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GENERAL INTEREST

COVER

The Inpex Corp.-operated Ichthys LNG project *launched its central processing facility (CPF) on Sept. 19, 2015, from Samsung Heavy Industries' shipyard in Geoje, South Korea, where it was constructed. Slated for start-up in third-quarter 2017, the joint-venture megaproject is expected to produce 8.9 million tonnes/year of LNG from Ichthys gas-condensate field in the Browse basin off Western Australia. The project reached a milestone in May with the completion of the prelaying of the 77-km chain and mooring system. This mooring system will be used to secure the project's two major offshore facilities—the CPF and the nearby floating production, storage, and offloading vessel—for at least 40 years of continuous operation. Photo from Inpex.*

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GENERAL INTEREST QUICK TAKES

ExxonMobil's second-quarter earnings fall 59%

ExxonMobil Corp. reported second-quarter earnings of $1.7 billion, down from $4.2 billion in second-quarter 2015 due to lower commodity prices and weaker refining margins. First-half earnings totaled $3.5 billion, a decline from $9.13 billion in first-half 2015. Upstream earnings in the quarter were $294 million, down $1.7 billion from second-quarter 2015. Lower liquids and gas realizations decreased earnings by $2.2 billion.

Production volumes were virtually unchanged at 4 million boe/d. Liquids production growth from recent start-ups more than offset the impact of field decline and downtime events, notably in Canada and Nigeria.

Liquids production during the quarter totaled 2.3 million b/d, up 39,000 b/d from a year earlier. Project ramp-up was partly offset by field decline and downtime mainly resulting from the Canadian wildfires. Natural gas production was 9.8 bcfd, down 366 MMcfd from second-quarter 2015 including field decline and divestment impacts.

US upstream quarterly earnings declined $467 million year-over-year to a loss of $514 million. Non-US upstream earnings were $808 million, down $1.3 billion vs. the prior year. Downstream earnings in the quarter were $825 million, down $681 million from second-quarter 2015. Weaker refining margins lowered earnings by $850 million while favorable volume and mix effects raised earnings by $130 million.

Chemical earnings in the quarter were $1.2 billion, reflecting continued benefits from gas and liquids cracking as well as growing product demand. The firm's downstream segment earned $825 million in the quarter despite significantly lower global refining margins versus the prior year quarter.

Second-quarter capital and exploration expenses were reduced by 38% to $5.2 billion. First-half capital and exploration expenditures were $10.3 billion, down 36% from the 2015 total. ExxonMobil last month agreed to acquire all outstanding shares of Papua New Guinea gas producer InterOil Corp. for more than $2.5 billion (OGJ Online, July 21, 2016).

Statoil to buy interest off Brazil for $2.5 billion

Statoil ASA has agreed to buy the 66% operated interest in the BM-S-8 offshore license in Brazil's Santos basin held by Petroleo Brasileiro SA (Petrobras) for $2.5 billion.

The license includes a substantial portion of the 2012 Carcara presalt oil discovery (OGJ Online, May 29, 2015).

Statoil said it is on the geological trend of the nearby Lula field and Libra area. It has 30° API oil and associated gas "in a thick reservoir with excellent properties."

Carcara straddles BM-S-8 and open acreage to the north, which Statoil said is expected to be part of a license round in 2017. In addition to Carcara, the license "holds exploration upside." The license is in its final exploration phase with one remaining exploration commitment well to be drilled by 2018. Statoil estimates the license has 1.3 billion boe in recoverable volumes.

Statoil said half of the purchase price will be paid after closing and the remainder paid when "certain milestones" have been met, including future unitization of Carcara.

Statoil and Petrobras are also in discussions focusing on long-term cooperation in the Campos and Espirito Santo basins, and new cooperation within gas and technology projects in the Santos basin.

Statoil said it has been in Brazil since 2001. The Statoil-operated Peregrino field marks 5 years of production this year.

Statoil cuts 2016 capex by $1 billion

Statoil ASA plans to cut its capital expenditure guidance for 2016 to $12 billion from $13 billion. That includes an exploration guidance reduction to $1.8 billion from $2 billion.

The state-owned firm's production guidance remains unchanged, with expected organic production growth of 1%/year from 2014-17. Statoil recorded equity production of 1.96 million boe/d in the second quarter. Underlying production growth in the quarter, adjusting for divestments, was 6% compared with last year's second quarter.

The firm took a second-quarter net loss of $307 million compared with a net profit of $861 million a year earlier. First-half organic capital expenditure was $5.3 billion.

Halcon Resources files Chapter 11

Halcon Resources Corp., Houston, has filed voluntary petitions under Chapter 11 of the Bankruptcy Code to pursue a prepackaged plan of reorganization in which the firm would eliminate $1.8 billion in long-term debt and reduce annual

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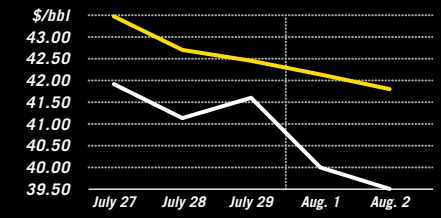

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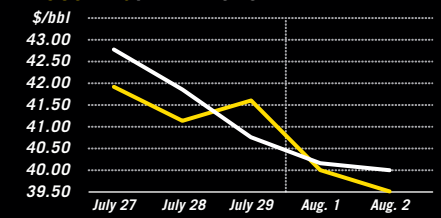

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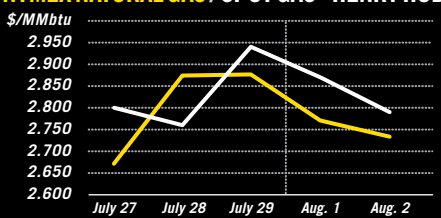

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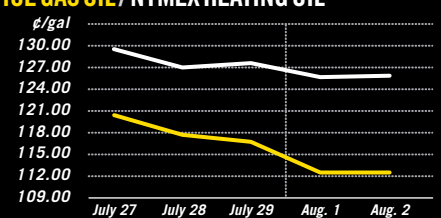

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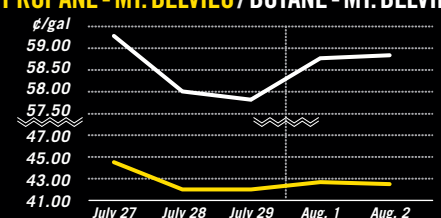
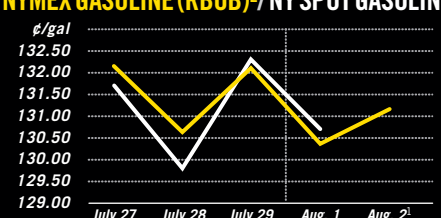


NYMEX GASOLINE (RBOB)[2] / NY SPOT GASOLINE[3]



[1]Not available [2]Reformulated gasoline blendstock for oxygen blending [3]Nonoxygenated regular unleaded

US INDUSTRY SCOREBOARD — 8/8

Latest week 7/22	4 wk. average	4 wk. avg. year ago[1]	Change, %	YTD average[1]	YTD avg. year ago[1]	Change, %
Product supplied, 1,000 b/d						
Motor gasoline	9,752	9,506	2.6	9,418	9,082	3.7
Distillate	3,729	3,723	0.2	3,752	3,976	(5.6)
Jet fuel	1,689	1,622	4.1	1,606	1,554	3.3
Residual	282	201	40.3	295	205	43.9
Other products	4,786	5,042	(5.1)	4,922	4,825	2.0
TOTAL PRODUCT SUPPLIED	20,238	20,094	0.7	19,993	19,642	1.8
Supply, 1,000 b/d						
Crude production	8,481	9,534	(11.0)	8,899	9,402	(5.3)
NGL production[2]	3,505	3,280	6.9	3,419	3,122	9.5
Crude imports	8,194	7,539	8.7	7,863	7,273	8.1
Product imports	2,321	2,208	5.1	2,170	2,099	3.4
Other supply[2 3]	2,594	2,277	13.9	2,136	2,310	(7.5)
TOTAL SUPPLY	25,095	24,838	1.0	24,487	24,206	1.2
Net product imports	(1,575)	(1,534)	—	(1,724)	(1,541)	—
Refining, 1,000 b/d						
Crude runs to stills	16,670	17,170	(2.9)	16,177	16,132	0.3
Input to crude stills	16,957	17,126	(1.0)	16,394	16,368	0.2
% utilization	92.6	94.9	—	89.9	91.2	—

Latest week 7/22	Latest week	Previous week[1]	Change	Same week year ago[1]	Change	Change, %
Stocks, 1,000 bbl						
Crude oil	521,133	519,462	1,671	459,682	61,451	13.4
Motor gasoline	241,452	241,000	452	215,922	25,530	11.8
Distillate	152,003	152,783	(780)	144,103	7,900	5.5
Jet fuel–kerosine	41,530	41,902	(372)	44,017	(2,487)	(5.7)
Residual	40,006	42,076	(2,070)	40,057	(51)	(0.1)
Stock cover (days)[4]			Change, %		Change, %	
Crude	31.3	31.1	0.6	27.4	14.2	
Motor gasoline	24.8	24.8	—	22.7	9.3	
Distillate	40.8	40.6	0.5	38.7	5.4	
Propane	102.8	104.8	(1.9)	98.2	4.7	

Futures prices[5] 7/29			Change		Change	Change,%
Light sweet crude ($/bbl)	42.14	44.75	(2.61)	49.26	(7.12)	(14.5)
Natural gas, $/MMbtu	2.78	2.72	0.06	2.84	(0.06)	(2.2)

[1]Based on revised figures. [2]OGJ estimates. [3]Includes other liquids, refinery processing gain, and unaccounted for crude oil. [4]Stocks divided by average daily product supplied for the prior 4 weeks. [5]Weekly average of daily closing futures prices.
Source: Energy Information Administration, Wall Street Journal

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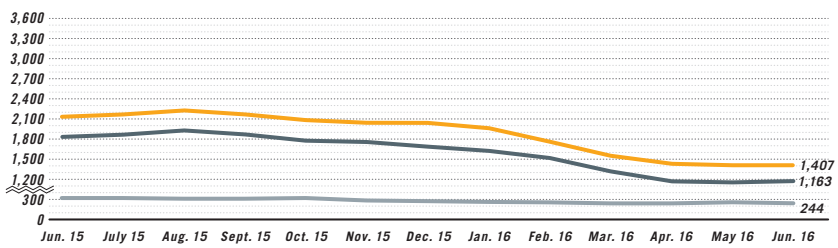
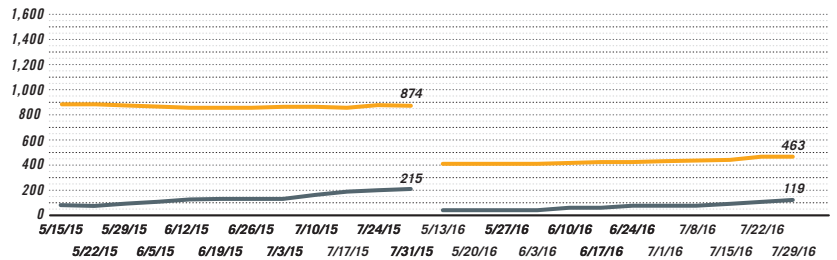


Note: Monthly average count

BAKER HUGHES RIG COUNT: US / CANADA



Note: End of week average count

interest expense by more than $200 million.

If the plan is approved by a Delaware bankruptcy court, creditors would split ownership of the firm and third-lien noteholders would receive more than 75% of the equity. The firm holds $3.12 billion in debt and $2.85 billion in assets, according to the filing.

Halcon's core operations are in the Bakken-Three Forks formations and Eagle Ford shale. Noncore assets include the Tuscaloosa Marine shale, Utica-Point Pleasant formations, and Austin Chalk formation. OGJ

EXPLORATION & DEVELOPMENT QUICK TAKES

Cyprus blocks attract six applications

Cyprus has received six applications for three offshore blocks on offer in its third licensing round (OGJ Online, Mar. 28, 2016). A subsidiary of Eni SPA, part of the joint venture that discovered giant Zohr natural gas field offshore Egypt to the south, participated in bids for all three blocks.

The Ministry of Energy, Commerce, Industry and Tourism offered the licenses under a model exploration and production-sharing contract.

Eni Cyprus Ltd. operates a combine with Total E&P Cyprus BV in an application for Block 6.

The company bid solo for Block 8, which also received an application for a group operated by Capricorn Oil (Cairn Energy) and including Delek Drilling and Avner Oil Exploration. Delek Group is a partner in the Aphrodite discovery by Noble Energy Inc. off Cyprus, and it and Avner participated with Noble in the giant gas discoveries in Israeli waters nearby.

Block 10 received three applications: from an Eni-Total combine operated by Eni; from a combine operated by ExxonMobil Exploration & Production Cyprus (Offshore) Ltd. with Qatar Petroleum International Upstream OPC; and from Statoil Upsilon Netherlands BV bidding alone.

