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MACROCOSM

Iran: The New New World Oil Order, Volume I

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Michael Warren

Iran could pump 5 million barrels per day by 2020. But a growing stream, not a violent flood.

Already rocked by the shale revolution and OPEC's abandonment of price targets, now oil markets have to absorb the new reality of Iran's huge step to re-enter the world of nations, become free of western sanctions, and exploit its vast crude production and export potential. *In this report we'll focus on our expectations for the short-term and long-term impacts on oil markets of new Iranian production. In another report to follow, we'll consider Iran's new production in the broader context of stubbornly flat US production in the face of sharply lower rig counts and CAPEX, which may portend a sharp production rollover in 2016.*

- *The stakes here are quite high. If a violent flood of Iranian oil crashes global oil prices -- dragging other commodities along with it, and pushing the US dollar to new highs -- then we would be*

Client conference call

A presentation and Q&A with **Richard Nephew**, former US State Department sanctions expert and top advisor to the US negotiating team for the Iran nuclear deal.

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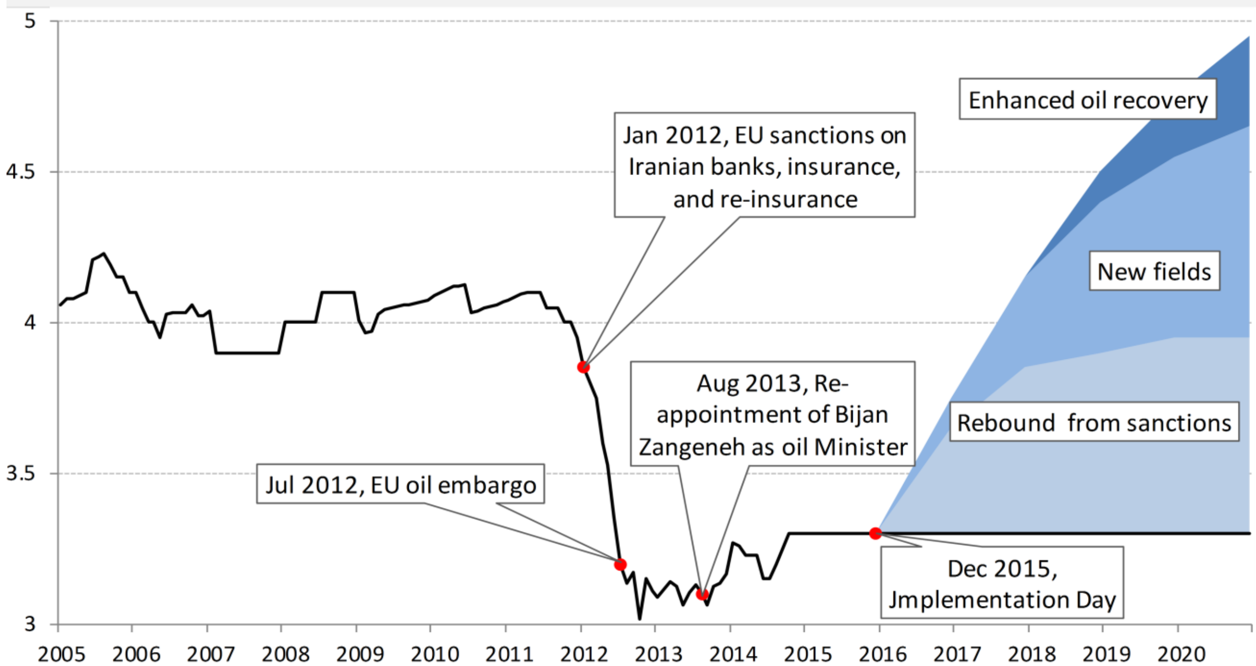
— Iran crude oil and lease condensate production Mil barrels per day, 2015 est at end-2014 level
Estimated production after sanctions and embargo lifted



Source: DOE IEA, TrendMacro calculations

- *looking at further employment and CAPEX contraction in the energy sector, and renewed risk of the recession that we barely avoided in the second quarter* (see "The Oil Crash: One Year from the Peak" June 25, 2015).
- *Our take right now is that this risk will likely be avoided. But it will be touch-and-go.*

