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If Current Trends Continue, Saudi Arabia Could Become an Oil Importer by 2025

By
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Abstract

The flame of oil is not eternal. The horizon carries all signs of peak oil. Saudi Arabia, the world's biggest crude oil producer and exporter risks becoming an oil importer probably by 2025 if current economic, demographic and security trends continue into the future. Saudi oil production peaked in 2005 and has been in steady decline since then with domestic oil demand rising at an alarming rate and accounting for 37% of crude production in 2012. As a result, Saudi crude exports have already declined by 32% between 2005 and 2012 and are projected to decline further by 9% by 2015. Population growth and robust economic development and also fuel subsidies drive that demand. By 2025 Saudi oil consumption is projected to exceed production by 610,000 barrels a day (b/d) and Saudi Arabia would have ceased, to all intents and purposes, to remain a net oil exporter. This paper will argue forcefully that even a drastic cut, if not elimination, of subsidies altogether and a determined shift from oil use in power generation and desalination to nuclear and renewable energy sources starting immediately will not delay the inevitable day when Saudi Arabia will become a net oil importer. The paper will also assess the implications of this eventuality for the global economy, energy security and the price of oil.

Key Words: Importer, trends, Shift, dove, price, reserves, peak

Introduction

In a research paper entitled: "The Shifting Sands under Saudi Oil Prowess" which I gave at the 31st USAEE North American Energy Conference in November 5, 2012 in Austin, Texas, I argued that the changing Saudi oil fundamentals have forced Saudi Arabia to become more hawkish on the oil price, prompted by economic, demographic and security pressures. I also argued that the Saudi shift from "dove" to "hawk" on oil price policy shows that they have far less oil firepower than previously believed. The paper's conclusion was that this shift will exert a heavy pressure on the oil price in coming years with a projected price of \$150-\$170/barrel by 2015 not out of place. This could precipitate a worse global economic crisis than the 2008 one from which the global economy has not yet fully recovered.

In this new research paper I revisit the Saudi oil potential to argue that if current trends continue into the future, Saudi Arabia will become a net oil importer by 2025 if not earlier. Even measures implemented today to curb Saudi oil consumption might be too little and come too late to delay the inevitable day when Saudi Arabia becomes a net oil importer.

Saudi Arabia's economy is oil-based; roughly 80% of budget revenues and 90% of export earnings come from oil. Oil accounts for 45% of Saudi Arabia's \$691.5 bn gross

domestic product (GDP) on purchasing power parity (ppp) basis against 40% from the private sector. **1**

The oil market has long been dominated by Saudi Arabia because of its ability to produce and export large quantities of crude oil. Saudi Arabia's role has been further enhanced by its ability to maintain a surplus capacity that can act as a strategic cushion during times of market tightness. For this reason the kingdom has been crucial to the stability of the oil markets.

However, Saudi Arabia's place in the world oil market is being threatened by its own unrestricted domestic fuel consumption. In an economy dominated by fossil fuels and dependent on the export of oil, current patterns of energy demand are not only unsustainable but also wasting valuable resources and rendering the country vulnerable to economic and social crises. That is why the need for change is urgent with Saudi Arabia having to face hard options and challenges in trying to address the politically sensitive issue of domestic energy prices and in steering the economy from oil dependency into a post-oil economy.

The world's largest oil exporter is consuming so much energy at home that its ability to play a stabilizing role in the world oil markets is at stake. Saudi Arabia's demand for its own oil and gas is growing at around 7% per year. At this rate of growth, domestic consumption will have doubled in a decade. On a "business as usual" projection, this would jeopardize the country's ability to export oil to global markets. Given its dependence on oil export revenues, the inability to expand exports would have a dramatic effect on the economy and the government's ability to spend on domestic welfare and services. Ultimately, it will exhaust Saudi Arabia's spare production capacity, causing greater volatility in the world oil markets. **2**

There are compelling reasons for Saudi Arabia to act now on both energy consumption and prices. These include the looming constraint on oil export capacity and the need to develop a post-oil economy. However, several factors make raising the price of energy a daunting task for the Saudi government - not least the role of cheap energy in Saudi Arabia's social contract and in its industrial development policy.

Following the political unrest in the Middle East since 2011, the Saudi authorities have become far more inclined than ever to give out more social benefits – including cheap energy. Yet the negligible cost of fuel to consumers is encouraging wasteful consumption and deterring investment in efficiency and alternative energy supplies.

Saudi Arabia must develop an energy policy based on achieving a long-term sustainable consumption pattern in line with its transition to a less oil-dependent economy. However, Saudi Arabia will face specific political and economic challenges.

It is well known that oil demand is strongest among the developing countries such as China and India; less widely recognized is that the oil supply is fast approaching a zero sum game.

Not only are the developing countries consuming more, but so are the producers themselves. However, the problem is not restricted to Saudi Arabia. Oil exports can disappear very quickly if squeezed between rising domestic demand and falling production. Net oil exports by 33 oil-exporting countries accounting for 99% of global net

