




Hazardous Substances Labels

SHAPING IRAQ'S OIL AND GAS FUTURE

Ellen Scholl

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Cover photo: Oil tankers load crude from the port of Basra in Iraq, one of the most import oil export points in the country, in 2012. Essam Al-Sudani (essam.photo79@gmail.com).

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EXECUTIVE SUMMARY

Energy has and will continue to be an integral part of the Iraqi economy for years to come. Oil revenue provides the bulk of the Iraqi national budget, as well as the budget in the Kurdistan Region of Iraq (KRI), providing a key source of revenue and funds for recovery and development. Iraq also boasts substantial gas resources, still in the early stages of development, which could serve as a key source of energy for domestic power generation, the basis for value-added industries, and eventually a source of trade and export revenue.

Despite the serious challenges Iraq has faced in recent years, including the impact of the fight against the Islamic State of Iraq and al-Sham (ISIS) and less favorable oil market conditions since 2014, Iraq has made substantial progress in incentivizing energy sector investment and increasing oil production and exports. That said, political and economic challenges still loom large, and the events of late 2017 sparked by the September independence referendum held by the Kurdistan Regional Government (KRG) underscore the degree to which oil development can be impacted, and even hampered, by Iraq's long-standing ethnic, sectarian, and political divisions. This is seen most clearly by Baghdad's retaking of the Kirkuk oil fields, which had been under KRG control since 2014, and the renewed debate over resource management and revenue sharing.

Despite enormous progress in increasing oil production and smaller but equally meaningful gains in gas development, particularly in the KRI since the fall of Saddam Hussein, obstacles to Iraq reaching its production potential remain. To continue to capitalize on Iraq's oil resources and increasingly utilize its significant gas resources, there are several challenges to be overcome, and improvements to be made.

For oil, the following issues must be addressed, both by the Iraqi government in Baghdad and by the KRG in Erbil.

- 1** Improve the fiscal terms for companies, provide stable investment conditions, and above all guarantee business certainty—and payment.
- 2** Alleviate uncertainty and maximize production by addressing the issue of revenue management and providing a durable and workable agreement on exports.
- 3** Formulate a robust infrastructure development framework that matches Iraq's ambitions.

In addition to removing obstacles to increased production and export growth, perhaps the biggest challenge for Iraq is sustainably managing the resulting resource revenue in a way that serves the country's long-term development interests and improves the living conditions for all Iraqis. Sustainable management of resource revenue, along with creating the foundation for a more diversified economy, is critically important both for Iraq more broadly and the KRI.

Gas has the potential to play a crucial and growing role in Iraq's economic future, which political leaders both in Baghdad and Erbil should work to utilize. To improve gas resource development, the report makes the following recommendations.

- 1** Baghdad and Erbil must get the incentive structure right.
- 2** Part of the incentive structure should include supportive gas pricing.
- 3** Institutions should mirror ambition.
- 4** Baghdad and Erbil should take a comprehensive approach to developing and integrating infrastructure throughout the supply chain, including mid- and downstream infrastructure.

With the chain of events that followed the fall 2017 referendum, and as 2018 elections in Iraq and the KRI approach, the potential new leadership in Baghdad and Erbil should prioritize addressing these obstacles to incentivize long-term oil and gas development and sustainably manage resources and the resulting revenue. This will require addressing the still-unresolved political issues between Baghdad and Erbil, which remain a key source of uncertainty. With oil prices remaining low, and global and regional gas demand set to grow, Baghdad and Erbil should recognize this is both a crucial moment for energy sector investment and a key window of opportunity for gas development.

Gas, less politically fraught than oil, has the potential to serve as a key area of cooperation between Baghdad and Erbil and could help improve the reliability of electricity supply. In the early stages of development, and as KRI gas production increases, the potential to supply Iraq with gas should be seen as an avenue of cooperation and a way to relieve the country's need for electricity and gas imports from Iran and as an important step for cooperation and leveraging resources for the benefit of all Iraqis.

INTRODUCTION

“While continued oil development is critical, gas has the potential to play a crucial role in Iraq’s economic future.”

Oil and gas development is crucial to Iraq’s future as a primary source of revenue and a driver of the Iraqi economy. While oil and gas production cannot single-handedly ensure Iraq’s recovery, such a recovery will prove elusive, if not impossible, without it. Oil production provides much-needed revenue and economic development and underwrites the Iraqi federal budget, while gas development could play a key role in Iraq’s future by fostering broad-based economic development, improving electric service provision, and fostering value-added industries. Additionally, increasing production could provide the basis for cooperation with neighboring countries and undergird regional economic development and trade.

This is far from guaranteed, however, and oil and gas, respectively, are in dramatically different stages of exploration, development, and production—and they serve different interests and outcomes. Oil production, currently more advanced, is essential for cash flow and at the heart of issues between the Iraqi central government in Baghdad and the autonomous Kurdistan Regional Government (KRG) in Erbil. Oil is politically fraught due to the country’s history with oil production; the geographic distribution of oil fields, the majority of which lie in the south, while 17 percent are found in the north; the unresolved interpretation of the 2005 Iraqi constitution; and ongoing disputes over revenue sharing. Changing oil market dynamics due to the rise of US shale production and policy changes from Saudi Arabia and the Organization of the Petroleum Exporting Countries (OPEC) also impact the future of oil in Iraq.

While continued oil development is critical, gas has the potential to play a crucial role in Iraq’s economic future. Relatively ignored, undervalued, and under-explored, gas could provide an opportunity to develop largely untouched resources and address domestic power needs. Gas development will require long-term planning,

investment, and strategic thinking and could serve as an impetus for reform and an area of cooperation between both Baghdad and Erbil and between Iraq and its neighbors. Less controversial than oil, and perhaps even more integral to broad-based economic development, gas is an opportunity for Iraq to forge a resource development model predicated on cooperation and mutual benefit. Gas development would not only enable Iraq to meet its domestic needs, but also to position itself as a potential exporter in a region that could account for up to a fifth of global demand growth looking out to 2040.¹

While energy development has the potential to serve as an avenue of cooperation, it is impacted, and often hampered, by Iraq’s long-standing ethnic, sectarian, and political divisions. Historically, energy development in Iraq was largely confined to areas that are currently under the direct authority of the federal government in Baghdad, established in the wake of the 2003 overthrow of the Baath regime. The new constitution, adopted in 2005, legally established the Kurdistan Region of Iraq (KRI), with its own autonomous, regional government. That same constitution also left key questions about the primacy of authority for oil and gas development between the federal government and regional governments unresolved.

Iraqi energy development still reflects this situation. The federal government in Baghdad is in charge of the bulk of the country’s resources and has pursued energy development along traditional state-run lines, which reject the concept of international companies taking a direct stake in the ownership of oil and gas resources. However, in the areas controlled by the KRG—where, with the key exception of the supergiant Kirkuk field that the KRG still partially controls, there was virtually no exploration prior to 2003. The KRG’s decision to allow international companies to take direct stakes in oil and gas fields resulted in a major transformation, as multiple discoveries turned the Kurdistan region into a significant energy province in its own right, with both oil and gas development underway.

Sandwiched between the areas controlled by the federal government and those run by the KRG are the historic oilfields of Kirkuk. The backbone of Iraq’s initial oil development, these fields now straddle the political boundaries and effective zones of control of the federal government and

¹ The International Energy Agency, *2017 World Energy Outlook*, 2017, 341.

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the KRG. Past development and future trajectories for development in all three areas—federal Iraq, the KRI, and Kirkuk—are thus very different.

This paper first explores the preeminence of oil in Iraqi energy development against the backdrop of challenges related to domestic and regional politics, including the September 2017 independence referendum held by the KRG and the Iraqi federal government's retaking control of Kirkuk and oil fields located there, oil markets, and industry challenges. It recognizes both Iraq's achievement in surpassing 4 million barrels per day (bpd) of oil production at the same time the country was at war with the Islamic State of Iraq and al-Sham (ISIS), while identifying some of the challenges still holding Iraq back from reaching 6 million bpd by 2020, as outlined in the International Energy Agency's (IEA) seminal 2012 Iraq Energy Outlook under the Central Scenario.²

While any consideration of Iraq's energy future must start with oil, gas is an increasingly important resource for the country's future. This analysis thus turns to gas development, which is still at a relatively early stage in federal Iraq and slightly more advanced in the KRI. While gas has remained on the periphery,

its potential to facilitate economic recovery and improve the lives of Iraqis by contributing to a more reliable and secure electricity supply should not be discounted, and indeed should be a priority for Baghdad and Erbil. While there are still sizable obstacles to overcome, there are positive signs, particularly in the KRI, that gas can play a key role in domestic power production, the creation of value-added industries, and over time, potentially enabling exports and facilitating regional cooperation.

While the (rapidly changing) political environment in Iraq and the relationship between the federal government in Baghdad and the KRG in Erbil, as well as the uncertainty surrounding Kirkuk, adds a layer of political risk, the current situation underscores the need—and serves as an opportunity—for both sides to come to a more durable agreement over the question of resource management and revenue. It also highlights the role gas could play in fostering cooperation and providing an opening for both Iraq and the KRI to improve electricity production, cooperation, and ultimately reduce their overwhelming reliance on oil revenue.

² The International Energy Agency, *Iraq Energy Outlook, World Energy Outlook Special Report*, October 9, 2012, https://www.iea.org/publications/freepublications/publication/WEO_2012_Iraq_Energy_OutlookFINAL.pdf.

THE POLITICS OF ENERGY IN IRAQ

It is hard to understate the role of mineral wealth in Iraq's economic life since the mid-twentieth century, and the degree to which energy, and more specifically oil, is intertwined with politics. One of the last bastions of conventional, low-cost onshore oil resources, Iraq holds the world's fifth largest proven oil reserves, amounting to nearly 10 percent of the global total and 20 percent of total proven crude reserves in the Middle East.³

Iraq's resources are geographically dispersed throughout the country, the majority located in the country's south, concentrated in and around Basra. There are also substantial resources in the disputed area of Kirkuk, where Iraqi oil was first discovered in 1927, and in the KRI.⁴ Some of the most significant oil fields (many of which also have associated gas) in Iraq and under the purview of Baghdad's Ministry of Oil include: Nahr Umar (discovered in 1948), 6.5 billion barrels; Zubair (1949), 4 billion barrels; Rumaila (1953), 17.7 billion barrels; West Qurna 1 (1973), 8.7 billion barrels; West Qurna 2 (1973), 13 billion barrels; Majnoon (1975), 13 billion barrels; East Baghdad (1976), 8 billion barrels.⁵

The Kirkuk field includes Khurmala, Baba, and Avana domes, the former of which is under operation by the KRG's KAR energy group, while the latter two, along with the nearby Bai Hassan field, recently came under the control of the Iraqi state-owned North Oil Company as federal forces retook Kirkuk and the surrounding areas formerly under Peshmerga control. Fields currently in the KRI include supergiant Shaikan, which currently accounts for around 33,000 bpd of oil production and is thought to hold 4 to 6 billion barrels of oil, while around 65,000 bpd are produced at the Taq Taq field and just over 100,000 bpd at the Tawke field.⁶

This geographic distribution of resources, intertwined with the distribution of ethnic and religious groups, is at the root of questions over resource management that continue to feature prominently in conversations about the future of Iraqi oil and gas development. The relationship between energy and politics is fundamental, as the Iraqi government and the KRG are reliant on oil revenue for their budgets. According to the World Bank, sustainable oil revenue management is a key constraint that Iraq, the world leader in oil revenue reliance, faces.⁷

This reliance is even more salient given the country's massive reconstruction challenge following years of war and a costly campaign against ISIS. On the heels of significant victories in dislodging the group from its former stronghold in Mosul and in Iraq more broadly, rapidly allocating funds and making discernible progress in rebuilding is crucial. Beyond humanitarian necessity, concerted action or willful negligence on the part of the Iraqi government in addressing these areas could either ameliorate or exacerbate feelings of neglect among the largely Sunni population in Mosul, many of whom feel ignored and abandoned by the Shia-led government in Baghdad.⁸

While the link between energy and politics is far from a new phenomenon, the degree to which energy development is connected with both domestic and regional politics was underscored by political events in late 2017, specifically the September 25 independence referendum held by the KRG; Baghdad's retaking of the disputed territory of Kirkuk and resumption of control over the oil fields located there in October; and a renewed debate over resource management, revenue sharing, and export authority between Baghdad and Erbil.

3 US Energy Information Administration, *Iraq Country Report*, April 28, 2016, <https://www.eia.gov/beta/international/analysis.cfm?iso=IRQ>.

4 International Monetary Fund, *IMF Country Report No. 15/236, Iraq: Selected Issues*, August 2015, 1, <https://www.imf.org/external/pubs/ft/scr/2015/cr15236.pdf>.

5 Iraq Business News, "List of Oil and Gas Fields in Iraq," <http://www.iraq-businessnews.com/list-of-oil-and-gas-fields-in-iraq/>.

6 The Oil and Gas Year, *Crossroads: Kurdistan is at a Crucial Point of its Development*, The Oil and Gas Year Kurdistan Region of Iraq 2016, 30.

7 World Bank, *Iraq: Systematic Country Diagnostic*, February 3, 2017, 1, 4. <http://documents.worldbank.org/curated/en/54281148727729890/Iraq-Systematic-Country-Diagnostic>.

8 Liz Sly and Aaso Ameen Schwan, "ISIS is near defeat in Iraq. Now comes the hard part," *Washington Post*, September 13, 2017, https://www.washingtonpost.com/world/middle_east/isis-is-near-defeat-in-iraq-now-comes-the-hard-part/2017/09/13/68b1f742-8d9e-11e7-9c53-6a169beb0953_story.html?utm_term=.2b29d545c7b7; Antonio Massella, *We Have Forgotten What Happiness Is: Youth Perspectives of Displacement and Return in Qayyarah Subdistrict, Mosul*, Oxfam, October 2017, <http://policy-practice.oxfam.org.uk/publications/we-have-forgotten-what-happiness-is-youth-perspectives-on-displacement-and-retu-620351>. See also Renad Mansour, *The Sunni Predicament in Iraq*, Carnegie Middle East Center, March 3, 2016, <http://carnegie-mec.org/2016/03/03/sunni-predicament-in-iraq-pub-62924>.



A pro-independence rally in Erbil, located in the KRI. Over 90 percent of the votes cast in the September 25 referendum were in favor of independence, a long-sought goal of the Kurdistan population of Iraq.
Photo credit: Levi Clancy/Wikimedia.

