

It's better to cry wolf than wait until the oil runs out

No one knows how much is left, but humankind can't wait any longer before coming up with alternatives

Are global oil supplies about to peak? Are they, in other words, about to reach their maximum and then go into decline? There is a simple answer to this question: no one has the faintest idea. Consider these two statements: 1. "Last year Saudi Aramco made credible claims that as much as 500bn-700bn barrels remain to be discovered in the kingdom." 2. "Saudi Arabia clearly seems to be nearing or at its peak output and cannot materially grow its oil production."

The first comes from a report by Energy Intelligence, a consultancy used by the major oil companies. The second comes from a book by Matthew Simmons, an energy investor who advises the Bush administration. Whom should we believe? I have now read 4,000 pages of reports on global oil supply, and I know less about it than I did before I started. The only firm conclusion I have reached is that the people sitting on the world's reserves are liars.

In 1985 Kuwait announced that it possessed 50% more oil than it had previously declared. Had it just discovered a new field? Had it developed a new technology that could extract more oil from the old fields? No. Opec, the price-fixing cartel to which it belongs, had decided to allocate production quotas to its members based on the size of their reserves. The bigger your stated reserve, the more you were allowed to produce. The other states soon followed Kuwait, adding a total of 300bn barrels to their reserves: enough, if it existed, to supply the world for 10 years. And their magic oil never runs

out. Though extraction has long outstripped discovery, Kuwait posts the same reserves today as it claimed in 1985.

So we turn to the US Geological Survey for an answer, and find that its estimates of global oil supply are as reliable as the Pentagon's assessments of Iraqi weapons of mass destruction. In 1981 it said we possessed 1,719bn barrels of oil. In 2000, 2,659. Yet the discovery of major oilfields peaked in 1964. Where has it come from?

It is true to say that oil reserves are not fixed. As technology improves or the price increases, oil that was formerly too expensive to extract becomes available. But the oil geologist Jean Laherrère points out that the survey's estimate "implies a five-fold increase in discovery rate and reserve addition, for which no evidence is presented. Such an improvement in performance is in fact utterly implausible, given the great technological achievements of the industry over the past 20 years, the worldwide search, and the deliberate effort to find the largest remaining prospects."

The current high oil prices are the result of a shortage of refineries – exacerbated by the hurricanes in the Gulf of Mexico – rather than a global shortage of crude. But behind that problem lurks another. Last week Chris Vernon of the organisation PowerSwitch published figures showing that while total global oil production has risen since 2000, the production of light sweet crude – the kind that is easiest to refine into motor fuels – has fallen, by 2m barrels a day. This grade, he claims, has already peaked. The refinery crisis results partly from this constraint: there aren't enough plants capable of processing the heavier grades.

And next in the queue? Who knows? All I can say is that George Bush himself does not appear to share the US Geological Survey's optimism. "In terms of world supply," he said in March, "I think if you look at all the statistics, demand is outracing supply, and supplies are getting tight." What has he seen that we haven't?

If the figures have been fudged, we're stuffed. That might sound extreme, but it is not my conclusion. It is that of the consultants hired by the US department of energy. In February this year the department released a report called Peaking of World Oil Production: Impacts, Mitigation and Risk Management. I say "released", for it was never properly published. For several months the only publicly available copy was lodged on the website of the Hilltop high school in Chula Vista, California.

The department's consultants, led by the energy analyst Robert L Hirsch, concluded that "without timely mitigation, the economic, social and political costs will be unprecedented". It is possible to reduce demand and to start developing alternatives, but this would take "10-20 years" and "trillions of dollars". "Waiting until world oil production peaks before taking crash programme action leaves the world with a significant liquid fuel deficit for more than two decades", which would cause problems

“unlike any yet faced by modern industrial society”.

Of course, we have been here before. Oil analysts and environmentalists have warned of disappearing reserves ever since drilling began, and they have always been proved wrong. According to people such as the Danish statistician Bjorn Lomborg, this is because the industry is self-regulating. “High real prices deter consumption and encourage the development of other sources of oil and non-oil energy supplies,” he says. “Since searching costs money, new searches will not be initiated too far in advance of production. Consequently, new oilfields will be continuously added as demand rises ... we will stop using oil when other energy technologies provide superior benefits.”

It is beginning to look as if he is wrong on all counts. As the Economist magazine pointed out on September 10, “demand for petrol is pretty inelastic in the short term”, because people still have to go to work, however much it costs. According to the analyst it cites, “it would take a doubling of petrol prices to reduce American petrol consumption by just 5%”.

Lomborg’s idea that companies can just go out and find new oil when demand rises suggests that he believes geology is as malleable as statistics. One day – or so we should hope – a superior technology will certainly emerge, but cheap alternatives to liquid fuels are currently decades away. Yes, the pessimists have been crying wolf for almost a century. But better that, perhaps, than crying “sheep” when the wolves appear.

The Hirsch report has no truck with those who believe in the magic of the markets. “High prices do not *a priori* lead to greater production. Geology is ultimately the limiting factor.” There are plenty of oil shales, tar sands and coal seams available for turning into liquid fuels, but it would take years and a massive investment before enough came online. Hirsch compares the projections of the oil optimists to those of the gas optimists in the late 1990s, who promised “growing supply at reasonable prices for the foreseeable future” in the US and Canada. Today the same people are bemoaning the deficit. “The North American natural gas market is set for the longest period of sustained high prices in its history, even adjusting for inflation ... Gas production in the United States (excluding Alaska) now appears to be in permanent decline.”

“The bottom line,” Hirsch says, “is that no one knows with certainty when world oil production will reach a peak, but geologists have no doubt that it will happen.” Our hopes of a soft landing rest on just two propositions: that the oil producers’ figures are correct, and that governments act before they have to. I hope that reassures you.