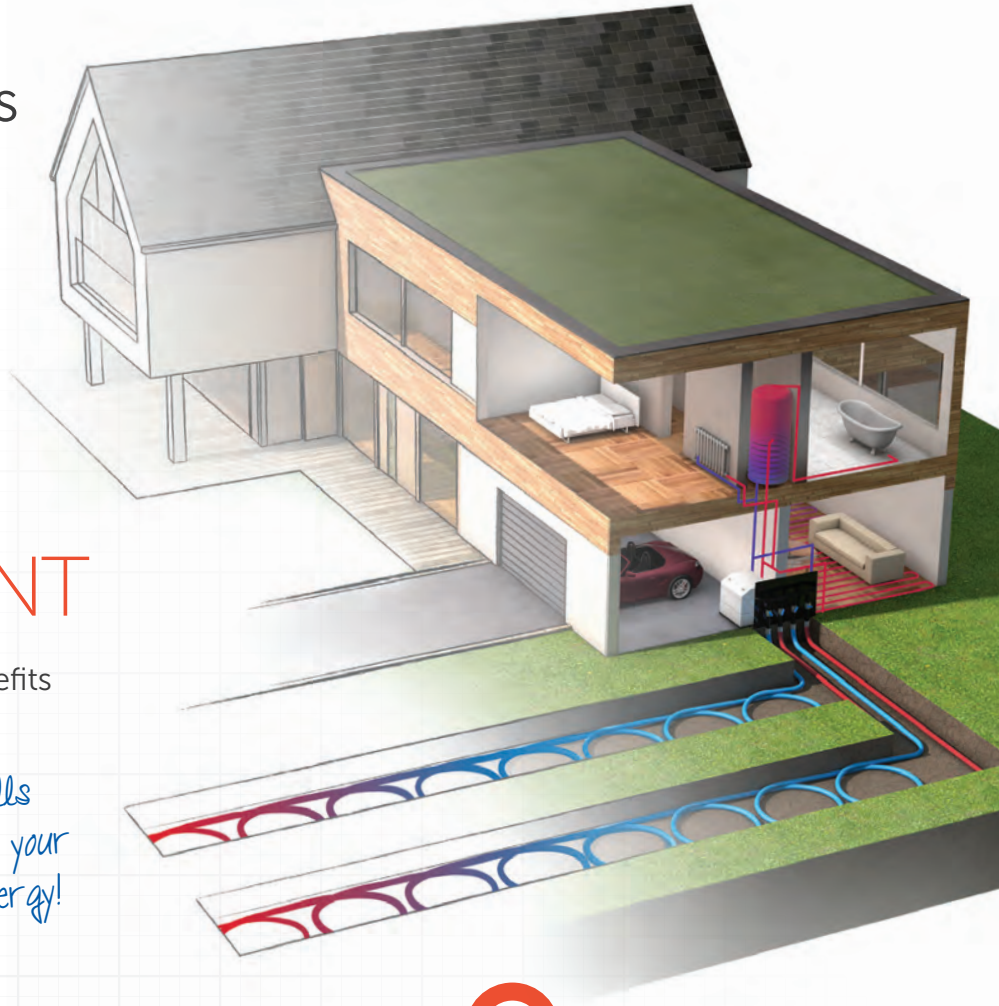
Kensa Heat Pumps
A KENSA GROUP COMPANY

MAKE YOUR SELF BUILD SELF SUFFICIENT

Go underground and enjoy the benefits of ground source heat pumps.

Lower your energy bills and get paid for heating your home with renewable energy!



