

Biomass

from

D-ENERGi™

One Stop Energy Solution Provider



Fully Funded Energy Supply Contract (ESCo)

- ▶ We do the design, build & install for your biomass system.
- ▶ We do the commissioning and maintenance.
- ▶ We source the fuel from your local area.
- ▶ You save up to 20% off your fuel bills.
- ▶ You don't need to worry about maintaining your heating system to your business property for the next 20 years.

**Leaving you to focus on do what you do best,
run your business.**



If you are considering biomass as a significant way to reduce your heating and hot water costs but don't want to use your own capital, or can't raise the funds to buy outright...

...there is another option that will give you great benefits without the risk or the need to raise any capital...





Biomass Heating Systems

D-ENERGi have teamed up with strategic market leading partners in their respective fields to offer you a fully funded biomass heating system for free. If you have tried to install a biomass system but were unable to raise the necessary capital investment then we can help with a fully financed ESCo (Energy Services Company) solution. If you opt for an ESCo model then D-ENERGi will provide you a fully managed service through our Energy Supply Contract. You receive the cost savings and environmental benefits against other fuels and pay an agreed amount for heat per kWh, billed by D-ENERGi on a monthly basis. The biomass boiler and associated equipment remains the property of the D-ENERGi funders who will retain the RHI payments.

How It Works

- ▶ D-ENERGi provides you the Client with a fully funded, brand new, world class biomass installation at no capital expenditure.
- ▶ D-ENERGi partners manage the installation process from start to finish, so there is no involvement of your time, working on planning and design etc
- ▶ D-ENERGi work with you the Client, to set and agree the minimum offtake amount based on previous years consumption. This amount guarantees the minimum amount of energy you require and pay for. No more rising Oil, or LPG bills. You can set a budget for your business enabling you to fix a high operational cost
- ▶ Payment is made on a kWh basis via the Energy Supply Contract each month to D-ENERGi
- ▶ Our proposal allows immediate savings to be made by reducing your fuel bills and providing long term fuel pricing stability

D-ENERGi Energy Supply Contract (ESCo) Includes:

- ▶ All fuel - the ordering and delivering of high quality wood fuel is all taken care of for your biomass system
- ▶ Full service, operation and maintenance package is included
- ▶ Automated monthly readings
- ▶ No standing charges or hidden costs, you pay per kWh of energy.
- ▶ ESCo is becoming increasingly popular with businesses and organisations who don't have the staff in-house to maintain complex and outdated heating systems. ESCo allows you to concentrate on your business, without worrying about your energy supply.



What we include for Free

- ▶ A one off cash incentive to get you started*
- ▶ Hargassner or Binder pellet or wood chip boiler - SMS diagnostics or full visual remote monitoring (boiler dependent)
- ▶ Stratifying accumulator tank suitably sized for the power output of the boiler
- ▶ Heat meters, exchangers, and controls
- ▶ Fuel store - with remote fuel monitoring
- ▶ Full on-site installation and commissioning
- ▶ Planning consent (if required)
- ▶ Annual servicing and maintenance including all parts, labour and call outs for 20 yrs



Remote monitoring

The Whitby High School Ellesmere Port, Cheshire

Boiler type	Binder, Type RRK/RRF
400-600	
Maximum rated output	500kW
Wood fuel specification	Wood chip
Moisture content	Up to 35%
Fuel storage volume	Approx 70 cubic metres
Ignition system	Twin Electric Ignition
Maximum particle size	P16A, P45A
Commissioned	September 2014





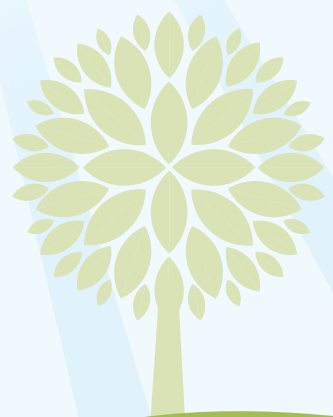
Wood Chip



Wood Pellet

How is it done?