On September 25, the KRG conducted a non-binding referendum in which residents of the KRI, and the disputed territories in and around Kirkuk, were given the opportunity to vote on the question of independence from Iraq for the Kurdistan Region. Over 72 percent of eligible voters participated in the referendum—opposed by Baghdad, the United States, and neighboring Iran and Turkey—with 92 percent voting in favor of independence.⁹ In addition to calling into question the relationship between federal and regional authority in Iraq and the composition of the country, the referendum was also controversial in allowing eligible voters in the disputed territories around oil-rich Kirkuk, which is located on the edges of the 2003-established borders of the KRI, to choose to participate.

The referendum set off a series of events, most notably Baghdad's retaking of resource-rich Kirkuk, which brought underlying questions about the delineation of federal versus regional power and authority in Iraq to the fore, highlighting that the

political and legal questions surrounding energy development and export in post-Saddam Hussein's Iraq not only remain unresolved, but add uncertainty to future development and export plans, particularly in the KRI. The political dispute between Baghdad and Erbil makes the current status quo seemingly untenable, and demonstrates that as the threat from ISIS recedes, the lack of a common enemy could also translate to fewer common interests and less of a pretext for Baghdad and Erbil to cooperate.

These events are the most recent chapter in a narrative dating back further in Iraqi (and Ottoman) history. However, much of the current political debate over hydrocarbon resources can be traced to the unresolved interpretation of the 2005 Iraqi constitution and resulting disagreement over resource management and revenue sharing. Articles 111 and 112, included in section four on the powers of the federal government, specifically address oil and gas development, but the interpretation of these articles is still a matter of debate between

⁹ "Iraqi Kurds decisively back independence in referendum," *BBC News*, September 27, 2017, <http://www.bbc.com/news/world-middle-east-41419633>.

Timeline: Referendum and Following Events of Fall 2017

- **September 24:** Iraq's National Security Council announces that all countries must deal with the federal Iraqi authorities in matters related to border-crossings and oil.¹
- **September 25:** KRI and some of the disputed territories vote in the independence referendum despite international opposition and against the will of Baghdad.
- **September 26:** Prime Minister Abadi says the government will not hold talks with the KRG following the referendum, which he called "unconstitutional."²
- **September 27:** Iraqi cabinet orders all KRI oil revenues be subject to federal control, audit, and jurisdiction, and orders all land and air border crossings be returned to federal control.³
- **September 29:** Iraqi Government enacts a ban on direct international air travel to KRI after KRG rejects Baghdad's demand to hand over control of international airports in Erbil and Sulaimaniya.
- **October 3:** Iraq stops selling dollars to banks in KRI and bans foreign currency transfers.⁴
- **October 10:** Iraqi Oil Ministry instructs state-owned North Oil Company, State Company for Oil Projects, and the state pipeline company to work on restoring the Kirkuk-Ceyhan pipeline, which has been out of commission since 2014.⁵
- **October 16-17:** Iraqi forces, in conjunction with Iranian-backed Popular Mobilization Forces, retake Kirkuk, which had been under KRG control since Kurdish Peshmerga forces halted the ISIS advance there in 2014. The Iraqi forces take control of Kirkuk oil fields, including Baba Gurgur, Hambur, and Khabbaz on Monday and Bai Hasan and Avana on Tuesday, while PMF secures Sinjar.⁶
- **October 18:** Iraqi forces continue advances into Kurdish areas near Mosul, which has been controlled by the KRG since 2003. Exports from Kirkuk-Ceyhan pipeline fall to less than 250,000 barrels per day, a drop of more than half.⁷ Rosneft also announces it has finalized a contract for five production blocs in the KRI.
- **October 19:** Chevron announces suspension of drilling operations at Sarta bloc.
- **October 25:** KRG offers to "suspend" the results of the independence vote, which Baghdad rejects the following day.⁸
- **October 26:** Iraqi forces and PMF move north of Mosul toward the border crossing at Fishkabor, while Prime Minister Abadi says he will accept nothing less than a full annulment of the referendum during a visit to Iran.⁹ Armies remain at a relative standstill.

1 Erika Solomon, "Baghdad ramps up pressure on Iraqi Kurdistan region," *Financial Times*, September 25, 2017, <https://www.ft.com/content/4564c7ea-a132-11e7-b797-b61809486fe2>

2 "Iraq refuses talks with Kurds about referendum results," *Al Jazeera*, September 26, 2017, <http://www.aljazeera.com/news/2017/09/iraq-refuses-talks-kurds-referendum-results-170926033646791.html>

3 Government of Iraq (@IraqiGovt): The Cabinet orders all oil revenues in Kurdistan region be subject to federal control, audit and jurisdiction, September 27, Twitter, <https://twitter.com/IraqiGovt/status/912991597842911234>. Government of Iraq (@IraqiGovt): The Cabinet orders all land & air border-crossings to be returned to the control to the Federal Borders Authority, September 27, Twitter. <https://twitter.com/IraqiGovt/status/912991597842911234>

4 Ahmed Rasheed, "Iraq steps up retaliation against Kurdish independence vote with dollar ban," *Reuters*, October 3, 2017, <http://www.reuters.com/article/us-mideast-crisis-kurds-referendum-cenba/iraq-steps-up-retaliation-against-kurdish-independence-vote-with-dollar-ban-idUSKCNIC823V?il=0>

5 Reuters Staff, "UPDATE 1-Iraq's Lualaba orders work to reopen oil pipeline to Turkey," *Reuters*, October 10, 2017, <https://af.reuters.com/article/commoditiesNews/idAFL8N1ML1K1>

6 Martin Chulov, "Iraqi forces drive Kurdish fighters out of town of Sinjar," *The Guardian*, October 17, 2017, <https://www.theguardian.com/world/2017/oct/17/iraqi-forces-drive-kurdish-fighters-out-of-sinjar>

7 David Sheppard, "Oil flows on Kurd's Kirkuk to Ceyhan pipeline reduced," *Financial Times*, October 18, 2017, <https://www.ft.com/content/20765670-92ee-3171-b907-59ee55c184bd>

8 Erika Solomon, "Baghdad rejects Kurdish proposals to end autonomy crisis," *Financial Times*, October 26, 2017, <https://www.ft.com/content/f4b726fe-ba26-11e7-9bfb-4a9c83ffa852>

9 Tamer El-Ghobashy, Mustafa Salim and Liz Sly, "Iraqi forces clash with Kurdish troops near strategic border with Syria," *Washington Post*, October 26, 2017, https://www.washingtonpost.com/world/iraqi-forces-clash-with-kurdish-troops-near-strategic-border-with-syria/2017/10/26/2f0987bc-ba30-11e7-be94-fabb0f1e9f9fb_story.html?utm_term=.ae8f0cfd39e1

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- **October 30:** KRG President Barzani announces he will step down when his term expires on November 1.
- **November 6:** The Iraqi Cabinet proposes reducing the budget share allocated to the KRG from 17 to 12.6 percent in the 2018 budget.¹⁰
- **November 10:** Iraq announces a preliminary deal to export as much as 60,000 barrels per day of Kirkuk oil to Iran via tuck.¹¹
- **November 24:** Baghdad announces it will invite foreign firms to bid on nine new oil and gas blocks, many of which are on the border with Iran and Kuwait. The Iraqi government stated the terms would differ from the current service contracts, to be announced in 2018.¹²
- **December 9:** Iraq and Iran reach agreement to swap up to 60,000 barrels per day of crude from crude with Iranian oil for one year.¹³

10 Ahmed Rasheed, Raya Jalabi, "Iraq cabinet plans to cut Kurdistan share in 2018 federal budget," *Reuters*, November 6, 2017, <https://www.reuters.com/article/us-mideast-crisis-iraq-kurdistan-budget/iraq-cabinet-plans-to-cut-kurdistan-share-in-2018-federal-budget-idUSKBN1D627S>

11 Ben Lando and Staff, "Iran to facilitate Kirkuk exports," *Iraq Oil Report*, November 10, 2017, http://www.iraqoilreport.com/news/iran-facilitate-kirkuk-exports-26543/?utm_source=IOR+Newsletter&utm_campaign=fd19881b15-Email_Update&utm_medium=email&utm_term=0_f9870911e6-fd19881b15-192894053

12 Ahmed Rasheed, "Iraq offers nine oil and gas blocks for exploration near Iran, Kuwait borders," *Reuters*, November 26, 2017. <https://uk.reuters.com/article/uk-iraq-energy-exploration/iraq-offers-nine-oil-and-gas-blocks-for-exploration-near-iran-kuwait-borders-idUKKBN1DQ0BW>.

13 Ahmed Hagagy, "Iraq oil minister says Kirkuk oil swap deal with Iran is for one year," *Reuters*, December 10, 2017. <https://www.reuters.com/article/us-iraq-oil/iraq-oil-minister-says-kirkuk-oil-swap-deal-with-iran-is-for-one-year-idUSKBN1E408W>.

the federal government and the KRG.¹⁰ Article 111 establishes that oil and gas are owned by "all the people of Iraq, in all the regions and governorates" while Article 112 outlines how resources should be managed; it states that "the central government, with the producing governorates and regional government, shall undertake the management of oil and gas extracted from present fields" and requires the federal government to distribute "its revenues in a fair manner in proportion to the population distribution in all parts of the country."¹¹

The KRG has interpreted these provisions as conveying "ownership to each region and government" and thus claims the right to enter into contracts independently of the federal government—an interpretation Baghdad contests.¹² Another key disagreement is the meaning of "present fields" and whether this term refers to proven versus producing fields. The KRG argues that the term present fields refers to those fields producing at the time the constitution was written and adopted, and thus is

not inclusive of KRI fields, which, even if discovered, were not yet producing.¹³

The inability to resolve differing interpretations of Article 112 and agree on responsibility for resource management contributed to the Iraqi Council of Representatives' failure to approve a draft national hydrocarbons law in 2007.¹⁴ The draft bill was criticized by Sunni political groups as allocating too little authority to Baghdad and by Kurdish parties who argued for more regional authority and against the complete control of Iraq's resources by the Ministry of Oil and state-owned entities.¹⁵ The draft hydrocarbon framework legislation was part of a broader legislation package that would also have included a draft revenue-sharing law, a law reorganizing the Ministry of Oil, and establishing the Iraqi National Oil Company.¹⁶ Absent a federal law, and based on its own interpretation, the KRG implemented a hydrocarbon law in 2007, paving the way for the KRG Ministry of Energy and Natural Resources to independently enter into contracts

10 David Romano, "Iraq's Descent into Civil War: A Constitutional Explanation," *Middle East Journal*, Volume 68, Number 4, Autumn 2014, 547-566, 556.

11 The 2005 Iraqi Constitution, https://iraqmission.us/wp-content/uploads/2014/11/iraqi_constitution.pdf.

12 Ghanim Anaz, *Iraq: Oil and Gas Industry in the Twentieth Century*, (Nottingham: Nottingham University Press, 2012), 227.

13 Ibid.

14 Christopher M. Blanchard, *Iraq: Oil and Gas Legislation, Revenue Sharing, and U.S. Policy*, Congressional Research Service, November 3, 2009, Appendix, Accessible: <https://fas.org/sgp/crs/mideast/RL34064.pdf>.

15 Lionel Beehner, Greg Bruno, *Why Iraqis Cannot Agree on an Oil Law*, Council on Foreign Relations, February 22, 2008, <https://www.cfr.org/backgrounder/why-iraqis-cannot-agree-oil-law>.

16 Christopher M. Blanchard, *Iraq: Oil and Gas Legislation, Revenue Sharing, and U.S. Policy*.

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with oil and gas producers to develop resources within the autonomous Kurdish region.

In addition to the lack of a federal framework on resource management, there is no law governing revenue sharing, which the constitution says should be “regulated by law.”¹⁷ Though the constitution requires that the federal government distribute the revenues fairly and proportionally, it does not lay out specifics for how this should take place.¹⁸

The constitution also left the future of the disputed territories, namely resource-rich (and for the Kurds historically significant) Kirkuk, in question. Article 140 stipulated that the government would hold a census and a referendum in Kirkuk and the disputed territories to allow the citizens of these territories to decide whether they would like to “remain under Baghdad’s federal authority or become part of the autonomous Kurdish region” by the end of 2007.¹⁹ However, Baghdad’s failure to hold such a referendum, and former Prime Minister Nouri Al-Maliki’s failure to uphold his promise to do so in exchange for Kurdish support for his new government in 2010, is a source of discontent for the Kurds.²⁰

Constitutional questions notwithstanding, the opportunity to explore and develop Iraq’s oil and gas resources, including those located in the KRI, has attracted the interest of international oil and gas companies, independent and mid-size producers, and state-owned oil companies. Both the federal government in Baghdad, through the Ministry of Oil, and the KRG’s Ministry of Natural Resources in Erbil have moved ahead, albeit offering different contractual arrangements.

The KRG passed its own hydrocarbons law and investment law, in the (largely realized) hope of attracting interest. The KRG opted for production-sharing contracts (PSCs), which are more attractive to companies and investors as they grant companies equity, even if the political situation in the KRI vis-à-vis Iraq adds a degree of uncertainty. This is an ongoing source of disagreement between the KRG in Erbil and Ministry of Oil officials in Baghdad, with the latter criticizing the former for offering

terms that are more beneficial to companies at the expense of the country. Erbil argues these contracts are necessary to attract the investments to develop new fields. Baghdad opted for Technical Service Contracts (TSCs), which treat international oil companies (IOCs) like a contractor rather than an investor, with little incentive for efficiency and no oil price exposure. These contracts are seen as safer, if offering far less attractive terms for companies, which effectively serve as contractors reimbursed for the costs of production and investment, and are paid a flat rate—a fixed fee per barrel, generally between one and five dollars depending on complexity and the state of the field.²¹

While investment, exploration, and production have proceeded in Iraq and the KRI despite these issues, it has not been without controversy. Indeed, the Iraqi government notoriously “blacklisted” companies that entered into contracts with the KRG’s Ministry of Natural Resources. While ExxonMobil’s agreement with the KRG’s Ministry of Natural Resources to explore for oil in the KRI was opposed by both Baghdad and Washington, Exxon ultimately continued its operations under contract with the Ministry of Oil in Baghdad even while undertaking exploration efforts in the KRI.²² Thus, while the disagreements between Baghdad and Erbil generated some political uncertainty, it was not enough to override the enormous investment potential.

Companies have continued their exploration and development efforts in the KRI, although these issues resurfaced with the referendum, which has added fuel to the fire by raising the level of uncertainty. In response to the referendum, the Iraqi government announced that it intended to reestablish federal control in disputed areas and called for federal control of oil revenue, airports, and borders. This includes the crucial border crossing and oil transit point at Fishkabur, which is the location of the currently inoperable Baghdad section of the Iraq-Turkey pipeline and the operationally independent KRG pipeline to Turkey, which links up with the Iraq-Turkey pipeline on the other side of the border.²³

17 The 2005 Iraqi Constitution, https://iraqmission.us/wp-content/uploads/2014/11/iraqi_constitution.pdf.

18 Ibid.

19 David Romano, “Iraq’s Descent into Civil War: A Constitutional Explanation,” *Middle East Journal*, Volume 68, Number 4, Autumn 2014, pp. 547-566. 564.

