

**Leisure Centre**

**Shropshire**

## Case Study



This popular Leisure Centre had two ageing oil fired boilers that needed replacing. The options were to replace the oil boilers, bring in a new gas connection and have two new gas boilers or have a wood boiler and new oil back up. The wood option won on lifetime cost grounds. The new wood fuel installation delivers heat for swimming pool water, showers and public areas.

### Project Type: Public Building

- 320 kw chip boiler
- 1,376,000 kWh delivered per annum
- Oil back up – not included within economics below
- Fuel is supplied via hook bins by MWF

### Feasibility, Design, Procurement and Project Management by MWF

#### Case Study Economics - @ Spring 2011

Wood fuel boiler output	320	kW
Total installed cost of wood fuel system	£180,000	
Assumed seasonal efficiency	80.0%	
Annual maintenance costs	£4,000	/annum
Wood fuel costs delivered	£110	per tonne @30% moisture
Full load equivalent hours operation	4,300	hours/annum
Wood fuel consumption/annum	499.0	tonnes
Wood fuel costs/annum	£54,889	
RHI rebate	£37,917	
<b>Net wood fuel costs/annum</b>	<b>£16,972</b>	
Carbon emissions	34,400	kg/yr - whole life cycle

#### RHI Rebate Calculations

	<i>Kwh</i>			
420,480	@	7.6	p	£19,763
	<i>Kwh</i>			
955,520	@	1.9	p	£18,155
<b>Total</b>				<b>£37,917</b>

<b>Verses Gas</b>				
Gas cost per KWh	3.20	p/kWh		
<b>Total gas cost/annum</b>	<b>£60,401</b>			
Annual saving with wood fuel	£43,429			
<b>Simple payback on net capital</b>	<b>4.1</b>	<b>years</b>		
Carbon emissions	371,520	kg/yr		
Carbon saving	337,120	kg/yr		
<b>Verses Oil</b>				
Oil cost per KWh	5.71	based on	50	p/litre
<b>Total oil cost/annum</b>	<b>£87,365</b>			
Annual saving with wood fuel	£70,393			
<b>Simple payback on net capital</b>	<b>2.6</b>	<b>years</b>		
Carbon emissions	481,600			
Carbon Savings	447,200	kg/yr		



320Kw Compte Chip Boiler

Oil back up system costs to manage risk not included in any of above