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Forget double-glazing or solar panels, you can make huge savings by blitzing limescale

By [Richard Dyson, Financial Mail On Sunday](#)

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Keeping warm: Homeowner Charles Sterling with his dog Bristle

The Government's controversial Green Deal, which allows homeowners to borrow to improve home energy efficiency, has focused on expensive options such as double-glazing or solar panels. But what about easier, cheaper choices? One that receives little publicity but can bring dramatic savings, is cutting limescale in water systems.

Plumbers and engineers have long known about the damage and costs caused by limescale – calcium carbonate deposits that form when water is heated – but water suppliers, housebuilders and homeowners are only now waking up to the savings.

Calcium levels vary by region.

Broadly, properties east of a line between Leeds and Southampton are classified as having 'hard to very hard'

water with high calcium.

Only Cornwall, western areas of Wales and parts of Scotland have 'soft or moderately soft' water.

In 'hard' areas, homeowners will regularly need to clean deposits from showerheads, kettles, dishwashers and other appliances.

But the more serious damage is harder to see and remove.

Of the average home's total annual energy consumption – 23,000 KWh and costing £1,250 – the Government estimates that 84 per cent goes on heating. Much of this involves heating water to use directly and to fill central heating systems.

Limescale on boiler elements and in pipes drastically reduces the efficiency of a heating system or even wrecks pumps and other equipment.

The Carbon Trust, which advises on energy efficiency, calculates that every millimetre of limescale on

CRACKING DOWN ON LIMESCALE IS SAVING ME MONEY

One homeowner who has used the unit in several properties is Charles Sterling, pictured above, who lives with his family in a Victorian farmhouse in Baldock, Hertfordshire. The house was draughty and cold and lacking in insulation, Charles recalls.

He double-glazed the sash windows, insulated the roofspace and many walls, fitted solar panels and installed the latest ground-source heating, which taps into the heat in the earth.

Limescale-reducing technology was part of the upgrade and the property has two Fast Systems units.

'I've had these in two previous properties,' says Charles, who runs a firm selling products for Britons driving abroad. 'They do not eliminate limescale, but without a doubt they stop it coagulating.'

'I fitted the units myself very easily and there is no doubt that they play a significant part in the energy efficiency of the house.'

a boiler's element boosts energy consumption by seven per cent. Limescale builds in hard water conditions at about 1mm a year.

Research by the University of Plymouth found that a boiler with no limescale took 90 minutes a day to supply the average home's hot water, while a boiler with 5mm of scale took more than four hours. With 10mm of scale, this rose to more than six hours, adding hundreds of pounds to a household's annual gas bill.

In 2006, the Government required new homes in hard water regions to have water softeners installed. Several local authorities are now putting them in during council property refits.

There are two major ways of treating hard water. Traditional systems, known as 'ion exchange' softeners, introduce salt to the water as it flows into the property, offsetting the effect of the calcium.

These systems take up significant space, cost from about £300 and require occasional refilling with salt at about £30 a year.

The advantages are that the water is noticeably 'better', with users reporting easier lathering and less detergent residue on clothes. Many report improvements in skin conditions such as eczema.

Other systems rely on electric fields generated in coils of wire on the supply pipe. The field alters the structure of the calcium and prevents it accumulating, it is claimed. Instead of a hard limescale, a powdery dust appears that is easily removed.

Consumer group Which? says: 'Electric and magnetic treatments have little scientific evidence to support their effectiveness.' But such systems are increasingly used in business premises and homes, with growing numbers of satisfied customers. The advantages are low cost – as little as £100 – and simple DIY installation.

Thames Water is promoting two softeners to its 14 million customers, including the electronic Fast Systems Scaleguard unit at £118. The electricity to power it costs just £5 a year.

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Electronic water conditioners do work - we have had one in situ for over 4 years and it has transformed our water supply to the extent that when we had our old pipes ripped out, they were clear. The University of Bath did carry out a scientific research trial on the Water Imp system, that confirmed its effectiveness (it is on their website). And you can still drink the water as you are not

adding salts, chemicals etc.

