

1 Q. Fuel costs and interest rates

2 Re: Amended Application, p. 1.21 and 1.22, Charts 1.7 and 1.8

3 Preamble:

4 The projected costs for No. 6 Fuel for the 2015 Test Year is higher than the
5 cost in July 2010, and the projected costs for Diesel Fuel for the 2015 Test
6 Year are higher than the cost in 2013.

7 Please provide:

- 8 • The date when these forecasts were made;
- 9 • The projected crude oil price for 2015 contemporaneous with these
10 forecasts;
- 11 • A copy of the fuel price forecast document that was relied upon in
12 preparing the Amended Application.

13 Does Hydro still have confidence in these forecasts? If not, please provide an
14 updated forecast, and indicate the repercussions of any change on other parts of
15 the Amended Application.

16
17
18 A. The 2015 Test Year fuel costs that are reflected in Charts 1.7 and 1.8 in the
19 Amended Application are based on fuel price forecasts that were prepared by
20 Hydro in October of 2014. The October 2014 fuel price forecasts prepared by Hydro
21 relied on the PIRA Energy Group fuel price forecasts posted to their website on
22 September 29, 2014. The projected oil price for Brent crude that was
23 contemporaneous with these forecasts was \$US 92 per barrel. Attached is a copy of
24 PIRA's World Oil Market Forecast document that is published by PIRA on a monthly
25 basis and which preceded the PIRA price forecasts relied upon by Hydro. Please
26 note that PIRA's World Oil Market Forecast documents are used to inform Hydro
27 about current North American and broader global oil market conditions.

1 Hydro considers the oil prices used in the Amended Application to be higher than
2 currently expected for the year 2015 based on more recent oil price forecasts for
3 No. 6 fuel as indicated in Hydro's response to CA-NLH-274.

4
5 Hydro accepts PIRA's forecasts as reasonable. If actual fuel costs vary from the
6 forecast Test Year No. 6 fuel costs on the Island Interconnected System, the
7 repercussions are rate changes to customers through the operation of the Rate
8 Stabilization Plan. The impacts of diesel fuel cost variances from the Test Year
9 forecast are impacts to Hydro's net income. In its Amended Application, Hydro has
10 proposed an Isolated System Supply Cost Variance Deferral Account to refund any
11 reduction in actual diesel fuel costs and to limit the net income impacts of supply
12 cost variances resulting from diesel fuel cost increases. See Finance Evidence,
13 Schedule VI in Hydro's Amended Application.

World Oil Market Forecast

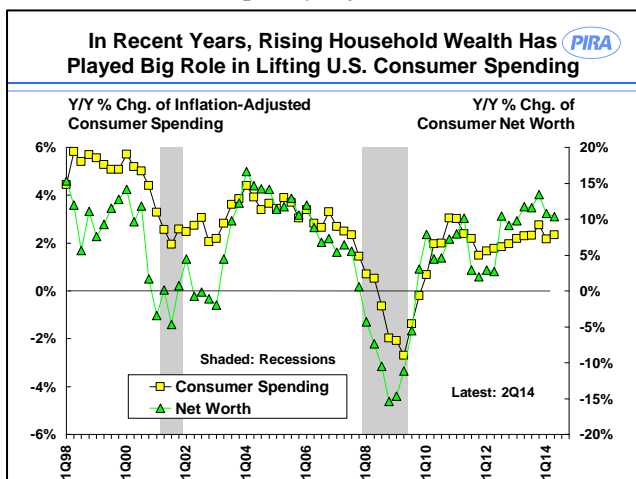
PIRA is cautiously optimistic the global economy will withstand the Fed's policy shift and lift into next year with growth above trend. Despite this and a rebound in oil demand growth oil market balances are forecast to continue to deteriorate. Low first half 2014 stocks hid blemishes but now that inventories have rebuilt, the ongoing imbalance of too much supply relative to demand will continue to pressure prices. PIRA has 2015 Brent prices averaging roughly \$92/Bbl while WTI is \$84/Bbl. Brent contango is here to stay and inevitably WTI will move into contango in the months ahead. Gasoline tightening in October will be short lived while distillate cracks will strengthen moderately over the next two months. New refinery capacity will keep pressure on margins in 2015. U.S. Gulf Coast crude prices will soften relative to Brent and Brent/Dubai will have to stay narrow. Oil supply disruptions ease but political tensions remain high.

Global Economy (Cautiously) Expected to Withstand Fed's Policy Shift and Lift into Next Year

PIRA's near-term view of the world economy has remained largely unchanged in the last few months. The U.S. is rebounding solidly after a weather-induced slump in the first quarter. Rising demand from U.S. consumer and corporate sectors is providing a tailwind for other areas through trade (especially emerging economies). Europe is sluggish, but is not falling back into a recessionary environment. Japan's economy is recovering from a major tax hike, with help from the central bank's massive financial liquidity injection. PIRA's forecast

looks for world GDP growth to reach 3.1% in 2014, and then to accelerate to above-trend 3.8% in 2015. Recent key economic releases have supported this outlook of improving global growth for the most part. For example, consumer spending and industrial activity in the U.S. are on pace to expand constructively during the third quarter, and emerging world exports are gaining steam.

Yet, there is also a palpable sense of potential vulnerability. For the global economy to keep lifting into next year, it will have to dodge several bullets. One major upcoming challenge will be the U.S. Federal Reserve's upcoming shift in its policy stance. The Fed's quantitative easing financial asset purchase program will come to an end next month, and the central bank is expected to start raising the policy interest rate in mid-2015 (or perhaps sooner). Financial markets (which have benefitted significantly from the Fed's unprecedented easy money policy) have yet to register major uneasiness at this eventuality. Rising asset prices have played a key role in the U.S.'s recovery (by playing an increasingly prominent role in boosting consumer spending, for example), however, potential market turbulence has an ability to send the economy off track. A related challenge will be the impact of U.S.



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tightening on the international flow of capital. As we highlighted here last month, the dollar has already strengthened significantly in recent weeks at the prospect of rising U.S. yields. This, in turn, doused commodity markets with bearish sentiments. Capital fleeing to the U.S. will continue for the foreseeable future, and this may prove disruptive for other economies, especially in emerging markets (it will constrain financial liquidity, and raise the cost of their dollar-denominated debts).

Additionally, concerns about the Chinese economy may be about to flare up yet again. As the value of the Chinese currency has remained largely stable against the dollar in recent weeks, other Asian economies are gaining advantage in export markets at the expense of China. The latest reading for industrial production provided a major disappointment, as its year-on-year growth slowed sharply from 9.0% in July to 6.9% in August. If evidence of weakness persists, Chinese policymakers will have to prescribe just the right amount of stimulus in order to defend the growth target of 7.0–7.5%, without exacerbating the country's debt problems.

As the U.S. Fed is about to end its remarkable monetary accommodation (which has been in place since the 2008/2009 great recession), its repercussions may potentially be far-reaching and very large. Thus, though PIRA remains constructive on the global economy's outlook, we are also

cautious given the heightened degree of uncertainty. Caution is also warranted in light of recent history – the world economy, unfortunately, has been prone to losing momentum after large negative shocks (budget battles in the U.S., debt crises in Europe, natural disasters such as Japan's 2011 earthquake) in the last several years. This has meant that negative revisions to the growth outlook have been far more frequent than upward revisions.

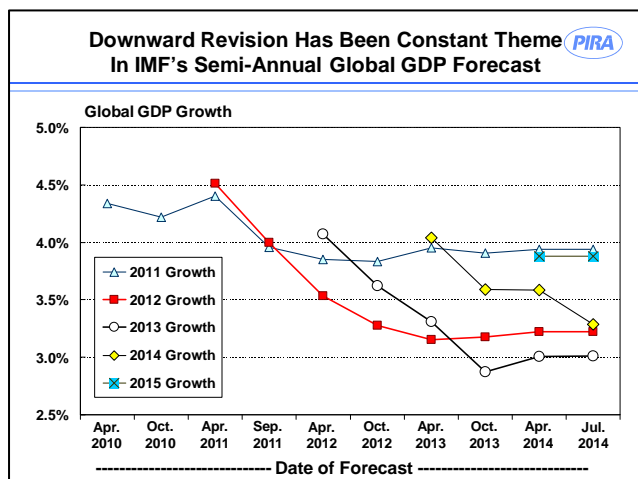
Nevertheless, PIRA's oil market balances are predicated on stronger, above trend growth next year (3.8%). Oil demand growth rebounds to 1.44 MMB/D (1.5%) after averaging under 1 MMB/D over the last four years. Despite this stronger demand, oil market balances are forecast to continue to deteriorate.

Oversupply to Worsen

Global oil demand growth is now just 640 MB/D in 2014, compared with non-OPEC supply growth of an amazing 2.2 MMB/D, led by the United States liquids growth of 1.62 MMB/D. OPEC's crude output decline of 400 MB/D makes just a minor contribution to reducing incremental excess global supply which is more than 1 MMB/D higher than the year before. Last year's stock draw has now become a substantial stock build which will continue into 2015, barring a dramatic decline in OPEC output, which PIRA believes is unlikely. Non-OPEC supply growth will continue to outpace demand growth even with above trend economic growth. The bottom line is that global oil supply growth is much larger than global demand growth at \$100/Bbl Brent so prices have to decline.

