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Louise Sunderland is so “pumped” with the heat pump warming her Victorian home that she asked her Twitter followers to name it. Since it’s made by the Swedish company Nibe, Sven maybe? “I quite like Engelbert Pumperdinck,” the energy policy adviser, 44, says.

Fitting the heat pump last month caused “very little disruption” to her five-bedroom house, built in 1879 at the end of a south London terrace. “Most importantly, the house is warm. And it’s a comfortable type of heat,” Sunderland says. “Don’t be put off by the scare stories that heat pumps don’t work in older homes.”

She and her partner, Matthew, spent £17,000 – including a £5,000 government grant from the boiler upgrade scheme – to upgrade their heating system and swap the gas boiler for a 12kW heat pump.

To “keep 1.5 alive” (the global goal of limiting temperature rises to 1.5C above pre-industrial levels), as world leaders urged at Cop27 this month, homeowners must do something more radical than climbing motorway gantries. We have to rip out our fossil-fuel boilers. “We simply cannot keep burning fossil gas,” Sunderland says.

There are signs of progress. Sales of heat pumps are on track for a record high of more than 26,000 this year, according to data from the Microgeneration Certification Scheme (MCS), which registers installations. Despite a gas boiler ban on new homes from 2025 and an aim of 600,000 annual heat pump installations by 2028, Britain lags far behind Europe. The French bought 537,000 heat pumps last year.

New schemes aim to bring heat pumps to the masses. With the £5,000 government grants, cash rewards for certain mortgage borrowers could make a heat pump cheaper than a gas boiler for some homes. Here is our ultimate guide.

What is a heat pump and why should I choose one?

Heat pumps have been around since the 1850s. A pump captures heat from the outside (from the air or ground) and increases it to a higher temperature to warm your home – it’s similar to how a fridge works, but in reverse. Ground source heat pumps tend to be more efficient than air source, but they are also more expensive to install.

“It’s the most efficient heating device you can buy today. It turns one unit of energy into three, four or five units of heating for your home – compared to 0.9 for the best gas boilers,” says Ian Rippin, chief executive of the Microgeneration Certification Scheme (MCS). “That’s the



Upgrading from oil or gas to a heat pump may be cheaper and easier than you think, says *Martina Lees* – just ask the people who have switched

magic inside the heat pump. It turns one into many.”

This offsets the higher price of electricity (34p/kWh), which is at present more than three times higher than gas (10p/kWh). Once electricity becomes cheaper and gas more expensive, as the government has promised, savings will increase.

Shouldn't I wait for hydrogen?

It sounds seductively simple. Proponents say clean-burning hydrogen could be piped to homes – instead of natural gas, or blended with it – without replacing boilers. But too many technical difficulties make this impracticable, a review of scientific papers concluded this autumn. Even if it was possible, it could almost double the cost of home heating compared with gas, the energy analysts Cornwall Insight found.

Do heat pumps work in older homes?

Having fitted a 7.5kW array of solar panels (£6,500) at their 400-year-old barn in Matlock, Derbyshire, last year, John and Christine Taylor added an air source pump in September. Last month John, 71, found himself testifying about their heat pump in the House of Lords. Why? “I’m trying to help my [four] grandchildren have a better planet without 40 or 50-degree temperatures here in 30 years’ time,” the retired insurance broker says.

The barn’s thick stone walls needed no extra insulation. John topped up the loft insulation and got a plumber to replace their nine radiators with bigger ones from Screwfix for £1,600. The 7kW Vaillant aroTherm Plus heat pump stands outside, clad in vinyl to resemble the grade II listed exterior. It is connected to a 200-litre cylinder in the

cupboard under the stairs.

“There’s a lot of bad press about heat pumps. ‘Oh, they don’t work.’ They do if you get the right people to install it. Plumbers are not the right people. You need a specialist heating company,” Taylor says. His system, fitted by IMS Heat Pumps, cost £11,260, of which the boiler upgrade grant covered £5,000.

Will I need new radiators?

Heat pumps run most efficiently (and cheaply) when the temperature of the water flowing through your radiators is 35C to 45C, compared with about 75C for a gas boiler. So, yes, you may need bigger radiators or, best of all, underfloor heating.

That does not mean you have to upgrade every radiator, says Emma Bohan of IMS Heat Pumps. “Even if you kept your gas boiler and swapped out 30-year-old