MADE IN BRITAIN

www.kensa.group/kensa-heat-pumps

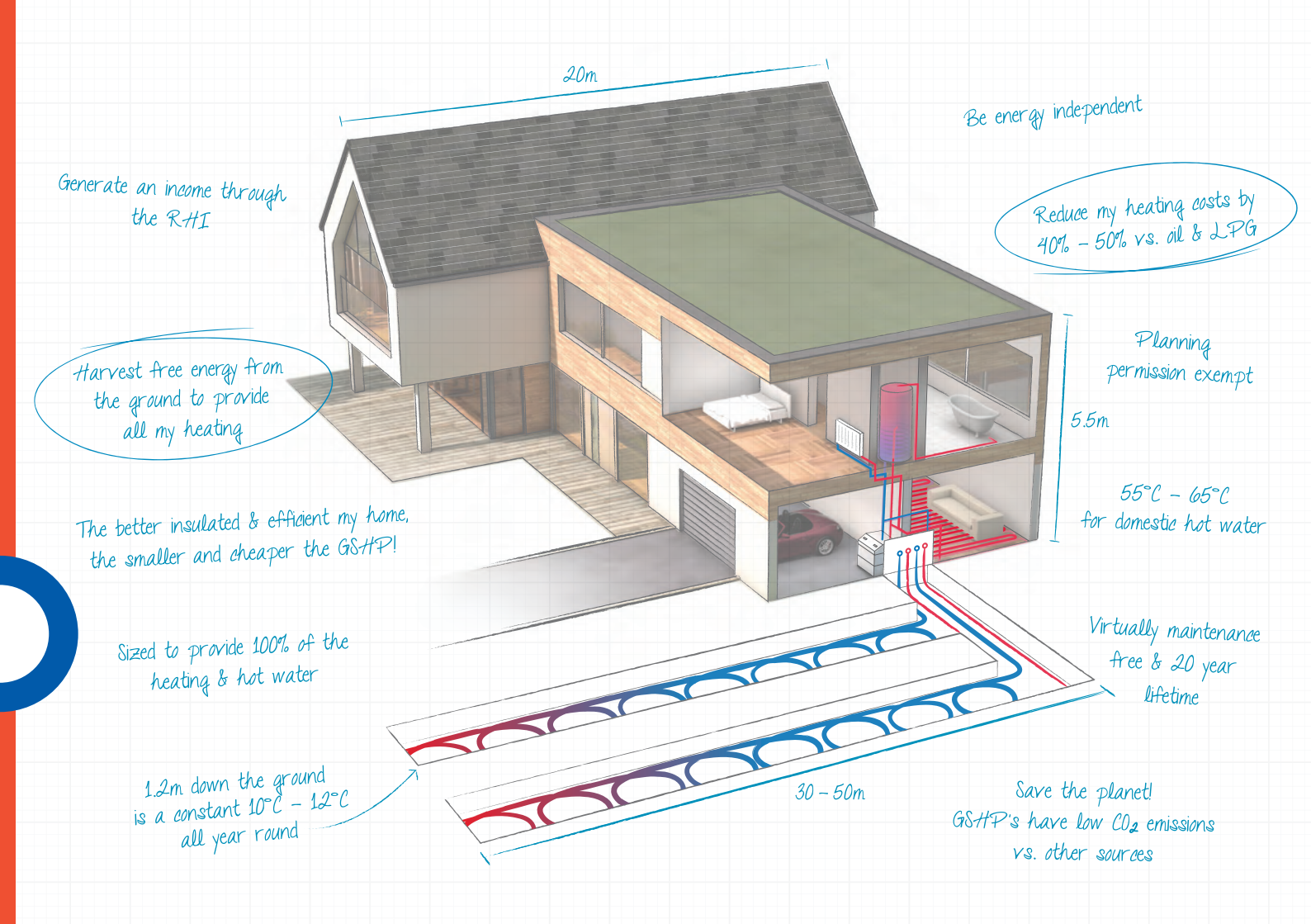
Harvest the freely available energy from the ground to heat your home & reduce your energy bills... and get paid for doing it.

Ground source heat pumps (GSHP's), extract heat from the earth using pipes buried underground and convert this to useful energy to heat your home.

Whether you are building your own home or renovating a property – especially if your options are limited to oil or LPG - ground source heat pumps are the ideal way to significantly reduce your heating bills forever.

And thanks to the Government's Renewable Heat Incentive (RHI) scheme, self builders and home renovators can now get paid for the renewable heat they generate.