Low Stocks Hid Blemishes

During first half 2014 low stocks were able to absorb the imbalance between oil supply and demand without significantly impacting prices. Brent averaged around \$109/Bbl while WTI was \$101/Bbl. We had begun 2014 with the lowest stock level in ten years in the three major OECD markets, but as the first half year progressed supply was substantially



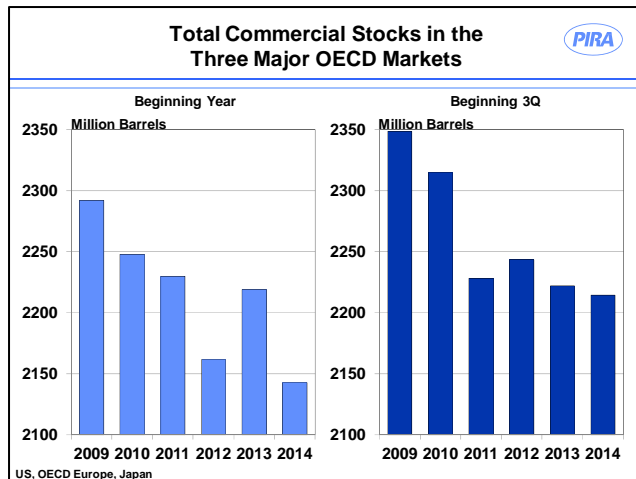
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outpacing demand. Year on year first half global oil demand growth averaged just 700 MB/D while U.S. liquids supply alone was running 1.55 MMB/D higher than the year before. By the end of the second quarter the inventory deficit of 76 million barrels (3.4%) beginning 2014 became an inventory deficit of just 7 million barrels (0.3%). Stocks levels were restored to more normal levels and this increased the vulnerability of prices to the imbalance continuing.



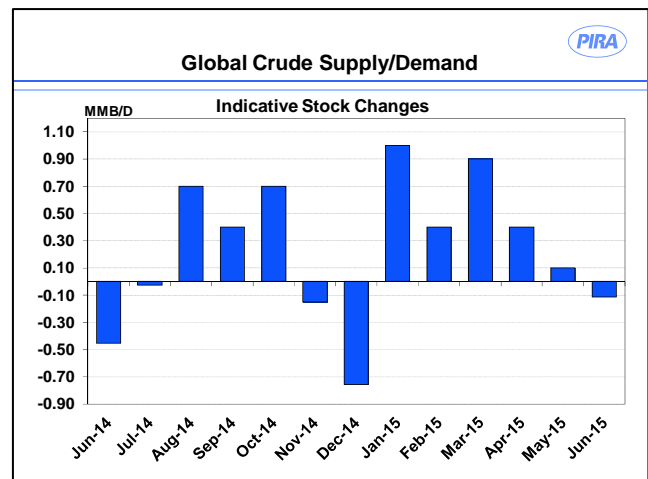
Crude stocks also began the year relatively low but then showed one of the largest builds in ten years during the first half of this year, increasing 53 million barrels in the three major OECD markets. This moved stocks to the high end of the historic range.

Stocks Rebuilt, Imbalance Pressures Prices

Once stocks were rebuilt, downward pressure on prices picked up momentum in the third quarter from a combination of further stock building, difficult adjustment processes and some easing of geopolitical risks to supply. Third quarter stocks in the three major OECD markets are expected to increase 500 MB/D, pushing reported stocks 16 million barrels (or 0.7%) higher than year earlier levels at the beginning of the fourth quarter. In addition to these reported inventories, PIRA estimates crude stocks in third party storage in the Atlantic Basin built 400 MB/D in the third quarter. These “homes” became a necessary disposal mechanism for unsold oil with the

economics supported by, and requiring, deep contango.

The contango will persist because of forecast crude stock increases as refiners reduce runs as a consequence of upcoming fall maintenance. Even after returning from maintenance, the crude overhang is expected to continue for some time because of likely ongoing oversupply through first half 2015.



The potential corrective process of an Atlantic Basin crude overhang is being undermined by a flawed transmission mechanism. As PIRA has discussed in previous reports, an Atlantic Basin surplus should translate into very narrow Brent/Dubai which encourages Asian refiners to pull surplus Atlantic Basin crude east and reduce Middle East liftings. But poor margins, limited contract flexibility, and crude quality preferences are limiting the pull by Asian refiners, thereby interfering with the corrective mechanism.

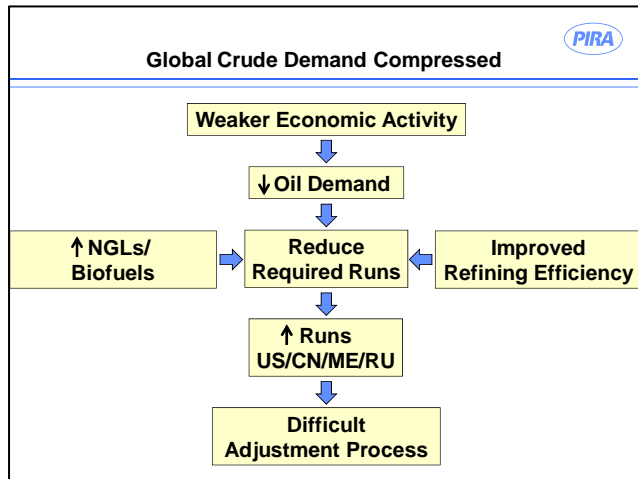
Refining margins have been hit by weak oil demand growth, increased NGL and biofuels output, and increased refinery efficiency. These factors have compressed global crude demand and taken together with increased runs in “advantaged” regions have created a difficult adjustment process for the rest of world which has been forced to reduce crude runs.

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A broken transmission mechanism and difficult refinery adjustment process have added to the bearishness for oil prices. Couple this with rising crude inventories and you have a recipe for crude prices to continue to grind lower with an occasional pop higher from a bullish geopolitical headline.

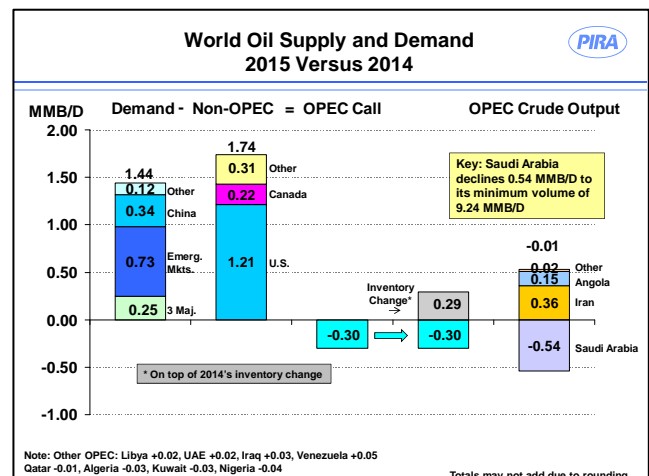
Geopolitical headlines have not been bullish so far in second half 2014. Libyan oil production has increased to about 700 MB/D currently and, while admittedly fragile, PIRA's balances assumes only 500 MB/D of Libyan output in 4Q 2014 and 450 MB/D throughout 2015. President's Obama's military support of Iraq and the Kurds stopped ISIS's territorial advances, reducing risks to Baghdad and Southern Iraq. Bullish geopolitical factors, nevertheless, present upside risks to prices especially given positioning (of which more later).

Non-commercial (financial) net length on NYMEX and Ice, futures and options, reached almost 940 million barrels on June 24, 2014 in the aftermath of ISIS's capture of Mosul. It has since fallen to 404 million barrels as of September 16. Brent contango, a rising U.S. dollar and higher long term U.S. interest rates have been taking their toll on financial net length. At the recent level, PIRA would characterize oil as being somewhat under owned by the financial community based on current economic parameters. This having been said, if WTI moves into contango then even lower net length would likely occur. This

risk is limited for now given how low Cushing stocks are and with October WTI consistently trading in strong backwardation, but as Cushing crude stocks grow in the months ahead with expected weakness in coastal crudes and Brent in contango, WTI will inevitably move into contango.

PIRA's 2015 Balances Have Saudi Arabia at 9.25 MMB/D Minimum Level

Even with Saudi Arabia cutting its 2015 output by 550 MB/D to its 9.25 MMB/D minimum level, stocks continue to substantially build in 2015, putting downward pressure on prices. This minimum level is PIRA's judgment based on the previous Saudi minimum of 8 MMB/D adjusted for consumption increases and past Ministry statements and market behavior. Also, the last unofficial quota agreed to privately by the OPEC Ministers in 2011 had Saudi Arabia at 9.415 MMB/D. Saudi Arabia would be prepared to cut if it believed others in OPEC were willing to share the burden and cut as well. Given recent losses in output in Iraq, Iran, and Libya and the dire financial need elsewhere in OPEC (e.g. Venezuela and Nigeria), it is hard to reasonably assume OPEC will share the burden. Thus it is PIRA's view that Saudi Arabia will hold to this minimum level and stocks will build, eroding prices. It would seem like a losing battle to support OPEC's current \$100/Bbl Brent target price based on current oil supply/demand fundamentals.



