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IRAQI OIL POTENTIAL AND IMPLICATIONS FOR GLOBAL OIL MARKETS AND OPEC POLITICS

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Iraqi Oil Potential and Implications

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I. Introduction

In October 2010, then-Iraqi oil minister Hussain al-Shahristani announced that Iraq's proven oil reserves had been increased by 25 percent from 115 billion to 143.1 billion barrels. The timing of the announcement, though also linked to Iraq's newly emerging information about its oil fields, was seen as politically motivated within the context of future oil production sharing agreements of the Organization of Petroleum Exporting Countries (OPEC). Iraq is currently excused from OPEC's quota system but sees its long-term potential in line with the productive capacity of Saudi Arabia. Historically, Iraq's quota has been set at parity with that of Iran, which has a far lower oil reserve base than Saudi Arabia. Iraq has the potential to increase production from 2.5 million barrels a day (b/d) in 2010 to more than 5 million b/d in the next five to 10 years. Iraq has expressed the ambition to reach 10 to 12 million b/d of production by 2017 but this lofty target will be difficult, given mounting political, bureaucratic and infrastructure related barriers.

Rising output from Iraq would likely alter the balance of political power within OPEC and challenge Saudi Arabia's current leadership. This paper will analyze Iraq's oil export strategy and infrastructure development plans and whether they are achievable. Then, the authors will address how rising Iraqi oil exports will influence Baghdad's relations with Saudi Arabia and Iran and change the political balance of power inside OPEC. Finally, the implications for consuming countries like the United States, China, and Japan will be considered.

The return of international oil companies (IOCs) to Iraq has raised the prospect that Baghdad's oil production will indeed be increasing in the coming years. Iraq is expected to see a 200,000 b/d increase in output in 2011, with output expansions already achieved at the Rumaila, Zubair, West Qurna-1, and Majnoon fields. As of spring 2011, Iraq's southern oil fields were producing a total of 1.986 million b/d and total production was pegged at around 2.7 million b/d. Iraq's June 2011 output was 2.56 million b/d, of which 2.27 million b/d were exported.

But foreign oil company officials say that while more output gains are easily achievable based on field performance and geology, infrastructure bottlenecks might make future increases harder to accomplish. The end result may be that ambitious targets set by the government of Iraq may not

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be reached in the short to intermediate term, delaying the time when OPEC will have to address rising Iraqi output.

So far, failure to make substantial progress on enhancing oil production levels has not had deleterious impacts on Iraq's federal budget. That is because Iraq based its \$82.7 billion budget for 2011 on a projected average oil price of \$76.50 and 2.2 million b/d in crude oil exports. Iraq's oil exports averaged 2.225 million b/d in May 2011. Oil prices have been higher than expected in 2011, averaging more than \$100 a barrel. This has left Iraq with 34 percent higher revenues than planned for the first five months of 2011 and could possibly cover the projected budget deficit for this year of \$13.4 billion. Iraqi leaders expect to increase the federal budget to \$98.45 billion for 2012, based on a projected oil price of \$85 a barrel.

Deputy Prime Minister Hussain al-Shahristani recently announced that Iraq was on track to increase its oil production by year's end, when the installation of the first of several new single point mooring system will help increase export capacity by an additional 900,000 b/d, but infrastructure bottlenecks may continue to thwart achievement of even this modest goal. Foreign oil companies say they are continuing to experience major delays and are questioning their ability to execute current contracted production targets given continued infrastructure development problems. Foreign companies are still at an early stage of mobilization, and political decentralization inside Iraq remains a barrier to rapid implementation of project development—especially large-scale repair and construction of infrastructure such as export facilities, pipelines, and water injection facilities—and electricity and natural gas development.¹ Failure to progress quickly on any or all of these necessary facilities will limit the ability of IOCs to translate upstream successes into continued export increases. Foreign firms are finding permitting processes, visa applications, and other bureaucratic approvals cumbersome given the multitude of official agencies at the local and provincial levels.

Broad power-sharing arrangements mean that all political decision-making is extremely slow, and Iraq's bureaucracy lacks the human resources capacity and operational efficiency needed to approve and then tender and award contracts for management and equipment for major oil

¹ Authors' interviews with IOCs working in Iraq.

infrastructure projects in a timely manner. Moreover, entrenched interests weigh in to block key projects, such as oil trucking services whose employees have much riding against the successful completion of new oil pipeline expansions.

Given these barriers to infrastructure development, 2011 production targets set by Iraq's South Oil Co. (SOC) and the IOCs, totaling increases of 600,000 b/d, will be hard to accomplish and even 2012 targets may wind up to be overly optimistic, if current bottlenecks cannot be resolved quickly. Inadequate transportation and export infrastructure, insufficient water supply for crucial water injection requirements, delayed natural gas development, and fears of future reservoir damage are prompting Iraqi officials and the IOCs to revise ideas about the level of oil production that can be accomplished by 2017. Solutions to insufficient water supply have proved particularly daunting, given Turkey's restriction of water flow along the rivers into Iraq and the high expense and large electricity supply required to pump seawater to the southern oil fields and to desalinate it for injection activities.

In addition, the spread of localized demonstrations in Iraq by citizen groups frustrated by the lack of progress on the ground regarding basic services is likely to exacerbate the problems, especially by diverting funds or electric services away from the oil sector or, worse still, by disrupting the fragile coalition government that has supported implementation of the foreign oil contracts.

Against this backdrop of social unrest and bureaucratic barriers, estimates that Iraq will achieve oil production between seven to 12 million b/d by 2017 seem optimistic. More likely, Iraq's production increases will materialize more slowly than projected, giving oil markets and OPEC time to adjust to the rising supplies.

II. Background: Oil Contracts, Output Targets and Existing Bottlenecks

The Iraqi oil ministry has awarded 12 technical service contracts to IOCs since reopening its upstream doors to foreign firms. Eleven contract awards resulted from two crude licensing

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rounds held in June and December 2009;² Baghdad had already awarded a \$3 billion contract to Chinese state firm China National Petroleum Corp. (CNPC) in November 2008 to develop the al-Ahdab field, the first major oil contract Iraq had inked with an IOC since the 2003 U.S. invasion.³ The al-Ahdab agreement with CNPC was actually a renegotiation of a production sharing agreement (PSA) signed with the Chinese firm in 1997.⁴ The deal stipulates that CNPC will begin production at a rate of 25,000 b/d following an initial three-year development phase, build up the output to a peak of 110,000 b/d once a final development plan receives the go-ahead, and maintain that plateau production for at least six years. On June 27, 2011, CNPC announced that it had completed its first phase of production at al-Ahdab, with output reaching 60,300 b/d.⁵

When Iraq conducted its first two licensing rounds and forecast that its technical service contracts with the IOCs would increase Iraq's oil production capacity by nearly 10 million b/d by 2017 from its 2009 capacity of 2.4 million b/d, industry experts questioned both the ability and the logic of Iraq and its foreign partners hitting those targets in the projected time frame. The early negotiations and signing of contracts were fraught with uncertainty as Iraq politicians wrangled for nine months over forming a new government in 2010. Procedures for the contracts' approval by a special governing council were debated and then discarded as impractical (the contracts were ultimately approved by the Iraqi cabinet), leaving open questions of whether they could be challenged by a new government, should the current coalition fail to hold together. Questions also remain about whether all of the contract holders can actually hit the plateau production goals set forth in the contracts.

Twenty-two IOCs participated in Iraq's first upstream round on June 30, 2009, in an attempt to secure winning bids for eight 20-year service contracts for already producing fields. Only one award came from this early round, given a tough negotiating stance taken by the Iraqi oil ministry. The initial failure to secure successful bidders was seen at the time as a political ploy

² *Iraq: The Mother of All Oil Stories*, Global Markets Research (Deutsche Bank: New York, October 4, 2010), 14.

³ "CNPC Signs Al-Ahdab Field Development Contract," *Middle East Economic Survey* LI, no. 46 (November 17, 2008).

⁴ Ruba Husari, "CNPC to Start Work on Iraq Field After Signing Service Contract," *The Oil Daily*, November 12, 2008.