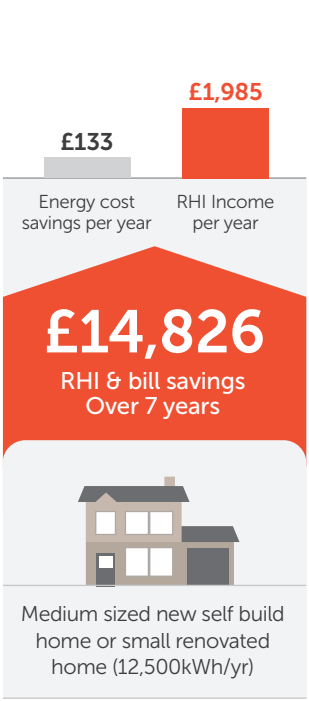
Dig deeper into the opportunities ground source can bring to your project.

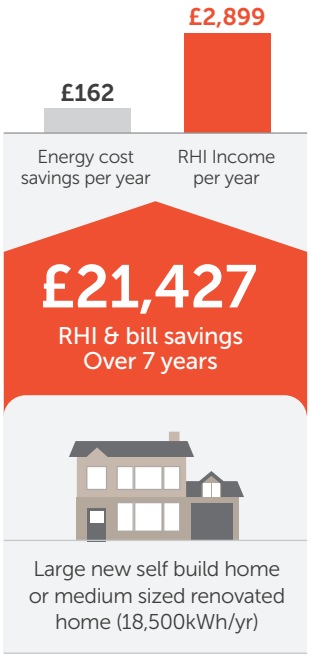

20m
Be energy independent
Generate an income through the RHI
Reduce my heating costs by 40% – 50% vs. oil & LPG
Harvest free energy from the ground to provide all my heating
Planning permission exempt
5.5m
55°C – 65°C for domestic hot water
The better insulated & efficient my home, the smaller and cheaper the GSHP!
Sized to provide 100% of the heating & hot water
Virtually maintenance free & 20 year lifetime
1.2m down the ground is a constant 10°C – 12°C all year round
30 – 50m
Save the planet! GSHP's have low CO_2 emissions vs. other sources

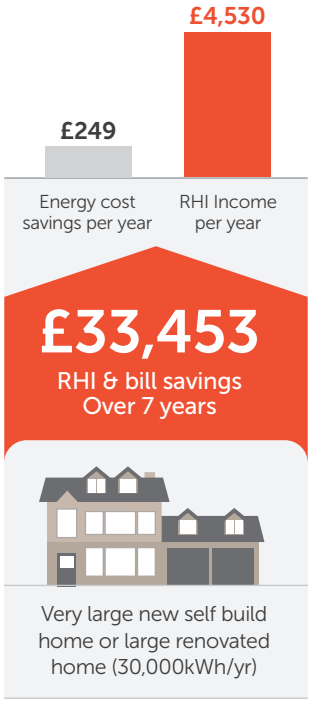
Get paid for heating your home

The Renewable Heat Incentive (RHI) has been introduced by the Government to encourage homeowners, self builders and property renovators to install renewable heating systems, helping to reduce the UK's carbon emissions.

The RHI will make guaranteed quarterly payments to you every year for seven years, helping to offset the cost of installing a renewable heating system.







For assumptions visit www.kensa.group/assumptions (Figures exclude inflation)

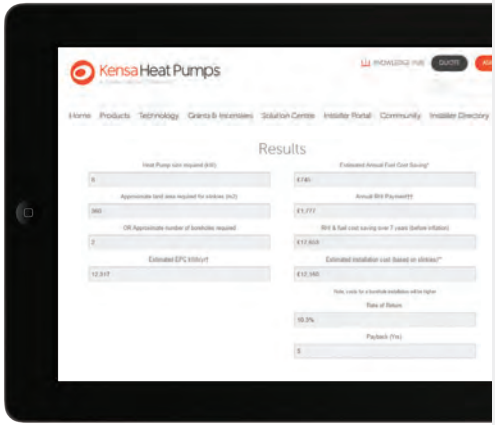
Guaranteed payments every 3 months for 7 years

40 - 50% fuel savings vs oil & LPG

Payback in 5 - 7 years

The Renewable Heat Incentive: What it means to you

Try our RHI calculator for free:
www.kensa.group/rhi-calculator



Whether you're building a brand new home, renovating an old building or undertaking a property conversion, the Kensa online RHI calculator tool will help you work out what a ground source heat pump and the RHI could generate for you.

