

## Real Life Case Study

### Wood burning stove reduces cost of heating and enhances lifestyle

**Key Points brought out in the case study:**

- No need for further heating in living/dining rooms
- Chose multi fuel stove but settled on wood for environmental reasons.
- Important to burn dry wood.
- Oil usage significantly reduced.
- Keeps rest of the house at comfortable warmth.
- Heating not effected by winter power cuts.



## Wood burning stove reduces cost of heating and enhances lifestyle

### No need for further heating in living/dining rooms

The Webb family live in a detached house in rural Wales, off the gas main. The house was built in April, 2003 with double glazing throughout, loft and cavity insulation. The central heating is a combi oil system. There is a lounge, open plan dining room and kitchen and four bedrooms. Michael Webb is retired and is at home most days looking after his two grandchildren before and after school. His wife Jayne works full time, Monday to Friday.

### Keeps rest of the house comfortable

Before Michael Webb installed a stove he used an electric fire to supplement the central heating system. Now he uses the stove instead of the central heating system. His research into stoves told him that a stove could reduce his heating costs and provide comfortable warmth. The reality has proved his finding to be true.

### Chose multi fuel stove but settled on wood for environmental reasons

Michael installed a multi-fuel stove in the lounge in October, 2013. The stove has an output of 5kw and an efficiency of 79%. Michael chose a multi-fuel stove so that he could burn a wide range of fuels but has settled on wood because it is environmentally friendly.

### Important to burn dry wood

True to form Michael checked into the type of wood he should burn. He tried a range of kiln dried and seasoned softwood and hardwood. Softwood is cheaper but it burns quicker so cost wise they work out about the same, so he has discovered that hardwood makes more sense. He has settled on hardwood. Michael has also discovered that the key to a well burning stove is the moisture content of the wood. Michael has purchased a moisture meter and uses it to check the dryness of the logs before he uses or buys them. He finds it best to split a log before using the moisture meter. Michael has confirmed the moisture content of the wood that he has used as follows: Kiln dried wood 10-14%; seasoned 20-25% and locally sourced conifer 18-22%.

### Oil usage significantly reduced - saving money

This year the Webbs have chosen to lay down freshly cut wood and allow it to dry before using. This is a cost effective way to buy logs so long as you are prepared to leave the logs to dry for at least one and preferably two seasons. Michael has purchased a simple open sided wood store and placed it along the side of his house. Logs will dry naturally when left open to the air. They just need protection from the rain.

The family has recorded their wood and other fuel usage between 16th November, 2013 and 20th February, 2014. The kiln dried has been mainly used during lighting and establishing the fire. Once established a mix of the seasoned wood has been used. The Webbs have been able to purchase kiln dried cut logs at £100 per m<sup>3</sup> and seasoned cut logs £85 per m<sup>3</sup>.

During this period, the total cost of the wood used has been £461. On the days the stove was used it was generally lit for seven hours per day, between 4pm and 11pm. Oil usage is down from 500 litres to 240 litres. The saving using the stove has been £140.

The central heating has only been run for a few hours some mornings and very occasionally at other times. The wood burning stove keeps the lounge/dining room hot and most of the rest of the house warm. The lounge was never really comfortable before the stove was installed. The heat varies throughout the house but is certainly adequate in bedrooms. Leaving the lounge door open allows the warm air to circulate around the house.

### Not effected by winter power cuts

One welcome benefit was that during the recent power failures the Webb's had a warm house. The electric usage is also down because the central heating pump is not running to the same extent and the backup electric fire in lounge is no longer needed. The tumble dryer has not used at all. The Webbs dry clothes in lounge overnight, utilising the residual heat in room. In the year to July 2014, the Webbs have used 19% less electricity; £69.27 less than the same period last year.