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Harnessing Trade and Markets for Sustainable Energy: A Case for a Sustainable Energy Trade Initiatives

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A much faster and more effective scale-up of innovation, use and diffusion of non-fossil fuel energy technologies is an imperative of the international community. The challenge to de-carbonise production and economic activity comes at a time of rapid expansion in energy demand, and in a context in which half of the world's population currently has no access to modern forms of energy. Globally, as the Intergovernmental Panel on Climate Change (IPCC) has noted, fossil-fuel based energy supply is the largest single source of greenhouse gas emissions.

In 2004 conventional energy supply and its related use in the buildings, industry and transport sectors were responsible for about 70 percent of global GHG emissions. More recent estimates from the International Energy Agency (IEA) placed such emissions at a record high of 30.6 Gigatonnes (Gt.) in 2010 alone, making the targets set by the international community to limit climate temperature rise to a maximum of 2 degrees centigrade (36 degrees Fahrenheit) extremely difficult to meet.

Indeed, for the “pathway to be achieved, global energy-related emissions in 2020 must not be greater than 32 Gt. This means that over the next ten years, emissions must rise less in total than they did between 2009 and 2010,” the IEA notes. Non-clean energy sources - i.e. fossil fuels - currently account for about 80 percent of emissions worldwide, and existing infrastructure and projects in construction are estimated to already lock-in to 2020 approximately 20 percent of those emissions. The geographical distribution of GHG emissions is highly heterogeneous, as is energy consumption. While they only host a fifth of the world's population, 40 percent of emissions continue to be generated in OECD countries, and 40 percent of energy demand is located there.

However, as many parts of the world experience rapid economic growth and the energy needs of millions worldwide in the developing world still remain unmet, the use as well as reliance of many countries on imported fossil-fuels is set to grow further.

From an environmental, energy-security, and economic perspective, a shift to sustainable energy use - low-carbon sources of energy as well as greater energy-efficiency - is therefore desirable. Low carbon sources of energy include solar, wind, biomass, and small-hydro power (that avoids negative environmental impacts associated with large-hydro). They could also include relatively lower carbon biofuels used for transport if produced under the right conditions.

The challenge of deploying and scaling-up sustainable energy

While de-coupling economic growth from fossil-fuel use and a replacement with sustainable energy sources is desirable, it is far from easy. A deep de-carbonisation of the power sector required for halving energy-related emissions by 2050 and boosting the

share of renewable energy from current levels of around 13 percent to 30-40 percent by 2050 would entail enormous effort according to the World Bank's 2010 World Development Report. It would imply, deploying every year for the next 40 years, an additional 17,000 wind-turbines (producing 4 megawatts [MW] each hence 68000 MW annually); 215 million square metres of solar photovoltaic panels, 80 concentrated solar power plants (producing 250 MW each); and 32 nuclear plants (producing 1000 MW each). Despite increasing levels of investments in recent years in sustainable energy the world it is still short of the levels of scale-up required. As an example of comparison for wind, the biggest capacity addition in wind energy since 1995 happened during 2008-2009 when close to 40000 MW was added, according to the World Wind Energy Association.

A major challenge associated with deploying sustainable energy is its high price relative to conventional fossil-fuels. This is partly due to the non-pricing of negative environmental externalities that are associated with fossil-fuel use. The playing field in favour of sustainable energy is further tilted by the subsidies that are often provided to fossil-fuels. While fuel-costs - except in the case of biomass - are low or zero for sustainable energy, they are characterised by high upfront costs owing mainly to high equipment and capital-related costs. While costs continue to decline over time for established technologies such as solar, universal “grid-parity” or equivalence of renewable electricity with that generated by fossil-fuels may require further significant cost-declines in sustainable energy deployment. An easier weapon in the armoury to fight climate change will be deploying energy-efficient measures that will lower energy intensity for economies, enable similar energy output to serve a larger number of people and uses and also help reduce expensive fossil-fuel imports for many countries. The UN has declared 2012 as the International Year of Sustainable Energy for All, and its Advisory Group on Energy and Climate Change - composed of major energy companies and UN agencies - has recommended universal access and a 40 percent increase in energy efficiency in the next 20 years. If these recommendations are implemented, this could reduce global energy intensity by 2.5 percent per year, approximately double the historical rate.

