

Redefining Peak Oil

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The technical analyses that Dr. M. King Hubbert and others who endorse this key discipline have been anchored by an analysis of the ultimate recoverable reserves an oilfield, basin, country or the world has, and the extent to which these reserves have already been produced. Once the 50% mark nears, Peaking is also just ahead.

Given a host technological advances and the quality of the data the world now has on reserves, the use of this theory might have accidentally become misleading and even obsolete. The loudest critics of Peak Oil analysis have constantly made this claim.

I am beginning to also support this thesis, but from an entirely different perspective. Rather than postponing or obsoleting Peak Oil as an event, modern oilfield technology and **very poor data** on both the quality and quantity of reserves may have totally masked the conventional predictability of when Peak Oil will occur. If my thesis is correct, rather than postponing the event, it makes it harder to predict and probably creates a more rapid decline once Peaking has occurred.

The great sweep of modern oilfield technology received almost as much hype about changing energy supply as the Dot.Com boom did to the stock market. Too many energy executives and energy analysts began to believe that these new tools made Peak Oil obsolete as an event, or at least postponed when the event would happen for decades. In reality, the opposite occurred. Rather than recovering vastly greater amounts of oil in place, multi-lateral horizontal well completions created super-straws to extract a higher portion of the post 50% recoverable reserves far faster.

The widespread use of 3 and 4-D seismic analysis and reservoir simulations as a substitute for the far more costly process of drilling a multiple number of appraisal wells that were cored and flow-tested to really understand the true nature of reservoirs then created a decade-long illusion that proven reserves

were far greater than the steadily lower production growth most oil companies were reporting.

OPEC's reported proven reserves almost tripled in the 1980s, not as a result of technology or added discoveries but through simply "changing the numbers." Then, ironically, as OPEC oil production grew for the past 15 to 20 years, virtually no OPEC producer ever reported a decline in proven reserves. Magically, the reported proven reserves stayed constant.

Another issue that should have anchored the whole Peak Oil analysis also got lost. The question of Peak Oil is not about the single highest amount of oil a well or reservoir can produce in a single day or even year. Defining the arrival of Peak Oil should have addressed the peak rate of production that a reservoir could safely sustain for a decade or more.

All pressurized reservoirs have a rate sensitivity to the amount of oil that can be produced by the miracle of natural reservoir pressures instead of a pump. As the practice of water and gas injection into pressurized fields to maintain high reservoir pressures for longer times grew, this created an artificial sense that rate sensitivity or what some called "conservation of oil" faded away.

I have now come to the conclusion that global oil production has passed sustainable peak output if properly defined. The world has created an illusion that Peak Oil is years away, when we might have already passed the real peak.