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King Hubbert : The peak oil

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I wanted to begin my new series of articles about the petroleum with a presentation of King Hubbert and his searches, because any subject on the future of the petroleum, its price, its production, and about metals turns around problems that King Hubbert splendidly developed there is half a century. King Hubbert is especially known for "Hubbert's curve" and his works on the peak of production of the petroleum, I shall limit myself in these lines to these two subjects, however afterward I shall approach the other subjects of King Hubbert's reflection. First part includes mister Hubbert's short biography and a brief presentation of Hubbert's curve, second and third part have for subject the peaks of production in United States and in the world. In this case, I limited so at least explanations by concerns of light, my idea is here more to present King Hubbert and its work that to explain its searches, afterward I shall make it by subjects.

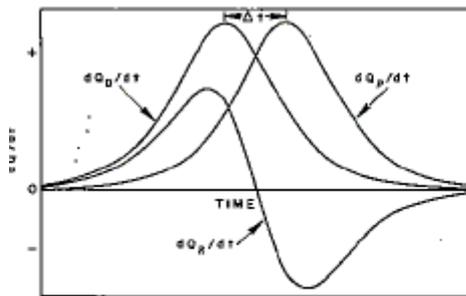
King Hubbert's searches on the oil peak of production (all resources)

A. Who is King Hubbert?

King Hubbert was born on October 5, 1903 to San Saba in Texas, he obtains his doctorate in Sciences in the university of Chicago in 1937, where he studies in parallel geology, physics and mathematics. He is senior analyst in 1942-1943 in Washington, he leads to it his first studies on the mineral resources. King Hubbert works for Shell in Houston during 20 years, he is here a Geophysicist, then a director of the investigation and the production, and finally consultant chief of the geology. He leaves Shell in 1963. He is also a Geophysicist of search to *US GEOLOGICAL SURVEY* and professor of geology and geophysics in Stanforde's university. He leaves Stanforde's university in 1968 and he returns in the university world in 1973, in Berkeley in California. He retires in 1976 quite in active remainder within "*US GEOLOGICAL SURVEY*", He dies on October 15, 1989 at the age of 86 years.

B. Hubbert's curve .

"Hubbert's curve" allows to have a theoretical curve of the production of petroleum. The curve of the investigation in the same shape as that of the production, but the peak of the curve of the investigation arrives much earlier than that of the production. And so from the peak of the oil investigation in United States in 1930, it was able to predict the peak of production of the petroleum in this last one in 1970. Then it is from the peak of the world investigation of the 1970's that he anticipates the future oil peak of production. Wars and energy crises return this more chaotic curve in practice, but it does not change anything the tendency. Once the past peak of production, the thorough tendency will be for a decline of the long-term production, wars and crises will make only decrease or increase in the short run production, long-term it does not change anything.



"Nuclear Energy and the Fossil Fuels" Presented before the Spring Meeting of the Southern District Division of Production, American Petroleum Institute, San Antonio, Texas, March 8, 1956. Publication No. 95. Houston: Shell Development Company, Exploration and Production Research Division, 1956.

www.hubbertpeak.com/hubbert/Bibliography.htm

Fig. 9.-Rates of discovery and production and rate of increase of proved reserves for growth curves shown in Fig. 8.

The peak of production US¹

A. The peaks of production :

From 1949, he works on the idea of peak of production of the petroleum and the gas (but also metals, coal, and uranium). He finds a mathematical solution of the problem in 1956. Idea is that the natural resources are in limited quantity, and that with their production they will spend sooner or later by a peak of production, then to decline bit by bit. The work of King Hubbert consists in calculating the date of these peaks of production. In contrast all the optimistic approaches of time, he predicts, in 1956, the peak of the production of the petroleum and the gas of United States for 1970. Administration US will not take into account his works, and one recognizes the correctness of its calculations on the peak of production of the petroleum and the gas in United States only in 1973.