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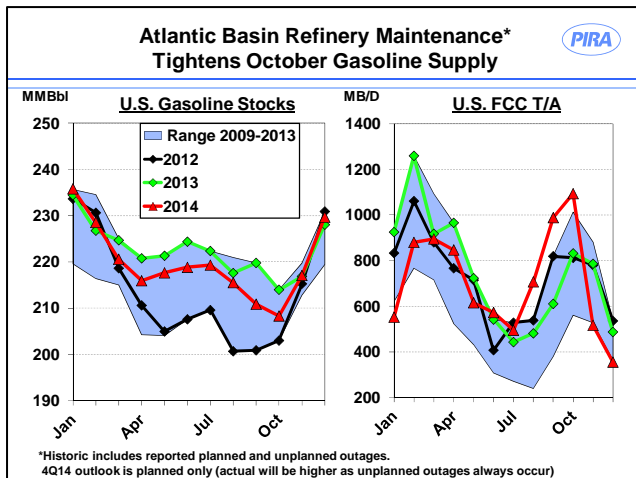
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Atlantic Basin Gasoline Stocks Tighten in October

With greater than typical FCC maintenance in the United States, along with runs restraint elsewhere in the Atlantic Basin (low European runs, refinery maintenance in Latin America), gasoline stocks are likely to tighten this October. This is helping gasoline cracks stay stronger in September than last year. It offers a welcome respite particularly to European refiners who have struggled with poor margins. Although European refinery yields and local demand are biased to middle distillates, the region is a huge gasoline exporter – roughly 1000 MB/D on average. Even Singapore gasoline cracks, which had been depressed in August, have recovered.

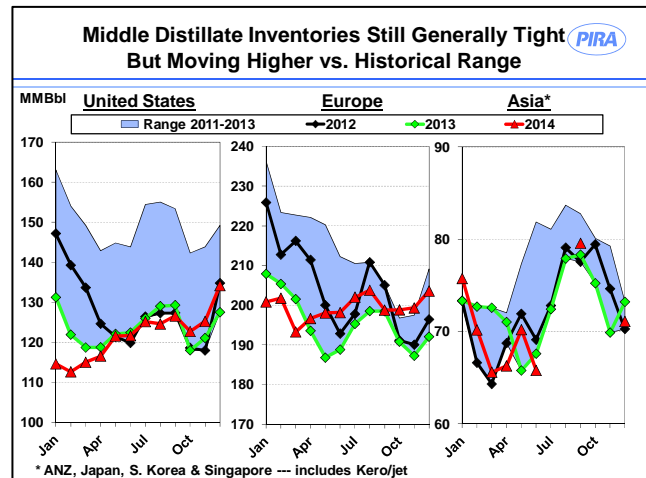
However, this will not last as gasoline cracks will inevitably soften as demand shifts lower seasonally, refineries return from maintenance, and potential supply increases due to higher RVP specs for winter grades. Stocks will build back.



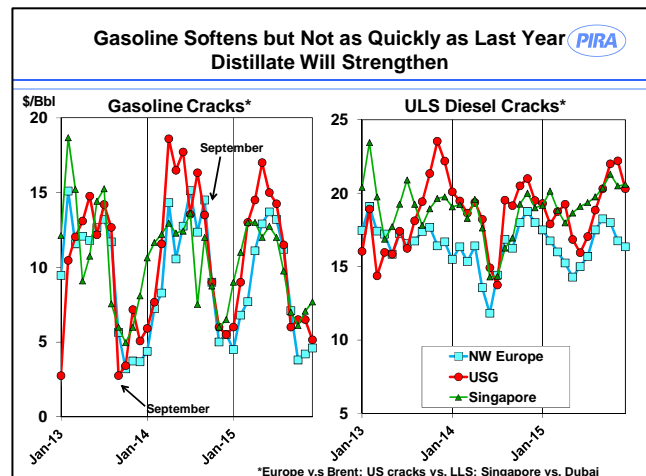
Middle Distillate Pricing Will Strengthen

The outlook for gasoil/diesel demand growth is weaker this year (under 0.2 MMB/D) compared to 2013 (over 0.3 MMB/D). But stocks are still generally tight in the Atlantic Basin despite higher runs in the United States, Russia and the Middle East. Lower runs in Europe and Latin America have been a major factor in this.

In Asia, middle distillate stocks (including kero/jet) are more mixed, with Singapore on the high side, but Korea and Japan flat to down. New capacity in China is not affecting the broader market that much as government policy limits product export growth. The larger impact is likely coming from a domino effect as new Atlantic Basin/Mideast refinery production displaces Indian exports further east. Runs/capacity cuts in Japan and Australia have helped relieve surpluses in Asia-Pacific (similar to Europe in the Atlantic-Basin), but discretionary runs cuts have likely been occasionally needed elsewhere in the region (e.g., margins were very low in late July-early August).



PIRA expects that gasoline cracks will come off rapidly while middle distillate will strengthen moderately over the next two months.



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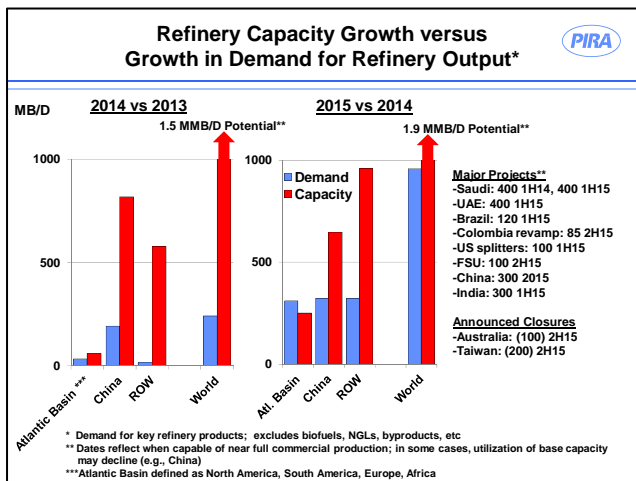


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New Refinery Capacity Will Keep Pressure on Margins in 2015

Refinery capacity growth has exceeded the growth in demand for the primary products from refineries (net of NGLs, biofuels, byproducts, etc.) in 2014. Partly this was due to lower demand growth, but even if demand had increased near historical averages, there was simply too much refinery capacity being built. This has particularly occurred in China, where new refineries generally force lower utilization rates in independent “tea kettles”. But even in the world excluding China, refinery capacity growth was substantially larger than needed. This has forced the shutdown of refineries in markets with declining demand (Europe and Japan) and in countries at a competitive disadvantage (e.g., Australia, Caribbean refiners earlier).



In 2015, this trend will continue with capacity/runs growth in countries with demand growth and/or advantaged feedstocks including China, the Middle East, the United States, and Russia. For demand, PIRA is keeping a generally optimistic view on global growth for 2015. Also, the switch in bunker specs to 0.1% sulfur in Emission Control Areas will add ~0.3 MMB/D to middle/heavy distillate demand (and similarly reduce residual fuel oil demand) giving a minor boost to Atlantic Basin conversion refiners.

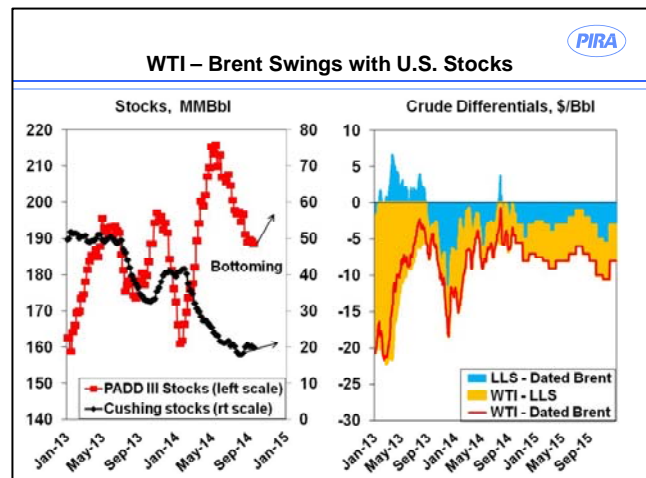
But even still, further capacity closures are likely as new refinery capacity is substantially larger than demand growth net of NGL/biofuels supply

increases. For example, some refiners in Italy and France are reportedly considering cuts. Refinery margins in these challenged regions will generally be pressured but with occasional recovery depending on the level of refinery runs/cuts.

