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## Here comes \$500 oil

**If Matt Simmons is right, the recent drop in crude prices is an illusion - and oil could be headed for the stratosphere. He's just hoping we can prevent civilization from imploding.**

By [Brian O'Keefe](#), senior editor

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(Fortune Magazine) -- Matt Simmons is as perplexed as anyone that it has fallen to him to take on OPEC, Exxon, the Saudis, and all the other misguided defenders of conventional wisdom in the oil patch. Why should one investment banker with a penchant for research be required to point out what he regards as the obvious - that from here on out, oil supplies can't meet demand, and if we don't act soon to solve this crisis, World War III could be looming?

Why should a man who scorns most environmentalists have to argue that locally grown produce and wind power are the way of the future? Why should a lifelong Republican need to be the one to point out that his party's new mantra - "Drill, baby, drill!" - won't really fix anything and that his party's presidential candidate is clueless about energy? That the spike in oil prices earlier this year wasn't a temporary market anomaly and the recent retreat in prices is just a misleading calm before a calamitous storm? That we're headed toward \$500-a-barrel oil?

"I find it ironic that here we have the biggest industry on earth, and I'm one of the few people to figure out that we have a major problem," he says, in his confident if not quite brash way. "And I did it all in my spare time. How stupid and tragic is that? I shouldn't be one of the only folks that actually has a handful of ideas of how we can keep from blowing each other up and get through this."

Indeed, Simmons isn't the obvious candidate to be the bearer of bad news about oil. He's spent his career working in the business, has lived in Houston for decades, and is such an industry insider that he helped edit the Bush campaign's comprehensive energy plan in the 2000 election - the document that was ultimately more or less rubber-stamped by Vice President Dick Cheney's infamous secret Energy Task Force. Over the past 35 years, his boutique investment bank, Simmons & Co., has helped finance and shape much of the country's existing oil-services business. With profits gushing, you might expect him to be celebrating.

Not to mention that the 65-year-old banker doesn't have the personality of a prophet of doom. He has a puckish wit, a relentlessly cheerful and enthusiastic demeanor, and the appearance of a rosy-cheeked cherub in a navy blazer. He routinely refers - in earnest - to his daily experiences as "tremendous fun." His closest business



associates have a hard time recalling him ever showing anger. But when it comes to oil and gas, his message is downright scary.

### An unlikely maverick

Simmons was transformed overnight from an influential industry expert to an A-list pundit by the publication in 2005 of his book "Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy," a fairly technical read which argues that Saudi Arabia's oil supplies are much more limited than everyone thinks.

Since then he has moved to the forefront of the peak-oil movement - a once fringe but now growing contingent of oil industry veterans, independent consultants, investors, and academics who believe that world oil production is at or near an inflection point, after which it will fall inexorably and fail to meet projected future demands. According to Simmons, we have already passed that peak. And while we're not going to run out of it anytime soon, the era of easy oil is over, and the world is about to enter a period of convulsive change. (Hint: Learn to garden, and buy some comfortable walking shoes.)

The soaring price of crude - it has risen from below \$20 a barrel in 2002 to as high as \$147 earlier this year - has helped thrust Simmons further into the spotlight. He was one of the main voices, for instance, in the recent oil-shock documentary "Crude Awakening," and his book has now sold more than 100,000 copies. His willingness to make bold predictions about how high crude may go has made him an A-list guest for cable TV news programs and a go-to source for newspaper reporters covering oil and gas. In 2005, when oil was \$58 a barrel, he predicted it would be at or above \$100 within a few years. Now he sees it climbing to \$200, \$300, or higher. "There really is no roof on oil prices at this point," he says.

Being so outspoken, of course, invites criticism, and Simmons has endured plenty. But he has also won a lot of high-profile admirers. "Like most people who ignore conventional wisdom, he was scoffed at, ridiculed, and denied," says commodities guru Jim Rogers. "And now, of course, people are starting to say, 'Oh, well, I thought of that.'" Billionaire oil and gas investors Richard Rainwater and Boone Pickens both heap praise on Simmons's analytical abilities. Maine's Senator Susan Collins, a Republican who recently began consulting with Simmons on energy issues, says, "I think he's issuing a clarion call that policymakers need to listen to."

