



Tech Talk - Saudi Arabia and Natural Gas Liquids

Posted by [Heading Out](#) on June 10, 2012 - 1:06am

Topic: [Supply/Production](#)

Tags: [crude oil production](#), [ngl](#), [saudi arabia](#), [saudi domestic consumption](#), [yanbu](#)
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The price of crude oil has been shown to have significant impact on the global economy, and in the current and somewhat fragile state of the various parts of that economy, the lower prices help. Yet [Stuart Staniford](#) has commented that given the Saudi need for income to hold off “Arab Spring” dissatisfaction, they are unlikely to let prices fall too far before cutting production, since even a 10% reduction in output [could raise prices 20%](#), thereby resolving their future income concerns. This reflects well the role of the Texas Railroad Commission back when it controlled US production in order to sustain an acceptable price for oil. But that role collapsed when overall US production was no longer able to spring to the rescue when demand rose and US production could not, passing the control over prices to OPEC and more particularly the Kingdom of Saudi Arabia (KSA), who have shown a willingness to control output to ensure that it proximately followed demand and has kept prices within an acceptable range for them. Their recent increase in production to offset possible Iranian sanctions, however, is likely to be transient, since – [apart from annoying Iran](#), it has also driven prices below that benchmark.

It is relatively easy to return to a more acceptable price by curtailing production, and as Stuart noted, this can increase KSA revenue at a time of falling global demand. However, in the opposing case, where the global economy requires a “reasonable” price for oil and will require them to increase production on a sustained basis, as they have done transiently to the limits of demand growth in the past year, that ability may be limited and of a shorter duration. It also occurs at a time that the internal use of crude is limiting the amount that the KSA can export. But while there is considerable discussion about this situation, there has been some increase in natural gas liquid production that is also important, and thus a main point of this post.

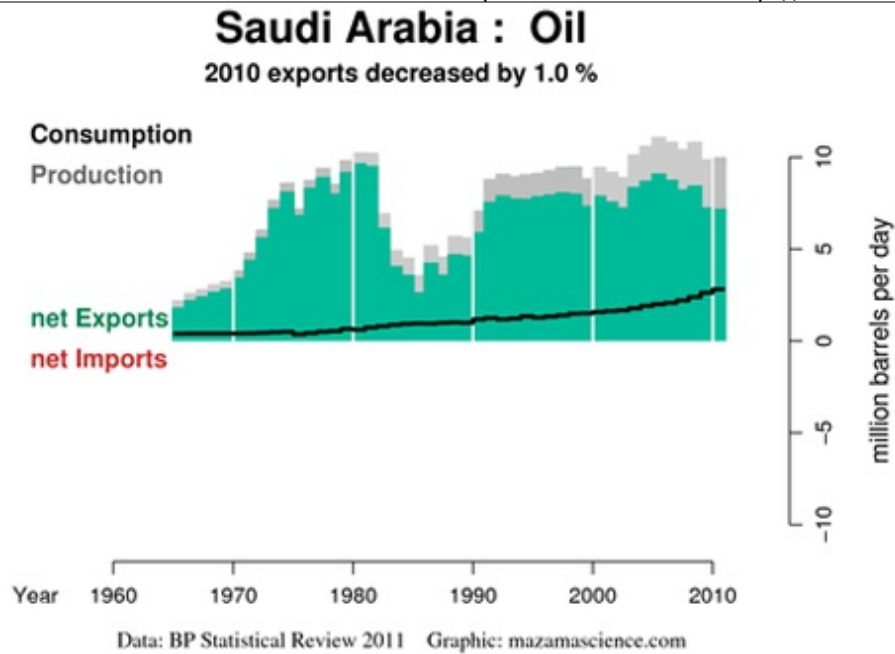


Figure 1. Recent KSA production and exports of oil ([Export Databrowser](#))

In the past, when the Kingdom has been challenged on the ability to increase production, it has listed the number of future fields that it would bring on line. Previous lists of future projects are, however, now reaching completion. Shaybah in the Empty Quarter, for example, raised production in January 2009 from 500 kbd to 750 kbd, and will soon raise it [an additional 250 kbd](#) to 1 million barrels a day.

