

## **'CARBON LEAKAGE' THREATENS TO UNDERMINE EFFECTIVENESS OF EU EMISSIONS REDUCTION SCHEME**

European Union (EU) policy on 'carbon leakage' – where emissions reductions in one region lead to an increase in emissions elsewhere – needs to pay more attention to the extent of competition within industrial sectors and the ability of firms to improve the carbon efficiency of their production technologies.

Otherwise, carbon leakage could exceed 50% in some sectors, meaning that for every two units of emissions cut through carbon regulation, at least one unit re-emerges elsewhere.

These are among the findings of research by **Robert Ritz**, presented at the Royal Economic Society's 2010 annual conference. In contrast to previous studies, this research shows that carbon leakage can arise due to regulated firms losing market share – rather than relocating their production facilities outside the EU.

The author argues that regulators should pay more attention to regulated firms that have fewer opportunities to make their production more carbon efficient, and to industries in which competition between firms is more intense.

The EU's emissions trading scheme (EU ETS) was launched in January 2005 with the aim of putting a price on polluting in an attempt to cut emissions. The sums at stake are large, with the annual value of carbon permits running in the tens of billions of euros. Carbon leakage is a major concern as it undermines the effectiveness of unilateral climate regulation in reducing global greenhouse gas emissions.

Current EU policy focuses on two metrics for assessing if a sector is at significant risk of carbon leakage: the carbon costs incurred by regulated firms, and their trade exposure. Industrial sectors with carbon costs and trade exposure above certain thresholds qualify for additional free allocations of emissions permits.

The research develops a method to estimate carbon leakage for an individual sector, taking account of its market structure and competitive conditions. It shows that carbon leakage is higher when:

- Regulated firms have a smaller market share, so a smaller proportion of carbon costs is passed on to customers.
- Operating profit margins in the sector are lower due to more aggressive competition between firms.
- Regulated firms have fewer opportunities to make their production technologies more carbon efficient.

The research finds that carbon leakage is likely to exceed 50% in many cases when there is little scope for regulated firms to make their production technologies more carbon efficient.

For the 'coated sheet' steel market in the EU ETS, the research estimates carbon leakage of 75% in the absence of carbon efficiency improvements. But if regulated

firms significantly improve their environmental efficiency, leakage rates can fall to 30% or less.

Emissions trading schemes require regulated firms to hold a sufficient number of permits to cover their carbon emissions, and firms can buy or sell permits on designated exchanges. Emissions permits are given to regulated firms for free or sold to them at auction.

The EU ETS was launched in January 2005, with Norway, Iceland and Switzerland recently having made similar policy commitments. Cap-and-trade policies for greenhouse gas emissions are also under consideration in Australia, New Zealand and the United States.

Concerns about carbon leakage apply to industrial sectors in which firms compete internationally – such as steel, cement, pulp and paper, aluminium, and oil and gas – in the absence of global carbon regulation.

ENDS

Notes for editors: 'Carbon leakage under incomplete environmental regulation: An industry-level approach' by Robert Ritz (Department of Economics, Oxford University and Oxford Institute for Energy Studies)