The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Tech Talk - A Recap in Light of Iranian Sanctions and Canadian Production Estimates

Posted by Heading Out on March 12, 2012 - 5:35pm
Topic: Supply/Production
Tags: canada, gulf of mexico, iran sanctions, oil sands, russian production, saudi arabia, thunder horse [list all tags]

This series of posts has just completed a review of the different regions of Russian oil production, with the conclusion that while Russia may maintain current production levels of around 10.4 mbd for a short time, it faces rising domestic consumption levels because it is not replacing existing production at a fast enough rate to be able to sustain exports. Without more investment than is likely available, the rate of new field development (given the harsh and remote nature of the sites) means that there will be a slow decline in available oil to the market starting fairly soon. Given the large supplies of natural gas coming available, this series is going to focus a bit more on oil as we continue the review.

As the series continues and moves slightly down the list to consider the future of the oil and gas fields in Saudi Arabia, it is worth noting that while there is little that Russia can do to significantly raise production in the short term, this does not hold true for the desert kingdom. However, before moving on to KSA in detail, I pause this week to consider some contextual changes in the overall picture.

One of the questions that has been raised many times relates to the true maximum production levels that Saudi Arabia can achieve. As oil prices continue to rise, politicians call for the Saudis to increase oil production, so that prices may fall. This is a rather odd and unrealistic request when the KSA needs all the income it can get to help domestically. The EIA, in considering the global oil flow as sanctions begin to bite on Iran, have projected that OPEC has a spare capacity of 2.5 mbd, most of which comes from KSA. At present the KSA is producing at around 9.7 mbd, up some 600 kbd from this time last year, according to the EIA, although there is a little question as to how accurate that number is.

The IEA is reportedly saying that KSA is already producing at 11.5 mbd. However, the IEA counts all liquids, as Gail the Actuary has pointed out, while EIA values add up to 9.7 mbd for the crude and condensate, and though there appears to be a discrepancy, there really is not. The debate is likely to see some harder numbers in the months ahead. Iran is already having problems marketing their oil, since after January 23, the European Mutual Protection and Indemnity Club is no longer covering shipping contracts. This makes it difficult for consumers such as India to maintain supply, and they are already considering the use of sovereign guarantees for its shipping lines. At the same time, the EU is not calling for coverage to be phased out until July 1.

The EIA report notes that Iran is currently the fifth largest producer of liquid fuels at 4.1 mbd, although it consumes 1.8 mbd of that internally. Thus, the threat to the global market runs at around a 2.3 mbd reduction on current overall demand of around 88.1 mbd. This series will discuss Iranian production and its prospects somewhat later, but before getting into an analysis of

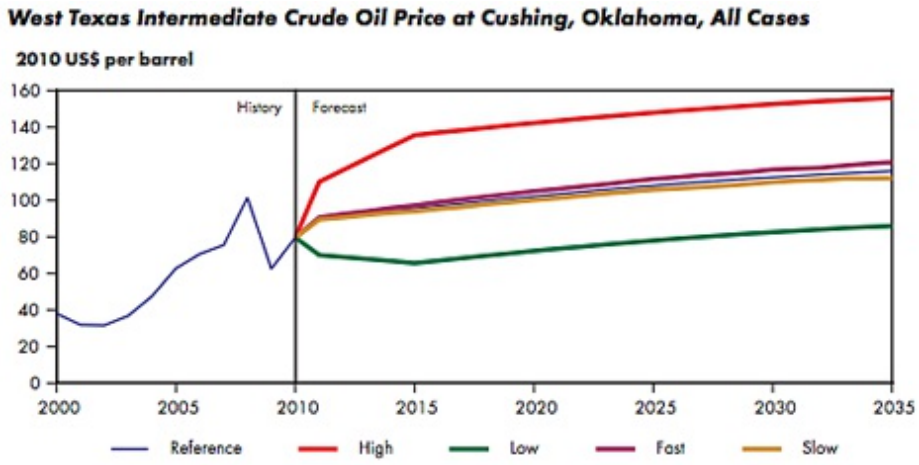
Saudi Arabia, it might be worth a quick glance back at a couple of countries covered earlier.

Estimates of future production are only that, and as noted in recent posts, not all projected production or plans work out as anticipated. To give but a few examples pointed out in comments and elsewhere:

The Russian oilfield at Yuzhnoye Khylchuyu was initially estimated to hold 505 million barrels of oil, but has now been reported as only having reserves of 142 mb.. (Noted by voiceinyourhead) On the other hand, the Sarmatskoye field in the Caspian is now considered to contain double the original estimate, estimated at just under 1 billion barrels of oil equivalent in natural gas and condensate. It is anticipated to come on stream in 2016. And, while on the topic of natural gas, both toolpush and RayRay have noted that the natural gas from Sakhalin Island is not going to see the 3rd LNG train that I mentioned in the post on that topic, and that the natural gas will instead feed into a pipeline to the mainland.