The increased production at Shaybah, however, also helps identify an additional source of increased production, since it is also increasing natural gas production to 2.4 bcf/day, with a concomitant production of 264 kbd of NGL. The increase in overall production of NGL from OPEC has, [for some time](#), provided a significant volume of additional fuel. By the last quarter of 2011, OPEC as a whole was producing 5.42 mbd of NGL and NCF (non-conventional fuel), up from 3.89 mbd in 2006.

Rune has written about NGL production [here](#) and [here](#), with the relative importance of this supply perhaps best illustrated with this graph from the latter post.

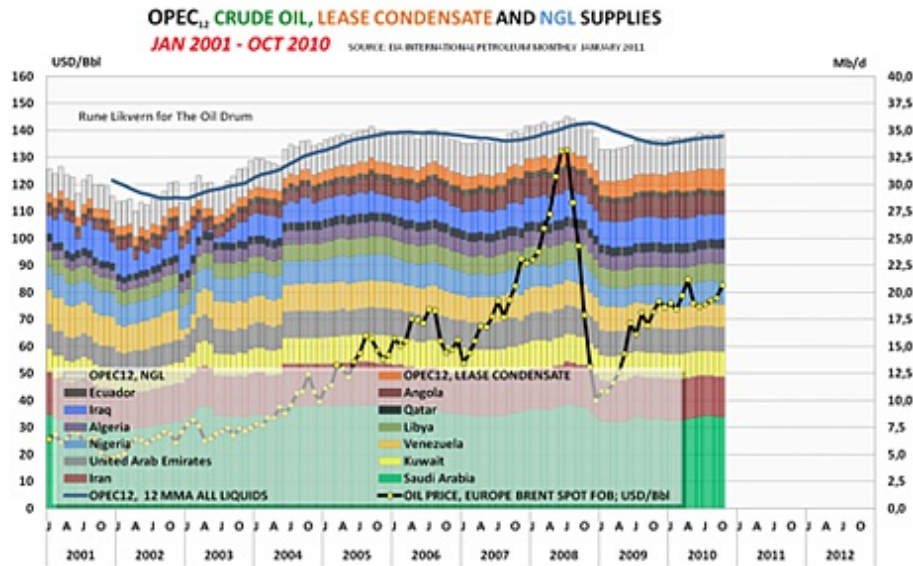


Figure 2. OPEC crude oil, condensate and NGL supplies over the decade from 2001 to 2010 ([Rune Likvern](#))

OPEC is anticipating an overall increase in NGL production from the 2011 average of 5.3 mbd to [5.7 mbd in 2012](#), with final quarter 2012 volume reaching 5.86 mbd. Apart from the increased supply from Shaybah, KSA is developing the Arabiyah/Hasbah offshore fields with onshore [processing at Wasit](#). This will produce 2.5 bcf/d of natural gas, with [240 kbd of NGL production](#) associated with that.

There is also the development of the [Karan field](#) that will, with the other programs in development, collectively raise KSA natural [gas production to 15.5 bcf/day](#) from the 10.2 bcf/d it was achieving in 2010. Unfortunately, the high sulfur content of the gas to be fed to Wasit is causing some problems and that project completion may now be [delayed until 2015](#), though the problem of sulfur freezing in the lines is not yet solved.

Saudi production of NGL’s has steadily grown over the years.