⁵ "CNPC Marks Iraq Milestone With Al-Ahdab," *International Oil Daily*, June 28, 2011.

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meant to appease the country's critics concerned that Iraq might too easily give away its oil reserves to foreigners. The second bidding round, conducted December 11-12, 2009, was a far smoother event than its June predecessor, with 39 foreign firms on hand and 11 IOCs snapping up technical service contracts for seven oil fields that could potentially raise Iraq's crude production by 4.8 million b/d. In the end, the ministry signed deals for total of 11 fields via the two bid rounds, gaining signature bonuses and such low remuneration fees that some analysts have questioned whether all firms can turn a profit.⁶ Under the contract terms, the consortia must boost production from the fields by 10 percent above the agreed baseline within three years in order to begin recouping costs and be paid per agreement.⁷

Six "super" fields will be the cornerstone of Iraq's massive crude oil expansion plans in Rumaila, West Qurna-1, West Qurna-2, Majnoon, Zubair, and Halfaya, which collectively hold nearly 200 billion barrels of oil in place. The giant Rumaila field accounts for one-third of the reserves under contract.⁸ Production from the Rumaila, Zubair, and West Qurna-1 fields alone could collectively boost Iraq's output by 5 million b/d, if plateau production rates are achieved as bid.⁹ If all contracts are implemented as targeted, Iraqi production would hit 12 to 13 million b/d by 2017 (see Table 1).

BP and CNPC were awarded a \$15 billion field development services contract for the 16 billion barrel Rumaila field development project on October 8, 2009, with the Iraqi cabinet subsequently approving the deal later that month.¹⁰ The Rumaila consortium—led by BP with a 38 percent stake, with partners CNPC (37 percent) and SOC (25 percent)—had pledged to raise output from a base of 1.066 million b/d to 2.85 million b/d.

⁶ Deutsche Bank, *Iraq: The Mother of All*.

⁷ "BP Crosses Rumaila Threshold," *The Oil Daily*, January 12, 2011.

⁸ Deutsche Bank, *Iraq: The Mother of All*, 14.

⁹ Peg Mackey, "Companies Bid Far Below Iraqi Ceiling in Round 2," *Energy Intelligence Briefing*, December 13, 2009.

¹⁰ Alistair Dawber, "BP Set for Iraqi Oil License as Cabinet Approves Deal," *The Independent*, October 19, 2009, <http://www.independent.co.uk/news/business/news/bp-set-for-iraqi-oil-licence-as-cabinet-approves-deal-1805329.html>.

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Table 1: Iraqi Oil Fields

Field name	IOCs	Location	Current Production (millions b/d)	Contracted Target Production (millions b/d)	Year to reach plateau target
Rumaila	BP 38%, CNPC 37%, South Oil Company (SOC) 25%	Southern Iraq	1.275 mb/d	2.85 mb/d	2017
Zubair	Eni 32.81%, Occidental Petroleum Corp 23.44%, KOGAS 18.75%, SOC 25%	Southern Iraq, west of Basrah	0.27 mb/d	1.2 mb/d	2015
West Qurna-1	Exxon 60%, Shell 15%, Oil Exploration Co. (OEC) 25%	Southern Iraq, north of Rumaila, west of Basrah	0.325 mb/d	2.825 mb/d	2017
West Qurna-2	Lukoil 56.25%, Statoil 18.75%, SOC 25%	Southern Iraq, north of Rumaila, west of Basrah	0	1.8 mb/d	2017
Majnoon	Shell 45%, Petronas 30%, Misan Oil 25%	Southern Iraq	0.075 mb/d	1.8 mb/d	2017
Halfaya	CNPC 37.5%, Total 18.75%, Petronas 18.75%, Misan Oil 25%	Southern Iraq	0.003 mb/d	0.535 mb/d	2016
Gharaf	Petronas 45%, Japex 30%, Iraqi firm 25%	Southern Iraq	0	0.230 mb/d	2016
Najmah	Sonangol 75%, Ninevah Oil 25%	Ninevah	0	0.110 mb/d	Not available
Qayara	Sonangol 75%, Ninevah Oil 25%	Ninevah	0	0.120 mb/d	Not available
Badra	Gazprom Neft 30%, KOGAS 22%, Petronas 15%, TPAO 7.5%, OEC 25%	Eastern Iraq	0	0.170 mb/d	2020
Al-Ahdab	CNPC 75%, Iraq's State Oil Marketing Organization (SOMO) 25%	Southeastern Iraq	0	0.110 mb/d	2015
Missan Fields Complex (Buzorgan, Abu Ghirab and Fakka)	China National Offshore Oil Corp. (CNOOC) 63.75%, TPAO 11.25%, Iraqi Drilling Company (IDC) 25%	Southeastern Iraq, near Iranian border	0.100 mb/d	0.450 mb/d	2016
Totals			2.048 mb/d	12.2 mb/d	

Source: Baker Institute, Deutsche Bank, Energy Intelligence Group

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To secure its Rumaila win, the BP-CNPC consortium not only acceded to the ministry's relatively sparse incremental barrel fee, it also bid an aggressive minimum production plateau target of over 1.1 million b/d higher than the 1.75 million b/d target suggested by Iraqi negotiators.¹¹ BP may have gambled on accepting the harsh remuneration fee for several reasons, including the sheer size of Rumaila's development; the fact that the consortium will be able to negotiate different fees for some other discovered but undeveloped reservoirs at a later date; that partner CNPC has ample experience with mature water flood programs; that BP can tap into the less expensive Chinese oil service industry through CNPC; and that the consortium quietly attained a cost recovery element that renders the deal more commercial.¹²

On January 11, 2011, BP reported that production from the Rumaila field had surpassed the 10 percent increase required for BP and CNPC to begin recouping costs and to start getting paid for their development work. Production at the field is running above 1.275 million b/d, a 20 percent boost over the 1.066 baseline rate that the group had accepted in December 2009. Hitting that level proved costly, with that first phase of drilling and production totaling some \$1.5 billion.¹³ BP's goal is to have Rumaila reach output of 1.35 million b/d by the end of 2011,¹⁴ with its contractual commitment to hit 2.85 million b/d of plateau production by 2017.¹⁵ BP has slated to drill more than 50 wells during 2011, but is facing potential problems in the coming year or so if the Shell-led project to manage associated gas from the Rumaila, Zubair, and West Qurna-1 fields isn't sorted out and approved. Roughly half of the 700 million cubic feet a day (mmcf/d) of gas that is produced along with crude output from Rumaila is being flared, with 35,000-50,000 b/d of additional liquids being burned off. If and when the BP-led group can reach Rumaila's plateau crude production of 2.85 million b/d, the field would theoretically be producing more than 2 billion cubic feet a day (bcf/d) and nearly 300,000 b/d of liquefied petroleum gas (LPG).¹⁶ CNPC announced at the end of May 2011 that the Chinese firm had lifted its first oil cargo from

¹¹ "Baghdad Ambushes Upstream Investors With Fees Demands," *Middle East Economic Survey* LII, no. 27 (July 6, 2009).

¹² "BP Submits Rumaila Development Plan," *Middle East Economic Survey* LII, no. 30 (July 27, 2009).

¹³ "Iraq: One Year Later," *Energy Intelligence Finance*, January 19, 2011.

¹⁴ "Iraq Export Limits Prompt Output Questions," *International Oil Daily*, July 1, 2011.

¹⁵ "BP Crosses Rumaila Threshold," *The Oil Daily*, January 12, 2011.

¹⁶ "Zubair and Rumaila Lead Iraqi Capacity Charge," *Middle East Economic Survey* LIII, no. 50 (December 13, 2010).

