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Under the mountains: Kurdish oil and regional politics

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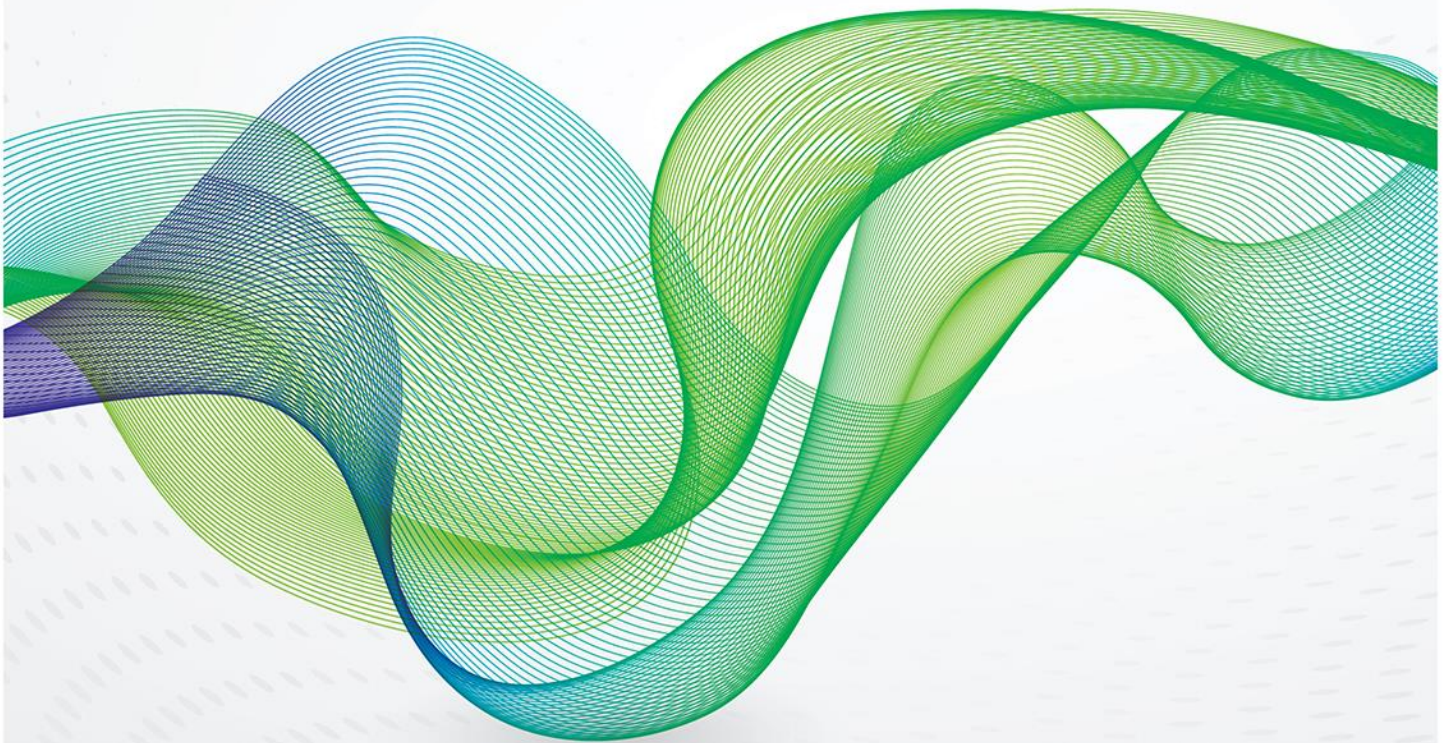
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Under the Mountains: Kurdish Oil and Regional Politics



OIES PAPER: WPM 63

Robin Mills*



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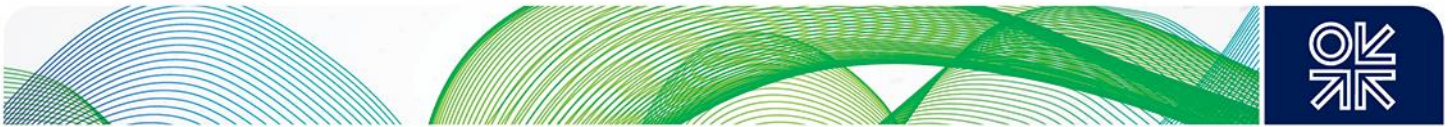
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Robin Mills,
Qamar Energy,
Dubai, December 2015