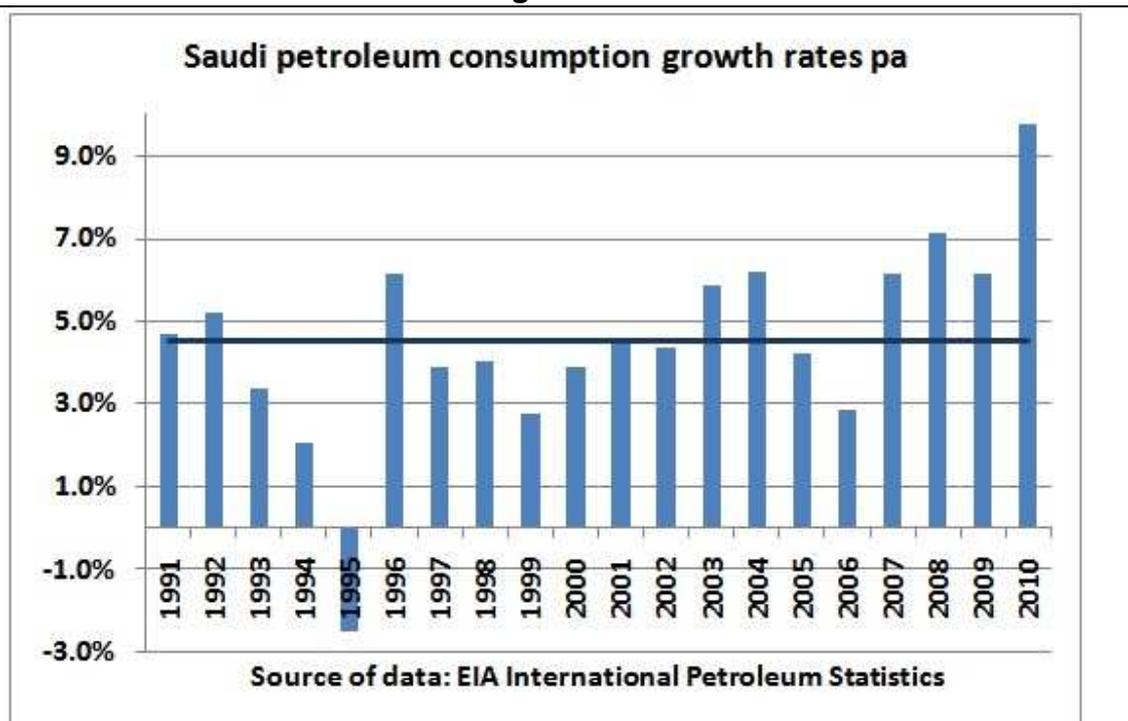
exports fell from 46 million barrels a day (mbd) in 2005 to 43 mbd in 2010. During the same period, China and India increased their net imports from 4.7 mbd to 7.7 mbd. If both trends continue at the current rate, China and India will consume the bulk of global net exports by 2030 – just 18 years from now. **3** Stagnant oil production combined with intensifying competition among consumers may soon produce oil prices so high that they would kill all prospects of future economic growth.

Anyone who still doubts the centrality of oil depletion in driving the crude oil price should read a recent working paper entitled:” The Future of Oil: Geology versus Technology” written by a group of economists at the International Monetary Fund (IMF). The paper confirms what the economics of peak oil has been telling us all through that geological constraints have a huge impact on the price of oil and that steeply-rising oil prices will not solve peak oil issues.

Growing Domestic oil Demand

Saudi Arabia’s oil demand is rising at a very high and alarming rate (see Figure1). Population growth and robust economic development and also fuel subsidies drive that demand. The country currently gets almost all its energy from fossil fuels.

Figure 1



In 2012, domestic consumption amounted to an estimated 3.06 mbd and is projected to reach 3.78 mbd by 2015. Between 1980 and 2012, consumption grew at average rate of 12.55% per annum (see Table 1). Saudi Arabia uses crude oil and natural gas as fuels for power generation and water desalination plants as well as for its petrochemical industry.

Table 1
Saudi Current & Projected Oil Production, Consumption & Exports
(mbd)

Year	Production	Consumption	Net Exports
1980	9.90	0.61	9.29
1985	3.39	0.94	2.45
1990	6.41	1.11	5.30
1995	8.23	1.25	6.98
2000	8.40	1.54	6.86
2005*	9.60	1.97	7.63
2006	9.15	2.04	7.11
2007	8.72	2.16	6.56
2008	9.26	2.34	6.92
2009	7.95	2.56	5.39
2010	8.20	2.75	5.45
2011	8.20	2.86	5.34
2012	8.20	3.06	5.14
2013	8.20	3.27	4.93
2014	8.20	3.50	4.70
2015	8.50	3.78	4.72
2016	8.70	4.04	4.66
2017	8.80	4.32	4.48
2018	9.00	4.62	4.38
2019	9.00	4.94	4.06
2020	9.00	5.29	3.71
2021	8.90	5.66	3.24
2022	8.46	6.06	2.40
2023	7.87	6.48	1.39
2024	7.32	6.93	0.39
2025	6.81	7.42	- 0.61
2030	4.74	9.68	- 4.94
<hr/>			
% of change			
1980-2012	- 17	+ 402	- 45

Sources: US Energy Information Administration (EIA) / Official Saudi data / BP Statistical Review of World Energy, June 2012 / Author's projections.

* Peak production year.

1-Power Generation

Oil accounts for 65% of power generation, with natural gas accounting for 27% and steam for the remaining 8%. **4** Current power generation capacity stands at 45,000 megawatts and is projected to increase to 75,000 megawatts by 2018 and to triple to 120,000 megawatts by 2030. Saudi Arabia already burns 1mbd for power generation. **5**

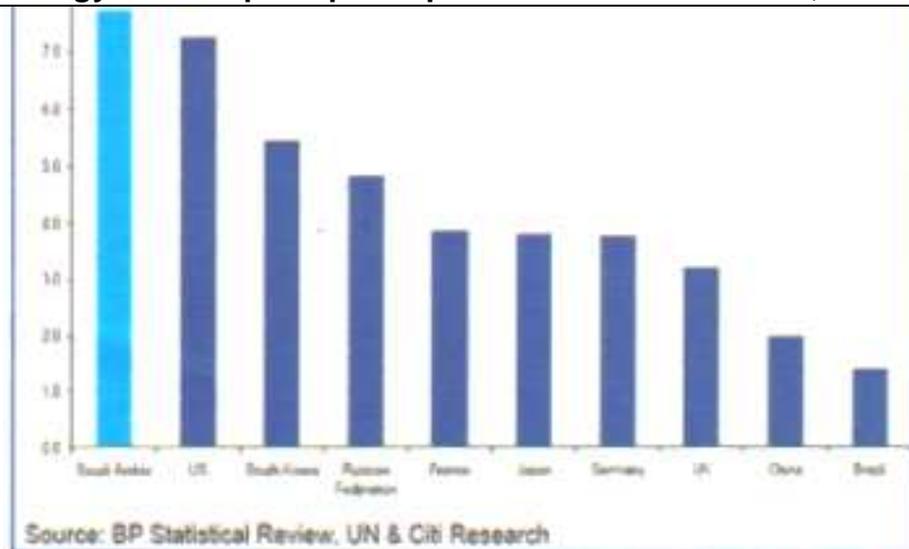
A looming power shortage requires Saudi Arabia to increase its generation capacity. Saudi Arabia has unveiled a \$100-bn plan to source 41,000 megawatts of solar projects over the next two decades – scaling up a domestic solar industry to support one third of