Crude Differentials Swing with Inventory, Supply, and Runs

Cushing inventories drained to their lowest levels since 2008 and essentially leveled off – pipeline capacity additions have reconnected it to the Gulf Coast. Consequently, WTI will generally price in quality/location parity with USG grades. USG stocks have also fallen and are likely near their bottom for now with refinery maintenance ahead. USG crude prices should soften relative to Brent as stocks build over the next two months.

Together, these trends put WTI-Brent at negative \$6-8/Bbl on average in the 4th quarter.



The growth in North American crude production is much larger than any net change in refinery runs in the Atlantic Basin shifting regional crude balances towards surplus. To allow this surplus to move to Asia, the only logical market for it, the Brent-Dubai spread will need to be narrower all else being equal. Contango at the front of the Brent curve is both a symptom of this and facilitates movement (helping to cover the longer haul compared to Asian refiners' Middle East alternatives).

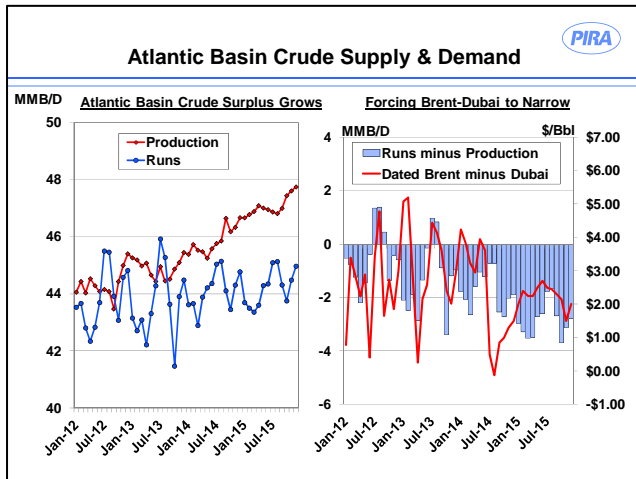
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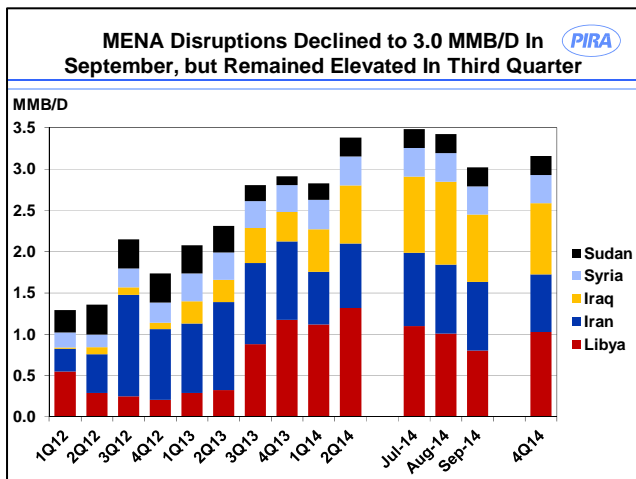
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This will also affect product markets as Asian refiners will have more difficulty economically competing in the Atlantic Basin. Also, fuel oil cracks, which are anchored in the West by the arb to Asia, will appear stronger compared to relatively softer Brent.



Oil Supply Disruptions Ease But Political Tensions Remain High

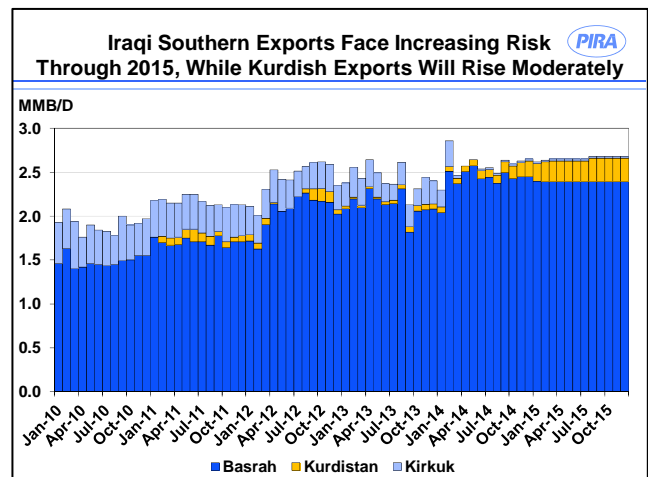
Crude oil supply disruptions in the Middle East and North Africa eased to 3.0 MMB/D in September, but averaged 3.4 MMB/D in the third quarter, in line with second quarter high levels. Disruptions are expected to moderate slightly through the rest of this year and next year, but risks to supply remain high on growing political turmoil in Iraq and Libya.



The conflict in Iraq broadened in September, as the U.S. expanded airstrikes, offered support to moderate Syrian rebels, and called on Arab and European allies to build an international campaign against the extremists. PIRA expects a long road ahead for Iraq, with the conflict likely to persist until a cohesive government is formed and an effective army in place.

Deep-rooted sectarian and political tensions continue to be the biggest challenge in forming a unified Iraqi government. Parliament approved most of Prime Minister Abadi's cabinet, including Adel Abdel Mehdi as oil minister with cordial ties to the KRG, but lawmakers remain divided on the crucial posts of defense and interior ministry. Negotiations on the division of power are being further complicated by Sunnis and Kurdish demands in exchange for military and political participation. PIRA expects political progress to be slow in coming months as the security situation remains fragile. However, in our view, the longer the process stalls, the greater the likelihood that the Kurds strengthen their push for independence, aided in part by weapons coming from the U.S.

PIRA continues to believe oil production gains in Iraq will be limited in the face of rising insecurity and a highly uncertain political future. The south has not yet been directly affected, but we see growing risk that ISIS carries out terrorist attacks and capacity expansion plans slow. PIRA forecasts southern Iraqi oil exports to remain constrained at 2.4 MMB/D in



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4Q14 and 2015. In the north, Kirkuk exports are not expected to return. Kurdish exports rise moderately to 180 MB/D by the end of 2014 and to 260 MB/D by the end of 2015. The Kurds will likely continue to face difficulty selling their oil as long as the government formation process is underway, but any favorable developments could provide potential upside.

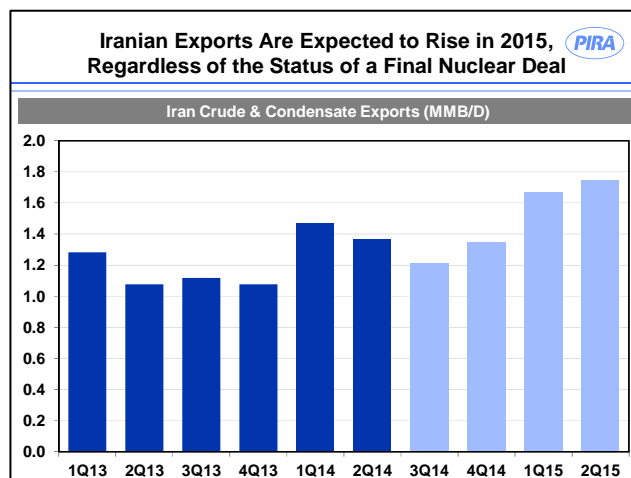
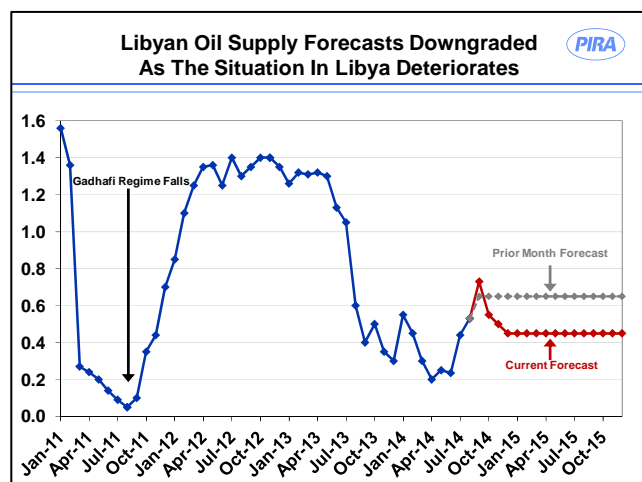
In Libya, strong production gains through the first half of September proved unsustainable as worsening militia violence and political chaos finally caught up to oil supply. Damage from militia fighting forced the Zawiya refinery and export terminal to shut a week ago, as well as the connecting Sharara field in the west, but reportedly the field and terminal reopened today. Obviously, the situation is fluid. Blockades at pipelines connecting oil fields to the Zueitina and Ras Lanuf terminals in the east are impacting output. Politically, the elected parliament in Tobruk has yet to form a cabinet and is struggling to maintain control of key ministries located in Tripoli, where Islamist forces have effectively taken control. The situation appears to be deteriorating rapidly and, despite a recent report about negotiations between the rival parliaments, we see little hope that the central government will be able to exert any power over an increasingly chaotic Libya.