20 Ibid.

21 International Monetary Fund, *Iraq: Selected Issues*, August 2015, 10, <https://www.imf.org/external/pubs/ft/scr/2015/cr15236.pdf>.

22 Deter Filkins, “Rex Tillerson at the Breaking Point,” *New Yorker*, October 16, 2017, <https://www.newyorker.com/magazine/2017/10/16/rex-tillerson-at-the-breaking-point>.

23 On September 27, the Iraqi government called for all land borders and airports to be turned over to the federal government, and that all oil revenues in Kurdistan be subject to federal control. Iraqi Government (@IraqiGovt), “The Cabinet orders all oil revenues in Kurdistan region be subject to federal control, audit and jurisdiction.” September 27, 2017, Iraqi Government (@IraqiGovt):” The Cabinet orders all land & air border-crossing s to be returned to the control of the Federal Borders Authority,” September 27, 2017, Twitter. <https://twitter.com/IraqiGovt/status/912991875140919298>.

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In October, Iraqi forces, (Iranian-supported) Popular Mobilization Forces advanced on and reclaimed Kirkuk and the Bai Hassan field and Avana dome of the Kirkuk field, all of which had been controlled by the KRG since Peshmerga forces defended the area from an ISIS advance in 2014. This has not only deprived the Kurds of a city often referred to as their Jerusalem, but reduces the potential oil exports (and thus revenue) from areas under Kurdish control by nearly half.²⁴ These fields accounted for approximately 280,000 bpd of the estimated 610,000 bpd in total KRG-controlled crude production. The KRG still retains control over the Khurmala dome section of the Kirkuk field, operated by Kurdish KAR since 2007, which produces 110,000 bpd.²⁵

The changing of hands of Kirkuk encompasses the energy-related issues at stake. The Iraqi government has rhetorically asserted the authority of the Ministry of Oil in Baghdad and the federal government more broadly in energy production and export. On October 19, Iraqi authorities warned that the Iraqi central government and the Ministry of Oil are “the only authorities with the constitutional and legal authorities to sign the contracts and agreements,

and develop and invest in the national oil and gas wealth.”²⁶ Prime Minister Haider Al-Abadi also warned that all revenues from KRI oil exports must be handed over to the federal government and called the 17 percent share of the federal revenue allotted for the KRI “unjust.”²⁷ The 2018 budget released by the Iraqi parliament on November 6 reduces the KRG budget allotment from 17 to 12.6 percent.²⁸

With elections in Iraq and the KRI slated for spring of 2018, both sides may have greater incentive to dig in their heels rather than compromise. The referendum encouraged Abadi to take a firm stance on the disputed territories to assert Baghdad’s—and his—authority. Meanwhile, having promised their voters independence, or at least a path to it, KRG politicians are in a bind now that the referendum appears to have decreased the likelihood of that dream becoming a reality. Additionally, in advance of an election in which relationships between Iraq’s domestic ethnic and religious identities will loom large, and the influence of external regional actors will be prominent, the small, incremental exercises that quietly build confidence could also help to build the trust and momentum to tackle larger issues.

24 Paul Rivlin, “Kurdistan’s Economic Woes,” *Middle East Economy*, Vol.7 No. 8 October 30, 2017, <http://dayan.org/content/kurdistan-economic-woes>.

25 “Reality Sets in As KRG Imagines Life with Less Oil,” *Middle East Economic Survey*, Volume 60, Issue 45, November 10, 2017, <https://www.mees.com/2017/11/10/oil-gas/reality-sets-in-as-krig-imagines-life-with-less-oil/5b62f550-c625-11e7-b3d7-7914dcb399d5>.

26 The Iraqi Oil Ministry, “The Oil Ministry: Contracts should be Signed Only with the Federal Government,” October 19, 2017, <http://www.oil.gov.iq/index.php?name=News&file=article&sid=928>.

27 Government of Iraq (@IraqiGovt) “PM @HaiderAlAbadi: All revenues from oil exported from Kurdistan region must be handed over to federal government” and “PM @HaiderAlAbadi: The previous 17% share from the federal budget allocated to Kurdistan region is not written in law and is unjust,” Twitter, November 7, 2017, <https://twitter.com/IraqiGovt/status/927959819209854976>.

28 Ahmed Rashid, Raya Jalabi, “Iraq cabinet plans to cut Kurdistan share in 2018 federal budget,” Reuters, November 6, 2017, <https://www.reuters.com/article/us-mideast-crisis-iraq-kurdistan-budget/iraq-cabinet-plans-to-cut-kurdistan-share-in-2018-federal-budget-idUSKBNID627S>.

ALL POLITICS ARE REGIONAL

Oil and gas development, along with the question of an independent Kurdistan, are deeply intertwined with regional politics. In some ways, Iraq is the epicenter for broader regional power struggles. The Kurdish question in particular resonates well beyond Iraq's borders, while the KRG's need to export oil (and desire to export gas) by necessity involves regional players, notably Iran and Turkey, but also Saudi Arabia and Russia.

The two most relevant regional actors are Iran, whose Quds Forces Commander Qassem Suleimani was reportedly heavily involved in the internal dynamics that facilitated a Patriotic Union of Kurdistan (PUK)-brokered Peshmerga withdrawal in Kirkuk in October,²⁹ and Turkey, whose current president, Recep Tayyip Erdoğan, launched a strategic energy partnership with the KRG in 2013 when he was prime minister, reaching an agreement that enabled independent exports from the KRG through the development of an oil pipeline.³⁰

While Tehran, Ankara, and Baghdad may disagree on many things, the referendum demonstrated that they agree on opposing and preventing the establishment of an independent Kurdistan. Both Iran and Turkey have their own domestic Kurdish populations, which have also advocated for more autonomy. In Turkey, the decades-long conflict against the Kurdistan Workers Party (PKK) is a primary concern for Erdoğan, who sees the actions of the PKK, along with the efforts of the PKK-linked Syrian Kurdish Democratic Union (PYD) political party and the affiliated People's Protection Units (YPG), in declaring an autonomous Kurdish zone in Syria as an existential threat.³¹ While Ankara may have found common cause with the KRG's ruling Kurdistan Democratic Party (KDP) in opposing the

PKK, this common interest falls well short of Turkish support for the KRG's independence bid.³²

Turkey has arguably underwritten the KRG's ability to develop some degree of economic distance from Baghdad, however, by enabling an independent export route for the KRG. This precipitated the dispute between Baghdad and Erbil over export and marketing rights for Iraqi crude, culminating in Baghdad's inclusion in the 2013 and 2014 budget language to withhold the agreed 17 percent budget transfer to Erbil in the event its oil was not sent through the State Oil Marketing Organization (SOMO).³³ Sitting at the center of this dispute, Turkey has used its relationship with the KRG as a counterweight to Baghdad, and its role as investor, customer, and enabler as an insurance policy against perceived growing Iranian influence in Iraq.

Following the referendum, Erdoğan warned the KRG that Turkey holds the power over "the tap" and can decide to close it, ostensibly as punishment for the KRG and specifically the ruling KDP, should it not prove as pliant as Turkey may have assumed.³⁴ However, while Turkey may play one party against the other, that does not mean Ankara is the only one with interests at stake. Given its desire to become an energy hub, it is debatable whether Ankara would risk its reputation as an energy transit corridor to punish the KRG. However, it does provide some degree of political influence. Ankara and Baghdad are reportedly discussing a revival of the out-of-commission Iraq-Turkey pipeline running from Kirkuk to Fishkabur to Ceyhan, which the Iraqi oil ministry asked the state-owned North Oil Company to rehabilitate and reopen.³⁵ The Iraq-Turkey pipeline as well as the KRG pipeline both cross the border at Fishkabur, a crucial oil transit point.³⁶ While rehabilitating the federally controlled Iraq-Turkey

29 Dexter Filkins, "Kurdish Dreams of Independence Delayed Again," *New Yorker*, October 16, 2017, <https://www.newyorker.com/news/news-desk/kurdish-dreams-of-independence-delayed-again>.

30 David Romano, "Iraq's Descent into Civil War: A Constitutional Explanation," *Middle East Journal*, Volume 68, Number 4, Autumn 2014, 560. See also Volkan Ozdemir and Slawomir Raszewski, "State and Substate Oil Trade: The Turkey-KRG Deal," *Middle East Policy* (2016), 131.

31 Rodi Said, "Syria's Kurds rebuked for seeking autonomous region," Reuters, March 17, 2016, <https://www.reuters.com/article/us-mideast-crisis-syria-federalism/syrias-kurds-rebuked-for-seeking-autonomous-region-idUSKCN0WJ1EP>.

32 Till F. Paasche, "Syrian and Iraqi Kurds: Conflict and Cooperation," *Middle East Policy*, Volume 22, Issue 1, March 2015, <http://www.mepc.org/syrian-and-iraqi-kurds-conflict-and-cooperation>.

33 Michael Knights, "Making the Iraqi-Revenue Generating Deal Work," The Washington Institute, December 3, 2014, <http://www.washingtoninstitute.org/policy-analysis/view/making-the-baghdad-krq-revenue-generating-deal-work>.

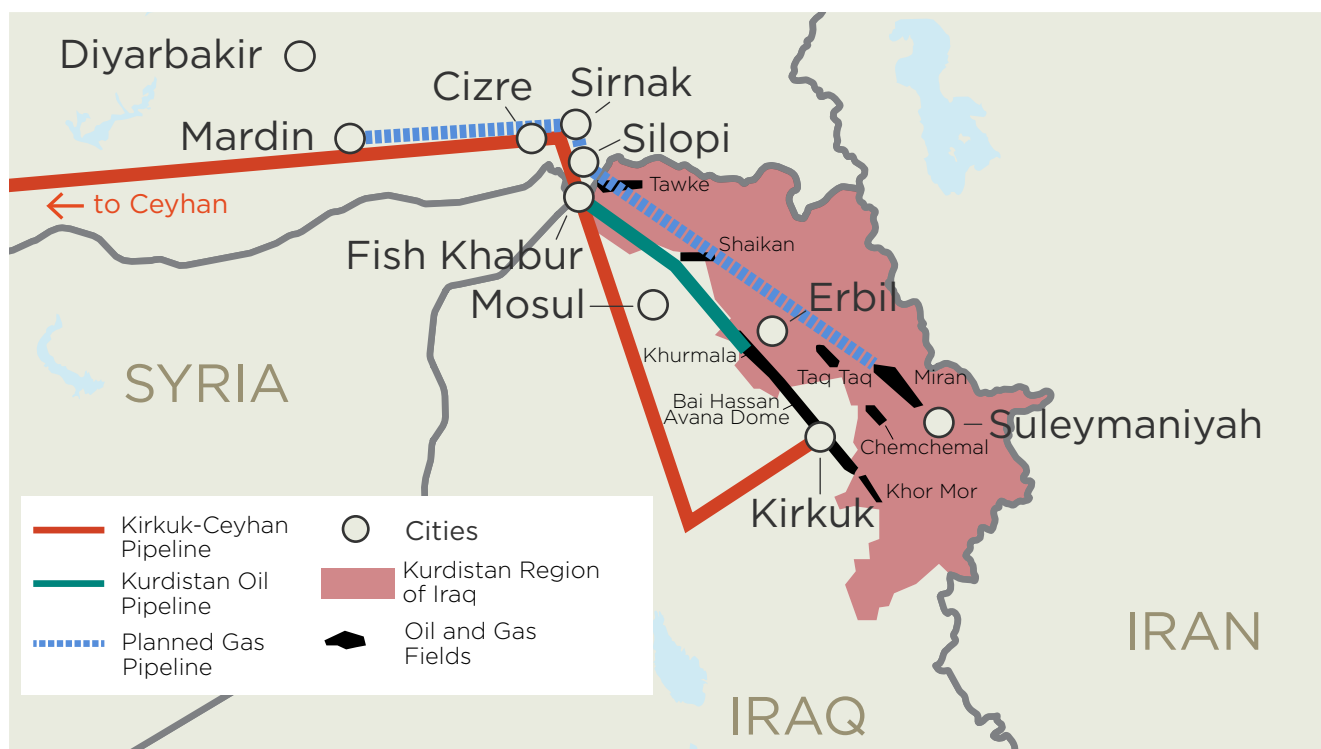
34 Reuters Staff, "Update 1-Iraq's Luaibi orders work to reopen oil pipeline to Turkey," Reuters, October 10, 2017, <https://www.reuters.com/article/us-mideast-crisis-kurds-referendum-turke/we-have-the-tap-turkeys-erdogan-threatens-oil-flow-from-iraqs-kurdish-area-idUSKCN1C018V>.

35 Reuters Staff, "UPDATE 1—Iraq's Luaibi orders work to reopen oil pipeline to Turkey," Reuters, October 10, 2017, <https://af.reuters.com/article/commoditiesNews/idAFL8N1ML1K1>.

36 The KRG independent pipeline carries crude from the Khurmala Dome to Fishkabur, while another pipeline brings crude from DNO's Tawke field to Fishkabur, where it connects to the KRG-Turkey pipeline.

Shaping Iraq's Oil and Gas Future

Map 1. Major Pipelines and Oil and Gas Fields



pipeline could enable exports of between 250,000 and 400,000 barrels per day, it will likely take years, and hundreds of millions of dollars, to repair.³⁷

Even as Baghdad and Ankara publicly talk of rehabilitating the pipeline, however, the two countries are in International Criminal Court arbitration over a 2014 case brought by Iraq, which alleges Turkey violated the Iraq-Turkey pipeline agreement by allowing independent KRG exports from Iraq and selling this crude without the approval of the Ministry of Oil in Baghdad.³⁸ If Turkey were to turn export authority from Ceyhan back to Baghdad, as Editor in Chief Ben Van Heuvelen of the *Iraq Oil Report* noted, it is “[h]ard to see how Turkey could give back control of Ceyhan exports to SOMO without undermining its legal position in arbitration.”³⁹

Furthermore, the KRG is reportedly indebted to Turkish companies, suggesting Ankara may have a vested interest in KRG retaining its ability to generate revenue—and thus repay its debts.⁴⁰ In negotiations with Ankara to ramp up exports from Iraq under the control of SOMO, Baghdad refused responsibility for KRG debts owed to Turkey, which reportedly amount to \$4 billion.⁴¹ While the Iraqi government has also announced its intention to take over the border crossings, and potentially the oil infrastructure located there, any attempt by Baghdad to take control of and physically limit oil exports—and thus likewise limit the KRG’s ability to generate revenue and pay operators—would likely raise a host of legal questions.⁴²

Fishkhabur is also the only crossing point that provides access for US military activities in Syria, and thus of interest to Iran, which some analysts say could use its influence through the Iranian-

37 Tom DiChristopher, “Iraqi oil shipments to Turkey reportedly plunge after standoff with Kurds,” *CNBC*, October 18, 2017, <https://www.cnbc.com/2017/10/18/iraq-oil-shipments-to-turkey-reportedly-plunge-after-standoff-with-kurds.html>.

