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## Promoting Standards Harmonization in the Fight Against Climate Change

BY LLEWELYN HUGHES

Last year the US and Japanese governments affirmed their joint commitment to fight climate change by cooperating in developing clean energy. Both countries are also pursuing green innovation independently. In his 2013 State of the Union address President Barack Obama called on Congress to allocate greater funds to the development of renewable technologies, and the Japanese government has long supported the development and deployment of more energy efficient technologies.

These initiatives are crucial in the fight against climate change. The emerging battle between auto manufacturers in Japan, the United States and Europe over standards for electric vehicles shows, however, that green innovation is as much about competitiveness as it is about helping the environment. It also illustrates that market outcomes can at times hinder—rather than help—the deployment of important technologies. The clean energy innovation agenda promoted by the US and Japanese governments thus needs to work to ensure market competition spurs, rather than harms, the deployment of less carbon intensive technologies in the transport sector and elsewhere.

### Climate Change and Transport

Reducing the role of oil in transport is a notable focus of the strategies developed by both governments to cut greenhouse gas (GHG) emissions. This makes sense. Companies in the United States, Japan and elsewhere, have made great strides in reducing the use of oil since the 1970s. Yet the transport sector remains tied to oil products, due largely to the lack of competitive alternatives. As a result, emissions from the transport sector make up a large share of global GHG emissions. The International Energy Agency, for example, estimates that GHG emissions from the transport sector made up 22 percent of emissions globally in 2010, with the majority coming from road transport.

It will take decades to roll over the stock of vehicles on our roads so that they are more fuel efficient. This makes it important to start now. Here, regulatory standards, efficiency targets, and subsidies and consumer information already play important roles in improving vehicle efficiency in the United States, Japan, Europe, and elsewhere. Yet the enormous growth in the middle class in China and India means greater vehicle efficiency needs to be balanced with the increased adoption of next-generation vehicles globally, along with greater use of non-fossil fuel-based electricity generation.

### Barriers to Next-Generation Vehicles

It is here that market leaders in the United States and Japan have a crucial role to play. There remain formidable barriers to the rapid deployment of next-generation vehicles. Battery technologies are one important impediment to greater consumer uptake of electric vehicles. Another is price, given that the cost of electric vehicles and hybrids remains high when compared to conventional fossil-fuel vehicles.

**Llewelyn Hughes**, recent Japan Studies Visiting Fellow at the East-West Center in Washington, explains that "The clean energy innovation agenda announced by the US and Japanese governments in their Shared Vision for the Future should retain a focus on how to better cooperate in standards setting, in consultation with European and other partners, in order to expand markets, drive down costs, and promote the deployment of more energy efficient technologies."

Taking these challenges into account, it is important to reduce the barriers to the uptake of alternatives to conventional autos. Here the US, Japanese, and European governments should be lauded for providing subsidies and tax breaks to make hybrids and other cars more affordable, which has, in turn, led to an increase in their use.

In another sense, however, the barriers to the deployment of greater numbers of electric vehicles are growing. Since 2010, a Japanese industry consortium has promoted a standard for fast-charging infrastructure called "CHAdeMO." Unlike regular charging, which enables owners of plug-in hybrids or pure electric vehicles to recharge their cars overnight, fast charging infrastructure allows owners of electric cars to gain a substantial charge in less than thirty minutes. CHAdeMO itself is a play on words, meaning both "Charge and Go," and "[How About] Some Tea?," a common refrain between friends in Japan when meeting, thus hinting that the car can be charged in the time it takes to sit down and have a cup of tea and a chat.

**"The battle over fast-charging standards points to the need for better coordination in order to harness competition in the fight against climate change."**

Fast-charging infrastructure is one step towards overcoming the range-anxiety that impedes consumer interest in electric vehicles. A Japanese consortium, headed by TEPCO, Nissan, Mitsubishi, and others, have made the CHAdeMO standard open, meaning others can use it without having to pay royalties. CHAdeMO is now available in almost 2,000 locations in Japan and internationally, including in the United States. Japanese manufacturers are currently working to make CHAdeMO the de facto standard for fast-charging. Yet a number of US and German auto manufacturers have announced their support for a rival standard, called the Combo, and in October last year the private standards body, SAE International, announced that it supported the Combo standard. China has announced a fast-charging standard of its own.

## A US-Japan Agenda

This is not to lay the blame with US, Japanese, or other automakers. Part of the argument over the better charger, CHAdeMO or Combo, is technical; another concerns genuine disagreements about what is more practical for drivers. But regardless of which technology is optimal, the emergence of the rival standards threatens to increase costs and confusion among consumers.

The battle over fast-charging standards points to the need for better coordination in order to harness competition in the fight against climate change. In particular, the competition over fast-charging shows that while supply chains are globalized, the national innovation systems that promote industrial competitiveness, and which are now being redeployed to help combat climate change, remain national in scope. This can lead to a mismatch between the public policy goal of developing and deploying important climate-related technologies at a rapid pace on the one hand, and coordinating and promoting the interests of national companies on the other.

Because of this, an important, but often overlooked, component of the innovation agenda is the need to improve coordination in industry standard setting. In the case of fast-charging technologies, earlier coordination between Japanese, US and European regulatory authorities might have been able to head off competition over standards, resulting in a more uniform electric charger. More generally, early coordination would ensure that lack of harmonization does not impede the development of new markets for goods and services that must be employed in the fight against climate change. The clean energy innovation agenda announced by the US and Japanese governments in their Shared Vision for the Future should retain a focus on how to better cooperate in standards setting, in consultation with European and other partners, in order to expand markets, drive down costs, and promote the deployment of more energy efficient technologies.

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