is sufficiently dry and cut to suitable size.

A unique web-based service, known as Mottinetti, has been set up in Eastern Finland to make it easier for people to sell or buy firewood as locally as possible. The idea behind this innovative and successful scheme has been highlighted during the NWH Project. Practical recommendations like brochures and DVD-formats on optimal firewood use and storage have also been produced and published during the project.





The three national coordinators at the closing conference of the Northern WoodHeat project: Loftur Jonsson (Iceland), Fiona Strachan (Scotland) and Dominik Röser (Finland).

Sharing ideas and experiences through NWH – no need to reinvent the wheel

The end of the Northern WoodHeat project has marked a milestone in the development of small-scale wood energy schemes in each of the three countries involved.

According to national coordinator Dominik Röser of the Finnish Forest Research Institute, Finland's main role in Northern WoodHeat has been to advise the other countries on the basis of Finnish practical experiences. "NWH has also helped us to build further on our experiences and figure out where we can still improve our knowledge," he adds.

Röser feels that the project has greatly expanded the horizons of Finnish participants, enabling them to gain a much better understanding of how different circumstances can affect the entire forest fuel business. These new experiences will make it easier for everyone to identify and overcome problems in new situations in future.

"Northern WoodHeat has certainly enabled us to build up strong partnerships that will be vital for future cooperation, also within Finland, and we are already planning various new projects," says Röser.

Welcome benefits for Scotland and Iceland

Fiona Strachan, the Northern WoodHeat project manager from the lead partner Highland Birchwoods highlights the project's benefits from a Scottish perspective: "Perhaps one of the main legacies of the project is the huge amount of useful information now available thanks to knowledge transfer and the new contacts we have made."

"Here in Scotland the focus has been on the best ways to supply woodfuel, and in this context we've been very lucky to have good advice from our Finnish partners," says Strachan. "It's been great to learn from their experiences, as this has meant that there's been no need for us to reinvent the wheel when it comes to setting up operations."

"Wood energy and forestry as a whole are still exotic concepts in Iceland, since only 0.3% of the country consists of forests," says Loftur Jonsson of the forestry consultancy Skograd. But know-how from Finland has already helped Icelandic innovators to establish a foothold for wood energy in Europe's least forested country.



The project is being part-financed by the European Union



European Regional Development Fund

InfoCard produced by:



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Northern WoodHeat in brief

Northern WoodHeat (NWH) has aimed to set up small and medium scale woodfuel supply chains, optimising the benefits to local communities.

The project has involved three countries: Scotland, Iceland and Finland.

The three-year project (2005-2007) has been co-ordinated by the Scottish regional development company Highland Birchwoods. Finland's input has been co-ordinated by the Joensuu research unit of the Finnish Forest Research Institute (Metla).

Major Finnish participants in addition to Metla have included the North Karelia University of Applied Sciences (NKUES) and the Joensuu regional development company JOSEK Oy. NWH has also been the first major international know-how and technology transfer project for Wenet (the Wood Energy Net) – a network of wood energy specialists based in Eastern Finland.

The project's total budget amounted to almost two million euros, of which approximately 550,000 euros has been used by participants from North Karelia, in Eastern Finland.

The Northern WoodHeat project has been part-financed by the European Regional Development Fund and the EU's Northern Periphery Programme. Finnish national funding was provided by the Ministry of the Interior NKUAS and Josek.



www.northernwoodheat.net