B. The peak of production of the petroleum in the United States took place:

Here is King Hubbert's graph about the future of the production of the petroleum and natural gas in United States in 1956

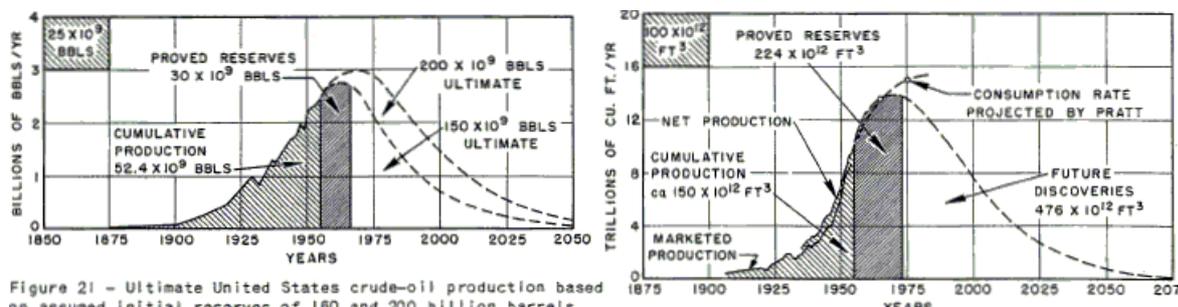


Figure 21 - Ultimate United States crude-oil production based on assumed initial reserves of 150 and 200 billion barrels.

King Hubbert

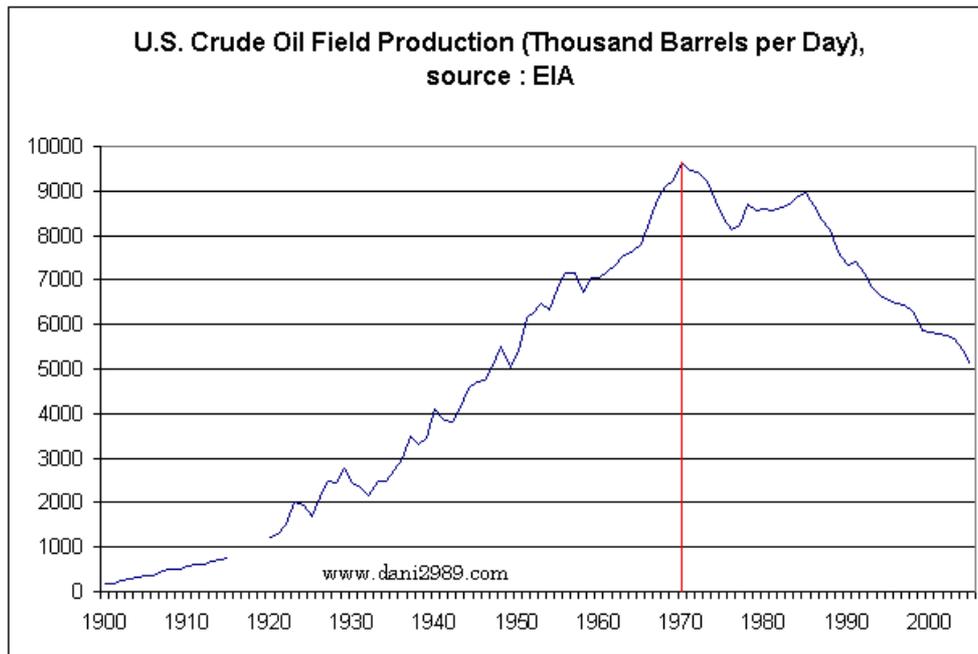
"Nuclear Energy and the Fossil Fuels" Presented before the Spring Meeting of the Southern District Division of Production, American Petroleum Institute, San Antonio, Texas, March 8, 1956. Publication No. 95. Houston: Shell Development Company, Exploration and Production Research Division, 1956.

<http://www.hubbertpeak.com/hubbert/Bibliography.htm>

Here is the production of petroleum in United States from 1900 till 2005 :

¹ Marion King Hubbert." Biographical sketch, Handbook of Texas Online, 1990.

