

Peak Oil Paradigm

Fact . . .

Over 1.5 TRILLION barrels of oil equivalent have been produced since Edwin Drake drilled the world's first oil well in 1859. The world will need that same amount to meet demand in the next 25 years alone. And if you're thinking that it's all for your gas tank, you're only half right . . .

You see, petroleum isn't just at your local Gas n' Go station, it is found in virtually every product that you buy, own and use. Be it your shoes, your Starbucks coffee cup, or the computer on which you are reading these very words. I'm not just talking about the petroleum used in the transportation of these products from the factory to the stores where goods like these are purchased and consumed. I'm talking about the petroleum used in making the product itself and, more importantly, the petroleum needed for the technological breakthroughs that made these products a possibility.

Chew on this:

- To construct the average car, approximately 27 to 42 barrels of oil, or 1,100 to 1,700 gallons, will be consumed.
- Making average desktop computer requires more than 10 times its weight in fossil fuels.
- Every calorie of food eaten in the U.S. requires roughly 10 calories of fossil fuels.

You see, we simply can't have computers, silicone, wire coverings, outlets, artificial limbs and electron microscopes without oil. Whether you want to believe it or not, oil does make the world go 'round.

Now, if you're curious and want to see how advanced a civilization can be without the use of petroleum, all you have to do is head to what gawking Long Island tourists call "Amish Country." To the locals, it's Lancaster, Pennsylvania. These people, whose everyday lives have sadly become a tourist attraction, are living in suspended animation at the peak of their own society, before petroleum came into the mix. No electricity, no flashlights, no plastic, no cars, no telephones, no Starbucks, no sneakers, no health clubs, no computers, no supermarkets (except to sell the wooden products they've made), no cell phones, and no Tasty Kakes... to which the modern world as a whole says: no thanks!

Today, talk of "peak oil" is dismissed by big oil companies as pure nonsense—a rumor spread by those who would take us back to the Dark Ages.

But that couldn't be further from the truth.

Far from being a rumor, this problem has even the King Kong of oil companies in a thinly disguised frenzy to find its next couple of million barrels. As you'll see, this problem has been piling up, ignored, for more than 30 years. Now the dominoes are all lined up and the first one is about to tip.

The Crippling Power of Oil

People who think that the oil crisis of 1973 was strictly an embargo have another think coming, it was an omen and the first sign of our vulnerability to the ever-dwindling supply of oil in the world.

You see, in October of 1973, Middle Eastern OPEC states stopped exports to the U.S. and other western nations. They meant to punish all the infidels that supported Israel, their foe, in the Yom Kippur War. It was then that these oil-rich desert countries realized the extent of the world-halting power they possessed. [The lesson nearly drove us mad . . .](#)

Blocking just 5% of our imported oil supply was enough to nearly quadruple the price overnight. It was a lesson we should never have forgotten. But it wasn't the first time—or the last—that oil, not weapons, proved to be the true “war machine.” In World Wars I and II, sabotaging the German supply lines was quite possibly the most crucial element to thwarting Germany's military.

Oil is so important to the strength of a nation's economy that it was the United States' final plan of attack to crush the Soviets.

During the late summer of 1985, the Reagan administration had a sudden stroke of genius. Tired of the stalemate, the American government knew that the only alternative to physical destruction of the Soviet Union was to nuke their economy. And knowing that much of its economy was based on two exports—oil to Europe and military weapons and training to anti-Western countries—we found an “in”.

Mindful of the saying “the enemy of my enemy is my friend,” we decided to make a little pact with Saudi Arabia—an offer the Saudis couldn't refuse. High oil prices from OPEC kept Soviet exports to Europe and other countries profitable. It also allowed Iraq, Iran and Syria to purchase advanced Soviet weapons and training. Those countries had been threatening Saudi Arabia for years.

