

Addicted to Science and Optimism

Skepticism is the first step to Truth – D. Diderot
Albemarle County BOS

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presentation

by

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Worried About Running Out of Petroleum Oil?

- Peak Oil: Originated by M. King Hubbert 1956
- His prediction was for US oil production to peak between 1965 and 1970
- US production did peak for a time in 1970
- Hubbert predicted maximum possible US oil production by 2011 as one billion barrels
- Actual 2011 production was two billion barrels

Earlier Peak Oil Predictions

- 1920: US Geological Survey estimated world contained 60 billion barrels of recoverable oil
- To date 1000 billion barrels have been produced with 1500 billion barrels in reserve
- Conventional world oil resources are estimated to be in the neighborhood of 10,000 billion barrels

Hubbert's Scarcity Predictions Fail

- World oil production would peak in 2000 at 12.5 billion barrels
- Fact: World oil production 2011 was 26.5 billion barrels, and increasing
- Hubbert's natural gas prediction for 2010 was 4 TCF
- Fact: 2010 US production was 26TCF

Hubbert Unable to Devine the Future and Future Technologies

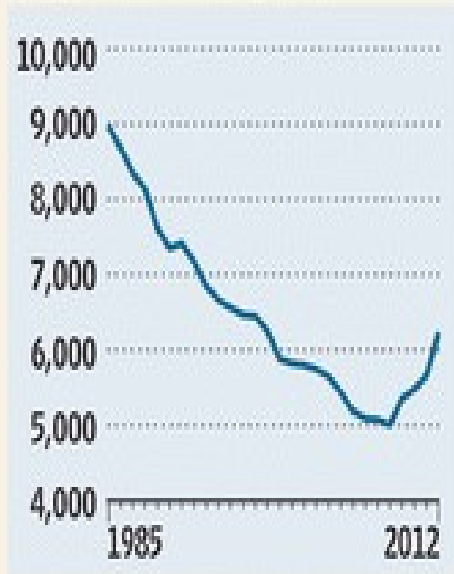
- Western US estimate to hold 2000 billion barrels of oil in oil shale deposits
- At the rate of our average yearly consumption that is a 286 year supply
- US predicted to be top oil producer in 2020

A Brighter Oil Future Than Predicted

Reversing the Trends | An oil recovery in the U.S.

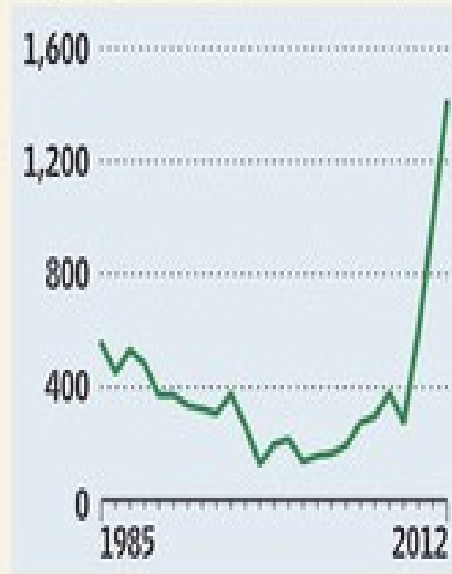
Production Turns Up...

U.S. field output of crude
(thousand barrels/day)



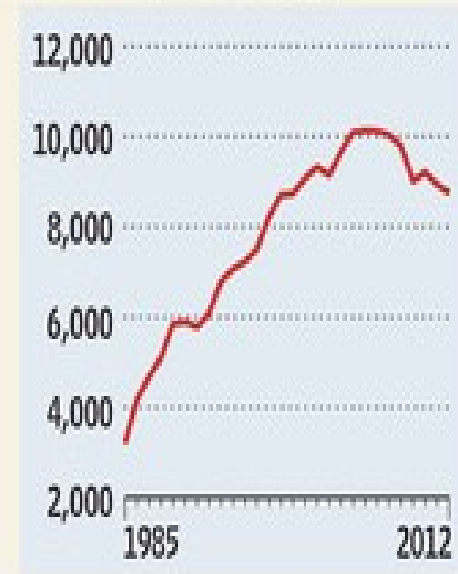
And Drilling Jumps...

Crude rigs operating in the U.S.,
a leading indicator of oil output



While Imports Fall

U.S. imports of crude
(thousand barrels/day)



Note: Figures for 2012 are through June 30.

Source: Energy Information Administration, Department of Energy

The Wall Street Journal

Abiotic Origin of Oil

Oil May Not Be A Fossil Fuel

Fossils From Animals And Plants Are Not Necessary For Crude Oil And Natural Gas, Swedish Researchers Find



“There is no doubt that our research proves that crude oil and natural gas are generated without the involvement of fossils.”

Vladimir Kutcherov et al published in the scientific journal *Nature Geoscience*.