The capital investment is paid out of the Renewable Heat Incentive over a period of years; the investor (ESCo Partner) will then continue to use the money to cover the cost of maintenance and servicing up to the end of the 20 years. You take none of the risks and you get all of the benefits such as; cheaper fuel costs and zero maintenance costs and no worries.



*Cash incentives are a single one off payment given at the commencement of the installation and the amount will be dependent on your individual circumstances



About our Hargassner Boilers



Boilers from 9kW to 199kW

Its technology delivers unparalleled levels of automation and all boilers come complete with fully automatic ignition, automatic heat exchanger cleaning systems and ash extraction. Log boilers up to 60kW are also available.

Quality and efficiency

Achieving the lowest emissions by offering the highest efficiency, ease of use and long lifespan are the mainstays of the Hargassner brand.

Latest production technology

9000 boilers per year are manufactured and sold. Manufacturing processes utilise advanced automation and just in time (JIT) production.

Award-winning boilers

The Hargassner product has received numerous awards and certifications. Energy Genie 2007 and 2013 award at the 'Energy Saving Fair' in Wels / Austria.

1st prize at the International Innovation Competition for 'Wood Energy' in France 2000, 2007, 2008, 2009, 2010.

Designed to last

A properly maintained and serviced Hargassner boiler has an indefinite lifespan and will function well beyond the 20-year Renewable Heat Incentive scheme.

The technology is robust, tried and tested, with thousands in operation worldwide. Spare parts are readily available for every boiler the company has ever manufactured since its inception in 1984.

About our Binder Boilers



Boilers from 200kW to 10MW

The Binder boiler offers both a bespoke design capability up to 10MW and steam capability.

The boilers are ideal for situations that require a larger system – typically as part of a broader M&E project.

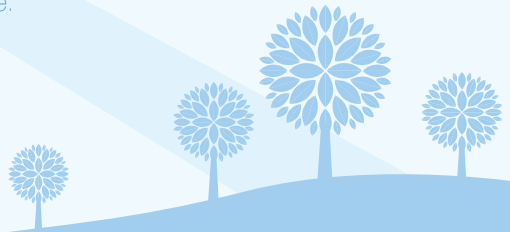


Years of experience

3000 units have been installed to date across the globe.

Robust, tried and trusted technology

High capacity technology requires special consideration. Binder boilers are fully automatic, highly efficient and have low ash residue. They offer remote system control and monitoring and high velocity cleaning, without significantly increasing the plant room noise and without the need for compressed air on site.

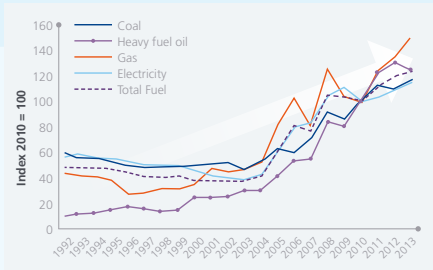


Fuel Security - The UK Energy Market

The price of heating fuel

Over 90% of the variation in the average national retail prices of heating oil is explained by movements in the price of crude oil which in turn varies as a consequence of global events.

Industrial fuel price trends 1992 to 2013



Industrial Fuel Price Indices in Current Terms
1992 – 2013

Wood fuel compared to other fuels

Wood fuel prices have been incredibly stable compared to other fuels. Wood fuel is a competitive source of heat compared to most fossil fuels such as oil and LPG and even natural gas when looking in the medium to long term.

It has the potential to offer end-users affordable energy that to some extent can be insulated from increases in fossil fuel prices. It also has perhaps the lowest cost of all renewable energy technologies.

The costs (shown left) are shown as "input" prices - i.e. the cost of the fuel before the inefficiency of the boiler.

They are presented like this to enable a like-for-like comparison, because that is the way that oil and gas prices are presented. Wood fuel boilers are typically 85-90% efficient, and so the cost of heat "on the meter" (after the inefficiencies of the boiler) will be the cost shown below divided by efficiency of the boiler. The price will depend hugely on the delivery size and the type of lorry which can access the site.

Moisture content is a critical parameter for wood fuel. Moisture has a significant impact on the calorific value of fuel as well as its cost.