UK offers 1,261 blocks in 29th offshore round

UK's Oil and Gas Authority (OGA) has launched the 29th offshore licensing round, making available 1,261 blocks for bid on the UK Continental Shelf (UKCS). Firms have until Oct. 26 to apply for blocks.

Some of the available areas were part of last year's UK government-funded, £20-million seismic campaign that acquired 8,896 km of full-fold seismic in the Rockall Trough area and 10,849 km of full-fold seismic in the Mid-North Sea High area.

The 29th Round marks the launch of the "innovate license" concept allowing licensees to work with OGA to design an optimal work program. OGA says the new concept enables more appropriate phasing of activity, rental fees, and competency tests; and implements a stage-gate process for better monitoring of progress than the previous licensing regime.

"We recognize that market conditions are currently very difficult but nevertheless we have a shared goal of making the basin as attractive as possible for exploration," commented Andy Samuel, OGA chief executive. "We've listened to industry feedback and have introduced more flexibility in the licensing regime and opened up potential new areas for licensing."

The 28th round in 2015 was one of the largest licensing rounds since offshore licensing began in 1964.

Seismic work slated for southeast Niger

Savannah Petroleum PLC has signed with BGP Niger SARL to acquire 800 line-km of 2D seismic data over part of the company's R3 license area in southeast Niger. The company's R1/R2 and R3/R4 permits are in the Agadem Rift basin, which contains 975 million bbl of 2P reserves with current production of 20,000 b/d, Savannah reported.

The seismic work is part of a call-off order through an unnamed Savannah subsidiary. The data acquisition will provide enhanced definition over 12 existing exploration targets identified on the operator's existing 2D dataset. The targets incorporate stacked traps at multiple play levels including the Oligocene Upper Sokor, Eocene Sokor Alternances, and Upper Cretaceous Yogou formations.

The company is considering single exploration wells on some of these targets but provided no specific timeline for appraisal activity. In addition, seismic crews and equipment are expected "to commence shortly," the company said.

A presentation released by Savannah says typical discoveries are 30° API gravity oil, and reservoirs in the Agadem area are normally pressured with porosity levels in the low-20% range. Average well costs are about $4 million.

China National Petroleum Corp. established Niger's first hydrocarbon production in late 2011, with start of oil deliveries from Sokor and Goumeri fields. The country awarded nine production-sharing agreements to five exploration companies the following year (OGJ Online, Aug. 2, 2012). OGJ

DRILLING & PRODUCTION QUICK TAKES

Total starts Incahuasi field in Bolivia

Total SA and partners have started production from Incahuasi natural gas and condensate field in Bolivia and are considering further development (OGJ Online, Sept. 25, 2013).

The first development phase has production capacity of 50,000 boe/d. It includes three wells drilled to below 5,600 m, a 230-MMcfd gas treatment plant, and 100 km of pipelines supporting exports to Argentina and Brazil. The field spans the Ipati and Aquio blocks in the Andean foothills 250 km south of Santa Cruz de la Sierra. A second development phase would involve three more wells and double the production rate.

Total, operator, holds 50% interest. Gazprom and Tecpetrol hold 20% each, and YPFB Chaco holds 10%.

Serica resumes production from Erskine field

Serica Energy PLC of London said Erskine field oil and gas production resumed July 27 following clearance of a blockage on a condensate pipeline and also on completion of scheduled

maintenance on the Lomond platform.

Erskine, a high-pressure, high-temperature development, lies in 90 m of water in the UK North Sea.

The pipeline blockage happened earlier this year in the Lomond-to-Everest export line when a pig became lodged due to wax buildup. Crews used pressure pulsing from both ends of the pipeline as well as a wax solvent.

The field then remained shut for a planned 2-month maintenance program on the Lomond platform, which coincided with a planned 1-month shutdown for maintenance of export and processing equipment through which Erskine gas is exported.

Following a short period for final clean-up during the first week of August, production from Erskine is projected to build-up rapidly, Serica Energy said.

Anadarko to keep six rigs in Delaware basin

Anadarko Petroleum Corp. plans to keep six rigs working in the Delaware basin, citing improved efficiencies and lower drilling costs. Previously, Anadarko executives had said they likely would cut the Delaware rig number from six to four this year.

"We've continued to significantly reduce our cost structure throughout the year," said Al Walker, Anadarko chairman, president, and chief executive officer, during a second-quarter earnings and operational update conference call on July 27.

Anadarko achieved record production from certain Gulf of Mexico operations, and onshore in the Delaware basin in West Texas and in the Denver-Julesburg basin in Colorado. Executives cited record sales volumes were reported from the Lucius and Caesar-Tonga offshore fields.

"Should the commodity-price outlook continue to improve, we will evaluate redeploying some of the additional cash generated via operations and asset sales toward our highest-quality US onshore opportunities," Walker said.

He said he expects light, sweet crude oil futures to return to $60/bbl on a sustained basis in 2017. Walker expects total US oil production will "bottom" at 8 million b/d possibly in this year's fourth quarter.

Anadarko's second-quarter sales volumes of natural gas, oil, and natural gas liquids totaled 72 million boe for an average of 792,000 boe/d.

In the Delaware basin, Anadarko continues its delineation program, running six rigs to enhance its understanding of both the vertical and horizontal potential across its 600,000-gross-acre holdings.

In the Gulf of Mexico, Anadarko said the Lucius platform achieved a 24-hr gross production record and averaged sales volumes above the platform's 80,000 b/d nameplate capacity. The Constitution spar reached 65,000 b/d while Anadarko's K2 complex reached an 8-year-high production rate of 28,000 b/d.

During the quarter, Anadarko continued to advance its understanding of the Shenandoah discovery in the gulf. Anadarko encountered more than 1,040 net ft of oil pay in the Shenandoah-5 appraisal well, expanding the eastern extent of the field.

Additionally, the company increased its working interest in Shenandoah to 33% and added several new exploration opportunities by participating in a preferential-right process. OGJ

PROCESSING QUICK TAKES

Phillips 66 finds buyer for Whitegate refinery

Canada's privately held Irving Oil Ltd., Saint John, NB, has agreed to acquire the 71,000-b/d Whitegate refinery—Ireland's only—from current owner Phillips 66 Co., Houston.

The companies, which signed an agreement on Aug. 3, plan to conclude the transaction by the end of the third quarter, at which time Irving Oil will take full ownership and continue full operation of the refinery, including maintaining its existing workforce, Irving Oil said.

As part of the agreement, Irving Oil also will acquire Phillips 66's associated wholesale marketing business in Ireland, Phillips 66 spokesman Dennis Nuss told OGJ.

Phillips 66 will continue to operate the business as usual until the transaction closes, Nuss said.

Located in Cork, the Whitegate refinery processes light, low-sulfur crude oil sourced mostly from the North Sea and West Africa to primarily produce gasoline, diesel, and kerosine for distribution mostly in Ireland, with some exports to customers in the UK and elsewhere in Europe.

Phillips 66 first announced plans to sell its business in Ireland in 2013, which at the time was to include the refinery and associated wholesale marketing business, as well as a crude oil and refined products storage terminal in Bantry Bay (OGJ, Dec. 2, 2013, p. 34).

The company's local management informed Ireland's Department of Communications, Energy, and Natural Resources (formerly Communications, Climate Action, and Environment) of its intention to put the refinery and marketing business up for sale in October 2015, DCENR said.

Tupras commissions unit at Izmit refinery

Turkish Petroleum Refineries Corp. (Tupras) has let a contract to Honeywell UOP LLC, a unit of Honeywell International Inc., for a hydrocracking unit designed to boost diesel production at its 11 million-tonne/year Izmit refinery in Turkey's northwestern province of Kocaeli.

As part of the contract, Honeywell UOP has provided the refinery technology licensing and equipment for its proprietary Unicracking enhanced two-stage processing unit, which produces 75,000 b/sd of middle-distillate products, including Jet A-1 aviation and Euro 5-quality diesel fuels.

Already installed and in operation, the Unicracking unit is integrated with the Izmit refinery's Honeywell UOP-licensed coker naphtha and distillate Unionfining units in a system that uses a common fractionation section and collectively processes feedstocks of straight-run diesel, coker gas oil, and vacuum gas oils. Along with boosting the site's diesel production by as much as 7% to help Tupras meet rising demand for transporta-tion fuel, the unit also will contribute to re-

ductions in the refinery's energy and hydrogen consumption, Honeywell UOP said.

LyondellBasell approves HDPE plant at US Gulf Coast

LyondellBasell has reached final investment decision to build a grassroots high-density polyethylene (HDPE) plant at the US Gulf Coast. Scheduled for startup in 2019, the proposed 1.1 billion-lb/year HDPE plant will be the first ever to use LyondellBasell's proprietary Hyperzone PE technology, a cascade-gas phase process based on the company's existing Multizone circulating-reactor technology, the operator said.

Despite its US Gulf Coast location, the plant will be equipped to produce a range of high-performance, multimodal HDPE products for export to markets across the globe, the firm said.

While LyondellBasell disclosed no further details regarding the precise location or cost of the project, the company told investors in June that, alongside its planned investment of $1.9 billion in 2016 on a maintenance and growth program designed to further increase reliability, efficiency, and production at existing manufacturing sites, it also was evaluating a total investment of $3-4 billion over the next 5 years on other growth projects (OGJ Online, June 3, 2016).

Announcement of this latest HDPE project follows a series of completed and ongoing projects LyondellBasell has undertaken as part of its long-term strategy to take advantage of increased North American shale gas production.

Alongside completing ethylene expansions of 800 million lb/year at its LaPorte, Tex., plant and 250 million-lb/year at the Channelview, Tex., plant in 2014 and 2015, respectively, the company currently is wrapping up an 800 million-lb/year expansion at its production complex in Corpus Christi, Tex. (OGJ Online, May 2, 2014).

The Corpus Christi ethylene plant expansion is due to be completed by the end of this year's third quarter, said Bob Patel, LyondellBasell's chief executive officer.

The company also is moving forward with plans to build the world's largest propylene oxide (PO) and tertiary butyl alcohol plant at its Channelview complex, which when completed in 2020, will be equipped to produce about 1 billion lb/year of PO and 29,000 b/d of oxyfuels. OGJ

TRANSPORTATION QUICK TAKES

Deal reopens three Libyan oil terminals

Three Libyan oil terminals are reported to have reopened after being blockaded since December 2014.

The Ras Lanuf, Es Sidra, and Zuetina terminals opened under a deal between the presidency council brokered by the United Nations and Ibrahim Jidran, branch leader of the Petroleum Facilities Guard (PFG).

The group said its blockades of Libyan ports responded to corruption and illicit oil sales.

In a statement welcoming the terminal deal, the National Oil Corp. said the only payments to the PFG were of overdue sala-ries. Rival groups threatened to attack tankers approaching the terminals. Terminal problems are among reasons Libyan production last year averaged slightly more than 400,000 b/d, down from 1.6 million b/d in 2010 before the start of civil war.

EIA: US crude-oil shipments by rail on decline

Movements of crude oil by rail in the US averaged 443,000 b/d in the first 5 months of 2016, down 45% from the same period last year, according to the US Energy Information Administration's energy-by-rail data methodology report. Fewer shipments of crude oil by rail from the Midwest (PADD 2) to the East Coast (PADD 1) account for about half of the decline.

The decrease in crude oil shipments by rail since last summer has been mainly attributable to narrowing price differences between US and imported crude oil, the opening of crude-oil pipelines, and declining production in the Midwest and Gulf Coast onshore regions.

"The economics of crude-by-rail transportation depend largely on the relationship between the prices of domestic and inter-national crude oils. Domestic crude oils priced in the Midwest and West Texas are no longer heavily discounted relative to imported crude oils priced in the North Sea. The narrower the spread between domestic and imported crude oils, the more likely coastal refiners will choose to run imported crudes rather than domestic supplies shipped by rail," EIA said.

Crude oil carried by rail from the Midwest to the East Coast remains the country's largest crude-by-rail movement at 176,000 b/d, or 45% of the total crude oil moved by rail in the US in May. Crude oil imports processed by East Coast refineries have generally increased since early 2015, averaging 760,000 b/d in May, up from 666,000 b/d in May 2015.

Mexican storage, transportation system proposed

TransCanada Corp., Sierra Oil & Gas, and Grupo TMM have proposed to jointly develop an $800-million refined product storage and transportation system to serve rising demand for gasoline, diesel, and jet fuel in central Mexico and surrounding markets. The project—being touted by the partners as the largest single investment in refined products since the establishment of the Mexico energy reform—will include construction of a marine terminal near Tuxpan, Veracruz, a 100,000-b/d, 265-km product pipeline, and an inland storage and distribution hub in central Mexico.

The marine terminal, with a draft of 14 m, will include four docking positions. The terminal will be pipeline-connected to regional distribution centers and will offer racks for truck loading and barge access to service other Gulf Coast ports. The pipeline will parallel TransCanada's recently awarded Tuxpan-Tula natural gas pipeline project (OGJ Online, Nov. 11, 2015). The inland distribution hub in central Mexico will provide connectivity to much of the Mexico Valley with access to major highways and distribution centers.