38 Oil & gas: Iraq arbitrates to disrupt Kurdish oil sales, *Lexology*, May 30, 2014, <https://www.lexology.com/library/detail.aspx?g=bf98f37e-629a-44df-8a72-8b4460b9dcda>.

39 Ben Van Heuvelen (@berendvh): “Hard to see how Turkey could give back control of Ceyhan exports to SOMO without undermining its legal position in arbitration,” September 28, 2017, Twitter. <https://twitter.com/berendvh/status/913512278577811460>.

40 Patrick Osgood and Ben Van Heuvelen, Seeking Financial Rescue, KRG offered Turkey major oil assets, *Iraq Oil Report*, March 11, 2017.

41 Kadhim Ajrash, “Iraq’s Oil Export Talks with Turkey Complicated by \$4 Billion Debt,” *Bloomberg*, November 2, 2017, <https://www.bloomberg.com/news/articles/2017-11-02/iraq-to-restart-kirkuk-oil-exports-this-month-via-kurdish-pipe>.

42 Rhys Dubin, “Why the Fight for Fishkhabour Is So Important for Iraqi Kurds,” *Foreign Policy*, November 1, 2017, <http://foreignpolicy.com/2017/11/01/why-the-fight-for-fishkhabour-is-so-important-for-kurds-iraq-attack-fishkhabour-feyshkhabour/>.

supported Shia militias to secure the border crossing and “clamp the gate shut” to US influence in Syria.⁴³ In the wake of the referendum, the Iraqi oil ministry announced it is working with Iran on a potential deal to export Kirkuk's crude to an Iranian refinery by truck,⁴⁴ and in December 2017 the Iraqi government announced it had reached an agreement to swap up to 60,000 barrels of crude produced in Kirkuk for Iranian oil for one year, enabling the federal government to resume the sale of crude from Kirkuk.⁴⁵

“While Tehran, Ankara, and Baghdad may disagree on many things, the referendum demonstrated that they agree on opposing and preventing the establishment of an independent Kurdistan.”

Iran exerts substantial political influence in Iraq, a long-held concern for the United States and for Tehran's Sunni Arab rivals in the Persian Gulf, and one that has also raised questions about future oil market dynamics as Iranian production rises and the regional conflict between Saudi Arabia and Iran plays out. Iran's role in brokering the agreement with the PUK in Kirkuk and the involvement of the Popular Mobilization Forces in retaking the city along with the regular armed forces further underline Iran's continued influence in Iraq, which has not gone unnoticed by regional actors concerned with Tehran's hegemonic ambitions.

During his October visit, US Secretary of State Rex Tillerson called on Riyadh to counter Iranian influence in Iraq, a request Saudi Crown Prince Mohammed bin Salman (commonly referred to as MBS), whose power has dramatically increased, appears willing to oblige.⁴⁶ Following Iraqi Shia cleric Muqtada al-Sadr's July 2017 visit to Saudi Arabia, Iraq and Saudi Arabia moved to restore ties, including reopening the Arar border crossing, closed since Iraq's 1990 invasion of Kuwait.⁴⁷ Intended to signal to Tehran that Iraqi Shia need not be beholden entirely to Iran, the MBS-Sadr meeting also suggests a wariness even amongst Iraqi Shia of the outsized nature of Iranian influence and a nationalist Iraqi perspective that views Iranian influence skeptically. The visit also resulted in Saudi Arabia pledging \$10 million for Iraqi reconstruction and exploring potential investment opportunities in Shia-dominated southern Iraq, pointing to the willingness of Iraqi groups to play external actors against one another for domestic benefit.⁴⁸ In late 2017, the oil ministers of Iraq and Saudi Arabia discussed energy sector cooperation, reportedly signing eighteen memoranda of understanding and cooperation on oil, gas, refining, and petrochemical projects.⁴⁹

Finally, Russia's involvement in both Syria and the Middle East conflict more broadly coupled with Russian oil firm Rosneft's \$3.5 billion in investment in the KRI in 2017 represent both a potential lifeline for KRI energy development and further evidence of Iraq's precarious balancing act between regional power dynamics.⁵⁰ Rosneft will reportedly take control (and potentially increase capacity from 700,000 to 950,000 bpd) of the pipeline linking Kurdistan and Turkey, making it seem less likely that Ankara or Baghdad might try to shut down the pipeline.⁵¹ Rosneft also announced that it would invest another \$400 million in five exploration blocks in the KRI, signing production sharing agreements even as Iraqi forces advanced on Kirkuk, prompting

43 Tomer El-Ghobashy, Mustafa Salmin, and Liz Sly, “Iraqi forces clash with Kurdish troops near strategic border with Syria,” *Washington Post*, October 26, 2017, https://www.washingtonpost.com/world/iraqi-forces-clash-with-kurdish-troops-near-strategic-border-with-syria/2017/10/26/2f0987bc-ba30-11e7-be94-fabb0f1e9ffb_story.html?utm_term=.ae8f0cfd39e1.

44 Ben Lando and Staff, “Iran to Facilitate Kirkuk Exports,” *Iraq Oil Report*, November 10, 2017, http://www.iraqoilreport.com/news/iran-facilitate-kirkuk-exports-26543/?utm_source=IOR+Newsletter&utm_campaign=fd19881b15-Email_Update&utm_medium=email&utm_term=0_f9870911e6-fd19881b15-192894053.

45 Reuters Staff, “Iraq and Iran Sign Kirkuk Oil Swap Deal,” *Reuters*, December 9, 2017, <https://www.reuters.com/article/us-iran-iraq-oil/iraq-and-iran-sign-kirkuk-oil-swap-deal-idUSKBN1E30JE>.

46 Paul Sonne, Margherita Stancati, “Tillerson Looks to Contain Iran's Influence in Iraq,” *Wall Street Journal*, October 22, 2017, <https://www.wsj.com/articles/tillerson-calls-for-closer-ties-between-saudi-arabia-iraq-1508675503>.

47 Margherita Stancati, “Saudis Open Iraqi Border and Forge Ties to Counter Iran,” *Wall Street Journal*, August 23, 2017, <https://www.wsj.com/articles/saudis-open-iraqi-border-and-forge-ties-to-counter-iran-1503480601>.

48 “Saudi Arabia to reopen border with Iraq after 27 years,” *Al Jazeera*, August 15, 2017, <http://www.aljazeera.com/news/2017/08/saudi-arabia-reopen-border-iraq-27-years-170815173750439.html>.

49 Iraq Ministry of Oil, Iraq & Saudi Arabia Signs 18 Memorandums of Understanding of Oil, Gas, Refining & Projects, December 6, 2017, <http://www.oil.gov.iq/index.php?name=News&file=article&sid=967>

50 Henry Foy, David Sheppard, “Iraq demands ‘clarification’ on Rosneft's Kurdistan contracts,” *Financial Times*, October 30, 2017, <https://www.ft.com/content/1d425216-bd8c-11e7-b8a3-38a6e068f464>.

51 Dmitry Zhdannikov, Vladimir Soldatkin, “Russia's Rosneft to take control of Iraqi Kurdish pipeline amid crisis,” *Reuters*, October 20, 2017, <https://www.reuters.com/article/us-mideast-crisis-iraq-kurds-rosneft/russias-rosneft-to-take-control-of-iraqi-kurdish-pipeline-amid-crisis-idUSKBN1CPI6L>.

Shaping Iraq's Oil and Gas Future

Baghdad to call on the company to “clarify” its investments in the KRI.⁵²

Rosneft provided the KRG with more than \$3 billion in advanced payments for crude oil transfers to settle outstanding debts with energy companies DNO, Genel Energy, and the Pearl Consortium, comprised of Crescent Petroleum, Dana Gas,

Austria's OMV, and Hungary's MOL, prior to the referendum.⁵³ Rosneft will also reportedly finalize a deal with the KRI to finance a regional gas pipeline with a capacity of 30 billion cubic meters (bcm) and exports potentially starting as early as 2020, a seemingly optimistic prognosis discussed in the gas section of this paper.⁵⁴

52 Henry Foy, David Sheppard, “Iraq demands ‘clarification’ on Rosneft’s Kurdistan contracts,” *Financial Times*, October 30, 2017, <https://www.ft.com/content/1d425216-bd8c-11e7-b8a3-38a6e068f464>.

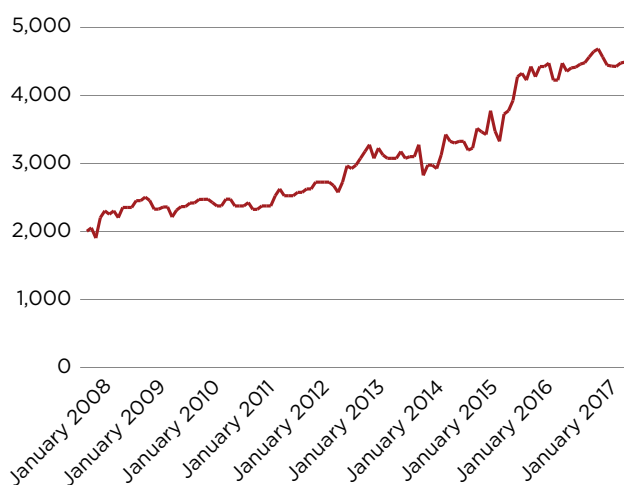
53 Stratfor Snapshots, “Iraq: Kurdistan Starts Settling Its Debts Ahead of Independence Referendum,” *Stratfor*, August 31, 2017, <https://worldview.stratfor.com/article/iraq-kurdistan-starts-settling-its-debts-ahead-independence-referendum>.

54 Henry Foy, Edward White, “Rosneft expects to ink deal with Kurdistan for new gas pipeline to Turkey,” *Financial Times*, September 18, 2017, <https://www.ft.com/content/7ad2857a-c242-3ce5-8a18-563c9a9567c6?mhq5j=e6>.

OIL DEVELOPMENT AND IMPORTANCE IN IRAQ

With this political and regional context in mind, Iraq's oil production trajectory in recent years has been tremendous given the circumstances, even if not necessarily at the levels anticipated in earlier, more optimistic projections.⁵⁵ Iraq has become the world's fourth largest oil exporter⁵⁶ and the second largest producer in OPEC, with production exceeding 4 million bpd for the first time ever in 2015, increasing to roughly 4.5 million bpd in 2016.⁵⁷ In 2017, the country also established a new record for annual exports. Production levels in 2006 were just under 2 million bpd, representing a more than doubling of production over a ten-year period.⁵⁸

Figure 1. Iraq Crude Oil Production
(Thousand barrels per day)



Source: Energy Information Agency Data.

While oil discovery in Iraq dates to 1927, the industry remained underdeveloped under Saddam Hussein's leadership and languished under international sanctions. International investment only began to return to the country following the fall of the Baath regime and the early years after the US invasion. The task in Iraq has mainly been one of rebuilding

and rehabilitating in the wake of devastation caused by prolonged war and international sanctions and subsequent internal conflict.

In the KRI, oil development is relatively immature and in many instances still in the exploratory phases. The KRI has effectively started from scratch, as the hydrocarbon resources of the region that now constitutes the KRI—apart from Kirkuk—were undeveloped, indeed almost totally unexplored, even prior to the downfall of Saddam Hussein.

As for Kirkuk, the impact of its development on Iraq's Kurdish population was—and is still today—politically contentious, not least since field development from the late 1920s onward led to the city of Kirkuk, long considered a “multi-ethnic area” with a prominent Kurdish presence, to become a flashpoint for ethnic identity and competition as workers arrived to operate the new wells and processing plants.⁵⁹ The Kirkuk field is divided into three domes—or geological formations—but only one, Khurmala, has been under KRG control prior to 2014, operated by Kurdish firm KAR.

The recovery of Iraqi oil production, and investment into exploration and production in the KRI, should overall be viewed as a major milestone, particularly given the challenging political and security environment. Acknowledging the above-ground risks, Iraq's average oil production costs are among the lowest in the world, at less than \$11 (\$10.57) to produce a barrel of oil in the country, according to Rystad energy data published by the *Wall Street Journal*.⁶⁰ This is compared to nearly \$30 in Nigeria or nearly \$20 in Russia.⁶¹ The cost is only slightly higher than that in neighboring Iran (\$9.08) and Saudi Arabia (\$8.98). Looking purely at production (\$2.16 or 20 percent of the total) costs, and setting aside the other cost components, Iraq is cheaper than production in Saudi Arabia (\$3.00), second only to Iran, where production costs are \$1.94.⁶²

55 The International Monetary Fund, *Iraq: Selected Issues*, IMF Country Report No. 15/236 August 2015, 1, <https://www.imf.org/external/pubs/ft/scr/2015/cr15236.pdf>.

56 The World Bank, *Iraq: Systematic Country Diagnostic*, February 3, 2017, <http://documents.worldbank.org/curated/en/54281148727729890/pdf/IRAQ-SCD-FINAL-cleared-02132017.pdf>

57 *BP Statistical Review of World Energy*, Oil Production, June 2017, 14, <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review-2017/bp-statistical-review-of-world-energy-2017-full-report.pdf>.

58 Ibid.

59 Michael Knights with Ahmed Ali, *Kirkuk in Transition: Confidence Building in Northern Iraq*, Policy Focus #102, The Washington Institute, April 2010, <https://www.washingtoninstitute.org/uploads/Documents/pubs/PolicyFocus102.pdf>.

60 WSJ News Graphics, “Barrel Breakdown,” *Wall Street Journal*, April 15, 2016, <http://graphics.wsj.com/oil-barrel-breakdown/>.

