

Real World Renewable Heating Options For Homes and Businesses

Ashburn Stoves

Ashburn Stoves was co-founded by a fully hands on heating engineering company with 30 year experience and a consultant specialising in research and housing development.

Directly from our base on the edge of the Yorkshire Dales on the Lancashire / Yorkshire border, or through our growing list of partners and installers throughout the whole of the UK; we provide biomass, solar thermal and heat-pump parts, service, training and support.

Terms:

Biomass – burning organic material, more often wood but also a variety of crops; which can be re-grown, re-capturing carbon to complete the renewable cycle.

Associated Appliances: High efficiency automated biomass boilers, boiler stoves and log stoves

Solar Thermal – capturing energy from the sun using wet (liquid filled) solar panels. Solar thermal systems capture energy directly into the heating system via heat exchangers. Not to be confused with Solar PV, which feeds electricity back into the energy grid.

Associated Appliances: Solar PV panels, high efficiency heat exchangers, insulated pipe systems.

Heat Pumps – heat pumps are in effect a fridge in reverse. They capture heat from the air (air source pumps) or from the ground (ground source pumps), passing that through heat exchangers into the heating system. To do this they do use electricity, however the cost to gain ratio is currently very positive.

Associated Appliance: Ground source heat pumps using vertical bore holes or shallow pipe matrix, high efficiency heat exchangers, insulated pipe systems.

All the above link to a 'Multi-Energy Heat Bank '* and require pumps / pump stations to circulate the heat. These are normally supported by UPS packs to provide power should the main supply fail.

'Fan Coil' heaters are normally used in commercial areas where they use high efficiency heat exchangers to convert hot water into hot/blown air.



Ashburn Stoves Ltd, Unit 10 Victoria Mill, Boot Street, Earby BB18 6UX
t 01282 841500 e hello@ashburnstoves.co.uk w ashburnstoves.co.uk
VAT 154828587 Company no. 8382637

@ashburnstoves facebook.com/ashburnstoves linkedin.com/company/ashburn-stoves



Our Fundamental Advice:

In the real world one of the above systems may not, in isolation provide a 100% solution to a home's heat and hot water needs – on demand.

We need to consider what people want:

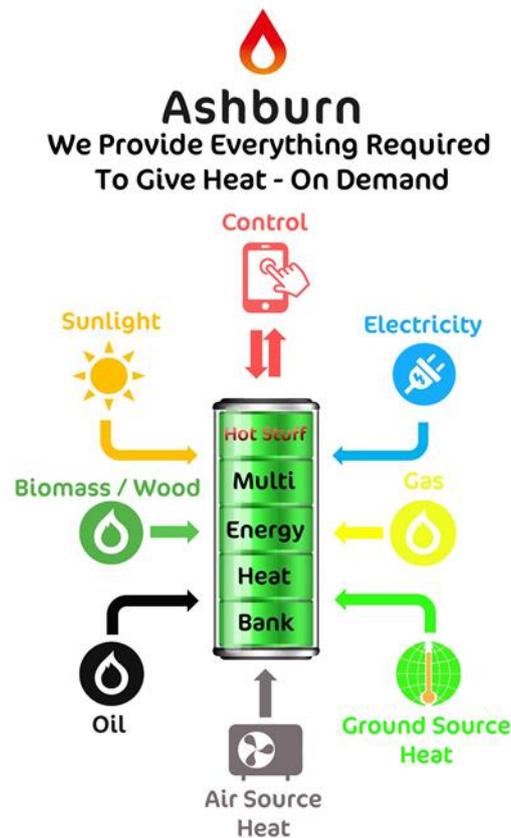
- 🔥 Good economy
- 🔥 High levels of automation
- 🔥 Heat and hot water on demand
- 🔥 Some independence from utility companies
- 🔥 To place low impact upon the environment and traditional forms of energy
- 🔥 Comfortable living

We advocate the 'Hot Stuff' Multi-Energy-Heat-Bank*

Think of this as a large battery for hot water which uses high efficiency insulation, capturing heat from a renewable system at optimum times. For example Solar PV would generate heat during the day, storing that heat to be available on-demand in the evening. It may be topped up at night by an automatic biomass boiler, a log stove with back boiler or a high efficiency electrical heating element powered off the on-grid supply.

The use of an electrical heating element does mean a system is not 100% renewable, but systems which provide the vast majority of their generation from renewables are still, in reality, a huge step forward for a home/business and society in general.

The diagram below clearly shows how different energy sources can be brought together to form a flexible system for differing circumstances. There is also the added benefit that future.



Biomass and Renewable heating installations can often be supported by grant funding from the governments RHI funding initiative.

