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What a gas: Expert hails energetic role for resource

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Phil Castle, *The Business Times*:



Workers assemble pipe in preparation for drilling at a natural gas drilling rig in Western Colorado. Natural gas could play a prominent role in providing a plentiful and inexpensive source of energy in the United States. (Business Times photo)

Bryan Willson can recite a top 10 list of reasons natural gas will play a prominent role in the future of energy, the economy and environment in the United States.

Among other things, natural gas is abundant, inexpensive and already used in homes and offices, says Willson, director of the Engines and Energy Conversion Laboratory at Colorado State University in Fort Collins. “Natural gas is the biggest kid on the block in terms of energy.”

At the same time, however, natural gas poses some disadvantages, Willson says. The very fact gas is plentiful and cheap could discourage conservation and delay development of other energy sources.

Willson discussed the pros, and some cons, of natural gas as part of a far-ranging presentation at the Energy Forum & Expo in Grand Junction.

A professor of mechanical engineering, Willson oversees a state-of-the-art research laboratory set up inside what was once a power plant. Technology developed there has been used for everything from reducing emissions from large engines used to compress natural gas in pipelines to simulating electrical power grids to creating cleaner cookstoves for use in developing countries.

Willson also is one of the founders of Solix, a company building systems for cultivating algae that produces oils that can be converted into biofuels and chemicals. Solix operates a demonstration plant in Southwestern Colorado.

When it comes to natural gas, Willson says there are a multitude of reasons gas constitutes the biggest play for energy, the economy and the environment.

The U.S. — and world — have a lot of natural gas reserves and natural gas remains inexpensive, he says. Since natural gas burns more cleanly, the increased use of natural gas could significantly reduce carbon dioxide emissions. Natural gas already is used in many ways in homes and offices and the scale of that use could be increased, he adds.

In addition to heating and generating electricity, there’s the potential to use more natural gas as a transportation fuel, Willson says.

While there’s savings associated with using natural gas instead of gasoline, there are costs to convert vehicles as well as construct fueling stations, he says.

While the majority of driving occurs over short distances, natural gas-powered vehicles can be equipped for longer ranges, he says. What's more, many natural gas pipelines in the United States are located near major highways, which would make it easier to construct fueling stations along those highways, he adds.

Over the past 10 years, however, there's been little change in the 100,000 to 115,00 natural gas-powered vehicles on the road in the U.S, he says.

There's additional potential for increased use of natural gas in devices that generate both heat and power as well as in manufacturing plastics.

Along with the potential advantages, natural gas also presents some potential disadvantages that could constitute a "train wreck" for energy, the economy and environment, Willson says.

Some research disputes that natural gas burns more cleanly than other energy sources, including coal. There's also the effects of increased natural gas exploration and production on water and land use, he says.

Some of the advantages of natural gas — including its abundance and low price — could become disadvantages in discouraging or delaying the development of other energy sources, he adds.

The key to increase the benefits of using natural gas, Wilson says, is to develop technologies that reduce the environmental effects of natural gas production, promote the transition from gasoline and diesel to natural gas as a transportation fuel and shift the use of natural gas strictly for heating to combined heat and power.

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About Phil Castle

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Phil Castle is editor of the Grand Valley Business Times, a twice-monthly business journal published in Grand Junction. Castle brings to his duties nearly 30 years of experience in editorial management positions with Western Colorado newspapers. In addition, his free-lance work has appeared in a variety of publications, including the Washington Post. He holds a bachelor's degree in technical journalism from Colorado State University.

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