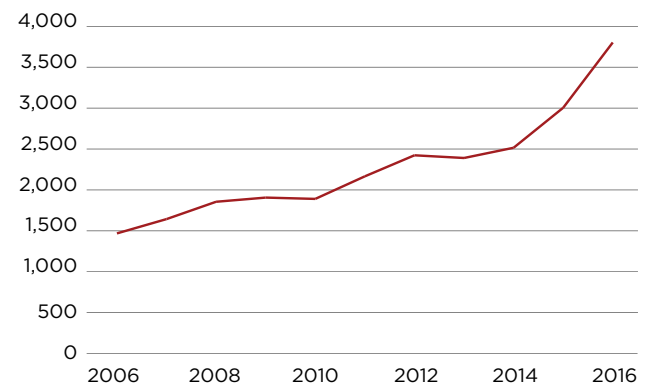
61 WSJ News Graphics, “Barrel Breakdown,” *Wall Street Journal*, April 15, 2016, <http://graphics.wsj.com/oil-barrel-breakdown/>

62 Ibid.

Shaping Iraq's Oil and Gas Future

Capitalizing on this competitive advantage is crucial. Nearly all of Iraq's government revenue, (over 90 percent), is derived from the hydrocarbon sector, which also accounts for 99 percent of exports and nearly 60 percent of overall GDP.⁶³ Energy has enabled the Iraqi economy to grow—estimates put annual growth at five percent from 2004 to 2014—but the Iraqi economy is also beholden to energy, reliant on oil exports and the revenue they generate.⁶⁴ The oil price decline beginning in late 2014 underscored the reliance of the Iraqi economy, as well as the KRG economy, on oil revenues, as Baghdad experienced a “double shock” due to falling revenue from lower oil prices and rising expenses related to the war against ISIS.⁶⁵ The KRG has undergone a “triple shock,” navigating the additional challenge of a cutoff in federal budget transfers from Baghdad amid a dispute over whether the KRG was contributing oil revenue to the national treasury.⁶⁶

Figure 2. Iraq Crude Oil Exports
(Thousand barrels per day)



Source: Energy Information Administration Data.

⁶³ World Bank, Iraq: Systematic Country Diagnostic, February 3, 2017, 1.

⁶⁴ Kenneth Katzman, Carla E. Humud, *Iraq: Politics and Governance*, Congressional Research Service, March 9, 2016, 34. <https://fas.org/sgp/crs/mideast/RS21968.pdf>.

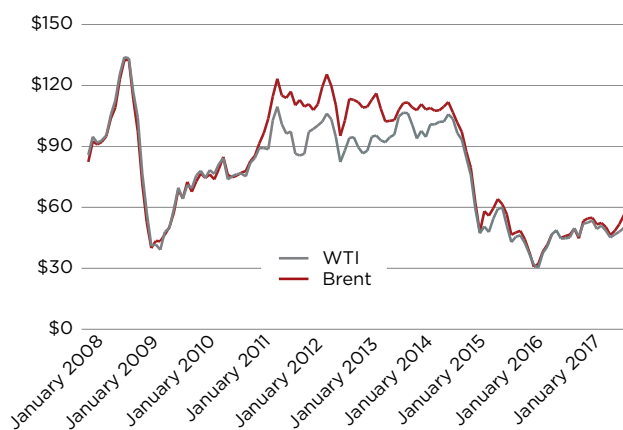
⁶⁵ IMF Press Release No. 17/323, IMF Executive Board Concludes 2017 Article IV Consultation with Iraq, August 9, 2017, <http://www.imf.org/en/News/Articles/2017/08/09/pr17323-iraq-imf-executive-board-concludes-2017-article-iv-consultation>.

⁶⁶ Kenneth Katzman, Carla E. Humud, *Iraq: Politics and Governance*, Congressional Research Service, March 9, 2016, 21, <https://fas.org/sgp/crs/mideast/RS21968.pdf>.

ENERGY LANDSCAPE: OIL MARKETS IN TRANSITION

Oil prices, which since 2014 have dropped to their lowest levels in decades, are a key component of this “shock.” This price environment and changing oil market dynamics underscore how Iraq’s oil future—and indeed its future more broadly, given the centrality of oil revenues—is impacted by a much broader shift in the energy landscape. This shift involves the rise of US shale production, Saudi Arabia’s 2014 shift in oil market management to pursue market share over price (presumably in the hopes of driving US shale out of the market and dampening potential Iranian production), the lifting of the US crude oil export ban, and the OPEC decision to curtail production in the hopes of buoying global prices.

Figure 3. Brent and WTI Oil Prices



Source: US Energy Information Administration Data.

The combination of increased US oil production from shale and the shift in Saudi Arabia’s market management caused oil prices to crater, putting pressure on OPEC and major oil producers around the world. Between 2014 and 2015, the OPEC Reference Basket fell from around \$96 per barrel to just under \$50 per barrel,⁶⁷ causing OPEC’s

collective export revenues to fall by nearly half to their lowest level since 2005.⁶⁸ This fall in revenue occurred even as total exports by its members rose slightly over the previous year.

According to OPEC data, the value of Iraq’s oil exports fell from nearly \$84 billion in 2014 to approximately \$54.7 billion in 2015, even as total export volumes increased from 2.5 to just over 3 million barrels per day over the same period.⁶⁹ This caused the size of the Iraqi budget to shrink, even as oil production continues to increase. The 2014 Iraqi budget was \$150 billion; the following year, the Iraqi government adopted a \$105 billion budget, and in December 2016 adopted an \$88 billion budget for the following year, which included a \$20 billion deficit.⁷⁰ Between 2015 and 2016, Iraq’s foreign exchange reserves declined from \$54 to 45 billion and the budget deficit increased from 12 to 14 percent of GDP.⁷¹

To grapple with this new oil price environment, at the 131st meeting of the OPEC conference in November 2016, member countries agreed on voluntary production adjustments, effective January 1, 2017, for an initial period of six months.⁷² A month later, eleven non-OPEC producing countries also agreed to participate in the production curtailment regime, which has since been extended through the end of 2018. Saudi Arabia, the de-facto leader of OPEC and the country instrumental in pushing these production cuts and taking on the bulk of the responsibility for them, was seemingly surprised by the degree to which shale has become competitive in some plays at increasingly lower prices, leading to an about-face from its policy of an all-out production push.

The situation has also raised questions about the characteristics of shale versus conventional production and the impact on oil market dynamics more broadly. Shale producers’ short production cycles and ability to rapidly ramp on and off

67 OPEC Annual Statistics Bulletin, 86, Table 7.1 OPEC reference Basket and corresponding component spot prices.

68 OPEC Annual Statistics Bulletin, 2016, 6, https://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2016.pdf.

69 OPEC Annual Statistics Bulletin, 2016, 16, Table 2.3 OPEC Members’ Value of Exports, and 48, Table 5.1, OPEC Members’ Crude Oil Exports by Destination.

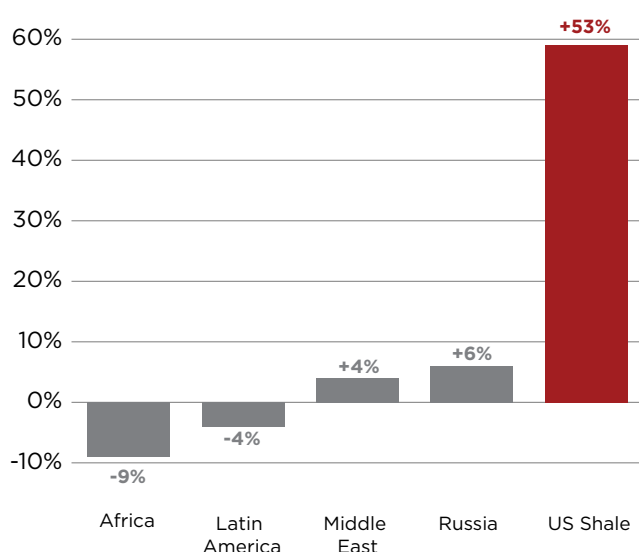
70 Kenneth Katzman, Carla E. Humud, *Iraq: Politics and Governance*, Congressional Research Service, March 9, 2016. 34. <https://fas.org/sgp/crs/mideast/RS21968.pdf>.

71 The International Monetary Fund, IMF Executive Board Concludes 2017 Article IV Consultations with Iraq, Press Release No. 17/323, August 9, 2017, <http://www.imf.org/en/News/Articles/2017/08/09/pr17323-iraq-imf-executive-board-concludes-2017-article-iv-consultation>.

72 *2017 World Oil Outlook 2040*, Organization of Petroleum Exporting Countries, October 2017, <https://woo.opec.org/index.php/pdf-download>.

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Figure 4. Change in Upstream Investments



Source: International Energy Agency, World Energy Investment Report, 2017.

have enabled greater flexibility in responding to changing market conditions. This has implications for oil price recovery, as when prices start to creep up, more shale production can be quickly brought back online; many warn that the recovery will be determined by the price band within which US shale can compete, even as OPEC continues to maintain an agreement to curtail production.⁷³

In addition to impacting revenue in the near term, low oil prices and changing market dynamics impact upstream investment decisions. Shell CEO Ben Van Beurden has referred to a potentially “lower for longer” scenario, a phrase that is more telling of the industry’s investment outlook than a price prognosis.⁷⁴ Between 2014 and 2016, upstream investment fell 44 percent and though 2017 saw modest recovery, much of the investment was in shale.⁷⁵ In the current environment, companies have increased their focus on “activities delivering paybacks in a shorter period of time” and simpler more streamlined projects.⁷⁶ In the near

term, upstream investment could remain either constrained or conservative, as oil companies shy away from complex multiyear megaprojects and instead focus on low cost, high recovery oil.

Low oil prices caused huge problems for both Baghdad and Erbil, as lower revenue and higher costs due to the ongoing security situation resulted in less additional funding for paying companies and investing in the sector.⁷⁷ As a low-cost producer, Iraq should maintain a competitive advantage in an investment-constrained, low-price environment. However, this is not assured, particularly if progress is slow in resolving some of the above-ground issues related to incentives and contract terms, business certainty, and operational constraints.

While the TSCs used by the Ministry of Oil are relatively low risk for the Iraqi government, the situation was more favorable when the contracts were negotiated and prices were high. Low oil prices put pressure on the government, whose take decreases while the per barrel fee for operators remains fixed. Since 2014, Baghdad was forced to ask firms to decrease investment, lower production rates, and otherwise scale back due to its inability to pay, ultimately impacting the country’s (and companies’) ability to scale up production, which will require high levels of continued investment.⁷⁸

For the KRG, low oil prices compounded the dispute in 2014 and 2015 over federal revenue transfers following Baghdad’s accusation that Erbil was selling oil independently of the SOMO. The reduced revenue caused Erbil to fall behind in payments to companies over the course of 2014 and 2015, which it has since made efforts to rectify. On the one hand, the irregularity of payments could be a bigger risk in the KRI, where many of the producing fields are operated by smaller companies that may not have as much cash on hand as an IOC; nevertheless, investment in the KRI makes up a larger proportion of some companies’ portfolios potentially making them more inclined to stick it out, whereas an IOC may go look for a higher return on investment.

73 David Sheppard, “Shale band explains oil price struggle to top \$60 a barrel,” *Financial Times*, October 17, 2017, <https://www.ft.com/content/14f77e72-b343-11e7-a398-73d59db9e399?mhq5j=e6>.

74 Lisa Fleisher, “Oil Prices May Stay Low ‘Forever’,” *Bloomberg*, July 28, 2017, <https://www.bloomberg.com/news/articles/2017-07-28/oil-prices-may-stay-low-forever>.

75 The International Energy Agency, World Energy Investment 2017, <https://www.iea.org/publications/wei2017/>.

76 Ibid.

77 *Iraq’s Energy Sector: Addressing Challenges and Leveraging Opportunities*, Plueger International, EU Iraq Energy Center, May 2016.

78 *Iraq’s Energy Sector: Addressing Challenges and Leveraging Opportunities*, Plueger International, EU Iraq Energy Center, May 2016, 16.

CHALLENGES AND RECOMMENDATIONS

It should be noted that while challenges to increasing oil production in Iraq broadly remain, Iraq has made tremendous progress over the last decade, particularly amid difficult conditions since 2014. However, there are still obstacles to overcome, which should be a priority to solve for the new government and leadership in Iraq and the KRI following the spring 2018 elections.

The current political climate demonstrates that the simmering disagreements between Baghdad and Erbil on resources and revenues still hold the potential to boil over. More to the point, independent companies and IOCs alike have continued to invest in Iraq and in the KRI despite the difficult security environment and the lack of a political settlement. A prolonged period of uncertainty, however, could raise the specter of political risk, which, combined with international market conditions that have constrained investment, could significantly dampen investor interest.

While far from an exhaustive list, a few critical issues to address include the following:

1. Improve the fiscal terms for companies, provide stable investment conditions, and above all guarantee business certainty—and payment.

In an increasingly constrained oil investment climate, IOCs will be assessing their investment in Iraq and the KRI against other opportunities in their portfolio, and even promising fields will be competing for capital and labor with other global plays that may have lower political risk, shorter payback times, and higher return on investment.⁸⁰ This is particularly relevant for Iraq, which needs the technology, expertise, and project management, and in many instances the balance sheet of these companies to rehabilitate fields and increase recovery.

A May 2017 report by Wood Mackenzie⁸¹ determined that the terms of the TSCs offered by Baghdad were a

key hindrance to Iraq meeting its production goals.⁸² While contracts offered through the Ministry of Oil offer certainty, the terms are far from favorable for producers, offering low margins and little incentive to reduce costs or increase efficiency. This has become worse over time, as the fall in oil prices and the government's need to divert revenue to pay for the conflict with ISIS resulted in reduced payments to IOCs, delayed the development trajectory of fields, and changed the level and timeline of productivity. There is a growing consensus on the need for a new investment model contract that will better align the interests of the IOCs with the host government and ensure cost effective and rapid production growth across all oil price scenarios. While the Ministry of Oil has alluded to this need numerous times, rather than setting a new model the Ministry has asked the IOCs to suggest new frameworks in the latest announced bidding round for priority border fields.

In September 2017, Shell announced that it would exit the Majnoon field and sell its 20 percent stake in West Qurna 1, indicating that at least one major investor has concluded that the current terms are sufficiently unfavorable and are starting to outweigh potential rewards.⁸³ In addition to negatively impacting current projects, either through delays or potential withdrawals, the current fiscal environment precludes bringing new projects online. Given the complicated operating environment and the current oil price, the Iraqi government should, and appears to be willing to, rethink these terms.⁸⁴ Indeed, in late 2017 the Ministry of Oil announced it would offer nine new oil and gas blocks on the borders with Iran and Kuwait for exploration and development. While the terms are to be finalized in 2018, the Ministry noted it would make substantial changes to both exploration and service contracts.⁸⁵

While the terms offered by the KRG under the PSCs are more favorable to companies, the operational environment and business climate is less certain,

79 The challenges and recommendations identified in this section are based on over a dozen interviews with current and former diplomats, international oil companies, analysts, and researchers.

80 Based on interviews with multiple IOCs.

81 Velda Addison, "Iraq Faces Obstacles on Path to Production Target," *E&P Mag*, May 31, 2017, <https://www.epmag.com/iraq-faces-obstacles-path-oil-production-target-1606846>.

82 This challenge was also brought up in interviews the author conducted with private and public sector individuals and analysts.

