



## Oil Production Could Peak Next Year

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Global oil production will peak sometime between next year and 2018 and then decline, according to a controversial new model developed by a Swedish physicist.

Since 1956, when American geophysicist M. King Hubbert correctly predicted that U.S. oil reserves would hit a peak within 20 years, [experts have debated](#) when the same might occur globally. Some oil companies and consultancy firms such as Cambridge Energy Research Associates speculate that oil will peak sometime after 2020, but a number of oil geologists and executives predict it will happen much sooner.

And once production starts declining, there could be major supply problems, analysts say, especially when it comes to transportation—cars, aircraft, trains and boats are today without a ready [alternative to petroleum-based liquid fuels](#).

Reaction to the latest prediction is as polarized as the debate has been on this issue for decades.

### New approach

Previous oil-peak models have used a “top-down” approach to estimate future production based on three factors—past rates of total production, estimates of [how much oil is left](#) and a steady decline rate.

The new model, developed by Fredrik Robelius, a physicist and petroleum engineer at the University of Uppsala in Sweden, uses a “bottom-up” approach based on field-by-field analyses of the 333 giant oil fields in use today. These together account for more than 60 percent of today’s oil production. He pooled the contributions from all the smaller fields together, treating them as an additional giant field.

Robelius built his model, which serves as his doctoral dissertation, after analyzing the fields’ past production rates and their ultimate recoverable reserves. Then he predicted how production will decline after peaking by incorporating rates of drop-off observed at other fields, ranging from six percent in a best-case scenario to 16 percent in a worst-case scenario. Finally, he combined his results with estimated forecasts for new field developments from sources such as the deep ocean and oil sands in Canada, but he says that these are unlikely to offset the upcoming declines from the giant fields—and there is little chance that new giant fields will be discovered in the future.

Caltech physicist David Goodstein agrees.

“Oil geologists have [gone to the ends of the Earth](#) to search out big fields, and it’s very unlikely that another big one will be found,” Goodstein told *LiveScience*, adding that Robelius’ methodology appears to be sound. “Even if another huge one is found, it would only put off the peak by a year or so.”

Although there are other potential sources of oil, they are not only smaller, but also frequently have low production rates because of geological constraints, said Robelius. In Canada’s oil sands, for instance, the oil is so heavy that it must be heated up before it starts to flow, he said, and this

is a slow and expensive process.

### **Perceptual problem**

Others disagree. Not much can be said about additional oil resources because we haven't really started looking for them yet, said Michael Lynch, president of Strategic Energy & Economic Research, an energy consultancy firm in Massachusetts. Lynch thinks that the oil peak lies farther into the future, partially because there's likely to be a lot of oil in as-yet undiscovered smaller fields.

"You don't go looking for them until you run out of the giant fields," Lynch said in a telephone interview. Robelius, and others like him, he said, suffer from a "perceptual problem—if I don't see it, it must not be there."

And new technologies could help solve [extraction](#) problems, said Sam Kazman of the Competitive Enterprise Institute, a non-profit public policy think tank in Washington, D.C.

"New technologies have turned fields that once seemed to be dormant into steady supplies of oil," said Kazman, who is also of the belief that the oil peak is not necessarily right around the corner. Just because giant oil fields have been important for oil production in the past, he said, "does not mean that they're going to stay important in the future."

Robelius says that these kinds of approaches rely on resources and technologies that haven't yet been developed or even discovered, which isn't practical. People assume that new resources will be able to produce oil quickly, he said, "without having any evidence whatsoever that that's the case."