

How heating our homes could help reduce climate change

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(PhysOrg.com) -- A radical new heating system where homes would be heated by district centres rather than in individual households could dramatically cut the UK's greenhouse gas emissions.

In a series of reports to be presented at a major conference this week, scientists at The University of Manchester claim using sustainable wood and other biofuels could hold the key to lowering harmful [greenhouse gases](#).

Building district heating schemes which would provide heat and hot water for a neighbourhood or community would not only drastically reduce greenhouse gases but would also be highly cost effective, the authors claim.

Focus groups to test the UK public's eagerness for such schemes have already been held and have resulted in the majority of people being in favour of the localised centres.

The plans would only provide cost savings if the [heat](#) demand is very steady. Otherwise large scale dedicated electricity plants become the most cost effective way to save greenhouse gases with [biomass](#), with costs per unit of carbon saved around half that of a smaller facility.

The reports state that using wood in UK power stations gave greenhouse gas reductions of over 84% and even higher savings of 94% were possible for heating schemes.

Prepared by the Tyndall Centre for Climate Change Research to highlight the effectiveness of using sustainable fuels rather than rely on fossil fuels, the series of reports will be presented this week at the UK's first bio conference - BioTen - which begins in Birmingham today (Tuesday 21st).

Author Dr Patricia Thornley suggests using a number of supply chains, including imported forest residues and local grown [energy crops](#), would reduce emissions and save on [fossil fuels](#).

The key is that biomass must be grown sustainably, taking into account potential for damage to the environment or undesirable socio-economic impacts.

Previous work by University of Manchester researchers took this into account in concluding that sustainable biomass could supply at least 4.9% of the UK's total energy demand.

Realising that potential could result in savings of 18 Mt of carbon dioxide every year, which is equivalent to the greenhouse gas emissions

associated with around 2.7 million households.

Dr Patricia Thornley, from the School of Mechanical Aerospace and Civil Engineering at The University of Manchester, said: “Bioenergy could play a very important part in helping the UK meet greenhouse gas reduction targets that will help to reduce the impact of climate change.

“Heating homes with wood reduces greenhouse gas emissions because plants and trees absorb carbon dioxide when they are growing and then re-release it when they are burnt for heating - so the only increase in greenhouse gas emissions are those involved in things like harvesting and processing the fuel.

“This work has taken a detailed look at all those emissions and established that even when we take them into account, there are still huge greenhouse gas savings to be made.

“If we can combine the low-carbon wood with really efficient heating systems, that offers an efficient and cost-effective route to reducing the [greenhouse gas emissions](#).

“The challenge for the industry now is to concentrate on developing new efficient and cost-effective technologies for [biofuel](#) production and to concentrate on getting the heating technologies deployed in the right environment.”

Provided by University of Manchester

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