

Sustainable Developments

Coping with a Persistent Oil Crisis

With global demand for cars accelerating, the best approach is to redesign cars and transport systems

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According to recent statistics, U.S. motorists have responded to record-high prices at the pump by driving less. Any hope that this cutback will significantly restrain global oil prices is misplaced, however: fundamental factors of supply and demand will keep oil costly for years to come.

Although U.S. drivers account for around 13 million barrels a day (mbd) out of 85 mbd of worldwide demand, the growth in driving in China, India and other developing countries will easily outstrip any cutback in U.S. demand.

Crude oil production in the Persian Gulf has been nearly flat at just over 20 mbd since the early 1970s. The growth in world supply since that time has come from oil fields outside the Middle East, but many of them have reached their production limits and important ones are in decline. There are few prospects for megadiscoveries that could keep up with fast-growing world demand.

The 18 billion barrels or so that is supposedly economically accessible in protected U.S. offshore sites would slake around seven months of global demand in 2008 and a much smaller share by the time they reached the market in 10 to 15 years. And these small gains would come at enormous environmental risks.

Today China has around 50 million cars, trucks and buses (roughly 40 per 1,000 people), compared with around 250 million in the U.S. (roughly 800 per 1,000 people). If China attains just half of the U.S. per capita ownership of passenger vehicles, it would have some 500 million of them, roughly twice as many as the U.S. Engineering advances in automobile production will dramatically accelerate the trend. Low-cost cars such as the Tata Nano, India's newly unveiled \$2,500 compact sedan, will bring auto ownership within reach of hundreds of millions of newly middle-class households in the coming decades. Currently around 900 million cars, trucks and buses are on the road worldwide. China and India alone could add another 25 million to 30 million vehicles per year in a decade; they could plausibly add another 600 million within 30 years. Conventional oil has little prospect of keeping up with this soaring demand.

Of course, a grave economic crisis—war, global depression, collapse of one or more major economies—would cut oil demand the hard way. There are two much better alternatives.

The first is a redesigned, far more energy-efficient vehicle that uses low-carbon-emitting energy carriers such as electricity or hydrogen. Variants of plug-in hybrids and all-battery cars have been promised by major auto producers as early as 2010, and demonstration hydrogen fuel-cell cars are also expected around then.

Unresolved problems of cost, performance and infrastructure face these technologies. Public funding for technological research, development and demonstration and for supporting infrastructure should be deployed to ensure a timely changeover to new energy-efficient (and low carbon dioxide-emitting) vehicles. Any electric or hydrogen option will require large-scale deployment of new low-emissions electricity generation, such as solar, wind, nuclear and coal plants that capture and sequester carbon dioxide.

The second alternative is a gradual reconfiguration of city life to reduce our dependence on driving and raise our reliance on walking, cycling and taking public transport. Despite free-market ideological presumptions, urban sprawl is at least as much a function of zoning and the provision of public infrastructure (for example, roads versus light rail) as it is of individual choices.

The current energy crisis will most likely worsen before it gets better. It threatens to create a prolonged period of stagflation, increased oil skirmishes and even oil wars, and further marginalization of the poor, who will find themselves priced out of transport and perhaps even out of food if the U.S. keeps up its dangerous policy of converting corn to ethanol fuel. Yet it could also be the critical spur to action, prompting vital changes in technologies and lifestyles. It's not too late to take the more productive path, but time is running out.

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