Tribute to M. King Hubbert." National Academy of Sciences, Letter to Members 19 (April 1990).

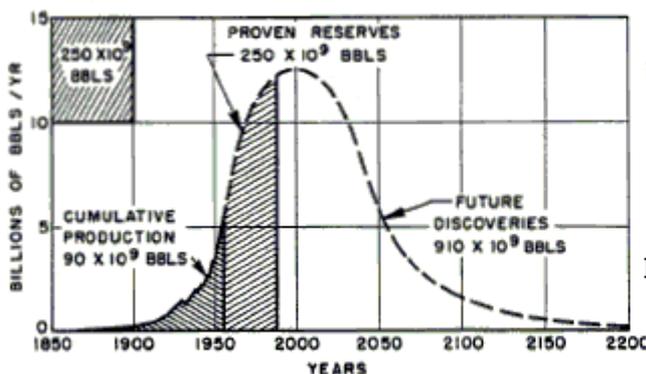


Peak of world production of petroleum according to King Hubbert²

A. The peak of production of the world production of petroleum :

The work of King Hubbert on the oil peak did not limit itself in United States, he also indicated the future peak of production for the world production of petroleum.

Here is King Hubbert's graph about the future peak of production of the world production of petroleum in 1956.

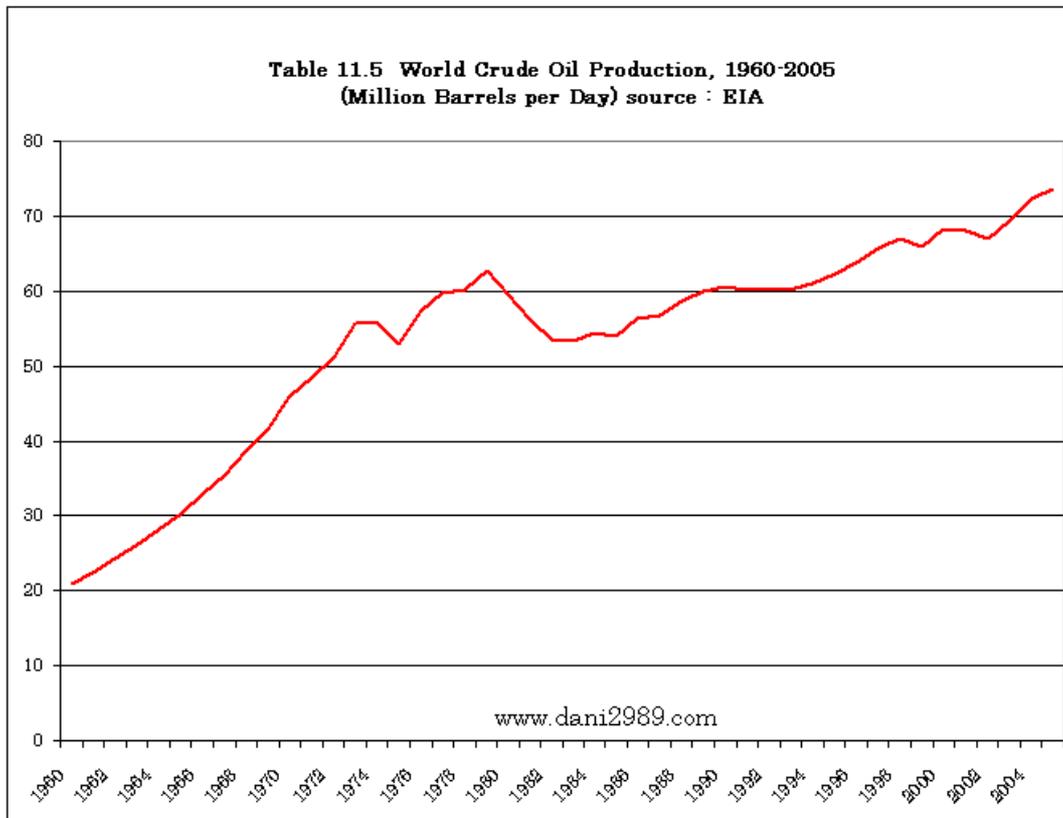
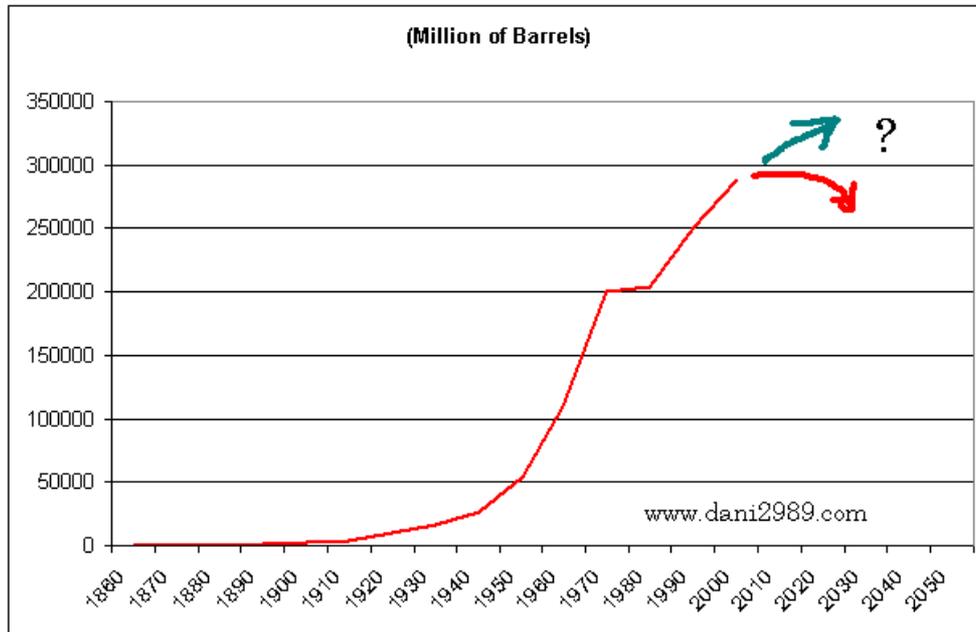


