Developing the Wood Fuel Supply Chain in the Cairngorms National Park

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In Partnership with;
Aberdeenshire Council
Scottish Enterprise
Programme

• What is Woodfuel?
• Woodfuel Cost Comparisons
• Future Wood Availability
• Current Wood Fuel Production in CNP
• What Can Be Done For The Future
Main Forms of Woodfuel

Log

Wood Chip

Pellet
Why use Biomass?

• Cost
  • local networks of production and usage minimises financial and environmental costs of fuel transportation.

• Fuel Security
  • Biomass can be sourced locally contributing to security of supply.

• Carbon Reduction
  • Biomass is a sustainable fuel that can offer a significant reduction in net carbon emissions compared with fossil fuels.

• Rural Benefits
  • UK sourced biomass can offer local business opportunities and support the rural economy.
Why use Biomass? - Continued

- Land Management
  - Better management of Woodlands, providing more opportunities for recreation and leisure activities.

- Pollution
  - Woodfuel emits lower atmospheric pollutants such as sulphur dioxide.

- Efficiency
  - Modern biomass combustion systems are highly sophisticated, offering combustion efficiency and emission levels comparable with the best fossil fuel boilers.
Comparative Prices

Typical domestic prices for fuels

Graph: Courtesy of BiomassEnergyCentre.org.uk
Given the right circumstances woodfuel can compete with all other forms of fuel in terms of price and efficiency.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Price per unit</th>
<th>kWh per unit</th>
<th>Pence per kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood chips (30% MC)</td>
<td>£70 per tonne</td>
<td>3,500 kWh/t</td>
<td>2.0p/kWh</td>
</tr>
<tr>
<td>Wood pellets</td>
<td>£130-150 per tonne</td>
<td>4,800 kWh/t</td>
<td>2.7-3.1p/kWh</td>
</tr>
<tr>
<td>Natural gas</td>
<td>2.5p/kWh</td>
<td>n/a</td>
<td>2.5p/kWh</td>
</tr>
<tr>
<td>Heating oil</td>
<td>58p per litre</td>
<td>10.2 kWh/ltr</td>
<td>5.9p/kWh</td>
</tr>
<tr>
<td>LPG (bulk)</td>
<td>38p per litre</td>
<td>5.8 kWh/ltr</td>
<td>6.6p/kWh</td>
</tr>
<tr>
<td>Electricity</td>
<td>10.5p/kWh</td>
<td>n/a</td>
<td>10.5p/kWh</td>
</tr>
</tbody>
</table>
Woodfuel Availability

Long Term Production is increasing in Forest Sector

• Scottish Production Forecast is 6.9 million m$^3$

• Rising to 8.9 million m$^3$ by 2021

• CNP has above average forest cover

• Advancements in Fuel Recovery Techniques
  • Residue Harvesting
  • Stump Harvesting
  • Recycled Wood
• All these lead to……

• Expansion of small and medium scale woodfuel usage in the Park, with out limitation of supply and without impacting on the current forest products processing industry.
• Local Firewood Merchants

• 1 chip producer Tomintoul

• 1 chip producer here at Alvie

• Demand for hardwood firewood increasing, but supplies are limiting.

• Plentiful softwood supplies for chip and pellet production.
Current Wood Fuel Usage - Where next?

- Current usage mainly logs for domestic heating
- Open fire only 20% efficient
- Wood burning stoves 40-60% efficient
- Modern automated woodfuel boilers/stoves are 90+% efficient
  - Expansion in usage of automated wood fuelled boilers provides greater efficiencies than increased usage on currently popular systems - these systems are the future?
  - More efficient systems can be supported with the same level of raw material supply
What Can Be Done For The Future?

• Improve availability of supply to current fuel producers
  • Firewood merchants - require more hardwood to market
  • Chip producers - need more local softwood availability
  • Pellet - opportunities for diversification for existing businesses to supply pellets
  • Pellet - development of small scale pellet production is possible

• Create Core Demand Centres
  • Chicken and egg argument - break the cycle
  • Allows Satellite Develops
  • Generates interest and confidence

• Increase Demand
  • Install more burning capacity
  • Supply infrastructure MUST develop at same rate as demand
What Can Be Done For The Future? (cont.)

- Consider supplier co-operatives to increase supply from small woodlands and reduce costs.
- Publicity and Promotion
- Support and Advice
- Demonstrations Days or Tours
- Make installing woodfuel systems simple
  - Improve planning approval process - educate planning officers
- Training and Education
  - Users
  - Fuel Supplier
  - Installers
Further Information

- Ian Cowe - Ian.Cowe@forestry.gsi.gov.uk
- Use Wood Fuel - usewoodfuel.co.uk
- Biomass Energy Centre - biomassenergycentre.org.uk
- Forestry Commission - forestry.gov.uk
- Forest Research - forestresearch.gov.uk
- Energy Saving Trust (SCHRI) - energysavingtrust.org.uk
- SRDP - scotland.gov.uk/Topics/Rural/SRDP