In his own upbeat way, he despairs about what is to come. As the price of oil has fallen this summer (to \$101 at press time), Simmons has watched in dismay as complacency has returned and the champions of do-nothingism have popped out of the woodwork to say I told you so. Not that it's lessened his conviction about the road ahead. "I do think there are a growing number of people who are getting it," he says. "But I guess it just reminds me that as a society, we don't have the ability to actually come to grips with a crisis until it's hit us in the face. I am discouraged enough now to think that we're going to have to have a really nasty shock before we wake people up."

### Has peak oil peaked?

On a Thursday morning at the end of July, Simmons is sitting in a wicker chair on the back porch of his six-bedroom summer home on the coast of Maine, waiting to do a live television spot on CNBC. Sun glints off Penobscot Bay below him. In the distance, sailboats glide in and out of Camden Harbor. It's the kind of scene that has captivated him since his Harvard days in the 1960s, when he started coming up here on weekends. Wearing a blue-and-white-checked shirt, cream-colored pants, and tasseled loafers, Simmons chats with Ellen, his wife, and Emma, one of their five daughters. His earpiece is chattering as CNBC anchor Melissa Francis teases his upcoming segment.

At the moment, the price of oil is hovering around \$124 a barrel, and CNBC wants him to interpret why crude is suddenly tumbling. "Has peak oil peaked? I guess that's our topic," he reports to everyone within earshot, before the shot goes live.

It was on this same porch five years ago that Simmons had the insight that convinced him that the oil age had passed its zenith. During a trip to Saudi Arabia in February 2003 with his friend Herbert Hunt (yes, the son of H.L. Hunt who, with his brother Bunker, almost cornered the silver market in 1980), Simmons had become suspicious

of the Saudis' claims about the vastness of their oil supply. In his four decades of working in the oil and gas industry, everyone he had ever talked to had taken it as gospel that the Saudis had enough oil to bail the world out when other supplies ran short. If that wasn't true, Simmons believed, the era of cheap oil was over. Demand for crude was on the rise worldwide, and supplies were getting tighter all the time. If the Saudis were pushing up against the limits of their oil production, the world needed to know.

In his typically analytical fashion, Simmons went hunting for data. He found it in the form of hundreds of technical papers submitted by Saudi oil geologists to the Society of Petroleum Engineers over the past 50 years. Simmons spent the month of August 2003 sitting on his porch in Maine and grinding his way through the minutiae of technical accounts of, for instance, reservoir pressure and water-cut percentages, trying to piece together the challenges that the Saudi geologists had encountered in managing their precious oilfields. In the end, his conclusion was clear. "I finished reading the last paper on a Sunday afternoon," says Simmons, "and I sat back and I thought, Holy crap, this is unbelievable. I've just discovered the biggest energy illusion ever in the world. We're in big trouble. I'm going to write a book."

And so he did. But writing the book didn't exhaust his passion. Today he is more convinced than ever that we've reached peak oil. If he's right, current world oil production- 86 million barrels a day- is about as high as we're going to go.

Of course, if demand goes up but supply doesn't, prices are apt to go through the roof. And unlike global oil production, global oil demand doesn't appear to be anywhere near a peak. Both the U.S. government's Energy Information Association and the independent International Energy Agency, based in Paris, estimate that worldwide demand will be more than 115 million barrels a day by 2030.

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## The prophet of \$500 oil (cont.)

By [Brian O'Keefe](#), senior editor

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While demand growth in the United States has slowed recently due to higher prices, the EIA projects that China and India will more than pick up the slack. And the IEA recently warned that high prices won't slow demand growth in emerging economies. If demand wants to go north of 100 million barrels a day and supply can't break 90 million (or drops below 80 million, as Simmons believes will happen within five years), it will be a price squeeze felt around the world. The peak-oil crowd will be able to declare victory - but nobody will be celebrating.

### The peak-oil theory

The concept of peak oil was introduced to the world in the 1950s by a curmudgeonly Shell geophysicist named M. King Hubbert, who observed that the production of oilfields tended to follow a bell-shaped curve, peaking and then turning down sharply. He came up with a formula to quantify his theory. And in 1956 he was ridiculed within the industry for predicting that U.S. crude oil production would max out in the early 1970s. Sure enough, though, in 1970 the United States reached its apex at just under ten million barrels per day, or roughly what the Saudis produce now, and began a long slide down. (Hubbert later predicted that world oil production would peak in 1995. He was a bit early on that call.)

