



Dalkia Bio Energy Ltd

RHI and Biomass Fuel Supply

Wood Waste Markets –The Truth!

Stuart Howarth – Wood Procurement Director

Personal Background

- Involved in Wood Recycling for a decade
- Developed 7 of the key wood recyclers in England
- Represented UK in Europe for 5 years
- Involvement with major wood studies in UK & Europe
- Key Advisor various parties
- WRAP Technical Development Task Force
- Assisted the Biomass Taskforce 2006
- Assisted the WIP Waste Wood as Biomass Report 2008
- Presented across Europe
- Involvement with establishment of wood processing and fuel supply for 30Mw Wilton 10 Biomass - Teesside
- Director Wood Procurement for Dalkia Bio Energy Ltd

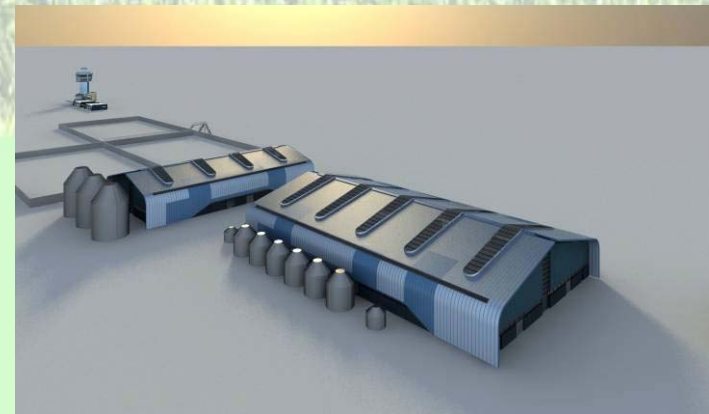
Who are Dalkia Bio Energy Ltd?

- Owned by Dalkia plc, part of Veolia Environnement
- Dalkia operate more than 170 wood biomass schemes across Europe:
 - 638MWe green electricity generation
 - 2,963MWth heat generation
- In addition operate Commercial and Industrial Energy schemes:
 - UK Heat capacity 2,228MWth
 - UK CHP capacity 256 MWe
- Bio Energy Division set up to establish Biomass feedstock infrastructure in UK to compliment European Operations
- Deal with both WID and Non WID Boilers
- Existing Pellet Supplies through WPE Durham



Who are Dalkia Bio Energy?

- Joint venture with CO2 Sense for 50kt Pellet Mill at Pollington, Jn 34 M62
- New wood processing facility at Pollington - 350kt within 3 years
- New 17.5MWe dedicated WID Compliant Biomass CHP at Chilton Nr Durham (circa 120kt p/a) firing Q1, 2011
- We have a dedicated team of biomass engineers covering all aspects of projects from design, installation, maintenance, financing, fuel supply and modelling



Introduction

- Dalkia welcomes any legislation that brings around carbon reductions
- Dalkia supports any legislation introduced to achieve this
- Dalkia considers it is a European wide necessity
- Which will assist renewable energy targets
- We must ensure any policy can be supported and delivered
- It must be environmentally sound, sustainable and efficient
- Longevity must be taken account of including volume availability and forecasts
- So what's the reality?
- How has it been assessed?

Assessment through Existing Reports and Studies

- WRAP 2005 Report suggested 10m/t of wood waste per annum available for recycling
- Biomass Task Force in 2006 increased fossil fuel content to 10% by CV - Clause 3.14, Page 14, suggested 3 Million Tonnes of wood waste could be directed annually to energy recovery
- April 2008 'Waste Wood as a Biomass Fuel' report by WIP Executive summary para 2 suggested 10m/t per annum arising as per 2005 WRAP Report
- September 2009 WRAP Revised Report down to 4.3m/t per annum arising for the whole of the UK
- Currently the Yorkshire and The Humber Region stands at around 500kt per annum arising

UK Legislation for Recovered Wood

- Environment Agency Permit required up to 50,000 tonnes p/a (Exempt from Waste Management License)
- Reducing within 3 years to 25,000 tonnes (under review)
- Waste Management License will be required for volume
- The UK environmental legislation 1990 'Duty of Care Regulations'
- UK Waste Packaging Regulations 1997
- PPC Regs 2002
- EWC Jan 2002
- WID 2004
- Hazardous Waste Regs July 2004

What is wood waste?