The role of domestic sustainable energy policies and their interface with trade

The high upfront costs entailed in the deployment of sustainable energy means that domestic policy intervention is required to create a more level playing field between sustainable and conventional energy sources and foster an “enabling environment” for investments into sustainable power generation. In addition to domestic sustainable energy policies, trade policies also help in enabling sustainable power producers to access equipment and services of the desired quality at competitive world market prices.

In a sector that is sensitive to high upfront equipment costs, enabling power producers to buy equipment at the most competitive prices will contribute to bringing down costs of sustainable energy generation. A wide variety of sustainable policy instruments can be deployed in this regard. They usually focus on regulatory and fiscal measures such as renewable portfolio standards or on fiscal incentives such as tax-credits. Such measures reduce both investment and production-related costs for renewable energy producers. Domestic sustainable energy promotion policies also work to increase consumer demand, either through a system of incentives such as tax reduction on solar home equipment or regulations such as mandatory purchase requirements. A similar set of policies can also influence the supply of, and demand for, sustainable transport fuels and technologies.

However countries often introduce these policies not only with a view to deploying sustainable energy but also to create domestic jobs and foster the growth of new “green” sectors and technologies. While synergies between these various objectives are possible, these policies may also be designed or applied in a manner that restricts trade or discriminates against foreign sustainable energy goods and services (SEGS) suppliers in order to meet domestic employment and industrial policy objectives. Direct trade policies such as higher customs duties on imported equipment or restrictions on the entry of foreign services suppliers may also be deployed in this regard. This can prevent sustainable energy equipment manufacturers who operate through a complex network of supply chains from sourcing components and services from their most efficient production/supply location. Thus both trade-policies (directly) and domestic sustainable energy policies (through the way they are designed and implemented) can create barriers for supply chain optimisation in the sustainable energy sector.

Non-tariff trade-related barriers to SEGS are diverse and may range from domestic support measures for biofuels to export restrictions of critical raw materials and various modes of services supply. Local content requirements are one policy that many countries use to create domestic jobs in sustainable energy manufacturing, specifically by mandating the use of locally-made components or technologies in sustainable energy projects. Countries may also link incentives or subsidies to power producers to the use of local equipment. Such measures have already triggered trade disputes at the World Trade Organization (WTO) and, should their use spread, may generate further trade friction.

Other trade and market barriers could be sparked by domestic laws and measures linked to investment, government procurement, competition policy and trade facilitation, or possibly by their absence. A great diversity of product-related standards or, on the contrary, an absence of standards could also hamper trade and diffusion of renewable energy equipment, as well as energy efficient products.

Countries that are high greenhouse gas emitters and those relying on fossil-fuel imports could benefit from environmental and energy-security perspective in addressing these barriers and fostering greater trade in SEGS. From an economic perspective, many of these are countries that are also major producers as well as traders of SEGS along various points in the value-chain.

Addressing trade and market barriers: The Relevance of Sustainable Energy Trade Initiatives

It may be possible to address some of these barriers taking recourse to existing rules disciplines in the WTO. However WTO rules in many areas of the energy sector (including sustainable energy) are ambiguous. The WTO’s Doha round negotiations are presently stalled including negotiations on environmental goods and services that could otherwise have addressed some of these barriers. Other venues outside the WTO may not have a proper mandate to address trade-related barriers. Some, such as the Energy Charter Treaty, do address issues of investment and transit but do not offer Members the scope of reflecting or binding trade-related concessions. And despite their importance from the perspective of SEGS trade, they do not include the US and major emerging economies such as China, Brazil, South Africa, Mexico, and India as full-fledged members. Under these conditions, countries can explore a variety of ways to address trade-related issues that may stand in the way of further scaling-up sustainable energy as well as ensuring economic benefits to all countries, particularly developing ones.