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Iraq as repayment for its investment in the Rumaila project, amounting to 2 million barrels of Basrah Light.¹⁷

A second consortium operating the four-billion-barrel Zubair field has similarly shown early production successes. The consortium—led by Eni with 32.81 percent, and including partners U.S. firm Occidental Petroleum Corp. (23.44 percent), Korean firm KOGAS (18.75 percent), and Iraqi firm SOC with the requisite 25 percent—has committed to spending more than \$20 billion to ramp up output from the Zubair field from its 2009 production level of 183,000 b/d to 1.2 million b/d in six years and maintain that output for seven years.¹⁸ The consortium has committed to drilling more than 200 wells, building treatment facilities and the necessary collection network as well as upgrading existing plants.¹⁹

The Eni-led group is the first of the consortia operating in Iraq to go into a cost recovery and remuneration phase, stating on December 5, 2010, that it had exceeded production of more than 10 percent of the initial production rate of 183,000 b/d. In fact, output from Zubair had already been exceeding the 201,000 b/d 10 percent target threshold since October 2010, when average output for the month reportedly stood at 236,000 b/d.²⁰ By mid-summer 2011, production from Zubair had reportedly reached 270,000 b/d.²¹

A third consortium, led by ExxonMobil (60 percent) and including Shell (15 percent) and Iraq's Oil Exploration Co. (OEC) (25 percent), has also surpassed initial targets at the 8.7 billion barrel West Qurna-1 field. The consortium signed the final contract with the Ministry of Oil on January 25, 2010. It has agreed to raise output from a baseline of 244,000 b/d to 2.825 million b/d. It was reported in early spring 2011 that the consortium had already surpassed that targeted output by producing 268,000 b/d,²² with levels having risen even further to around 325,000 b/d by mid-

¹⁷ "CNPC Gets Iraqi Pay Day," *Oil Daily*, June 1, 2011.

¹⁸ "Iraq Inks USD20b Zubair Oil Field Deal," *Bloomberg*, January 23, 2010, <http://www.ordons.com/asia/middle-east/2477-iraq-inks-usd20b-zubair-oil-field-deal.html>.

¹⁹ "Eni Inks Iraq's Zubair Field," *The Oil Daily*, January 25, 2010.

²⁰ "Zubair and Rumaila Lead Iraqi Capacity Charge," *Middle East Economic Survey* LIII, no. 50 (December 13, 2010).

²¹ "Iraq Export Limits Prompt Output Questions," *International Oil Daily*, July 1, 2011.

²² "Iraq W. Qurna 1 Output to Rise 10 pct in Weeks," *Reuters*, March 3, 2011, <http://uk.reuters.com/article/2011/03/03/iraq-oil-exxon-idUKLDE72212K20110303>.

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summer.²³ The deal also includes development of the Mishrif reservoir and the formations of Yamama, Khasib, S'adi, and other smaller reservoirs.

Shell has also made progress getting the huge Majnoon field into production. Shell, the operator of the field with 45 percent, is partnered with Malaysia's Petronas (30 percent) and Iraq's state firm Misan Oil (25 percent) in the Majnoon project. The Shell-led consortium has pledged to boost the field's nominal 2009 output of less than 50,000 b/d to a plateau production target of 1.8 million b/d.²⁴ By midsummer 2010, Shell and its partners had bumped the Majnoon field's output to 75,000 b/d. The consortium is intent on drilling 15 wells over the coming two years to boost production to 175,000 b/d by the end of 2012 and hired Halliburton in November 2010 to conduct the drilling. The Shell-led consortium will begin recouping its costs from Majnoon when output reaches 120,000 b/d next year.²⁵

By contrast, production has not started yet at the super-giant West Qurna-2 field complex that is to be developed by Russian firm Lukoil (56.25 percent), Norway's Statoil (18.75 percent), and SOC (25 percent). The consortium has agreed to increase the field's output to 1.8 million b/d by 2017 and maintain that output level for seven years. Analysts have questioned the economics of the West Qurna-2 deal for Lukoil and Statoil—the consortium is estimated to earn around 56 cents a barrel after factoring in the 35 percent tax on the remuneration fee and the 25 percent stake taken by the Iraqi state oil partner, in this case, SOC.²⁶ The consortium has said it expects to begin recouping costs when the field reaches 120,000 b/d.²⁷

Drilling on West Qurna-2 was to have started in March 2011, with first production slated for the end of 2012.²⁸ However, Lukoil has subsequently bumped the production start-up date at West Qurna-2 to the beginning of 2013. According to Lukoil President Vagit Alekperov, the Lukoil

²³ "Iraq Export Limits Prompt Output Questions," *International Oil Daily*, July 1, 2011.

²⁴ Peg Mackey, "Companies Bid Far Below Iraqi Ceiling in Round 2," *Energy Intelligence Briefing*, December 13, 2009.

²⁵ "First Output Milestones Loom for Iraqi Fields," *Petroleum Intelligence Weekly*, November 22, 2010.

²⁶ Mackey, "Companies Bid Far Below."

²⁷ "FACTBOX: Oil Deals Between Iraq and Global Majors," *Reuters*, February 26, 2010,

<http://www.reuters.com/article/2010/02/26/iraq-election-oil-deals-idUSLDE61P02H20100226?pageNumber=1>.

²⁸ Statoil, "Lukoil and Statoil Sign Contract for the West Qurna 2 Field in Iraq," news release, January 31, 2010, <http://www.statoil.com/en/NewsAndMedia/News/2010/Pages/LukoilAndStatoilSignsWestQurnaContract.aspx>.

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consortium is to complete all tenders for the West Qurna-2 project in September 2011, covering drilling and construction of the crude oil treatment unit and transportation units.²⁹ The work plan for 2011 had included drilling two appraisal and two exploration wells and rehabilitating a number of shut-in wells.

A consortium led by CNPC (37.5 percent) and including Total and Petronas, each holding 18.75 percent shares, and Misan Oil Co. taking the state's 25 percent interest was awarded the last of Iraq's "super six" fields in the second licensing round, beating out three other consortia. CNPC and its partners will expand the 4.1 billion barrel Halfaya field's output from around 3,000 b/d to a plateau production target of 535,000 b/d by 2016. The Halfaya field is slated to reach production of 70,000 b/d by the end of 2011 or early 2012.³⁰

The 900 million barrel Gharaf field will be developed by a consortium formed by Petronas and Japan Petroleum Exploration Co. (Japex) with a production plateau pledge of 230,000 b/d to be reached by 2016. Petronas, with a 45 percent stake, serves as operator of the project, with partners Japex holding a 30 percent interest and an Iraqi firm taking the 25 percent state share. In February 2011, state-run Japan Oil, Gas and Metals National Corp. (JOGMEC) announced that it was planning to provide around \$198 million of capital to the Gharaf field development project and in return would take a less than 50 percent stake in Japex's wholly-owned subsidiary that is participating in the project. The Petronas-led consortium has stated that it expects to invest between \$7-8 billion in developing the Gharaf field and that oil output is to start flowing in 2012 at 50,000 b/d.³¹

Other small field awards include heavy oil fields Najmah and Qayara to be developed by the Angolan state oil firm Sonangol, with a 75 percent stake in both projects, and Iraqi firm Ninevah Oil with 25 percent stake. The two fields—together holding estimated reserves of 1.7 billion barrels—are located in the violence-prone Nineveh province. The deal includes a plateau production target of 110,000 b/d for Najmah and a 120,000 b/d plateau output goal for Qayara.

²⁹ "Lukoil Outlines Iraqi, Cote d'Ivoire Plans," *Nefte Compass*, June 23, 2011.

³⁰ "Total Follows Unorthodox Path in Middle East," *Petroleum Intelligence Weekly*, December 27, 2010.

³¹ "Japan's JOGMEC to invest in Iraq oilfield project," *Reuters*, February 10, 2011, <http://in.reuters.com/article/2011/02/10/crude-iraq-jogmec-idINTOE71903W20110210>.

Sonangol is reportedly looking for other international partners to join into a consortium and plans to increase output from the two fields to 50,000 b/d in 2013, of which 20,000 b/d is to be pumped from Najmah and 30,000 b/d from Qayara.