PIRA remains highly concerned with the continued military and political coalescing of groups in Libya. We have long argued that consolidation of disparate

militias into larger groups greatly increases the risk of a more destructive civil war. With lines being drawn along Islamist and non-Islamist lines, the potential for wider regional involvement also grows. PIRA downgraded its forecasts for Libyan oil supply, which is now expected to decline to 450 MB/D by the end of 2014 with no further supply gains in 2015. Continued militia fighting and political discord is expected to lead to greater oil production disruptions, and supply gains will be difficult to sustain.

In Iran, formal P5+1 nuclear negotiations resumed over the weekend. However, with little apparent movement in closing wide negotiating gaps, the prospect of reaching a final nuclear deal by November 24 remains challenging.

PIRA is becoming increasingly convinced that in most scenarios Iranian oil production is likely to be higher in 2015. Sanctions will be difficult to maintain, regardless of whether or not a deal is reached. The international community is likely to look positively on the limitations Iran has already put on the most sensitive aspects of its nuclear program (halting enrichment of up to 20% uranium and eliminating its stockpile). Furthermore, barring a major reversal of Iranian actions, the threat of retaliatory Israeli or U.S. military action is diminished given other tensions in the region. PIRA forecasts Iranian oil production will rise by 360 MB/D to 3.32 MMB/D in 2015.



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Changes to PIRA's World Oil Balances

Summary

There were two major increases to our assessment of World oil demand this month. First, baseline demand for Non-OECD countries was raised reflecting the recent release by the IEA of their 2014 edition of Annual Energy Statistics of Non-OECD Countries; this reported on 2012 demand for the first time and resulted a 0.4 MMB/D increase in PIRA's Less Developed Country category. Second, upward adjustments were made to apparent demand assessed for China and the Former Soviet Union; these resulted from inclusion of Refinery Gain in the demand assessment, and for the FSU inclusion of NGLs. The net impact of these changes was to increase 2012 demand by over 0.9 MMB/D. Other demand factors discussed below lowered the net total increase for 2014 and 2015 to about 0.8 MMB/D.

Supply changes by contrast were much smaller with total 2014 revised down 10 MB/D and 2015 revised down 60 MB/D. In breaking down the supply changes, 2014 saw non-OPEC increased 70 MB/D while OPEC crude was decreased 80 MB/D. For 2015, the respective changes were Non-OPEC unchanged while OPEC crude was down 60 MB/D.

World Supply/Demand, MMB/D		
	2014	2015
Revisions vs Last Month		
World Oil Demand	0.79	0.79
Non-OPEC *	0.07	0.00
OPEC	-0.08	-0.06
Year-on-Year Growth		
World Oil Demand	0.6	1.4
Non-OPEC**	2.2	1.7
OPEC Crude**	-0.4	0.0
* Includes OPEC NGL/Condensate		
** Non-OPEC & OPEC growth is adjusted for Angola and Ecuador leaving Non-OPEC category and joining OPEC, and for Indonesia leaving OPEC		

Annual growth rates were not as significantly impacted. 2014 demand growth was reduced to 0.6

MMB/D from last month's 0.9 MMB/D due mainly to upwardly revised 2013 OECD demand coupled with more weakness now seen in OECD countries for 2014 relative to last month's view. Growth for 2015 remains at 1.4 MMB/D. Non-OPEC growth continues exceptionally strong with 2014 and 2015 forecast at 2.2 and 1.7 MMB/D. OPEC crude is forecast to decline 0.4 MMB/D in 2014 versus 2013 and is expected to remain flat in 2015.

Demand

The main components of the 0.8 MMB/D upward revisions to **World** oil demand are discussed below by region.

U.S. demand was revised up 70 MB/D for 2013, down 60 MB/D for 2014, and was unchanged for 2015. Although new EIA monthly data for June led to an increase in 2014 second quarter by 20 MB/D, more recent weekly data now into September resulted in a 190 MB/D lowering of third quarter demand. The largest change fell on mogas, down 100 MB/D, and we attribute some of this apparent weakness to gasoline jobbers deferring purchases in an environment of declining prices. Other weakness in third quarter included resid (due to cheap natural gas and a mild summer) and "other" products mainly non-LPG products with the reduction driven by the weekly DOE data. Fourth quarter 2014 was also lowered reflecting the current quarter's weakness and sluggishness of this year's economic growth. For 2015, oil demand is expected to have larger annual growth than for 2014 reflecting a forecast lower price environment; this higher growth rate led to no change in annual demand versus last month's forecast. The impact of the 2013 and 2014 changes was to lower 2014 growth to only 0.1MMB/D, down from 2013's growth of 0.5 MMB/D; 2015 demand growth is only marginally better than 2014 at 0.2 MMB/D.

Western European demand was almost unchanged with only 2015 revised up 10 MB/D. For 2014, although latest IEA monthly data on June resulted in a 30 MB/D increase for second quarter (resid and other) and partial data on inland deliveries raised

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third quarter demand by 30 MB/D also (mainly naphtha and other products), fourth quarter demand was lowered 60 MB/D due to a reduced GDP outlook with largest impact on gas oil demand. In 2015, a modest increase in demand reflected the net of both lowered oil prices and lowered GDP outlook. Mogas and diesel were both revised down due to lowered GDP outlook with mogas affected more than diesel because of a relative shift to more diesel powered cars in the new car sales market. The net overall increase in demand thus was due to lowered oil prices which should favorably impact industrial demand more so than transportation sector demand because of its high taxes account for a large share of retail prices.

Japan demand had the largest regional reduction this month with 2014 and 2015 revised down 40 and 60 MB/D. Although latest IEA data through June resulted in a small increase in second quarter demand (20 MB/D, mainly other products), government and trade industry data into September led to a reduction of third quarter demand by 140 MB/D. Fourth quarter was also lowered more than 2014 was, reflecting lower GDP growth and the power sector's reduced use of resid and crude burn and increased natural gas burn. 2015 was lowered because of a more pessimistic view of power sector demand.

FSU apparent demand (oil output less net exports) was revised up by 340 to 380 MB/D over 2013 – 2015 reflecting the NGL and Refinery Gain additions to the oil output component of apparent demand. Latest trade data did not significantly impact net exports. FSU demand growth for 2014 was essentially unchanged versus last month at -0.1MMB/D while 2015 growth was revised up slightly to 0.1 MMB/D.

China apparent demand (equal to production plus net imports) was revised up for 2013 - 2015 by 260 – 270 MB/D reflecting mainly the refinery gain impact. As with FSU, latest import / export data (August) was close to last month's forecast and did not suggest substantial revision to the trade outlook. Annual

demand growths for 2014 and 2015 were unchanged at 0.3 MMB/D.

World Oil Demand, MMB/D		
	2014	2015
Revisions vs Last Month		
United States	-0.06	0.00
Western Europe	0.00	0.01
Japan	-0.04	-0.06
Other Industrial	0.01	0.00
Less Developed	0.31	0.25
Former Soviet Union	0.35	0.38
Eastern Europe	-0.04	-0.04
China	0.26	0.27
Total	0.79	0.79
Annual growth		
United States	0.1	0.2
Western Europe	-0.2	0.0
Japan	-0.2	0.0
Other Industrial	0.0	0.1
Less Developed	0.6	0.7
Former Soviet Union	-0.1	0.1
Eastern Europe	0.0	0.0
China	0.3	0.3
Total	0.6	1.4

Less Developed Country demand was revised up substantially resulting from the IEA's publication of annual non-OECD country statistics covering 2012 with historical revisions back to 2005. Demand for 2012 was revised up 400 MB/D with regional changes of 130 MB/D each for Africa and Asia, 90 MB/D for Middle East, and 50 MB/D for Latin America. Demand for 2013 was revised up by 410 MB/D as the higher baseline assessment was projected forward. Subsequent years had progressively lower increases at 310 and 250 MB/D; the lowered growth was mainly in the Middle East and specifically mostly Saudi Arabia (weaker PetChem) and Iran (lowered mogas and diesel due to higher local prices). LDC forecast growth was reduced 0.1 MMB/D for each of 2014 and 2015 by the weaker outlook to 0.6 MMB/D and 0.7 MMB/D respectively, but remains the strongest component of world demand growth. LDC growth is 100% of world growth in 2014 and half of 2015 growth.



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Non-OPEC

Non-OPEC supply for 2014 was revised up 70 MB/D while 2015 was not changed. Details are below.

U.S. was revised up by 70 MB/D in 2014 but 2015 remained unchanged. In 2014, the change was mostly driven by higher actuals for Gulf of Mexico (40 MB/D), as well as higher actuals for Colorado non-shale. Shale liquids did not change, as a decrease of 20 MB/D in the Bakken forecast was offset by an equal increase in Eagle Ford. In 2015, an upward revision of 60 MB/D in the Gulf of Mexico was balanced by a similar downward revision in the shale forecast. The shale revision was driven by a lower price environment. In the Gulf of Mexico, the upward revision for 2015 reflected higher production actuals from 2014.