No one disputes that oil production will top out some day. It is, after all, a finite resource. The argument is about how far off the peak is. As Simmons and others point out, many of the world's largest oilfields - Prudhoe Bay, the North Sea - have already gone into decline. The most optimistic estimate for the average depletion rate of the

world's currently producing oilfields is between 4% and 5% annually, or about four million barrels per day at our current rate of production. That means that each year we must find enough new oil to first replace those four million barrels of lost daily production before we even add enough to meet new demand. This is all the more worrisome because world oil discovery of new reserves has been slowing since the mid-20th century.

Despite this gloomy case, most of the oil establishment insists that, while oil may be harder to find, there is still plenty of it, and any peak in production is decades away. OPEC, whose member nations sit on 75% of the world's reported reserves, pooh-poohs concerns about a peak.

Earlier this year Abdallah Jum'ah, CEO of Saudi Aramco, the kingdom's national oil company, called peak oil "a myth." The multinational oil giants are only slightly less optimistic. While they acknowledge that crude is getting harder to find and produce and that so-called unconventional oil (like natural-gas liquids) will be increasingly important, they don't think a peak is imminent either. Exxon Mobil ([XOM](#), [Fortune 500](#)) has run ads that dismiss peak oil as a far-off problem. This summer Tony Hayward, BP's ([BP](#)) chief executive, bet a peakist that oil production in 2018 will be higher than it is today. "It's unbelievable," says Simmons. "These guys don't even understand their own business."

One difficulty in assessing the situation is the lack of transparent information about oil production and reserves, particularly in OPEC countries. Back in the 1980s, after OPEC decided to base its production quotas on reserve figures, several of the cartel's producers abruptly raised their claims of "proven reserves" by 40% or more. Saudi Arabia, for instance, raised its proven-reserve figure from 170 billion barrels to about 260 billion in 1988. Amazingly, that figure has stayed more or less constant since then - even as billions of barrels have been pumped out of the ground. "We need to send in the audit troops," says Simmons regularly in his speeches. "The major oilfields of the world need to be invaded by third-party inspectors so that we can figure out how bad things are and deal with it."

A favorite target of Simmons and other peakists is Cambridge Energy Research Associates (CERA), a leading provider of supply data to the major oil companies. Led by chairman Daniel Yergin, the Pulitzer-winning author of the oil history "The Prize," CERA rejects talk of an imminent peak and advises instead that the world may reach an "undulating plateau" of production at some point in the distant future, perhaps around 2030. The firm has opened itself to criticism over the past few years by consistently predicting that oil prices would fall back, only to watch them soar.

According to Peter Jackson, a geologist and CERA's director of oil industry activity, the firm's proprietary database of some 20,000 projects shows plenty of capacity growth through at least 2020. "Our analysis just doesn't support a peak in the foreseeable future," says Jackson, who declines to discuss Simmons directly. "I would love to see a decent analysis that shows something to the contrary."

For his part, Simmons would love to get a detailed look at CERA's proprietary information. "All this undiscovered oil they talk about has by definition not been found yet," he says. "And it is as unusable as my unearned net worth. I can guarantee you that I wouldn't have had the guts to go into any bank in the world and say I'd like a loan against my unearned net worth."

Earlier this year, Simmons and other members of the Association for the Study of Peak Oil in the U.S. offered to bet CERA \$100,000 that the world would not meet CERA's production forecast of 112 million barrels per day in 2017. CERA didn't respond. "I'm very cognizant of how annoying it is to be the guy saying I told you so," says Simmons, leaning forward and peering over his bifocals. "It's much better to use a bit of ridicule."

Not a preordained prophet

When Simmons gets interested in something, he goes all out. In 2005, the same year that "Twilight in the Desert" came out, Simmons self-published a book of his watercolor paintings, the fruit of 30 years of carrying his paint set wherever he traveled. He and his wife sit on the board of the National Trust for Historic Preservation, and a few years ago he funded the restoration of an old movie theater in Rockland, Maine, near his house. Simmons is also an avid book and antique collector.