1. Introduction

The development of major oil and gas reserves in the autonomous Kurdish Region of Iraq (KRI)¹ is a recent phenomenon, dating back no earlier than 2005. Despite promising geological signs, political conditions largely prevented exploration and production until after the US-led removal of the Saddam Hussein regime. The story since then has attracted major media interest, perhaps even more than has been devoted to the larger fields in the south of Iraq, and there has been a wide range of publications on the politics of the region, as well as others on its culture and religion.² Outside specialist industry publications, however, there has been less analytical work focusing on the region's oil and gas sector.

Study of the Kurdish oil story is important for various reasons.

It represents the rare case, in recent history, of the **discovery of a large new onshore conventional petroleum province**.³ It illustrates the development of such a province under conditions of moderate technical challenge but major and volatile political uncertainty. Considered as a unit, the KRI could soon emerge as a significant oil producer on a par with, or even exceeding, Oman, Colombia, or Azerbaijan and, like them, effectively outside OPEC.

The KRG's formulation of its own oil policy and laws, often in opposition to the federal government in Baghdad,⁴ presents an important case of **sub-national authority over the natural resource sector**, which may be relevant to other oil-producing countries or territories exploring federal structures, for instance Yemen and Libya, not to mention Iraq's own Basra region. The KRG has quite explicitly linked petroleum development and revenues to economic and political security and independence.

The development of Kurdish hydrocarbons has **major political implications** for:

- the political economy of the Kurdish region;
- the Kurdish region's possible *de facto* or *de jure* independence;
- regional politics, including the future of Kurdish populations in neighbouring countries, the continuation of Iraq as a state, and the conflict in Iraq and Syria;
- a possible new source of oil and, particularly, gas for Turkey and the EU, at a time of difficult relations with Russia.

Section 2 of this paper outlines the history and development of the KRI's hydrocarbon resources; Section 3 examines current status and future potential; Section 4 considers the economic, legal, and political issues and debates, and the role of politicians and international oil companies; and the paper concludes with Section 5, by examining the wider implications of Kurdish oil and gas, as well as some lessons for other comparable regions.

¹ Often referred to as the 'KRG' (Kurdistan Regional Government) though strictly speaking this is the name of the government, not the territory; as 'Kurdistan', though this should apply to the broader area inhabited by Kurds, spread across several countries; or, by Kurdish nationalists, as 'South Kurdistan' (with 'North Kurdistan' in Turkey, 'West Kurdistan' in Syria, and 'East Kurdistan' in Iran. The euphemism 'North Iraq', used to avoid Turkish sensitivities, seems to be falling into disuse. In this paper, I restrict the use of the term KRG to the regional government and its apparatus. I use the informal term 'federal Iraq' to refer to those parts of Iraq not included in the KRI.

² e.g. 'Religion in Kurdistan',

www.hum.uu.nl/medewerkers/m.vanbruinessen/publications/Bruinessen_Religion_in_Kurdistan.pdf.

³ The fields in Syria's Euphrates Graben found in the 1980s, Rajasthan in India in the early 2000s, Uganda in the mid-2000s, and Kenya recently, are smaller. Otherwise most recent major new provinces, such as the West Africa Transform Margin, Mozambique–Tanzania, or Brazil's Santos Basin, have been found offshore. Larger fields have been found onshore in this period, but in established hydrocarbon plays. This excludes, of course, the very large unconventional (shale) resources developed in North America.

⁴ Although, as is discussed below, the KRG would argue this was in line with the post-Saddam constitution's federal provisions.



2. Background: a Brief History of Oil and Gas in the Kurdish Region of Iraq

The current status of hydrocarbon resources in the KRI is heavily dependent on its politics and external relations. In turn, these are strongly influenced by its history, both recent and more distant. Oil and gas development has only become an important and contentious issue since 2005, following ratification of the Constitution of Iraq and formalization of the region's autonomous status, which made it possible to attract international oil companies. The KRI's external relations, which strongly influence its energy policy, are guided by historical and geographic realities. However, historical patterns are not immutable, and the KRG's leadership has also made choices which have set its oil industry on a very different path from that of Baghdad.