In addition, a Gazprom-led consortium won a technical service contract for the 100 million barrel Badra field, located near the Iraqi border with Iran in eastern Iraq. Gazprom Neft, the field operator, holds a 30 percent stake in the project, and it is joined in the consortium by South Korea's Kogas (22 percent share), Petronas (15 percent), Turkey's TPAO (7.5 percent), and the Iraqi state firm OEC (25 percent).³² Production at the field is to begin in 2013 and is expected to reach a plateau output of 170,000 b/d by 2017. In June 2011, Gazprom Neft stated that it had been given the authorization from the Iraqi government to start drilling at the Badra field, with state-run NOC approving a drilling contract between Gazprom Neft and Schlumberger.³³

Finally, a CNOOC-led consortium signed a deal to develop three Missan province fields—Buzorgan, Abu Ghirab, and Fakka—that are located near the Iranian border in southeastern Iraq. CNOOC holds a 63.75 percent stake in the project, with TPAO taking an 11.25 percent share and the Iraqi Drilling Co. (IDC) representing the state with a 25 percent interest. The consortium is committed to increasing the Missan fields' production from around 100,000 b/d currently to 450,000 b/d in six years³⁴ but has gotten off to a slow start³⁵ at the fields, which are problematically located in a border area disputed by Iran. In December 2009, Iranian troops briefly occupied an Iraqi well in the Fakka field, but withdrew after a sharp rebuke from the Iraqi government. Tehran has now formally requested negotiations to demarcate the borders.³⁶ Iraqi production is currently estimated at 2.7 million b/d, with the southern fields producing roughly 1.986 million b/d (see Table 1 above). Northern Oil Company is producing about 630,000 b/d from Kirkuk and surrounding fields. Oil exports from within the area controlled by the Kurdistan Regional Government (KRG) reached 90,000 b/d in February 2011 and have continued to climb

³² Gazprom Daily Report, "Gazprom Neft Announces First Tender Results in Iraq," November 10, 2010, <http://gazprom.einnews.com/pr-news/242556-gazprom-neft-announces-first-tender-results-in-iraq>.

³³ "Gazprom Neft Gets OK for Iraqi Contract," *Nefte Compass*, June 23, 2011.

³⁴ "Baghdad Signs Final Misan Development Contract With CNOOC and TPAO," *Middle East Economic Survey* LIII, no. 21 (May 24, 2010).

³⁵ Peg Mackey, "Edison Going Cold on Iraq's Akkas Gas Field," *The International Oil Daily*, September 30, 2010.

³⁶ Hassan Hafidh, "Consortium Seals Iraq Deal," *Wall Street Journal*, May 17, 2010, <http://online.wsj.com/article/SB10001424052748703315404575249863739648230.html>.

to reach about 150,000 b/d in July.³⁷This includes shipments from the two producing fields in the KRG territory—Taq Taq and Tawke.

The fate of previously announced production increases outside of the Kurdish area is looking increasingly insecure as infrastructure bottlenecks may prevent the IOCs undertaking technical service contracts from actualizing possible additional increases that would take Iraqi production beyond current production of 2.7 million b/d. Physical limits to export infrastructure in southern Iraq has prompted the Iraqi government to look at alternative solutions, including asking IOCs to cut back operations.

Iraq has two main crude oil export terminals located in southern Iraq along the Persian Gulf. Basrah Oil Terminal, formerly known as Mina Al-Bakr, is Iraq's largest oil terminal, with four berths that can take in very large crude carriers (VLCCs). Most of the damage to Basrah Oil terminal during the Gulf War has been repaired. Located 12 km east of the Basrah Oil Terminal, the Khor Al-Amaya terminal was heavily damaged during the 1980-1988 Iran-Iraq War and subsequently completely destroyed during Operation Desert Storm in 1991. The Khor Al-Amaya terminal has also experienced explosions and attacks in recent years. Export capacity rates for Khor Al-Amaya were originally 1.2 million b/d. At present, Iraq can export about 1.8 million b/d of crude oil from these southern Basrah terminals.

The Iraqi government is currently proceeding with a plan to install additional buoy systems to increase export capacity at southern Basrah ports. Each single buoy mooring system could add as much as 900,000 b/d of capacity. The first buoy system is in design stages at present and Iraqi government sources say financing has been arranged, but it remains unclear how long it would take to put new buoy systems in place to supplement the Basrah Oil Terminal. Iraqi officials announced on television in June 2011 that new export systems at the Basrah Oil Terminal and at Khor Al-Amaya would eventually facilitate 4.5 million b/d of exports from southern ports, The IOCs are also seeking approval to build a new oil pipeline collection from the southern oil fields, but all export related projects have been proceeding very slowly.

³⁷ “Signs of Progress Emerge on Iraq’s Long-Delayed Oil Legislation,” *Oil Daily*, July 15, 2011.

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Iraq has an operational export pipeline to Turkey. The Kirkuk-Ceyhan pipeline has two parallel lines that originally had a total operational capacity of 1.6 million b/d, but pumping stations and other infrastructure on the lines were damaged by war. Reconstruction on the pipeline in recent years has restored some capacity, though many pumping stations and other vital infrastructure remain damaged. There have been occasional attacks on the line since then.³⁸ Sources say the pipeline can only operate at around 400,000 b/d at present.³⁹

Iraq's Strategic Pipeline, running between Iraq's northern and southern fields from Fao to Haditha, was built in 1975. The north-south system allows Baghdad to export Kirkuk crude out of the Gulf and for Southern Rumaila crude to be piped for export out of Turkey. The Strategic Pipeline had a design capacity of 800,000 b/d but due to deterioration can only carry between 200,000 b/d and 400,000 b/d currently.

The 1.65 million b/d Iraqi-Saudi (Ipsa-2) pipeline was closed indefinitely by Riyadh during the Gulf War. Iraq is currently in talks with Syria about refurbishing a 1.25 million b/d export pipeline through Syria.

Beyond the immediate problem of export pipeline and port infrastructure, another obstacle that may prevent future progress in the oil field expansions is lack of adequate water supplies for projects. The construction of a shared water injection facility at Umm Qasr is an integral component of the development of the Rumaila, West Qurna-1, and Zubair fields and the facility will be essential for maintaining reservoir pressure and offsetting production declines. Because the need is most acute at the West Qurna-1 field, operator ExxonMobil is overseeing the project. Work on the water injection facility was to have begun in early 2011 on the initial phase of the project—involving injecting 2 million b/d of seawater, mostly into West Qurna-1—but the project continues to face major delays.

In the spring of 2011, localized social protests in Iraq focused squarely on the country's lack of services, including severe shortages of electricity. Political leaders promised that electricity

³⁸ Ibid.

³⁹ Authors' interviews with Iraqi officials.

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services to the residential sector would take precedence, creating new problems for industry's ability to mobilize the electricity services needed for the water injection program. Power generation is needed both to pump seawater north to the southern oil fields as well as to fuel desalination plants that will be required to convert seawater into usable water for injection purposes. With even less electricity now expected to be made available from the national power grid for oil operations, IOCs are currently seeking new solutions to generate the electricity needed for the water injection program.

The resolution of natural gas handling strategies is another barrier to steady development of the southern Iraqi oil fields. In July 2011, Iraq initialed a \$17 billion Shell-led joint venture that would capture flared natural gas from Iraq's southern fields for use in domestic markets and eventual export but political delays continue to plague natural gas development. The deal, which still needs government approvals, will continue to fall under intense scrutiny because of its intent to facilitate the exporting of Iraqi gas. The country's severe shortages of electricity had led many politicians to back off any suggestions for programs that would favor natural gas exports over provision of domestic electricity services. This is similarly calling into question whether it will be politically feasible to mount a major gas export initiative in Iraq any time soon. There are legal and economic aspects of the deal that must be sorted out as well, particularly since the country's new oil and gas law has been stalled for two years and because under the old oil and gas law passed in Saddam Hussein's regime, only SOMO is allowed to export natural gas or crude oil.⁴⁰ Moreover, other foreign investors are also unhappy about turning natural gas production over to Shell, and may lobby for the opportunity to compete for the right to utilize the gas from their own projects.⁴¹ Baghdad has tentatively delayed its 4th bid round tender for exploration for natural gas until early 2012. The gas-rich Anbar region is also pursuing its own provincial level oil and gas exploration deals which could also complicate future natural gas resource development and export plans.