- [Ferrariqirl1](#) , Darlington, United Kingdom, 10/4/2013 11:17

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We have had a salt water softener since the 90's and have just had to replace the old one after 19 years of service. The benefits are profound and the cost of the salt is offset by the savings in detergent, shampoo, conditioner, soap, etc. in addition to the savings from heating water. We had our 6 year old washing machine repaired and the drum and heating element looked almost brand new. I have a skin complaint which flares within a couple of days if we stay away in a hard water area. Wouldn't be without one now. The Brita tap filter takes care of most of the limescale for drinking water.

- [Kev69](#) , Hove, United Kingdom, 07/3/2013 18:15

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I have used a salt water softener for three years after the hot water side of our combi boiler failed due to limescale deposits which resulted in an expensive boiler replacement. We chose the clockwork model requiring no electrical connection. It is the size of a desk top PC and fits in a kitchen unit. It is very heavy but once installed that is no issue. All of the deposits around taps and shower heads have disappeared and the washing machine produces clean towels that do not dry out like a sheet of cardboard. I originally tried other cheaper products but they were useless. You need to separately protect your heating/radiator water by adding an additive such as Fernox to the system. This protects the pump and prevents rust and sludge.

- [hweaver](#) , Newcastle, United Kingdom, 06/3/2013 09:04

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What a confusing article. The central heating system is likely to be a sealed system so it won't benefit from any traditional water softener . It is of course a good idea to treat the water with additives when the system is initially filled. The traditional salt based water softener will do a great job in extending the life of pipes and appliances supplied by either hot or cold water especially in hard water areas. Being a medic , I quite agree that drinking water needs to be isolated from the salt based softeners but are ok with the in line magnetic types which aim to keep the scale deposits in solution. Paul

- [Paul](#) , Peterborough, United Kingdom, 05/3/2013 18:58

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- [Paul](#) , Peterborough, United Kingdom, 05/3/2013 18:54

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I would disagree that softeners take up "significant space". I have a non-electric softener with 2 tanks, that fits under my kitchen sink - it looks rather like a PC tower and isn't in the way at all. I actually got mine to see if it would help get rid of my eczema rather than for cost savings - I've only had it a couple of months but I'm already itching less, which is fantastic. I've also stopped using salt in the dishwasher and haven't had to clean the showerscreen as it hasn't got marks on it. I suppose time will tell what savings I can make, but less cleaning is definitely good and I wouldn't be without it now.

- [shinyf13](#) , Ringwood, United Kingdom, 05/3/2013 17:00

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I had a salt based water softener fitted in 2008 which proved to reduce limescale and make showers etc much more pleasant. Just replaced my old boiler with a new energy efficient combi only to find out at the last minute that the guarantee would be invalidated unless the water softener was disconnected. None of the manufacturers websites seemed to point this out when I was researching what model to have. I live in an area of very hard water as do thousands of others....why do they not make boilers that are compatible with salt based water softeners?

- [Stephanie25](#) , Canterbury, United Kingdom, 05/3/2013 13:09

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A cheap way to treat shower heads is to soak them in vinegar. This can be had for free by saving it from pickles jars, or bought at modest cost - the cheapest will do.

- [Corbycom](#) , London, United Kingdom, 05/3/2013 10:26

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Buy a water filter for £15 from Boots and use filtered water for cooking, kettles etc. I must admit though I do use calgon tablets in the washing machine which I have read are a waste of money, but I'm not sure I trust any of the suggested alternatives.

- [Kin8Reds](#) , London, United Kingdom, 05/3/2013 08:50

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I would like to know where Malcolm lives because our shower head has to be cleaned of limescale frequently

- [Mick - East Sussex](#) , Seaford, United Kingdom, 05/3/2013 06:52

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