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News Analysis

Much Talk, Mostly Low Key, About Energy Independence

By SIMON ROMERO

HOUSTON, Feb. 1 — Industry experts say that if President Bush wants to make a push to reduce the country's oil consumption, there are some solutions at hand. But with names like carbon composites and new metal alloys, they may seem banal and do not create much buzz.

Perhaps the most significant step the nation could take in reducing oil dependence is to change the way cars are produced, according to the Rocky Mountain Institute, an energy research organization that has consulted for the Department of Defense. Automobiles, for instance, use about 9 million barrels of the 20 million barrels or so of oil that the United States consumes each day. Trucks, heavy machinery and some power plants consume the rest.

Improving the efficiency of hybrid engines, like those used in the Toyota Prius, and using advanced metal alloys and carbon composites instead of heavier steel to make cars could double or triple the miles per gallon in these automobiles.

"We could reduce our consumption by four to five million barrels a day by going down this pathway," said Odd-Even Bustnes, a principal at the Rocky Mountain Institute. "What the president said yesterday is a step in the right direction, but I'm not sure it's a step of the right magnitude."

Conservation of oil has not been a priority for the administration, which has avoided pressuring Detroit to produce fewer sport utility vehicles and more energy-efficient cars.

In fact, overall federal funding for research and development in energy efficiency has declined 14 percent since 2002, adjusted for inflation. Among the federally sponsored projects are the president's Freedom Car hydrogen vehicle program, according to the American Council for an Energy-Efficient Economy.

Some measures that President Bush left out of his state-of-union address could also bring big payoffs: measures that might actually curb oil consumption like greater fuel-efficiency rules for cars, a gasoline tax or increasing ethanol imports from Brazil.

While President Bush did propose more use of alternative fuels, what he left unsaid was that producing such "renewable" fuels, like hydrogen or ethanol from corn, requires large amounts of petroleum. As if to remind Americans of oil's paramount importance in the economy, Barry Russell, president of the Independent Petroleum Association of America, said, "many alternative fuel options depend on petroleum or natural gas for their effective development."

Still, some of the president's proposals advance the discussion of what the United States needs to do to become less dependent on oil. Ethanol, for instance, could be made from materials in addition to corn, like switch grass, a kind of grass that grows abundantly on the prairies of the Plains.

"Ethanol is mandating additional diversity to the pool of motor fuels," said Daniel Yergin, chairman of Cambridge Energy Research Associates. "The definition of oil is being widened."

The administration has also declined to consider tax increases on gasoline, perhaps fearful of angering

American motorists. The nonpartisan Congressional Budget Office estimated in 2004 that a new gasoline tax of 46 cents a gallon, up from today's federal gasoline tax of 18 cents a gallon, would reduce gasoline consumption by 10 percent over the next 14 years.

That leaves as a centerpiece of the administration's new energy strategy an emphasis on ethanol, which is rising in favor among alternative fuel sources. Ethanol production from corn in the United States still relies on subsidies, but ethanol made from sugarcane in Brazil competes handily with gasoline. In fact, it was only after Brazil's government exposed ethanol to market forces in recent years that its success became clear.

Brazil's sugarcane industry produces about 160,000 barrels of oil-equivalent a day, assisting the country in achieving self-sufficiency in oil sometime this year, according to David G. Victor, director of the program on energy and sustainable development at Stanford University. Still, unlike Japan and China, which have plans to import Brazilian ethanol, the Bush administration has retained a 54 cent tariff on every gallon of imported ethanol.

"It's remarkable that we're not taxing fuel from Saudi Arabia while we're taxing fuel from Brazil," said Gal Luft, a co-director of the Institute for the Analysis of Global Security, a research organization in Washington that specializes in energy issues.

The Bush administration instead opted to support the development of a domestic industry for cellulosic ethanol, which would use plant fiber now discarded as waste to produce a transportation fuel. The technology is promising but not thought to be commercially viable until the next decade. In the meantime, the government continues to support traditional ethanol made from corn, a process that consumes large quantities of expensive natural gas.

Most eye-catching among the new measures was the call to replace 75 percent of imported oil from the Middle East by 2025. Such an objective is nonthreatening to the oil industries controlled by the regimes of that region, given the rising economies of China and India. Oil is a fungible commodity that is bought and sold on a global market, so other countries could easily take the place of the United States as buyers of Saudi oil.

In fact, the administration may have avoided measures to aggressively curb oil consumption because it understands such moves might end up weakening American and European oil companies. Since each barrel of oil enters into a global pool that is traded daily, higher-cost producers — in places like the tar sands of Alberta, the North Sea off Britain or Norway, or the Gulf of Mexico in the United States — would be the first to halt production if the United States were to lower its oil purchases and thus ease market prices.

High oil prices enable companies in these costly areas to compete with a nation like Saudi Arabia, where it costs less than $5 a barrel to produce oil. That also helps explain why divorcing an economy from a reliance on imported oil can be painful, as Brazil's early experiments with ethanol showed when the government was forced to absorb losses from the program.

The reliance of the American economy on oil from unstable countries is an issue that presidents might still be grappling with in 2025, just as three decades ago the first ambitious, and subsequently abandoned, efforts began to wean the nation off imported oil in the aftermath of the 1970's oil shocks.

"The idea of independence from oil imported from the Middle East," said Mr. Bustnes of the Rocky Mountain Institute, "will be achieved the day we are oil-free."

Heather Timmons contributed reporting from London for this article and Edmund L. Andrews from Washington.