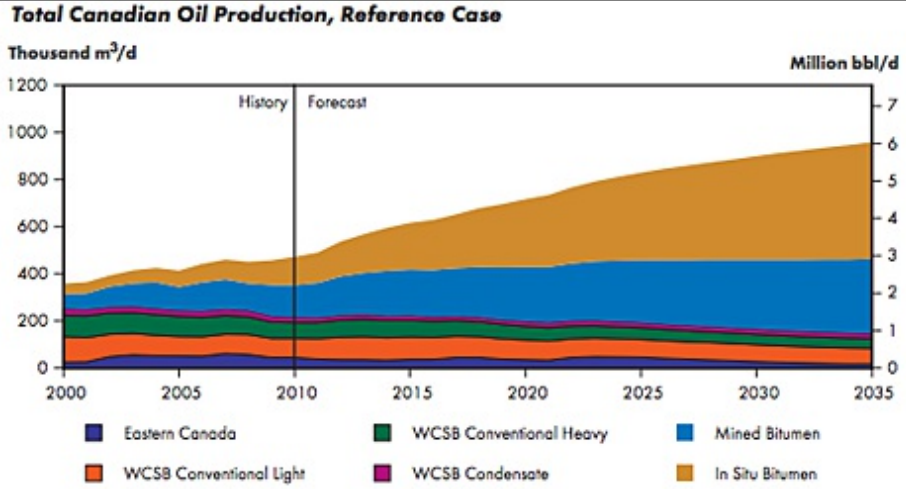
In regard to the posts that cover the United States and Canada, the February monthly flow of oil through the Alaskan pipeline has fallen to an average of 609,805 bd. This is down from an average of 624,716 bd in January and gets the flow closer to the point where solidifying wax and water start to cause problems.

In the time since the posts were written on North American production and promise (politically, including Canada with the United States makes the overall change in production figures look better than if the figures were based solely on US production, particularly as oil from the Albertan oil sands rises to production levels of 3 mbd by 2015) the Canadian National Energy Board (NEB) released their "Canada's Energy Future: Energy Supply and Projections to 2035" report. In seeking to predict future production, the NEB anticipated that the price of a barrel of oil would rise relatively modestly over the next 20 years. Even in their high estimate, they do not see the price rising to more than $160 a barrel by 2035 (who would bet that the estimate is exceeded this year or next?).



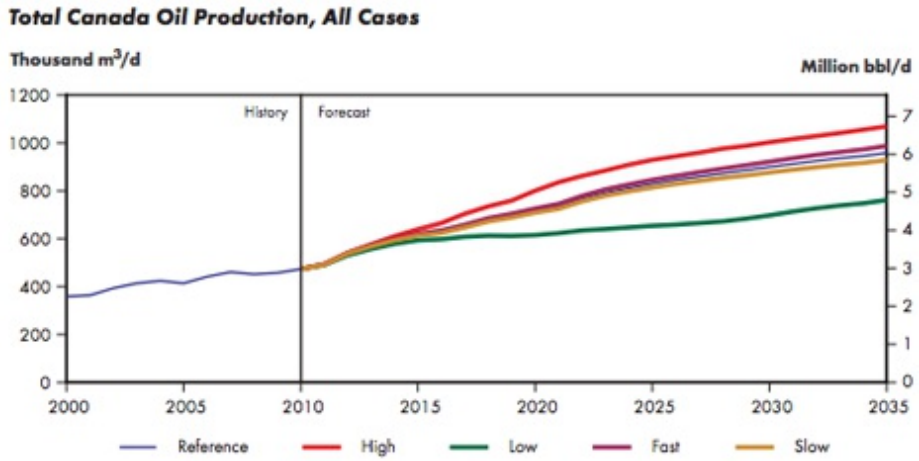
Canadian estimate of the future of crude oil prices (NEB)

The report estimates that in the Reference case, oil production from the oil sands will reach 5.1 mbd in 2035, which is three times 2010 production. This will come mainly from in-situ methods.



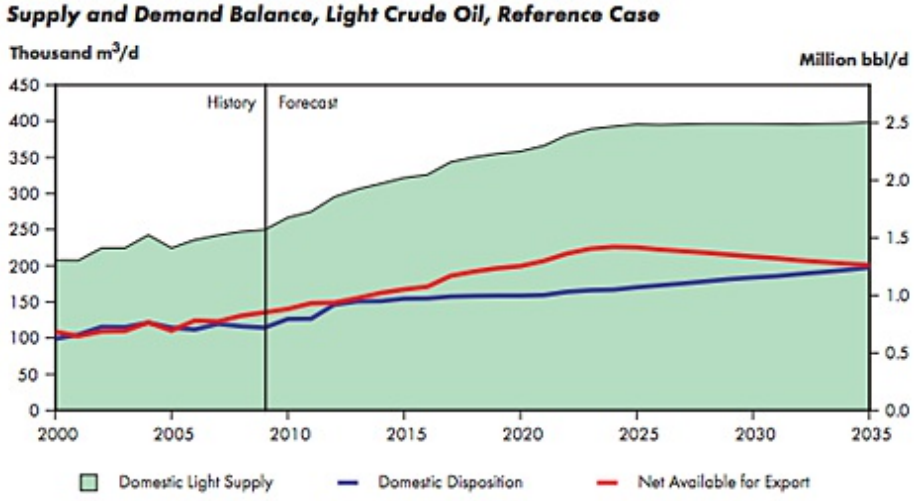
Canadian crude oil production (NEB)

