Forestry Commission Scotland

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

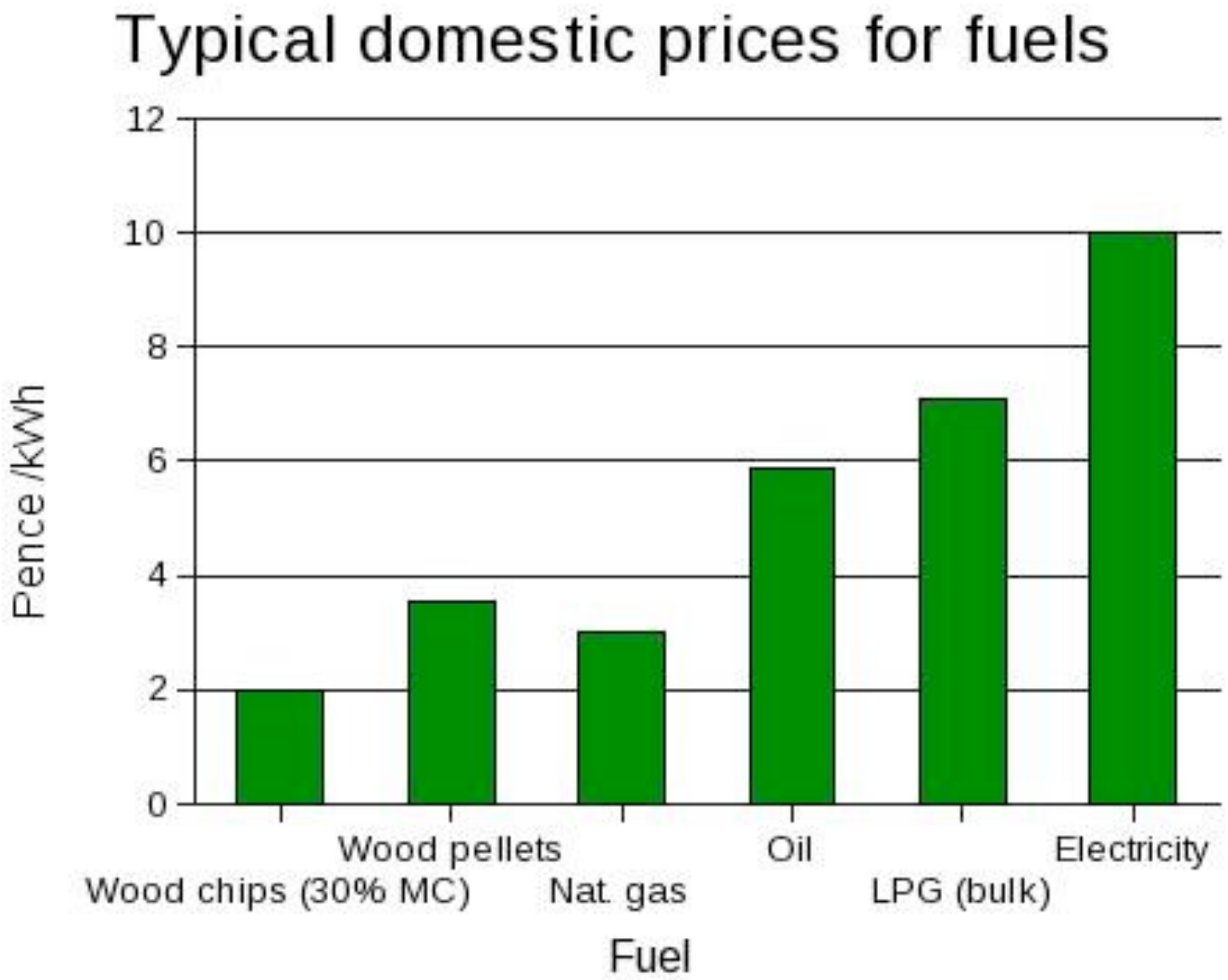
Why use Biomass?

- 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



Graph: Courtesy of BiomassEnergyCentre.org.uk

Comparative Prices

Given the right circumstances woodfuel can compete with all other forms of fuel in terms of price and efficiency.

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

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

Woodfuel Availability (cont.)

- 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.

Current Wood Fuel Production in CNP

- 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**