"Nuclear Energy and the Fossil Fuels" Presented before the Spring Meeting of the Southern District Division of Production, American Petroleum Institute, San Antonio, Texas, March 8, 1956. Publication No. 95. Houston: Shell Development Company, Exploration and Production Research Division, 1956.
<http://www.hubbertpeak.com/hubbert/Bibliography.htm>

Figure 20 - Ultimate world crude-oil production based upon initial reserves of 1250 billion barrels.

² [hubbertpeak](http://www.hubbertpeak.com)

We can clearly see that the peak of production is in the zone around 2000 ...
Here is where the world production of petroleum today is :



B. Where are we?

All days, on the television, in newspapers, on the radio, justifications brought to the increase of the price petroleum are of cyclical order (war, geopolitical tension ...) and ever they are of order structural (the production of petroleum is for its maximum while demand increases). Short-term cyclical crises have an incidence on the production and the price for the petroleum because there is a major structural problem: nearness of the peak of production of the petroleum, it is so difficult to know at which moment " T " the peak will have or took place, but it seems that we are not it far. Signals are numerous for the peak world of production of petroleum (running in the resources of certain country, price increase, increase of laborious production, difficulties of renewal of resources for oil companies, tensions with the producing countries, OPEC which does not forbid any more the price increase but the decline, the lie on the reserves of the companies and the countries ...)

King Hubbert is the pioneer of searches on the peak of production generally and of some petroleum in particular, he brought answers which he knew how to defend with courage during years in spite of the fact that he is in contrast all the surrounding areas of time. Nevertheless in spite of the success to estimate the peak of production of the petroleum in United States in 1970, its calculations for the peak of world production of petroleum in 2000 are not always accepted by the economic and political community, because question is not any more for a long time to know if the peak of production will take place, but when it will take place.

King Hubbert was qualified by some of the pessimist, but how to name those who ignore problem?

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