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Running Out of Oil?

Every single day, the world uses about 84 million barrels of oil. A barrel contains 42 gallons, or 159 liters. So, worldwide, we burn more than 3.5 billion gallons (more than 13 billion liters) of oil with every setting sun.

How much can possibly be left down in the ground when we're using it up at such a rate? The answer depends on how you estimate what oil experts call "proven reserves."

Got Oil? Prove It

Basically, proven reserves measure the amount of oil that producers can safely expect to extract from known reservoirs and sell at a profit under current conditions. So determining the size of these reserves not only involves geology (and some educated guesswork), it involves economics, too.

Today, the oil industry estimates that the world's proven reserves total roughly 1.2 trillion barrels. Most of this oil (61.5 percent) is in the Middle East—particularly in Saudi Arabia (21.9 percent), Iran (11.4 percent), and Iraq (9.5 percent). The United States has just 2.5 percent of the world's proven reserves, though it is by far the world's top oil user.

More Oil? See Canada

Simple math says that if the world continues to use oil at the record pace of 31 billion barrels a year, our proven reserves will be gone in 39 years. But simple math doesn't solve a complex problem—because the oil industry has been increasing its estimate of proven reserves. In fact, since 1985, the world's proven reserves have grown by 57 percent.

Some of this growth comes from the discovery of new oil fields, but most of it is economics. Technological improvements have reduced the cost of oil extraction, while market forces have driven oil prices up. Simply put, oil that once wasn't worth extracting has become profitable to pump, and that increases the size of proven reserves.

Take Canada's Athabasca oil sands. Located in Alberta, the oil sands are a mixture of sand, clay, water, and a tar called bitumen, from which oil can be extracted. Extracting the oil used to be prohibitively expensive, but today's oil prices are changing that equation. According to Alberta's government, 174 billion barrels are already recoverable—enough to make Canada second only to Saudi Arabia in proven oil reserves.

Lots Left? Hard to Say

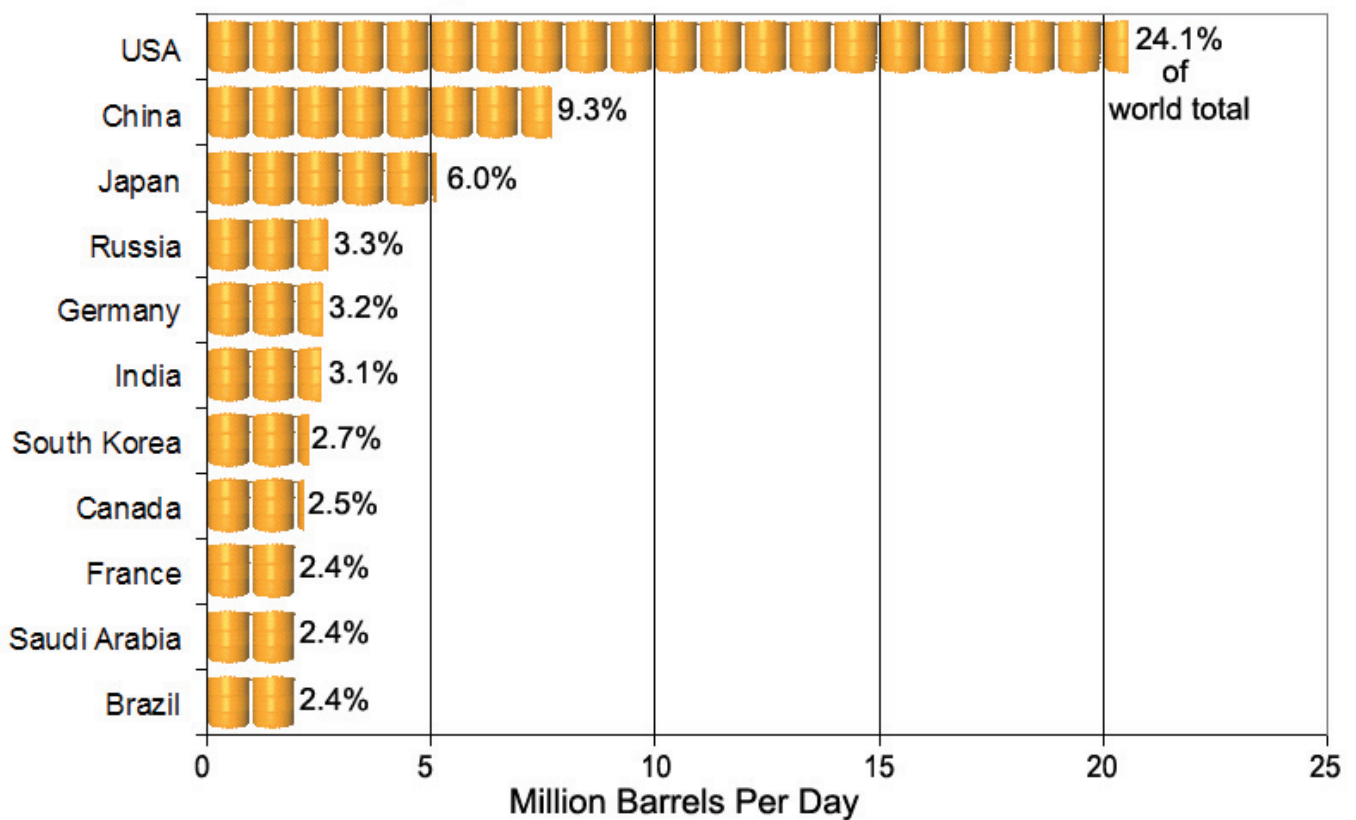
Experts still disagree over how much of Alberta's tar-trapped oil should count as proven reserves. The same goes for oil sands in Venezuela and oil shale in the United States. Yet any large new oil reserves will likely come from nontraditional sources like these. Few industry experts expect to find vast new traditional fields like those in Saudi Arabia.