83 "Shell says to exit Majnoon oil field," *Platts*, 15 September 2017, <https://www.platts.com/latest-news/oil/london/shell-says-to-exit-iraqs-majnoon-oil-field-26805192>; Reuters Staff, "Shell selling its stake in Iraq's West Qurna 1 oil field," Reuters, September 13, 2017, <https://www.reuters.com/article/shell-iraq-qurna/shell-selling-its-stake-in-iraqs-west-qurna-1-oil-field-idUSL5NILU2JV>.

84 The Oil and Gas Year: Iraq Overview, says: "In the second half of 2016, the Iraqi government and the Ministry of Oil signaled a readiness to abandon the technical service contracts," <http://www.theoilandgasyear.com/market/iraq/>; Ahmad Ghaddar, "Iraq offers oil fields under new contract terms," Reuters, October 24, 2016, <http://www.reuters.com/article/us-iraq-oil-contract/iraq-offers-oil-fields-under-new-contract-terms-idUSKCN12O1MV>.

85 Ahmed Rasheed, "Iraq invites foreign bids for oil, gas blocs in new areas," Reuters, November 27, 2017, <https://www.reuters.com/article/us-iraq-energy-oil/iraq-invites-foreign-bids-for-oil-gas-blocs-in-new-areas-idUSKBN1DR0SO>.

and the unreliability of payments has impacted investment and is thought to have contributed to some companies deciding to withdraw from investments there.⁸⁶ The open political questions raised by the referendum and the ongoing issues with Baghdad add political risk, while there is also business uncertainty associated with the durability of contract terms as producers transition from exploration to production.

The irregularity of payments (and the issue of those still outstanding) has improved over the course of 2017, but is still a key source of uncertainty.⁸⁷ While the KRG has thus far kept its promise of regular payments and, in the fall of 2017 settled outstanding debts and disputes, the loss of revenue from the Kirkuk fields, production suspensions due to political instability, and a serious dispute with Baghdad could impact the KRG's bottom line—and its ability to make payments. This is further complicated by the fact that the KRG received—and thus owes—around \$3 billion in prepayment for crude oil from traders, including Rosneft, Trafigura, and Vitol.⁸⁸

2. Alleviating uncertainty and maximizing production will require addressing the issue of revenue management and providing a durable and workable agreement on exports.

The ongoing disputes over resource rights between Baghdad and Erbil, and the seeming lack of a durable agreement on exports has been and will continue to be an increasing source of uncertainty for producers in the KRI as they move from exploration to production.

In the KRI, one element of business uncertainty is the question of exports and who has the ultimate right to market and sell crude. While discussions between Ankara and Baghdad to rehabilitate the currently offline pipeline linking Kirkuk oil to Turkey remain just discussions, these talks, along with statements by the federal government about asserting control over key border crossings, inject uncertainty into the equation for Kurdish production and for producers operating in Kurdistan.

The events of fall 2017 illustrate how aboveground risks can impact production. For example, during the referendum crisis, Iraqi authorities closed the airspace over the KRI, preventing international commercial flights in and out of cities like Erbil

“Given the intersection between many of the security-related issues . . . the United States has a clear interest in ensuring both parties address their disagreements through dialogue.”

and Sulaymaniyah. This hampered the mobility of companies' staff, and the overall situation prompted Chevron to announce that it would temporarily suspend the exploratory drilling that the company had just resumed earlier that month after a two-year hiatus.⁸⁹

Baghdad and Erbil, both of which could potentially have new leadership in 2018, need to find common cause in a transparent and stable arrangement that provides a framework for oil exploration, development, and production and recognizes that incentivizing production and providing clarity on exports is needed. Iraq should also recognize that—regardless of the question of independence—isolating Kurdistan's economy is shortsighted and will yield few positive results. While contentious, Kirkuk could offer the opportunity to test a joint resource management regime, which would serve the interests of both sides in keeping production, exports, and revenue flowing and incentivizing private sector investment.

The United States, which has strong relationships with Baghdad and Erbil, could help facilitate a more structured conversation around these outstanding issues, potentially under the auspices of a US- or internationally led dialogue to mediate the broader disagreement between the central government and Erbil following the referendum. The United Nations has also taken a leadership role, and should it continue, the United States should support this effort and use its relationship with both governments to keep them at the table. Given the intersection between many of the security-related issues, including the influence of Iran and the border with Syria, as well as the energy issues at stake, the United States has a clear interest

86 Dilshad Abdullah, “International oil companies pull out of Kurdistan,” *Al-Monitor*, December 30, 2016, <https://www.al-monitor.com/pulse/originals/2016/12/american-oil-company-exxon-mobil-iraq-kurdistan.html>.

87 Nathalie Thomas, “Frontier too far? Oil producers adjust to reduced hopes for Kurdistan,” *Financial Times*, March 26, 2017, <https://www.ft.com/content/2755dfae-106f-11e7-b030-768954394623>.

88 “Reality Sets in As KRG Imagines Life with Less Oil,” *Middle East Economic Survey*, Weekly Energy, Economic, and Geopolitical Outlook, Vol. 60, No. 45 10 November 2017.

89 Benoit Faucon, “Chevron Temporarily Suspending Operations in Iraqi Kurdistan,” *Wall Street Journal*, October 19, 2017, <https://www.wsj.com/articles/chevron-is-temporarily-suspending-operations-in-iraqi-kurdistan-1508431448>.



The Taq Taq oil field, located north of the Kirkuk oil field and southeast of the Kurdistan capital city of Erbil, has been producing since 2006. *Photo credit: Azad Lashkari/Reuters.*

in ensuring both parties address their disagreements through dialogue.

3. The country needs a robust infrastructure development framework that matches its ambitions.

Looking forward, one of the biggest constraints to increased oil production in Iraq is the ongoing inability of infrastructure development to keep pace with production. In Baghdad and in Erbil, the ongoing security environment has diverted funds that could otherwise be used for infrastructure development. For Iraq to increase production (and thus, in theory, revenue), it must undertake a concerted, coordinated program of infrastructure development.

Such a program will require addressing the need for new public-private partnership models for infrastructure investment, as well as frameworks to better incentivize foreign direct investment. The government should consider how best to bridge this investment gap, potentially with new legislation and streamlining regulation across the value chain.

This includes infrastructure to bring water to southern fields for enhanced oil recovery, as well as treatment facilities to provide that water. Thus, increasing production will require increasing amounts of water and the infrastructure to produce and deliver that water. Water injection facilities have been slow to come online, and little (if any) headway has been made in the long-discussed Common Seawater Supply Project, intended to bring desalinated water to Iraq's southern fields. The inability to provide that water or the infrastructure to produce it will likely hold up further production increases. Additionally, infrastructure to capture and reinject gas will also be key; this issue is discussed in more detail in the gas section of this paper.

Iraq must invest in its midstream transportation infrastructure to bring the oil from fields to processing and export facilities. Iraq announced it would expand the Khor al-Amaya terminal to 1.2 million bpd and undertake dredging to enable Suezmax vessels, which have up to one million barrels of capacity, to load at the port.⁹⁰ The Basra

⁹⁰ "Iraq Targets Crude Terminal Expansion," *Middle East Economic Survey*, January 27, 2017, <https://www.mees.com/2017/1/27/geopolitical-risk/iraq-targets-crude-terminal-expansion/e6501300-4932-11e7-9dae-8d526253c168>.

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Oil Terminal has a capacity of 1.6 million bpd, and Iraq added a fourth single point mooring (SPM) system at the end of 2017, bringing it online earlier than planned to increase southern exports following the referendum.⁹¹ SPMs allow Iraq to pump crude directly to ships at sea, with a theoretical capacity of 900,000 barrels per day, (which *Bloomberg* estimates is closer to 480,000 in practice), helping to alleviate congestion along Iraq's limited coastline.⁹²

It is worth noting that an expansion in southern export capacity also increases Iraq's reliance on the Gulf for the bulk of their exports, a potentially risky position should regional tensions escalate, particularly given the need to transit the Strait of Hormuz, the world's largest oil chokepoint.⁹³

4. In addition to removing obstacles to increased production and export growth, perhaps the biggest challenge for Iraq is sustainably managing the resulting resource revenue in a way that serves the country's long-term development interests and improves the living conditions for all Iraqis.

Iraq must escape the resource trap and figure out how to transform "below-ground natural resource

wealth into above ground financial, physical, or human wealth," and it must do so in a way that provides broad economic benefits.⁹⁴ Oil revenue, while necessary, is not sufficient to foster broad-based economic development and alone "will not generate sufficient jobs to ensure the welfare of all Iraqis."⁹⁵ This is perhaps even more important to the KRI, which lacks final control over its key sources of revenue, namely budget transfers from Baghdad and oil exports through Turkey.⁹⁶

Ultimately, while oil will continue to play a key role in Iraq's future, oil revenue alone will not be enough to drive large-scale economic development and recovery writ large, and could continue to be the focus of contention if these revenues are not invested in a sustainable manner benefitting all Iraqis. Meanwhile, other resources, namely gas and electricity, which lack oil's history or visibility, offer an opportunity for broad-based economic development and even cooperation between Baghdad and Erbil, and between Iraq and its neighbors over the long term.

91 Anthony Dipaola, Julian Lee, "Iraq Adds Oil-Export Facility to Offset Drop on Kurdish Feud," *Bloomberg*, October 23, 2017, <https://www.bloomberg.com/news/articles/2017-10-23/iraq-adds-oil-export-facility-to-offset-output-drop-in-kurd-feud>.

92 Anthony Dipaola, Julian Lee, "Iraq Adds Oil-Export Facility to Offset Drop on Kurdish Feud," *Bloomberg*, October 23, 2017, <https://www.bloomberg.com/news/articles/2017-10-23/iraq-adds-oil-export-facility-to-offset-output-drop-in-kurd-feud>.

93 The US Energy Information Administration, *World Oil Transit Chokepoints*, last Updated July 25, 2017, <https://www.eia.gov/beta/international/regions-topics.cfm?RegionTopicID=WOTC>.

94 Frederich van der Ploeg, "Fossil Fuel Producers Under Threat," *Oxford Review of Economic Policy*, Volume 32, No. 2, 2016, pp 206-222, 217.

95 World Bank, Systematic Country Diagnostic, February 3, 2017, Page 1.

96 Robin Mills, *Under the Mountains: Kurdish Oil and Regional Politics*, Oxford Institute for Energy Studies, Paper WPM 63, January 2016, 31.

GAS DEVELOPMENT KEY TO IRAQ'S FUTURE

While oil is dominant, and often politically charged, in Iraqi discourse and political economy, gas has not traditionally attracted the same attention. Instead, gas is often ignored or seen as a nuisance or byproduct of oil production rather than a valuable commodity in its own right. Thus, despite having the world's twelfth largest gas reserves, amounting to nearly 112 trillion cubic feet (tcf), much of Iraq's gas resources remain untapped.⁹⁷ In 2016, Iraq's natural gas production amounted to just 1 billion cubic meters (bcm), the lowest of any major Middle East hydrocarbons producer.⁹⁸ According to the KRG's Ministry of Natural Resources, the region could hold a potential 200 tcf of gas reserves,⁹⁹ although recent reserve downgrades on the oil side have underlined the challenge of translating this potential into sustainable production.¹⁰⁰

The lack of attention thus far belies the fundamental role gas development could play in Iraq's economic growth. Rather than focusing on the disadvantages of gas compared to oil (i.e., in terms of revenue generation), the Iraqi government and the KRG should focus on the broader benefits of gas development to society. In particular, moving from liquid fuels to gas in power generation comes with a host of economic and environmental benefits, while developing and enabling local industries related to gas and power can have a multiplier effect on employment and economic development. The development of gas would force Iraq to invest domestically, to think long term and strategically, and to create value-added

products that would ultimately help the country diversify. Additionally, natural gas production could help increase the reliability and scope of electricity provision, which would improve trust in the government's ability to provide services and aid overall economic development. More generally, gas development could help Iraq reach many of the goals established in the country's integrated national energy strategy, including meeting domestic energy needs, encouraging economic diversity, improving standards of living, creating employment, and assuming a role in regional and global energy markets.¹⁰¹

Thermal power accounts for 75 percent of Iraqi electricity, and of this 75 percent, gas-fired power stations represent 70 percent of installed capacity.¹⁰² Electric service provision in Iraq remains largely unreliable and inadequate, and suffers from "an ever-widening gap between supply and demand."¹⁰³ While Iraq has taken some positive steps in improved electricity provision and reliability, including signing a \$1.4 billion agreement with GE Power to add 2,000 megawatts (MW) in capacity to the grid in January 2017¹⁰⁴ and a \$400 million agreement to build fourteen electricity substations in Baghdad, Nineveh, Salahuddin, Anbar, Karbala, Diwaniyah, and Basra province,¹⁰⁵ electric service provision remains spotty at best.¹⁰⁶ As such, poor electricity service provision is a source of public grievance, but improvements would better the standard of living in Iraq and help Iraq's political leadership demonstrate their ability to reliably provide and improve public services, which are key to government legitimacy.

97 *Iraq Country Report*, US Energy Information Administration, last updated April 18, 2016. <https://www.eia.gov/beta/international/analysis.cfm?iso=IRQ>.

98 *BP 2017 Statistical Review of World Energy*, June 2017, Chart: Natural Gas: Production in Billion cubic meters, Page 28. <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review-2017/bp-statistical-review-of-world-energy-2017-full-report.pdf>

99 "Gas - Vision," Ministry of Natural Resources, Kurdistan Regional Government, last accessed on October 15, 2017, <http://mnr.krg.org/index.php/en/gas/vision-gas>.

100 Ron Bousso, "Shrinking oil reserves crimp Iraqi Kurdistan's allure," Reuters, March 10, 2016. <https://www.reuters.com/article/us-iraq-kurds-oil/shrinking-oil-reserves-crimp-iraqi-kurdistsans-allure-idUSKCNOWC1G9>.

101 booz&co, Iraq Prime Minister Advisory Commission, Integrated National Energy Strategy, Final Report, September 25, 2012, 76 <http://documents.worldbank.org/curated/en/406941467995791680/pdf/105893-WP-PUBLIC-INES-Summary-Final-Report-VF.pdf>.

102 The International Monetary Fund, Iraq: Selected Issues, August 2015, IMF Country Report No. 15/236, 20.

103 Luay Al-Khatteeb, Harry Istepanian, *Turn A Light On: Electricity Sector Reform in Iraq*, Brookings Doha Center Policy Briefing, March 2015, 4 <https://www.brookings.edu/wp-content/uploads/2016/06/Alkhatteeb-Istepanian-English-PDF.pdf>.