Domestic Information: www.ofgem.gov.uk/environmental-programmes/domestic-renewable-heat-incentive

Non-Domestic Information: www.ofgem.gov.uk/environmental-programmes/non-domestic-renewable-heat-incentive-rhi

We source our brands from European companies who have a long track record of providing these systems in parts of Europe where reliable heating systems are a necessity, overcoming the harshest of conditions year after year. We seek 'engineering excellence' across our product range.

You could slash your heating bills, dependence on utility companies and heating oil while being kind to the environment, by installing a biomass boiler or boiler stove and with optional Solar Thermal panels you will have hot water during the summer months without lighting your boiler.

Some of our customers are reporting a significant saving in their heating bills by using a biomass boiler or boiler stove. What's more with a biomass boiler stove you have the cosiness and radiant heat of a real fire, with almost no mess!



Biomass

What is Biomass Fuel?

Biomass is defined as ‘material, other than fossil fuel or peat, which is, or is derived directly or indirectly from, plant matter, animal matter, fungi or algae’. Examples of fuels that often meet this definition include (but are not limited to):

- Wood logs, chips and pellets
- Straw and agricultural residues
- Food waste
- Paper/ pulp residues from the paper manufacturing process
- Biomass residues from the food processing industry
- Sewage sludge

You can see more about Biomass fuel here >> <http://www.forever-fuels.com/>

What Are Biomass Heating Systems?

Biomass heating systems use agricultural, forest, urban and industrial residues and waste to produce heat and electricity with less effect on the environment than fossil fuels. This type of energy production has a limited long term effect on the environment because the carbon in biomass is part of the natural carbon cycle; while the carbon in fossil fuels is not, and permanently adds carbon to the environment when burned for fuel.

Biomass Boilers can run on a variety of fuels and run very efficiently on pellets. These are made from a wood material which is dried and compressed to a low moisture level with no additives. The resulting fuel has a high calorific value or heat content and is clean, burning easily and efficiently to give you a constant heat.

Pellets allow for the fuel to be stored in a hopper and fed automatically into the boiler.



Why Choose a Biomass Boiler?

Environmentally Friendly

- Uses renewable fuel
- Practically carbon neutral
- Tree planting benefits wildlife

Government Incentives

- RHI - Renewable Heat Incentive – years feed in tariff for MCS installations⁵
- Reduced VAT

Flexible Installation Solutions

- Provides heating and hot water 365 days a year
- Linked to a 'Hot Stuff' Multi Energy Heat Bank
 - Link to existing heating systems
 - Existing boiler can remain as a back up
 - Connect to solar and ground or air source heating

1. Source <http://www.energysavingtrust.org.uk>

2. Source <http://www.energysavingtrust.org.uk>

<http://www.energysavingtrust.org.uk/domestic/biomass>

Why Verner & Ponast

That is a good question! How many people have heard of them before now? Not many I would wager and we certainly hadn't before the middle of 2012. The reason that we were fortunate enough to come across Verner was that we were looking for an appliance for home, one which would provide all of our hot water and heating requirements and free us from the gas bill. I suppose this is the same reason why many of you are reading this now. Of course we looked to our home market first but soon decided that as a great nation of engineers and manufacturers we simply don't make anything even remotely close to what we were looking for so with trepidation we decided to look further afield. Other UK based websites have details of imported stoves but the models on offer didn't appeal to us nor did most of the websites which seemed more than an electronic shop window selling goods they didn't really understand.



They say that Google is your friend – well not really when you are looking for something outside the UK or for some strange reason the USA! However look for something in France – non, Germany – nein, Danish- nej and so on. Anyway it pays to persevere and when we did we came across Verner and we liked what we saw. They didn't have distributors in the UK but were willing to sell us one directly as we are a well-established business both retailing and installing heating appliances. Buying something unseen is a leap of faith by anyone's standards but we stumped up the money and waited for the delivery which happily took only one week, thankfully it came well packaged and in one piece.

To say that we were impressed is an understatement. In this day and age of cutting corners and increasing margins it is rare to come across a company prepared to stick to sound engineering principles and manufacture a product intended to last. That was obvious when we tried to move it – it's heavy! As engineers ourselves we could appreciate the finer details such as a bearing on the keep for the door catch and beautifully tig welded stainless steel fittings with no sharp edges, they just served to dot the i's and cross the t's for us.

Our family holiday was spent in the Czech Republic, funnily enough four days of which were spent with Verner at their manufacturing facility in Cerveny Kostelec. Verner is run by the Verner family, all of whom are engineers and are completely hands on in the company, it felt good to be talking to a good old fashioned family firm with a modern outlook and moral values similar to ours.

Our market is ready for well-designed heating products which deliver their promise which is why we struck a deal to become sole distributors for Verner in the UK.

We know a good thing when we see one. That is why we know that we will be hearing much more about Verner in the future.



