

Tech Talk - the top 30 oil producers, a review

Posted by Heading Out on April 10, 2011 - 1:18pm

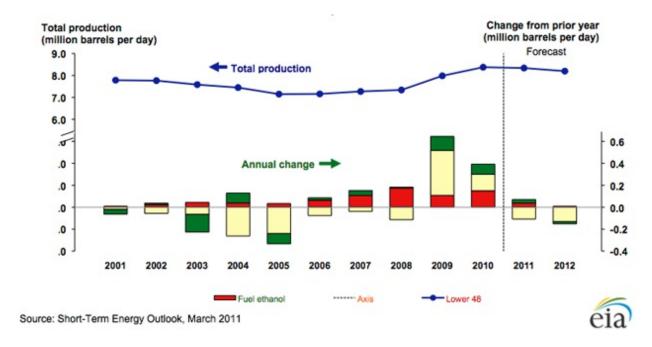
These posts have been going through the EIA list of the top oil producers in the world, over the past few weeks, I thought I might just review them collectively, but briefly, before starting to look at individual countries and oilfields. Even the posts that I have written recently have become out of date with new information (Russia increased production again in February by 20 kbd over January reaching 10.23 mbd) and then fell back to 10.2 mbd in March but at this stage, rather than focusing on such details, I am trying to generate a sense of the overall picture. It should also be recognized that I am just grabbing a snapshot of data, rather than the more detailed studies that look at the longer term, which folk such as Rembrandt, Rune and Euan provide. The simplest way to do this is to place my current estimates of production for the top 30 oil producers that I have reviewed in this series against the EIA estimate of their production in 2009.

		2009 EIA	Latest estimate
1	Russia	9.934	10.2
2	Saudi Arabia	9.76	10.67
3	United States	9.141	8.2
4	Iran	4.177	3.66
5	China	3.996	4
6	Canada	3.294	3.1
7	Mexico	3.001	2.55
8	UAE	2.795	2.89
9	Brazil	2.577	3
10	Kuwait	2.496	2.386
11	Venezuela	2.471	2.39
12	Iraq	2.4	2.7
13	Norway	2.35	1.8
14	Nigeria	2.211	2.7
	Algeria	2.086	2
16	Angola	1.95	2.35
17	Libya	1.79	0
18	United Kingdom	1.42	1.3
19	Kazakhstan	1.54	1.6
20	Qatar	1.2	1.4
21	Indonesia	1.02	1
22	Azerbaijan	1.01	1
23	India	0.877	0.876
24	Argentina	0.794	0.76
	Egypt	0.678	0.66
	Oman	0.816	0.863
27	Malaysia	0.693	0.7
28	Australia	0.588	0.54
29	Colombia	0.685	0.92
30	Ecuador	0.485	0.504
	top 6 total	40.302	39.83
	top 30 total	78.235	76.719
	top 30 total	70.233	/0./19

Top 30 oil producing countries (those increasing production over 2009 are shown in red).

It is significant to note that while Saudi Arabia was producing 8.05 mbd of crude in 2009, this has risen to 8.869 mbd on average for February as the Kingdom increased production to match the shortfalls in oil exports from Libya, inter alia. (With roughly 1.8 mbd in "other liquids" this takes total KSA production to 10.67 mbd and moves it back to the top of the League. However those numbers were from the March MOMR, which reports on February, In that report Libya was still being recorded as producing around 1.3 mbd). It is now reported that overall OPEC was not able to match the Libyan decline in March, falling about 350 kbd short, while KSA production has now reached 9 mbd, (10.8 including other liquids).

Contrary to President Obama's <u>recent remarks</u> the EIA are anticipating a decline in US crude oil and liquids production over the next two years, part of which <u>has been blamed</u> on the change in GOM regulations. As a result it would be optimistic to anticipate much more than a US production of 8.3 mbd (and the EIA project it will be down to 8.2 mbd next year). It is unlikely that US production will increase beyond that point.