electricity production by 2032. Solar electricity will be replacing the oil Saudi Arabia uses for desalination plants. The solar plan is projected to reduce domestic consumption of oil by 520,000 b/d. In addition, the government has approved the construction of a \$300 million facility to turn waste into energy. The facility will process 180 tons of waste a day, producing 6 megawatts of electricity and 250,000 US gallons of distilled water. **6**

Power generation at peak rates is growing at about 8% per annum. If Saudi oil consumption grows in line with peak power demand, the country could become a net oil importer by 2025.

Saudi Arabia's primary energy consumption per capita at 8.35 tonnes of oil equivalent (toe) in 2011 was higher than the United States' at 7.56 toe and more than twice that of Japan. **7** The Saudis are using more per capita energy than either the US and Japan even though their industrial base as a share of GDP is much smaller than either of them (see Figure 2).

Figure 2
Primary Energy Consumption per Capita in Selected Countries, 2011 (toe)



2- Desalination Plants

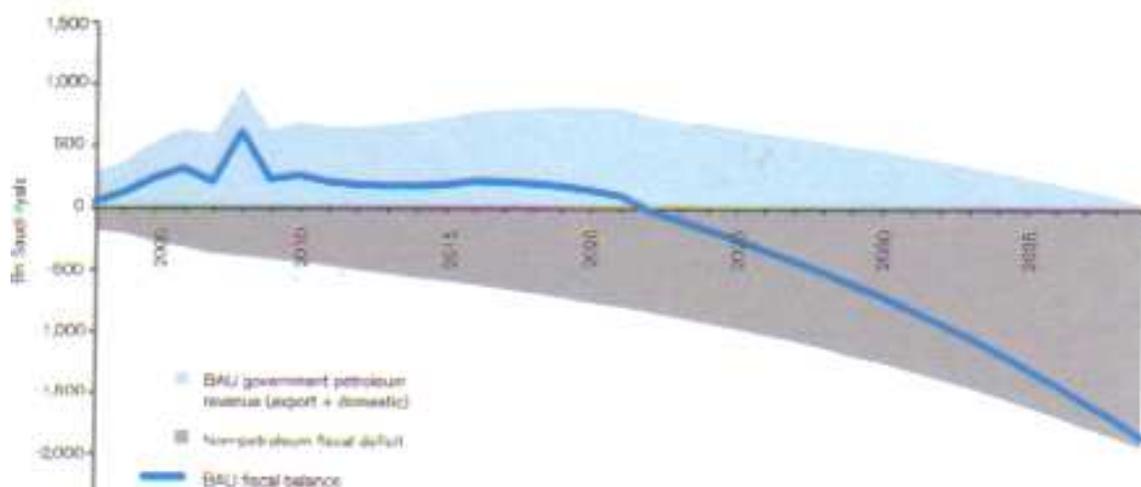
The Saudis consume 250 liters per day of water – the world's third highest, growing at 9% a year. Saudi Arabia has very limited natural water resources and these are not sufficiently replenished by rainfall to balance the rapidly growing demand of the largest economy in the Middle East. Saudi Arabia relies on desalination to close the gap in its water resources. However, water desalination consumes a lot of power generated by burning fossil fuels.

It is estimated that Saudi Arabia currently uses up to 20% of its daily oil production (1.6 mbd in 2012) to power its 27 desalination plants and this is projected to rise to an estimated 40% by 2025 if no alternative energy sources are found. **8** The drive to decrease the carbon footprint of new plants is leading Saudi Arabia to experiment with

renewable energy. Solar-powered desalination is a hot topic but still a long way from commercialization especially for large capacities.

Saudi Arabia's rising energy consumption pattern is unsustainable and could expose the country to economic vulnerabilities in coming years. The country already consumes 37% of its total oil production. This means that on a "business as usual" trajectory it would become a net oil importer by 2025. This would also mean the kingdom becoming increasingly dependent on debt to support government spending at home and to pay for imports – or having to make drastic cuts (see Figure 3).

Figure 3
Saudi Arabia's Fiscal Deficit on Business-as-Usual Trajectory



Source: Chatham House Research 2010.

Facing a rapidly growing population of 25 million, a third of whom under the age of 14 and high unemployment (officially 10.5%-11% but unofficially anything between 20% and 30%) of the Saudi labour force, the need to diversify the economy and create jobs is paramount. If this is not done fast enough – and the signs are it is not – the subsequent fiscal squeeze would have serious political consequences. **9**

Between 2000 and 2011 Saudi Arabia increased its oil consumption by 1.28 mbd, an 81% jump, which was only second in the world to China whose oil consumption increased by 5 mbd, a 105% jump, during the same period. **10**

And while global per capita oil consumption stayed at roughly 5.4 barrels in 2011, the average Saudi consumed 39 barrels each.