Over the ten years from 2010 to 2020, in-situ production is anticipated to grow at 9% p.a., while mining production will rise at 5% p.a. The North West Upgrader is anticipated to come on stream in 2014, with an initial 50 kbd of throughput. Carbon dioxide produced during the process will be used in Enhanced Oil Recovery (EOR) locally. If the price rises to the highest levels anticipated, then production might be estimated to rise just under 7 mbd in total for Canada by 2035.



Canadian production for different case estimates of price, as above (NEB)

However, the NEB recognizes that domestic consumption will affect overall supply, but considers that it will likely only significantly impact the lighter crudes, and that the difference between the roughly 4 mbd of heavy crude produced and the 3.8 mbd available for export in 2035 will reflect a relatively constant 0.2 mbd of internal consumption.

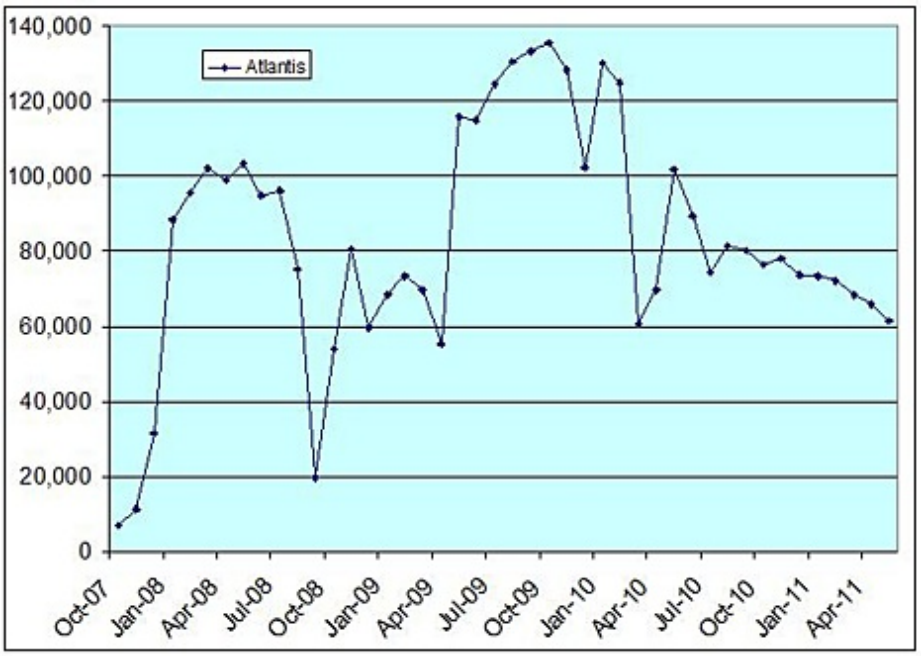


Canadian light oil future predictions (NEB)

Therefore, with considerably more oil being available from Canada, there remain concerns over how much will be shipped to the USA, albeit with somewhat less pressure on domestic producers. Which is likely good news, because the likelihood of US production remaining at current levels is still doubtful.

One of the hopes for the future comes from the wells being drilled in the Gulf of Mexico, with DoE projecting that gulf production will rise to some 2 mbd by 2020, from 1.3 mbd at present.

One concern that remains, however, lies in the actual levels of production that will be achieved. As Jean Laherrère has noted, the wells in the deep water have not all held up their promise, peaking on average within a year of coming on line. Jean notes that the production decline with the Mars and Ursa fields are at about 9% per year, which he notes is less than half the decline rate at Thunder Horse. Darwinian is also tracking production, and although he notes that Tahiti is performing relatively consistently at 110 kbd, Atlantis is not coming close to the 185 kbd projected.



Atlantis production (Darwinian)

Exploration and development in the Gulf are apparently now back to pre-Deepwater Horizon levels, and one can only hope that future developments will be less dramatic and more successful.

The speed of that recovery is encouraging, though the results to date have been a little less promising than anticipated. But, as with operations in the Arctic, investment costs are going to be high for any new finds that are viable, and will take a number of years to develop, at a time when demand is going to continue to increase. The Gulf discoveries, for example, will likely start to come ashore about the time that the Bakken and Eagle Ford plays start to fall in production, and thus, overall, may not give the boost to American volumes that are currently being projected.