Fuel supply

We have supply chain arrangements with a number of wood chip and pellet suppliers meaning we are able to supply high quality fuel at competitive prices. We can provide you with long term price guarantees lasting for 1yr, 3yrs or even 5yrs meaning that you will know that the price you are paying won't fluctuate and that you won't be getting any nasty surprises. Alternatively, you can 'spot purchase' from whomever you want.

Switching to a biomass wood fuel heating system such as wood chip instead of either oil or LPG can save you between 40% and 60% on your heating costs (depending upon type of existing fuel being used and age and efficiency of current system).

Commodity (% Moisture Content)	Pence/ltr	£/tonne Value	Net Calorific (input) kWh/T	Pence/kWh ("on the meter")	Pence/kWh
			kWh/ltr		
Main Gas (Commercial)				3	3.53
Wood Chip (20%)	70	2300		3.04	3.58
Wood Chip (40%)	90	2900		3.1	3.65
Wood Chip (30%)	120	3500		3.43	4.03
Main Gas (Domestic)				3.5	4.12
Wood Chip (20%)	150	4100		3.66	4.3
Firewood (30%)	150	3500		4.29	5.04
Wood Pellet (10%)	220	4800		4.58	5.39
Wood Pellet Bagged	250	4800		5.21	6.13
Heating Oil (Commercial)	60		10.3	5.83	6.85
Heating Oil (Domestic)	70		10.3	6.8	8
LPG (Domestic)	55		6.6	8.33	9.8
Electricity (Domestic)				12	12

Additional Advantages of Wood Fuel

Is wood fuel clean?

Unlike oil, gas or LPG, Wood fuel presents no risk if accidentally released into the environment and there are no harmful by-products. The flue gas is smoke free and the ash content of between 0.5% and 1.5% by volume is minimal.

Why is wood as a fuel carbon neutral?

As it burns, wood produces carbon dioxide - one of the main greenhouse gases responsible for climate change. But this CO₂ is absorbed by new growth. This means that no extra carbon is put into the atmosphere - which is why wood fuel is carbon neutral. Although, during processing more CO₂ is released to the atmosphere, this is negligible. The 'embedded' carbon in wood chip is very small indeed, and in wood pellets is relatively, although more than in wood chip.

Woodland in the UK is a renewable resource and therefore as trees are felled new trees are planted or re-grow as coppice. During the process of photosynthesis carbon is stored in the growing tree and the woodland soil. In the UK woodlands are managed in line with the UK Forestry Standard and all felling is controlled by the Forestry Commission. The standards ensure that woodland is managed sustainably and to the best environmental standards.

Does using wood fuel for boilers damage woodland?

On the contrary, a demand for logs and wood chip creates a market for timber - which can make the difference between woodland management being financially viable and not.

Where do wood fuel suppliers source their wood?

Most wood fuel suppliers purchase timber as close as possible to each depot from a wide range of suppliers including local farmers, co-operatives, woodland management companies, sawmills, arboriculturalists. Wood fuel is beginning to show its potential for unlocking the numerous under-managed woodlands and the consequent benefits to biodiversity.

Can wood fuel benefit the local economy?

The wood energy industry benefits the local economy because it generates income for owners, contractors, processors and suppliers. The increased forest management improves future productivity and asset value. Woodland management activities increase local employment, as well as improving habitat and biodiversity.

Is there enough timber in the country?

The forestry commission have calculated that there are an estimated 2 million tonnes per year of timber being produced by our unmanaged woodlands and this is in addition to an already large, healthy and vibrant wood fuel supply industry. This additional timber alone is enough to produce c.5million MWh of heat (or 25,000 x 199kW boilers). On top of this, many hundreds of thousands of tonnes of timber are sent to landfill every year, mainly from the construction and manufacturing industries which are now also beginning to realise the cost savings achievable by using their own waste wisely by turning their waste into heat and heating their factories at the source of production.



Biomass Heating System Design

Modular Solutions

Where customers don't have the internal space available for a biomass heating system and fuel store, we offer a fully modular solution which houses both of these in a single unit.