The high oil price also allowed the Soviet Union to keep a military presence in South Yemen, Syria, Ethiopia and Afghanistan. The idea was to bankrupt the Soviet Union by having Saudi Arabia drop its oil prices far below what the Soviets could afford to sell its oil for. Once non-Soviet prices were lowered, former Soviet oil clients would cease buying from the USSR, killing the communist giant's income. It would also harm the Soviet economy because Iraq, Iran and Syria would no longer be able to sell their oil at prices high enough to be able to afford Soviet weapons and training.

It was a sucker punch to end the Cold War, a numbers-crunching accountant's wet dream . . . and it was just crazy enough to work. But that's also where the problems begin. In short, we taught the Saudis how to cook the books and how to make their supplies appear larger than they really were to keep the oil prices low.

In December 1985, the price of oil was \$26.46. And then, suddenly, on March 31, 1986, it plummeted to \$10.25. The Soviets couldn't keep up, and their economy began to collapse. Our part of the bargain for Saudi Arabia's aid in bankrupting the Soviets would become known as Operation Desert Storm.

But the book-cooking lessons learned by the Saudis would soon become widespread among OPEC nations—and even among big oil companies. After decades of inflating their actual reserve numbers without finding any more significant oil resources, the future of the world's oil is falling apart faster than a canvas shoe on a rainy day.

You may be asking yourself, “What do you mean they aren't finding any more oil? There's tons of oil being discovered, isn't there?”

Well, it's like I mentioned before: Since 1859, we have consumed 1.5 trillion barrels of oil. And with our forecasted rate of consumption, it will take only 20 years to consume another 1.5 trillion. In the past two years alone we've consumed over 60 billion barrels of oil—and that rate's about to take off.

With an exponential increase in consumption, we are faced with a dire problem.

The number of “giant” oil field discoveries has declined dramatically since the 1960s. The large reserves and production capability of these fields are essential to increase world oil production; the combined output of smaller oil fields serves at best to offset declines in the older giants. Unfortunately, since 1990, there have been few giants discovered in the world—a total of 35—and none of these have a production capability above one million barrels per day. Before the 2006 “Jack” oil field discovery, which we all know has problems of its own, the last confirmed giant find occurred in 2003 off the Brazilian shore. But the oil found there contains mostly heavy (dirty) oil and is not expected to come on-line until 2011.

Although it's a sizable find, the 700 million-barrel Papa-Terra field lies in almost 4,000 feet of water (Jack is under 7,000 feet of water, and more than 20,000 feet under the sea floor.) Curiously, both the Papa-Terra and Jack discoveries caused Big Oil to jump for joy like a fifth-grader getting a snow day. The size of the Jack field is still to be determined. But to put the size of Papa-Terra into context, at current global oil consumption rates, that amount of oil is consumed every 8.3 days! The world needs many more giants just to replace the consumed reserves, and we aren't coming close. In fact, we would need 85 Papa-Terras to make up for global consumption over the last two years.

The world's largest oil field, Ghawar in Saudi Arabia, was discovered in 1948 and currently produces approximately 4.5 million barrels per day. With an estimated 60–70 billion barrels in remaining reserves, it could continue producing for several decades, but nothing of its size has been discovered since. The importance of Ghawar and other older giant fields to global oil production can not be overstated.

Twenty years ago, 15 fields had the capacity to produce more than one million barrels per day. Today only four fields can produce that much:

- Ghawar (Saudi Arabia)
- Kirkuk (Iraq)
- Burgan (Kuwait)
- Cantarell (Mexico)

But I'm only getting started. You see, it gets worse—much worse . . .

The Last Domino Is About to Fall

There's an issue that has the world's finest geologists, physicists and investment bankers as nervous as an agoraphobic in Central Park. These rational and conservative professionals are absolutely terrified by the fact that there soon won't be enough oil to keep the world's economies running, and the fear is spreading faster than the panic after an Orson Welles broadcast.

The reason for their terror starts with an indisputable fact . . .