The project's planned in-service date will be based on discussions with shippers. TransCanada will hold a 50% interest, with Sierra holding 40% and Grupo TMM holding 10%. OGJ

■ *Denotes new listing or a change in previously published information.*

AUGUST 2016

SPE/AAPG/SEG Unconventional Resources Technology Conference (URTeC), San Antonio, web site: www.urtec.org/ **1-3.**

Society of Petroleum Engineers (SPE) Nigeria Annual International Conference & Exhibition, Lagos, web site: connect.spe.org/spenc/naice/naice2016/ **2-4.**

International Conference on Oil Reserves & Estimation Techniques, Seattle, web site: waset.org/conference/2016/08/seattle/ICORET **8-9.**

NAPE Expo, Houston, web site: napeexpo.com/shows/about-the-show/houston/ **10-11.**

EnerCom's The Oil & Gas Conference-2016, Denver, web site: www.theoilandgasconference.com/ **14-18.**

4th International Conference on Petroleum Engineering, London, web site: www.petroleumengineering.conferenceseries.com/ **15-17.**

IADC/SPE Asia Pacific Drilling Technology Conference & Exhibition, Singapore, web site: www.spe.org/events/apdt/2016/ **22-24.**

GeoBaikal 2016: Expand Horizons, Irkutsk, Russia, web site: www.eage.org/event/index.php?eventid=1433&Opendivs=s3 **22-26.**

SPE Asia Pacific Hydraulic Fracturing Conference, Beijing, web site: www.spe.org/events/aphf/2016/pages/general/call_for_papers.php **24-26.**

2nd International Congress & Expo on Biofuels & Bioenergy, Sao Paulo, web site: biofuels-bioenergy.conferenceseries.com/ **29-31.**

15th European Conference on the Mathematics of Oil Recovery (ECMOR XV), Amsterdam, web site: www.eage.org/event/index.php?eventid=1416&Opendivs=s3 **Aug. 29-Sept. 1.**

Offshore Northern Seas, Stavanger, web site: www.tofairs.com/expo.php?fair=103366 **Aug. 29-Sept. 1.**

2nd International Congress & Expo on Biofuels & Bioenergy, Sao Paulo, web site: biofuels-bioenergy.conferenceseries.com/ **29-31.**

Ultradeepwater & Onshore Technology Conference, Galveston, Tex., web site: www.rpsea.org/events/503 **30-31.**

SEPTEMBER 2016

Second Applied Shallow Marine Geophysics Conference, Barcelona, web site: www.Eage.org/event/index.php?eventid=1421&Opendivs=s3 **4-8.**

EAGE First Conference on Geophysics for Mineral Exploration and Mining, Barcelona, web site: www.eage.org/event/?eventid=1420 **4-8.**

European Association of Geoscientists & Engineers (EAGE) First Conference on Geophysics for Mineral Exploration & Mining, Barcelona, web site: www.eage.org/event/index.php?eventid=1420&Opendivs=s3 **4-8.**

22nd European Meeting of Environmental and Engineering Geophysics, Barcelona, web site: www.eage.org/event/index.php?eventid=1419&Opendivs=s3 **4-8.**

SPE Offshore Europe, Aberdeen, web site: www.offshore-europe.co.uk/ **5-8.**

SPE Intelligent Energy Conference, Aberdeen, web site: www.intelligentenergyevent.com/ **6-8.**

NACE Egypt Corrosion Conference, Cairo, web site: egyptcorrosion.nace.org/ **6-8.**

AAPG SEG International Conference & Exhibition 2016, Cancun, web site: www.aapg.org/publications/blogs/events/article/articleid/23667/increase-your-exposure-exhibition-and-sponsorship-opportunities-available/ **6-9.**

AAPG SEG 2016 International Conference & Exhibition, Cancun, web site: www.aapg.org/events/conferences/ice/announcement/articleid/20311/aapg-seg-2016-international-conference-exhibition-cancun **6-9.**

23rd Annual India Oil & Gas Review Summit & International Exhibition, Mumbai, web site: www.oilgas-events.com/india-oil-gas **9-10.**

International Conference on Chemical Engineering, Phoenix, web site: chemicalengineering.conferenceseries.com/ **12-14**.

Geomodel 2016, Gelendzhik, Russia, web site: www.eage.org/event/index.php?eventid=1448&Opendivs=s3 **12-15.**

ESOPE International Exhibition & Symposium for the Pressure Equipment Industry, Paris, web site: www.esope-paris.com/ **13-15.**

SPE Deepwater Drilling & Completions Conference, Galveston, Tex., web site: www.spe.org/events/ddc/2016/ **14-15.**

2nd Annual IoT in Oil & Gas, Houston, web site: energyconferencenetwork.com/iot-in-oil-and-gas-2016/**14-15.**

Rio Oil & Gas Expo & Conference, Rio de Janeiro, web site: www.whereinfair.com/rio-oil-gas-expo/rio-de-janeiro/2016-Sep/ **14-16.**

International Conference on Oil & Gas Transportation, Zurich, web site: waset.org/conference/2016/09/zurich/ICOGT **15-16.**

Turbomachinery & Pump Users Symposium, Houston, web site: tps.tamu.edu/event-info **15-17.**

Iran International Petroleum Congress (IIPC), Tehran, web site: www.iranpetroleumcongress.com/ **19-21.**

The CWC World LNG & Gas Series: Asia Pacific Summit, Singapore, web site: asiapacific.cwclng.com/ **20-23**.

2016 Deloitte Oil & Gas Conference, Houston, web site: www2.deloitte.com/us/en/pages/energy-and-resources/events/oil-and-gas-conference.html **21**.

SPE Liquids-Rich Basins Conference—North America, Midland, Tex., web site: www.spe.org/events/lrbc/2016/ **21-22.**

International Conference on Petroleum Industry & Energy, Los Angeles, web site: www.waset.org/conference/2016/09/los-angeles/ICPIE **22-23**.

Eastern Section, American Association of Petroleum Geologists 2016 Annual Meeting, Lexington, Ky., web site: www.esaapgmtg.org/ **25-27.**

Corrosion Technology Week 2016, Houston, web site: ctw.nace.org/ **25-29**.

Operational Excellence in Refining & Petrochemicals, Houston, web site: www.opexinrefiningandpetrochem.com **26-28.**

SPE Annual Technical Conference & Exhibition (ATCE), Dubai, web site: www.spe.org/atce/2016/ **26-28.**

SPE Annual Technical Conference & Exhibition, Dubai, web site: www.spe.org/events/calendar/ **26-28.**

US-China Oil & Gas Industry Forum (OGIF), Tysons Corner, Va., web site: www.cvent.com/d/hfqw6c **27-29.**

Flexible & Cost Effective Well Site Facilities Onshore 2016, Houston, web site: www.facilities-design-onshore.com **28-29.**

3rd Annual Unconventional Production & Well Site Facilities Design, Onshore 2016, Houston, web site: www.facilities-design-onshore.com/program/ **28-29.**

Global Oil & Gas South East Europe & Mediterranean Conference, Athens, web site: www.oilgas-events.com/Global-Oil-Gas-Black-Sea-Mediterranean-Conference/ **28-29.**

International Conference on Petroleum & Petrochemical Engineering, London, web site: www.waset.org/conference/2016/09/london/ICPPE **29-30.**

International Conference on Geophysics, Vancouver, web site: geophysics.conferenceseries.com/ **29-30.**

OCTOBER 2016

ICOGPE 2016: 18th International Conference on Oil, Gas & Petrochemical Engineering, Barcelona, web site:

www.waset.org/conference/2016/10/barcelona/ICOGPE **3-4.**

SPE African Health, Safety, Security, Environment & Social Responsibility Conference & Exhibition, Accra, Ghana, web site: www.spe.org/events/en/2016/conference/16hsea/homepage.html **4-6.**

Kazakhstan International Oil & Gas Conference (KIOGE) 2016, Almaty, Kazakhstan, web site: kioge.kz/en/conference/about-conference **5-6.**

USEA 9th Annual Energy Supply Forum, Washington, DC, web site: https://www.usea.org/event/usea-9th-annual-energy-supply-forum **6.**

International Conference on Geosciences, Orlando, web site: geosciences.conferenceseries.com/ **6-7.**

Cyber Security for Critical Assets LATAM, Rio de Janeiro, web site: www.criticalcybersecurity.com/latam/ **6-7.**

23rd World Energy Conference, Istanbul, web site: www.wec2016istanbul.org.tr/ **9-13.**

International Conference on Oil Reserves & Energy Management, New York, web Site: www.waset.org/conference/2016/10/new-york/ICOREM **10-11.**

The 2016 API Tank, Valves, & Piping Conference & Expo, Las Vegas, web site: www.api.org/events-and-training/calendar-of-events/2016/tvp **10-13.**

SEG International Exhibition and 86th Annual Meeting, Dallas, web site: www.seg.org/web/annual-meeting-2016/ **16-21.**

International Conference on Oil Reserves & Production, London, web site: www.waset.org/conference/2016/10/london/ICORP **17-18.**

The 8th Saudi Arabia International Oil & Gas Exhibition (SAOGE), Dammam, web site: www.saoge.org/ **17-19.**

SPE Well Construction Fluids 2025 Forum: Meeting the Challenges, Dubai, web site: www.spe.org/events/16fmel/ **17-19.**

2016 Fall Committee on Petroleum Measurement Standards Meeting, Los Angeles, web site: www.api.org/Events-and-Training/Calendar-of-Events/2016/fallcopm **17-21.**

Permian Basin International Oil Show, Odessa, Tex., web site: www.pboilshow.org **18-20.**

The 37th Oil & Money Conference, London, web site: www.oilandmoney.com/ **18-19.**

Society of Petroleum Engineers (SPE) African Health, Safety, Security, Environment & Social Responsibility Conference & Exhibition, Accra, Ghana, web site: www.spe.org/events/hsea/2016/ **18-20.**

SPE Latin America & Caribbean Heavy Oil & Extra Heavy Oil Conference, Lima, web site: www.spe.org/events/laho/2016/ **19-20.**

Arctic Technology Conference (ATC), St. John's, Newfoundland & Labrador, web site: www.arctictechnology-conference.org/ **24-26.**

SPE Russian Petroleum Technology Conference & Exhibition, Moscow, web site: www.spe.org/events/rpc/2016/ **24-26.**

SPE North America Artificial Lift Conference & Exhibition, The Woodlands, Tex., web site: www.spe.org/events/alce/2016/ **25-27.**

SPE Asia Pacific Oil & Gas Conference & Exhibition (APOGCE), Perth, web site: www.spe.org/events/apogce/2016/ **25-27.**

The 10th Element Oilfield Engineering with Polymers Conference, London, web site: oilfieldpolymers.nace.org/ **25-27.**

Bottom of the Barrel Technology Conference (BBTC) Middle East & Africa 2016, Manama, web site: www.bbtc-mena.biz **26-27.**

International Conference & Expo on Oil & Gas, Rome, web site: oil-gas.conferenceseries.com/ **27-28.**

Gulf Safety Forum (GSF) 2016, Doha, web site: www.gulfsafetyforum.com/ **30-31.**

23rd Africa Oil Week Africa Upstream Conference 2016, Cape Town, web site: www.oilgas-events.com/Find-an-Event/Africa-Oil-Week/ **Oct 31-Nov 04.**

NOVEMBER 2016

SPE Annual Caspian Technical Conference & Exhibition, Astana, Kazakhstan, web site: www.spe.org/events/en/2016/conference/16ctce/homepage.html **1-3.**

4th Iran Europe Oil & Gas Summit, Berlin, web site: www.iran-summit.com/**1-3.**

2nd International Conference & Expo on Oil & Gas, Istanbul, web site: oil-gas.omics-group.com/ **2-3.**

7th Annual Summit Operational Excellence in Oil & Gas, Houston, web site: www.opex-inoilandgas.com 7-**9.**

The Abu Dhabi International Petroleum Exhibition & Conference, (ADIPEC), Abu Dhabi, web site: www.adipec.com/ **7-10.**

RefComm Mumbai 2016, Mumbai, web site: refiningcommunity.com/refcomm-mumbai-2016/ **7-11.**

International Petroleum Technology Conference (IPTC), Bangkok, web site: www.iptcnet.org/pages/about/future-dates.php **14-16.**

4th East Africa Oil & Gas Summit & Exhibition, Nairobi, web site: eaogs.com/**15-17.**

21st Annual Oil & Gas of Turkmenistan (OGT) Conference 2016, Ashgabat, web site: ogt.theenergyexchange.co.uk/ **16-17.**

■ Project Financing in Oil & Gas, London, web site: www.smi-online.co.uk/energy/uk/conference/Project-Financing-in-Oil-and-Gas **21-22.**