104 Mark Egan, "New \$1.4 Billion GE Power Deal Will Supply Iraq With Reliable Electricity," GE Power, January 18, 2017, <https://www.ge.com/reports/new-1-4-billion-ge-deal-will-supply-iraq-reliable-power/>.

105 Powering Iraq from North to South: Ministry of Electricity and GE Sign \$400 Million Contract to Build 14 Electric Substations, GE News Room, November 22, 2017, <http://www.genewsroom.com/press-releases/powering-iraq-north-south-ministry-electricity-and-ge-sign-400-million-contract-build>.

106 Anne Barnard, "120 Degrees and No Relief? ISIS Takes Back Seat for Iraqis," *New York Times*, August 1, 2015, https://www.nytimes.com/2015/08/02/world/middleeast/iraqis-protest-electricity-shortage-during-heat-wave.html?_r=0.



A gas field in Basra, southern Iraq. Gas development in the south has mainly focused on capturing and processing associated gas produced at major oil fields, to help reduce flaring and utilize Iraq's gas resources.
Photo credit: Essam Al-Sudani/Reuters.

Increased gas and power production could also serve as an area of cooperation between Baghdad and Erbil, as these resources seem to engender less controversy than oil. For Iraq, increased power production and cooperation with Erbil could help alleviate the former's reliance on Iran for both electricity and gas imports in the short term, and potentially create the opportunity for exports over the medium to long term. Iraq is the largest importer of Iranian electricity, and in late 2017 the two countries were working to synchronize their electricity networks.¹⁰⁷

Gas development could also reduce the need for gas imports from Iran, which began in June 2017. Iran exports gas through a pipeline connecting the South Pars field to power plants in Sadr, Baghdad,

and al-Mansuriyah per a 2013 agreement.¹⁰⁸ Under the agreement, exports started at 7 million cubic meters (mcm) per day, with the potential to increase to 35 mcm, resulting in an estimated \$3.7 billion in annual revenue for Iran. Iraq moved to increase Iranian gas imports in late 2017, approving an agreement to import gas to Diyala province.¹⁰⁹ A 2015 agreement also promised gas exports through a separate line to Basra, although it is unclear when this will occur.

In addition to facilitating economic development, domestic gas resources could mitigate potential reliance on Iran for electricity and gas imports, reducing Iran's opportunity for leverage. Reports that Iran cut fuel exports, namely diesel, to the KRG following the referendum provides a cautionary

107 "Iraq Named Iran's Top Electricity Importer," *Financial Tribune*, July 24, 2017, <https://financialtribune.com/articles/energy/68862/iraq-named-irans-top-electricity-importer>.

108 Reuters Staff, "Iran starts gas exports to Iraq, Iranian official tells IRNA," Reuters, June 21, 2017, <https://www.reuters.com/article/us-iran-iraq-gas/iran-starts-gas-exports-to-iraq-iranian-official-tells-irna-idUSKBN19C2PT>.

109 Reuters Staff, "Iraqi government approves more natural gas imports from Iran: statement," *Reuters*, December 5, 2017, <https://www.reuters.com/article/us-iran-iraq-gas/iraqi-government-approves-more-natural-gas-imports-from-iran-statement-idUSKBN1DZ2FG>.

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tale of how Iran might use exports as either a carrot or a stick.¹¹⁰ Given that Iraq is a potentially lucrative, long-term, accessible export market for Iran's gas and electricity exports, which would increase Iran's economic and political influence, it is unlikely that Iran will welcome Iraqi domestic gas development. Additionally, Iran may become increasingly focused on Iraq as an export market as the Trump administration continues to threaten the Iran nuclear deal; the uncertainty surrounding the October decision to decertify the deal could raise the risk perception for companies looking to invest in or cement export deals with Iran.

Developing domestic gas resources could help alleviate the need for imports and over the long term, it holds the potential for Iraq to become an exporter of gas and petrochemicals. Middle Eastern energy consumption is projected to rise out to 2035, with natural gas accounting for more than half that growth,¹¹¹ while OPEC's world oil market report predicts, "the largest contribution to future energy demand is expected to come from natural gas."¹¹² The region's growing gas demand is driven by growing electricity consumption (and the desire to move away from oil-fired electricity generation) and the growing needs of the building sector, industrial activity, and increasing desalination.¹¹³ While the Middle East boasts a high level of aggregate gas reserves, they are mostly located in Qatar and Iran, the former opting to enter the global liquefied

natural gas (LNG) market, and the latter working to build up its export capability. Thus, when it comes to intra-regional gas trade, there could be an opportunity for Iraq.

Iraq could have the long-term potential to supply growing needs in neighboring Kuwait, Jordan, and Saudi Arabia. Prior to the Iraqi invasion of Kuwait, Iraq exported gas to its neighbor through a pipeline with a capacity of up to 400 million cubic feet per day from Iraq's Rumaila field,¹¹⁴ and in September 2017, the Iraqi government announced that the cabinet had authorized talks with Kuwait on gas exports.¹¹⁵ Iraq is also reportedly working with Japanese firm Toyo to build a pipeline for gas exports to Kuwait, which would help Iraq to finish making reparation payments owed to its neighbor following the 1990 invasion.¹¹⁶ Talks to solidify such a deal, while ongoing, have thus far stumbled on disagreements over price. The KRG continues to pursue plans to export gas to Turkey under the auspices of a 2013 intergovernmental agreement, which remains unfulfilled, and the overall Ankara-Erbil energy partnership by the end of the decade.

Gas development could also help facilitate the creation of value-added industries in Iraq, and the high ethane content of Iraq's gas resources, if exploited, could give Iraq a strategic advantage over countries in the Middle East facing shortages in ethane and switching to more expensive feedstock like naphtha.¹¹⁷

110 Iran bans fuel trade with Kurds after 'Yes' vote in independence referendum, France 24, October 2, 2017, <http://www.france24.com/en/20170930-iran-kurdistan-ban-fuel-trade-independence-referendum-erbil-iraq-turkey-israel>.

111 *BP Energy Outlook 2017*, Country and Regional Insights: Middle East, <https://www.bp.com/content/dam/bp/pdf/energy-economics/energy-outlook-2017/bp-energy-outlook-2017-region-insight-middle-east.pdf>.

112 Organization of Petroleum Exporting Countries, *2017 World Oil Outlook 2040*, October 2017, 10, <https://www.opec.org/index.php/pdf-download>.

113 The International Energy Agency, *2017 World Energy Outlook*, 341.

114 Rex J. Zedalis, *The Legal Dimension of Oil and Gas in Iraq* (Cambridge University Press: 2009), Part One, the Contextual Background, 9.

115 Government of Iraq (@IraqiGovt): The Cabinet reviews several projects across Iraq, approved draft laws and authorizes start of talks with Kuwait on export of gas. September 27, Twitter, <https://twitter.com/IraqiGovt/status/912991939187879936>.

116 Rania El Gamal, Osamu Tsukimori, Dmitry Zhdannikov, "Exclusive: Iraq looks to Kuwait gas pipeline to pay off reparations," Reuters, November 22, 2017, <https://www.reuters.com/article/us-iraq-kuwait-gas-exclusive/exclusive-iraq-looks-to-kuwait-gas-pipeline-to-pay-off-reparations-idUSKBN1DM1LU>.

117 booz&co, Iraq Prime Minister Advisory Commission, *Integrated National Energy Strategy, Final Report*, September 25, 2012, 19, <http://documents.worldbank.org/curated/en/406941467995791680/pdf/105893-WP-PUBLIC-INES-Summary-Final-Report-VF.pdf>.

STATE OF PLAY: IRAQ AS A NASCENT GAS PRODUCER

The exploration, production, capture, and utilization of gas resources are still in nascent stages. Iraqi gas development prospects are largely tied to oil production, as much of the gas is associated with oil fields as a byproduct of oil production, and would likely, at least in the short to medium term, be utilized for reinjection as part of enhanced oil recovery and to meet domestic needs and increase power generation.

To capitalize on and increase its gas potential, Iraq will need to address the flaring of associated gas at major oil production sites, namely Rumaila, Majnoon, Zubair, and West Qurna 1 and 2, responsible for nearly 65 percent of flared volumes.¹¹⁸ Flaring in Iraq, the second largest flaring country in the world, has risen along with oil production, increasing from around 13 bcm in 2013 to over 17 bcm in 2016.¹¹⁹

The Iraqi government signed on to the World Bank's "Zero Routine Flaring by 2030" initiative in May 2017, and has been a member of the Global Gas Flaring Initiative for years.¹²⁰ In 2013, Iraq also set up the Basrah Gas Company, a public private partnership between Shell, Mitsubishi, and state-owned South Gas Company to address flaring at Rumaila, West Qurna 1, and Zubair, responsible for 1 billion cubic feet (bcf) per day in production, only a minor fraction of which is utilized.¹²¹ In its recent announcement on exiting the Majnoon field, Shell noted the decision would put the company "in a stronger position to focus its efforts on the development and growth

of the Basrah Gas Company and the Nebras Petrochemicals Project."¹²² The company promoted the project as a beneficiary of its decision to exit Majnoon, but some analysts claim that Baghdad was less than pleased with Shell's decision.¹²³

While the deadline for ending flaring in southern Iraq has been pushed back from 2016 to 2022, Basrah Gas Company fulfilled the south's liquefied petroleum gas (LPG) requirements in 2016,¹²⁴ and it began to export gas liquids the same year.¹²⁵ However, it remains to be seen whether the public private partnership continues to make progress given the \$17 billion price tag.¹²⁶ In fact, progress remains stalled in part due to disagreements on price.

Non-associated gas fields in Iraq include Akkas, in Anbar province; Mansuriyah, near the Iranian border in Diyala province; and Siba, in Basra. With a combined production potential of 11 tcf, these are Iraq's three largest gas fields.¹²⁷ All were awarded contracts by the Ministry of Oil in Iraq's third bidding round (Akkas and Mansuriyah were included in the first bidding round, but were only awarded contracts after improved terms were offered).¹²⁸ While Korea Gas Company (KOGAS) was awarded a contract to operate Akkas, development was essentially halted in 2014 as the field, located in Anbar province, was attacked and the area under the control of ISIS until late 2017, when Iraqi forces retook the field.¹²⁹ Thus far, reports indicate the

118 World Bank, "Amid ongoing conflict, Iraq to Begin Snuffing Out Flares," May 9, 2017, <http://www.worldbank.org/en/news/feature/2017/05/09/amid-ongoing-conflict-iraq-to-begin-snuffing-out-flares>.

119 World Bank, "Global Gas Flaring Reduction Partnership," Upstream Gas Flaring Databank, 2017, http://dataviz.worldbank.org/views/GGFRDashboard08_28_2017/GasFlaring?%3Aembed=y&%3AshowShareOptions=true&%3Adisplay_count=no&%3AshowVizHome=no&%3Atoolbar=no.

120 World Bank, "Amid ongoing conflict, Iraq to Begin Snuffing Out Flares," May 9, 2017, <http://www.worldbank.org/en/news/feature/2017/05/09/amid-ongoing-conflict-iraq-to-begin-snuffing-out-flares>.

121 Asset Report: Basrah Gas Company, Wood Mackenzie, October 13, 2107, <https://www.woodmac.com/reports/upstream-oil-and-gas-basrah-gas-company-11417088>.

122 Kadhim Ajrash and Khalid Al Ansary, "Iraq Says Chevron, Total Want to Work at Majnoon Oil Field," *Bloomberg*, October 9, 2017, <https://www.bloomberg.com/news/articles/2017-10-09/iraq-says-chevron-total-want-to-work-in-giant-majnoon-oil-field>.

123 Rania El Gamal, Osamu Tsukimori, Dmitry Zhdannikov, "Exclusive: Iraq looks to Kuwait gas pipeline to pay off reparations," Reuters, November 22, 2017, <https://www.reuters.com/article/us-iraq-kuwait-gas-exclusive/exclusive-iraq-looks-to-kuwait-gas-pipeline-to-pay-off-reparations-idUSKBN1DMLU>.

124 Luay Al-Khatteeb, *Iraq's Economic and Energy Review*, Columbia SIPA Center on Global Energy Policy, September 22, 2016., <http://energypolicy.columbia.edu/publications/commentary/iraq-s-economic-and-energy-review>.

125 Aref Mohammed, "Iraq plans to triple gas liquids exports from southern oilfields," Reuters, January 23, 2017, <http://www.reuters.com/article/us-iraq-energy-gas/iraq-plans-to-triple-gas-liquids-exports-from-southern-oilfields-idUSKBN1571KB>.

126 Luay Al-Khatteeb, *Iraq's Economic and Energy Review*.

127 US Energy Information Administration, *Iraq Country Report*, last updated April 28, 2016, <https://www.eia.gov/beta/international/analysis.cfm?iso=IRQ>.

128 Sinan Salaheddin, "Iraq signs initial deal to develop Akkas gas field," Associated Press, January 1, 2011, http://archive.boston.com/cars/news/articles/2011/06/01/iraq_signs_initial_deal_to_develop_akkas_gas_field/

129 Ahmed Rasheed, "Iraqi forces capture Akkas gas field from Islamic State: minister," Reuters, November 2, 2017, <https://www>.

fields remain inaccessible, replete with land mines and other obstacles left behind, and the damage has been called “extensive.”¹³⁰

The Mansuriyah gas field is operated by Turkish Petroleum (TPAO), along with Kuwait Energy Company KOGAS, and Iraq's Midland Oil, but despite a contract being awarded in 2010, there has been little progress and thus far no wells have been drilled. Gas was supposed to supply the local Mansuriyah power plant, which is already completed and has had to rely on Iranian gas imports for commissioning, and to supply condensate for local industries. The Siba gas field in Basra is operated by Kuwait Energy Company, along with TPAO and the local Maysan Oil Company. Development activities are reportedly near completion, and commercial production is expected to start at the end of 2017 with the contracted production plateau met in five years.¹³¹

KRI gas development has focused on non-associated gas potential in several promising fields, attracting investment from a host of regional companies and smaller independent operators. The KRI initially attracted interest in developing its gas resources due to the proximity of the (then rapidly) growing Turkish market, aided by the KRG's investor friendly image. The KRI does produce associated gas from the Khurmala field in Kirkuk, operated by KAR, which is used in domestic power production.¹³²

Development of Khor Mor, the first non-associated gas producing field in the region, began in 2007; production of gas and condensates began in 2008 and LPG production in 2011.¹³³ The rapid development of the field, operated by the Pearl Consortium (consisting of Dana Gas, Crescent Petroleum, Austria's OMV, Hungary's MOL, and

Germany's RWEST), was widely seen as a success, with gas flowing within just fifteen months, utilized to provide the region with stable electricity supply via the Bazian and Erbil power plants.¹³⁴ However, the subsequent dispute between Pearl and the KRG, which has since been resolved, temporarily halted development, and during that interim fuel imports cost the KRG billions. Under the August 2017 agreement, the KRG agreed to pay Pearl \$600 million and an additional \$400 million for investment, while Pearl will reportedly increase production at Khor Mor and Chemchemal (which remains non-producing at the time of writing) from 330 million cubic feet per day to 800 million within two years.¹³⁵

Meanwhile, the Miran and Bina Bawi fields are central in long-discussed plans to export KRG-produced gas to Turkey, as outlined under the 2013 intergovernmental gas-sales agreement between Ankara and the KRG.¹³⁶ Miran is thought to hold estimated reserves of 122 bcm, with Bina Bawi estimated at 201 bcm.¹³⁷ Under the agreement, exports of 4 bcm per year were supposed to start in 2017. While this milestone was clearly missed, KRG Natural Resources Minister Ashti Hawrami has stated that the targeted 10 bcm by 2020 could still be met and increased to 20 bcm beyond 2020.¹³⁸ The agreement between the KRG and Rosneft, announced just days before the referendum, on construction of a gas pipeline system to bring gas to domestic power plants and industrial facilities and exports to Turkey by the end of the decade, has brought renewed attention to gas exports.¹³⁹ Rosneft has indicated it wishes to formally close the pipeline deal, which is reportedly on a “fast track basis,” by the end of the year.¹⁴⁰ The early 2020s will be important, as Turkish state-owned BOTAS's long-term contracts with key suppliers expire by the

[reuters.com/article/us-mideast-crisis-iraq-gas/iraqi-forces-capture-akkas-gas-field-from-islamic-state-minister-idUSKBN1D21UL](https://www.reuters.com/article/us-mideast-crisis-iraq-gas/iraqi-forces-capture-akkas-gas-field-from-islamic-state-minister-idUSKBN1D21UL).

