

Time for more 'greentrepreneurs'

How can the UK speed up the reduction of domestic carbon emissions today while we await the renewable power age of the future? Paul Worswick, director at Oxyvent, takes a closer look...

The Energy Company Obligation, set to take over from the existing Carbon Emissions Reduction Target and the Green Deal, are two of the most talked about pieces of legislation currently driving the UK's energy conscious power march towards renewable and sustainable sources of energy.

Combined with DECC's decision to protect the £860 million of funding set aside for the Renewable Heat Incentive and ongoing discussion over Feed-in-Tariffs (FiTs), the legislation and figures are supporting the growth of a renewable energy industry.

A walk around Ecobuild this year showed the investment and drive behind renewables and rightly so. The UK needs growing numbers of 'greentrepreneurs' and business that will save us from our reliance on oil and put the carbon emissions reduction targets firmly in our grasp. However, these energy saving technologies will not be accessible to everyone over night, or even in a few years.

REDUCED ENERGY USE

So until then, to reduce the energy use of domestic homes – of which 57% is used for space heating and 25% for heating water (source: DECC energy trends 2009) - the UK seems to be relying on thinking and innovations that have been on the market for decades.

In 2009, the government placed loft and cavity wall insulation high on the agenda to reduce emissions through the Heat and Energy Saving Strategy Consultation.

It set 2015 as the target for all outstanding homes to comply and, as a cost effective and non-intrusive method to lower energy use, is acceptable for the homeowner, the installer and the government.

This will be followed by the roll out of smart meters in all homes by 2020. These will cover both gas and electricity and in field trials have been shown to save around five to 10% on energy usage. However, doubts have been cast on these numbers when mass roll out occurs. Both of these measures require little involvement from the homeowner.

Thermostatic radiator valves are the other key player on the existing emissions reduction installed product market. They require more input from the homeowner but they are cheap and enable the homeowner to better manage their heating bills by allowing them to set the temperatures of each room independently and easily switching off in unused rooms.

As is the case with the renewable energy



The easy fit Oxyvent tank enforces boilers to operate at 65°C and radically improves radiator efficiency

market, legislation has seen a boom in the growth of installers for these measures. With deadlines looming and an abundance of installers to do the job, the UK should meet the targets set.

But with this good news, a new problem starts to emerge. The installation of the existing measures outlined will reach critical mass, along with other measures outlined on the Energy Saving Trust (EST) website. When this happens, what products will pick up the carbon reduction baton?

The focus is on the renewable energy market and the domestic carbon emission technologies these measures are driving.

However, when you review the investment and skills required to install them, many are currently prohibitively expensive, intrusive to install and have very long payback periods. With or without grants, how long before these measures become realistic for households – new build and retrofit?

One of the most expensive measures on the market is ground source heat pumps, costing between £9,000 and £17,000 including installation. They currently provide savings of -£40 against an efficient gas heating system and up to £370 against a solid fuel system (source: <http://www.energysavingtrust.org.uk/Generate-your-own-energy/Ground-source-heat-pumps>).

The initial investment alone makes it prohibitive to most UK households, before you consider the lengthy payback period.

Air source heat pumps, installed for between £6,000 and £10,000, provide savings from -£130 per year against an efficient gas-fired heating system to £370 against solid fuel systems (source:

[\[your-own-energy/Air-source-heat-pumps\]\(#\)\).](http://www.energysavingtrust.org.uk/Generate-</p>
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Of course, as both air and ground source heat pumps operate at a lower temperature than more traditional heating systems, homeowners will also need to factor in budget to ensure their home is effectively insulated. If they don't, they run the risk that their home won't heat up on the coldest days, even when they leave their pumps on constantly.

For those with green consciences and tighter budgets, you'll still need approximately £5000, plus installation costs, to invest in micro combined heat and power boilers. Generating both heat for space heating and hot water, as well as electricity (around 1Kw) from your heating fuel, they are eligible for FiTs (13p per kWh). They are a market changing innovation, but still probably beyond the financial reach of most homes.

Finally, there is solid wall insulation which is very relevant to the retrofit market. However, with internal solid wall insulation costing between £5,500 and £8,500, saving £365 annually and external wall insulation costing between £10,500 and £14,500, saving around £385 per year - (source: EST estimated figures based on insulating a gas heated, semi-detached home with three bedrooms) - is solid wall insulation cost effective either?

INSTALLATION SKILLS

As the market develops, installation skills become more standard and adoption increases, it's expected that prices will fall considerably making these measures more accessible. But until then, what products are on the market that will fill the looming gap between the existing measures being rolled out and those of the future?

The answer is very little. Going back to Ecobuild, how many brand new cost effective and simple to install products – not adaptations of existing technologies - did you see to tackle domestic heating and hot water emissions? They were there, but were few and far between.

The market is so focused on how we'll power the UK in the future, we are running the risk of overlooking new affordable non intrusive technologies that can radically reduce emissions right now.

Waiting for renewable energy to become mainstream and for public opinion to embrace the need to reduce carbon emissions will happen but until then, there's no reason the industry should sit and await a fully renewable age when they can do more right now.