



WoodEnergy
Biomass Heating Experts



Biomass Heating

for Poultry Farmers



WoodEnergy
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Experience

A pioneer of UK biomass heating since 2001



Over
100,000kW
installed across
the UK.

Over **70**
agricultural and
rural estate
installations.



Approx. **400**
separate
boiler projects.



Biomass Heating System Design

Larger commercial, new-build and refurbishment M&E projects are serviced directly by Wood Energy Ltd. For these projects we provide a free biomass consultancy service.

Projects would typically be of a large and complex nature up to 10MWs and would be supported by our own in-house specialist technical engineering team. We have a range of detailed CAD drawings that encompass layout, connectivity and controllability of the boiler/s, Accumulator Tanks, the flue, the pipework and, where appropriate, district heat connections and Building Management Systems.



Smaller commercial and domestic projects are serviced through our Registered Installation Partners.

Registered Installation partners are located throughout the whole of the UK thereby offering a regional and local service. Each Registered Installation Partner has received specialist training from Wood Energy Ltd on Hargassner and Binder boilers and system design and possess a series of standard design layouts that Wood Energy Ltd has developed over many years. They also have access to our technical engineering department for complex design support where required ensuring that each project is comprehensively designed.

Biomass Heating Experts

Biomass heating solutions from 9kW to 10MW

Wood Energy Ltd is widely acknowledged as a biomass heating specialist and has been a pioneer of biomass heating in the UK since the early stages of the industry. We offer a range of wood chip and wood pellet boilers, ranging in size from 9kW to 10MW, for commercial, industrial, public sector, agricultural and domestic buildings of all sizes. We provide a full design and installation service that utilises high quality, highly efficient technology across boilers, feed systems and fuel storage solutions.





Solutions for new buildings and retrofit

The solutions we offer are tailored for each client and suitable for both new construction projects and replacement of existing boilers. Whether you require a single boiler to feed an existing system, or multiple boilers with new heat distribution technology, we can design and install a whole solution that will meet your needs.

We also offer a modular, pre-packaged biomass heating boiler and storage solution as an option for clients who don't have the internal space for a biomass heating boiler, or who want a solution with minimum business and/or building interruption.

Dedicated to biomass heating

We have been dedicated to biomass heating for much longer than most of the providers in the market and we only provide biomass heating. As a result, our in-house experts are highly experienced specialists with a comprehensive understanding of the financials, the technology, the process and the Government's Renewable Heat Incentive requirements; this means that our clients can be confident of receiving first-class advice and support from beginning to end.



Unrivalled technical expertise

We are an engineering-led organisation with significant experience of designing, installing, commissioning and maintaining large and complex biomass heating systems across practically every industry. This has equipped our experts with the ability to understand your requirements in detail and therefore ensure that you have the right technology, in the right place, and that every consideration is made in ensuring that your system is as efficient and as robust as possible.

Exclusive access to advanced technology

We have held the exclusive UK market rights, for the last decade, for biomass heating boilers from two highly-respected Austrian manufacturers – Hargassner and Binder, whose technology has been continuously developed over 30 years. With significant investment in R&D and manufacturing processes, and 100,000 boilers installed worldwide, their products are acknowledged for their high quality, controllability, efficiency and longevity.



Case Study: Higher Hall Farm, Devon

**£846,000
better
off over
20 years***



Peter and Sam Boyles and their four children run an organic poultry farm in Barnstaple, Devon. Their poultry sheds were originally powered by LPG and it was the steep rise in fuel prices that initially made them look to biomass heating.

Wood Energy installed a 199kW fully-automatic, self-cleaning Hargassner boiler. It is fuelled by high quality wood chip which comes from a supplier just two miles away from the farm.

"We chose the boiler because it was well-built, mechanically sound and tried and tested," said Peter.

"It's been very successful and has benefited our chickens more than we originally thought.