2.1. Political history

The Kurdish people are divided between Iraq, Iran, Syria, and Turkey, with smaller numbers in other countries. The area of 'Kurdistan' covers about 190 000 km² in Turkey, 125 000 km² in Iran, 78 736 km² in Iraq (including disputed territories), and 12 000 km² in Syria. There are about 5 million Kurds in Iraq (not all of whom live in the KRI) and the population of the KRI (stated by the KRG at 5.2 million⁵) also includes non-Kurds as well as refugees and internally displaced people. Iran has 5–7.9 million Kurds, Turkey 12 million (or possibly up to 22.5 million⁶), and Syria 2–2.5 million.⁷

The Kurds speak a number of related dialects of Kurdish, an Indo-European language related to Farsi, of which Kurmanji and Sorani are the main varieties within Iraqi Kurdistan, and these dialects are not easily mutually intelligible. However, the rise of the KRG, satellite television, and more recently social media have been influential in fostering a sense of pan-Kurdish identity. Within the KRI, especially around Kirkuk, there are also substantial Arab and Turkoman minorities, as well as a large refugee population of Syrians and Iraqis fleeing fighting between the regime of Bashar Al Assad and opposition groups, or escaping areas controlled by ISIS (the 'Islamic State of Iraq and Al-Sham [Syria]' or 'Da'esh', its Arabic acronym).

The Kurdish sectarian majority is Sunni Muslim, with a Shi'ite minority. The Feyli Kurds are Shi'a, and live in both Iran and Iraq. There are also minorities of non-Islamic religions: Yezidis and the closely related Shabak, the Ahl-e Haqq, and some tens of thousands of Christians.

Following World War I, the San Remo conference of 1920, the Franco-Turkish agreement of October 1921, the Treaty of Lausanne of 1923, and the League of Nations judgement of December 1925⁸ determined that the wilayat (province) of Mosul (containing the modern KRI) would be included in the new British mandate state of Iraq; hence there would not be a Kurdish state covering parts of Iraq, Syria, and Turkey. The British wanted to secure the anticipated oil resources of the Mosul area, promising the French in return a 25 per cent stake. Neither the British nor the independent Iraqi government that succeeded in 1932 kept to their assurances of establishing an autonomous Kurdish government.

The establishment of the Kurdistan region dates back to the March 1970 autonomy agreement between the Kurdish opposition and the Iraqi government, following years of heavy fighting. The agreement, however, failed to be implemented and by 1974 northern Iraq plunged into another round

⁵ Website of Kurdistan Regional Government: www.gov.krd/p/p.aspx?l=12&p=214.

⁶ The divergence may result from the desires of the Turkish government and Kurdish nationalists respectively to downplay or overstate the size of the Kurdish population.

⁷ CIA World Factbook.

⁸ 'A brief survey of The History of the Kurds', Kendal Nezan, President of the Kurdish Institute of Paris: www.institutkurde.org/en/institute/who_are_the_kurds.php.



of bloody conflict between the Kurds and the Arab-dominated government of Iraq. The 1975 Algiers Agreement between Iraq and Iran withdrew Iranian support for the Kurds and their revolt collapsed. The Iran–Iraq War of 1980–88, especially the 1988 Anfal genocide campaign of the Iraqi army which included chemical weapons attacks against the people of Halabja, devastated the population and environment of Iraqi Kurdistan. Mass population transfers, ongoing since the 1960s, were intended to ‘Arabize’ certain territories, for example around Kirkuk.

Following the 1990–91 First Gulf War, and the 1991 uprising of Kurds in the north and Shia in the south against Saddam Hussein, the Peshmerga⁹ succeeded in pushing out the main Iraqi forces from the north which, with establishment of the northern no-fly zone by the US-led Gulf War coalition, left the region with *de facto* autonomy over its finances, military, and internal affairs, but without any foreign diplomatic recognition. In 1992, the major political movements of KDP (Kurdistan Democratic Party) and PUK (Patriotic Union of Kurdistan) established the semi-autonomous Kurdistan Regional Government (KRG). During 1994–7, the PUK and KDP fought an intermittent civil war in which several thousand people were killed.

