Sharing non-ETS emissions reduction efforts fairly

A recent study investigated various approaches to sharing reductions of non-ETS emissions among countries in the EU. In January 2008, the European Commission proposed post-Kyoto reductions in greenhouse gas (GHG) emissions for all 27 EU countries. These reductions will be distributed among sectors in the European Emission Trading Scheme (ETS) and sectors outside the ETS (non-ETS emissions).

ETS emissions arise from the energy and industrial sectors, whilst non-ETS emissions result from other sectors, such as residential, agricultural, transport and waste management. New proposals call for a 21 per cent cut in ETS emissions and 10 per cent in non-ETS emissions by 2020, compared to 2005 levels, with overall national targets being set for non-ETS sectors. Allocation of these reduction targets will be based on the ability of each country to pay, that is GDP per capita. For example, countries that are relatively less wealthy, but with economies that are expected to grow rapidly, would be allowed to increase emissions.

Researchers from Finland investigated the effects of different methods of sharing the overall reduction of non-ETS emissions across the 27 Member States. In the study, projected population figures, economic growth forecasts and the current levels of GHG emissions were used to estimate future emissions from the non-ETS sectors.

Four different scenarios were modelled, in which non-ETS emissions reductions were shared among EU countries. Researchers used the intensity of GHG emissions as criteria, that is the GHG/GDP ratio and convergence of GHG per capita. The scenarios were:

1. Keeping the annual rate of change in the GHG/GDP ratio the same in all countries between 2008 and 2020
2. Allowing the GHG/GDP ratio to become equal in all countries in 2020, i.e. equal emissions per GDP for all countries in 2020
3. Using historical rates of GHG/GDP from between 1993 and 2005 as a base for annual reductions. Countries with decreasing GHG/GDP ratios and moderate projected GDP growth, such as Ireland, Finland, the UK, Denmark and Sweden, would receive strict targets
4. GHG per capita becoming equal in all countries in 2020

It was found that reduction targets for each country changed, depending on the scenario chosen. A country’s individual circumstances determined how difficult it would be to meet the reduction target under each scenario. For example, scenario 1 provided the toughest target for countries including Austria and Spain, but the easiest for other countries, such as Poland and Ireland. In addition, the results demonstrated how sensitive the reduction targets were to the underlying assumptions made, the approach used and the input data. The researchers emphasised that the approach used by the study is simple, but makes it clearer to see how reduction targets could be distributed among member states.

Although the method can be used to indicate trends and targets for future emissions, a major disadvantage is that the detailed data required to model specific national circumstances cannot be included. For example, GHG emissions embedded in imported goods have not been considered in the modelling. In addition, the researchers suggest that adjustment mechanisms should be included, to account for uncertainties in setting reduction targets.

1. See: http://ec.europa.eu/environment/climat/climate_action.htm The “Climate action and renewable energy package”
2. See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008PC0017:EN:NOT Proposal for a Decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community’s greenhouse gas emission reduction commitments up to 2020 (the so-called “Effort Sharing” Decision): Sharing the effort: Fairness among Member States

Contact: laura.saikku@helsinki.fi
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