Use our RHI calculator to discover your home's potential:

1. Use Kensa's RHI calculator tool to project the potential income and savings based on your project. Visit: **www.kensa.group/rhi-calculator**
2. Submit your plans online to Kensa or a Kensa approved installer for a more detailed estimate.
3. The Kensa Technical Team are on hand to discuss your project in more detail.
4. Kensa will work with you and your preferred installer to produce a final specification.

Key RHI Facts:

- Guaranteed payments made every 3 months for 7 years based on"deemed" energy consumption – based on figures from your Energy Performance Certificate.
- Government backed scheme, administered by ofgem. Visit Ofgem's website for details: **https://www.ofgem.gov.uk**
- 20.89p/kWh tariff for GSHP.
- All self-build and domestic renovation projects are eligible.
- Payable on 'renewable heat' produced by the GSHP to a peak heat demand of 30,000kWh/ Year - GSHP's produce 3 - 4kWh of renewable heat for every 1kWh of electricity consumed.
- Lower flow temperature heating systems, i.e. underfloor heating, optimise heat pump performance & RHI payments.
- Index linked tariff increases every year with inflation.
- Installations must be compliant with the Microgeneration Certification Scheme (MCS) to be eligible.

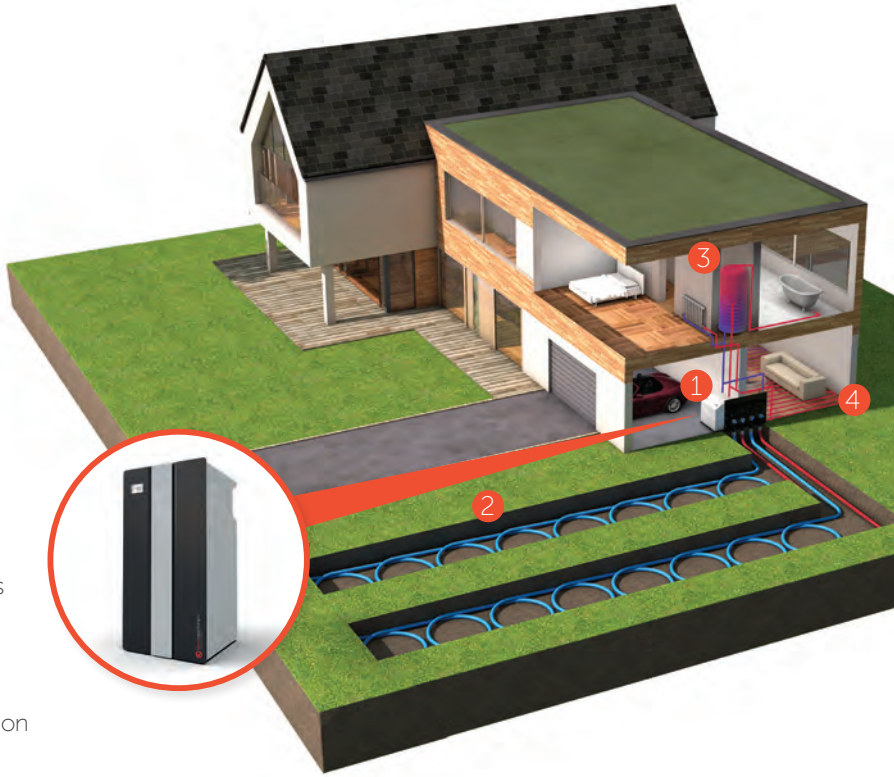
Ground source up close

A ground source heat pump provides heat to your home by transferring solar energy stored in the ground (or other heat sources, such as water in lakes or rivers) and upgrading this to a higher temperature to provide your home with all the heating and hot water it needs.

Ground source heat pumps are powered electrically, but because they are able to capture such a high proportion of "free" energy from the ground, they produce up to 3 or 4 times more energy than they consume, making them highly efficient compared with other forms of heating.

Heat is extracted from the earth using collectors – consisting of plastic pipes – buried underground (or on a lake or river bed). A mixture of water and anti-freeze is circulated through the pipes, attracting the heat energy and transferring it to the heat pump. Where possible, coiled pipes known as "slinkies" are buried horizontally in trenches, however where space is limited, pipework can be installed vertically in boreholes.