The 2003 US-led invasion of Iraq and subsequent political changes led to the ratification of a new Constitution of Iraq in 2005;¹⁰ this codified the status of the Kurdish region as a region within a federal Iraqi state, with defined powers reserved to itself (see Section 4.2 for discussion of these powers in the context of the oil sector). PUK leader Jalal Talabani became Iraqi president and the Kurds, usually pro-American, became an important balancing force in Baghdad politics. However, their desire to prevent the emergence of a strong Baghdad administration that might repeat Saddam Hussein’s repressive centralization led them to favour a weak federal government.

Unlike most of the rest of Iraq, between 2005 and 2014 the KRI maintained a good level of security and enjoyed strong economic growth and development; this included progress in signing and implementing oil and gas exploration and development deals with international companies. However, as discussed below, there were a number of intractable disputes between Baghdad and Erbil during this period, of which the vague constitutional provisions regarding the hydrocarbon sector and revenue-sharing were amongst the most important.

Tensions between Kurdistan and the federal Iraqi government mounted through 2011–12 on the issues of power sharing, oil production, and territorial control. In 2012, the Iraqi government ordered the KRG to transfer its powers over their military forces (the Peshmerga) to the federal government. Relations became further strained by the formation of a new command centre – Dijla (Tigris) Operations Command - for Iraqi forces to operate in a disputed area over which both Baghdad and the KRG claimed jurisdiction.

The fate of Kirkuk was supposed to be determined by a referendum (covered by Article 140 of the Constitution) which was originally supposed to have been held in 2007. No date has been set for the vote on the future of this disputed area that is claimed by Iraqi Arabs, Kurds, Turkomans, and other minority groups. None of the sides involved really wished the referendum to take place: Baghdad did not wish to lose control of Kirkuk, the Kurds were not entirely sure of their support in the city (and the KDP did not wish to weaken its position by acquiring a predominantly pro-PUK city), and Turkey exerted pressure to protect Turkmen populations in the area and to prevent the KRG acquiring a large revenue source.

During the Islamic State of Iraq and Syria (ISIS)’s 2014 offensive, in which they captured Mosul, the KRG forces took control of the city of Kirkuk and the surrounding area, as well as most of the disputed territories in northern Iraq claiming (not unreasonably) that this was to protect local populations from ISIS. However, clashes have occurred (as in the disputed town of Tuz Khurmatu in November 2015¹¹)

⁹ Kurdish militia: ‘those who face death’.

¹⁰ ‘Iraqi Kurdistan’, www.onwar.com/actors/type42/iraqikurdistan.htm.

¹¹ ‘Multiple dead in Kurd-Hashid fight in Tuz’, Iraq Oil Report, 13 November 2015, www.iraqoilreport.com/news/multiple-dead-in-kurd-hashid-fight-in-tuz-17031.



between Al Hashd Al Shaabi (Popular Mobilization) forces – largely Shi'ite militias – and Peshmerga forces, despite their alliance in principle against ISIS, but these may have predominantly local roots or be related to indiscipline within Al Hashd Al Shaabi. Such disturbances, however, do raise concerns over future political, or even armed, conflict between Baghdad and the KRG.

Political power in the KRI, as well as command of the Peshmerga, has largely been split between the Kurdistan Democratic Party (KDP) led by Kurdish president Masoud Barzani, and the Patriotic Union of Kurdistan (PUK), led by former Iraqi president Jalal Talabani until he suffered a stroke in December 2012. In 2009, the Movement for Change (Gorran), led by Talabani's former deputy Nawshirwan Mustafa, split off from the PUK; Gorran campaigned against corruption and nepotism in the two established parties and attracted sizeable support which made it, on some measures, the region's second-largest party. In general, the KDP is more tribal and conservative, and has its base in the governorates of Erbil (Hewlêr in Kurdish) and Dohuk, while the PUK is more urban and socialist-oriented and is centred in the southern KRI in the Sulaymaniyah (Slemani) governorate, as well as in Kirkuk. However, the Kirkuk governor, Najmaldin Karim, though part of the PUK, has established an independent power base of his own. There are also a number of smaller Islamist parties.