US crude and liquid fuels production – (\underline{EIA})

With China, Iran, and Canada holding relatively steady in the short term, this gives an updated total of 39.83 mbd for the top six, which is about 1.4 mbd higher than when I wrote the initial post back in February, but 500 kbd below the EIA estimate for their 2009 production. (While Russia and the KSA increased, the USA and Iran declined). Of these it is likely that only the KSA can continue to increase production much more.

In the second tier, Mexican production continues to fall, and was down to 2.556 mbd in February, with reports that it will now be an oil importer <u>well before 2020</u>. Exports have already fallen to 1.23 mbd, which does not bode well for customers. The United Arab Emirates (UAE) have, like the KSA, increased production to help out, though so far this has only been up to 2.394 mbd from 2.3 mbd for most of last year. (They also produce roughly another 500 kbd of other liquid fuels). By 2020 they should be able to produce up to 3.5 mbd. And in similar vein Kuwait, now producing at 2.368 mbd, up from 2,3 mbd. Kuwaiti plans are to reach 3.5 mbd by 2015, and be at 4 mbd by 2020.

The current political turmoil has even persuaded Venezuela to increase production, with OPEC reporting levels of 2.39 mbd for February, a gain of around 100 kbd. Though how long that is

sustained depends on the success of the many investors that have been persuaded to invest in the Venezuelan oil sands.

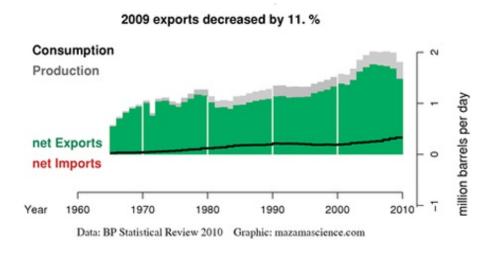
In the third group Norway is declining, being now at just over 2 mbd, and even though it has just announced a <u>major new discovery</u> that will not come on line for at least 5 - 10 years, in the meanwhile, production will continue to fall. Norway needs more discoveries similar to this, however, to be able to sustain production levels extending into the future, since without them <u>production will collapse</u>.

Brazil was touted, by President Obama in his remarks about the Energy Blueprint last week, though the increasing volumes of oil that they will produce remain foreign to the United States, and though they will likely increase production up to around 4 mbd by 2020, rising domestic consumption may well take much of that increase.

Which brings us into the states that has some political turmoil. Iraq has been able to bring production back to around 2.64 mbd (according to OPEC) with the hope of reaching 3 mbd by the end of this year. At the moment about 1.2 mbd of this is exported. One of the great questions of the decade is just how close to a projected 10 mbd by 2020 that Iraq will be able to get. Sadly the continuing conflicts there, though reduced in scale, make it difficult for me to see much beyond 5 mbd by 2020.

Nigeria, which has had its own internal conflicts for some time, is going to the polls as I write this, and the expected winner is planning to <u>overhaul the oil industry</u>. However, if stability continues, then it might be possible to resurrect some of the older fields and perhaps increase overall production by some 350 kbd.

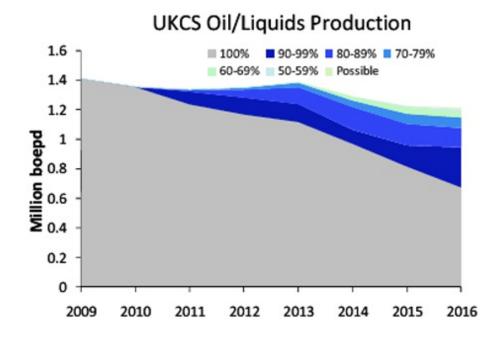
Algeria, which has had some turmoil, but may emerge from the ongoing protests without much change, is producing around 2 mbd of liquids. That has not changed as OPEC has moved to match the decline in volumes from Libya and other countries facing protests, and may reflect the current maximum that the country can produce. In the stability stakes I suspect that Algeria may survive without much change, although the plot I put up from Energy Export Databrowser does suggest that production may have peaked.