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131 Ali Al-Aquily, “Siba preparing year-end commercial gas production,” *Iraqi Oil Report*, August 30, 2017, <http://www.iraqoilreport.com/news/siba-preparing-year-end-commercial-gas-production-25094/>.

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134 Luay Al-Khatteed, “\$7. Billion on KRG fuel imports could have been saved with affordable gas,” *Brookings On the Record*, June 27, 2015, <https://www.brookings.edu/on-the-record/7-3-billion-on-krg-fuel-imports-could-have-been-saved-with-affordable-gas/>.

135 “KRG to pay \$1bn in “Full and Final Settlement,” *Iraq Business Journal*, August 31, 2017, <http://www.iraq-businessnews.com/2017/08/31/krg-to-pay-1bn-to-pearl-in-full-and-final-settlement/>.

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137 The Oil and Gas Year, Kurdistan Region of Iraq 2016, “Project Update: Miran and Bawi Bawi Gasfield Development,” 59.

138 The Oil and Gas Year, Kurdistan Region of Iraq 2016, “Needy Neighbor,” 57.

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140 Mark Smedley, “Rosneft to Join KRG Gas Pipe Project,” *Natural Gas World*, September 18, 2017, <https://www.naturalgasworld.com/rosneft-to-join-kurdish-gas-pipe-project-55363>.

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middle of the decade, and private contracts with Gazprom expire in 2021.¹⁴¹

Genel Energy, owned by British and Turkish investors and one of the earliest active investors in the KRI, is currently the sole contractor with full working interest in Miran and Bina Bawi. The company announced it was moving ahead with development following agreement with the KRG on the amended production sharing contracts and gas lifting agreements.¹⁴² However, Genel was still looking for Turkish farm-in partners for the fields' upstream development as of fall 2017,¹⁴³ and the company will likely be unable to develop the field without partners given the \$700 million price tag of developing the first round of gas¹⁴⁴ and the estimated total \$5 billion in costs to develop the field.

Gas exports also depend on Turkish demand going forward. While Turkey has experienced rapidly growing gas demand over the last decade, in recent years economic growth has slowed and so has gas demand. Projections of Turkish demand reaching 70 bcm by the end of the decade no longer seem feasible, and the more ambitious BOTAS projections of reaching more than 80 bcm by 2030 now seem

entirely off the mark.¹⁴⁵ The Turkish government has emphasized reducing reliance on (pipeline) gas imports and diversify existing sources of gas supplies, and has worked to increase the share of domestic resources, namely coal and renewables, in power generation, through tax incentives and subsidies for domestic resources. While the result has been a drop in power sector gas demand since 2015, gas imports increased in 2017 as Turkish growth appeared to rebound. However, it remains to be seen whether Turkish economic growth will remain robust, and the rate of future gas demand growth will impact the outlook for pipeline projects. Gas produced in the KRI could provide a low cost source of supply diversification for Turkey, and enable Turkey to move away from other higher cost suppliers, namely Iran.

Overall, while gas remains an area of great potential for Iraq, there are still obstacles to overcome, and gas development remains in the early stages. Questions of incentives, investment, and price are still largely unanswered, while both Baghdad and Erbil have been hampered by the fiscal situation since 2014 caused by low oil prices and high security costs.

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- 141 Gulmira Rzayeva, *Turkey's Gas Demand Decline: reasons and consequences*, Oxford Institute for Energy Studies, April 2017, <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/04/Turkeys-gas-demand-decline-reasons-and-consequences-OIES-Energy-Insight.pdf>.
- 142 Genel Energy plc: Update on Miran and Bina Bawi Fields, February 13, 2017, <http://www.genelenergy.com/media/2027/genel-update-on-miran-and-bina-bawi-fields-final.pdf>.
- 143 Mark Smedley, "Genel Still Seeking Partners in Iraqi Kurdistan," *Natural Gas World*, October 19, 2017, <https://www.naturalgasworld.com/genel-still-seeking-gas-partners-in-iraqi-kurdistan-56110>.
- 144 Nathalie Thomas, Mehreen Khan, "Genel Energy remains deadlocked over key gas assets," *Financial Times*, August 1, 2017, <https://www.ft.com/content/5ffaf158-76a1-11e7-90c0-90a9d1bc9691>.
- 145 Gulmira Rzayeva, *Turkey's gas demand decline: reasons and consequences*, Oxford Institute for Energy Studies, April 2017, <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/04/Turkeys-gas-demand-decline-reasons-and-consequences-OIES-Energy-Insight.pdf>.

CHALLENGES AND RECOMMENDATIONS

1. To facilitate gas development, Baghdad and Erbil must get the incentive structure right.

This is particularly critical as gas development differs in key respects from oil development, including slower return on investment. Gas development in the KRI and Iraq more broadly will require massive investments in the infrastructure to produce, capture, process, transport, and distribute that gas. It will also require a supportive framework and set of incentives to attract investment. This will likely require long-term gas purchase contracts to ensure the certainty required for the high levels of investment and slow rate of return that normally accompanies gas development.

For associated gas at southern Iraqi fields, this will also require ensuring that whatever contract model Baghdad offers to oil producers, it also offers incentives for gas development at those fields.

2. Part of the incentive structure should include supportive gas pricing.

Both Iraq and the KRI currently lack a supportive gas pricing policy. To develop gas to meet domestic needs, there will need to be effective pricing in place to incentivize companies to undertake production of non-associated gas and invest in capturing, processing, and distributing flared gas.

Gas development requires, in part, terms that are attractive enough to incentivize investment and cover commercial costs. The development of gas markets, both in Iraq and in potential export markets in neighboring countries, along with effective, competitive pricing are key if companies are going to be incentivized to proceed—and to meet the needs of the domestic market. They will require grappling with the difficult and unpopular question of domestic gas prices.

Overall, a key question raised by the IEA in 2012 will need to be addressed—namely, how to manage the tradeoff between the low value but high need of gas on the domestic market, and the more attractive returns available on export markets.¹⁴⁷ The post-2014 fall in energy prices has made the case for exports more difficult, resolving this question in the short term. However, if market conditions improve

over the long term, this could again become an issue. At present, KRI exports to Turkey, along with exports from Iraq to Kuwait, appear to be back on the agenda, and the question is whether Iraq can establish favorable domestic gas market conditions.

3. Institutions should mirror ambition.

Baghdad should consider broadening the Ministry of Oil to “Ministry of Oil and Gas” or “Ministry of Energy” more broadly, both to symbolize the government’s commitment to gas and to build the capacity of the institution to facilitate growing gas development and production. This will likely require some capacity building, as Iraq’s experience historically has been with oil.

This change in name should be accompanied by a clearer distinction in roles, namely a move to separate out the policymaking and regulatory responsibilities currently held by the Ministry of Oil. Additionally, Iraq and the KRG would benefit from creating a separate gas regulator, distinct from their respective ministries, to encourage transparency and the development of gas prices and a market.

4. Baghdad and Erbil should take a comprehensive approach to developing and integrating infrastructure throughout the supply chain, including mid- and downstream infrastructure.

This includes inadequate infrastructure capacity for gathering the gas, processing and distributing that gas to customers, and storage capacity given the seasonal character of Iraqi demand. In the KRI, where gas development is arguably more advanced, “the region still lacks significant gas infrastructure”¹⁴⁸ and exports to Turkey would require significant infrastructure development and investment.¹⁴⁹ There is need for investment in gas processing plants and transmission infrastructure. One example of potential major infrastructure investment includes the deal between the KRG and Rosneft to build a gas trunk line.

This will also require addressing issues in the electricity sector, including improving the transmission and distribution infrastructure, reducing transmission losses and theft, addressing the issue of subsidies at the point of consumption,

146 The challenges and recommendations are based on expert interviews with current and former diplomats, international oil companies, researchers, and Iraq experts.

147 The International Energy Agency, *Iraq Energy Outlook, World Energy Outlook Special Report*, 2012, 123.

148 Robin Mills, *Under the Mountains: Kurdish Oil and Regional Politics*, 22.

149 “KRG Gets Creative in Boost Investor Confidence,” *Middle East Economic Survey*, Volume 60, Issue 35, September 1, 2017, <https://www.mees.com/2017/9/1/oil-gas/krg-gets-creative-in-bid-to-boost-investor-confidence/94b100a0-8f00-11e7-ab38-f774ebab244d>.



US Secretary of State Rex Tillerson, left, with Iraq's Prime Minister Haider Al-Abadi in Baghdad in October 2017. During his visit, Tillerson called for unity in Iraq in the aftermath of the KRG independence referendum and the Baghdad's re-taking of Kirkuk. *Photo credit: Alex Brandon/Reuters.*

and ultimately setting up electricity markets and transferring responsibility to the private sector. Additionally, an improved collection system is needed for electricity bills—recent pilot projects initiated by the Ministry of Electricity in Baghdad may provide a useful template.¹⁵⁰

Finally, as Iraq grapples with questions of primacy and authority over resource management, finding a path forward on the oil side can only help facilitate and further enable gas development efforts and help lay the foundation for increased gas production and trade.

¹⁵⁰ Ministry of Electricity, Request for Information to Operate and Maintain the Distribution Grid, and Organize the Collection of Energy for the Ministry of Electricity for the Republic of Iraq, January 2016, <https://moelc.gov.iq/upload/upfile/ar/589.pdf>.

CONCLUSION

While challenges remain to achieving the goals of increased oil production and turning gas from potential to production, there is substantial opportunity for Iraq's resources to generate revenue and contribute to broad-based economic development, if managed properly. As both Iraq and the KRI head into an election year, potential new governments both in Iraq and at the helm of the KRG should seize this as an opportunity to target investment to specific projects that contribute to long-term economic development goals.

While perhaps an obvious point, as political reconciliation remains elusive, the failure to rebuild, rehabilitate, and repair Sunni areas impacted by ISIS (namely Mosul) could instigate Iraq's next crisis. The United States, searching for a post-ISIS strategy, should recognize the importance of an inclusive, forward-looking policy beyond uniting behind a common enemy. Absent either a common enemy or a sense of common purpose and identity, Iraq could continue to lurch from power struggle to political crisis. And absent a new strategy, US policy will continue to encourage cooperation on the grounds of a threat that is receding, while ignoring the real threat of political fragmentation amid consolidation of power by Abadi, whose use of Shia-dominated PMF militia forces in Kirkuk both raises concerns of undue Iranian influence and may undermine attempts at strengthening national unity.

The Kurdish referendum, and the transfer of authority and oil resources in Kirkuk back to the federal government, has once more underscored how the lack of resolution on oil resource and management issues remains a key source of uncertainty and potential instability. New governments in both Baghdad and Erbil should recognize that uncertainty at this critical moment for oil markets—and as gas development struggles to gain a foothold—could be detrimental to Iraq's standing as a low-cost producer with high potential. Tackling this issue should be a priority as part of their governing mandate.

The KRG, likewise, should use this impetus to get its internal house in order. The political uncertainty following the referendum, compounded by KRG President Masoud Barzani's November 1 resignation, could cause hesitation on the part of companies that worry their investments could be caught not only between Baghdad and Erbil, but also preoccupied by questions of the future of the KRG and the fault lines in KRG politics. More importantly, for the

KRG, the events of fall 2017, the events of fall 2017 should illustrate the difficulties in their continued reliance on budget transfers in Baghdad or oil exports facilitated by a neighbor that sees energy in geopolitical terms.

The KRG should also focus on diversification, which could lay the groundwork for more sustainable and politically-insulated economy over the long term. If oil resources in Iraq remain a political football, and it appears likely they will, and the question of exports remains wrapped up in larger domestic and regional power politics, the development of a diversified economy that is not entirely dependent on oil revenue would seem to be the only viable path forward for the KRI. Whether independent or not, KRI autonomy will require a diversified economy, rehabilitating traditional sectors like agriculture, and ensuring both broad-based growth and mitigating reliance on the oil sector, while tackling expenditures on salaries and subsidies and putting in place a concerted strategy to encourage non-oil foreign direct investment.

Given Iraq's current, identity-based political climate, Abadi's efforts to centralize authority could be seen by some as an attempt to protect or advance a national, Iraqi identity, or as an attempt to centralize and exercise authority in a way that is overly favorable toward its Shia population at the expense of the other groups. Any perception that the government is failing to invest resource revenues in a way that tangibly improves the quality of life for all Iraqis could decrease state unity and potentially spark calls from other provinces for more autonomy. Moreover, the over-dependence on Iran could have spillover effects for gas development, as Iran likely hopes to keep Iraq as a customer of its gas and electricity exports.

While oil may continue to be a contentious issue, gas and electricity still have the potential to facilitate cooperation, or at least the recognition of mutual benefit. In the short term, gas produced in the KRG needs a market, and the most logical of those markets may lie to its south. Federal Iraq will need both gas and electricity particularly in areas recently liberated from ISIS, which in the short term will likely require imports and reliable suppliers, particularly to offset the growing reliance on Iran for these resources. This would seem to provide a significant opportunity for cooperation, should Baghdad and Erbil be willing to seize it.

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