International Conference on Shale Oil & Gas Engineering, London, web site: www.waset.org/conference/2016/11/london/ICSOGE **24-25.**

5th International Conference on Petroleum Geology & Petroleum Industry, Dubai, web site: petroleumgeology.conferenceseries.com/ **24-25.**

Oil & Gas Safety & Health Conference 2016 OSHA Exploration & Production, Houston, web site: www.oshasafetyconference.org/Events/ugm/Osha2016/default.aspx **29-30.**

■ OSEA2016 Exhibition & International Conference, Marina Bay Sands, Singapore, web site: www.osea-asia.com **Nov. 29-Dec. 2.**

SPE Thermal Well Integrity & Design Symposium, Banff, Alta., web site: www.spe.org/events/en/2016/symposium/16twid/homepage.html **Nov. 29-Dec. 1.**

Society of Petroleum Engineers (SPE) Middle East Artificial Lift Conference & Exhibition, Manama, Bahrain, web site: www.spe.org/events/meal/2016/ **Nov. 30-Dec. 1.**

DECEMBER 2016

International Conference on Energy Engineering & Oil Reserves, Hong Kong, web site: www.waset.org/conference/2016/12/hong-kong/ICEEOR **5-6.**

International Conference on Oil Reserves & Energy Technologies, Hong Kong, web site: www.waset.org/conference/2016/12/hong-kong/ICORET **5-6.**

SPE/AAPG Africa Energy & Technology Conference, Nairobi City, Kenya, web site: www.spe.org/events/en/2016/conference/16afrc/homepage.html **5-7.**

5th World Congress on Petrochemistry & Chemical Engineering, Phoenix, web site: www.petrochemistry.omicsgroup.com/ **5-7.**

Third EAGE Integrated Reservoir Modelling Conference, Kuala Lumpur, web site: www.eage.org/event/index.php?eventid=1477&Opendivs=s3 **5-7.**

OpEx MENA 2016—Operational Excellence in Oil, Gas & Petrochemicals, Abu Dhabi, web site: www.opex.biz **5-7.**

Oil & Gas Supply Chain Procurement, Houston, web site: energyconference.network.com/oil-gas-supply-chain-procurement-2016/ **6-7.**

Fair warning

ROBERT BRELSFORD
Downstream Technology Editor

With forms for the 2016 edition of OGJ's annual Worldwide Refining Survey now making their way onto desks of this year's respondents, there couldn't be a better time to pull back the curtain to offer readers and operators alike a peek at what life will be looking like for the downstream technical editor over the next few months.

It also provides an opportunity to remind some US and international operating companies—particularly those whose holdings include refineries historically listed in the survey—of the survey's broader importance.

While it's a voluntary response-based review of the industry's refining landscape, the decision to "reserve the right not to participate" (as one operator recently put it) under an assumption of your refinery's ongoing inclusion in the survey moving forward is now tantamount to playing a dangerous game.

Beast of burden

With the departure of a dedicated survey editor in late 2015, OGJ sectional editors have taken over responsibilities for surveys within their respective disciplines. As much as this creates a chance for editors to more deeply interact with individual operating companies during the data collection process, it also demands a time commitment that can't impede upon accomplishing day-to-day editorial priorities.

In a perfect world, the survey process would be one into which the editor could effortlessly step, with the basic components ready to roll out like some mythically smooth machine: the perfect survey form would be perfectly in queue to roll out to the perfectly exhaustive list of respondents at their perfectly accurate (and direct) addresses.

Back in the day, this is probably how it likely was for the lineage of OGJ survey editors whose work now fills the neatly bound volumes of past issues lining the walls of our archives room.

Things have changed, however.

Survey e-mails now haunt inboxes of suddenly missing long-time survey recipients. This company now has the survey go to that department. That company thinks this department should receive it. These companies have no idea which division should handle it, so "just send them to our legal departments and someone there will figure out what to do with it and get back to you shortly."

"Thanks so much, and yes, I'll look forward to hearing back from you soon."

Oh, and, by the way, I'll be holding my breath until you do.

Maybe adding that last bit would have made a difference 20 years ago, but today, not so much.

Two-way street

While certain long-time respondents take for granted the refinery survey process under a presupposition that their plants will land in the finished product whether or not they get their acts together to formally respond, a host of seemingly new operators are pulling out their hair to simply receive an invitation to participate.

This one has a new 10,000-b/d topping refinery here. That one is planning a new 40,000-b/d modular refinery there. Here are government documents from our countries to validate our existence.

The point is, inclusion in the survey—even the invitation to be included—is a privilege. To date, we still call the refining survey a "survey" because we value an operator's direct input. If we wanted to call it a "report," we would call it a report, and I could make much better use of my time by simply pulling official operating data from filings, typing it into my little computer, and calling it a day.

So you're more than entitled to reserve your right not to reply. Just remember, we reserve our right to rescind our invitation. And if your refinery vanishes from our listing, and a certain producer cuts off your crude deliveries…well, you probably should have just gone ahead and responded. OGJ

OGJ's 2016 Worldwide Refining Survey

Forms for the 2016 edition of OGJ's annual Worldwide Refining Survey were sent to respondents via e-mail during the first 2 weeks of August. Completed survey forms must be returned by Oct. 1, 2016, to guarantee inclusion of respondents' data in this year's published survey, which will be available for download by OGJ subscribers on Dec. 5, 2016. For past and new respondents, if you have not received the annual survey package and feel this has occurred in error, please contact Robert Brelsford, OGJ Downstream Technology Editor, at rbrelsford@ogjonline.com or (713) 963-6232.

Perils of independence

Energy independence can be perilous in a country plagued by misunderstanding of the concept. In pursuit of energy independence, a country faces two hazards. One is the wasted expenditure of public money. The other is nonchalance when the goal seems within reach.

In its current political mood, the US government is strongly disinclined to spend money on "independence" associated with nonrenewable hydrocarbons. It prefers nowadays to waste money on the commercialization of uncompetitive energy with fatal problems of scale. A better strategy would be to focus public spending on research and to let markets set the fuel mix. But that transfer of economic control from politicians to citizens awaits further increases in the cost of electricity, degradation of delivery systems, and an inevitable reaction by voters against energy authoritarianism.

Hazard of nonchalance

The hazard of nonchalance is more immediate. Diminished reliance on imported oil creates the illusion that the US already has achieved or drawn near enough to energy independence to abandon longstanding concern about oil in trade. According to a different version of this hazard, energy independence and security represent trifling matters in comparison with the horrors of climate change. Both views are misguided.

The beginning of wisdom on energy independence is that the US is not energy-independent and will not be in any meaningful sense of the phrase. By the standard metric, net trade, the US is approaching independence for fossil energy. It's a net exporter of coal and soon will be for natural gas. Net imports of oil and gas liquids are falling. On that basis, the country can become a net energy exporter.

In matters of independence, however, the important commodity is oil—at least for the US. It's the potential for disruption of foreign oil supplies, vulnerable as they are to political disturbance, that makes energy independence a matter of special concern. And with oil, US progress is impressive, thanks largely to recently developed shale resources. According to the Energy Information Administration, net imports as a share of total US liquids consumption fell from 60% in 2005 to 24% in 2015. Still, EIA expects the US to remain a net liquids importer beyond 2040. Although the net—import share of total consumption will have dropped to 7% by that year, its lowest level since 1957, the US will depend on foreign sources for 1.5 million b/d of crude and other liquids.

Even if the US imported no oil, however, it would need to worry about oil in trade. The large loss of oil supply anywhere raises prices everywhere. No country involved in trade of any kind, net oil exporter or otherwise, is immune from the economic effects. So no country can claim independence from the global oil market.

The Middle East

For that reason, no globally influential country, regardless of its status in oil trade, can afford to disengage from the Middle East. While unconventional resources introduce great potential, the Middle East still dominates oil supply with its massive reserves and low production costs. And the region is changing rapidly—from the upsets of the Arab Spring, to the economic restructurings in Saudi Arabia and neighbors, to the geopolitical realignments in progress as endemic rivalries evolve and terrorism spreads. The US surrendered much influence when it opted for a subdued role in the region. Whether that was wise is open for debate. What cannot sensibly be argued is that a lowering of net oil imports diminishes US interests in Middle Eastern affairs.

Although energy independence calibrated to oil trade can be a misleading goal, movement toward it remains important. The domestic use of oil produced domestically keeps wealth created by resource development home. That's why a country should want to produce as much and import as little oil as it can. And it's why the supply dimensions of independence and security—even and especially those related to nonrenewable hydrocarbons—never must lose priority in the formulation of energy policy. OGJ

GAO report criticizes DOI's efforts for methane emissions control

Nick Snow
Washington Editor

US Department of the Interior reporting guidance to oil and gas operators may hinder the US Bureau of Land Management's ability to account for methane emissions on onshore federal leases, the Government Accountability Office warned.

GAO said the agency historically has required operators to submit monthly oil and gas operations reports (OGOR) that it uses to track produced volumes, including royalty-exempt natural gas such as that vented or flared, or used to power equipment on the lease.

But this emphasis on data from royalty-bearing production provides limited guidance on how operators are to report methane emissions, GAO said in a July 21 report. Specifically, it:

- Does not provide specific instructions on how to estimate natural gas emissions, which results in operators using varying estimation methods that may be difficult to verify.
- Provides limited guidance on which OGOR categories to use when reporting flared gas emissions, which results in inconsistent reporting.
- Does not specify which natural gas emissions activities should be reported, resulting in operators not reporting some releases, such as from storage tanks.

"As a result of these limitations, Interior may not have a consistent accounting of natural gas emissions from onshore federal leases, and does not have the information it needs to reasonably ensure it is minimizing waste on these leases," the report said.

BLM's field offices have not consistently followed BLM's existing guidance in managing operators' venting or flaring requests, it said. GAO found that the field offices have approved venting or flaring requests that did not include the documentation BLM's guidance requires, the report said.

The agency received 1,281 venting or flaring requests from operators in fiscal-year 2014. GAO reviewed the documentation for a random sample of 100 of those requests and, based on this sample, estimates that 90% (+/-8) did not provide the documentation BLM guidance requires, the congressional watchdog service said in its report. "GAO also estimates that BLM approved 70% (+/-9) of these venting or flaring requests and, for nearly half of the approvals, allowed operators to flare gas royalty-free," it added.

Investigators also found that selected BLM field offices have applied agency guidance differently to venting or flaring requests, the report said. "For example, officials in two BLM field offices GAO reviewed said they used their authority under the existing guidance to charge royalties on flared gas, while a third field office was considering doing so. The other three field offices GAO reviewed have interpreted BLM guidance as allowing all venting or flaring requests in their regions to be approved royalty-free," it said.

GAO said BLM's proposed update to its regulations, if finalized, would clarify how the agency will manage future venting or flaring requests. Interior officials told GAO that they expect to finalize the proposed update to its regulations by yearend and that finalizing the regulations is an Obama administration priority, the report said.

It specifically recommended that additional guidance come from:

- BLM on how to estimate gas emissions from federal oil and gas leases.
- DOI's Office of Natural Resources Revenue (ONRR) on how to report royalty-free and royalty-bearing flaring and consider creating a separate category for royalty-bearing flaring.
- ONRR on how to report certain unreported or underreported emissions, such as emissions from storage tanks and gas vented during well completions.
- ONRR on how to differentiate between combusted and noncombusted lease use volumes reported on the OGOR, which could assist DOI in measuring its progress toward greenhouse gas reduction goals.

In a July 27 response, Kristen J. Sarri, principal deputy assistant Interior secretary for policy, management, and budget, said DOI generally concurs with the report's recommendations.

"These findings and recommendations will enhance [BLM's] ability to improve reporting of emissions data on the monthly [OGORs], help BLM ensure compliance with existing guidance until its proposed regulations go into effect, and ensure [ONRR] provides additional guidance on emissions data reporting," she wrote. OGJ

BSEE, NOAA begin joint study of multiple remote spill-sensing systems

Nick Snow
Washington Editor

The US Bureau of Safety and Environmental Enforcement and National Oceanic and Atmospheric Administration jointly began a study of multiple remote spill sensing systems at BSEE's Ohmsett facility in Leonardo, NJ, south of New York City on July 22.

The three-phase study will employ Ohmsett's 660-ft long, 2.6 million-gal capacity saltwater test tank, the US Department of the Interior agency said. Spill responders will be able to use its results to better monitor and measure oil slicks and emulsions in the marine environment and improve offshore spill response operations in the process, it said.

The study is the latest in comprehensive long-term oil-spill response research that BSEE and its predecessor agencies have conducted for more than 25 years. The program's main focus is to improve methods and technologies to detect, contain, treat, recover, and clean up offshore spills.

"We have a pretty broad portfolio—anything that makes certain the industry is prepared to respond effectively," Lori Medley, BSEE's oil-spill response branch chief, told OGJ on July 25.

Remote sensing uses various technologies to acquire data on objects or events without making physical contact. Sensors either can be passive—responding to external stimuli and recording natural energy reflected or emitted from the Earth's surface—or active, using instruments and technologies to collect data about their targets.