Non-OPEC Oil Supply, MMB/D		
	2014	2015
Revisions vs Last Month		
United States	0.07	0.00
Canada	-0.01	0.00
Mexico	-0.03	-0.04
North Sea	0.04	0.06
FSU	-0.06	-0.04
China	0.00	0.00
Other*	0.05	0.02
Total	0.07	0.00
Annual growth		
United States	1.6	1.2
Canada	0.2	0.2
Mexico	0.0	-0.1
North Sea	0.0	-0.1
FSU	0.0	0.1
China	0.0	0.0
Other*	0.4	0.4
Total	2.2	1.7
* Includes OPEC NGL/Condensate		

Canada production was revised down by 10 MB/D in 2014 but remained unchanged in 2015. The slight drop in 2014 is attributable to lower actuals for Alberta bitumen production. Total Canada growth for

2014 and 2015 is forecasted at 220 MB/D for both years.

Mexico was revised down for 2014 and 2015 by 30 and 40 MB/D. This mainly reflected reported July crude actuals which fell to 2388 MB/D, a decline of almost 50 MB/D versus June. This decline was mainly Light and Other Heavy while Cantarell, KMZ, and Super light crude remained flat versus June.

North Sea was revised up by 40 MB/D in 2014 and 60 MB/D in 2015, mainly due to a higher forecast for Norway. Crude loadings for September showcased that the traditionally heavy maintenance in September will be lighter this year, as part of the maintenance was already conducted in March and June, pushing up the September forecast. Crude and NGL Norwegian actuals for July were also higher than expected thanks to limited maintenance programs. As a result, Norwegian crude production was revised up by 25 MB/D in 2014 and 30 MB/D in 2015, while NGL production was revised up by 10 MB/D and 15 MB/D respectively. UK crude production was also up 10 and 15 MB/D respectively for 2014 and 2015, thanks to higher actuals for the Telford field and the Claymore field. Denmark production remained at the same levels for 2014 and 2015. Total North Sea is close to flat this year, but resumes decline next year at a forecast 120 MB/D.

FSU supply was revised down 60 MB/D for 2014 and 40 MB/D for 2015. Lower Russia NGL production and maintenance loss in Kazakhstan and Azerbaijan are the primary reasons for the revision. For Russia, NGL production was revised down for both 2014 and 2015 by 50 MB/D while there was no change to combined crude and condensate production in 2014 and a small 10 MB/D increase in 2015. In Kazakhstan, Tengiz field is scheduled to have maintenance beginning at the end of September for 45 days, and output from the field will fall to 400 MB/D from normally 600 MB/D during the period. Accordingly, Kazakhstan's crude and condensate production was revised down 10 MB/D in 2014; no

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change was made for 2015. In Azerbaijan, BP has delayed scheduled maintenance on West Azeri platform in the ACG field complex to 2015. With normal output of around 170 MB/D at West Azeri platform, we expect this maintenance will lower 2015 total output by 10 MB/D. Total FSU sees 10 MB/D year-on-year decline in 2014 and 100 MB/D growth in 2015.

China supply was unchanged for 2014 and 2015. New July field actuals showed declines that month were from both onshore (-90 MB/D) and offshore (-90 MB/D) in contrast to our last month's assumption, which was based on a country total and past trends, that declines would be mainly offshore. The revised mix of crude field production data in combination with a preliminary August country total, which was up 30 MB/D from July, did not result in any net change to total production when projected forward. China supply growth in 2014 and 2015 remains small at nil and 10 MB/D.

Other Supply was revised up 50 MB/D for 2014 and 20 MB/D for 2015. Largest increases were for Brazil and Pakistan. Brazil was revised up by 20 and 10 MB/D respectively in 2014 and 2015 with the increase due to slightly higher than expected crude production actuals in Caratinga, Marlim Sul and Ostra fields while ethanol projections remained the same. Pakistan production was revised up after new production actuals for Q2 2014 showed a 20 MB/D increase, primarily due to higher production from the Tal and Nashpa fields and new production from Sinjhor and Makori blocks.

OPEC

OPEC crude production estimates were revised lower by 80 MB/D for 2014 and 60 MB/D for 2015. The changes mainly reflect decreases in Libya and Iran, which are only partially offset by increases in Nigeria and Kuwait.

In **Libya**, production gains through the first half of September suffered a setback as a rocket attack shut the Zawiya refinery, export terminal, and connecting

Sharara field. Although reports indicate the terminal and oil field are back online, worsening militia violence and political chaos will likely continue to impact supply. Production estimates were revised lower by 30 MB/D in 2014 (60 MB/D for the second half of 2014) and by 200 MB/D in 2015.

2014 OPEC Crude Production - MMB/D					
	1Q	2Q	3Q	4Q	Yr
Saudi Arabia	9.53	9.47	9.80	9.44	9.56
Kuwait	2.57	2.62	2.74	2.68	2.65
Neutral Zone	0.51	0.42	0.32	0.48	0.43
UAE	2.66	2.71	2.79	2.79	2.74
Iran	3.07	2.92	2.85	2.99	2.96
Qatar	0.73	0.73	0.72	0.72	0.73
Algeria	1.12	1.12	1.10	1.08	1.11
Libya	0.43	0.23	0.56	0.50	0.43
Nigeria	2.19	2.15	2.22	2.23	2.20
Angola	1.58	1.60	1.75	1.63	1.64
Venezuela	2.35	2.35	2.34	2.30	2.33
Ecuador	0.54	0.54	0.54	0.55	0.54
OPEC-11	27.28	26.87	27.74	27.40	27.33
Iraq	3.19	3.21	3.07	3.16	3.16
OPEC - 12	30.47	30.08	30.81	30.56	30.48
Capacity	32.24	32.34	32.75	33.01	32.59
Spare	1.76	2.26	1.94	2.45	2.11
OPEC - 12					
Quota	30.00	30.00	30.00	30.00	30.00
Vs Quota	0.47	0.08	0.81	0.56	0.48

Iranian production forecasts were lowered by 120 MB/D in 2015 on reduced expectations of Iranian oil sales to China, India, Japan, and South Korea. Still, production is set to rise in 2015 as sanctions will be difficult to maintain.

2015 OPEC Crude Production - MMB/D					
	1Q	2Q	3Q	4Q	Yr
Saudi Arabia	9.00	9.00	9.00	9.00	9.00
Kuwait	2.56	2.60	2.63	2.61	2.60
Neutral Zone	0.48	0.48	0.48	0.48	0.48
UAE	2.70	2.74	2.80	2.80	2.76
Iran	3.23	3.29	3.36	3.38	3.32
Qatar	0.72	0.72	0.72	0.72	0.72
Algeria	1.08	1.08	1.08	1.08	1.08
Libya	0.45	0.45	0.45	0.45	0.45
Nigeria	2.08	2.18	2.18	2.18	2.16
Angola	1.75	1.81	1.81	1.81	1.80
Venezuela	2.39	2.39	2.38	2.38	2.39
Ecuador	0.55	0.54	0.54	0.54	0.54
OPEC-11	26.99	27.30	27.43	27.42	27.29
Iraq	3.14	3.17	3.22	3.21	3.18
OPEC - 12	30.13	30.46	30.65	30.63	30.47
Capacity	33.30	33.58	33.73	33.78	33.60
Spare	3.17	3.12	3.09	3.15	3.13
OPEC - 12					
Quota	30.00	30.00	30.00	30.00	30.00
Vs Quota	0.13	0.46	0.65	0.63	0.47

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Nigerian supply was revised higher by 40 MB/D in 2014 (70 MB/D for the second half of the year) and 110 MB/D in 2015 on stronger-than-expected exports from new and existing fields.

Kuwait production forecasts were revised 100 MB/D higher in 2015 on stronger expected sales to China and the Philippines.

OPEC production is forecast to decline by 0.1 MMB/D in 2014. PIRA assumes that production will be flat in 2015.

Total OPEC spare capacity will average 2.1 MMB/D in 2014, with 1.9 MMB/D in the third quarter and 2.4 MMB/D in the fourth quarter. In 2015, spare capacity will increase to 3.1 MMB/D on an annual basis.

Stocks

Total Stock Change and Onshore Commercial Stocks were revised to be more of an implied draw as a result of the large increases made to oil demand while changes to supply were much smaller. The impact of revised demands are reflected in the balancing item, rest of world stocks. Hence, the revised more negative stock change does not reflect market tightness. It is more a reflection that demand is overstated and supply is understated.

Inventory Build / Draw, MMB/D		
	2014	2015
Revisions vs Last Month		
Total Stock Change*	-0.8	-0.8
Gov't Stock Change	0.0	0.0
Onshore Commercial	-0.8	-0.9
Three Major OECD	0.0	0.1
Annual Stock Change		
Total Stock Change*	0.1	0.3
Gov't Stock Change	0.1	0.1
Onshore Commercial	0.0	0.2
Three Major OECD	0.3	0.3
* After Time Phasing		

Three Major OECD stock build/draw was not significantly revised for 2014 after end-second quarter stocks were revised down only a small amount. For 2015, three Major OECD stock build/draw was revised up 0.1 MMB/D reflecting a larger increase in global stocks than for 2014. Annual stock builds for the Three Major OECD stocks for 2014 was unchanged at 0.3 MMB/D while 2015 was slightly higher this month and also 0.3 MMB/D.