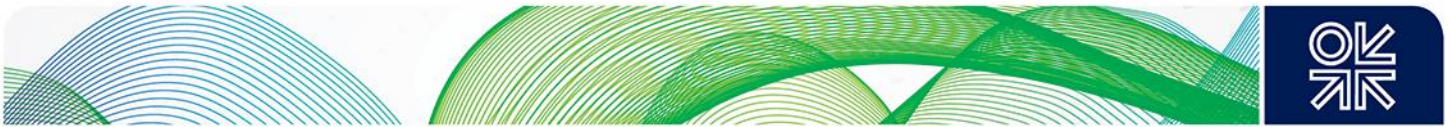
The KDP has drawn closer to Turkey, and in particular to the AK party (AKP) of President Recep Tayyip Erdoğan, while the PUK has historically been closer to the PKK (Kurdistan Workers' Party) in Turkey (which has waged a long insurgent campaign against the government in Ankara) and to the PKK's affiliate the PYD (Democratic Union Party) in Syria. The PUK has also been more in favour of remaining within a federal Iraq, while the KDP has made several calls for outright independence. On 1 July 2014, KRG president Masoud Barzani announced that that Iraq's Kurds would hold an independence referendum within months, but this proposal has died down. Though a majority of Kurds seems to be in favour of independence,¹² the leadership has not taken decisive steps towards it so far for various reasons: outside pressure, and also the rewards and useful leverage of holding offices in Baghdad; the availability, until recently, of federal oil revenues; and the potential to advance their interests (such as gaining ground in Kirkuk and other parts of the disputed territories) within the framework of a weak Iraqi state. The USA, a vital political and security partner for both Baghdad and Erbil, has also discouraged Kurdish independence aspirations, because of the potential for regional destabilization.

Iraqi Kurdistan's neighbours – Iran, Syria, and especially Turkey – have generally been opposed to outright independence, fearing it would increase the demands of their own Kurdish populations. Turkey has, though, been ready to encourage the KRG's autonomy, preferring a malleable Kurdish entity over which it would have strong economic and political influence, as a counterweight to the PKK organization of the Kurds in Turkey, as well as to Baghdad. The KRG has also been a source of lucrative business opportunities, not only oil and gas deals, but also in other trading. Eighty per cent of goods sold in the KRI were made in Turkey, and trade volume expanded from \$4 billion in 2009 to \$8.4 billion in 2012.¹³ Turkish companies were particularly prominent in the engineering and construction sectors.

Conversely, the alliance with Turkey has bolstered the position of the KRG, and of the KDP within it. It has strengthened Masoud Barzani's aspirations to a leadership role among all Kurds, not just those of the KRI, as shown by his November 2013 visit to Diyarbakır (Amed), the most important city in the

¹² 'New Public Opinion Poll On Iraqi Kurdistan's Independence, 2 October 2012, Musings on Iraq blog: <http://musingsoniraq.blogspot.ae/2012/10/new-public-opinion-poll-on-iraqi.html>. This source suggests 56% support in 2012, though almost half of the 'no' respondents said Kurdistan had to develop further before it was ready for independence. However, note a September 2015 poll suggesting 52% of Iraqi Kurds supported a more representative central government, 17% a loose federation, and only 20% partition of Iraq into three countries (Kurdish, Sunni Arab, and Shi'a Arab): 'Middle East 2015: Current and future challenges', Prepared for the Sir Bani Yas Forum, November 2015, Zogby Research Services: <http://static1.squarespace.com/static/52750dd3e4b08c252c723404/t/5667940fbfe8731ec365efa7/1449628687692/Sir+Bani+Yas+2015+Letter+FINAL.pdf>.

¹³ 'Determined to Grow: Economy', Invest In Group: <http://investingroup.org/review/236/determined-to-grow-economy-kurdistan/>.