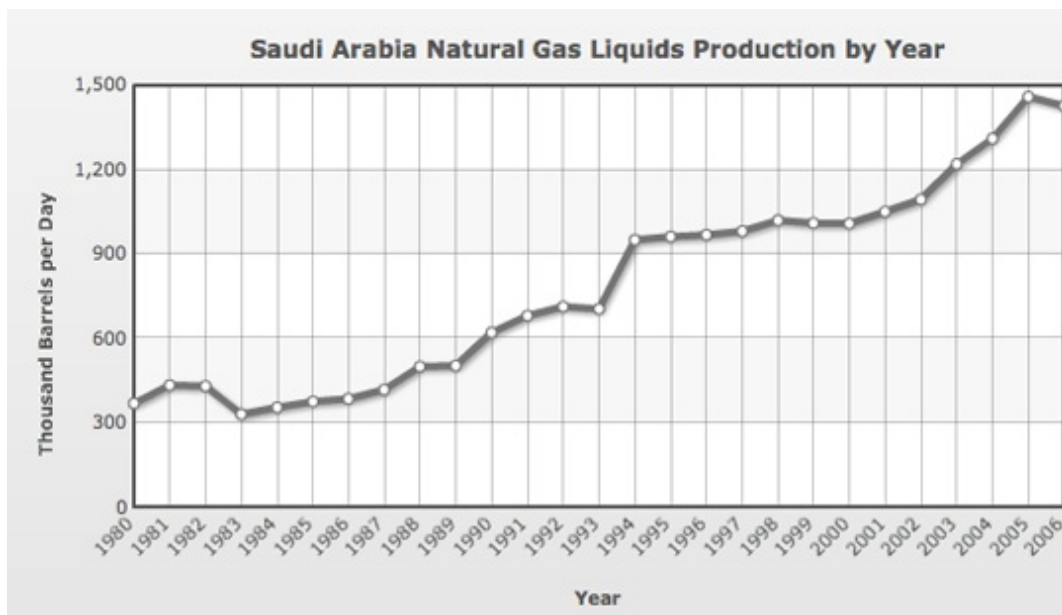


Figure 3. Saudi Arabian NGL production ([Index Mundi](#) from EIA)

Last August, for example, it shipped [197,824 metric tons](#) - roughly equivalent to 66 kbd - of exports through ports under the Saudi Port Authority – note that this does not include the amount used internally, but was 79% up on the previous year and does not include shipments from ports operated by Saudi Arabian Oil Co, or by Aramco.

It should be also be noted that following the drop in consumption caused by the recession, the United States has increased the amount of crude that it is importing from KSA over the last couple of years.

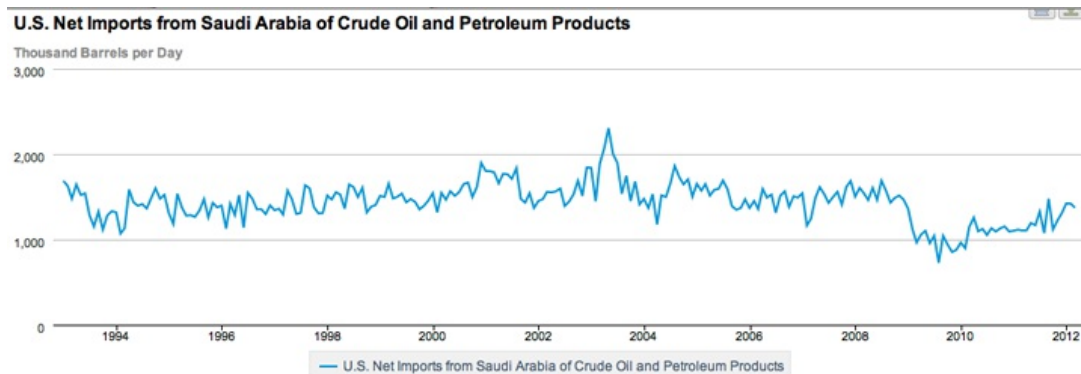


Figure 4. U. S. Imports of Crude and Petroleum Products from Saudi Arabia ([EIA](#))

However, because of the increase in the volume of natural gas produced in the United States, there has been a [concomitant rise in the amount of NGL](#) produced. The volume of NGL produced varies with the field, with the relative differences shown in the following figure.



Figure 5. Volume of NGL produced per kcf of natural gas in different fields around the United States ([NPC North American Resource Development Study](#)) (PDF)

In 2010, the US averaged a production of 2.42 mbd of NGL. Were production of natural gas to rise to 110 Bcf/day by 2035 as has been projected by some, this will yield some 3.9 mbd of NGL with an additional 0.69 mbd from refinery production at that time. The US does not, sensibly,

[import any NGL](#) and with rising production, will likely start exporting to Canada, where production is declining.

The Saudi market for NGL lies largely in Asia, with an export terminal at [Yanbu](#). [The terminal](#) is connected to Abqaiq through a [1,170 km pipeline](#), and can handle [exports of up to 2 mbd](#) of NGL.



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