PIRA'S OIL MARKET SCOREBOARD September 22, 2014

	Bullish	Bearish	Neutral
MARKET ISSUES			
October Change In:			
Onshore Commercial Stocks		✓	
Days Supply Cover		✓	
Cushing Sweet Stocks		✓	
Refinery Margins		✓	
Atlantic Basin Sweet to Asia		✓	
OPEC Compliance			✓
Economic Outlook	✓		
Interest Rates			✓
Refinery Maintenance		✓	
Other Factors:			
Technicals		✓	
Seasonals		✓	
Market Psychology		✓	
Non-Commercial Position*	✓		
Rebalancing	✓		
OIL PRICE OUTLOOK**			
Next 30 Days		✓	
Next 90 Days		✓	
One-Year Out		✓	

* A reverse indicator; at high levels of speculative net length it is bearish.

** Versus NYMEX

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PIRA's 35th Annual Retainer Client Seminar

Thursday-Friday
October 9-10, 2014

New York Hilton Midtown

This one-of-a-kind gathering reviews PIRA's short- and long-term outlook for crude oil and petroleum products, natural gas, electric power, coal and emissions. It also examines the major structural changes expected in various world energy markets. Don't miss this opportunity to join industry colleagues and hear PIRA's in-depth and market-moving analysis firsthand. [Refer to the agenda for complete details](#), or if you would like to attend this year's seminar, contact sales@pira.com.

World Oil Market Forecast


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GLOBAL OIL
Table 1: Crude Oil Prices (\$/Bbl)

	WTI			Brent		
	2013	2014	2015	2013	2014	2015
Jan	94.75	94.90	87.50	113.00	108.25	95.00
Feb	95.25	100.80	86.00	116.30	108.85	94.00
Mar	92.85	100.50	84.00	108.35	107.55	93.00
Apr	91.95	102.00	84.00	101.90	107.60	92.00
May	94.65	101.90	81.00	102.50	109.60	89.00
June	95.75	105.25	84.00	102.90	111.65	91.00
Jul	104.65	102.80	84.00	107.95	106.65	90.00
Aug	106.55	96.35	84.00	111.25	101.60	91.00
Sep	106.20	92.60	83.50	111.90	97.10	91.50
Oct	100.40	88.00	82.50	109.05	93.50	92.50
Nov	93.90	87.00	79.50	107.95	95.00	90.00
Dec	97.80	87.00	83.00	110.80	94.00	91.00
1Q	94.30	98.75	85.85	112.55	108.20	94.00
2Q	94.10	103.05	83.00	102.45	109.60	90.65
3Q	105.80	97.25	83.85	110.35	101.75	90.85
4Q	97.35	87.35	81.65	109.25	94.15	91.15
YR	97.90	96.60	83.60	108.65	103.45	91.65

Notes: WTI at Cushing, Dated Brent FOB North Sea

Table 2: World Oil Supply/Demand 2013-2015 (MMB/D)

	2013	2014					2015				
	YR	1Q	2Q	3Q	4Q	YR	1Q	2Q	3Q	4Q	YR
Oil Demand	92.7	92.5	92.1	93.7	95.2	93.4	93.9	93.5	95.0	96.9	94.8
Industrialized	39.8	39.6	38.6	39.6	40.6	39.6	40.0	39.0	39.8	40.8	39.9
Emer. Economies	48.2	48.4	49.2	49.3	49.7	49.1	49.3	50.0	50.6	51.0	50.2
FSU	4.7	4.5	4.3	4.7	4.9	4.6	4.6	4.4	4.7	5.1	4.7
Oil Supply	91.7	92.9	93.0	93.8	94.3	93.5	94.4	95.1	95.3	96.2	95.2
Non-OPEC	60.8	62.5	62.9	63.0	63.7	63.0	64.3	64.6	64.6	65.6	64.8
FSU	14.0	14.1	14.0	14.0	14.0	14.0	14.1	14.1	14.1	14.2	14.1
Other	46.8	48.3	48.9	49.0	49.8	49.0	50.2	50.5	50.6	51.4	50.6
OPEC Crude	30.9	30.5	30.1	30.8	30.6	30.5	30.1	30.5	30.6	30.6	30.5
Time Phase Impact	(0.1)	0.3	(0.3)	(0.5)	0.1	(0.1)	(0.1)	(0.2)	(0.1)	(0.3)	(0.2)
Time Phase Supply	91.6	93.2	92.7	93.4	94.4	93.4	94.3	94.9	95.2	95.8	95.1
Total Stock Change	(1.1)	0.7	0.6	(0.3)	(0.8)	0.1	0.5	1.4	0.2	(1.0)	0.3
Gov't Stock Change	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Comm. Stock Change	(1.2)	0.5	0.5	(0.4)	(0.8)	(0.0)	0.4	1.3	0.1	(1.1)	0.2
3 Major Stock Change	(0.2)	0.0	0.8	0.5	(0.3)	0.3	0.1	1.0	0.7	(0.5)	0.3
THREE MAJOR OECD STOCKS:											
End Q. Volume (Bn bbl)		2.15	2.21	2.26	2.24		2.25	2.34	2.40	2.36	
Cover (Days)		61.38	61.64	61.34	61.75		63.52	64.91	64.89	64.34	

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GLOBAL OIL
Table 3: US Gulf Coast Oil Price Forecast

	LLS	HLS	Sour Crude Index	#6 1% S	#6 3% S	#2 HOil	Diesel	K Jet	ConvUL	3:2:1 Crk
(nom. \$)	USGC (\$/Bbl)	USGC (\$/Bbl)	USGC (\$/Bbl)	USGC (\$/Bbl)	USGC (\$/Bbl)	USGC (c/g)	USGC (c/g)	USGC (c/g)	USGC (c/g)	USGC (\$/Bbl)
Jan-14	102.80	104.50	99.25	98.75	88.25	287.4	292.6	291.9	258.8	9.90
Feb-14	106.35	105.95	102.90	102.85	90.35	288.0	299.6	298.2	271.5	10.00
Mar-14	104.10	102.65	99.80	102.35	89.30	285.2	292.3	290.1	275.4	12.95
Apr-14	104.15	104.05	98.35	101.55	90.75	288.3	294.1	290.0	292.2	18.05
May-14	104.25	104.25	98.95	98.40	91.75	285.9	291.6	287.9	287.5	16.25
Jun-14	108.20	108.70	102.60	99.25	93.10	287.8	293.2	289.6	299.8	16.05
Jul-14	106.40	105.40	101.75	94.45	88.95	279.9	286.1	283.7	285.6	12.75
Aug-14	100.10	99.05	96.20	94.20	87.65	277.0	284.9	286.2	277.2	16.30
Sep-14	95.90	94.15	91.95	91.75	85.90	265.2	273.9	275.0	261.6	14.50
Oct-14	90.50	89.50	86.10	83.30	78.50	258.3	264.3	264.3	236.9	12.00
Nov-14	90.00	89.80	85.30	81.00	77.00	259.5	264.3	261.9	228.6	10.35
Dec-14	91.00	90.70	86.85	80.00	77.00	258.3	263.1	260.7	229.8	9.50
Jan-15	92.50	92.45	88.65	80.50	77.50	261.9	266.2	267.9	234.5	9.85
Feb-15	91.00	91.15	87.15	79.00	75.00	252.4	259.3	257.1	238.1	11.00
Mar-15	89.00	89.00	84.90	80.10	75.50	248.8	256.5	254.8	242.9	13.85
Apr-15	89.00	89.25	84.05	80.20	75.50	250.0	257.7	253.6	246.4	15.00
May-15	86.00	86.05	81.45	78.70	74.00	237.1	244.9	240.7	245.2	15.85
Jun-15	89.00	89.15	84.70	80.40	76.00	242.1	249.9	246.9	247.6	14.25
Jul-15	89.00	88.75	84.90	77.40	73.50	244.8	252.5	249.5	245.8	14.10
Aug-15	89.00	88.95	85.00	79.20	75.50	249.0	256.8	253.8	239.3	12.85
Sep-15	88.50	88.75	84.50	79.50	76.00	251.9	259.0	256.7	225.0	9.75
Oct-15	87.50	87.25	83.00	79.50	76.00	254.3	260.7	258.5	223.8	10.75
Nov-15	84.50	84.45	79.85	76.40	73.00	248.8	254.0	252.1	216.7	11.00
Dec-15	88.00	87.95	83.50	77.70	74.50	252.4	257.9	256.4	221.8	9.45
1Q 2014	104.40	104.35	100.65	101.30	89.30	286.9	294.8	293.4	268.6	10.95
2Q 2014	105.55	105.65	99.95	99.75	91.85	287.3	293.0	289.2	293.2	16.80
3Q 2014	100.80	99.55	96.65	93.45	87.50	274.0	281.6	281.6	274.8	14.50
4Q 2014	90.50	90.00	86.10	81.45	77.50	258.7	263.9	262.3	231.7	10.60
1Q 2015	90.85	90.85	86.90	79.85	76.00	254.4	260.7	259.9	238.5	11.55
2Q 2015	88.00	88.15	83.40	79.75	75.15	243.1	250.8	247.1	246.4	15.05
3Q 2015	88.85	88.80	84.80	78.70	75.00	248.6	256.1	253.3	236.7	12.25
4Q 2015	86.65	86.55	82.15	77.85	74.50	251.8	257.5	255.7	220.8	10.40
YR 2014	100.30	99.90	95.85	94.00	86.55	276.7	283.3	281.6	267.1	13.20
YR 2015	88.60	88.60	84.30	79.05	75.15	249.5	256.3	254.0	235.6	12.30

Notes:

- 1) Gasoline reflects 87 octane.
- 2) Fuel oil #6 1%S reflects 6 API.
- 3) Diesel reflects 15 ppm.
- 4) 3:2:1 Crack vs. LLS
- 5) Beginning with Jan 2010, USG Sour Crude Index is intended to track the US contract basis used by major Mideast crude exporters.