It's no wonder a topic as complicated as oil would beguile him. But his path to peak-oil prophet was anything but preordained. In fact, he was raised to be a banker. He grew up in a Mormon family, the second-oldest of six kids in Davis County, Utah, just north of Salt Lake City. His father, Roy, was a self-made man who in 1960 took over the struggling Zions National Bank, founded by Brigham Young, and built it into an empire. Roy always engaged his family in business discussions and even took a teenage Matt along on trips to New York to sit in on meetings. "I don't remember us sitting around the dinner table discussing who was going to win the Super Bowl or anything like that," says Harris Simmons, Matt's younger brother and current CEO of Zions Bancorporation ([ZION](#)), which has a market cap of \$3.5 billion.

Simmons got his first exposure to the oil business in 1969. After graduating from Harvard Business School a couple of years earlier, he took a job writing case studies for one of his professors. (On the side he was also operating a booming business as a money manager; his clients included former Michigan governor George Romney, the father of both Mitt and Simmons's Harvard buddy Scott Romney.) That spring he traveled to Los Angeles for a case study interview and met up with his father, who was attending a conference in Palm Springs.

During a break, Simmons's father introduced him to a fellow attendee, a deep-sea diver named Lad Handelman who had been doing underwater work for the oil companies on rigs off Santa Barbara. Handelman explained that his fledgling company was growing faster than he could manage it, and he was planning to sell out. Simmons told him he should bring in new money instead. "I can help you with that," said Simmons. "Why don't we raise some capital?" The venture, Oceaneering, became one of the country's fastest-growing and most successful offshore-drilling service companies, and suddenly Simmons had a new career as an investment banker.

In 1974, Simmons moved to Houston with his younger brother L.E. to launch Simmons & Co. and take advantage of the exploding oil-services business. To get an edge over his bigger competitors from Wall Street, Simmons made it a point to learn his chosen industry inside and out. "He probably does more research than anyone I've ever seen in the energy business," says Bob Long, the CEO of offshore drilling contractor Transocean and a longtime Simmons & Co. client. "He's always been passionate about gathering and analyzing statistics." His business thrived until the mid 1980s, when oil prices crashed and, as Simmons says, the services industry "fell off a cliff." He found himself working on bankruptcies and liquidations. The fact that the experts missed the coming collapse of oil prices pushed him to study harder.

By the early 1990s, Simmons thought the industry had contracted too far and that at some point in the near future, America would be facing a new oil crisis as a result. He launched a securities business at Simmons & Co. to exploit the demand for research and trading that he envisioned in oil and gas. And at a stage in his career when most senior partners would be leaving the research to their young analysts and spending more time on the golf course, he did more and more independent research, publishing white papers for friends and clients. (He hates golf.)

In 1997 he wrote a prescient report called "China's Insatiable Energy Needs." And in 2001, when he realized there was no publicly available resource, he embarked on a study of the world's major oilfields. He found that an alarming percentage of today's oil production comes from a handful of giant fields that were mostly discovered decades ago. (Saudi Arabia's Ghawar field, by some estimates, still accounts for upwards of 6% of the world's daily output after 60 years of production.) By the time he arrived in Saudi Arabia in 2003, he began to suspect that worldwide oil production was reaching its peak.

### Oil illiteracy

"John McCain is energy illiterate," Simmons is saying. "He's just witless about this stuff. As a lifelong Republican, I'm supporting Obama." A dozen oil and gas men sitting around a conference table in Lafayette, La., chuckle nervously as he continues. "McCain says, 'Oh, we're going to wean ourselves off foreign oil in four years and build 45 nuclear plants by 2030.' He doesn't have a clue."

On this humid day in early June, Simmons is visiting a gas exploration company called PetroQuest Energy. Lafayette is a hub for the Gulf Coast oil and gas industry, and Simmons is in town to give a talk at the local college this evening. But he and Mike Frazier, the CEO of Simmons & Co., have stopped off for a private visit

with the PetroQuest board. After a bit of his usual sermon - "There's no end in sight to higher oil prices, unless the world economy absolutely collapses" - Simmons opens the room to questions. It's obvious that his rhetoric has surprised his hosts. But Simmons is not the sort to mince words. ("Matt is the smartest analyst I've ever seen on energy," said Frazier to me later, "but we don't always agree on everything. Including politics.")

