

Hybrid Day on the Hill

June 11, 2009

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It's a great honor for me to be here, and it's a pleasure to see in person this impressive array of cutting-edge, U.S.-made hybrid trucks.

At the Center on Globalization, Governance & Competitiveness, our research often leads us to ask, "What does it take for firms, industries and nations to compete in the global economy?" Today we are confronted with global warming. Because we now live in a carbon-constrained world, the rules of competitiveness have changed. Our Center is now exploring a new concept we call "Low-Carbon Competitiveness."

We are producing a series of research reports called *Manufacturing Climate Solutions*. So far we have analyzed 10 carbon-reducing technologies—including LED lighting, solar, wind, and now hybrid trucks. We study the market potential of each industry and the associated jobs. To do this, we need more than a traditional industry view of the end product.

Instead, we use a framework called value chain analysis. We start with the basic input/output structure of a supply chain—tracing all the inputs, from raw materials through components through the final product and the end buyer. We add a company overlay, naming major firms. We show the different points where value is created. We identify who has power in the chain to drive things forward.

The geography of a value chain tells us a lot about employment and economic development. Our analysis tries to map out the regional opportunities, the global markets. It allows us to zoom in or out, and it gives us a systemic view of an industry, showing the full reach of opportunities.

Across the various industries we have studied, we've noted several characteristics that tend to indicate a good competitive position. The U.S. hybrid truck industry appears to have 6 of these characteristics.

1) Low Carbon. Hybrid trucks dramatically reduce fuel use and emissions, which Victoria Mills from Environmental Defense Fund will soon describe for us in greater detail.

2) Manufacturers. U.S. firms are the world's leaders in truck manufacturing. In the few short years that American companies have been involved in the hybrid truck space, the domestic industry has grown with unequalled momentum. As you can see on the U.S. map of hybrid truck manufacturing and R&D, the jobs are already dispersed in more than 30 states. There are some regional hot spots, including the north-central industrial states hardest hit by manufacturing job losses, as well as California, Texas, and North and South Carolina.

3) Big Buyers. The buyer category is an extremely important part of the value chain, and in this industry buyers have been major players since the beginning. More than 95 commercial fleets have either bought hybrid trucks or are working with manufacturers to test and develop new models—including FedEx, UPS, Coca Cola, Pepsi, Verizon, and Wal-Mart. In an emerging industry, this is an extraordinary degree of cooperation between producers and buyers.

4) Synergies. The value chain for hybrid trucks includes energy storage, including advanced battery development, ultra-capacitors, and perhaps things we don't even know of yet. It includes power electronics and control systems—hardware and software used for simulating, modeling, and for optimizing energy flows. These advances have significance way beyond vehicles; they will be crucial to the future of wind, solar, the smart grid, and other areas the United States should be investing in, in order to compete in a carbon-constrained world.

5) Smart Policy. There are a lot of ways to provide appropriate support to a new, innovative industry. Our report identified 2 things government can do: help truck buyers with the purchase cost so they can make volume orders. This in turn brings production costs down, which is often the turning point where a new industry can take off. Government can also provide sustained support and partnership to keep developing hybrid technology. These advances have strategic value well beyond hybrid trucks. In fact, they are central to this whole new frontier of low-carbon competitiveness.

Today is an exciting day. I'm very glad to be here, and I look forward to hearing more from the experts about how to seize this competitive opportunity.