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Oil Shortage?

Saudi Arabia: There's plenty in the ground, but it won't be easy to get. The kingdom may need major new foreign investors. Will it dare open up?

Saudi officials like to fly visitors across the Empty Quarter, the forbidding desert that occupies the eastern portion of the kingdom, to visit the Shaybah oil field. Nestled amid stunning sand dunes like a ship in a vast ochre ocean, Shaybah is a source of national pride for the Saudis -- akin to the Hoover Dam or the Apollo space missions for Americans. To outsiders, the message is: When it comes to oil, you can count on us. "We are the most reliable producer and supplier of crude in the whole world," says Mahmoud M. Abdul Baqi, exploration chief of Saudi Aramco, the giant state-owned company that produces most Saudi oil and gas and exerts powerful control over Saudi Arabia's economy

Shaybah, which started producing in 1998, is an impressive piece of engineering. Developing the field was made possible by the use of multi-branched wells that were bored under the towering dunes from salt flats interspersed among the red hills. The new wells produce 10 or more times the volume of a traditional vertical well, sharply reducing the number of holes needed and thus slashing costs. Shaybah's installations are built to withstand scorching temperatures of up to 50C. One hundred million cubic feet of sand were moved to construct a new town, complete with giant swimming pool, mosque, and library, to house the 700 or so workers operating the facilities.

But tours of Shaybah may no longer be enough to allay doubts about the shelf life of Saudi Arabia's oil fields and the reliability of its reserve estimates. Long-standing assumptions about Saudi oil are being questioned -- with some observers wondering if Aramco is too resistant to needed outside investment. The doubts come at a time when the kingdom is coping with a domestic Islamist insurgency and a changing relationship with the U.S. The uncertainty is rattling the markets just as oil prices are pushing $40 a barrel and reserves of oil companies, especially those of Royal Dutch/Shell Group (RD), are being revised downward.

Since it's widely assumed that Saudi Arabia controls about a quarter of the world's oil, any doubts about whether the kingdom has the goods go to the heart of the global economic system. Will the Saudis be able to raise production as demand rises and traditional oil sources elsewhere decline? "We cannot afford to be wrong about the ability of key exporters to meet growing oil demand to make up for disruptions in supply," says Robert E. Ebel, director of the energy program at the Center for Strategic & International Studies (CSIS), a Washington think tank. "Too much is at stake politically and financially."

"There Is No Plan B"

The most vocal skeptic is Matthew R. Simmons, chairman of Simmons & Co. International, a well-known Houston-based investment bank specializing in energy. He made headlines in February by telling a CSIS audience that the Saudi "miracle" of almost effortless, cheap production was nearing an end. Drawing on technical papers published by the Society of Petroleum Engineers and a February, 2003, visit to Saudi oil fields, Simmons thinks the Ghawar Field, the world's largest, with production of 5 million bbl. per day, could be running dry. Other fields of similar vintage -- Ghawar was discovered in 1948 -- such as Forties in Europe's North Sea or Alaska's Prudhoe Bay, have declined sharply from their peaks. "The entire world assumes Saudi Arabia can carry everyone's energy needs on its back cheaply," says Simmons. "If this turns out not to work, there is no Plan B."

Simmons says the big problem is "no data" for the reserves of Saudi Arabia and other big

Mideast producers. "No third-party inspector has examined the world's most important [energy] insurance policy for years." If the Saudis don't like the questions, he says, they should present "good, transparent data" to back up their claims. Simmons also suspects that most of the other big Saudi fields, including Abqaiq and Berri, could be past their peak. He thinks production has been sustained by technology -- chiefly a system known as water injection -- and that a sudden collapse in a field is possible. That occurred at Oman's Yidal field, to Shell's regret. He speculates that the Saudis may soon have to develop fields once deemed marginal, boosting capital costs.

If Simmons is right, the Saudis could soon be in deep trouble. Their relations with the U.S. are already strained thanks to the participation of so many Saudis in the September 11 attacks. If it turns out they have much less oil than they claim, "the role of the kingdom would be completely devalued strategically," says Roger Diwan, a senior analyst at consultant PFC Energy in Washington. With no alternative to oil in sight for decades, the U.S. and other consuming nations would increasingly need to look to other sources, such as Russia or Iraq.

Not surprisingly, the Saudis have reacted with shock and dismay to the skepticism. Some mutter darkly about conspiracies against their country. "What's the story? Why this sudden panic?" said Abdul Baqi in a meeting with *BusinessWeek* at Aramco's Dhahran headquarters in Saudi Arabia's Eastern Province.

Simmons' pronouncement is having one beneficial effect: The tight-lipped Saudis are opening up, to a degree. Three top Aramco reservoir engineers and geologists offered *BusinessWeek* a scenario as optimistic as Simmons' is gloomy. Even though it has been producing oil for decades, they say, Saudi Arabia has depleted only 28% of its proved reserves. Not only does it have 260 billion bbl. of proved reserves with a 90% probability of recovery, 100 billion more barrels of already discovered oil may be recoverable, especially as technology improves. As for Ghawar, the Saudis produced detailed data showing that pressure is steady and water content of the oil -- a sign of trouble if it's extensive -- is under control. "I think [Simmons' argument] is completely wrong -- based on flawed statistics and very poor engineering analysis," says Nansen G. Saleri, a longtime Chevron (CVX) veteran who is now Aramco's chief of reservoir management.

The Saudis conclude that the kingdom could easily ramp up to 10 million bbl. a day from its current 8.5 million and comfortably sustain that level through 2042. If demand is really strong, they insist, the kingdom could build up to 12 million bbl. a day by 2016 and hold that level out of existing reserves until 2033.