There are three explanations for this growing thirst for oil. The first is demography. Saudi Arabia's population grew from 20 m to 25m between 2000 and 2010, a 25% increase. Demand for power, water and petrol has risen accordingly. Saudi power-generating capacity has doubled in the past decade. The second relates to economic structure. It takes energy to produce energy: pumps must be powered and vast quantities of seawater desalinated. Saudi Aramco, the state oil company, sucks up nearly 10% of the

country's oil output. Attempts to diversify the economy beyond oil, gas and petrochemicals have not gone far. **11**

The third reason is the inefficiency of domestic energy markets. Some 65% of Saudi electricity is generated using oil. Oil is used with such profligacy because domestic consumption is massively subsidized. According to IEA, global oil subsidies added up to \$192 bn in 2010. OPEC countries accounted for \$121 bn of the total. **12**

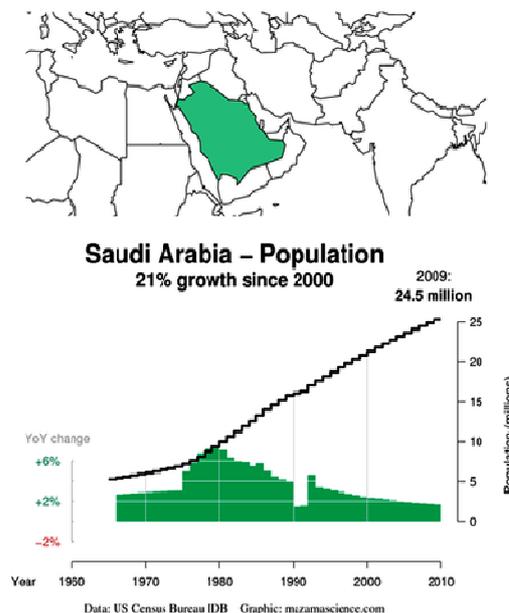
Many oil-producing countries including Saudi Arabia have pledged to cut subsidies. But this is hard to do when regimes are terrified of popular unrest. Only Iran, which had the most generous subsidy regime, has managed a big price hike – and it had a handy scapegoat in the form of sanctions. **13**

It is costing Saudi Arabia dear to burn through so much oil. With “lifting” costs of \$3 to \$5 a barrel the fuel is cheap but the opportunity cost, given a global price of \$120/barrel, is huge.

Long-term Trends

Saudi Arabia's population grew rapidly from 5 million in 1965 to 25 million in 2010. The population is projected to reach 27 million in 2015 and 32 million in 2025 (see Figure 4).

Figure 4



It is projected that oil consumption will continue to outstrip population growth supported by rising GDP per capita. This fast population growth is impacting hugely on oil consumption & exports. Net exports in 2011 were at their lowest level since the Gulf War (see Figure 5).

Figure 5
Saudi Arabia's Oil Production, Consumption & Exports
(mbd)

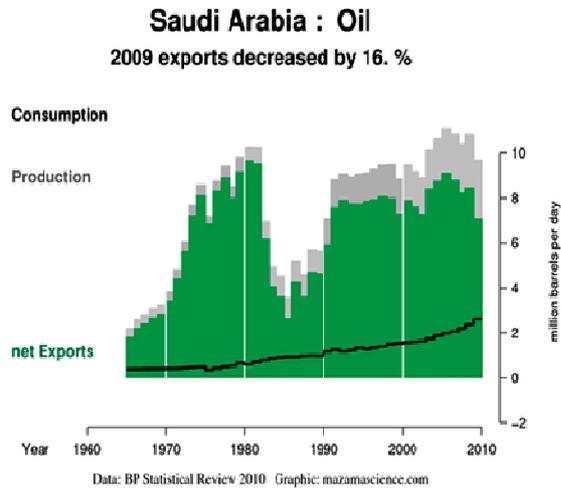
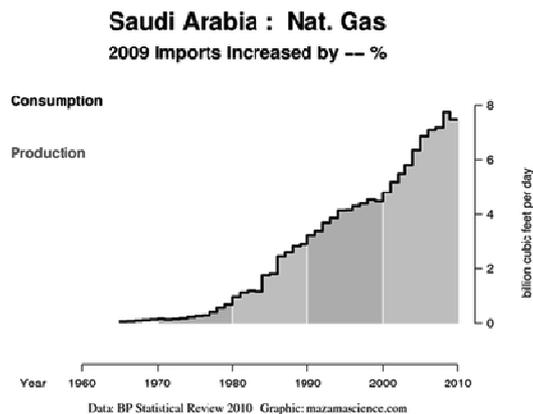


Figure 6 shows the long-term trend of Saudi Arabia's only other source of energy – natural gas. With no infrastructure for import / export of natural gas, Saudi Arabia consumes 100% of its own production. In 2011, natural gas accounted for 41% of total energy consumption with oil making up the rest.

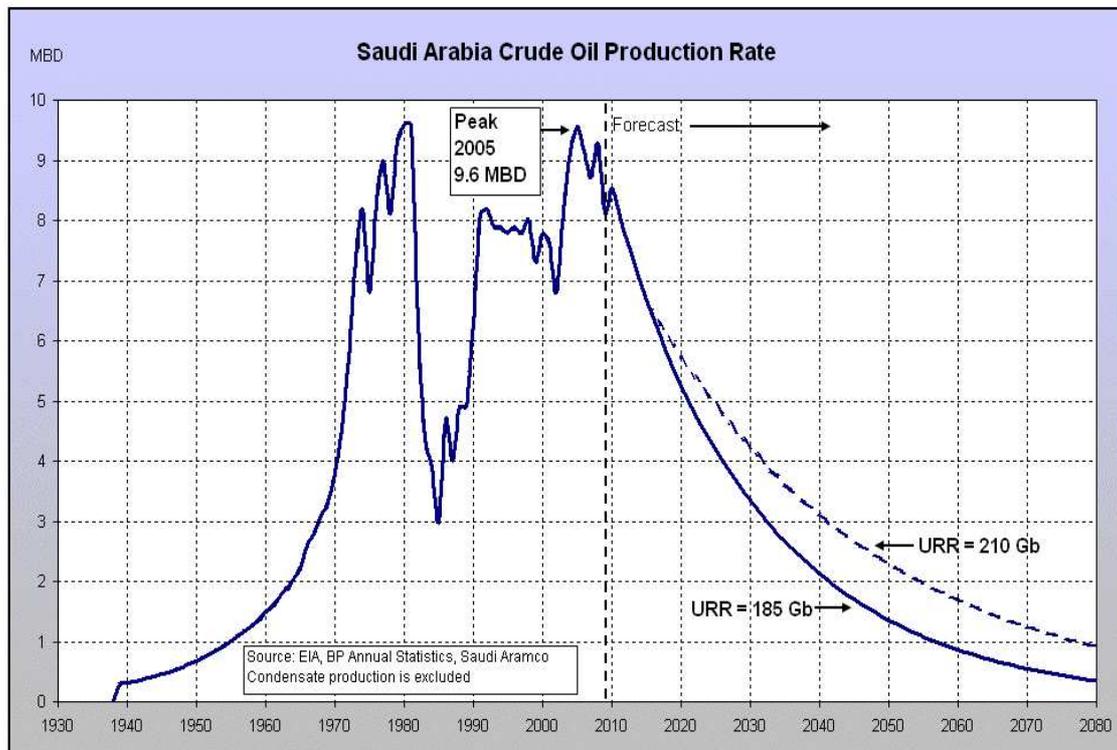
Figure 6
Saudi Arabia's Natural Gas Production & Consumption
(bcf/d)