"They have a much better atmosphere to live in all round. The boiler is very efficient at burning wood chip and produces a lovely dry stable heat. The poultry sheds don't suffer from humidity any more so the chicken bedding stays nice and dry which is much healthier for them and has saved us time and money from re-littering."

"Wood Energy helped us with the RHI application forms, which took a bit of filling out, to get us through the accreditation process. We now submit simple meter readings online once a quarter and we've received five payments so far."

No. of sheds	4
Total floor area	19,592 sq ft
Flock size	24,000
Legacy heating system	LPG
Legacy annual fuel bill	£20,000
Biomass heating solution	1 x 199kW Hargassner wood chip boiler with unit heater distribution
Total project cost	£110,000
Annual fuel saving	£10,000
Annual RHI payments received	£27,295
Payback period	3.0 years

*Annual fuel saving with assumed annual fuel price escalation of 6% plus annual RHI payments received with assumed RPI increase of 3.5%

The Benefits of Biomass Heating

You can reduce your heating bills by up to 50%

- It costs up to 50% less than oil or LPG to produce the equivalent heat using wood fuel. You also get paid for the heat that you produce and use.
- The Renewable Heat Incentive can deliver you tens of thousands of pounds of additional income per year. Over a 20-year period this equates to a significant sum.

Your investment will payback in 4 years or less

- The average biomass heating boiler installed on a poultry farm will pay for itself in just four years and often less.

Your business will be more efficient

- Biomass heating systems, when linked to an effective heat distribution system, produce constant temperatures for improved health and growth.
- Reduced CO₂ means that less ventilation is required.
- The dry nature of a biomass heating indirect heat source helps to keep litter dry, reducing costs and improving the shed environment.
- Welfare standards are a concern for many consumers and commercial clients and therefore switching to biomass heating can increase their satisfaction.

You will decrease your environmental impact

- Biomass heating is carbon neutral and therefore makes your business greener. It will also improve Climate Change Levy discounts for those that have chosen to be part of the scheme.

Security of supply

- The fuel for biomass heating boilers is usually available relatively locally and is renewable by its nature. This means that your business is not exposed to the risks associated with security of supply from overseas energy sources and political intervention.

Support the British economy

- Purchasing fuel within the UK supports local jobs and the British economy.

Fuel Cost Comparison



The Renewable Heat Incentive

The Renewable Heat Incentive (RHI) is a Government-funded scheme administered by Ofgem. It aims to encourage an increase in the proportion of heat generated by renewable technologies by offering fixed, index-linked regular payments to companies and organisations generating and using heat produced by renewable energy.

Eligible organisations join a tariff relevant to the capacity of their biomass heating system. The tariff dictates a fixed rate that they will be paid for every kilowatt hour they produce and use over a 20-year period.

The RHI tariffs are issued on a quarterly basis and, as with other renewable technologies, the tariff rates will degress over time as the total volume of heat produced by renewables increases. This means that early adopters will benefit from a higher 20-year fixed payment.

Those signing up to the current payment tariff will receive between 1p and 8.6p for every kWh that they produce and use, depending on the size of their boiler.*

RHI payments are made quarterly, in arrears, and require that scheme participants submit regular meter readings related to their heat production and usage via a personal online account.



*According to tariff at September 2013.

The metering systems are installed at point of generation and point of usage and there are rigorous conditions to be met related to their accuracy; for example, where more than one building is using heat, multiple metering systems are required or heat loss must be calculated and discounted.

Your biomass heating system must be provided by a registered installer who can certify the system. This is an Ofgem prerequisite for joining the scheme.

