To the Last Drop...

Are we facing the end of Saudi oil?

Book Review by Wayne Lutton

In March, Saudi Arabia boosted its oil output. At the beginning of April, the Saudi Oil Ministry launched two new projects that are part of a $55 billion endeavor to keep pace with the world's growing demand for oil. But demand for this source of energy is rising by around 2 million barrels a day and oil executives and analysts warn that even Saudi Arabia's resources will be unable to cope.

"The current out-of-control demand is not good for us," said Ghazi Al-Rawi of Gulf One Investment Bank. "When you have this kind of demand, you're forced to supply beyond the optimal rate. That's not a positive thing." Nawaf Obaid, a Saudi petroleum adviser with close ties to the government, added," If this continues, you'll have demand outstripping supply over the next five years by a wide margin." Saudi officials non-the-less assert that the kingdom's proven reserves can sustain demand for a few more decades before starting to dwindle.

Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy
by Matthew R. Simmons
New York: Wiley Publishers
448 pages, $24.95 h/c, $16.95 paper

The Saudis' claim to have huge oil reserves is questioned by Matthew R. Simmons, a Texas energy investment banker with 20 years' experience in oil, in his important book, *Twilight in the Desert*. Simmons argues that the Saudis may be deceiving the world, as well as themselves. He contends that the Saudi oil reserves are far smaller than claimed. What reserves they do have come from six mega deposits that produce 97 percent of its 9.5 million barrels a day, out of an 11 million barrels-a-day likely capacity. These giant fields were all discovered before 1967. The largest in the world is the 2000-square mile Ghawar field near the Persian Gulf. These wells have been pumped for 50 years or more and at near capacity for almost 40 years. Typically, he notes, an oilfield will yield about 75 percent of its oil during the first half of its producing life (p. 278). Since almost all of the great Saudi fields are decades old, they are likely to lose their capacity to deliver at high output.

Simmons explains the technical side of the issues involved. He shows that pumping oil involves more than just sinking a well into the ground. A number of factors complicate matters, including:

- declining reservoir pressure as oil is pumped from a field over time,
- the emergence of a secondary gas cap,
- corrosion in the pipes and other equipment from water injection'
- increasing water mixed around the oil and mixed with the oil,
- unpredictable behavior of this water, and
- the low productivity of later wells in an oil field.

Simmons also disputes the Saudi-Aramco corporate prediction that 20 million new barrels can be added to the daily flow by means of accelerated drilling by the year 2030. Based on geological patterns, it is unlikely that any new major fields lie nearby. Aramco has already prospected widely outside of the Ghawar region and has yet to find anything of significance. Thus, Simmons is convinced that the possibility of any great new discoveries on the Arabian Peninsula "must now be deemed remote." Consequently, Simmons doubts that Aramco can increase its output to near the levels it claims. Rather, he believes that Saudi oil

---

Wayne L. Lutton, Ph.D., *is editor of* The Social Contract.

production may have already peaked (see Chapter 12, "Saudi Oil Reserves Claims in Doubt").

The author also makes an important distinction between "pure reserves" (actual oil in the ground) and "recoverable reserves" (oil that is cost-effective to produce). Another distinction must be made between grades of oil. It may be cost-effective to pump "sweet" oil (the purest grade) out of a field but not worth the expense to pump lower grades of oil.

Simmons also looks at Saudi Arabia's demographic/social/political climate. The kingdom is no longer populated by a relatively small number of wealthy beneficiaries of the oil revenues, living in luxury villas and driving a Mercedes. The country is actually facing serious financial challenges, compounded by population growth. As he explains:

> *For years, the population of Saudi Arabia was tiny, numbering only six million as recently as 1970. Close to one-third of these people were expatriate immigrants merely working in the kingdom.…In 30 brief years, the number of Saudi citizens quadrupled from about four million in 1970 to over 16 million in 2000.*
>
> *As with the entire Middle East today, the majority of the Saudi population is very young… Only 2.5 percent of the population is over 65, and 43 percent are still under 14. The birthrate is an astonishing 6.3 children per female… The University of Utrecht, which is known for its studies of population, forecasts that Saudi Arabia's population will surpass 30 million by 2010 and will be close to 50 million by 2030.*

A surging population confronted by inevitably shrinking oil revenues will lead to political instability. It appears that Saudi Arabia is in a no-win situation.

The book ends, in Appendix C, with a review of "The 1974 and 1979 Senate Hearings," devoted to the members of the Senate who were responsible for Energy oversight. The Senate was then informed that Peak Oil had been reached and the United States was on a downhill slide in oil production. Yet no planning was undertaken to deal with the inevitable future energy crisis.

The author dismisses the assertions of optimists who chirp that higher prices will lead to new discoveries and the development of new reservoirs, if not in the Middle East, then in China or the republics of the former Soviet Union. Reviewing studies produced by the Society of Petroleum Engineers, he notes that no geological surveys indicate the presence of even one Saudi super-giant field like those at Ghawar. And even if some new oil is located, the extraction costs may exceed any economically reasonable return: "I suspect [this new development] would require a price of oil today that *exceeds* $100 per barrel. Might it be as high as $200 a barrel? Until we have better knowledge of the real replacement costs for assets like drilling rigs, pipelines, and refineries over the next 10 to 20 years, any estimate is a random guess. But $200-per-barrel could be too low."

In such an economic climate, what sense does it make to encourage population growth in this country, as U. S. immigration policy has since the changes in the 1965 Immigration Act took effect? Since when is *more* better? ■