The Peaking of Saudi Oil Production

Saudi Arabia's crude oil production peaked at 9.6 mbd in 2005. A steady production decline was forecast from 2010 onwards (see Figure 7).

Figure 7



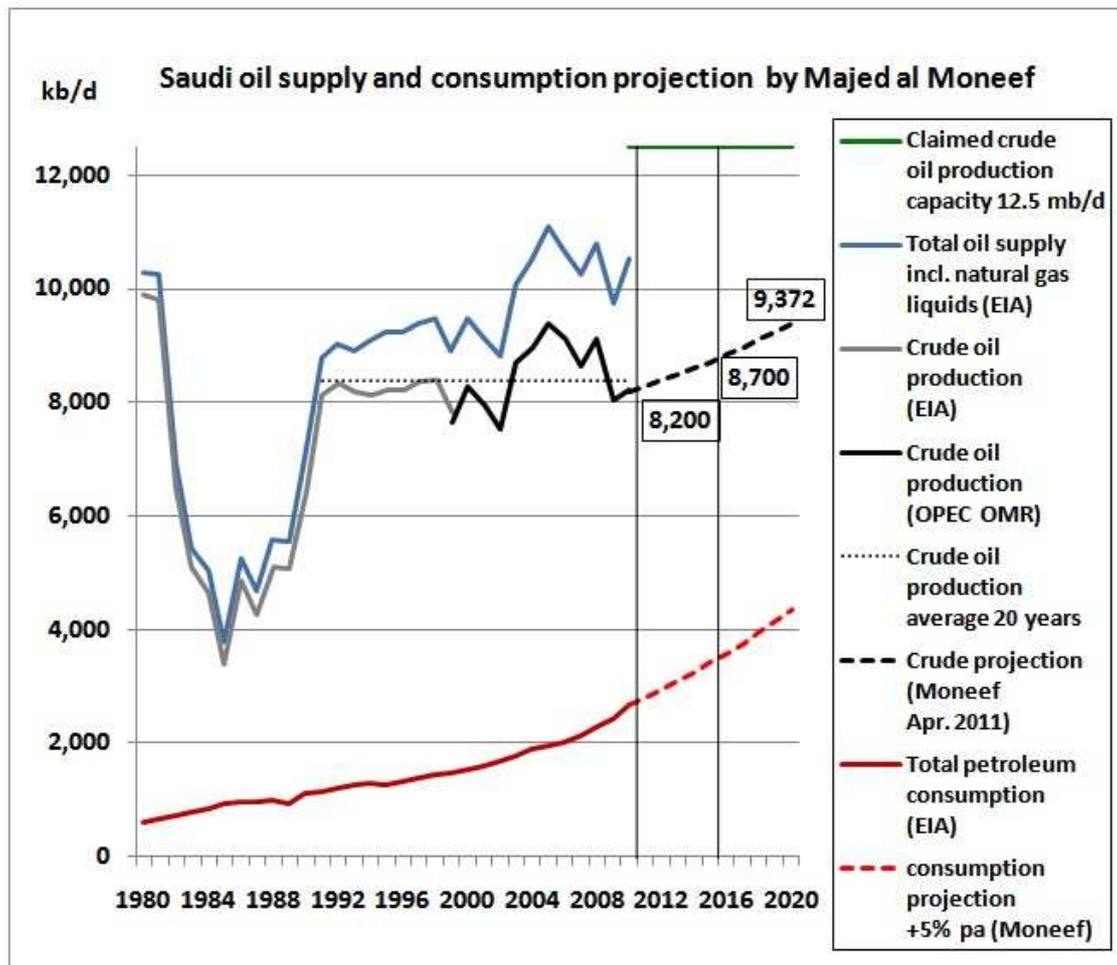
The forecast production profile assumes that Saudi Arabia's ultimate recoverable crude oil reserves (URR) are 185 bb. However, it is possible that Saudi Arabia could have an additional 25 bb from discovered undeveloped fields and future discoveries. A higher URR of 210 bb implies that the additional production increment could decrease the total decline rate from about 2015 as shown by the dashed line in the chart below.

In 2010, Saudi oil production averaged 8.2 mbd according to the Saudi governor in OPEC, Mr Majed al Moneef, and quoted by Platts. Mr al Moneef also said production will not increase beyond 8.7 mbd until 2015 (see Figure 8).

This is a far cry from the frequent claims by the Saudi oil minister Ali Al Naimi that Saudi Arabia has now an overall production capacity of 12.5 mbd when in fact they hardly have any spare capacity. The Saudis have had recently to scrape the bottom of the barrel to partially offset the decline in Libya's oil exports estimated at 1.25 mbd.