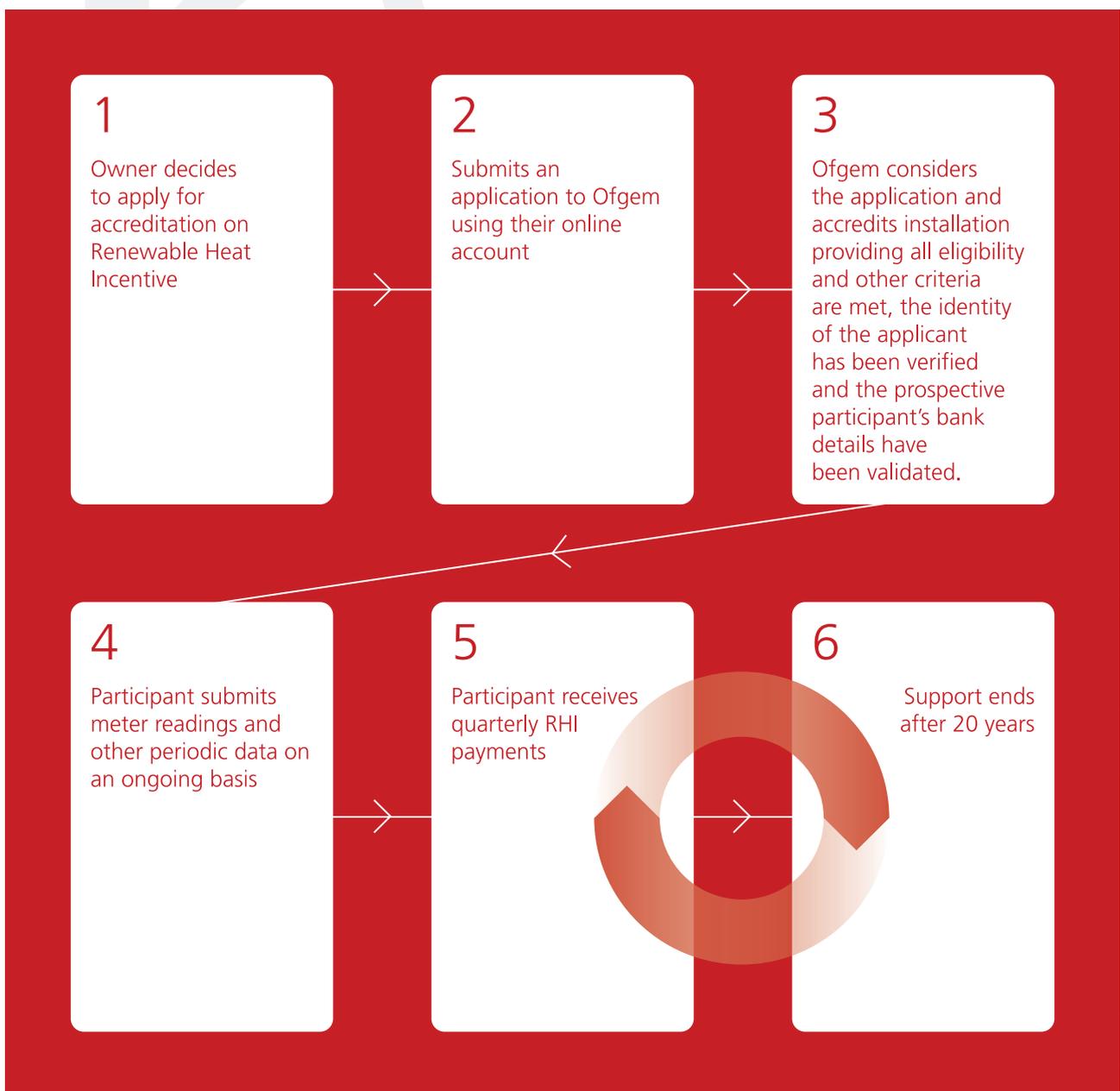
We provide full RHI support

Once your online account is set up, you are required to complete various forms as part of an accreditation process in order to receive payments through the scheme. These require information related to your energy usage and the installation and metering arrangements. This is all done online and we provide you with any support you need to help you through what can be a complex process.

