

## 14kW of Mitsubishi Air Source Heat Pumps



Above: Mr Mike Corry of Newton Aycliffe Green Heating for his 4 Bedroomed Detached Home

### The Brief

Mr Mike Corry of Newton Aycliffe approached Revolution Power as his 25 year old gas fired boiler was inefficient in providing his heating and hot water and in need of replacement. In replacing his boiler, Mr Corry was keen to reduce both his on-going energy costs and his carbon dioxide footprint for his 25 year old 4 bedroomed detached house located in Newton Aycliffe.

### The Solution

To help Mr Corry to achieve this goal, Revolution Power specified and installed a new 14kW Air Source Heat Pump system from Mitsubishi which uses the new Zubadan hot gas injection technology to achieve efficiencies of around 350%. The Heat Pump has a compact external unit which can be discretely placed and operates down to -25°C. It uses electricity to drive a refrigeration system which draws ambient heat out of air in the garden and concentrates it into warm water.

### Key Features

- ✦ 30-50% reduction in co2 emissions
- ✦ Low running costs
- ✦ Low maintenance
- ✦ Low noise—unobtrusive and quiet
- ✦ Perfect for under floor heating integration
- ✦ Estimated savings of £350 per year compared to the gas boiler
- ✦ 1750 kg of Carbon Dioxide is being saved by the system

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### Heat Pumps How Do They Work?

Each 1 kW of electricity is typically able to concentrate and produce 3.5 kW of heat enabling the heat pump to warm water up to a maximum of more than 50°C as required – this warm water is then used to provide domestic hot water and operate the existing radiators in order to warm the house.

Like many people Mr Corry was quite sceptical about the technology. He has been closely monitoring the amount of electricity used by the heat pump since its installation in July, 2010. He was pleasantly surprised to find that the heat pump had no problems keeping their home heated to 20°C through the very severe winter weather of the winter 2010 – 2011. Amusingly, early on and before some adjustments, Mr Corry's scepticism was quickly allayed when there were times the house was too warm and the heating had to be adjusted down to suit!



Above: Showing the Air Source Heat Pump outside the house

### The Result

The costs for the electricity used during this first year of operation have run to about £700. This is about 30% less than the cost of gas consumed by his old gas boiler the year before with the house being heated to a similar level. Calculations made by Revolution Power have demonstrated an estimated electrical usage for an average year to be £680 compared to the gas boiler which would have cost £1022. These figures are most reassuring as the estimates are confirmed by the measured electrical usage figures provided by Mr Corry. These same estimates confirm that, as an added bonus, a mass of around 1750 kg of Carbon Dioxide is being saved by the system compared to his former boiler over an average year.



Left: Shows the renewable energy working throughout the house by heating the radiators



Above: Shows the renewable energy controllers