Furthermore, it has now emerged from confidential cables sent by the US Embassy in Riyadh between 2007 and 2009 and recently leaked by Wikileaks that Saudi Aramco's claimed 12.5-mbd capacity needed to keep a lid on prices, could not be reached.

Figure 8
Saudi Oil Supply & Consumption Projection



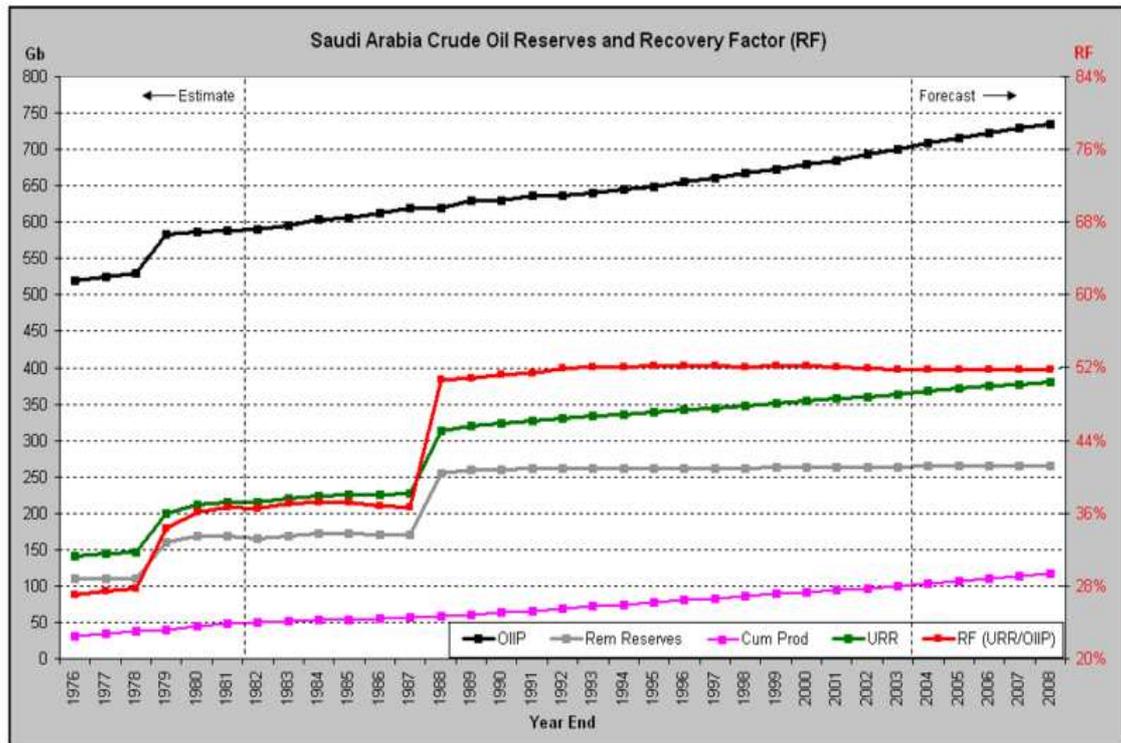
Source: Official Saudi data.

Saudi Proven Crude Oil Reserves

The Saudis claim that their remaining proven oil reserves amount to 265 bb of oil based on a recovery factor (RF) of 52% and Oil initially in place (OIIP) of 716 bb (see Figure 9).

Saudi Arabia claimed that its OIIP has been growing steadily since 1982. There is considerable doubt about the validity of this increase given the lack of new oil discoveries and the unusual nature of its steady continuous increase. Only one significant discovery has been made since 1975, the Hawtah Trend, a collection of about six fields during 1989-91 with about 2 bb addition to reserves and 6 bb to OIIP. Given the lack of significant new discoveries, a 2005 study by the Association for the Study of Peak Oil (ASPO) estimated that in 2003 the OIIP was a more realistic 580 bb rather than 716 bb.