Oil production follows a bell curve. But demand only increases.

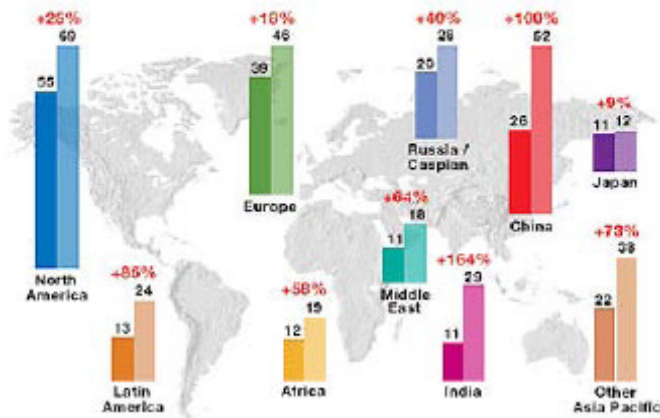


As much as some may dream, oil is not renewable. It works like this: Every year following the peak of oil production (believed to have happened already by highly respected researchers, geologists and investment bankers like Matthew Simmons), the world's output will go into steady decline. And the rate of decline is staggering . . . as much as 10% a year! This isn't just a one-field observation, it's true for every oil-producing country and the world as a whole.

Assuming, for simplicity's sake, that the world reached its peak oil production back in 2005, that would mean that by 2025 there would be as much oil produced as there was in 1985. Fine, there was a lot of oil for the world in 1985. Only there's a slight hitch.

Growing World Energy Demand (Millions of oil-equivalent barrels per day)

■ 2004 ■ 2030 % = Change



By 2025, the world's demand for oil is going to be 60% greater than it is today, while production capacity is thrown back to 1985 levels. This is due to the world's rapidly growing population and increasing industrialization. China's annual oil consumption growth rate of 7.5% and India's of 5.5% are both expected to take a quantum leap over the next decade. It's easy to see there's trouble ahead. But rising demand is only a tiny part of our problem.

How 72.4% of ALL Statistics Are Made Up on the Spot

Remember the Reagan strategy for bankrupting the Soviets? Well, it's now come back to haunt us. During that time, something weird was happening in the Middle East. In some miraculous way, the OPEC countries were reporting that their new reserves weren't depleting, in fact, they reported them growing. It's something I like to refer to as "The great oil swindle of the 1980s."

The "official" reserve estimates are reported by government-owned oil companies and are often bloated to suit political and geopolitical interests. The fact is, many OPEC governments see their respective country's oil reserves as more political than geological. And they use the numbers as a way to add to the value of their "stock" in the geopolitical market.

No one's exactly sure how much more crude OPEC's oil fields still contain. But there's strong evidence to suggest the official oil reserve numbers put out by OPEC governments have been fudged on purpose. Let me explain . . .

Back in 1989, Saudi Arabia claimed to be sitting on a total of 170 billion barrels of oil. But only a year later—without the discovery of any major new oil fields—the official reserve estimate somehow grew 51.2% to 257 billion barrels. Take a look:

Official Oil Reserves as Reported by the Saudi Arabian Government
Saudi Arabia (billion barrels)

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
166	169	169	167	167	170	257	257	258	259	259

Unbelievable indeed...

One has to wonder exactly how any country increases its oil reserves by 87 billion barrels without finding any major new fields. In fact, there's no way they could. The truth of the matter is that this increase probably came from a little "creative accounting."

Saudi Arabia wasn't the only country to significantly—and mysteriously—add to their oil reserves. Five other OPEC countries also magically added more reserves, virtually overnight. The United Arab Emirates managed to increase their reserves by nearly 200%!

