



Fuel Economy Trumps Alternative Fuels *Scatter Shot Approach Likely Model for Climate Policy*

BOSTON, December 1, 2009—In a 15-year projection of the global transport fuels market released today, ESAI Energy LLC, a division of Energy Security Analysis, Inc. (ESAI), found that, although climate policy, economic development, and advancements in technology will inspire a broad range of new fuels and vehicle technologies, fuel economy improvements will have, by far, the largest volumetric impact on the global consumption of hydrocarbon-based transport fuels.

The study, *Scatter Shot Reform: Fuel Engine Pathways for Automotive Transportation 2010-2025* explores the global trends for alternative fuels and vehicle efficiency technologies, quantifying their impact on gasoline and diesel fuel demand. ESAI's bottom-up approach measures the impact of each fuel and engine technology in each country over the next 15 years and identifies approximately 10 million b/d, nearly 17 percent, of conventional oil demand at risk as alternative fuels penetrate the transport fuels markets and new vehicle technologies and fuel efficiency gains lessen transport fuel demand overall. "There is no single fuel or technology driving this transformation of the transport fuels market. Instead, there is a scatter shot approach in each country or region that, when taken together, will reshape the oil markets. Among those outcomes, fuel economy will have the biggest impact and is the policy lever that ties transport reform closest to climate policy," says Sander Cohan, ESAI Principal.

ESAI's research evaluates the global impact of 15 potential fuel pathways, covering sources as diverse as cellulosic ethanol, compressed natural gas, and plug-in hybrids. ESAI concludes that unique features of each geographic region— policy drivers, technological development, and the availability of economic resources—will result in haphazard reform. Automobile technology and stricter fuel economy standards in the U.S., China and even Europe will provide half of the avoided hydrocarbon-based transport fuel demand. All alternative fuels combined will provide the other half.

Furthermore, transport fuel reform will serve as a useful model for the implementation of policies to combat climate change. Policies and technologies used to address climate change will vary from region to region, driven by local forces rather than global consensus. This will have a bearing on global climate talks.

This week's United Nations Climate Change Conference is the next opportunity to set the agenda for climate change. However, early reports already indicate that the Copenhagen talks will be an effort to compare national and regional plans, instead of real progress towards a global solution. Going forward, climate talks are expected to be more along these lines, focused on aligning regional efforts rather than global plans. "As the climate conference opens in Copenhagen, it is increasingly clear that a substantive global climate treaty is unlikely and unnecessary," said Sarah Emerson, ESAI President. "While international negotiations may help align benchmarks for carbon emissions, we believe the most effective climate change policy will unfold at the regional and national level. Incremental but steady steps that are tailored to each country or region will make a larger impact on carbon emissions than an overarching, and possibly unworkable, goal."

For the legacy energy company, opportunity lies not simply in choosing the winning fuel pathway to supplement or replace conventional oil demand, but in leveraging one's supply chain and market expertise to partner with innovation and capitalize on policy-driven opportunities in the transport fuel markets. In addition, the research, development, and investment capabilities of existing energy companies will be critical to implementing new fuels on the desired scale.

The scatter shot reform of the global transport fuels market is underway. While the ultimate volumes of avoided demand for traditional petroleum are still relatively small on a global basis, they are not insubstantial overall and are impressive within some countries. Climate policy and the attendant technology and fuel solutions are likely to follow the same approach.

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