Already oil producers have a hard time replacing the 31 billion barrels the world uses up each year, and consumption rates continue to rise. If consumption begins to outstrip the opening of new reserves, global supply will inexorably shrink (some experts think this is already happening). The future of oil may well come down to a race between consumption and innovation—including innovations to reduce consumption.

—Michael Himick and Steve Sampson

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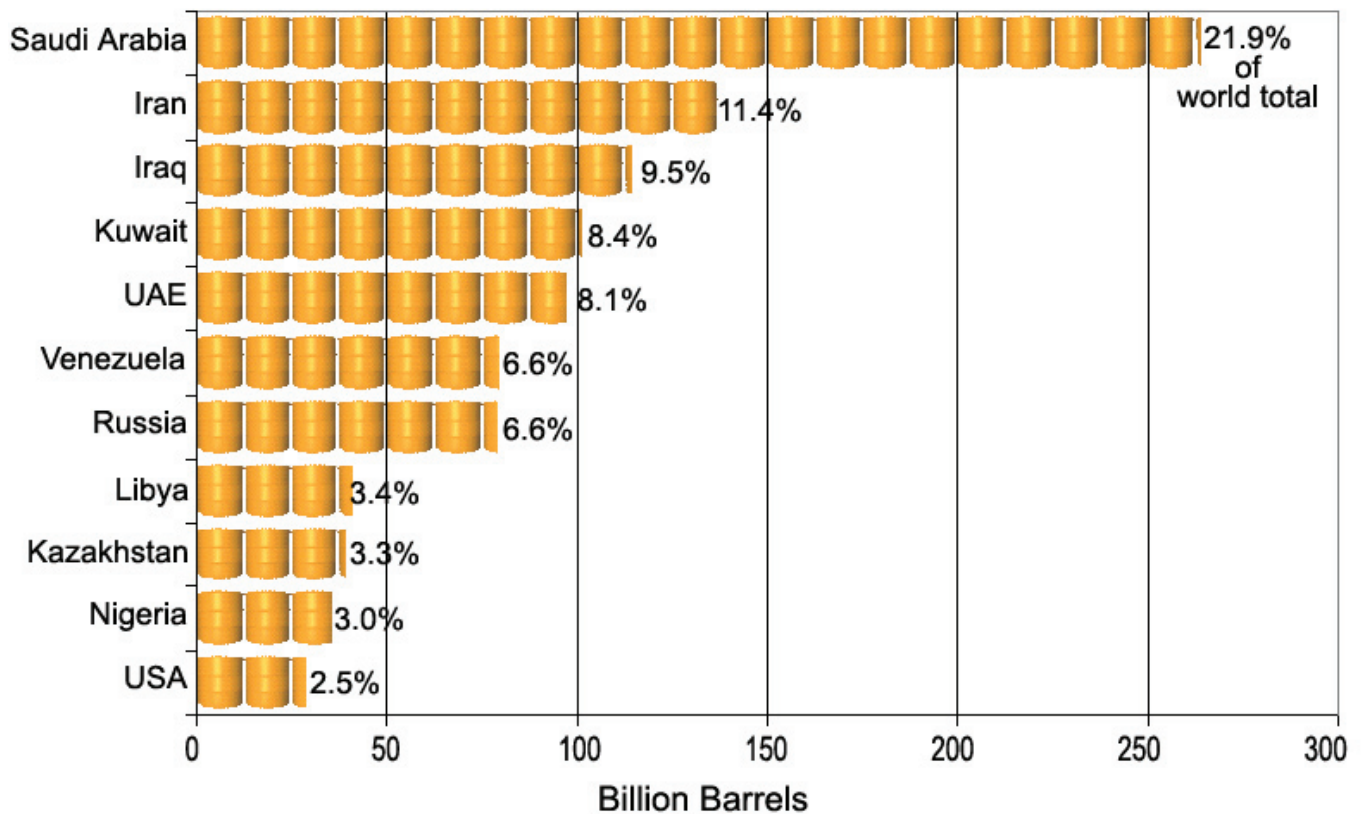
Top Oil Consumers



Source: BP Statistical Review of World Energy 2007

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Most Proven Reserves



Source: BP Statistical Review of World Energy 2007