Given the export constraints and the barriers to water- and gas-injection and gas handling infrastructure in southern Iraq, many analysts are downsizing estimates of what production levels

⁴⁰ "Shell Iraq Natgas Venture Delayed by Legal Issues," *LNG Intelligence*, Energy Intelligence Group, February 16, 2011.

⁴¹ Authors interviews with Iraqi officials and IOC operators.

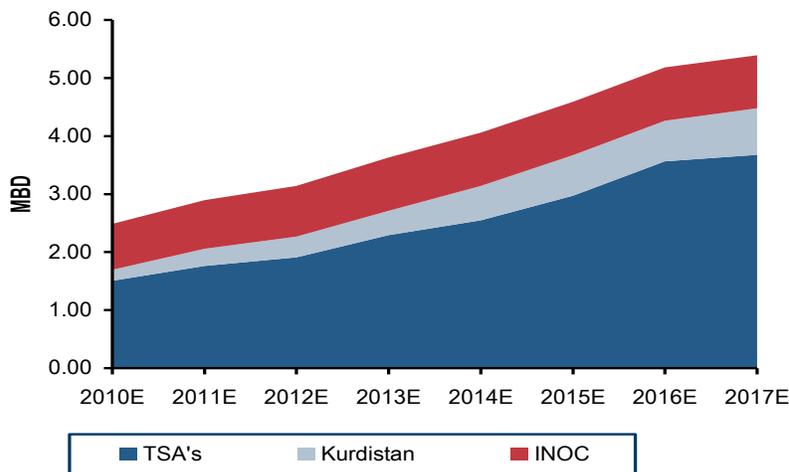
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can be achieved by the IOCs by 2017. Although the consortiums have three years from the date of the contract signature to reach their first production goals, at the same time they must submit final development plans, so any excessive delays will ultimately affect the foreign firms' production schedules. Iraqi government officials and IOC officials recognize the issues and there is discussion that the service contract targets and schedules will have to be renegotiated.

Conservative forecasts suggest that given the level of disrepair in export infrastructure and other constraints, Iraq may have trouble exceeding its old production levels of 3.6 million b/d by 2017. More optimistic accounts estimate Iraq will be able to reach 7.2 million b/d by 2017. General expectations are that Iraq will be able to reach 4 to 5 million b/d of output in the next five to 10 years.

Figure 1: A Typical Forecast for Iraqi Production to 2017

TSA's-Technical Services Agreements



Source: Credit Suisse

OPEC sources say Iraq will not be asked to consider rejoining the production quota system until it has restored output to its pre-Gulf War 3.6 million b/d level. Official statements reflect this sentiment. OPEC Secretary General Abdalla El-Badri said in a briefing at the end of OPEC's October 2010 conference in Vienna that any decision by OPEC's 12 member countries about granting Iraq a new quota would not likely occur until 2013 or 2014. El-Badri suggested that

Iraqi production of “4 million or 5 million” b/d would “trigger that discussion of how to accommodate them in any future quota agreement.”⁴²

III. OPEC Aspirations and Deliberations

While it is clear that Iraq’s estimates for its proven crude oil reserves have been outdated and needed to be reassessed, Baghdad’s 2010 announcement of new reserve figures that are 25 percent higher at 143.1 billion barrels was seen as politically oriented and aimed to lay the groundwork for an eventual Iraqi claim for a higher oil production quota within the OPEC production sharing system. Iraq’s aims for a reserve reassessment are twofold: to demonstrate that its oil potential surpasses that of Iran, which used to hold quota parity with Baghdad, and to establish its status as a producer with long-term potential similar to Saudi Arabia.

Iraq’s previous reserves estimate was fashioned from 1970s methodology and assumed an average reserve recovery rate of about 25 percent. More advanced technology today, however, can result in recovery rates of 40 percent or more. The revision came after a review of the acreage of 66 of the country’s oil fields. Most of the increase in Iraq’s reserves estimate was the result of a near doubling of the West Qurna field’s reserves to 43.3 billion barrels, based on a recovery factor of 42 percent. Then-Iraqi oil minister Hussain al-Shahristani noted that the new Iraqi reserves figures are conservative and that figures will be upgraded as future field development work is completed.⁴³

Not surprisingly, Iran announced ten days after Iraq’s declaration that Iran had boosted its proven crude oil reserves estimate to 150.1 billion barrels and, according to Iranian Oil Minister Massoud Mirkasemi, that figure would likely be revised upwards by the end of this year. The fact that Iran’s announcement of its new reserves estimates came three days ahead of an OPEC ministerial conference was not lost on industry analysts, who saw this as part and parcel of the

⁴² David Blair, “Opec Considers Adding Iraq to Quota System,” *Financial Times*, October 15, 2010, <http://www.ft.com/cms/s/0/480d277c-d852-11df-a7b4-00144feabdc0.html#axzz1GQwpQDT0>.

⁴³ “Field-by-Field Details of Iraq’s Reserves Upgrade,” *Energy Intelligence Briefing*, November 1, 2010.

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two longtime rivals fighting over quotas.⁴⁴ In fact, Iraq's delegate to OPEC, Falah al-Amri, intimated as much, telling *Reuters* on the day after Iraq had announced its new reserves estimate that "The new proved reserves figure will entrench Iraq's position at OPEC and in the future help Iraq get a higher export quota in OPEC."⁴⁵ Saudi oil minister Ali Naimi, not to be outdone in the battle of the reserves, announced in mid-October 2010 that the giant Ghawar field still holds 88 billion barrels of oil reserves—a figure substantially higher than the approximately 50 billion barrel figure traditionally associated with the field. In a passing reference to the revised reserve figures supplied by Iran and Iraq, Naimi was quoted as saying, "So, the world's oil reserves are plentiful. Fossil fuels—whether they are carbon oil or gas—are going to be with us whether we like it or not for the next 30-50 years, if not longer." When asked about whether the kingdom was seeing the end of the era of "easy oil" with the Saudi decision to develop the heavy-oil offshore 900,000 b/d Manifa field, the Saudi oil minister responded by saying, "Well, I am sorry to disappoint people, but easy oil is not over."⁴⁶

As for Iraq's return within OPEC, Iraqi officials and politicians suggest that Baghdad, when it is assigned a quota, will not accept quota parity with Iran, but will rather see the country's long-term potential in the same class as OPEC heavyweight Saudi Arabia.⁴⁷ Then-Iraqi oil minister al-Shahristani made it clear in statements in spring and summer 2010 that Iraq expected an OPEC limit of no less than the group's biggest member.⁴⁸ In an interview with *Petroleum Intelligence Weekly* in March 2010, when questioned directly about whether Iraq's OPEC quota should be the same as that of Saudi Arabia, Shahristani couched his answer but still got his point across: "I'm not saying equal. It should not be less than any other member based on reasonable criteria. It would depend on demand at that time, how much is being produced outside Opec, what is required of Opec and how that is going to be distributed among its members."⁴⁹

⁴⁴ "Iran Ups Oil Reserves Estimate, Passes Iraq," *Reuters*, October 11, 2011, <http://af.reuters.com/article/energyOilNews/idAFMOS14321020101011?pageNumber=1&virtualBrandChannel=0>.

⁴⁵ Emran Hussein, "Iraq Ups Crude Reserve Estimate to 143bn Barrels," *ArabianOilandGas.com*, October 5, 2010, <http://www.arabianoilandgas.com/article-7897-iraq-ups-crude-reserve-estimate-to-143bn-barrels/>.

⁴⁶ Alex Schindelar and Barbara Shook, "Saudi Minister Bumps Up Ghawar Reserves," *The International Oil Daily*, October 20, 2010.

⁴⁷ Authors' interviews with Iraqi officials and other Gulf OPEC delegates.

⁴⁸ "Shahristani to Stay as Iraq Oil Minister," *ThePeninsulaQatar.com*, December 19, 2010, <http://www.thepeninsulaqatar.com/business-news/136087-shahristani-to-stay-as-iraq-oil-minister.html>.

⁴⁹ "Iraq's Al-Shahristani: I've Done My Share," *Petroleum Intelligence Weekly*, March 22, 2010.