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Table 4: Brent & NY Harbor Oil Price Forecast

	Dated Brent FOB (\$/Bbl)	#6 1% S NYH (\$/Bbl)	#6 3% S NYH (\$/Bbl)	#2 HOil NYH (¢/g)	Diesel NYH (¢/g)	K Jet NYH (¢/g)	ConvUL NYH (¢/g)	RBOB NYH (¢/g)
(nom. \$)								
Jan-14	108.25	96.05	89.80	303.7	311.5	306.6	267.3	264.1
Feb-14	108.85	102.90	93.85	305.0	319.4	309.2	279.5	275.5
Mar-14	107.55	101.75	91.40	290.9	298.9	299.1	275.0	270.4
Apr-14	107.60	100.15	91.10	288.5	295.8	293.0	290.9	297.5
May-14	109.60	98.70	93.05	285.9	293.3	290.1	286.5	296.3
Jun-14	111.65	97.45	94.20	287.8	296.0	291.8	289.7	306.1
Jul-14	106.65	95.55	90.25	277.6	287.8	287.8	280.4	291.6
Aug-14	101.60	89.30	88.35	275.2	284.8	294.4	270.7	276.4
Sep-14	97.10	87.50	86.60	263.4	274.1	280.1	265.3	265.3
Oct-14	93.50	80.30	78.80	259.5	267.9	269.0	246.4	243.9
Nov-14	95.00	79.25	77.50	264.3	270.2	270.2	240.5	238.7
Dec-14	94.00	78.20	76.70	263.1	269.0	267.9	239.3	237.3
Jan-15	95.00	79.25	77.50	266.9	272.9	276.4	241.7	239.5
Feb-15	94.00	78.30	75.80	255.3	263.6	262.4	242.9	239.8
Mar-15	93.00	80.05	76.80	250.0	258.9	256.7	240.5	240.2
Apr-15	92.00	80.10	76.20	250.0	259.5	257.1	242.9	250.2
May-15	89.00	78.35	74.45	236.5	246.1	243.1	240.2	250.4
Jun-15	91.00	79.95	76.25	241.5	251.1	248.7	243.1	253.8
Jul-15	90.00	77.25	74.20	244.2	254.3	251.9	242.6	252.1
Aug-15	91.00	79.10	75.60	248.5	258.0	256.8	236.2	244.0
Sep-15	91.50	79.25	75.95	251.9	260.8	259.0	228.6	229.8
Oct-15	92.50	79.25	76.25	256.7	263.8	261.4	234.3	232.1
Nov-15	90.00	76.25	73.25	253.6	259.5	258.3	230.5	228.8
Dec-15	91.00	76.30	73.80	257.1	262.9	261.9	232.3	229.9
1Q 2014	108.20	100.25	91.65	299.9	309.9	304.9	273.9	270.0
2Q 2014	109.60	98.75	92.80	287.4	295.0	291.6	289.0	300.0
3Q 2014	101.75	90.80	88.40	272.1	282.2	287.4	272.1	277.7
4Q 2014	94.15	79.25	77.65	262.3	269.0	269.0	242.1	239.9
1Q 2015	94.00	79.20	76.70	257.4	265.1	265.2	241.7	239.8
2Q 2015	90.65	79.45	75.65	242.7	252.2	249.6	242.0	251.5
3Q 2015	90.85	78.55	75.25	248.2	257.7	255.9	235.8	242.0
4Q 2015	91.15	77.25	74.40	255.8	262.1	260.6	232.3	230.3
YR 2014	103.45	92.25	87.65	280.4	289.1	288.3	269.3	271.9
YR 2015	91.65	78.60	75.50	251.0	259.3	257.8	238.0	240.9

Notes:

- 1) Conventional Gasoline reflects 87 octane; RBOB reflects 83.7 octane.
- 2) Diesel reflects 15 ppm.

World Oil Market Forecast


September 22, 2014

GLOBAL OIL
Table 5: Key Product Price Spread and Crack Forecast

	WTI @ Cushing	USGC ConvUL Crack vs. LLS	USGC #2 HOil Crack vs. LLS	USGC ConvUL- #2 HOil	USGC K Jet- #2 HOil	USGC #2 HOil- #6 3%S	NYH RBOB Crack vs. WTI	NYH #2 HOil Crack vs. WTI	NYH #2 HOil- #6 1%S
(\$/Bbl)									
(nom. \$)									
Jan-14	94.90	5.90	17.95	-12.00	1.90	32.50	16.00	32.65	31.50
Feb-14	100.80	7.65	14.60	-6.95	4.30	30.60	14.90	27.30	25.20
Mar-14	100.50	11.55	15.65	-4.10	2.05	30.45	13.05	21.65	20.40
Apr-14	102.00	18.60	16.95	1.65	0.70	30.35	22.95	19.20	21.05
May-14	101.90	16.50	15.80	0.70	0.85	28.30	22.55	18.20	21.40
Jun-14	105.25	17.70	12.65	5.05	0.75	27.80	23.30	15.65	23.40
Jul-14	102.80	13.55	11.15	2.35	1.60	28.60	19.65	13.75	21.00
Aug-14	96.35	16.30	16.20	0.10	3.85	28.70	19.70	19.20	26.25
Sep-14	92.60	14.00	15.50	-1.50	4.10	25.50	18.85	18.05	23.10
Oct-14	88.00	9.00	18.00	-9.00	2.50	30.00	14.45	21.00	28.70
Nov-14	87.00	6.00	19.00	-13.00	1.00	32.00	13.25	24.00	31.75
Dec-14	87.00	5.50	17.50	-12.00	1.00	31.50	12.65	23.50	32.30
Jan-15	87.50	6.00	17.50	-11.50	2.50	32.50	13.10	24.60	32.85
Feb-15	86.00	9.00	15.00	-6.00	2.00	31.00	14.70	21.20	28.90
Mar-15	84.00	13.00	15.50	-2.50	2.50	29.00	16.90	21.00	24.95
Apr-15	84.00	14.50	16.00	-1.50	1.50	29.50	21.10	21.00	24.90
May-15	81.00	17.00	13.60	3.40	1.50	25.60	24.15	18.35	21.00
Jun-15	84.00	15.00	12.70	2.30	2.00	25.70	22.60	17.45	21.50
Jul-15	84.00	14.25	13.80	0.45	2.00	29.30	21.90	18.55	25.30
Aug-15	84.00	11.50	15.60	-4.10	2.00	29.10	18.50	20.35	25.25
Sep-15	83.50	6.00	17.30	-11.30	2.00	29.80	13.00	22.30	26.55
Oct-15	82.50	6.50	19.30	-12.80	1.75	30.80	15.00	25.30	28.55
Nov-15	79.50	6.50	20.00	-13.50	1.40	31.50	16.60	27.00	30.25
Dec-15	83.00	5.15	18.00	-12.85	1.70	31.50	13.55	25.00	31.70
1Q 2014	98.75	8.40	16.05	-7.70	2.75	31.20	14.65	27.20	25.70
2Q 2014	103.05	17.60	15.15	2.45	0.80	28.80	22.95	17.65	21.95
3Q 2014	97.25	14.60	14.30	0.35	3.20	27.60	19.40	17.00	23.45
4Q 2014	87.35	6.85	18.15	-11.35	1.50	31.15	13.45	22.85	30.90
1Q 2015	85.85	9.35	16.00	-6.65	2.35	30.85	14.90	22.25	28.90
2Q 2015	83.00	15.50	14.10	1.40	1.65	26.95	22.60	18.95	22.45
3Q 2015	83.85	10.60	15.55	-5.00	2.00	29.40	17.80	20.40	25.70
4Q 2015	81.65	6.05	19.10	-13.05	1.60	31.25	15.05	25.75	30.20
YR 2014	96.60	11.85	15.90	-4.05	2.05	29.70	17.60	21.20	25.50
YR 2015	83.60	10.35	16.20	-5.85	1.90	29.60	17.60	21.85	26.80