More information on how a heat pump works can be found on the Kensa website **www.kensa.group/the-technology**



1

Ground source heat pump unit:
Small, compact and about the same size as a washing machine; typically installed in a garage or utility space.

2

Slinky ground collectors:
Buried in trenches, approx. 1.2m deep by up to 50m long, slinkies circulate energy from the ground to the heat pump, and back again.

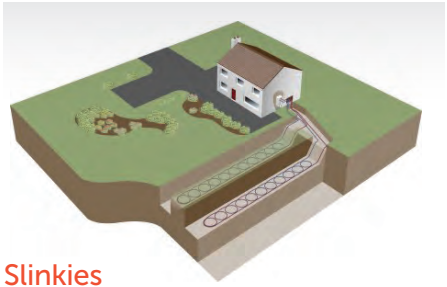
3

Hot water cylinder:
Designed to provide optimum performance with a heat pump; delivers mains pressure hot water whenever you need it.

4

Heat distribution system:
Underfloor heating allows lower water flow temperatures, helping to achieve maximum heat pump efficiency. Radiators can also be used but need to be sized correctly and typically require higher water flow temperatures, impacting efficiency.

Going to ground: Your options

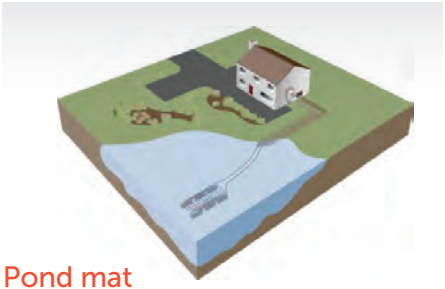


Slinkies

- Typically require twice the footprint of your home.
- Series of shallow trenches.
- Backfilled and re-turfed.

Borehole

- Ideal for limited space.
- More expensive than slinkies.
- Minimal waste material.
- 80 - 150m deep.



Pond mat

- Used in water sources to benefit from highly efficient heat transfer.
- Slinky pipes fixed to a stable platform and sunk.

What can I expect?

Lower fuel bills

GSHP's produce 3 - 4kWh of energy for every 1kWh of electrical energy they consume, making them 300 - 400% efficient. Compare this to a typical boiler, which is just 90% efficient.

Lower emissions

Because a GSHP extracts so much "free" energy from the environment, this enables CO_2 emissions to be lower than any other type of heating system.

Minimal maintenance

GSHP's don't require annual servicing or maintenance. If required though, a quick health check with Kensa over the phone can often diagnose and remedy any potential issues.

Assured payment through the RHI

Once you're in, you're in. A condition of all RHI installations means even if the scheme ends after you install, your 7 years of payments won't.

Energy independence

Become energy independent. No more worries about fuel deliveries, fuel theft, or unsightly oil tanks in the garden. Just good clean energy from the ground.

Planning headache? Not here!

Don't worry, there is no need to alter your plans when you install a ground source heat pump.

KENSA TIP: Ground conditions vary across the country affecting the amount of land needed for slinkies. Our RHI calculator tool advises how much land you'll need: **www.kensa.group/rhi-calculator**

We dig to your tune

Installing a ground source heat pump system takes place in stages allowing it to fit in with your build schedule.

Fitting the ground source heat pump is very straightforward, but requires careful design to ensure you get the most from your system. We can work with your preferred installer to ensure you get an efficient and rewarding system that meets MCS standards and qualifies for the RHI.

What is MCS?

The Microgeneration Certification Scheme (MCS) is an internationally recognised quality assurance scheme supported by the Department for Business, Energy & Industrial Strategy. MCS certifies microgeneration technologies used to produce electricity and heat from renewable sources. MCS is also an eligibility requirement for the Government's Renewable Heat Incentive (RHI)

START

Your build project stages

Heat pump stages

We hope this guide has filled you with inspiration to fit a ground source heat pump. Ordering & installing a ground source heat pump can easily be broken into stages to fit with your project plans.

