

Oil production in the world close to peak

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In a worst-case scenario, global oil production may reach its peak next year, before starting to decline. In a best-case scenario, this peak would not be reached until 2018. These are the estimates made by Fredrik Robelius, whose doctoral dissertation estimates future oil production on the basis of the largest oil fields. The dissertation will be publicly defended at Uppsala University in Sweden on March 30.

Fredrik Robelius bases his forecasts on studies of global oil reserves, historical production, and new finds. He focuses on the very largest oil fields, so-called giant fields, which produce a total of at least 500 million barrels of oil.

Giant fields comprise only about one percent of all oil fields in the world, but they nevertheless account for more than 60 percent of total production. Unfortunately, the trend is heading downward when it comes to new giant-field discoveries, both in terms of the number of fields and the volume of the fields located. The majority of the largest giant fields are found around the Persian Gulf and are more than 50 years old.

“The dominance of giant fields in global oil production supports the thesis that they will be crucial to what future production will look like,” says Fredrik Robelius.

He developed a model based on historical production, the total exploitable reserves of the giant fields, and their rate of diminution. The model assumes that oil fields have a constant rate of diminution, which Robelius has verified by studying a number of giant oilfields where

production has waned. The analysis shows that an annual rate of diminution between 6 and 16 percent is reasonable.

To be sure that the future production of a field will wind up inside the interval of the model, Robelius used both pessimistic and optimistic estimates. Then he combined the results from the model with field forecasts for deep-water production, new finds, oil sand in Canada, and heavy oil in Venezuela to construct his forecasts.

“All cases studies show that global oil production will begin to drop off at roughly the same time as the giant fields. According to the most pessimistic scenario, the peak will be reached in 2008, whereas the most optimistic scenario, assumed to follow a 1.4-percent annual increase in demand, places the peak in 2018.”

Source: Swedish Research Council

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