Natural gas best gasoline substitute

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Auto pollution, oil spills and growing dependence on foreigners for fuel have helped natural gas emerge as an energy solution that's literally lurking beneath our feet, scientists say.

The naturally occurring gas called methane, once considered useful mainly to heat and cook, is now widely viewed as the most realistic way to power cars and trucks into the 21st century because it is plentiful, safe and clean.

There's such a vast supply underground that U.S. energy companies cap wells when the price gets too low for profitable sale. Petroleum-rich Saudi Arabia squanders methane by burning the gas as it spurts from crude oil wells.

"The Saudis flare each day enough gas to fuel two-thirds of the road transport of Western Europe," says Princeton University professor Enoch Durbin, a leading proponent of the natural gas alternative.

"From a satellite, the brightest subject on earth you'd think would be New York or San Francisco. It's the Saudi fields."

Natural-gas powered vehicles in Canada, part of an experimental fuel-alternative program Durbin helped create, have logged 500,000 miles without an overhaul because gaseous fuel does not cause the wear and tear of liquid fuel. Liquid fuels wash lubricants off walls of a car's engine, increasing friction and wear.

The Canadian vehicles recently began rusting and falling apart. But the engines are in such good condition they are being sold for use in other vehicles, Durbin says.

"If you're going to use it you have to be confined to a regular route where you can refill," says Michael German, senior vice president of the American Gas Association, which represents U.S. distributors and pipelines.

German says the 30,000 cars in the United States now running on natural gas are underground metal pipe.

So the system exists for getting gas from producers to service stations. What's needed, scientists say, are pumps at the stations to dispense the gas into vehicles.

Ninety-three percent of the natural gas used in the United States is domestically produced and the rest comes from Canada. Nearly half the crude oil consumed here, on the other hand, is foreign.

About 80 percent of natural gas comes from underground gas reservoirs; the rest is found with oil.

Some experts worry that greatly increased use of natural gas would deplete supplies and increase reliance on foreign energy suppliers, but others reject that fear.

"We have such huge methane reserves we don't know how much we have," says Raymond Baddour, chemical engineering professor at Massachusetts Institute of Technology. "I think this fuel has a very bright future for you, your children and grandchildren."

Moreover, it is renewable from unconventional sources such as purifying garbage, sewage and animal waste, which theoretically could yield limitless supplies.

Durbin recalls asking a geologist about the supply of

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natural gas.

“‘He said, ‘What do you want to pay? At 60 cents per 1,000 cubic feet, there’s none.’

“No one wants to drill a deep hole if it’s cheap,” Durbin says. “If you tell me you’re willing to pay $2 instead of 60 cents, I suddenly can drill a deep hole.”

The Department of Energy estimates proven reserves of natural gas in the United States total 187.2 trillion cubic feet. By some reckonings, that represents at least three centuries’ worth of supply, even if all U.S. vehicles burned natural gas instead of gasoline.

Proven reserves of domestic crude oil, in comparison, are estimated at 27.3 billion barrels, or a 9 1/2-year supply at current consumption rates.

“There is a tremendous amount of shut-in gas that is sitting there waiting for a market or for the price to go up, which is the same thing,” says Charles Andrew, an official of John S. Herold & Co., an oil and gas appraisal concern.

About a half million cars are powered by natural gas worldwide, all backyard creations. No auto manufacturer makes a natural gas car, but that is changing.