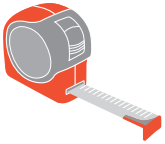
Work out a budget

A GSHP costs around £10k - £18k. The RHI will pay this back in typically 5 to 7 years, so factor this into your budget, as well as the maintenance & fuel savings. Our RHI calculator tool will help you see the savings: **www.kensa.group/rhi-calculator**

Send us your plans

Upload your project plans at **www.kensa.group/heat-pump-quote-request** and we will provide you with an initial quote for a ground source heat pump system designed to your project specifications.

Size up



Once your building plans are finalised we can confirm the final design and price. A GSHP takes into account your property's heat demand, the efficiency of your home, and the space available around your home for ground arrays.

Find professional help

Kensa can support you and your preferred installer with the final design and installation of your GSHP system. For Kensa recommended installers please contact us on **0345 222 4328**

To make sure you qualify for the RHI you have a few options:

OPTION 1

Use a Kensa approved installer

Kensa has a UK wide network of approved installers to undertake the entire installation for you.
For details of installers local to you please contact us on **0345 222 4328**

OPTION 2

Use Kensa's MCS Umbrella

If you wish to use your own installer utilise Kensa's MCS Umbrella service to ensure a certified installation for the RHI. Find out more about our MCS Umbrella at **www.kensa.group/mcs-umbrella**

FIT FOR ALL

Kensa Support

We will provide you and your preferred installer with dedicated technical telephone support and the most comprehensive resources available online at **www.kensa.group/knowledge-hub**

Foundations → Roof, Electrics & Plumbing Done → FINISH

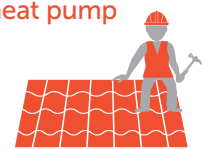
Order

From order you can expect to have your ground arrays on site in just three weeks (if slinkies) and your heat pump in 6-8 weeks, and don't forget you do not need any planning permission.

Install ground arrays

The best time to install the ground arrays (pipes) for your heat pump is when your foundations are being dug to minimise disruption, although they can be done at any time.

Install & comission the heat pump

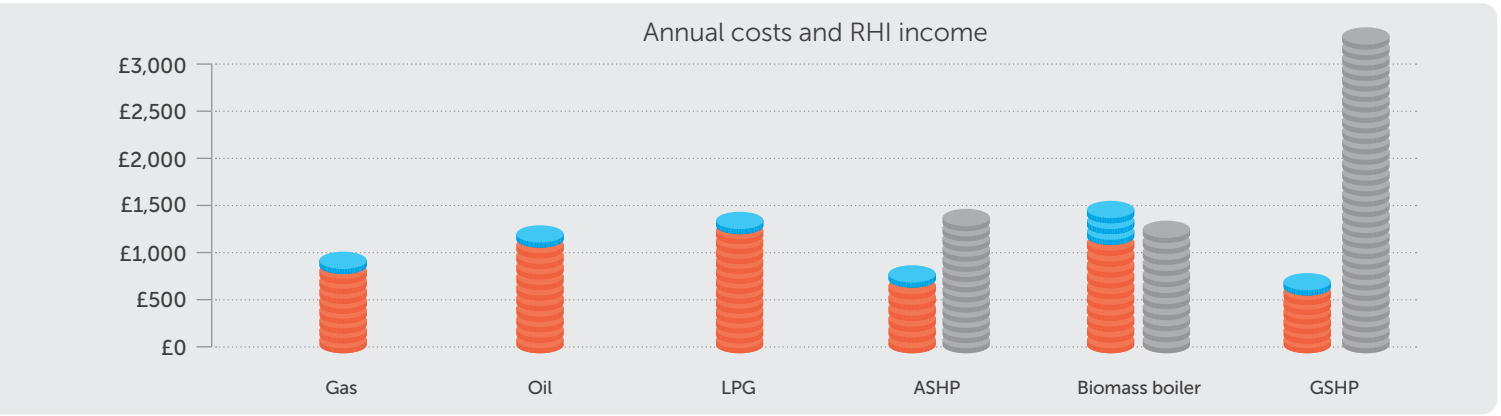


Once your home is watertight and the electrics and plumbing are in, it is time to install your ground source heat pump and register for the MCS.

Get RHI payment

Once your system is MCS accredited you can apply to the RHI scheme. Just 3 months after you will get your first RHI payment and will continue to do so every 3 months for 7 years!