Figure 9



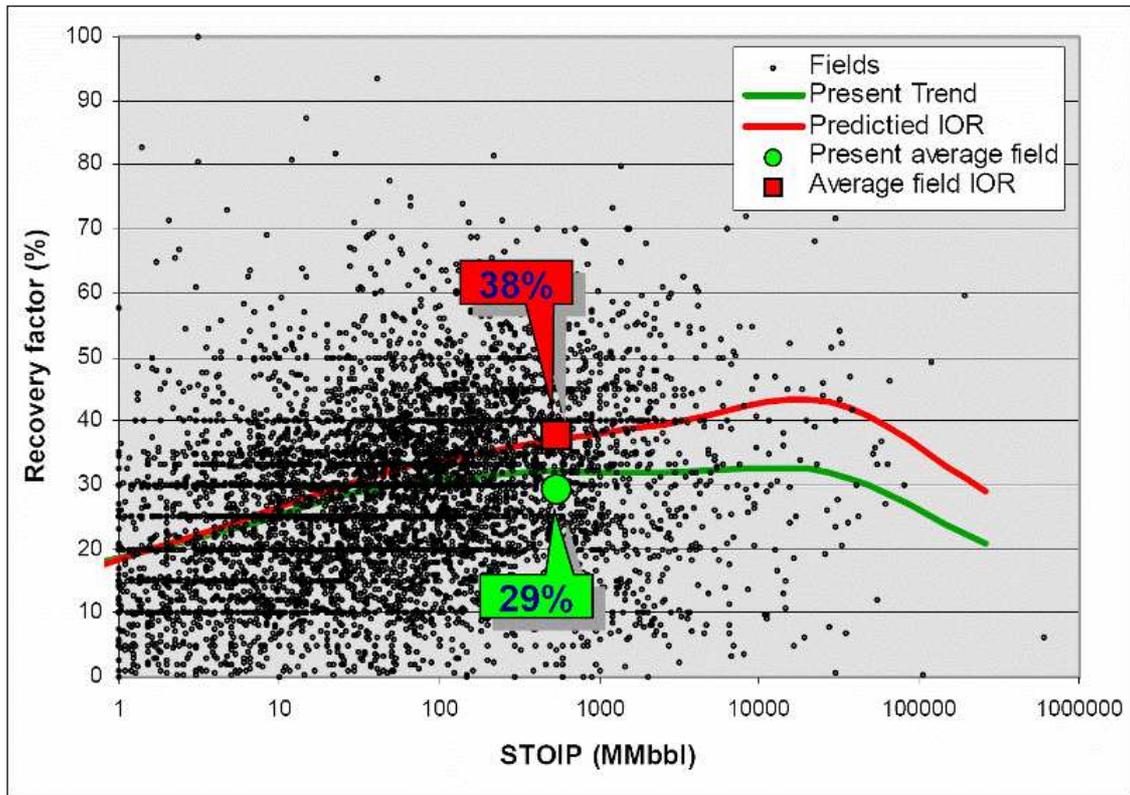
Source: Courtesy of Saudi Aramco

The Saudis are also claiming an RF of 52% when the average global RF is about 35%. Applying the previously assumed lower and upper global RF limits of 32% -36% to the more realistic estimate of 580 bb Saudi OIIP gives a range of 185 bb to 210 bb of recoverable reserves. Given Saudi cumulative production of 125 bb to year end 2011, this gives a range of remaining recoverable crude oil reserves from 60 bb to 85 bb and not Saudi claim of 265 bb.

And while Aramco's use of improved technology in existing fields could have raised Saudi RF by a couple of points, an RF of 52% is out of question.

Figure 10 from the Norwegian oil company, Statoil, shows possible increases in RF due to enhanced oil recovery (EOR) methods. Statoil calculated how the average RF goes up from 29% to 38% by applying EOR methods. The Statoil data provides enough support to increase Saudi Arabia's RF upper limit of 35% to 37% but not to 52%.

Figure 10



Role for Renewables

Moving into renewable energy for Saudi Arabia is a necessity not a luxury. The country expects domestic power demand to triple over the next two decades and wants a more sustainable mixture of energy sources according to Khalid Al Sulaiman, vice president for renewable energy at King Abdullah City for Atomic & Renewable Energy. King Abdullah City is the centre in charge of developing green energy. Saudi Arabia is seeking new ways to generate power because it prefers exporting valuable crude to maximize income and allocating natural gas to make petrochemicals. It is projected that energy from renewable and nuclear sources may account for more than half of the kingdom's supply of energy by 2030. **14**

Saudi Arabia, which depends on oil for 90% of its annual revenue, is planning to spend \$100 bn over the next 10 years to develop solar and nuclear power to preserve more of its valuable crude for export. They are already planning an 80GW nuclear blitz.

The Gulf region has some of the world's best solar resources. However, governments in the region have historically valued oil and gas at cost and have provided their populations with subsidized electricity, two factors which have impeded the development of renewable energy. A Bloomberg New Energy Finance Study dated 7 January 2011 shows that falling costs of photovoltaic (PV) technology mean that solar energy is already a viable option for power generation in the region where it can be used to

replace oil for power generation, as long as that oil is valued at the international selling price. **15**

Bloomberg New Energy Finance has modelled the economics of a modern, low-cost 100 MW PV plant and concluded that there is a strong economic rationale for Gulf Cooperation Council (GCC) states to build solar capacity today. **16**

Can Saudi Arabia Reverse the Slide Towards Becoming An Oil Importer?

There are many measures that Saudi Arabia could implement to curb its insatiable thirst for oil. Unfortunately these measures might be too little and come too late to prevent it becoming a net oil importer by 2025.

(i)- Tackling the Thorny Issue of Subsidies

Subsidies give Saudis an appetite for oil. Thanks to government subsidies, petrol costs only US12 cents a litre in Saudi Arabia, making it cheaper than bottled water. The same subsidy system also holds down the prices of drinking water and electricity consumption in a country where almost all buildings are air-conditioned.

In total, the Saudi government spends \$20 bn on water subsidies every year and at least \$13 bn on holding down electricity prices. **17**

Officials complain that wasteful use of energy and water encouraged by subsidies, can't be allowed to continue or the world's largest oil exporter might face an energy crisis of its own. The danger is that Saudi Arabia will use an ever higher proportion of its oil production of 8.2 mbd for its domestic needs, leaving less and less for export.

But any reduction in subsidies is often met with enormous resistance in a country where people feel entitled to the government's largesse. After all, subsidies are the main method of redistributing the kingdom's oil wealth to the population at large. As such, this hugely expensive system is part of the political settlement in Saudi Arabia.

With popular revolts shaking the region, analysts say the kingdom's rulers are unlikely to risk the anger that could arise from reforming the subsidies. So far, King Abdullah has managed to avoid the protests that have swept the Arab world, reaching fellow Gulf monarchies including Bahrain and Oman.

Instead, the king unveiled a mammoth package of economic benefits worth \$35.5 bn in February 2011. Another even bigger bounty of wage bonuses, along with unemployment and housing benefits totaling \$92 bn, followed three weeks later. **18**

The Saudi government needs to be watching for future trends as the country is using a huge amount of oil at home. The government is aware of the problem and has made ambitious plans to change the country's energy mix, bringing in solar and nuclear power. The aim is to prevent soaring domestic demand from curtailing its ability to export oil. On present trends, Saudi Arabia will soon burn most of its oil production domestically, according to Hashim Yamani, president of the King Abdullah Atomic & Renewable Energy City. At present, 3.20 mbd are used at home. If consumption patterns did not

change, this would rise to 8 mbd by 2028, said Mr Yamani – equivalent to almost all current oil production. **19**

Subsidies are one of the various channels for rent distribution for resource-rich countries. They are a form of a social contract between the people and their government. However, Subsidies distort relative prices resulting in inefficient allocation of resources. They also lead to wasteful consumption and also smuggling.

