

COMMENT

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America must end its dependence on oil

A little over a year ago we helped organise an effort among a wide range of groups in the US to draw public attention to the potential for two emerging trends to bring down the global economy. These trends, which affect the price and availability of energy, are the greater-than-expected pace of increased demand for oil in China, India and other emerging markets and the threat of disruption of Persian Gulf supplies by a terrorist attack. They have helped push the price of oil to more than \$60 a barrel with forecasters seeing little prospect of it ever going below \$50 again.

The sober awakening to these two trends by governments and the oil industry was underscored by a new round in the debate concerning the "peak" of oil reserves – the top of the bell-shaped curve that represents the world's oil reserves and the lower production and higher cost of oil products that lie ahead when the peak is reached. Most experts agree that we will reach the peak within 25-30 years.

Because the impact of growing demand and dwindling supplies is long-term, it is not surprising that there has been only a cautious response to these factors from governments, with no noticeable action. It is less understandable that political leaders from Tokyo to London and Washington have failed to deal with the threat of a disruption in oil flows from the Gulf.

Such an attack on, say, Ras Tanura, an important oil-processing centre in

Saudi Arabia, could remove up to 4m barrels a day from the market and overnight send the price of oil well above \$100 a barrel. Such a sharp disruption could last for up to a year and could lead within weeks first to the meltdown of the Japanese economy, due to its almost total dependence on imports, and before long to the collapse of other industrialised economies.

This is not alarmist speculation; it approaches a consensus view among oil industry experts and among governments. So why is the US government not charting an aggressive course towards a solution? To be fair, President George W. Bush has spoken candidly of the risks of our reliance on foreign oil and has proposed some measures to deal with it. The core of these have thus far concerned the supply of traditional petroleum; that is, to increase US production in the Arctic National Wildlife Refuge and other known oil and gas deposits off US shores. But those measures alone will not come close to getting America off foreign oil.

The good news is that there is a large family of proven technologies available that could entirely eliminate US reliance on foreign oil within 20 years and sharply limit other oil importers' reliance as well. Specifically, America should take four steps towards energy independence.

First, we must move away from reliance on petrol towards a mixture of alcohol (ethanol and methanol) and petrol. Brazil has demonstrated that ethanol produced from sugar cane is

competitive at the pump when oil is above \$45 a barrel. Most Brazilian vehicles are today running on a mixture of ethanol and petrol that costs roughly \$1.75 a gallon to produce. Methanol can be made from coal – and the US is the Saudi Arabia of coal – at a cost of roughly 50 cents a gallon. Diesel engines should use diesel produced

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from renewable sources and coal. Second, cars and trucks should be made to burn a variety of fuels. This technology has been available for generations. Half the new cars sold in Brazil now are flexible fuel vehicles. A vehicle can be given this capability for roughly \$150.

Third, we should move to using hybrid-electric vehicles. Half of the 150m cars and trucks on the road in America drive only 20 miles a day. Equip the hybrid with a more capable, but still state-of-the-art, battery, plug it in at night to "fill up" with electricity for the equivalent of as little as 25-cent-per-gallon petrol, and it will take you 20 miles with no loss of performance

before any petrol is needed. Fourth, we should retool Detroit – the carmaking capital of the US – to use lighter, stronger carbon composite materials. Transforming all US vehicles over the next 20 years to be made of largely carbon composite materials could cut oil imports by 32 per cent and provide stronger, lighter and safer vehicles.

Predictably there has been resistance towards such technologies within the automobile and energy industries, but their concerns over safety and cost can be answered. Alternative fuels are affordable and the practicality of the vehicle technologies is being shown in Japan by Toyota and other manufacturers. Odds are there will be a plug-in hybrid from Japan within two years and it will take away even more market share from Detroit.

Even if all these measures were adopted it would take 20 years to replace the 150m vehicles on the road in the US. But the cost of not taking action could be catastrophic. In the past year, an impressive bipartisan spirit has emerged in the House and Senate in favour of implementing most of the above ideas. Such a spirit presents a favourable climate for a corresponding presidential initiative in next week's State of the Union address.

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