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In December 2009, while attending the OPEC conference in Luanda, Angola, Shahrstani warned that Iraq has been “deprived of its fair share” of oil output for some time. The then-Iraqi oil minister stated that the organization should around 2011 establish “the basis of the (quota) allocation.” Shahrstani was quoted as saying that “Countries’ needs for reconstruction should be one of the top criteria, in addition to countries’ capacity of production, countries’ reserves.”⁵⁰ Indeed, other Iraqi officials and politicians privately suggest that OPEC countries such as Saudi Arabia, which benefited with higher production by replacing Iraq’s production in the 1990s and 2000s, should weigh that benefit in setting Iraq’s future quota. In effect, Iraq should get a disproportionately higher quota down the road to make up for its economic suffering and decades-old loss of market share.

Shahrstani also made it clear in the summer of 2010 that there was no immediate need for dialogue to start bringing Iraq back into the OPEC quota fold. “Nobody is really in a rush to discuss (quotas) yet, but once we pass 3.5 or 4 million barrels a day in two to three years time, we should enter into a very constructive discussion about new market shares,” Shahrstani was quoted as saying.⁵¹

Other OPEC delegates confirm that the subject of Iraq’s oil quota will be off the table for some time, until the country’s production has exceeded 3.6 million b/d and its economy is back on track. At present inside OPEC, delegates are skeptical of how long it will take Iraq to return to the 4 to 5 million b/d level and believe the issue won’t have to be tabled for many years, if ever.

Still, Saudi Arabia is likely to watch developments in Iraq with great interest and has shown in the past that it will act to protect its long-term interests. Iraqi-Saudi relations are currently relatively weak. Saudi foreign policy has focused on limiting the rise of Shi’ite power throughout the Middle East and curbing Iran’s regional influence, and this is reducing Riyadh’s interest in

⁵⁰ Javier Blas, “Iraq Readies for Fight Over Opec Quota Allocations,” *Financial Times*, December 22, 2009, <http://blogs.ft.com/energy-source/2009/12/22/iraq-readies-for-fight-over-opec-quota-allocations/>.

⁵¹ Barbara Surk, “Iraq Says it May Abide by OPEC Quotas in 2-3 Years,” *Associated Press*, August 29, 2010, <http://finance.yahoo.com/news/Iraq-says-it-may-abide-by-apf-3166129155.html?x=0&.v=1>.

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strengthening ties with Iraq's Shi'ite leader Nouri Al-Maliki.⁵² Saudi Arabia's willingness to send troops to nearby Bahrain to suppress peaceful public protests by Bahraini Shias seeking greater political participation was aimed not only to draw the line against Iranian expansionism but also to lower the risks that Shia unrest not spread to within its own borders where Shia populations have staged protests of their own.⁵³

Within OPEC, Saudi and Iraqi delegations rarely coordinate or convene privately. Rather, Iraq's delegation tends to caucus with Iran. At OPEC's bitter June 2011 meeting, Iraq openly supported Iran in opposing a Saudi-led push for a major 1 to 1.5 million b/d output increase. In addition to statements made during OPEC deliberations backing Iran in opposing the Saudi production proposal, Iraqi Oil Minister Abdul Kareem Luaiby told the press that the "current oil price does not pose a threat to economic growth" and stated that Iraq did not believe OPEC had any reason to increase its production.⁵⁴ The United States and other industrialized countries had been pressuring OPEC to boost output. Iraq's preference for higher oil prices reflects both its financial situation, where high oil prices are preventing budgetary woes, as well as recognition that its production is relatively static, obviating any need for Baghdad to concern itself yet with higher quota discussions. As discussed, Iraq remains outside the quota system until its production starts to climb significantly. Still, despite its support for the Iranian position at the June OPEC meeting, strong Iraqi-Iranian tensions over oil policy also exist, and Iraq responded angrily to Tehran's heavy-handed military intervention at the Iraqi border Fakka field. Iraq has made clear that it will not consider Tehran's sensibilities when it comes to developing border areas.

As Iraq climbs closer to having its output top 5 million b/d or more, Baghdad will have to consider the fate of other countries that have challenged Saudi oil power in the global arena.

⁵² For discussion of this perspective, see Nawaf Al-Obaid, "Amid the Arab Spring, A US-Saudi split" The Washington Post, May 15, 2011 where Mr. Al-Obaid notes that Saudi Arabia has warned the United States of a "tectonic shift" where the kingdom "intends to pursue a much more assertive foreign policy, at times conflicting with American interests." http://www.washingtonpost.com/opinions/amid-the-arab-spring-a-us-saudi-split/2011/05/13/AFMy8Q4G_story.html The kingdom made clear it is pursuing its own security agenda in Bahrain, for example, and is gearing up for an additional \$100 billion in military spending. Also for discussion of high level official Saudi statements regarding the Shia-Sunni divide, see <http://www.bakerinstitute.org/publications/IEEJIran.pdf>.

⁵³ Michael Slackman and Ethan Bronner, "Saudis, Fearful of Iran, Send Troops to Bahrain to Quell Protests," *New York Times*, March 15, 2011.

⁵⁴ Hassan Hadidh, "Iraqi Oil Minister Says No Need for OPEC to Increase Production," *Dow Jones Newswire*, June 7, 2011.

Other geopolitically prominent regimes that have taken on this ambition—such as the Shah’s Iran, Rafael Caldera’s Venezuela, and even the Soviet Union—all failed to outlast the Saudi regime and their countries (Iran, Venezuela, and the Soviet Union) saw their oil industries greatly weakened by tumultuous oil markets highly influenced by Saudi pricing and production policies.

Saudi Arabia’s response to Venezuela’s ambitious campaign to increase oil productive capacity from 2.8 million b/d in 1991 to 7 million b/d by 2010 may serve as a warning to those Iraqi politicians who are willing to assert that Iraq should raise output to 10 or 12 million b/d and even to take on the global oil swing producer role. Saudi Arabia, concerned with the long-range implications of Venezuela’s market expansion on the kingdom’s ability to maintain its sales to the United States, increased production.⁵⁵ Venezuela never reached its 7 million b/d target. In 1997, as Caracas reached about 3.7 million b/d of production and overtook Riyadh as the United States’ largest supplier, the Saudi government began high level negotiations with the Venezuelan government and quietly tried to pressure Venezuela into compliance with the country’s OPEC quota of 2.3 million b/d.

The Venezuelans ignored the Saudi efforts and persisted in their all-out production policy, continuing to ratchet up output and flaunting what they were doing against the Saudi pressure.⁵⁶ As a consequence, Saudi Arabia turned on its own taps, raising its production from slightly above its 8 million b/d quota in September 1996 to 8.5 million b/d for virtually all of 1997.⁵⁷ The Saudi intention was to bring down prices as a way of punishing Caracas and inducing Venezuela to cooperate. The Saudis succeeded more than they could have wished. The combined overproduction of the two countries turned out to be about exactly the amount of extra oil inventory that built up in the world, some 400 million barrels, and with it a price collapse from \$27 (West Texas Intermediate crude benchmark) in the spring of 1997 to \$10 in the winter of 1998-1999. The disciplining of Venezuela has had obvious consequences, including helping to

⁵⁵ David Bird, “Saudis Not About to Concede Any Markets,” Dow Jones Co., October 16, 1997; “Saudis Subdue Doubters by Plowing Ahead with Crude Production,” *The Oil Daily*, January 8, 1998. Also, see discussion of this subject in Rapporteur’s Report, Harvard University Oil and Security Executive Session, May 14, 2003, Environment and Natural Resources Program, Belfer Center for Science and International Affairs.

⁵⁶ Bird, “Saudis Not About to Concede”; and “Saudis Subdue Doubters.”

⁵⁷ For data, see the PIW/OMI database at www.energyintel.com.

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induce a change in the regime in Venezuela, a radical reduction of Venezuelan upstream capital expenditures, and a withering of the country's own production capacity to under 2.4 million b/d currently. The lesson many inside OPEC have drawn from the Venezuelan price war was that Riyadh will act to make sure that no fellow OPEC countries will gain the financial or oil capacity wherewithal to threaten the kingdom.