Energy subsidies are also regressive and result in the bulk of benefits accruing to households in high income groups, in effect transferring inefficiency. They also limit investment in infrastructure and wealth-creating projects. **20**

(ii)- Raising Energy Prices as a Way of Reducing Subsidies

Abolishing fuel subsidies increases poverty incidence and is socially and politically undesirable. It must be accompanied by measures to protect poor households from any decline in real income.

Nevertheless, reforming energy subsidies is a priority for Saudi Arabia and other Middle Eastern countries regardless of international politics. Any attempt to reform energy prices should be carried out within a package of measures that increase private-sector employment for Saudi nationals.

Whilst it may be politically unacceptable to abolish the subsidies altogether, the government could still raise the prices of the subsidized petrol, water and electricity. It is a sheer waste to charge 12 US cents for a litre of petrol and 3 US cents for a Kwh of electricity not to mention the loss of revenue to the country.

Saudi power providers pay \$5 - \$15 a barrel for their fuel from Saudi Aramco. As a result of these subsidies, I estimated the loss to Saudi Arabia in oil export revenues in 2011 between \$99 bn-\$110 bn. **21** The only real way to rationalize energy consumption would be to reduce subsidy levels if not eliminate them altogether eventually.

HSBC bank estimates that Saudi Arabia spends as much as \$35 bn every year on water and electricity subsidies and \$8 bn on fuel subsidies.**22** However, when the loss of export earnings is added, the size of subsidies mushrooms into \$99 bn-\$110 bn.

(iii)- Replacement of oil by Nuclear & Renewable Energy Whenever Possible

In early 2010 work began on a solar-powered desalination plant outside Jeddah. The country's first grid-connected solar power station – a 500W plant built by a Saudi-Japanese joint venture on Farasan Island and connected to Jizan regional grid – was inaugurated in October 2011. **23** Saudi Arabia hopes to generate 7%-10% of electricity from renewable energy by 2020. **24**

Nuclear power appears to have moved rapidly up the Saudi agenda in the last couple of years, perhaps spurred by the UAE's contracts for four nuclear power stations and Iran's advances in this field. Saudi Arabia announced that it will construct its first fleet of 16 nuclear reactors by 2030 and that these would satisfy around 20% of the country's electricity demand.

The development of atomic energy is essential to meet the country's growing requirements for energy to generate electricity, produce desalinated water and reduce reliance on depleting hydrocarbon resources. **25** However, the addition of planned nuclear and renewables will not fill the demand gap in time. Raising the price of energy is the most obvious means of restraining consumption, but this risks being stalled or undermined by lack of public support.

The measures outlined above might be too little and come too late to prevent Saudi Arabia becoming a net oil importer by 2025. The government's focus is on adding supply rather than on reigning demand. But in the decade it will take to develop new forms of energy, oil production would have reached a plateau (this happens in 2019) while overall energy demand continues to rise. With consumption in 2025 projected to be 142% higher than it is today (if demand continues to grow at 7% per annum as is the case now), the additional supplies from renewable energy particularly solar electricity are projected to displace 520,000 b/d of oil in power generation and water desalination. Even then, Saudi Arabia will still consume its entire oil production and would have ceased, to all intents and purposes, to remain an oil exporter.

Impact & Implications for the Global Oil Market

The current Saudi consumption trends could deprive the world oil market of 3 mbd by 2022 rising to 5 mbd by 2025. Saudi Aramco has warned that crude oil export capacity would fall by about 3-7 mbd by 2028 unless the domestic energy demand growth is checked. **27**

The kingdom's ability to stabilize the international oil market would be damaged with spare capacity used up to maintain export volumes. This puts big strains on oil markets since Saudi spare capacity has been an important factor in oil prices. The longer-term picture is equally worrying.

Global demand for oil is projected to rise to 112 mbd by 2025. Saudi Arabia and other Gulf producers such as Iran and Iraq with vast and easily accessible reserves are regarded as the obvious sources of new supply.

But Iranian oil production will continue to decline without access to equipment and advanced technology. Iraq, currently producing 3 mbd, has the reserves to increase production significantly. But a lack of stability and security and a battered oil infrastructure are deterring the investment required to boost supplies. And Saudi Arabia's thirst for its own oil would have made it a net oil exporter by 2025. The Gulf is usually seen as the answer to global oil problems, but it could soon become part of the problem.

The pressure on the oil price will continue unabated in coming years with a projected price of \$150-\$170/barrel by 2015 not out of place. However, if Saudi Arabia ceases to be a net oil exporter by 2025 as I am predicting, the oil price could rocket to more than \$200/barrel. We must remember that the loss of 1.25 mbd of Libyan oil exports last year immediately added \$20 to the price of a barrel. It would be safe then to project that the loss of 5 mbd of Saudi oil exports could add \$100 to a barrel thus lifting the price to \$200-220/barrel.

Previous price shocks have shown that a \$10/b rise in the oil price knocks off a three quarters of a percentage point from the global economy. A sustained price of \$200-\$220/barrel would cause global GDP to fall by 3.75% - 4.5%. This not only could undermine the very fundamentals of the global oil market but could also precipitate the worst global economic crisis the world has ever witnessed if not the collapse of the global economy altogether.

Conclusions

An analysis of Saudi oil fundamentals suggests that the world's biggest crude oil producer and exporter is heading towards becoming a net oil importer by 2025, prompted by economic, demographic and security trends.

And whilst the addition of nuclear and renewable energy will help curtail partially the growth of oil and gas consumption, only raising the price of energy is the most obvious means of restraining consumption.

Still, these measures might be too little and come too late to prevent Saudi Arabia from becoming a net oil importer by 2025. By then Saudi Arabia will be consuming its entire oil production and would have ceased, to all intents and purposes, to remain an oil exporter.

Saudi Arabia is usually looked upon as the answer to the world's oil problems, but it would soon become part of the problem.

If Saudi Arabia does indeed cease to be a net oil exporter by 2025 as I am predicting, the oil price could rocket to more than \$200-\$220/barrel. This would plunge the world in the worst global oil crisis it has ever witnessed with the possible collapse of the global economy altogether.

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Footnotes

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