Jack Welch

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www.hwenergy.co.uk
About HWEnergy

• Founded in 2003

• Believe that biomass heating is right for Scotland:
  – Cuts Carbon
  – Cuts Cost
  – Adds value to a low value resource
  – Creates jobs
  – Helps secure our secure energy future
  – It makes sense!

• Renewable heat is the big energy challenge
  – 50% of total energy demand, 47% of CO2 and a very low renewable heat starting point.

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About HWEnergy

• 170 Projects and 25MW of installed capacity
About HWEnergy

- Zonal support for service and heat supply.
The Renewable Heat Incentive

• What is it?
  – “A transformation in the way we heat our country”
  – Greg Barker, Minister of State, DECC, 10th March 2011

• Why?

• Good News:
  – Annual, guaranteed payment for switching to renewables. Payable for 20 years and inflation uplifted.
  – Relatively simple to understand
  – An attractive financial return to encourage investment, particularly against oil
  – Applies to groups of buildings and individual non-domestic buildings

• Not so Good News
  – No domestic RHI until August 2013 & details about to be announced
Some rules of thumb

**Energy Content**
- 1 tonne of woodchip fuel = 3000 kWh @ 30% moisture
- 1 tonne of woodchip fuel = 5m3
- 1 litre of oil = 10.3 kWh
- 1 litre of LPG = 7kWh
- 10,000 litres of oil = 33 tonnes of woodchip

**Price of Fuel**
- Home produced biomass fuel at £60 per tonne. Cost per kWh = £60 / 3000 = 2p per kWh (net)
  - £30 raw material
  - £15 chipping
  - £5 storage
  - £10 delivery
- Oil at 60p per litre = 6p per kWh gross
  - @ 80% efficiency = 7.2p per kWh net
Projects and RHI: Small

2 Farm Houses or Guest Houses

• Chip or Log Boiler
• Project Type
  – 10,000 litres of oil
  – 50kw Boiler
  – £60,000 investment
  – Oil saving @ 60p per litre = £4500
• RHI impact = £5,000 per annum for 20 years.
**Medium Scale RHI**

"Small" Boiler

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Demand (kWh)</td>
<td>400,000</td>
<td></td>
</tr>
<tr>
<td>Equivalent to approx</td>
<td>40,000 litres of oil</td>
<td></td>
</tr>
<tr>
<td>Boiler size (kw)</td>
<td>195</td>
<td></td>
</tr>
<tr>
<td>Tier 1 eligible kWh's</td>
<td>256,230</td>
<td>(195 x 1314)</td>
</tr>
<tr>
<td>Tier 1 Payment</td>
<td>£21,267.09</td>
<td>(256,230 x 8.3p)</td>
</tr>
<tr>
<td>Tier 2 kWh's</td>
<td>143,770</td>
<td>(400,000 - 256,230)</td>
</tr>
<tr>
<td>Tier 2 Payment</td>
<td>£3,019.17</td>
<td>(143,770 x 2.1p)</td>
</tr>
<tr>
<td>Annual RHI</td>
<td>£24,286.26</td>
<td></td>
</tr>
<tr>
<td>Lifetime RHI</td>
<td>£485,725.20</td>
<td></td>
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</tbody>
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Example Projects
Example Projects
Example Projects: Heat Cabins
“Typical” Large Scheme
# Larger Scale Project: 300kw

## PROJECT SUMMARY: Rural Estate

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Capital Costs</td>
<td>£254,000</td>
<td>£541,138</td>
</tr>
<tr>
<td>Fuel Cost Saving</td>
<td>£27,057</td>
<td>£541,138</td>
</tr>
<tr>
<td>RHI Income</td>
<td>£20,576</td>
<td>£411,522</td>
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<tr>
<td>RHI Service Plan Costs</td>
<td>£3,571</td>
<td>£71,425</td>
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<tr>
<td><strong>Total Savings</strong></td>
<td><strong>£44,062</strong></td>
<td><strong>£881,235</strong></td>
</tr>
<tr>
<td>Basic Years to Payback (no inflation)</td>
<td>5.76</td>
<td></td>
</tr>
<tr>
<td>Pre-tax IRR (with inflation)</td>
<td>19.8%</td>
<td></td>
</tr>
</tbody>
</table>
Different Options: Smaller
GGCR Case
Different Options: Bigger
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