However, it is hard to assess the final outcome of Iraq's evolving relations with Saudi Arabia and their cooperation regarding oil markets given the high level of uncertainty now facing both countries. Both Iraqi and Saudi leadership are in transition. Faced with growing social unrest in the country, Iraqi Prime Minister Nouri al-Maliki has tentatively indicated he will not run for a new term of office, and the future political coalitions for Iraqi power sharing remain uncertain. Saudi Arabia's King Abdullah is in failing health, and the kingdom may also have to consider a new transition of power in the coming years. Thus, it is hard to predict how internal political changes over time might affect Saudi-Iraqi oil cooperation down the road.

Also, there remain questions about whether Saudi Arabia will continue to make the massive investments it will take for the kingdom to carry enough spare productive capacity to make credible a threat to destabilize oil markets through an oil price war. As Robert McNally and Michael Levi point out in their *Foreign Affairs* piece "A Crude Predicament," "With US-Saudi ties having frayed over the last decade, Riyadh's motivation to continue contributing to its security partnership with the United States by maintaining spare crude capacity has diminished...today, Riyadh is less certain about the strength of its alliance with Washington and may thus be less willing to incur the costs and risks involved in contributing to the US-Saudi partnerships in these ways (flooding the oil market)."⁵⁸ But McNally and Levi's analysis fails to recognize that Saudi Arabia's interest to carry spare capacity goes beyond its security relationship with the United States.

For the past decade, Saudi Arabia has failed to commit to a sufficient program of oil field expansion to maintain its ability to dramatically lower oil prices and that lack of foresight is now

⁵⁸ Robert McNally and Michael Levi, A Crude Predicament: The Era of Volatile Oil Prices, *Foreign Affairs*, July/August 2011, p. 100.

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presenting problems for Riyadh. Indeed, among the best lever Saudi Arabia had to influence Iran's policies was its ability to dramatically lower the price of oil. Iran is dependent on oil revenues for over 65 percent of government revenues. The kingdom, with its plentiful foreign financial reserves, could have been in a position to withstand a period of low oil prices to diminish Iranian power in the region. But it is currently unable to use this strategic weapon against Tehran because oil markets both do not believe in Saudi's market power now nor in its power in the future. The market is convinced that Saudi Arabia has limited spare capacity and therefore oil prices have remained high, despite Saudi announcements of production increases. In essence, project delays and problems in the kingdom's upstream sector are thwarting the kingdom's regional influence to contain Iran and limiting its global power. It remains to be seen how Saudi Arabia will respond to this challenge and whether it will opt to allocate higher funding to oil field expansion in the future.

It is in the kingdom's long term geopolitical and security interests to maintain its leadership role in the global oil arena. Riyadh's ability to threaten other oil producers that it could flood the oil market is a critical aspect buttressing its leadership role inside OPEC and gives the country regional clout as well. Saudi Arabia's ability to singlehandedly alter the price of oil gives the kingdom significant geopolitical power, and it has used its ability to lower the price of oil to its geopolitical advantage on many occasions over the decades. With this oil superpower stature comes much of the global influence that Saudi Arabia enjoys on the international stage.

However, the costs of expanding and maintaining sufficient spare capacity to influence global markets have increased dramatically over the years. Saudi Arabia has less spare capacity immediately available now than in the 1980s and 1990s, and it will be quite expensive for Saudi Arabia to bring on an additional production capacity. The kingdom has spent \$14 billion since 2005 to increase its oil production capacity from 10 million b/d to 12 million b/d. Future investment in a new tranche of production capacity is likely to be even more expensive given that the kingdom will have to shift to areas that have more complex geology and require greater technological intervention. But the kingdom is also facing competing priorities with higher spending requirements on social services and defense in light of new regional and internal

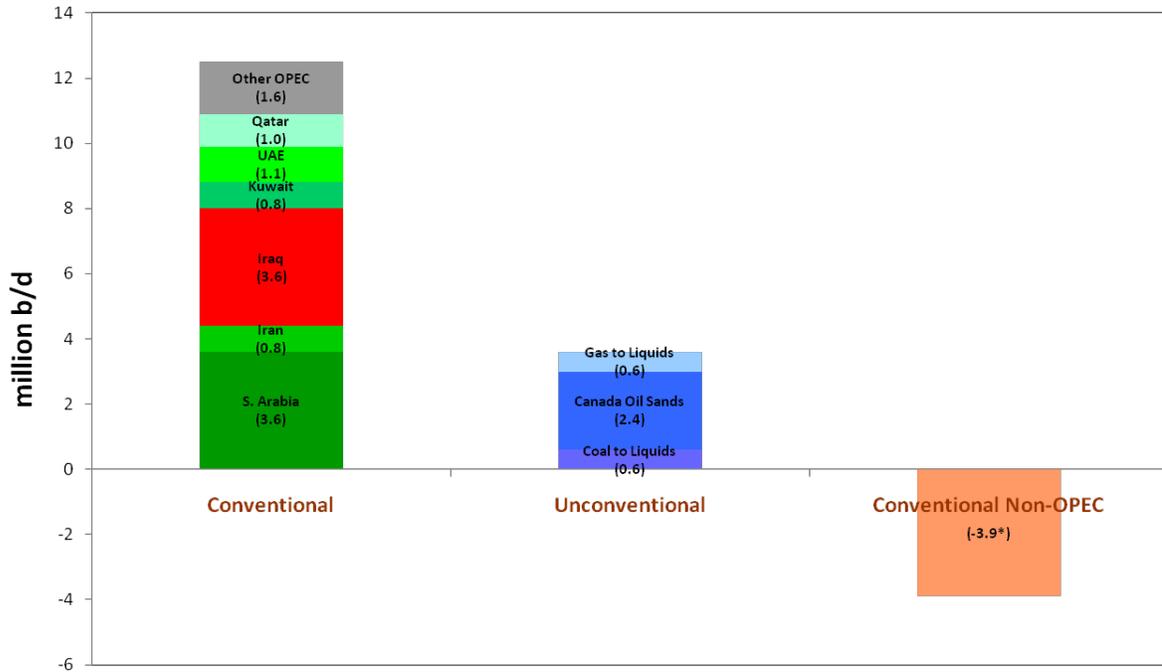
challenges.⁵⁹ King Abdullah ordered sweeping spending increases of \$67 billion in March 2011 for housing, job creation and the military, on top of a \$36 billion hand-out to citizens in February, in an effort to respond to increased instability across the Middle East. The pressures for higher defense and social spending will make it that much harder for the government to justify a massive campaign to expand its oil sector.

Under one alternative scenario where the kingdom relinquishes its oil market leadership role by failing (accidentally or on purpose) to make sufficient capacity expansion investments in the coming years, possible rivalry between Iraq and Saudi Arabia might be averted. Instead, the two countries might take a more cooperative stance over time if both the kingdom and Iraq have difficulty meeting rising demand for oil into the 2010s and beyond. The International Energy Agency (IEA) is predicting, for example, that an additional 3.6 million b/d from both Iraq and Saudi Arabia will be needed to balance demand by 2030.

Supply uncertainty that could develop in the Middle East and North Africa as a result of current turmoil might increase the chances of this alternative scenario coming to pass. There are critical unknowns to trends in the Middle East that could dramatically impact future oil market balances. Prior to the turmoil, OPEC production was generally expected to increase in the coming years (see Figure 3). But production increases could easily become derailed by political unrest and shifts in economic fortunes.