RHI Portability

Recent changes to the RHI now permit the moving and re-location of the qualifying equipment. For example; if a system was fitted in Care Home, the owner of the equipment can decommission and relocate the boiler at a new location and still be able to claim the remaining term of the RHI payments at the original contract tariff level rate. This portability makes investing in a biomass heating system even easier with less risk. The installation of a modular, pre-packaged (Green Heat Module) biomass heating boiler and storage solution is ideal if there is chance the system may need to be relocated at a future date.

The Renewable Heat Incentive scheme process



The Technology

How biomass heating works

Like conventional boilers, biomass heating boilers heat water which is circulated around a heating system. They are fuelled by wood pellet and/or wood chip and the process of fuelling is automated. Fuel is either suctioned or augered from a storage area into the boiler; from here it passes through to a combustion chamber where it is automatically lit by an electric ignition.

During combustion, the hot gases pass through heat exchanger turbulators which transfer the heat to the water within the system; this is then circulated to distribute that heat. The automated system monitors the oxygen levels and temperatures within the boiler and then automatically adjusts the fuel feed and fan speed to give the highest possible efficiencies.

A wood pellet boiler



Fuel options

We supply both wood chip and wood pellet boilers. Which is the most suitable for you will depend on local availability. Advising you on fuel suppliers and fuel types is part of our standard design process.

Wood pellets are the most consistent and space efficient fuel as they are drier and have a much lower fluctuation in calorific value. However, if you have your own wood chip or a good local supply, and a large fuel storage capability, then wood chip could be the more cost-effective option.

Probably the single, most important fuel consideration is quality. Our poultry farm installations utilise Hargassner boilers which will happily burn wood chip with a moisture content of up to 35%. Fuel with a higher water content will reduce the efficiency of the boiler significantly and, if you ignore the guidelines provided, will potentially reduce its lifespan.



Fuel feed systems

Fuel is typically fed into a boiler by an extractor auger which uses either a rotary or hydraulic ram mechanism. A wood pellet boiler can also be fed by suction pipe. The suction system activates, typically, once every 24 hours for a few minutes.

In a wood pellet boiler, the pellets pass into an internal hopper; they then drop onto a double rotary valve which meters them onto a feed auger which stokes the boiler.

A wood chip boiler does not have an internal hopper. The extractor auger moves the fuel through a burn-back flap into the boiler, from where it drops directly onto the feed auger.



Fuel storage

Suitable storage is integral to the success of any biomass heating project. You need to be able to store a sufficient quantity of fuel in a place that is easily accessible for deliveries. Keeping the fuel dry is critical for both the efficiency and longevity of the boiler and so it is important to consider the whole transfer process, from lorry to store and then on to feed the boiler. Combustible fuels always require consideration and, to avoid over-exposure to any build-up of naturally occurring gas, you need to control access to the fuel store and ensure there is adequate ventilation.

Heat distribution

Getting the correct heat distribution specification is crucial to the success of any poultry biomass heating system. Optimal positioning of heat emitters is essential for maximising distribution and creating consistent bird growth throughout the poultry house.

All the heat emitters we supply are 'designed for purpose' in order to deliver best performance in a demanding poultry shed environment. Our experts are fully conversant with the various technologies available so are able to recommend the most appropriate solution for your needs.

The heat emission products we offer include, but are not limited to:

- Reventa
- CUBO from Choretime
- Multiheat from Abbi-Aerotech
- The Holland Heater

Alternatively, your system can be linked to an existing heat distribution system but it is important to understand that this may reduce efficiency.

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.

The Green Heat Module arrives at your site on the back of a lorry, fully-fitted out, and is linked to your distribution system via a single flow and return connection. Low Loss Headers can be introduced within the Module for multiple hydraulic 'hook ups'.

The main benefits of this approach are faster installation and reduced business interruption. In addition, where a business may potentially move premises, it is possible to also move the module while still claiming the Renewable Heat Incentive at the same rate as when it was first commissioned.