Range of technologies

Remote sensing from an aircraft, including unmanned aerial vehicles (UAV), is the most common form of oil-spill tracking, according to BSEE's web site. Satellites using radar sensors are becoming a viable alternative, and using visual satellite imagery to monitor spills also shows promise, it said.

For underwater remote sensing, most spills can be accessed by using remotely operated vehicles (ROV) and autonomous operated vehicles (AUV), although existing sensor packages need to be refined to meet needs created by this environment. A combination of sensors currently is used for oil-spill surveillance, presenting challenges in data fusion and delays in getting the appropriate data to responders, BSEE said. This makes it necessary to develop and advance new sensors and real-time data transmission technologies, it said.

"We'd like to minimize data acquisition and transfer time," noted Jay Cho, who also works in BSEE's oil-spill response branch. "We're trying to develop several different approaches for various situations."

The goal is to get more real-time data instead of delayed satellite feeds, Medley said. NOAA is involved because it determines penalties such as BP PLC's fine after its Macondo deepwater well blew out, spilling millions of barrels of crude into the Gulf of Mexico in 2010, she added.

Current study's focus

The current study will look at emulsified oil, Medley said. "When its oil concentration is above 25%, it's harder to burn using existing technologies," she told OGJ. "This study will try to evaluate their limitations and applications. We picked out given satellites on specific days, then flew fixed-wing systems and drones, followed by people gathering individual samples."

Researchers will compare multiple remote sensing systems to determine how well each detects oil-water emulsion mixtures and measures oil thickness during the study's first phase, BSEE said in its announcement of the joint study with NOAA. Remote sensors will view emulsified oil in the Ohmsett tank from different angles and heights and through different mediums to validate sensor capabilities, it said.

Above water, sensors on the "Ohmsett Bridge" will provide an up-close view of the water's surface as an ROV provides an underwater view, BSEE said. Simultaneously, remote sensors on a UAV, a fixed-wing aircraft, and a helicopter will take measurements. Three satellites with remote sensors also pass overhead and provide space-based observations.

The study's second phase, planned for late this year, will allow the research team to measure sensor performance in an open-water environment and compare that data to controlled conditions at the Ohmsett tank, BSEE said. "We hope to go offshore in the Gulf of Mexico in September, where we expect different results," Medley said. "In the tank, its cement bottom reflects some information from elsewhere that we don't expect to be present on the open ocean."

BSEE said that development of operational methods and procedures for processing and interpreting the capabilities of the sensors will occur in the study's third and final phase. OGJ

NICK
SNOW
Washington Editor | Blog at www.ogj.com

BSEE's focus on bolts

Blowout preventers (BOP) were an initial offshore equipment focus following the 2010 Macondo deepwater oil well blowout. Lately, however, the US Bureau of Safety and Environmental Enforcement has paid growing attention to bolts.

BSEE Director Brian A. Salerno observed in a July 20 column at the agency's web site that on Jan. 4, 2010, a few months before the event that destroyed the Deepwater Horizon semisubmersible rig, the crew aboard another semi, the Ocean Confidence, was testing a BOP when all 20 of the 16-in. long, 3-in. diameter bolts at the connection between the upper and middle double rams suddenly failed approaching 14,000 psi.

"Luckily, this was a shipboard test, not a situation where the BOP was needed to prevent a catastrophe," Salerno said. But less than 3 years later, bolt failures made the Discover India's lower marine riser package separate from the BOP stack, spilling more than 400 bbl of synthetic drilling fluids, he said. Investigators found that hydrogen-induced stress corrosion cracking from embrittlement was the cause.

"Bolts are among engineering's most simple creations, but they hold together most of the subsea infrastructure used in oil and gas exploration," Salerno noted. "I'm not sure anyone has counted all individual bolts involved in an offshore operation from drilling through production, but the number is in the thousands. We have a responsibility to make sure that every one of these bolts can handle the stresses they are designed to withstand."

While there have been no major bolt-related accidents so far, BSEE became so alarmed at the prospect that it issued a nationwide safety alert in February.

Among important steps since, Salerno said the new offshore well control rule includes bolts among required safety-critical equipment reporting. BSEE also is working with international regulators to identify global bolt failure incidents and causes, and has assembled a work group with the American Petroleum Institute, he said. The agency's Safe OCS near-miss reporting system also allows it to receive data directly from contractors and offshore workers.

"The bolt problem has probably been around for quite a while—in fact, we know of an incident dating back to 2003," Salerno said. "That we have not had a major incident so far may be due to luck more than anything else. How long that luck will last is not a question I think any of us is comfortable answering." OGJ

USGS assists India in finding large offshore gas hydrates deposit

Nick Snow
Washington Editor

The US Geologic Survey has assisted India's government in discovering large, highly concentrated natural gas hydrate deposits in the Bay of Bengal. The discovery, which is the first of its kind in the Indian Ocean, could potentially be produced, the US Department of the Interior agency said.

Gas hydrates are a naturally occurring, ice-like combination of gas and water found in the world's oceans and polar regions. The amount of gas within the world's gas hydrate accumulations is estimated to greatly exceed the volume of all known conventional gas resources.

This recent discovery was the result of the most comprehensive gas hydrate field venture in the world to date, made up of scientists from India, Japan, and the US, officials said. Scientists conducted ocean drilling, conventional sediment coring, pressure coring, downhole logging, and analytical activities to assess the geologic occurrence, regional context, and characteristics of gas hydrate deposits in India's offshore area.

The research expedition was the second joint exploration for gas hydrate potential in the Indian Ocean. The first, also a partnership between scientists from India and the US, discovered gas hydrate accumulations, but in formations that were currently unlikely to be producible.

Although it is possible to produce gas from hydrates, there are significant technical challenges, depending on the location and type of formation, USGS said. Previous studies have shown that gas hydrates at high concentrations in sand reservoirs is the type of occurrence that can be most easily produced with existing technologies.

As such, the second expedition

focused on the exploration and discovery of highly concentrated gas hydrate occurrences in sand reservoirs. The gas hydrates found are in coarse-grained, sand-rich depositional systems in the Krishna-Godavari basin, and are made up of a sand-rich, gas-hydrate-bearing fan and channel-levee gas hydrate prospects. The next steps for research will involve production testing in these reservoirs to determine if gas production is practical and economic, the agency said.

"The results from this expedition mark a critical step forward to understanding the energy resource potential of gas hydrates," said USGS Senior Scientist Tim Collett, who participated in the expedition.

"The discovery of what we believe to be several of the largest and most concentrated gas hydrate accumulations yet found in the world will yield the geologic and engineering data needed to better understand the geologic controls on the occurrence of gas hydrate in nature and to assess the technologies needed to safely produce gas hydrates," Collett said.

The international team of scientists was led by India's Oil & Natural Gas Corp. Ltd. on behalf of the Ministry of Petroleum and Natural Gas India, in cooperation with USGS, Japanese Drilling Co., and the Japan Agency for Marine-Earth Science & Technology. In addition, USGS said it is working closely with the National Institute of Advanced Industrial Science & Technology Japan on the analysis of pressure core samples collected from sand reservoirs with high gas hydrate concentrations.

The agency has a globally recognized research program studying gas hydrates in deepwater and permafrost settings worldwide. USGS researchers focus on the potential of gas hydrates as an energy resource, the impact of climate change on gas hydrates, and seafloor stability issues, officials said. OGJ

NPC to work more closely with DOE on emergency preparedness

Nick Snow
Washington Editor

The National Petroleum Council has agreed to use the new approach in the US Department of Energy's 2016 Clear Path IV emergency preparedness exercise to independently track progress in implementing recommendations in its 2014 Enhancing Emergency Preparedness for Natural Disasters report and identify opportunities for continued improvement.

In a July 29 letter to US Sec. of Energy Ernest J. Moniz, NPC Chairman Charles D. Davidson noted that DOE announced in late 2015 that the fourth annual Clear Path energy sector preparedness exercise would move away from earlier exercises' academic formats toward a functional exercise supporting the Obama administration's Quadrennial Energy Review, the 2014 NPC report's recommendations, and DOE leaders' desire for more coordination across sectors.

"The move to a functional exercise created the opportunity for industry and government to work together not just during the exercise, but during the planning and review process," said Davidson, who formerly was Noble Energy Inc.'s chief executive officer. "This created an ongoing dialogue and facilitated development of working relationships that are likely to continue for years."

Strong, continuing communication among oil and gas companies and the federal and states' governments will be essential in developing a more effective US energy emergency preparedness program, he said.

"Organizations with mature programs have been implementing and continuously improving them for years. In order to sustain and build on past progress over time, the NPC cannot overemphasize the importance of a formal management of change process," Davidson said in the letter.

That process is an essential component of any program, but the added complexity of change within government resulting from a change of administration and the large turnover of senior staff makes this even more critical, he said.

A key, ongoing priority

"The NPC encourages DOE to make management of change a key priority in planning for a new administration, and an ongoing priority for the emergency preparedness and response program," Davidson said.

In remarks to the council at its July 29 meeting, Deputy US Energy Sec. Elizabeth Sherwood-Randall said DOE was pleased to have strengthened the Clear Path exercise to make it more meaningful, and to ensure that its government and industry partners can work together more effectively during a crisis.

"The department has heard from many people that this was the most valuable exercise we have done to date, and that it is a great example of what we need to sustain far our into the future," she said.

Moniz, who also spoke at the meeting, highlighted the Obama administration's program to double federal investments in clean energy research and noted the significant opportunity to include technologies that would enable the cleaner use of natural gas and other fossil fuels.

"I really want to emphasize something we probably have not articulated well enough and consistently enough, and that is how the natural gas revolution in this country has addressed what arguably are the three highest-level objectives—economy, environment, and security. The natural gas revolution has really hit the trifecta," he said.

NPC also elected ExxonMobil Corp. Chairman Rex W. Tillerson to succeed Davidson as its chair at the meeting. OGJ

AFPM questions SEC proposal's broader disclosure requirements

Nick Snow
Washington Editor

The American Fuel & Petrochemical Manufacturers questioned whether it would be appropriate for the US Securities and Exchange Commission to mandate disclosure requirements for environmental, social, and governance matters, particularly related to climate change, for publicly traded companies.

"We think it would be a mistake to politicize decades of settled legal precedent and regulation by mandating reporting of speculative environmental or social issue information in SEC filings," AFPM Pres. Chet Thompson said on July 25 after the association filed comments regarding SEC's Concept Release for Business and Financial Disclosure under Regulation S-K.

"The existing requirements are adequate for addressing the issues that are fundamental for financial investors and securities markets, and mandating the disclosure of immaterial, speculative matters, would not be in shareholders' best interest," Thompson said. "Requiring a company to disclose social and environmental mat-

ters that are not material or sufficiently certain would effectively force companies to support social and environmental policy agendas that lie outside the SEC's authority."

SEC's Apr. 13 Concept Release explores whether Regulation S-K remains a sound structure for ensuring adequate business and financial disclosures to investors, AFPM said. Additionally, it asks whether parts of the regulation have become unnecessary and whether additional disclosures are needed to support the integrity of securities markets, build investor confidence in these markets, and support capital formation in the market.

"AFPM believes it is important to maintain the integrity of the nation's longstanding corporate disclosure laws, which have enjoyed bipartisan consensus, regardless of the political party leading the SEC," Thompson said. "We hope the SEC carefully considers the implications of changing mandatory reporting requirements, particularly in relation to social and environmental issues.

"Any changes to Regulation S-K should focus on maximizing shareholder benefits and should not risk more than 80 years of federal laws, regulations, and court decisions governing corporate disclosure," he said. "We support keeping nonmaterial information separate from what is material and relevant to a company's financial profile." OGJ

Shell's second-quarter, first-half earnings take dive

Royal Dutch Shell PLC reported second-quarter earnings on a current cost of supplies (CCS) basis, excluding identified items, of $1.05 billion, down from $3.76 billion in second-quarter 2015. First-half earnings on a CCS basis, also excluding identified items, totaled $2.6 billion, down from $7.5 billion in the same period last year.

The multinational firm says second-quarter earnings were impacted by the decline in oil, gas, and LNG prices; the depreciation step-up resulting from the BG PLC acquisition; weaker refining industry conditions; and increased taxation. Earnings benefited from increased production volumes from BG assets.

Excluding identified items, the firm's integrated gas division recorded second-quarter earnings of $868 million, down from $1.4 billion in first-quarter 2015. Its first-half earnings were $1.86 billion, down from $2.89 billion a year earlier.

Separately, Shell and its partners this month delayed final investment decision (FID) for their LNG project near Kitimat in Canada, citing "global industry challenges, including capital constraints (OGJ Online, July 12, 2016)." Upon its release of second-quarter earnings, Shell said it will also delay FID for its Lake Charles LNG project.

Compared with the year-ago period, integrated gas earnings in the third quarter are expected to be negatively affected by a reduction of some 15,000 boe/d associated with the impact of maintenance.

