



## **'Trade and technology dimensions of energy use and climate change'**

29<sup>th</sup> September 2012

*Venue: Magnolia Hall, India Habitat Centre, New Delhi*

The nexus between trade, energy use and climate change is receiving much attention lately. Developed countries adopting emission reduction measures and competitiveness concerns in these countries, have led to proposals for tariff or border tax adjustments to offset any adverse impact of capping carbon emissions. However, such adjustment measures can impose significant economic costs upon developing countries by affecting market access and reduced export revenues. This might in turn affect their ability to adopt clean energy and energy efficient technologies.

Imposing environment related trade restrictions has been discussed in economic and legal spheres. Opinion is divided however on whether such border tax adjustments are permitted under the World Trade Organizations (WTO) law for taxable inputs that are not physically incorporated in the final product. There is also an apprehension that carbon or energy efficient related standards, both government and private, may proliferate affecting exports from developing countries. As per the WTO Agreement on Technical Barriers to Trade (TBT), standards and conformity assessment procedures should not create unnecessary obstacles to trade or be used as protectionist tools.

*Moreover, Article 3 of the UNFCCC states that: "The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade." The Kyoto Protocol provides that its parties "shall strive to implement policies and measures ...in such a way as to minimize adverse effects, including... effects on international trade" (Article 2).*

Interestingly, there are instances of proposal to impose trade sanctions/barriers against countries that do not impose controls on carbon emissions, either through use of renewable energy or use of energy efficient technology (e.g. Waxman-Markey bill introduced in the US Congress). However, it is not clear whether such unilateral measures can really tackle the global problem of climate change or impact the competitiveness of developing countries. Some studies



have also shown that the competitiveness impact of emission measures is not significant.

Developing countries may want to deploy energy efficient technologies and rely more on renewable energy sources as such a strategy would also improve their energy security situation. But such plans may be difficult to implement due to limited access to technologies. One of the reasons could be the global intellectual property rights regime which may not be sufficiently conducive for diffusion of such technologies. However there is no global consensus on this issue. For example, while the developing countries are having greater flexibility in patent regimes in green technologies, the US clean energy and security act has emphasised strong protection of green technologies.

Given this context, TERI has undertaken a study to understand the trade, technology and IPR issues related to energy use and climate change. The interim findings are already available and we are planning a seminar to discuss the possible implications further from different perspectives.

We analyzed India-US trade as a case, as US is a very important trade partner for India where exports to US accounts for 12% of India's total exports. Any future measure is perceived to have significant impact on India's total exports. We found that the estimated overall reduction in India's exports to US under two scenarios (carbon tax of Euro 20 and 30 per ton) is 2.5% and 4% respectively. Amongst the top 10 commodities exported to the US (2006-2007), iron and steel, cotton textiles, chemicals, in CPCB list of 17 most polluting industries. Key products that are going to experience a decline in exports of more than 10% include, cement products, fertilizer, iron and steel and pulp and paper, glass and ceramic under both the scenario. In value terms, iron and steel sector will experience a maximum dip in revenue of Rs.98,629 lakhs (under scenario 1) and Rs.1,47,944 lakhs (under scenario 2). i.e. 14% and 21% of the 2006-2007 level exports. Cotton textiles will be the sector to experience the second highest decline in revenue after iron and steel of Rs.60,972 lakhs (under scenario 1) and Rs.91,458 lakhs (under scenario 2). It is of course not clear if border carbon tax is imposed at all what will be the actual basis.

This study also tried to understand the issues surrounding mitigation and adaptation technologies with the help of case studies. One particular company with a global presence in wind power has found it a good business strategy to take over companies in different parts of the world, in order to acquire their patents. This tendency, according to some stakeholders interviewed, has acted as

a major barrier to the development of indigenous technology in India. Most of these technologies acquired from foreign companies, either through licensing or take over are with very little adaptation. For example, wind power technologies are designed for sub-zero temperatures, dust free environment and European wind flows, and hence, turbines have high rates of break down in India leading to high costs. While this could be brought down if appropriate technologies are developed indigenously, indigenization of technologies is not taking place at a rapid pace and IPR issues could be partly responsible for this. In biotechnology, Indian companies often develop alternative technologies rather than accessing existing technologies in foreign countries as they are often expensive. This of course takes time and delays the process of adopting advanced technologies.

In light of these interim findings, the seminar will try to address the following questions:

- What are the potential bases of imposition of border adjustment tax at developed country destinations?
- How serious is the threat of carbon or energy efficiency related standards affecting trade of developing countries?
- What can be the potential solutions/reactions to those emerging challenges?
  - Clean energy, energy efficient technology, trade retaliatory measures etc.
- How important is it to make changes in the global IPR regime to facilitate greater access to efficient and clean technologies for developing countries?
- How can developing countries' devise IPR regimes which while honouring TRIPs obligations are able to achieve the twin goals of achieving technological innovation and facilitating technology transfer?