The modules are secure, providing excellent protection against theft and vandalism. There are also a number of aesthetic options to allow them to blend into your environment. They can be pre-painted in a range of colours, clad in various materials or vinyl wrapped with imagery of your choice.

Green Heat Module

Total Warranty, Total Peace of Mind – for the Life of the RHI

The main concerns from a number of clients relates to the certainty of the RHI payments and boiler longevity. The RHI payments are linked to the boiler serial number. If the boiler breaks down and is unrepairable, then the on-going RHI payments are lost. This can be catastrophic if the boiler failure occurs early on in the life of the boiler and even worse still if the boiler is outside of the warranty period – which is normally less than 5 years.

If a re-submission of RHI is required it is likely that it will be at the new, and much reduced rates. This is because RHI payments are set to degress (for new comers to the scheme) at regular intervals.

Wood Energy understands that these risks are significant, and for some clients, unacceptable. Therefore, Wood Energy provides a Total Warranty for our Green Heat Modular solutions.



A 20 year Total Warranty for the whole Green Heat Module is available with every module. These would typically include, but are not limited to;

- Module has a 25yr thermal integrity warranty
- Module has a 25yr structural integrity warranty
- Module has a 20yr boiler warranty*
- Module has a 40yr paint coating warranty. Module paint coating does not require annual inspection and is a maintenance free product of up to 40 years Inland and 30 years for a Coastal application / installation.
- Module 'Total Coating' Warranty goes direct to the building owner, and is fully transferable should the Module be sold to another party.

* The Total Warranty is only available if the client enters into a Wood Energy Warranty & Maintenance Service Contract at time of order. The Total Warranty is only available for Green Heat Modular solutions. Please request a quotation for your specific project.



About Hargassner

Most of our poultry farm installations utilise either one, or multiple, 199kW Hargassner boiler systems. These are highly efficient (independently tested at over 93%) and offer the optimum RHI payments.



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.

Boilers from 9kW to 199kW

The manufacturer offers wood chip and wood pellet 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.

Latest production technology

9000 boilers per year are manufactured at Hargassner's Austrian factory. Its manufacturing processes utilise advanced automation and just in time (JIT) production to ensure that every last detail is made and assembled according to real orders, always in the correct quantity and at the correct time.

Award-winning boilers

Hargassner's products have 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.



Hargassner heating technology centre

Hargassner's Austrian manufacturing facility is state-of-the-art and includes a large-scale R&D department and a global training centre.



Dedicated to the future of biomass heating

Almost every element of a Hargassner boiler is manufactured in-house to ensure that quality is consistent. In addition, constant scrutiny of the detail is part of the company's regular process in order that it can stay at the forefront of technological advances.



The Project Process



1

We make an initial survey of your installation

One of our experts will visit your farm to discuss your needs and to survey the site and system requirements. They will make a boiler recommendation and talk you through the different system components. They will also provide you with an indication of price and explain the Renewable Heat Incentive in detail.



2

We send you a proposal

After the initial survey, we will send you a full proposal which confirms the system agreed and related costs. It will also set out our terms and conditions and required payment schedule. Once you are happy with the proposal, we require a signature and small deposit so we can order your boiler.



3

We agree the project timescales with you

We will confirm final deliveries and timescales. We know that your crop cycle is crucial to your business and will do our utmost to ensure that the installation is as seamless as possible, working around your schedule.



4

We develop your project to full design

Our engineers will prepare a full design specification of your system with a full breakdown of the component requirement.

Their final designs will be presented to you so that you are fully aware of the installation plan.

If additional documents are required by local planning, building control etc, we may ask for a further deposit in advance to cover our costs.



5

We install and commission your system

We begin any preparatory, building or installation works on site as soon as is practical. If you have decided to undertake groundwork or building work yourself, we offer advice to ensure that it meets the boiler installation requirements.