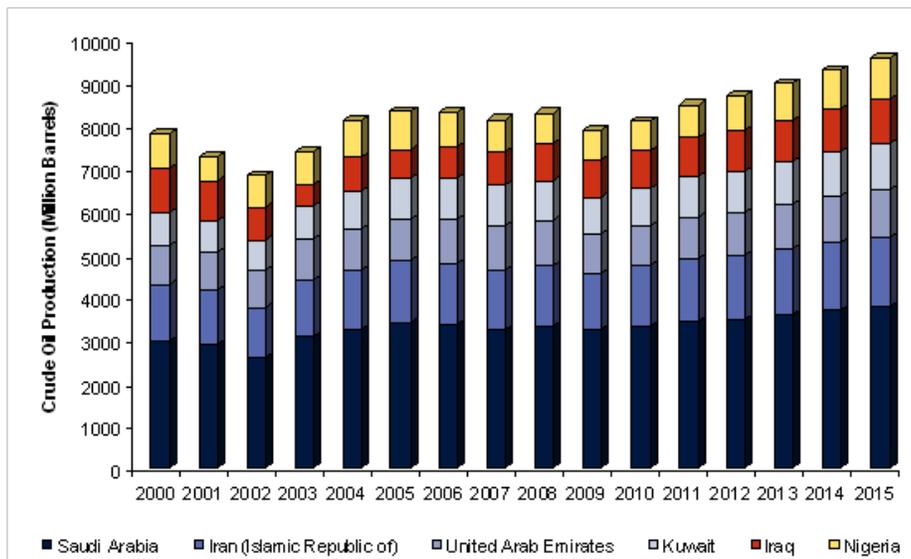
⁵⁹A new estimate by the Institute of International Finance suggests that Saudi Arabia will need at least \$110 oil by 2015 to balance its budget, up from \$88 a barrel this year given rising spending needs. Sudeep Reddy, "Saudi Government's Break-Even Oil Price Rises \$20 In a Year," Real Time Economics blog of the *Wall Street Journal*, March 31, 2011, <http://blogs.wsj.com/economics/2011/03/31/saudi-governments-break-even-oil-price-rises-20-in-a-year/>.

Figure 2: IEA 2010 Base Case Reference Scenario: Increase in World Oil Supply, 2009-2030



Source: International Energy Agency

Figure 3: OPEC Increases Expected through 2015



Source: Credit Suisse

Existing production potential could slip in the coming years in a number of countries seeing internal instability now, including Libya, Iran, Nigeria, and Venezuela (see Table 2).

Table 2: Production Uncertainty in Politically Unstable Countries

(in kb/d)	2010	2011	2012	2013	2014	2015
Iraq						
Low Case	2 400	2 700	2 800	3 150	3 400	3 600
High Case	2 400	2 970	3 670	4 670	5 970	7 270
Iran						
Low Case	3 680	3 580	3 480	3 380	3 280	3 180
High Case	3 680	3 730	3 780	3 830	3 880	3 930
Nigeria						
Low Case	2 200	2 400	2 600	2 600	2 650	2 700
High Case	2 200	2 450	2 700	2 950	3 200	3 500
Venezuela						
Low Case	2 200	2 150	2 100	2 050	2 000	1 950
High Case	2 200	2 150	2 150	2 300	2 600	2 620

Source: Credit Suisse

OPEC production and spare capacity could easily be impacted by the current turmoil. In light of current conflict, Libyan production, now at a standstill, could falter even when peace returns to that country, instead of rising to 2.02 million b/d as previously forecast. Iranian capacity could fall faster than expected while unrest and/or political leadership transitions could mean that even Saudi Arabia or Iraq could reverse their current upward course. Kuwaiti growth could also fail to materialize given current internal political turmoil that is hindering decision-making in Parliament and elsewhere in the government.

In the aftermath of political upheaval in Egypt, oil markets face new concerns related to the nature of domestic societies, economies, political leadership, and “political legitimacy” in key oil producing countries. The potential for social, political, or even military problems in the region, fueled by social media and reformist movements, sectarian conflicts, media sensationalism and, in some places, rising religious fervor, is unlikely to resolve itself anytime soon. Many countries in the Middle East are vulnerable to domestic unrest or political crises, ranging from leadership succession problems to radical revolutionary challenges to existing regimes, that could lead to another 1979-style disruption to Middle East oil exports. Moreover, oil exports could easily be curtailed by work stoppages or strikes by oil workers, possibly motivated by political issues such as human rights or power sharing.

Table 3: Over 21 Million b/d of Middle East Liquids Production Could be at Stake from Middle East Turmoil and Political Contagion

Country	Median Age (years)	Unemployment Rate	Oil Production (million b/d)
Algeria	27.1	10%	2.1
Libya	24.2	30%	1.5
Syria	21.5	8%	0.4
Yemen	17.9	35%	0.4
Saudi Arabia	24.9	11%	9.5
Iran	26.3	15%	4.5
Iraq	20.6	15%	2.8

In this context, it is possible that, depending on trends there versus developments in other countries, Iraq—with its new experiment in democracy and large number of IOCs working in country—may prove in a decade to be one of the only large oil producers to have the spare capacity to meet growing global demand and provide extra barrels during a supply crisis.

IV. Conclusion: Implications for the United States and Japan

Possible increases in Iraqi oil production will likely be very important to the future stability of global oil markets. Iraq’s aspirations to become a major oil exporter create shared interests with the United States and other major oil consuming countries.

The United States and other major powers should meet to discuss ways to support Iraq’s realization of the potential of its oil and gas deposits. As the U.S. government did successfully in the Caspian region and the Japanese government did successfully in Qatar and other LNG producing nations, the United States, EU, Japan, and China should work together to ensure that IOCs operating in Iraq and the Iraqi government are able to attain attractive financing and loan packages to underwrite major export infrastructure development projects. Multinational assistance would also be appropriate as a means to support major investments as well as bilateral or trilateral trade finance and development assistance.

Iraqi Oil Potential and Implications

The United States has a major stake in Iraq reaching its energy potential because of the stakes of Iraq's success or failure for U.S. and global energy security. The expected shift by the United States away from military security activities to civilian assistance in governance, human capacity building, legal reform and rule of law, and the promotion of civil society can be complemented by partnership with other oil-consuming nations in these areas of aid and assistance. The United States has a strong interest in Iraqi stability and the consolidation of Iraq's nascent democracy. Political stability will be a critical factor for Iraq's continued energy development. Transparency and accountability in governance will be particularly important to Iraqis if they are to put their faith in oil and gas resource development. By promoting governance and rule of law programs via embassies, consulates, and NGOs, the United States can partner with Iraqi institutions to build a better future for the Iraqi people and plan a wiser exploitation of natural resources than other parts of the Middle East and North Africa have seen. In addition, the United States should continue to support efforts inside Iraq to resolve conflicts over shared authority for resource development and revenue sharing between federal, provincial, and local officials and to promote the development of a new oil law that would clarify uncertainties about political jurisdiction for oversight of oil and gas exploration and development projects. Without a well-defined national political framework for oil and gas development, Iraq runs the risk that conflict over resource rights and benefits could become a destabilizing factor in the country's long-term stability and unity.

Iraq's current oil sector investment strategies mesh nicely with U.S. interests both by promoting involvement of U.S. firms in Iraq's energy sector and by allowing Iraq to play a more active role in stabilizing oil markets in the years ahead. The United States should be proactive in its diplomacy to support a continuation of this pathway and to discourage other regional powers from disrupting this important element to Iraq's future.

Finally, the United States should promote the training of Iraqi oil industry leaders and the transfer of technology to Iraq that will ensure the building of domestic capability for Iraq's oil industry. The United States' premier position in drilling, environmental, and other energy sector technologies can ensure that U.S.–Iraq relations are maintained in a positive and engaged fashion, once the security relationship between Iraq and the United States begins to wind down.

Iraqi Oil Potential and Implications

Iraq can be expected to turn to the United States and the American oil sector for assistance and support in its aspirations to return to being a major international player in the global energy sector. The United States should foster this promising aspect of long-term relations with Baghdad as an opportunity to solidify the friendship and cooperation between the two countries.

The U.S. Department of Energy and the International Energy Agency can also play a strong role in cultivating lasting relationships with senior leaders from Iraq's oil sector to promote consumer-producer dialogue that can serve as a building block for better cooperation in the future with the Iraqi government as its stature in world oil markets grows and as Iraq plays a more important role in OPEC. Dialogue will be helpful to ensure that U.S.-Iraq relations do not fall into the trap of zero sum strategies on energy. Regular diplomacy could include the sharing of views and forecasts about global oil market trends and information on respective energy policies as well as joint investments in new technology development for oil and gas exploration, renewable energy production, and environmental cleanup and protection.