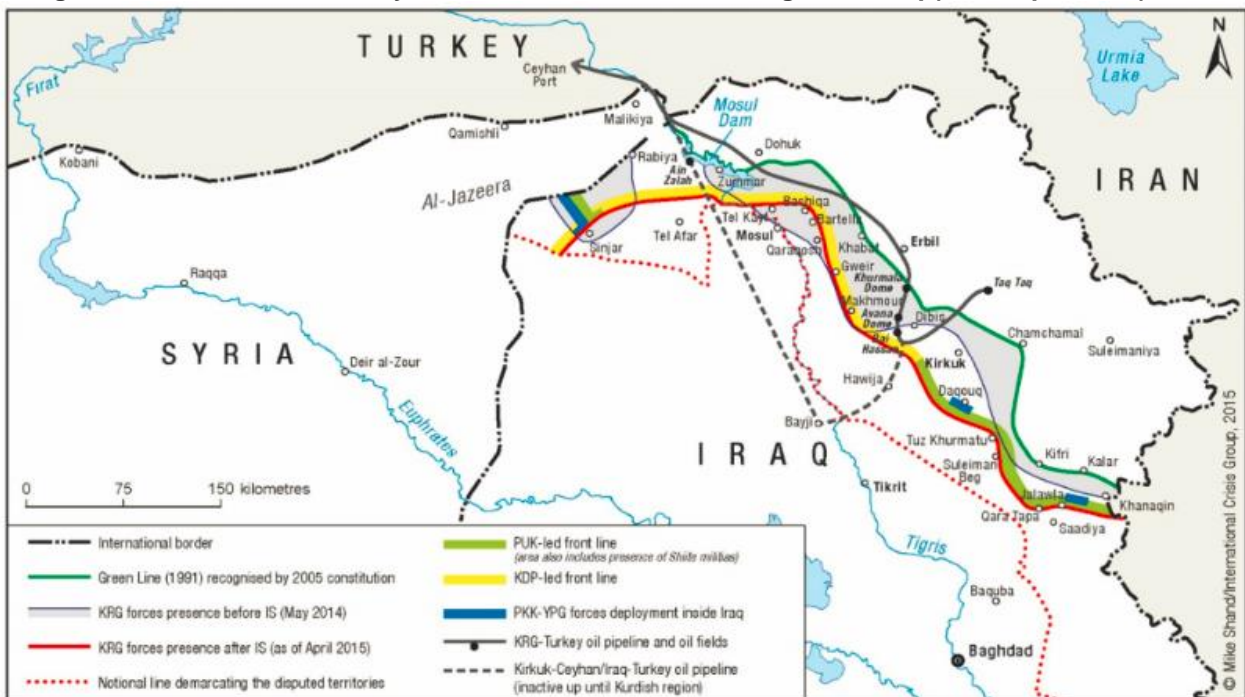
Kurdish part of Turkey – challenging PKK leader Abdullah Ocalan while attracting Kurdish votes to (then) Prime Minister Erdoğan and the AKP. Turkey also provides a protector against Baghdad and Iran.

Iran also exports significant quantities of goods to the KRI and is an important, though secondary, oil export route. However, its policy is guided more by divide-and-rule – playing its favoured PUK against the KDP, as well as the KRG against Baghdad.

However, various factors – the rise of ISIS, the autonomy established by the Syrian Kurds during the Syrian civil war, and intervention by Turkey and other countries on various sides – have complicated all alliances and they remain in flux. This was on display with the tensions between the KDP and PUK Peshmerga, the PKK, and the YPG (Syrian Kurdish militia) during the long drawn-out operation to recapture Sinjar (Shingal) in north-western Iraq from ISIS. Turkey can no longer rely on Baghdad or Damascus to suppress their Kurdish populations, while Erdoğan’s close relationship with the KDP involves Turkey in intra-KRG struggles.

Figure 1 shows: the boundaries of the KRI as recognized in the 2005 Constitution (the ‘Green Line’), the KRG forces’ advance before and after the ISIS campaign from May 2014, the maximal extent of the ‘disputed territories’, the deployments of PUK, KDP, and YPG (Syrian Kurdish) Peshmerga, and the federal and Kurdish oil pipelines from Kirkuk to Turkey.

Figure 1: Political and military boundaries of the Kurdish region of Iraq (as of April 2015)¹⁴



In 2013, the term of President Masoud Barzani was extended for a further two years until August 2015. In June 2015, the rival parties to the KDP (mainly the PUK and Gorran) refused to extend his tenure further. In October 2015, protests by government workers demanding unpaid salaries escalated into attacks across the KRI on KDP offices. The KDP blamed these on Gorran and, without proper legal authority, expelled Gorran ministers and parliamentarians from Erbil and from the KDP-controlled parts of the KRI.¹⁵ This potentially dangerous situation was escalating further at the time of writing.

¹⁴ (International Crisis Group, 2015).

¹⁵ Iraq Oil Report, 12th October 2015.



2.2. Petroleum history

The petroleum history of the KRI can be divided into five phases.