We install the boiler equipment and any required piping and electrical and flue connections. We then flush and fill the system, fuel it and commence the commissioning of the entire heating loop.



6

We ensure that you are satisfied and in control

Although our boiler technology is sophisticated, it is fully automated and easy to use. However, it is important that you understand how to operate it for maximum efficiency and longevity.

Before we hand the system over to you, we ensure that you are confident in operating it and taking meter readings so that it will provide you with a long and reliable service, an optimised return on investment and, most importantly, that it is safe.



7

We support you with gaining RHI accreditation

Once your boiler is commissioned, we support you through the RHI accreditation process. We ensure that you are fully versed in the process of taking and sending meter readings to Ofgem, in order to receive your Renewable Heat Incentive payments.



8

Warranty, service and maintenance

Our highly skilled engineers are on call nationwide for routine servicing and unplanned outages.

As with all complex equipment, your boiler will need to be maintained in line with the manufacturer's recommendations. Regular servicing is also essential to validate the warranty and, for RHI projects, ensure maximum efficiency and longevity to deliver the maximum return on investment.

We offer three different service and support packages. Please ask for further information.



Case Study: Thorngrove Farm, Worcestershire

**£2.8 million
better
off over
20 years***



Thorngrove Farm already had one biomass heating boiler and owner, Jon Hickton, also had experience of other biomass heating boilers. With a good working knowledge of biomass heating, he specifically chose the Hargassner technology from Wood Energy. This was provided as a modular solution to be used with a fan coil heat distribution system.

"I especially wanted the Hargassner technology," said Jon. "It is by far the best and I genuinely wish my other boiler was Hargassner too."

"It is a good quality, efficient boiler – very low maintenance and easy to use compared to my other one. It's self-cleaning and when we have power cuts, it corrects itself automatically. The aftermath of a power cut on any farm can be time-consuming but the Hargassner just puts itself right and carries on working!"

"Apart from the considerable financial benefits of biomass heating, it also creates a more pleasant environment in the sheds for birds and humans. When I used oil, fumes inevitably got into the sheds and every litre of oil produces the corresponding moisture. I had to over-ventilate the sheds to deal with these things which was a vicious circle, because I then had to try and heat the fresh air that came in as a result of that ventilation."

"The installation was pretty straightforward. The module was delivered by lorry and Wood Energy came out to commission it. We had a couple of teething problems at the start, which is not unusual with any new system, but their staff responded quickly and efficiently to sort them out."

"I wish I had a Hargassner for each separate shed. The heat is consistent throughout the shed, the litter is drier and the RHI income has been higher than we thought. It is definitely the best biomass heating technology."

No. of sheds	4
Total floor area	65,508 sq ft
Flock size	120,000
Legacy heating system	Oil
Legacy annual fuel bill	£72,000
Biomass heating solution	2 x 199kW Hargassner wood chip boilers with fan coil heat distribution
Total project cost	£300,000
Annual fuel saving	£46,000
Annual RHI payments received	£50,000
Payback period	3.1 years

*Annual fuel saving with assumed annual fuel price escalation of 6% plus annual RHI payments received with assumed RPI increase of 3.5%.

Wood Energy Our Experience

**A pioneer of UK biomass heating since 2001.
Over 100,000kW installed across the UK.
Over 400 separate biomass heating projects.**

Installation types

- Care Homes
- Country Houses and Estates
- District Heating Schemes
- Domestic Housing
- Educational Facilities
- Factories and Industrial Buildings
- Horticultural Applications
- Hospitals
- Hotels
- Leisure Centres
- Local Authority and Public Buildings
- Offices
- Poultry Farms
- Prisons

Solutions include the full range of temperature options for almost any application

- Low temperature
- Med Temperature
- High Temperature
- Steam
- Thermal Oil



Contact Us

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Correct at time of print. December 2013

Your Local Registered Installer

