Peter Kernohan
Biomass Technical Manager

Turning “No” to “Know”

Today’s Presentation

- Solid Energy New Zealand (SENZ).
- Pellet Production
- Drivers.
- Heat uses.
- Space and Layout.
- FAQs
- Case Studies.
- Questions.
Residues to Revenues 2009

SOLID ENERGY New Zealand Ltd
Fuel – Coal, Wood Pellets, Biodiesel
Hardware – Solar systems, pellet fires and boilers

- Biodiesel
- Wood pellets
- Pellet fires
- Pellet boilers
- Solar systems

Pellet Production to date

Rotorua
Rolleston
Residues to Revenues 2009

The Process

Taupo Production Facility

Page 3
The Product

- Must be less than 10% moisture
- Must be made from virgin clean wood and NOT recycled wood
- Must not be made from brash or thinning
- Must not contain bark
- Must have a MD of over 97%
- Ash level below 1%
- No contaminants
- Bulk density of 650kg/m3
- Particle size <3mm

Wood Chip & Wood Pellets

<table>
<thead>
<tr>
<th></th>
<th>Wood Chip</th>
<th>Wood Pellets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Storage space</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Supply chain</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>New producers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fuel handling</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Boiler cost</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Fuel degradation</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Delivery</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>
Drivers

**Financial**
- Ops costs.
- Maintenance
- Consumables
  - Man hours.

**Technical**
- Depreciation
- Heat output
- Automation
- Space.

**Environmental Legislative**
- ETS implications
- Carbon credits
- Marketing
- Boiler consent
- Flue emissions

---

**Heat Use Profiles**

*Load spikes, eg:- Space and water heating*

*Steady load, eg:- Process heat*
Questions to be asked

Don’t be a Guinea pig. Ask for reference sites. How many of this type have you installed?

What fuel delivery and storage arrangements will be needed? What will the boiler be able to meet my needs and profile? What about space and lead times and warranties, what support is offered?

What fuel is available in my area? Can I get a contract? Is it multi fuel?

What level of automation is provided? Can I dial in? What man hours are required to run it?

What consent is needed? Has this boiler been put through the consent process before?

What is the boiler availability?
Case Studies

Radfords Yarns – 150kW HDG replacing electricity (process heat)

Katikati – 200kW HDG replacing coal (Space heat)
Case Studies

Rotorua Girls High – 1,000kW conversion from coal (space heat)

Questions

Peter Kernohan
03 345 6187
027 225 6459
peter.kernohan@solidenergy.co.nz
www.solidenergy.co.nz