Sustainable Energy Trade Initiatives (SETIs) can be conceived as one way to provide enabling governance where it doesn’t exist, and to do so in a focalized manner. They could provide enabling frameworks at international level with the widest possible participation and a common set of disciplines (with due consideration for development levels) that are necessary to speed and scale up further introduction of renewable forms of energy.

They can establish international cooperation to address climate change, longer-term energy security and enable a transition to a low-carbon economy. It would be focused on ensuring robust markets for sustainable energy-related goods and services (SEGS) by tackling trade-related barriers and providing a global framework for sustainable energy trade (comprising technologies and components necessary for sustainable power generation through solar-PV, wind, small-hydro and biomass as well as those required to achieve greater energy-efficiency in end-use sectors (buildings, industry and transport). Eventually it could also comprise cross-border trade in sustainable energy. They could ensure that policies are implemented in a manner that is fair and non-discriminatory to trading partners

They could be pursued either within the WTO framework, including agreements amongst like-minded countries, or outside of the WTO. They could comprise, depending on what countries decide may be the best approach, either legally binding agreements or voluntary approaches. The non-binding nature for instance of venues such as APEC for instance enables ambitious initiatives though it may provide less than the desired amount of predictability. SETIs could also be developed as ‘templates’ that depending on various conditions and circumstances be integrated into RTAs or other bilateral trade agreements as well. Thus, SETIs could enable a fresh approach that takes a holistic and integrated view of the sustainable energy sector, while simultaneously addressing a variety of market and trade-related barriers. They could be a way to bring together countries interested in addressing climate change and longer term energy security, while maintaining open markets. Numerous possible pathways could be conceived for such initiatives in terms of structure, as well as the scope of issues and market barriers to be addressed, timelines for addressing issues as well as their implementation, whether legally binding or voluntary agreements etc

If countries decide to transform any SETI into a formal Sustainable Energy Trade Agreement, (SETA) they could consider a stand-alone plurilateral agreement similar to the Government Procurement Agreement (GPA) at the WTO. Alternatively, they could extend concessions on a most favoured nation (MFN) basis to all WTO Members, similar to the Information Technology Agreement (ITA), with such an extension made conditional on the accession of a “critical mass” of Members based on various trade, climate, or energy-related criteria.

Certain countries may also wish to conceive of a SETI as a stand-alone plurilateral agreement outside of the WTO, the advantage in this case being that membership would also be open to other, non-WTO Members. There could also be a possibility of eventually incorporating such an agreement into the WTO framework at some point in the future. If concluded outside the WTO, members would need to clarify the agreement’s relationship with existing WTO rules and agreements, including with regard to any dispute settlement mechanisms.

Each of these approaches for a SETIs has its own pros and cons. It may be difficult to obtain traction for a legally binding agreement amongst certain groups of countries. However, effective implementation as well

as predictability could be concerns as far as ‘softer’ approaches are concerned although more contentious issues could be discussed and more countries may be willing to sign on. Whatever the approach adopted, negotiators should ensure that the “development dimension” is reflected in the modalities, including special and differential treatment for developing countries as well as meaningful provisions on facilitating access to climate-related technologies, technical assistance, and capacity building. For instance a special fund that could enable developing countries to purchase licenses for certain technology sectors could be created either within SETIs or as part of the UNFCCC “Green Fund” and be linked to SETI obligations on trade and vice-versa. Alternatively here could be provisions on financing renewable energy infrastructure projects within SETI developing country members at concessional rates by international financial institutions or development banks.

While not a “silver bullet” remedy for all the trade-related issues and challenges on sustainable energy, a SETA might facilitate alternative or innovative approaches to liberalising sustainable energy goods and services. It could provide an environment conducive to assessing the linkages between sustainable energy goods and energy services, and serve as an ideal “laboratory,” where rules and disciplines pertaining to sustainable energy could be clarified and take shape.

In addition to its catalysing effect on world trade in a sector of huge importance to global climate mitigation efforts, such an agreement could constructively inform, and perhaps even shape the course of future negotiations and work at the WTO as well as the UNFCCC.

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Please note that this paper is in draft form. It will be revised and included in an e-book that ICTSD will publish shortly after the WTO ministerial conference.

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