Energy futures, security and trade: implications for climate policy

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Abstract

Energy dominates the global greenhouse (GHG) gas inventory. Wider trends will affect the opportunity for climate policy to bear down on energy-related emissions. These include: level energy demand in developed countries; rising energy demand in developing countries to meet service needs; volatile and uncertain global energy prices; oil import dependence that is now back to 1970s levels; and new import dependence associated with trade in natural gas. At the same time unconventional fossil fuels with significant lifecycle GHG emissions, such as oil from tar sands and shale gas, are entering energy markets. Meanwhile, the financial crisis and subsequent recession have decreased investors' appetite for risk and the capacity to finance many low carbon energy projects.

In this uncertain time, there are varied perspectives on what the future holds for global energy. This presentation will provide examples of three different perspectives which could be said to characterise "parallel universes". The first, from a major global energy company, projects current trends and envisages some progress in low carbon technologies but basically a continuation of the fossil fuel paradigm with rising CO_2 emissions through to 2030. The second, based on the IEA's Energy Technology Perspectives work, takes a back-casting approach and asks what needs to happen in the energy system if global emissions are to be halved by 2050 in line with a $2^{O}C$ goal. This requires massive decarbonisation of the electricity system, ambitious energy efficiency measures and a move towards the "electrification" of many final demand sectors. This is the world inhabited by LCS researchers. The third perspective, also from a major energy company, involves an exploration of different possible futures and the degree to which different countries coalesce round shared interest and agendas. In the best possible world, GHG emissions are back to 2000 levels by 2050 but, if countries stick to their narrow interests, emissions continue to rise.

The presentation emphasises the importance of linking the climate agenda to other policy concerns and domains. There is a closer examination of the link between climate policy and energy security. Energy security is a multi-faceted concept and a range of measures is needed to promote security. In general there are synergies between the security and climate agendas, but the alignment is not perfect. A case study of the UK indicates that a security-based energy strategy which still meets climate goals would place a larger emphasis on energy efficiency than would a strategy based purely on climate concerns. Low carbon supply helps to reduce exposure to uncertain and volatile energy prices but brings some challenges to reliability of supply that must be addressed.

The presentation also highlights some of the tensions between ambitious unilateral climate policy measures and trade issues, taking as examples a number of measures under consideration by the EU. The presentation concludes by underlining the message about linking climate policy to other concerns and asserts the need for constructive dialogue to manage the inevitable tensions associated with increasingly unilateral climate policies.