Official Government Oil Reserves Reports
(in billions of barrels)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
UAE	30	30	30	31	92	92	92	92	92	92	92
Iran	51	48	48	49	93	93	93	93	93	93	90
Iraq	43	44	44	47	100	100	100	100	100	100	100
Kuwait	64	90	90	92	92	92	92	94	94	94	94
Venezuela	25	26	26	25	56	58	59	59	63	63	64

Interesting, huh? It seems OPEC was rubbing the magic oil-lamp and passing it around like a Playboy magazine at an all-boys school. And for a while, the Middle East abacus trick worked like a charm. But in a 1998 report, the International Energy Agency (IEA) finally admitted to knowing about some of OPEC's wizards cooking their books. *Petroleum Intelligence Weekly* found something spine-tingling in Kuwait's filing cabinet on January 23 of last year that would, the very next day, raise oil prices by \$2.13 per barrel.

Kuwait, the world's fifth largest oil producer and an upstanding member of OPEC, had less than 50% of the oil reserves that it officially claimed. And that wasn't the bad news. Their findings reported that Kuwait's now 49 billion barrels of oil didn't distinguish between their proven, possible and probable reserves. In other words, they were pretty sure they had 49 billion barrels of oil instead of the 99 billion they reported to have. But they don't know how much of that 49 billion barrels can actually be extracted from the field.

Though it had long been suspected, until then no one had caught a glimpse of "the inside story." Still, OPEC claims that they can increase their production to 20 million barrels per day. But how can they increase their output when it's been found that Middle East oil nations, even Saudi Arabia, are pumping oil from known "post peak" fields? There's one answer . . .

OPEC Has Passed the Peak

According to the U.S. Department of Energy's special report, the world will face "peak oil" by 2015. But many of the world's best informed professionals think the end is much closer than that. Some, like Matthew Simmons, think that it has already passed as far back as 25 years ago. And their reasoning is disconcertingly solid.

"It's no secret anymore that for every nine barrels of oil we consume, we are only discovering one."

—*The BP Statistical Review of World Energy.*

In the Middle East the oil fields are already using water-flooding, a version of advanced oil recovery, to get out what oil they have left. That is a major sign that they have passed their peak of easily extractable oil. This is especially true in Saudi Arabia. The Saudis have over 300 recognized oil reservoirs. But 90% of the country's oil production comes from only five fields discovered between 1940 and 1965.

They are:

- **Abqaiq Field** (official reserve estimate: 12 billion barrels)
- **Safaniya-Khafji Field** (official reserve estimate: 30 billion barrels)
- **Berri Field** (official reserve estimate: 12 billion barrels)
- **Manifa Field** (official reserve estimate: 11 billion barrels)
- And the granddaddy of them all: **Ghawar Field** (official reserve estimate: 70 billion barrels)

Ghawar is so large that its production accounts for about 60% of all Saudi Arabian oil. No wonder that, among the many prolific oil fields in the Middle East, the giant Ghawar field stands out as the region's crown jewel.

The massive field was discovered in 1948. Production at Ghawar began two years later and reached a peak of 5.7 million barrels per day in 1981. This is the highest sustained oil production rate ever achieved by any single oil field in history. During the mid and late 1980s, Ghawar's production rate fell as it was restricted for market reasons. But by 1996, with the development of two other areas in the southern part of the field, production went back up above five million per day.

Since its discovery, Ghawar has produced more than 55,000 million barrels of the black goopy stuff. And there's still more to be found deep under the earth. But no one is sure exactly how much crude the Ghawar oil field still contains. Like I mentioned before, there's a lot of evidence that suggests the official oil reserve numbers put out by the Saudi Arabian government have been fudged on purpose. So it's quite likely that there's not as much oil at Ghawar as the Saudis say. In fact, there's probably a lot less. And for the oil-starved economies of the world, that's seriously bad news. But it gets worse . . .

