

M. King Hubbert, “Peak Oil,” and U.S. Energy Policy

Peter R. Rose

718 Yaupon Valley Rd., Austin, Texas 78746

EXTENDED ABSTRACT

Using innovative concepts related to U.S. crude oil production and reserves data, Marion King Hubbert generated prescient and unwelcome forecasts in 1956 and again in 1962, that annual U.S. crude oil production would peak in the late 1960s or early 1970s at around 3 billion barrels, and decline thereafter, implying growing American dependence on imported oil. Hubbert estimated that ultimate domestic crude oil production would total about 200 billion barrels.

These forecasts brought him into sharp conflict with the U.S. Geological Survey’s (USGS) Vincent E. McKelvey from the 1960s into the 1970s, even after McKelvey became Director of the USGS in 1971. Under McKelvey’s leadership, the USGS had consistently estimated that domestic crude oil resources were as much as three times larger than Hubbert’s forecasts—as much as 590 billion barrels—sufficient “to meet projected consumption through and beyond” the end of the 20th century. Their increasingly acrimonious and public dispute reached out well beyond the American scientific community, and spilled over into national energy policy.

When U.S. crude oil production peaked in 1970 at about 3.2 billion barrels, Hubbert’s bold forecast seemed to be confirmed, and he was hailed as a prophet. McKelvey was fired in 1977 by the incoming Carter administration, and Hubbert’s forecasts were used to deny subsidies to domestic exploration and production companies (“if the resource endowment is not there, it’s not worth paying companies to try and look for it”), and developing alternative energy sources, including U.S. oil shale deposits.

Working under the protection of U.S. Sen. Henry ‘Scoop’ Jackson, Hubbert then developed analogous estimates of future domestic natural gas production, as well as global crude oil production. He forecast that U.S. natural gas production would peak in 1975, at about 18 trillion cubic feet per year, with a total production of about 1050 trillion cubic feet. Hubbert also predicted that global oil production would peak at an annual rate of about 40 billion barrels in about 1995, with ultimate production of about 2000 billion barrels. These forecasts have long since been eclipsed by actual production, and discovered reserves.

Examined from the vantage point of nearly 40 years, all of Hubbert’s forecasts are clearly too pessimistic, primarily because he failed to anticipate that technological breakthroughs would make exploration and production in hostile environments possible, and that new drilling and stimulation technologies would allow reservoirs to be developed in rocks then thought to be incapable of production. Furthermore, the arrogant intransigence of both Hubbert and McKelvey prevented the nation from receiving the benefits of a balanced assessment of future crude oil and natural gas supplies.

... (Note: The full version of this extended abstract, including complete text, illustrations, and references, will be made available at a later date on both the 2014 GCAGS convention website [www.gcags2014.com] and AAPG Search and Discovery website [www.searchanddiscovery.com]).