Your heating options



For assumptions visit www.kensa.group/assumptions
(Based on a large new self build home)

Ground source heat pumps are a popular choice with many self builders and it's easy to see why:

While ground source heat pumps are a little more expensive to install than other heating solutions, their inherent efficiency means they can deliver the lowest running costs of any type of heating system. They also provide an attractive return from the RHI giving you payback on your investment typically in 5 to 7 years.

Compared with oil or LPG:

- No unsightly fuel storage tank;
- No hassle of organising fuel deliveries;
- No worry over fuel theft;
- Pay for the energy when you use it, not in one upfront cost.

Compared with air source heat pumps (ASHP):

- Ground source heat pumps have inherent higher efficiency;
- Lower running costs and higher RHI payment;
- No need for planning permission due to noise;
- Longer life expectancy.

Compared with biomass:

- Ground source heat pumps don't require space for fuel storage;
- Biomass fuel prices are unregulated;
- Virtually no maintenance compared with high maintenance for biomass;
- No need for planning permission due to emissions.

KENSA TIP: The RHI calculator on our website will give you a good understanding of the costs, savings and RHI income for your project. Visit: **www.kensa.group/rhi-calculator**

British innovation for your self build project

Kensa is the UK's only dedicated manufacturer of ground source heat pumps. We believe that everyone should benefit from sustainable, efficient, and affordable heating.

Established in 1999, our extensive product range is the largest on the UK market, and with a UK wide network of fully approved installation partners, we're perfectly placed to help with your project needs.

Our Product Range

Kensa
Shoebox Series

Kensa
Evo Series

Kensa
Twin Compact Series

What Kensa is about

- UK's only dedicated manufacturer & supplier of ground source heat pumps;
- Widest range of ground source heat pumps in the UK;
- Designed and built in the UK;
- Dedicated technical support;
- Largest online resource for ground source heat pumps: www.kensa.group/kensa-heat-pumps
- UK wide network of approved installers.

Manufactured in the UK

Direct technical support

140+ Kensa installers

MCS CERTIFIED

RECC RENEWABLE ENERGY CONSUMER CODE

ISO 9001 UKAS

GSHPA GROUND SOURCE HEAT PUMP ASSOCIATION

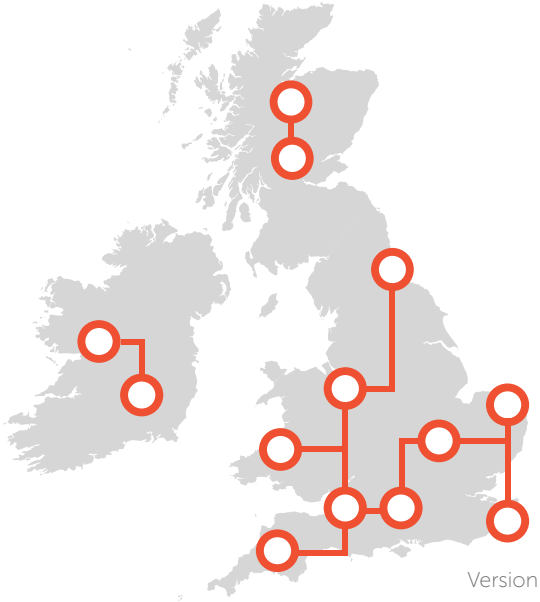
MADE IN BRITAIN

KENSA TIP: Get ground source heat pump project inspiration in the Kensa Solution Centre.
See: **www.kensa.group/homeowner**

Kensa Heat Pumps
A KENSA GROUP COMPANY

Visit **www.kensa.group/kensa-heat-pumps** to access a wealth of support unique to Kensa; the largest online resource dedicated to ground source heat pumps in the UK.

START YOUR JOURNEY AT
www.kensa.group/homeowner



GET IN TOUCH

Kensa Heat Pumps Ltd, Mount Wellington, Chacewater, Truro, Cornwall TR4 8RJ

Call **0345 222 4328** | Email **info@kensaheatpumps.com**
Visit **www.kensa.group/kensa-heat-pumps**

facebook.com/KensaHeatPumps | twitter.com/KensaHeatPumps

Version 6.0