But while few in the industry doubt the Saudis have huge quantities of oil, experts warn that even the Saudis won't know their capabilities until an actual ramp-up. "Even they won't know until they have tested," says Herman Franssen, president of International Energy Associates Inc., an energy consultant in Chevy Chase, Md. And the Saudis may face far greater challenges in developing their reserves and maintaining production than they would like to admit. "We think Saudi Arabia has huge reserves," says Fatih Birol, chief economist at International Energy Agency, a Paris-based intergovernmental group that monitors global energy supply. "We also recognize that these reserves may have geological surprises ranging from steep decline rates in some giant fields to water [problems]."

In addition, if older fields elsewhere in the world run dry, the Saudi fields may be called upon to perform heroically: Birol estimates that the Saudis would need to double current production capacity, to 20 million bbl. a day, by 2020. His agency figures that global demand for oil will grow from 80 million bbl. a day in 2004 to 115 million by 2020. In this scenario, the Saudis would be supplying close to 30% of that increase.

The Saudis and some analysts are skeptical that demand will rise that much, even with behemoth China consuming as much as it can. One reason: Higher prices may curb the world's thirst. "Some of these long-term forecasts are way off the mark," says Saddad Husseini, who recently retired as Aramco's executive vice-president. "They show a minimal change in price and a huge increase in demand." But among outside analysts, there is lingering concern about whether the Saudis are moving fast enough to develop new sources of crude. "The issue is not whether there is enough oil but rather whether they have the willingness and the ability to develop it in a timely manner," says Edward L. Morse, a former U.S. official for global energy policy and now a senior adviser at Hetco, a New York-based energy trader.

The numbers are huge. With new capacity costing $3,000 to $6,000 per daily barrel, the Saudis would have to spend somewhere around $6 billion to $12 billion just to get to 12 million bbl. a day -- along with substantial costs to maintain production. Doubling output would require much broader investment, perhaps $150 billion, Birol estimates. He worries that because Saudi Arabia and other big Mideast producers, such as Iran, are largely closed to foreign investment, there may be financing constraints. "If the reserves are closed to [foreign direct investment], they may not be able to find the necessary funds," he says.

For now, with oil prices high, Aramco doesn't seem to be having any problem making the case for its budget to the Saudi government. But economists in the kingdom think that in coming years, with a growing population and demand for more schools, hospitals, and other public services, Aramco could find its spending curtailed. Its executives shrug off such concerns. Projects such as Shaybah have come in ahead of schedule and below cost.

Aramco executives also like to distinguish their organization from other national oil companies, arguing that Aramco retains the commercial ethos of its founding American partners -- not the sometimes lax attitude common at most state-run organizations. Certainly, Aramco personnel are an elite among Saudi industry. Engineers display an American-style, can-do approach to their jobs. Onsite, at least, they wear Western clothes -- not the cumbersome Saudi national uniform of white robes and checkered kaffiyehs. "I worked 18 years at Chevron, and I don't really see the difference," says Saleri. "In fact, as far as the ability to do things, we have tremendous empowerment."

Gingerly Pace

Yet Aramco is also different from an international oil company. It is managing gigantic fields with a long-term strategy rather than milking smaller ones for all they're worth, as majors often do. Shaybah is now producing about 550,000 bbl. a day -- even though Aramco execs say that with close to 16 billion bbl. of reserves, the field could easily be milked for 1 million bbl. a day. An oil major, under pressure to maximize returns on capital, would likely be pumping at much nearer that level. But Aramco is proceeding at a gingerly pace, preferring to more fully understand Shaybah's reservoirs before pushing them harder, even though the field's high-quality crude brings a premium of a dollar or more per barrel over the heavier oil from other Saudi fields. "We drive slowly, not fast," says Saleri.

Aramco execs say they don't feel much urgency to add production capacity. They plan a hike of 1.4 million bbl. a day or so by 2009, but that might just make up for depletion in the years between. But Aramco execs may have another reason to downplay talk of a crisis: They don't want the government in Riyadh to invite oil majors in to develop the next generation of Saudi oil fields. Aramco isn't happy about the prospect of having foreign companies operating in the kingdom. They like having all of those reserves for themselves -- and would probably balk at the hard-charging style of an Exxon Mobil Corp. (XOM) or a BP PLC (BP).

Partly because of Aramco's opposition, a four-year, high-profile effort led by Crown Prince Abdullah to attract global companies to explore for gas to power electricity, petrochemical, and water projects worth tens of billions of dollars collapsed last year. It was replaced by much more modest wildcat exploration schemes. ExxonMobil and BP walked away, while Royal Dutch/Shell and Total (TOT) agreed to an exploration deal. In March, several more global companies, including Russia's Lukoil (LUK), Spain's Repsol YPF (REP), and Italy's ENI (E) signed gas-exploration deals.

One goal of the gas initiative, according to sources close to the project, was to break Aramco's domination of the Saudi oil-and-gas industry. But Crown Prince Abdullah and Foreign Minister Saud al Faisal underestimated the power of Aramco and Oil Minister Ali Naimi, a fierce advocate of the national company who was its first Saudi CEO. Naimi and his minions drove the majors crazy by restricting them to exploration acreage they considered marginal. At the signing ceremony on Mar. 7, Naimi hinted that it will be a long time before more foreign investors are let into the kingdom's oil-and-gas industry. "It is necessary to slow down to know the results of this work," he said.

Still, Saudi Arabia is changing, and Naimi, who is 68, won't be in his job forever. Like the proverbial camel, international oil companies have their noses under the Saudi tent. As demand for oil rises, they hope they'll find a way in.