The upstream division took a second-quarter loss, excluding identified items, of $1.33 billion compared with a $469-million loss a year earlier. Its first-half loss totaled $2.76 billion compared with $664 million a year ago.

Upstream earnings in the third quarter are expected to be negatively impacted by a reduction of some 35,000 boe/d associated with sabotage incidents and repairs in Nigeria. Earnings could be further impacted if the security conditions continue to deteriorate.

The firm's oil and gas production for the second quarter was 3.51 million boe/d, an increase of 28% compared with second-quarter 2015. The impact of BG on the second quarter production was an increase of 768,000 boe/d.

Excluding identified items, the downstream division posted first-quarter earnings of $1.82 billion, down from $2.96 billion in first-quarter 2015. Its first-half earnings were $3.83 billion, down from $5.61 billion in the year-ago period.

Refinery availability is expected to marginally increase in the third quarter as a result of lower planned maintenance compared with the same period a year ago. Chemicals manufacturing plant availability is expected to increase in the third quarter, driven by the planned restart of the Bukom chemical site in Singapore, compared with third-quarter 2015, which was heavily impacted by unit shutdowns at the Moerdijk chemical site in the Netherlands.

Second-quarter capital investment was $6.3 billion. Half-year capital investment was $65.3 billion, which included $52.9 billion related to the acquisition of BG. Organic capital investment for the full year is expected at $29 billion compared with combined capital investment of $47 billion in 2014. Divestments for the second quarter were $1 billion. OGJ

ConocoPhillips posts $1.1-billion net loss in second quarter

Houston independent ConocoPhillips Co. reported a second-quarter net loss of $1.1 billion, down from a second-quarter 2015 net loss of $179 million. Excluding special items, second-quarter adjusted earnings were a net loss of $985 million, down from second-quarter 2015 adjusted earnings of $81 million.

The firm posted a first-half net loss of $2.5 billion, down from earnings of $93 million in the year-ago period. First-half adjusted earnings were a net loss of $2.2 billion, down

from a net loss of $141 million a year earlier.

Guidance for capital expenditures has been lowered to $5.5 billion vs. prior guidance of $5.7 billion.

"Our financial position improved as we reduced our debt by [$800 million] and generated asset sale proceeds of [$200 million], remaining on track for about $1 billion of asset sale proceeds this year," commented Ryan Lance, ConocoPhillips chairman and chief executive officer.

The firm progressed its phased exit from deepwater exploration with its July agreement to sell three exploration blocks offshore Senegal to Woodside Petroleum Ltd. (OGJ Online, July 14, 2016).

Production for the second quarter was 1.55 million boe/d, a decrease of 49,000 boe/d compared with the same period a year ago due to normal field decline, dispositions, planned downtime, and the impact of wildfires in Canada. Production for the first 6 months of the year was 1.56 million boe/d, a drop from 1.6 million boe/d for the same period in 2015 due to normal field decline and dispositions.

ConocoPhillips notes that, by the end of June, output from its Surmont oil sands project was restored to first-quarter levels after wildfires scorched the area. Production also began to ramp up from the Kebabangan gas development offshore Malaysia.

The APLNG project in Australia continued to operate above expectations, with Train 2 expected to start up in the fourth quarter, the firm says.

The firm is increasing its full-year production guidance to 1.54-1.57 million boe/d. Its third-quarter production guidance is 1.51-1.55 million boe/d, reflecting "significant planned turnaround activity during the quarter." OGJ

Devon to boost rig count in Delaware basin, STACK play

Devon Energy Corp., Oklahoma City, now says it plans to add as many as 7 operated rigs to its acreage in the STACK play of Oklahoma and Delaware basin of Texas during the second half, with resulting incremental production seen in early 2017.

That's up from the 3-rig plan reported in June. The increased activity is reflected by a $200-million increase in Devon's full-year upstream capital program to $1.1-1.3 billion.

Devon's second-quarter accrued upstream capital spending, which accounts for activity incurred during the reporting period, amounted to $221 million, down $29 million from the low end of the firm's guidance range.

The firm reports operating cost savings from lease operating expenses (LOE), which is Devon's largest field-level cost. LOE fell 26% $416 million compared with that of second-quarter 2015, and was 5% below the low end of guidance. The drop was primarily driven by improved power and water-handling infrastructure, declining labor expense, and lower supply chain costs.

As a result, Devon is lowering its full-year LOE outlook by $150 million to $1.6-1.7 billion, and is now on track to reduce LOE and production taxes by nearly $600 million compared with that of 2015.

Quarterly loss sustained

Even with the operational efficiencies, Devon took a second-quarter net loss of $1.57 billion compared with a second-quarter 2015 net loss of $2.82 billion. During the first half, the firm posted a net loss of $4.63 billion compared with $6.42 billion in first-half 2015.

Including the sale of its 50% interest in the Access Pipeline, Devon's divestiture program is now complete at $3.2 billion, exceeding the top end of the firm's $2-3 billion guidance range (OGJ Online, July 14, 2016). At least two thirds of sales proceeds are expected to be utilized for debt reduction, while the remaining amount will be reinvested in the firm's US resource plays, Devon says.

Companywide net production was 644,000 boe/d during the second quarter. Of this amount, 545,000 boe/d was attributable to the firm's core assets, where investment will be directed going forward. Production from core assets exceeded the midpoint of guidance by 6,000 boe/d, driven entirely by US resource plays.

Within the Devon's US resource plays, production averaged 419,000 boe/d, highlighted by strong results from the STACK and Delaware where aggregate production increased 27% year-over-year. Light-oil production from US resource plays, which is Devon's highest margin product, averaged 110,000 b/d, exceeding the top end of guidance by 2,000 b/d.

In Canada, net oil production from Devon's heavy-oil projects averaged 121,000 b/d in the second quarter. Driven by the performance of the Jackfish 3 facility, Canadian oil production increased 24% compared with that of second-quarter of 2015. Scheduled maintenance at the Jackfish 2 facility curtailed production by 11,000 b/d in the quarter. OGJ

Eni takes second-quarter loss amid Val d'Agri shutdown

Eni SPA posted a second-quarter adjusted net loss of €290 million compared with an adjusted net profit of €505 million in second-quarter 2015. For the first half, the firm took an adjusted net loss of €267 million compared with an adjusted net profit of €1.23 billion in first-half 2015.

Eni attributes the losses to lower commodity prices and the second-quarter oil production shutdown at Val d'Agri field in the Southern Apennines, occurring after Italian au-

thorities seized certain plants and facilities amid alleged environmental crimes. The shutdown has affected about 60,000 boe/d net to Eni.

On June 1, Italian authorities granted Eni a temporary repeal of the seizure to allow the firm to perform certain plant upgrading intended to address claims made by the public prosecutor. Eni has since completed the plant upgrade. Once the public prosecutor verifies the upgrade, it's expected to repeal the seizure.

As a result, companywide hydrocarbon production fell 2.2% during the second quarter. During the first half, an average of 1.73 million boe/d was up 0.5% year-over-year. Eni says confirmed schedules and costs of ongoing development projects will bolster future production growth by more than 5% in 2017.

During the rest of the year, the firm expects stable year-over-year production due to planned ramp-ups and start-ups of new fields, primarily in Norway, Egypt, Angola, Venezuela, and Congo (Brazzaville). Those increases will absorb the 4-month production shutdown in Val d'Agri, mature field decline, and a lower expected contribution from production one-offs.

"Hydrocarbon production beat expectations, offsetting the suspension of activity in Val d'Agri and the disruptions in Nigeria," commented Claudio Descalzi, Eni chief executive officer. "Our exploration, which is focused on near-field activity, has allowed us to revise upwards our expectations for…discoveries in just 6 months."

Descalzi says the company is capable of funding capital expenditures with cash flow at a Brent crude oil price of $50/bbl. The firm maintains plans to reduce 2016 capital spending by 20% year-over-year. OGJ

Unipetrol updates refinery, petchem operations

Robert Brelsford
Downstream Technology Editor

Unipetrol AS is planning to return units hampered by extended shutdowns at its refining and petrochemical operations in the Czech Republic to full production rates by yearend.

At its Chempark Zaluzi petrochemical complex in Litvinov, Unipetrol currently is finalizing reconstruction of the ethylene plant's steam cracker, which has remained off line following an explosion and ensuing fire at unit in August 2015 (OGJ Online, Dec. 7, 2015; Aug. 14, 2015), the company said in its latest investor report.

To date, repairs include mechanical completion of eight of the unit's ten furnaces, with reconstruction of the two remaining furnaces to be completed by the end of August.

Following its planned restart in late August using the eight reconstructed furnaces, the 544,000-tonne/year (tpy) steam cracker is scheduled to reach 80% capacity by month's end, with its return to 100% capacity due to occur by late October, the operator said.

At subsidiary Ceska Rafinerska AS's 3.3 million-tonne/year Kralupy refinery, Unipetrol said it will start reconstruction and repair of the plant's fluid catalytic cracking (FCC) unit during the second half.

Shutdown of the FCC on May 17 following "an extraordinary event" subsequently forced suspension of all crude processing activities at the refinery (OGJ Online, June 3, 2016).

While Unipetrol disclosed no further details regarding a timeframe for the FCC's repair or the nature of the May incident, the company confirmed it will resume crude processing at the refinery sometime in early October.

In a separate release, however, Unipetrol RPA—operator of the company's Litvinov chemical complex at Chempark Zaluzi—characterized the May FCC event at Krapuly as an explosion which, alongside halting crude operations at the refinery, also prompted declaration of a force majeure on shipments of polypropylene produced by the Litvinov plant.

In other operational updates for this year's first half, Unipetrol said it completed scheduled maintenance during March and April at its Litvinov chemical complex and Ceska Rafinerska's nearby 5.4 million-tpy Litvinov refinery, including a polypropylene debottlenecking project.

Other projects advanced during the first 6 months of the year included rehabilitation of an unidentified hydrocracker and construction of a new polyethylene unit (PE3) at its Litvinov chemical complex (OGJ Online, June 7, 2016).

Alongside ongoing repairs to damaged production units during the second half, Unipetrol said it also will invest in a project related to Jet-A1 fuel production at the Litvinov refinery as well as launch a tender seeking bids for construction of a new boiler house for Litvinov's reconstructed steam cracker. OGJ

Unipetrol AS has rebuilt a steam cracker at its Chempark Zaluzi facility at Litvinov, Czech Republic. Photo from Unipetrol.

Sibur boosts capacity at Western Siberian gas plant

Robert Brelsford
Downstream Technology Editor

Russian conglomerate PJSC Sibur Holding, Moscow, has completed a project to expand NGL fractionation capacity by 1.4 million tonnes/year at its Tobolsk (formerly Tobolsk-Neftekhim) processing site in Western Siberia's Tyumen region (OGJ Online, Apr. 5, 2016; July 14, 2015).

Requiring a total investment of 5.5 billion rubles to complete, the expansion has increased total fractionation capacity at the Tobolsk production site to 8 million tpy from 6.6 million tpy, Sibur said.

The project, which specifically expanded capacity of the Tobolsk's second fractionation unit to 4.2 million tpy from 2.8 million tpy, involved a series of upgrades to the unit, including installation of new internal equipment, new heat-exchange and pump equipment, and complete replacement of fractionation trays for column equipment.

Additional work included the revamp of an existing loading rack at the site and construction of four 600-cu m spherical propane storage tanks, the operator said.

Upon first announcing the project in 2015, Sibur said the expansion also was to include construction of a cooling tower, as well as work to expand the unit's ability to process a wider range of feedstock.

The capacity expansion at Tobolsk comes as part of Sibur's strategy of continuing to focus on expanding its capabilities for deep processing of hydrocarbons competitively sourced via advantaged access to West Siberian NGL feedstock, said Sibur Chairman Dmitry Konov.

Regional program

Sibur has undertaken a series of projects and long-term agreements with Russian oil and gas majors in recent years to help expand access and processing capabilities for NGL feedstock produced in the region as part of its program to develop a petrochemical cluster in Western Siberia under the Russian government's gas and petrochemical industry development plan through 2030, the company said.

Sibur's recent initiatives to expand on site processing capacity include startup of a second-phase expansion of its Vyngapurovsky gas processing plant (GPP) in northern Russia's Yamal-Nenets Autonomous Region, which lifted the site's processing capacity to 4.2 billion cu m/year (with a recovery rate of up to 99%) from 2.8 billion-cu m/year for associated petroleum gas (APG) it receives from OAO NK RussNeft's Western Siberian production fields (OGJ Online, Apr. 1, 2016).

With joint-venture partner PJSC Gazprom Neft, St. Petersburg, the company also commissioned the Yuzhno-Priobskiy GPP in Western Siberia's Khanty-Mansi Autonomous Area, which has a capacity to process 900 million cu m/year of APG and a liquids-recovery rate that exceeds 95% (OGJ Online, Sept. 3, 2015).