- Any form of wood thrown out or discarded
- Off cuts from production
- Construction or demolition wood waste
- Pallets, boxes and crates
- Old Furniture – Kitchens, Bedrooms, Chairs, Tables etc
- Flooring
- HWRC's or Local Authority Tips
- Log waste
- Forestry
- Saw Mill Residues
- Only concerned with pre and post consumer – exclude forestry!

Wood Waste Products & Volumes 2009

- Panelboard feedstock to make chipboard/Laminates Egger, Sonae, (1.2mt p/a)
- Horse Bedding (200kt p/a)
- Poultry Bedding (200kt p/a)
- WID Biomass Fuel (300kt p/a)
- Non WID Biomass Fuel (100kt p/a)
- Cattle Bedding
- Small Pet Bedding
- Mulches
- Compost
- Play Surfaces

What are the Grades and types?

- Grade A
Bedding
Non WID Biomass Fuel
- Grade B
Panelboard Feedstock
- Grade C
WID Biomass Fuel
- Grade D
WID Biomass Fuel
- Virgin soft and hard wood
no paint additives or
finishes, i.e. pallets and
packaging
- Painted soft and
hardwoods including the
above
- Melamine, chipboard
including above
- MDF, Formica and
hardboard including above

Grade A Soft wood and Hard wood



Grade B Mixed Wood



Grade C and D Low Grade



Grade D Low Grade



Grade D Low Grade



Wood Waste Fuel Grading

- Grade A - Non WID Fuel

Virgin Soft and hardwood unpainted, finished or added to in any way e.g. soft and hard wood off cuts, virgin pallets, packaging, etc

- Grade B - WID Fuel

Any other Non Hazardous wood waste including painted, Melamine, Chipboard, MDF, Plywood, Formica e.g. C&D, Kitchens, Furniture, etc

'Availability Summary or Reality'

- Current arising 2009 WRAP Report - 4.3m/t in UK
- 2008/9 we used 2.3m/t as per WRA evidence
- Remaining availability is 2m/t per year across UK
- Total availability Yorkshire and Humber 500kt
- Yorkshire and Humber utilisation around 450kt
- Current large scale biomass planning demand is in the order of 18m/t per annum or 9 times availability
- See Germany
- Current ratio's by wood waste types suggest availability of 15% for Grade A Non WID and 85% WID
- This means 645kt of Non WID and 3.655mt of WID wood fuel is available per annum in the UK
- Or 45kt Non WID Fuel and 1.7mt of WID Fuel remaining!

How can we help?

- Dalkia have over 170 facilities across Europe and in the UK
- Wealth of experience
- Offer a full turn key solution
- 100kt per annum of Grade A pellet
- New 100 Acre processing facility at Pollington producing 350kt in under 3 years
- State of the art cleaning technology
- Established contracts – wood fuel security
- Already ahead of the game!

Dalkia Bio Energy Ltd Internal Supply Arrangements

Biomass Wood Chip/Pellet Supply

- Chip/pellet supplied to specification
- Sources of materials already identified
- Full audit provided
- Each load is analysed
- Moisture content measured on arrival
- All work performed under contract
- Regular inspection and visits to suppliers
- Loads downgraded and rejected when necessary
- All permits and EA documents in place
- Long term contracts secured

Summary

- Sometimes all is not what it seems
- Wood volumes 60% less than originally stated
- Waste wood is a highly competitive market
- High Capital costs involved in processing wood
- Biomass Facilities – need volume and sustainability
- Most wood waste in Yorkshire and Humber is being utilised
- Dalkia Bio Energy Ltd have the ability to reduce your risks and fears through established facilities
- Assessments are now available!

Thank you any questions?

Stuart Howarth

Wood Procurement Director