

# Export American natural gas? Not so fast, says Stanford economist

December 19 2012, by Max McClure

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Powering public transportation with compressed natural gas, as in Washington, D.C., is one possible use of the glut of natural gas in the United States. Credit: Mario Roberto Duran Ortiz/Wikipedia

(Phys.org)—Stanford economics Professor Frank Wolak warns of betting against the international spread of shale gas technologies by attempting to export domestic natural gas.

With the advent of the "[shale gas](#) revolution," the [United States](#) has

undergone a full-scale [natural gas](#) boom. Driven by fracking and horizontal drilling, the United States will likely overtake Russia as the world's largest producer of natural gas by 2015, according to the [International Energy Agency](#).

Now, as estimates of available reserves continue to go up and prices drop to less than \$3 per million BTU, talk is turning to exporting natural gas – potentially a serious [moneymaker](#), with countries like Singapore facing per million BTU prices around \$16.

As a Stanford economics professor and director of the Program on Energy and Sustainable Development at the university's Freeman Spogli Institute, Frank Wolak understands the urge to export.

"But there's a significant risk here that I don't think people are necessarily factoring in," he said.

As he explained in a recent [policy brief](#) for the [Stanford Institute for Economic Policy Research](#), investing in natural gas export facilities "is a bet against what U.S. firms excel in – developing and commercializing new technologies and products."

## **Ghost facilities**

Along the coasts of Texas and Louisiana, the early 2000s saw the construction of a number of liquefied natural gas (LNG) receiving terminals, intended to meet a predicted increase in natural gas imports.

"Those facilities are now sitting vacant," Wolak said, "because the price of natural gas in the United States has fallen so much." Many are converting themselves into export facilities.

He thinks moving immediately to export runs the risk of repeating this

scenario in reverse. It takes time to site, permit, construct and bring an LNG export facility online. In the meantime, American entrepreneurs will be looking to apply technologies like fracking and horizontal drilling elsewhere.

"It's hard to see why this technology can't be exported to the rest of the world," said Wolak.

If that happens, a U.S. export facility could be finished only to find a few new shale gas revolutions in other parts of the globe overturning its intended markets.

## **Cooking with gas**

What does Wolak recommend the United States do with its embarrassment of domestic natural gas riches? Use it at home.

There is no major technological barrier to using natural gas in the transportation sector – our heaviest user of oil. Vehicles that burn compressed natural gas (CNG) are already in common use, particularly in Asia and South America.

Wolak noted that the use of compressed natural gas makes the most sense in a vehicle fleet that drives a well-defined circuit, such as urban buses or taxis. Vehicles that use the denser liquid natural gas are better suited for heavy-duty use, such as regional long-haul truckers. The compressed natural gas refueling infrastructure could expand once these routes were established.

Home filling stations for personal vehicles are another option – household compressors that work with existing home natural gas connections are, in fact, already on the market. The devices are currently priced out of the range of most consumers, but these home filling

stations could become a viable option as natural gas becomes a more popular fuel choice.

Wolak also noted that natural gas is currently replacing coal in the production of electricity, a trend that is likely to continue given current conditions in the global coal market and natural gas's relative environmental benefits. Natural gas generation facilities, he pointed out, produce only a third to a half of the greenhouse gas emissions per megawatt hour as coal-fired facilities, and are now cheaper per BTU.

"All I need is heat energy," Wolak said. "Whatever source of energy is cheapest is ultimately what I'm going to use."

Provided by Stanford University

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