



THE UNIVERSITY *of* EDINBURGH

## *News Release*

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### **Carbon levy could limit impact of climate change, study suggests**

A decades-old tax system may offer an economical solution to the problem of catastrophic climate change, according to a new study.

A consumer tax levy on fossil fuels could provide a means of lowering their use or encouraging the adoption of cleaner alternatives, the research suggests.

Such a system – adopted from a tool devised by the economist Arthur Pigou in the 1920s – could help avert dangerously high global temperatures and sea level rises. Current economic policies for reducing the use of fossil fuels are unlikely to be as effective, the study finds.

The results emerge ahead of the upcoming COP22 climate change talks in Marrakech, Morocco, at which delegates will seek to enforce targets to keep global temperature rise to less than 2C.

The proposed levy – known as a Pigouvian tax – would offer a way to balance the competing needs of supporting economies while at the same time limiting the impact of man-made greenhouse gas emissions on the environment.

A key facet of the carbon levy is that all revenue would be recycled directly to households.

The policy would likely encourage the development of green technologies, and reduce consumption. Such a system has been successfully introduced in British Columbia, Canada.

Researchers at the University of Edinburgh, who carried out the study, designed a simple, readily understandable model of climate economics. They took into account the costs to society of climate change, the costs of adopting new technology, how the climate is likely to respond to change, and future changes in costs.

They found that under existing economic policy conditions, global temperatures are likely to continue to rise strongly this century. This is the case even when future greenhouse gas emissions are moderated in the most cost-effective way possible, with strategies that seek to optimise reductions in the use of fossil fuels.

The research, published in *Anthropocene Review*, also shows that global temperatures exceeded 1.5C above pre-industrial levels five months after the Paris Climate Agreement.

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Professor Roy Thompson, of the University of Edinburgh's School of GeoSciences, who carried out the study, said: "Estimates vary over future costs of climate damage and of potential savings from emission abatements. But what is now evident is that society needs to take much firmer action."

For further information, please contact:

Catriona Kelly, Press & PR Office, 0131 651 4401; 07791 355940; [Catriona.Kelly@ed.ac.uk](mailto:Catriona.Kelly@ed.ac.uk)