McCain's midsummer move to begin campaigning on a platform of more offshore drilling has only hardened Simmons's position. "What a hypocrite," says Simmons, who supported McCain's rival Mitt Romney in the primary - no surprise given Simmons's history with the Romney family. "Here's a man who for at least the past 15 years has strenuously, I mean strenuously, opposed offshore drilling. And now it's 'drill, drill, drill.' And he doesn't have any idea that we don't have any drilling rigs. Or that we don't have any idea of exactly where to drill." (As for McCain's running mate, Sarah Palin, Simmons says: "She's a very colorful person, but I don't think there's a scrap of evidence that she knows anything about energy.")

For the record, Simmons has been advocating more drilling off the coast of the United States since the early 1990s, but now he says that treating it as our salvation is misguided. "I'm not saying we shouldn't do it," says Simmons. "We should, and the sooner the better. But we shouldn't think that it'll have any impact for a decade or two." The exception, he says, is the reservoir in the hotly debated Arctic National Wildlife Reserve. "ANWR," he says, "is the only place that we could drill right now and it might actually make a difference in a year or two."

As for some other currently vogueish sources of fuel coming to the rescue, he's dismissive. Oil shale? "Buck Rogers stuff. It just can't work." Ethanol? "It's a joke. The numbers just don't add up."

Simmons believes that a radical change in the way we live is inevitable. "We should basically be going back to creating a village economy, so that we really reduce the energy intensity of how we live," he says. "We need bigtime conservation, not feel-good conservation. Make things where they're used. You'll end long-distance commuting, and we have the tools to do that now with webcams. Grow food locally. Grow food in your backyard. If they're not commuting, people will have time to do that."

## Ocean energy

One afternoon in 2005, Simmons was sitting in his study in Maine watching waves crashing ashore when he started to think about all the potential power to tap from the ocean. "I thought to myself, Wouldn't it be fun to start an institute to study ocean energy?" he says. So he did. Sort of.

Today the sole employee of the Ocean Energy Institute is a physicist named George Hart, 62, who has spent the past 25 years working on the government's Star Wars missile defense system. (In the 1970s, at the Naval Research Laboratory in Washington, D.C., Hart helped develop the excimer laser, which is used today for tasks as varied as Lasik surgery and printing the freshness dates on Budweiser cans.) The institute doesn't yet have a headquarters, but it does have a big idea. And it doesn't involve waves.

Last spring Hart and Simmons cooked up a plan to build a floating wind-turbine farm 20 miles off the coast of Maine that they say could easily power the entire state - the equivalent of five nuclear power plants (and far enough from the coast not to be visible). The Gulf of Maine has 100 gigawatts of wind power, or 10% of U.S. daily consumption. The hope is that Maine can be an example for the rest of the country. Playing off the high profile wind-farm plan recently proposed by Simmons's buddy Boone Pickens, they're calling this idea the Pickens Plan Plus. Things appear to be moving fast. Senator Collins has thrown her support behind it.

The day after the CNBC interview, Simmons and Hart drove up to the University of Maine to visit the Advanced Engineered Wood Composites Center (AEWC), a 60,000-square-foot structural testing facility. The lab's director, Habib Dagher, is one of the world's leading experts in composite materials. He's working with Simmons and Hart to develop new windmill-blade technology.

The AEWC guys gave a presentation showing how the project could be ready by 2020. Simmons then donned a hardhat and safety glasses and got a tour of the testing floor. As it happens, the lab had already been hired by a large wind-power company to fatigue-test a prototype for a 55-meter turbine blade. A ten-meter segment of the

blade was locked in a device called a hydraulic actuator - what looked like two massive steel vise grips - receiving 38,000 pounds of pressure up and down every second. "This is really incredible," Simmons announced. "I'm going to come back up here with two or three investor types I know."

On the way out, I asked Simmons if seeing the lab made his virtual institute feel more real. "Oh, yeah, very impressive," he said. "But we need to compress the time frame - 2020 is way too far out. That plan is fine assuming that we go along like we are now, and everything is okay in the world. But it's not going to be okay. We're going to need this stuff much sooner."

*Reporter associate Doris Burke contributed to this article. ■*

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