The New York Times

February 23, 2012

# The Methanol Alternative to Gasoline

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PRESIDENT Obama recently called the United States the “Saudi Arabia of natural gas” and asserted that it was time for our oil-dominated transportation fuel market to open the door to natural gas. He’s right. It would be cheaper for consumers and reduce the strategic importance of oil. But first we need cars that can run on methanol, a high-octane fuel made from converted natural gas.

We’re producing more natural gas these days than we can use, thanks to new techniques to extract gas from shale. A recent report from the M.I.T. Energy Initiative, “The Future of Natural Gas,” called methanol “the liquid fuel that is most efficiently and inexpensively produced from natural gas.” China has already taken notice. Automakers there, like Chery, Geely and Shanghai Maple, have all introduced vehicles capable of running on methanol. Indeed, methanol is so much less costly per mile than gasoline that illegal fuel blending is rampant in China.

Unfortunately, most cars sold in the United States offer consumers no choice beyond gasoline. The so-called flex fuel vehicles that are now on the market are warranted to operate only on gasoline and ethanol. If Congress were to enact an open fuel standard that required new cars to be warranted to run on all-alcohol fuels, including methanol, natural gas could compete with oil in the liquid fuels market. Producing these cars would cost about $100 more. And these fuels could be distributed through the current refueling infrastructure with only slight retrofits.

The current global spot price for methanol made from natural gas is $1.13 per gallon, without any subsidy. Methanol produces about half the energy per gallon as gasoline, so you need to burn twice as much

to go just as far. But it is still cheaper than gas. It would cost approximately $3 today, including taxes, distribution and retail markup, to travel the same distance on methanol as on a gallon of gasoline, according to calculations by the Methanol Institute, a cost that is well below the current national average for gasoline. If the economics of natural gas change, a flex fuel vehicle could still run on methanol made from coal, biomass and possibly recycled carbon dioxide, if that technology proves economical.

Natural gas can also play other roles in the transportation sector. It can be used to generate electricity to charge the plug-in hybrids and electric vehicles that have entered the market. And if natural gas prices were to spike, there is always coal, nuclear or renewable power to rely upon for power generation. (Today, only 1 percent of the electricity in the United States is generated from oil.) Still, mass-market penetration of plug-in hybrid and electric vehicles will take some time, because of the high cost of automotive batteries.

Another way to run cars on natural gas is by using compressed natural gas, or C.N.G. These vehicles require a dedicated fuel line and a large gas canister in the trunk. However, the cost of converting a light-duty vehicle to C.N.G. is over $10,000. Such an upfront cost would be reasonable in high mileage users (over 35,000 miles per year) like taxis, buses and garbage trucks, but is too high for a typical car owner, and the return on investment would take many years, even with current low natural gas prices.

America is rich in natural gas and coal, but this is meaningless in terms of energy and economic security as long as our cars are unable to run on fuels made from these domestic commodities. Consumers should have a choice in the cost and type of fuel their vehicles require.

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