Solar Thermal

What Are Solar Thermal Heating Systems?

Solar thermal heating systems use heat energy from the sun to increase the temperature of the liquid within the solar panel. This liquid is then pumped through a heat exchanger within a water tank ('Hot Stuff' Multi Energy Heat Bank), transferring the collected heat to the water in the tank for your hot water needs.

By fitting Solar Thermal panels during the summer you could save all of the costs associated with heating your domestic hot water and in winter the biomass boiler will top up what is needed. No need to use fossil fuels at all.

Why Choose Solar Thermal?

Heat water for your home using energy from the sun.

No need to use fossil fuels or electricity in the summer when you would prefer not to use your biomass boiler. Solar thermal panels/collectors use free heat from the sun to warm domestic hot water. This is the perfect way to compliment the use of your biomass boiler during summer months.

The benefits of solar water heating

- Hot water throughout the year: the system works all year round, though you'll need to heat the water further with your biomass boiler during the winter months.
- Cut your bills: sunlight is free, so once you've paid for the initial installation your hot water costs will be reduced.
- Cut your carbon footprint: solar hot water is a green, renewable heating system and can reduce your carbon dioxide emissions.



Savings from Solar Thermal

Solar water heating systems can achieve savings on your energy bills. Based on an industry recognised calculation 10% of your total fuel bill will be due to the production of hot water. For example if your annual fuel bill is £1,500 the 10% proportion used for heating domestic hot water would be £150 and this would be the annual saving if you fitted solar thermal.

Source <http://www.energysavingtrust.org.uk>

Why a CTC Regulus Heat Pump?

In the sphere of high-quality heat pumps CTC Regulus ranks among the leading suppliers. Heat pumps supply from us, unlike from our competitors, combines all the demands that are expected to be met by a heat pump:

- High energy savings
- Very quiet heat pump operation
- Top quality
- Excellent parameters
- Long-term customer care

High energy savings

We put emphasis on the right technical design of the entire heating system.

Thanks to that, the heat pump operate more efficiently and economically, giving a long service life. Moreover, our systems can offer a combination of further heat sources like solar thermal systems, biomass boiler stoves and common boilers. Savings achieved this way are even higher.

Very quiet heat pump operation

Noise level has never been high for CTC Enertech heat pumps, however designers of the new heat pump generation succeeded in reaching such low values that we have become market leaders in this area.

Top quality

We offer heat pumps made for Regulus by CTC Enertech, a traditional Swedish company who has been manufacturing heating technologies since 1923. Heat pumps have been produced by the company for



over 30 years. CTC Enertech is the first manufacturer ever to produce air-to-water heat pumps, it ranks among the absolute top in its branch.

CTC Heat Pumps have been granted the European Quality Label for Heat Pumps (Q label) which guarantees, first of all, that the parameters are true, the supplier is reliable and the service ensured.

CTC Heat pumps are characterized by a long service life, even under harsh climatic conditions in Scandinavia. That is one of the reasons why these heat pumps rank among the best in Europe.

Excellent parameters

CTC Enertech puts emphasis on innovation. The latest series of heat pumps excel in operating parameters compared to competitors' products:

- High flow temperature, up to +65 °C
- Heat generated even under very low outdoor temperatures, as low as -22 °C for air-to-water heat pumps
- System with a CTC heat pump is rated with the highest efficiency class, A+++
- Compact build – a sealed refrigerant circuit, easy installation
- Very quiet operation

Long-term customer care

It is very easy to buy a heat pump from a manufacturer. However, it is much more difficult to select the right heat pump type and related heating system elements suitable for a specific situation.

Many customers already have or intend to buy a solar thermal system, fireplace, boiler which are included in our design, so that the whole heating systems works in an effective and efficient manner.

Once a heat pump is installed, a warranty service follows. Our system is ready to be extended if required in the future (solar thermal system, biomass boiler stove.). Further we offer remote monitoring of your heating system for service monitoring of your heat pump and heating system operation.

Types of heat pumps

Heat pumps are manufactured in two most common types:

Air-to-water heat pumps

Air-to-water heat pumps draw energy from the ambient air. The latest types of heat pumps work under very low outdoor temperatures, as low as -22°C. They are manufactured in compact design; the entire heat pump is housed being in one compact unit.

Ground-to-water heat pumps

Ground-to-water heat pumps draw energy from the ground (they are independent of the ambient air



temperature). These heat pumps utilize heat either from deep bores or from shallow underground pipe loops

(laid horizontally below frost line). Ground-to-water heat pumps are placed indoors and are manufactured in two versions – a heat pump alone, or a heat pump with a thermal store for space heating support and hot water heating.

Controllers and other boiler-room components are housed within a neat, fridge-sized case.