As we had expected (see "Greece? China? Oil's the Risk" July 8, 2015), oil markets seem to have significantly discounted, well before it was announced on Monday of last week, the nuclear deal between Iran and China, France, Germany, Russia, the United Kingdom, the European Union and the United States. *The specific terms of the 159-page Joint Comprehensive Plan of Action (JCPOA) might have been some relief, as they defer the lifting of economic sanctions until after the so-called "Implementation Day" -- when Iran has performed, and the International Atomic Energy Agency (IAEA) has verified, a long checklist of undertakings to scale back its nuclear development. If everything goes as planned, Implementation Day should occur around the end of 2015 or beginning of 2016.*

- The key sanctions that the EU and US will lift if Iran passes the IAEA test on Implementation Day are the embargo on oil purchases, as well as restrictions on banking, shipping, insurance, technology and investments -- all of which have crippled Iran's ability to produce, transport, and execute transactions in oil.
- These sanctions -- especially those imposed by Europe -- have succeeded in dramatically reducing Iran's oil output. Following the EU banking and technology sanctions in January 2012, production fell from 3.85 million barrels per day to a low of 3.1 million by October of that year, after the EU embargoed Iranian crude in July (please see the chart on the previous page).
- Right after "Implementation Day," Iran can begin to sell Iran its stored oil. It has 10 tankers with 21 million barrels of condensate moored off the port of Assaluyeh, and 9 tankers with 19 million barrels of crude moored off Kharg Island. And some Iranian condensate is reported to be stored onshore in China. Even if the National Iranian Oil Company (NIOC) dumps it all onto the global markets all at once, these volumes are not especially large in the grand scheme of things -- for example, they represent about two days of US consumption, or about three and a half days of Chinese consumption.
- The real impact of Iran's re-joining global oil markets comes next -- when it starts to build back up to the capacity left underutilized during the years of sanctions and embargoes.
- To get back to pre-sanctions production levels of about 3.85 million barrels per day, Iran would have to add 550,000 to today's 3.3 million. We think this can happen by 2017 (again, please see the chart on the previous page).
- This won't add 550,000 barrels per day to Iran's *exports*, however. By 2017, a sanctions-free Iran will experience a recovering economy that will raise domestic demand -- which we estimate will

Update to strategic view

OIL: The nuclear deal brings Iran back to global oil markets, but not until early 2016. Its 40 million gallons in storage will make only a small short-term impact on markets. After that, Iranian oil will be a growing stream entering global markets, not a violent flood. Pre-sanctions production can be re-attained by the end of 2017, but some of that will be consumed internally as the Iranian economy improves. New fields will be brought online to tap Iran's vast reserves. And enhanced oil recovery will modernize obsolete wells -- but it's all a lot of redevelopment for Iran to actually pull off. We think production will rise from today's 3.3 million barrels per day to almost 5 million by 2020. In the intermediate term, the potential negative price impact will be blunted by a rollover in 2016 US production in the face of collapsed CAPEX, and by increasing global demand. For now, we are sticking with our forecasted price range of $50 to $65.

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eat up as much as 100,000 barrels per day from that increased production.