Water, Water Everywhere

In Saudi Arabia, seawater is injected into oil fields to increase pressure and stimulate production. Normally only 30% of the oil in a reservoir can be extracted, but water injection increases that percentage—known as the recovery factor—and maintains the production rate of a reservoir over a longer period of time. Over time, however, the volume of water that is lifted along with the oil increases, decreasing the volume of oil proportionately until, eventually, what flows out of the reservoir is almost pure water and the field is no longer worth operating.

Now here's the bad news . . .

Saudi Aramco, the national oil company of Saudi Arabia and Ghawar's operator, is currently injecting a staggering 7 million barrels of sea water per day back into the Ghawar field in order to prop up pressure. At the Offshore Technology Conference a few months ago, experts claimed that Ghawar was producing about 55% water, that is, more than half the fluid brought up the well!

For now Ghawar is still far too productive to abandon, but because of increasing problems with managing the water, it is becoming very costly to maintain. One day in the very foreseeable future it will become uneconomical to extract Ghawar's oil and the field will be abandoned.

Only 821 Days of Ghawar Oil Left

The "official" reserve estimate at Ghawar is about 70 billion barrels—about 12% of the world's total. Yet, given the possible numbers fudging that's been going on, who's to say how much oil is really still there?

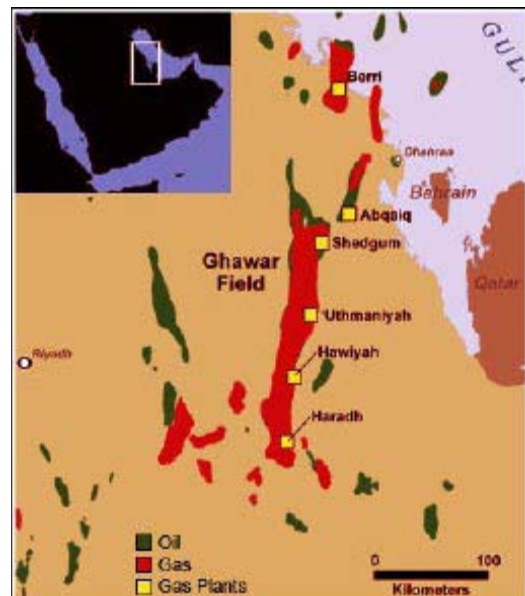
But the heck with it. Let's give the Saudis the benefit of the doubt, and let's assume that there really are 70 billion barrels of crude in the ground at Ghawar. Shoot . . . let's even assume they'll be able to get every last drop of crude out of the ground. So, we have 70 billion barrels of oil, right? So what!

According to the Energy Information Administration, the world consumes about 85.29 million barrels of crude per day. That hypothetical 70 billion barrels at Ghawar would only last the world 821 days! You read that right—the largest oil field in the world, under the best of circumstances, holds only enough oil to last the world just over two years! And that figure hasn't even taken into account the ever increasing worldwide demand. Granted, Ghawar isn't the only oil-producing field around. Still, it is the undisputed heavyweight champ when it comes to oil fields. And like they say, if the head dies, the body will soon follow.

Prognosis: Terminal

Today, the giant field produces about five million barrels per day—about 6.25% of the world's total oil production. This field is one of only four able to produce over a million barrels per day. (Cantarell in Mexico produces nearly two million barrels per day, Burgan in Kuwait produces 1.7 million barrels per day and Da Qing in China produces one million barrels per day.) Ghawar is, therefore, extremely important to the world's economy and well being. And unfortunately for the world, few know the actual state of Ghawar.

We do know that Ghawar's production rate is in decline. In April 2006, a Saudi Aramco spokesman admitted that its mature fields are now declining at a rate of 8% per year, implying that Ghawar may have peaked. You read that right . . . it's likely that Ghawar has peaked!



