

# Geologist: In Terms of Supply and Demand, the Oil Peak Is Past

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Jeffrey Brown is an independent petroleum geologist and analyst, who also manages an exploration program in West Texas. He has a major interest in the subject of "Peak Oil" and has used mathematical models to project a very grim future for the world's oil supply. We caught up with Jeffrey at his office outside Dallas.

**Eli Neusner, reporter, [HardAssetsInvestor.com \(HAI\)](#): You've published some controversial research in the past. What is the gist of your analysis?**

**Jeffrey Brown, petroleum geologist (Brown):** The basic thrust of my research is that the world has already arrived at Peak Oil - which is a condition in which the worldwide supply of oil cannot keep up with demand. We have used proven mathematical models to show that the top five net oil-exporting countries - which are Saudi Arabia, Russia, Norway, Iran and the United Arab Emirates, and which account for one-half of current world net oil exports - are showing an ongoing decline in net oil exports, continuing a trend that began in 2006. To give you an idea of where we're headed, Mexico - another former top producer - will see its oil exports hit zero in 2010.

**HAI: How can you be so sure?**

**Brown:** Because of the models and because we've seen it all before. Our mathematical model shows that once oil production in an oil-exporting country starts declining, the resulting decline in net oil exports can be quite rapid, and the oil exporter tends to show an accelerating net export decline rate. It's irreversible. The top five oil-exporting countries will approach zero net oil exports around 2030, going from peak exports to zero in about 25 years.

Many large producing regions have shown production patterns that are consistent with the models. The lower 48 peaked in 1970. Texas peaked in 1972. Alaskan oil production slowed the U.S. oil decline, but U.S. oil production never equaled its 1970 peak. Today, Prudhoe Bay, the largest American oil field, is now at about one-fifth of its peak production and declining rapidly. Did we stop finding oil in Texas or in the rest of the lower 48? No. However, it is impossible to replace old, very large oil fields, with a collection of the much smaller fields, such as those we've been finding in Texas since 1972.

**HAI: Are there other examples of regions that have experienced peak oil production?**

**Brown:** Yes; just take a look at what happened in the North Sea oil fields, where, despite using the best technology and with no restrictions on drilling, production has been falling steadily since peaking in 1999 at 52% of total recoverable reserves. North Sea oil production is now about one-fourth below its peak. As a result, the United Kingdom, which was a net oil exporter in 1999, exporting more than 1 million barrels a day, is now a net importer.

**HAI: But don't the oil fields of the top five exporters have enough supply to last us for decades? Aren't they continually finding new oil fields?**

**Brown:** Unfortunately, whatever new fields come on-line are only incremental improvements in the level of supply. Russia's big fields are in decline and their new fields aren't coming on-line fast enough. Russia peaked in the 1980s, then it rebounded and now it's resuming its production decline. Saudi Arabia showed an uptick this year, but it's still below its 2005 rate of production. There was a big find in Brazil recently, which some say has the potential for 600 billion barrels of oil. But even that will take 7-10 years to come on-line and it will only postpone Peak Oil by a few years. Brazil is still a net importer, and whatever new oil it finds will go to supporting its domestic economy.

**HAI: What does it all mean for net importers like the U.S., and what can we do about it?**

**Brown:** Oil is basically a horse race between declining demand and declining production, and right now declining production is winning. Declining net oil exports will inevitably result in continued rapid increases in the price of oil. As we all know, the price of oil doubled between May 2007 and June 2008. Over that same period, the average monthly price increase was 6%. Oil's taken a breather over the past couple of months, but last September and October, oil kicked up 10% per month, and we expect the same this year.

In terms of what we can do, we'll have to decrease our dependence on oil and reduce our overall energy consumption. I know I'm not the first person to advocate that, but I'm afraid it's going to take large-scale measures, including writing off a big swath of our investment in suburbia. That's a lifestyle that we can no longer support, with its dependence on inexpensive and abundant fossil fuels. We'll have to reduce our dependence on the automobile and increase our investment in electrified transportation, such as electric light rail, streetcars, commuter rail and subways. We're going to have to return to the way we used to live: in dense, urban housing along electrified mass transit lines. This, combined with a crash wind and solar power program, as well as a big push for more localized food production, will help us make the transition to our inevitable future without oil.