- From a pure engineering perspective, wells that were shut in and others that had been choked back could be brought back to full production quickly and easily.
- And Iran has already taken steps to alleviate the terrible mismanagement of production infrastructure by military cronies appointed by prior president Mahmoud Ahmadinejad. Now, since technocrat Bijan Zangeneh, a former oil minister, was restored to power in August 2013, production has already increased more than 200,000 barrels per day (most of which has gone to domestic consumption, under a subsidy program that makes gasoline extremely inexpensive for Iranian citizens).
- But getting all that oil into the markets is more than just a matter of increasing a choke on a well. Large-scale global oil flows are determined, in many cases, by long-term contracts. Iran will have to wait in line to compete for market share. Iran's most likely customer will be Europe, which is trying to displace Russian Urals crude and compensate for the loss of Libyan volumes -- and which is potentially coming out of its extended stagnation in the wake of the Great Recession and its debt crises.
- But Iran won't be an entirely credible contractual counterparty, considering that a mis-step in its compliance with the JCPOA's requirements could make it impossible to fulfill contracts.
- The riskiness of Iran as a contract counterparty affects the engineering, too. International oil companies (IOCs) will hesitate to rapidly make robust commitments of capital and personnel. Oil Minister Zanganeh held the same portfolio in the 1990s, and he had little luck enticing international oil companies to invest in Iranian oil fields. Contracts he negotiated met with stiff resistance from the *Majlis* and the Guardian Council. While Zanganeh has introduced a new Iranian Petroleum Contract, commercial details haven't been made available yet, and the Majilis will still need to sign off on them.
- *So we can be sure that Iran's restoration of pre-sanction levels of production will not present global markets with a violent flood of new supply, but rather a gradually growing stream.*
- *And as we will discuss in detail in a forthcoming report, that stream will flow against an ebb tide of a rollover in US light tight oil production, the deferred consequence of this year's drastic cutback in CAPEX.*
- Longer-term, Iran is capable of producing above its pre-sanction levels by bringing new fields online, tapping its vast reserves. With its eye on China as a prize market, NOIC partnered with Sinopec and China National Petroleum Company (CNPC) in the fields of Yadavaran, and North and South Azadegan, along the Iraqi border. *These volumes, estimated to come on line in 2016, we think will plateau at 700,000 barrels per day by 2020* (again, please see the chart on the first page).
- *Yet in an important sense the potential production gains from new fields cuts against the thesis that Iran's production from existing fields can easily bounce back to pre-sanctions levels.* Financial,

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political and managerial resources are not infinite. The more Iran focuses on new fields, by necessity the less it can focus on old ones.

- In the same vein, Oil Minister Zangeneh has repeatedly stated his priority on developing the South Pars gas field to feed condensate to a new refinery that was supposed to start operations this year, but will now come on line in 2016 -- and add 300,000 barrels of capacity for condensate and crude oil. By 2018, Iran would like to increase refining capacity to 3 million barrels per day from its current level of 1.9 million, to stop the importation of motor gasoline. It wants to be a net exporter of gasoline, probably targeting EU markets, given the fuel quality specifications to which they are going to produce. Big plans -- and big distractions.
- Fighting the re-development war on yet a third front, over time Iran can also exploit modern enhanced oil recovery (EOR). Currently 50% of production comes from fields that are 70 years old. An EOR program planned by the Iranian Consortium (made up of several IOCs) prior to the overthrow of the Shah has never been fully implemented. So Iranian oil fields are in bad shape and need investment in new technology to bring them back to historical levels.
- EOR programs typically boost production by 50% if they are executed well. If Iran can earn the trust -- and the capital and the expertise -- of IOC's, and 50% of the pre-sanctions production is increased 50%, then Iran could add almost a million barrels per day. *We think this will be a very long-term process, and are expecting OER to add 300,000 per day by 2020* (again, please see the chart on the first page).
- *Combining the restoration of pre-sanctions production, bringing new fields online, and applying OER to legacy fields, we see Iranian production at just under 5 million barrels per day by 2020* (again, please see the chart on the first page).

Bottom line

The nuclear deal brings Iran back to global oil markets, but not until early 2016. Its 40 million gallons in storage will make only a small short-term impact on markets. After that, Iranian oil will be a growing stream entering global markets, not a violent flood. Pre-sanctions production can be re-attained by the end of 2017, but some of that will be consumed internally as the Iranian economy improves. New fields will be brought online to tap Iran's vast reserves. And enhanced oil recovery will modernize obsolete wells -- but it's all a lot of redevelopment for Iran to actually pull off. We think production will rise from today's 3.3 million barrels per day to almost 5 million by 2020. In the intermediate term, the potential negative price impact will be blunted by a rollover in 2016 US production in the face of collapsed CAPEX, and by increasing global demand. For now, we are sticking with our forecasted price range of $50 to $65.