And if Ghawar has peaked, Saudi Arabia has peaked. And if Saudi Arabia has peaked, the world has peaked! In fact, three of the four fields that I mentioned a moment ago are in confirmed decline! This means several hundred thousand barrels of oil per day will have to be added every year just to make up for the diminished output. And you and I both know that's not likely to happen. Saudi Aramco has estimated that total production capacity from all its fields in 2011 will be 10.15 million barrels a day. That's about the same as its current capacity. But to meet expected world demand, says the United States Department of Energy's research arm, Saudi Arabia will need to produce 13.6 million barrels a day by 2010 and 19.5 million barrels a day by 2020.

Saudi Arabia has been the world's leading oil exporter for over three decades. Today, the country produces about 8 million barrels a day—roughly one tenth of the world's needs. If Saudi production fell short, the consequences would be significant, and Ghawar's decline is the first sign of this happening.

While the world has other large producers like Russia and Iraq, these countries do not have the massive reserves or excess oil capacity for export like those found in Saudi Arabia. Therefore they will not be able to make up for short supply. And the new oil fields found elsewhere around the globe are tiny when compared to Ghawar and therefore will not be able to deliver enough oil to make up the difference. As a result, supplies will tighten and oil prices will increase further. The global economy will soon begin to feel the squeeze. Previous spikes in oil prices have helped cause recessions. But this time I'm afraid that the effects are going to be much worse, and we'll soon find that with every barrel they pump in the Middle East, the cost of extracting additional barrels accelerates.

According to Matthew Simmons, considered to be the most knowledgeable man on the planet when it comes to oil, within the next three to five years, Saudi oil production is going to collapse by as much as 30–40%. Clearly, this would push oil well over \$100.

Since Kuwait's "late night shredding sessions" were discovered, analysts have found that the disease of inflated oil reserves has spread even to the Big Oil companies.

The King Kong of oil, Exxon Mobil, while claiming that the world has plenty of oil, was caught red-handed on February 7, 2006. According to SEC filings, the oil giant reported that it was replacing 112% of the oil produced and sold. In reality, Exxon replaced only 83% of the oil it sold last year. That's a 17% drop in production! It's this type of accounting shenanigans that we're currently seeing former CEOs going to jail for.

Keeping in mind that a drop in our oil supply of as little as 5% in 1973 was able to increase the price of oil by as much as 400%, imagine what will happen if the Simmons hypothesis is even remotely accurate. According to him, we could easily see oil shoot up above the \$200 dollar range. This is the kind of scenario we're facing, but running out of our "easy oil," aside from skyrocketing prices, has bigger implications, especially to Americans, than you may first realize.

The Destruction of the Dollar

At the end of WWI, the strength of our currency shifted from the “gold standard” over to, what is now called, the petro-dollar. For decades, OPEC’s currency for all oil exported was the good old greenback. Today, 50% of the strength of the United States currency is dependent of cheap, plentiful oil.

But what would happen if OPEC would successfully shift their currency from the U.S. dollar to the Euro, as Iraq and Iran have tried to do? The answer is simple but drastic. The value of our dollar would plummet by roughly 50%, and we would once again be in an economic state far worse than the Great Depression. **The terrifying part is, without our military presence in the Middle East, it would happen.**

But, with all of the light shining on the actual amount of oil the Middle East has, and no more Giant oil fields being discovered, we are finding a new, safe place for America’s energy and independence from terrorist suppliers.

Our Only Alternative is Several Alternatives

President Bush’s 2006 State of the Union Address was dead on . . .

“We are addicted to oil.”

The value and power that oil has is never to be underestimated. While it is harmful to our environment, there is simply no more cost-efficient method for energy. But while that resource of easy to attain oil is depleting, we have to stop finger-pointing and look at what options we have from here. Despite your opinion of the current President, his solution to have many solutions, is the only way that we can continue our way of life.

The reason for needing many different energy sources is that with what we have today, switching to only one doesn’t stand the chance of hell freezing over. But when solar, wind, geothermal, nuclear, hydroelectric, ethanol and oil come together, we have a fighting chance of sustaining our way of life, and that is something that wars are fought over!

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