To accommodate increased transportation routes for gas feedstock at the Tobolsk processing site, Sibur in 2014 built a 1,100-km, 8 million-tpy pipeline from Purovsk to Tobolsk as well added a 1.5-million tpy rail-loading rack, both of which were designed to support Tobolsk's fractionation capacity expansion, the company said.

Increased LPG output from its gas fractionation units also has spurred construction of Sibur subsidiary ZapSibNeftekhim LLC's long-planned ZapSib-2 integrated ethylene, polyethylene, and poly-propylene production complex at Tobolsk, which upon its proposed startup in 2019-20, will include a 1.5 million-tpy ethylene steam cracker, four polyethylene production units with a production capacity of 1.5 million tpy, a 500,000-tpy polypropylene production unit, as well as 100,000-tpy butane-butylene fractionation unit (OGJ Online, Feb. 20, 2015). OGJ

THE EDITOR'S PERSPECTIVE

'Keep-it-in-ground' approach rebuked by Obama's science guru

by **Bob Tippee**, Editor

Realism with energy and climate change has lifted its battered head in, of all places, the administration of US President Barack Obama.

At an annual conference of the Energy Information Administration this month, Obama's go-to intellectual on climate change rebuked "keep-it-in-the-ground" activists.

White House science adviser John Holdren called that approach "unrealistic" in his keynote speech.

Fire-breathers at groups like Greenpeace and 350.org cannot have welcomed the message, especially given its source.

Holdren, a Harvard professor trained in fluid dynamics and plasma physics, has spent his career advocating for aggressive precaution against climate change.

Indeed, he's credited with instigating the rebranding of the issue from unmarketable "global warming" and is reported to want to tweak the phrase to "climate disruption."

What would Americans do, after all, without academic elites in positions of influence telling them how to talk?

Holdren has had his White House job since the beginning of the Obama administration and also worked in the administration of Bill Clinton.

So he knows how to influence policy. He can claim credit for an Environmental Protection Agency gone rogue and a torrent of initiatives from EPA and elsewhere consistently aimed at discouraging development of fossil-energy resources.

But even Holdren thinks extremists go too far.

Asked to explain his remarks at the EIA meeting, a White House spokeswoman told the Washington Post that Holdren had pointed out the US and world depend on fossil fuels for more than 80% of their primary energy.

"It's not practical or affordable to replace the huge, fossil-fuel infrastructure with nuclear and renewables overnight, no matter how badly we may want to," she said, according to the newspaper. "As a result, the US will be using fossil fuels for decades to come, albeit, one hopes, with the share of nonfossil supplies increasing over time."

One also hopes that this morsel of practical reality will influence the formulation of energy policy more heavily than it has so far in this administration's final months.

(From the subscription area of www.ogj.com, posted July 29, 2016; author's e-mail: bobt@ogjonline.com)

ADVERTISERS INDEX

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IMPORTS OF CRUDE AND PRODUCTS

	Districts 1-4		District 5		Total US		
	7-22 2016	7-15 2016	7-22 2016	7-15 2016	7-22 2016	7-15 2016	7-24* 2015
	1,000 b/d						
Total motor gasoline	854	808	15	89	869	897	613
Mo. gas. blending comp.	763	744	14	76	777	820	588
Distillate	83	145	10	45	93	190	130
Residual	37	71	138	147	175	218	272
Jet fuel-kerosine	21	99	172	226	193	325	138
Propane-propylene	101	59	22	24	123	83	63
Other	802	586	104	145	906	733	950
Total products	**1,898**	**1,768**	**461**	**676**	**2,359**	**2,446**	**2,166**
Total crude	**7,117**	**6,787**	**1,320**	**1,346**	**8,437**	**8,133**	**7,545**
Total imports	**9,015**	**8,555**	**1,781**	**2,022**	**10,796**	**10,577**	**9,711**

*Revised.
Source: US Energy Information Administration
Data available at PennEnergy Research Center.

EXPORTS OF CRUDE AND PRODUCTS

	Total US		
	7-22-16	7-15-16	*7-24-15
	1,000 b/d		
Finished motor gasoline	454	395	366
Jet fuel-kerosine	156	138	144
Distillate	1,266	1,305	1,228
Residual	362	353	390
Propane/propylene	668	661	600
Other oils	995	1,042	1,013
Total products	**3,901**	**3,894**	**3,741**
Total crude	**677**	**598**	**571**
Total exports	**4,578**	**4,492**	**4,312**
NET IMPORTS			
Total	6,218	6,088	5,399
Products	(1,542)	(1,448)	(1,575)
Crude	7,760	7,536	6,974

*Revised.
Source: Oil & Gas Journal
Data available at PennEnergy Research Center.

CRUDE AND PRODUCT STOCKS

District	Crude oil	Motor gasoline		Jet fuel, kerosine	Fuel oils		Propane-propylene
		Total	Blending comp.		Distillate	Residual	
	1,000 bbl						
PADD 1	16,960	72,493	67,043	9,198	59,251	10,581	5,149
PADD 2	150,663	51,746	45,369	6,128	29,748	1,196	28,758
PADD 3	271,100	80,235	70,470	16,869	45,626	23,078	52,770
PADD 4	24,523	7,443	5,552	666	3,796	246	[1]2,922
PADD 5	57,888	29,536	27,369	8,669	13,581	4,906	—
July 22, 2016	**521,134**	**241,453**	**215,803**	**41,530**	**152,002**	**40,007**	**89,599**
July 15, 2016	**519,462**	**241,000**	**214,716**	**41,901**	**152,783**	**42,076**	**87,436**
July 24, 2015[2]	**459,681**	**215,922**	**190,234**	**44,017**	**144,102**	**40,057**	**89,447**

[1]Includes PADD 5. [2]Revised.
Source: US Energy Information Administration
Data available at PennEnergy Research Center.

REFINERY REPORT—JULY 22, 2016

District	REFINERY OPERATIONS		REFINERY OUTPUT				
	Gross inputs	Crude oil inputs	Total motor gasoline	Jet fuel, kerosine	Fuel oils: Distillate	Fuel oils: Residual	Propane-propylene
	1,000 b/d						
PADD 1	1,085	1,019	3,316	93	320	41	154
PADD 2	3,719	3,713	2,723	211	1,091	46	404
PADD 3	8,889	8,788	2,129	877	2,781	190	968
PADD 4	617	616	323	39	185	9	[1]206
PADD 5	2,614	2,450	1,620	468	542	75	—
July 22, 2016	**16,924**	**16,586**	**10,111**	**1,688**	**4,919**	**361**	**1,732**
July 15, 2016	**17,071**	**16,864**	**10,126**	**1,721**	**5,004**	**412**	**1,734**
July 24, 2015[2]	**17,083**	**16,761**	**9,980**	**1,704**	**5,097**	**389**	**1,646**
	18,320	**Operable capacity**	**92.4**	**utilization rate**			

[1]Includes PADD 5. [2]Revised.
Source: US Energy Information Administration
Data available at PennEnergy Research Center.

Additional analysis of market trends is available through **OGJ Online**, *Oil & Gas Journal's* electronic information source, at http://www.ogj.com.

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OGJ CRACK SPREAD

	7-29-16*	7-31-15*	Change	Change, %
	$/bbl			
SPOT PRICES				
Product value	53.35	68.51	(15.16)	(22.12)
Brent crude	42.55	54.14	(11.59)	(21.41)
Crack spread	10.80	14.37	(3.57)	(24.82)
FUTURES MARKET PRICES				
One month				
Product value	55.12	72.75	(17.64)	(24.24)
Light sweet crude	42.05	47.96	(5.91)	(12.32)
Crack spread	13.07	24.79	(11.73)	(47.30)
Six month				
Product value	54.93	65.34	(10.41)	(15.93)
Light sweet crude	45.52	50.92	(5.40)	(10.60)
Crack spread	9.41	14.42	(5.01)	(34.73)

*Average for week ending.
Source: Oil & Gas Journal
Data available at PennEnergy Research Center.

OGJ GASOLINE PRICES

	Price ex tax 7-27-16	Pump price* 7-27-16	Pump price 7-29-15
	¢/gal		
(Approx. prices for self-service unleaded gasoline)			
Atlanta	151.4	200.8	255.7
Baltimore	159.5	210.5	258.7
Boston	156.5	201.5	261.7
Buffalo	150.4	211.5	272.7
Miami	145.5	200.5	265.7
Newark	165.4	198.3	251.7
New York	173.4	234.5	285.8
Norfolk	190.7	231.4	235.8
Philadelphia	140.7	209.5	280.8
Pittsburgh	158.6	227.4	277.8
Wash., DC	182.5	224.4	267.8
PAD I avg	161.3	213.7	264.9
Chicago	215.7	264.3	299.6
Cleveland	166.2	212.6	261.2
Des Moines	163.3	213.7	261.1
Detroit	163.4	212.3	263.9
Indianapolis	166.0	214.3	264.4
Kansas City	160.3	196.0	248.0
Louisville	164.6	209.0	280.6
Memphis	171.2	211.0	254.4
Milwaukee	150.7	202.0	278.4
Minn.-St. Paul	158.0	205.0	268.2
Oklahoma City	149.8	185.2	227.5
Omaha	155.9	202.0	241.0
St. Louis	159.3	195.0	267.9
Tulsa	158.2	193.6	232.9
Wichita	157.6	200.0	251.7
PAD II avg	164.0	207.7	260.1
Albuquerque	154.0	191.3	250.5
Birmingham	166.0	205.3	242.2
Dallas-Fort Worth	160.9	199.3	235.8
Houston	162.1	200.5	236.5
Little Rock	161.1	201.3	244.8
New Orleans	161.8	200.2	245.2
San Antonio	160.9	199.3	245.5
PAD III avg	161.0	199.6	242.9
Cheyenne	174.9	217.3	276.4
Denver	187.2	227.6	285.8
Salt Lake City	181.4	229.3	290.3
PAD IV avg	181.2	224.7	284.2
Los Angeles	254.9	313.9	400.2
Phoenix	191.5	228.9	292.3
Portland	188.4	237.9	290.6
San Diego	228.9	287.9	395.3
San Francisco	234.9	293.9	382.2
Seattle	208.0	270.9	320.2
PAD V avg	217.8	272.2	346.8
Week's avg.	**171.7**	**218.4**	**272.6**
July avg.	**178.7**	**225.4**	**278.7**
June avg.	**188.3**	**234.9**	**276.9**
2016 to date	**160.4**	**207.1**	—
2015 to date	**202.5**	**249.8**	—

*Includes state and federal motor fuel taxes and state sales tax. Local governments may impose additional taxes.
Source: Oil & Gas Journal.
Data available at PennEnergy Research Center.

BAKER HUGHES RIG COUNT

	7-29-16	7-31-15
Alabama	1	2
Alaska	4	9
Arkansas	—	4
California	7	11
Land	7	11
Offshore	—	—
Colorado	21	38
Florida	—	1
Illinois	3	2
Indiana	—	—
Kansas	—	7
Kentucky	1	3
Louisiana	46	78
N. Land	15	26
S. Inland waters	4	5
S. Land	9	14
Offshore	18	33
Maryland	—	—
Michigan	—	—
Mississippi	3	3
Montana	—	1
Nebraska	—	2
New Mexico	28	54
New York	—	—
North Dakota	27	70
Ohio	13	21
Oklahoma	60	107
Pennsylvania	15	42
South Dakota	—	—
Texas	214	375
Offshore	1	1
Inland waters	—	—
Dist. 1	14	43
Dist. 2	13	48
Dist. 3	5	18
Dist. 4	11	18
Dist. 5	3	3
Dist. 6	9	23
Dist. 7B	3	4
Dist. 7C	24	34
Dist. 8	112	148
Dist. 8A	9	15
Dist. 9	—	4
Dist. 10	8	16
Utah	2	4
West Virginia	8	17
Wyoming	8	22
Others ID-INV-1	2	1
Total US	**463**	**874**
Total Canada	**119**	**215**
Grand total	**582**	**1,089**
US oil rigs	374	664
US gas rigs	86	209
Total US offshore	19	34
Total US cum. avg. YTD	**485**	**1,108**

Rotary rigs from spudding in to total depth.
Definitions, see OGJ Sept. 18, 2006, p. 46.
Source: Baker Hughes Inc.
Data available at PennEnergy Research Center.

OGJ PRODUCTION REPORT

	[1]7-29-16	[2]7-31-15
	1,000 b/d	
(Crude oil and lease condensate)		
Alabama	18	27
Alaska	475	450
California	530	564
Colorado	300	339
Florida	5	6
Illinois	20	26
Kansas	93	122
Louisiana	1,283	1,435
Michigan	14	17
Mississippi	51	68
Montana	58	77
New Mexico	360	410
North Dakota	1,053	1,198
Ohio	64	74
Oklahoma	355	423
Pennsylvania	17	20
Texas	3,540	3,769
Utah	80	101
West Virginia	20	22
Wyoming	187	238
Other states	50	47
Total	**8,573**	**9,433**

[1]OGJ estimate. [2]Revised. Source: Oil & Gas Journal.
Data available at PennEnergy Research Center.