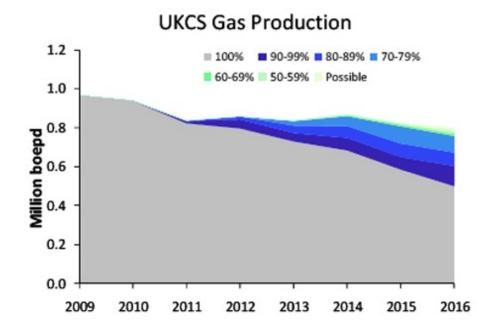
Algerian oil statistics (Energy Export Databrowser)

Angola is currently producing 1.7 mbd but may add some 650 kbd this year, for a total of 2.35 mbd. And that brings us to Libya, where the increased fighting, particularly over the oil refinery town of Ras Lanuf, makes it increasingly unlikely that the 1.7 mbd which came from Libya will be available again soon.

The United Kingdom is in significant decline, but recent moves to further tax the oil industry have made it possible that the decline may steepen. This because the new taxes proposed will likely reduce the profitability of the field developments proposed, <u>discouraging their development</u>. Recently production has run at 1.35 mbd of liquids, which is scheduled to drop to 1.3 mbd this year, and 0.94 mbdoe of natural gas, anticipated to fall to 0.85 mbdoe this year. The criticality of investment is shown in the projected production over the next 5 years, with the different colors showing the likelihood of success. Note that the grey of current production is declining at about 10%.



UK Projected Oil production (2011 <u>UK Oil and Gas Activity Survey</u>)



UK Projected Natural Gas production (2011 UK Oil and Gas Activity Survey)

Moving to the next tier down, Kazakhstan is now at 1.6 mbd and slowly increasing production toward a target of 3 mbd by 2020. Qatar is running at 1.4 mbd, but with almost 0.6 mbd of that in NGL. Indonesia is producing right around 1 mbd and may maintain that in the short term. It is

being challenged in rank by Azerbaijan which has just incremented up to 1 mbd, a volume that is expected to continue to rise until it reaches about 1.25 mbd in 2014.

The tier that lies below 1 mbd starts with India, which is currently holding a production of around 878 kbd, and having to import increasing amounts of oil to meet demand. Given that the country also subsidizes the price, this is becoming an <u>increasingly expensive consideration</u> for the government. India is followed by Argentina, which is post peak and declined to 0.76 mbd most recently. Egypt is similarly declining, now to 660 kbd, but as one of the early nations to change under the most recent protests, and with the situation still somewhat fluid, it is difficult to predict how much the country will have both for itself, and for external customers, a year from now.

Oman will likely weather the current storms, and is also increasing oil production, to the point that it is moving up to pass India, with an Omani production of 863 kbd, some of which is tied to NGL production.

In the final four that produce more than 500 kbd Malaysia is barely maintaining production at 700 kbd, while Australia has fallen from 588 kbd to 540 kbd. Both are now being passed in production by Colombia, one of the "hotter" places for development at the moment, with production rising to possibly 920 kbd this year. Ecuador, which closes out the top 30, has recently increased production from 485 to 504 kbd.

That completes the top 30, and accounts for some 76.7 mbd of production. Those same countries back in 2009 were reported by the EIA as producing some 79.23 mbd of oil. Remember that world demand is anticipated to increase by somewhere between 1.4 and 1.6 mbd this year, and that of this list of 30 only 13 increased production, and the rest declined and the concern for the future becomes thus more clearly defined. (The difference between the two totals is partially explained by the loss in Libyan oil - we will see within the month how well OPEC covers that).

But it is not the overall production from the world that can be estimated that accurately, but by looking at individual countries and, in some cases, individual oilfields that we can get some better sense of what is to come. So the next step will be looking at these nations in more detail, in the weeks ahead.

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