External Finishes

A range of finishes are available, please call us to discuss your exact requirements. Below are a range of selected finishes.



Timber Clad Finish



Insulated Trapezoidal
Wall Panel (RW)



Insulated Architectural
Wall Panel (Micro-Rib)



Insulated Architectural
Wall Panel (Flat)

Kimbolton School Cambridgeshire

Boiler type	Hargassner in timber clad GHM incorporating a 4m agitator
Maximum rated output	199kW
Wood fuel specification	Wood chip
Moisture content	Up to 35%
Fuel storage volume	Approx 35 cubic metres fed via a fast fill vertical fuel system (VFS)
Ignition system	Twin Electric Ignition
Maximum particle size	P16A, P45A
Commissioned	Jan 2014





Interested... What next?

Commercial businesses with regular, constant heat demands are the most suitable for a **free** system. To see if you are eligible fill in the form and one of our team will contact you shortly.

Experienced Registered Installation Network across the UK

Our partners in-house installation team has delivered over 100,000kW of medium and large-sized projects across the UK. We also work with a network of carefully selected Registered Installer Partners who, as well as having existing experience, have also completed our own specialist training courses and have access to our technical support. This means that you can be confident of a biomass heating solution that meets your needs and utilises high-quality, highly-efficient technology across boilers, feed systems and fuel storage solutions. The Registered Installation Network ensures consistent skill levels on a national basis provided by local contractors with local knowledge.



Biomass Enquiry Sheet



Date:

We need the following details from you. Please complete the enquiry form and any other relevant information and submit by email to renewables@d-energi.com or alternatively fax to 0161 237 3636. If you have any questions or concerns completing the form please contact our renewables team on 0800 781 7626, who will be delighted to help.

Enquirer Details	
Name	
Business Name	
Type of Business	
Site Address	
Telephone	
Mobile	
email	
Can you provide 2 years or more of audited accounts	Yes <input type="checkbox"/> No <input type="checkbox"/>
Company registration number if Ltd company.	

Type of Building(s)	
Are you the freeholder or leaseholder	Freeholder <input type="checkbox"/> Leaseholder <input type="checkbox"/>
If the leaseholder, how many years are left on the lease.	
Number and use of buildings to be supplied	
Size of main building (sq ft/m)	
Distance from boiler location	
Planning permission required / conservation area / listed	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, applied for?	
Is there access for a fuel delivery lorry, (Cement mixer size) within 20m of the proposed boiler location	Yes <input type="checkbox"/> No <input type="checkbox"/>

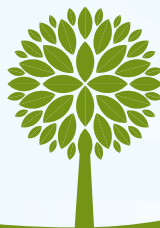


Existing Boiler

In total on the site how many boilers does the facility have?		
How many separate plant rooms does the facility have and where are they located?		
Current Fuel Use	Fuel Bill p.a. (£ ex VAT)	
	Quantity of fuel used p.a. kWh / m ³ / litres	
Boiler Size (kw)		
Type of fuel used	Oil <input type="checkbox"/>	Gas <input type="checkbox"/>
	LPG <input type="checkbox"/>	Other <input type="checkbox"/> Type
Please include a recent invoice for your relevant fuel. Eg oil, LPG or Electric. We will use this then to calculate the cost per litre and calculate the savings to be made by switching to a biomass solution.		
Additional Information		

New Boiler

Plant Room Type	Prefabricated stand alone containerised plant room	Site to building distance (m)				
	New fixed plant room and/or fuel store					
	Retro fit into an existing building	Plant room dimensions	Length (m)			
			Width (m)			
Height (m)						
Fuel Type	Pellet <input type="checkbox"/>	Wood <input type="checkbox"/>	Chip <input type="checkbox"/>	Logs <input type="checkbox"/>		
Financial	Cash <input type="checkbox"/>	Loan <input type="checkbox"/>	Lease <input type="checkbox"/>	FTEU <input type="checkbox"/>		
If you are a school, do the school / governors have the authority for capital budgets and running costs?		Yes <input type="checkbox"/>	No <input type="checkbox"/>			





D-ENERGi is a trading name of UK Healthcare Corporation Ltd.

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