

# 3G Energy

WOOD HEATING FOR THE FUTURE


---

## Pellet Technology and Markets An Overview

Wood Pellet Fuel Production Seminar  
Tuesday 13th June 06  
National Energy Centre, Milton Keynes

### Who are we?


- § Biomass heating engineers
- § 10 years experience
  - Exclusive UK importers and installers of K b Schaefer and Kunzel Boilers
  - Installed boilers for Durham County Council, Northumberland Council, Slough Council and IKEA UK and private clients
  - Nominated Preferred Supplier for 3 PFI projects in Scotland.
  - Consultancy
    - Biomass heating and CHP feasibility studies
    - Biomass drying and processing
  - Domestic and commercial heating systems
    - Domestic pellet and log Boiler importer and wholesaler
    - Pellet stove distributor
  - Past Chairman: British Pellet Club and British Biogen Heatnet



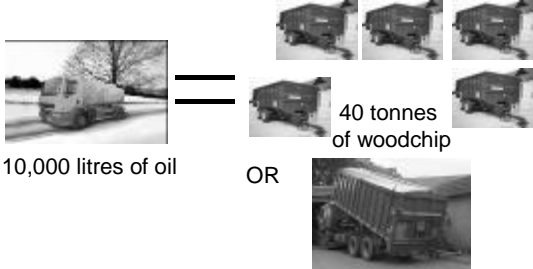
### What is being covered today?

An Overview  
Pellet technology and uses.


- Pellet appliances.
- The pellet market.
- Pellets in the UK.
- Can we make Money?



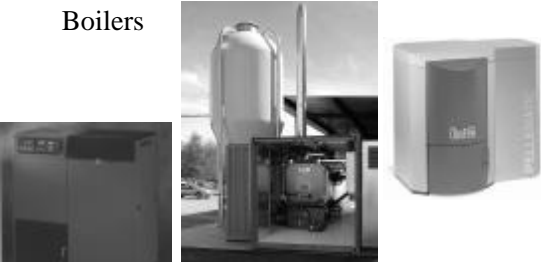

### Heat value of different fuels



10,000 litres of oil      OR      22 tonnes of pellets




### Boilers

## The Pellet Market

- § A significant heating fuel in the EU
- § Used in Sweden for most installations under 1MW
- § European domestic appliance manufacturers cannot keep up with demand
- § Pellets are now a fuel commodity traded like natural gas, coal and oil!
- § Supply is constrained by capacity
- § Demand is weather dependant



## Pellet manufacturing in the UK

- § What is heat worth?
- § Oil 36.5p/l equivalent to 3.7p/kWh
- § LPG 33p/l equivalent to 5.2p/kWh
- § Nat Gas 2.8p/kWh
- § So to be price competitive pellets must sell for less than 3.7p/kWh or £177 per tonne delivered inc VAT
- § Plus any non cash added value



## £177 per tonne is this possible?

- § Ex works value max £140/tonne
- § Small machine ½ tonne per hour
- § Output 25 tonnes per week
- § Large machine 5 tonne per hour
- § Output 250 tonnes per week/shift



## Things to consider:

- § Raw material costs
- § Raw material storage and preparation
  - Silos, mag-sep, loader, etc.
- § Operating costs
  - Staff, electricity, rent, overheads
- § Product bagging, storage and delivery
- § Quality control
- § Matching production to consumption



## Pellet demand

- § Domestic
- § Pellet stove 1 tonne pa
- § Pellet boiler 5 tonnes pa
- § Commercial
- § School 300kW 150 tonnes pa
- § Industrial 300kW 500 tonnes pa



## Grants and finance

- § For pellet production
  - Bioenergy Technology Scheme
  - LEC support- **soft loans-discount rent**
  - Maybe Heat ROCS
    - Unknown but unlikely to be better than a 10% discount on end users fuel bill?



## Grants and Finance 2

### § Pellet consumption:

- Low carbon buildings programme. **-NIL!**
- Bioenergy Capital Grants **up to 40%**

### § Installed costs:

- Pellet stove £4,000-£5,000
- Pellet boiler £10,000 +
- Commercial boiler 5-7x oil cost



## My View...



## 3G Energi Offer:

- § Biomass boilers to suit almost any application
- § Design service to match the right appliance to the clients heating needs.
- § Advice and support to ensure fuel supply and heating system design are managed to ensure a successful installation



## Heat value of different fuels