US CRUDE PRICES

	7-29-16 $/bbl*
Alaska-North Slope 27°	22.77
Light Louisiana Sweet	36.97
California-Midway Sunset 13°	32.30
California Buena Vista Hills 26°	40.65
Wyoming Sweet	37.85
East Texas Sweet	36.00
West Texas Sour 34°	33.00
West Texas Intermediate	38.00
Oklahoma Sweet	38.00
Texas Upper Gulf Coast	31.75
Michigan Sour	30.00
Kansas Common	37.00
North Dakota Sweet	32.00

*Current major refiner's posted prices except N. Slope lags 2 months. 40° gravity crude unless differing gravity is shown. Source: Oil & Gas Journal. Data available at PennEnergy Research Center.

WORLD CRUDE PRICES

OPEC reference basket	Wkly. avg. 7-29-16	$/bbl 40.24 — Mo. avg., $/bbl — May-16	June-16
OPEC reference basket		43.21	45.84
Arab light-Saudi Arabia		43.48	46.28
Basrah light-Iraq		42.05	44.63
Bonny light 37°-Nigeria		46.85	48.48
Es Sider-Libya		45.83	47.28
Girassol-Angola		46.58	48.30
Iran heavy-Iran		41.67	44.68
Kuwait export-Kuwait		41.60	44.50
Marine-Qatar		44.13	46.37
Merey-Venezuela		34.28	38.22
Minas 34°-Indonesia		48.64	51.56
Murban-UAE		47.12	49.28
Oriente-Ecuador		41.96	44.03
Saharan blend 44°-Algeria		47.73	48.98
Other crudes			
Fateh 32°-Dubai		44.29	46.25
Isthmus 33°-Mexico		44.76	47.51
Brent 38°-UK		46.83	48.28
Urals-Russia		45.08	46.60
Differentials			
WTI/Brent		0.01	0.46
Brent/Dubai		2.54	2.03

Source: OPEC Monthly Oil Market Report.
Data available at PennEnergy Research Center.

REFINED PRODUCT PRICES

	7-22-16 ¢/gal		7-22-16 ¢/gal
Spot market product prices			
Motor gasoline (Conventional-regular)		No. 2 Distillate Low sulfur diesel fuel	
New York Harbor	133.10	New York Harbor	133.10
Gulf Coast	133.30	Gulf Coast	130.30
		Los Angeles	137.10
Motor gasoline (RBOB-regular)		Kerosine jet fuel	
New York Harbor	134.80	Gulf Coast	123.10
No. 2 heating oil		Propane	
New York Harbor	123.10	Mont Belvieu	47.30

Source: EIA Weekly Petroleum Status Report.
Data available at PennEnergy Research Center.

IHS PETRODATA RIG COUNT

JULY 29, 2016

	Total supply of rigs	Marketed supply of rigs	Marketed contracted	Marketed utilization rate (%)
US Gulf of Mexico	109	53	40	75.5
South America	54	50	41	82.0
Northwest Europe	109	88	68	77.3
West Africa	69	57	29	50.9
Middle East	167	157	124	79.0
Southeast Asia	96	81	40	49.4
Worldwide	835	698	500	71.6

Source: IHS Petrodata
Data available in PennEnergy Research Center

US NATURAL GAS STORAGE[1]

	7-22-16	7-15-16 bcf	7-22-15	Change, %
East	715	697	638	12.1
Midwest	815	801	652	25.0
Mountain	213	210	170	25.3
Pacific	318	318	339	(6.2)
South Central	1,233	1,251	1,058	16.5
Salt	336	349	301	11.6
Nonsalt	897	901	757	18.5
Total US	**3,294**	**3,277**	**2,857**	**15.3**
	May-16	**May-15**	**Change, %**	
Total US[2]	**2,976**	**2,296**	**29.6**	

[1]Working gas. [2]At end of period.
Source: Energy Information Administration
Data available at PennEnergy Research Center.

WORLDWIDE CRUDE OIL AND GAS PRODUCTION

	May 2016	Apr. 2016	5 month average production 2016	5 month average production 2015	Change vs. previous year Volume	Change vs. previous year %	May 2016	Apr. 2016	Cum. 2016
	Crude, 1,000 b/d						Gas, bcf		
Argentina	520	521	520	533	(13)	(2.4)	110.9	105.4	528.90
Bolivia	50	50	50	50	—	(0.6)	65.0	65.0	325.00
Brazil	2,300	2,296	2,312	2,426	(114)	(4.7)	102.0	102.0	466.02
Canada	2,516	3,421	3,000	3,642	(642)	(17.6)	452.0	450.3	2,335.75
Colombia	910	920	950	994	(44)	(4.4)	30.0	30.0	150.00
Ecuador[1]	550	540	544	546	(2)	(0.4)	1.0	1.0	5.00
Mexico	2,174	2,177	2,208	2,266	(58)	(2.5)	181.1	177.6	926.44
Peru	43	40	44	61	(17)	(27.9)	44.8	39.4	186.25
Trinidad	73	72	74	82	(8)	(9.5)	106.9	100.6	531.59
United States	8,767	8,933	9,040	9,440	(400)	(4.2)	2,422.0	2,363.8	12,008.66
Venezuela[1]	2,220	2,300	2,318	2,412	(94)	(3.9)	68.0	68.0	340.00
Other Latin America	86	86	86	89	(3)	(2.9)	4.5	4.5	22.92
Western Hemisphere	**20,209**	**21,356**	**21,146**	**22,540**	**(1,394)**	**(6.2)**	**3,588.2**	**3,507.7**	**17,826.53**
Austria	3	13	13	17	(4)	(23.8)	3.3	3.3	17.62
Denmark	143	147	137	159	(22)	(13.6)	13.3	13.3	62.15
France	17	17	17	16	1	3.7	0.1	0.1	0.54
Germany	48	46	47	46	1	1.3	24.0	24.8	120.67
Italy	28	29	66	96	(30)	(31.1)	18.7	18.7	92.84
Netherlands	19	20	21	30	(9)	(30.0)	167.3	167.3	913.19
Norway	1,584	1,650	1,634	1,597	37	2.3	371.0	370.8	1,903.63
Turkey	49	50	49	48	1	2.5	1.1	1.1	5.86
United Kingdom	1,002	1,012	1,016	875	141	16.1	123.9	112.3	570.64
Other Western Europe	5	5	5	7	(2)	(32.4)	3.2	3.2	15.88
Western Europe	**2,903**	**2,994**	**3,005**	**2,892**	**113**	**3.9**	**725.9**	**714.9**	**3,703.03**
Azerbaijan	794	796	794	844	(50)	(5.9)	58.0	58.0	285.72
Croatia	14	14	14	12	2	13.3	5.3	5.3	26.87
Hungary	14	14	14	12	2	19.0	5.3	5.3	27.16
Kazakhstan	1,315	1,330	1,342	1,369	(27)	(2.0)	145.0	145.0	724.79
Romania	77	77	77	80	(4)	(4.7)	29.7	29.7	161.67
Russia	10,219	10,226	10,366	10,118	248	2.4	1,642.7	1,771.5	9,360.51
Other FSU	400	400	400	401	(2)	(0.5)	516.0	516.0	2,579.23
Other Eastern Europe	60	61	61	58	4	6.3	25.7	25.6	130.75
Eastern Europe and FSU	**12,893**	**12,918**	**13,066**	**12,894**	**173**	**1.3**	**2,427.8**	**2,556.5**	**13,296.69**
Algeria[1]	1,090	1,090	1,098	1,108	(10)	(0.9)	230.0	230.0	1,150.00
Angola[1]	1,720	1,750	1,756	1,764	(8)	(0.5)	4.0	4.0	20.00
Cameroon	82	82	82	82	—	—	2.0	2.0	10.00
Congo (former Zaire)	28	28	28	28	—	—	—	—	—
Congo (Brazzaville)	290	290	290	290	—	—	—	—	—
Egypt	684	684	684	687	(3)	(0.4)	127.0	127.0	635.00
Equatorial Guinea	248	248	248	248	—	—	0.1	0.1	0.30
Gabon	260	260	260	260	—	—	0.3	0.3	1.50
Libya[1]	280	350	344	412	(68)	(16.5)	45.0	45.0	225.00
Nigeria[1]	1,440	1,620	1,674	1,810	(136)	(7.5)	70.0	70.0	350.00
Sudan	258	258	258	258	—	—	—	—	—
Tunisia	46	46	46	53	(7)	(12.9)	7.5	7.5	37.52
Other Africa	285	285	285	285	—	—	7.8	7.8	38.86
Africa	**6,996**	**6,991**	**7,053**	**7,285**	**(232)**	**(3.2)**	**493.6**	**493.6**	**2,468.19**
Bahrain	48	50	50	49	—	0.4	32.0	32.0	160.00
Iran[1]	3,610	3,560	3,330	2,836	494	17.4	465.0	465.0	2,325.00
Iraq[1]	4,270	4,360	4,294	3,612	682	18.9	82.0	82.0	415.29
Kuwait[1,2]	2,850	2,730	2,810	2,792	18	0.6	48.1	48.1	245.68
Oman	1,010	1,000	1,012	971	41	4.2	86.0	86.0	430.00
Qatar[1]	660	660	660	670	(10)	(1.5)	550.0	550.0	2,750.00
Saudi Arabia[1,2]	10,250	10,220	10,210	10,010	200	2.0	250.0	250.0	1,250.00
Syria	30	30	30	30	—	—	14.0	14.0	70.00
United Arab Emirates[1]	2,910	2,820	2,834	2,852	(18)	(0.6)	165.0	165.0	825.00
Yemen	160	160	160	160	—	—	—	—	—
Other Middle East	1	1	1	1	—	—	26.5	26.5	132.50
Middle East	**25,799**	**25,591**	**25,391**	**23,983**	**1,407**	**5.9**	**1,718.6**	**1,718.6**	**8,603.47**
Australia	264	281	289	289	(1)	(0.2)	137.1	156.7	767.59
Brunei	107	91	113	117	(4)	(3.6)	33.7	36.8	189.28
China	3,984	4,048	4,146	4,263	(117)	(2.7)	382.6	373.6	2,074.63
India	739	733	736	763	(28)	(3.6)	93.8	87.9	448.38
Indonesia	740	730	741	794	(53)	(6.7)	213.0	213.0	1,065.00
Japan	11	11	11	11	—	—	11.8	12.9	67.70
Malaysia	698	716	726	612	115	18.8	195.7	179.3	940.64
New Zealand	32	39	36	39	(3)	(8.2)	15.9	15.6	74.62
Pakistan	83	80	85	94	(9)	(10.0)	124.3	119.5	602.23
Papua New Guinea	30	30	30	30	—	—	0.5	0.5	2.50
Thailand	269	269	269	242	27	11.3	97.1	118.1	567.57
Vietnam	300	300	300	300	—	—	33.0	33.0	165.00
Other Asia–Pacific	27	32	28	31	(4)	(11.3)	114.2	113.6	569.28
Asia–Pacific	**7,284**	**7,360**	**7,510**	**7,586**	**(76)**	**(1.0)**	**1,452.6**	**1,460.5**	**7,534.41**
TOTAL WORLD	**76,083**	**77,210**	**77,170**	**77,179**	**(9)**	**—**	**10,406.8**	**10,451.8**	**53,432.32**
OPEC	32,590	32,730	32,613	31,618	995	3.1	1,978.1	1,978.1	9,900.97
Offshore Europe	2,756	2,836	2,813	2,658	156	5.9	508.2	546.5	2,749.42

[1]OPEC member. [2]Kuwait and Saudi Arabia production each include half of Neutral Zone. Totals may not add due to rounding.
Source: Oil & Gas Journal. Data available at PennEnergy Research Center.

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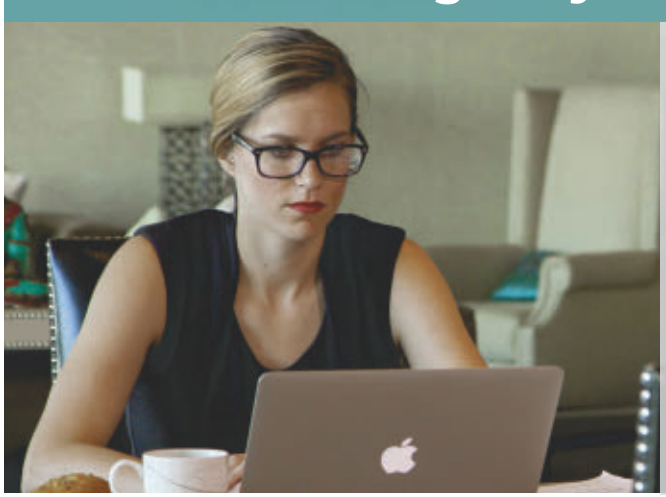

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