2.2.1. *Kirkuk to the First Gulf War: 1927–91*

In October 1927, the giant Kirkuk field was discovered by the Iraq Petroleum Company (IPC) – a consortium of Standard Oil of New Jersey,¹⁶ Standard Oil of New York,¹⁷ Gulf Oil,¹⁸ Pan-American,¹⁹ Atlantic Richfield,²⁰ Anglo-Persian,²¹ Royal Dutch Shell, the Compagnie Française des Pétroles,²² and Calouste Gulbenkian²³ – heralding the emergence of Iraq as a major oil-producing country.

Further discoveries followed in the vicinity of Kirkuk and other parts of northern Iraq. But exploration in the areas now part of the KRI was very limited prior to 2004. The nationalization of most of IPC's concession area after the July 1958 revolution halted exploration in the country, and its assets were fully nationalized by the end of 1975. After that, there was only limited exploration in the south of Iraq, under service contracts. Various explanations for the lack of exploration in Kurdistan include the opposition of the Baathist government to developing the region and, conversely, Kurdish opposition to central government activities. But at least as important is that the area's less certain geological prospectivity and rugged terrain made it unattractive compared to the giant fields in the south.

A few fields were discovered in the KRI during this period – Chemchemal (gas) in the 1920s, Khor Mor (gas) in 1953, Demir Dagħ in 1960, and Taq Taq in 1978²⁴ – but development did not proceed. The last well drilled before the First Gulf War was Jabal Kand, north of Mosul, in 1981. (See Figure 2.)

¹⁶ Later Exxon, now ExxonMobil

¹⁷ Later Mobil, now part of ExxonMobil

¹⁸ Later acquired by Chevron

¹⁹ Later Amoco, then acquired by BP

²⁰ Later acquired by BP

²¹ Later Anglo-Iranian, now BP

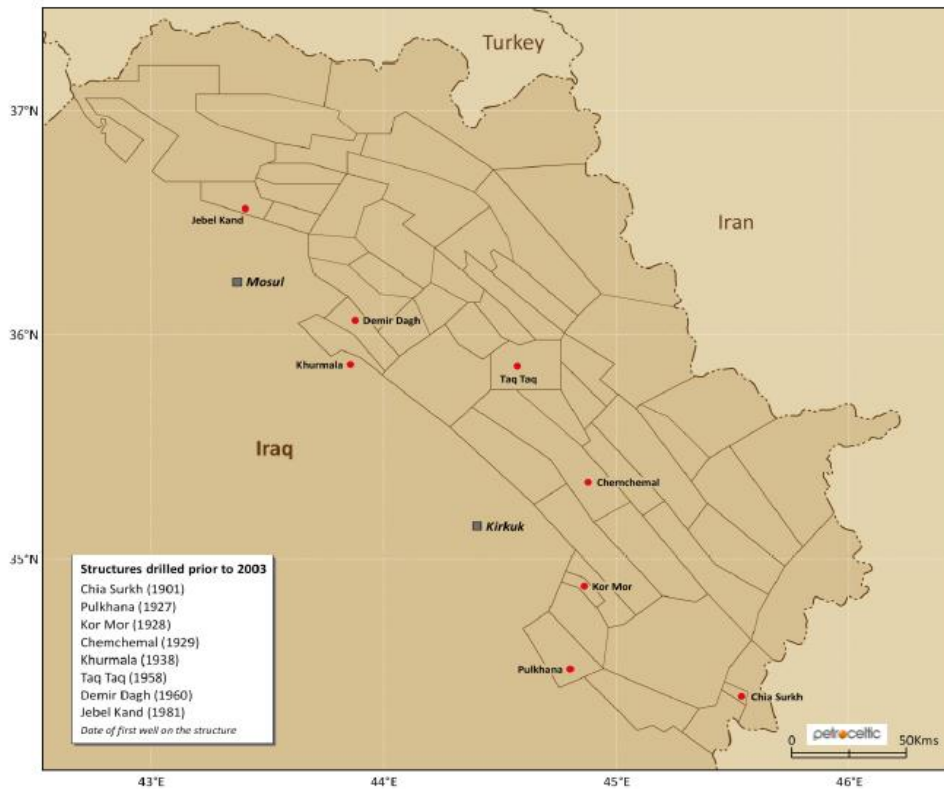
²² Now Total

²³ Now Partex

²⁴ First drilled in 1960, but drilling was suspended in April 1961 due to the nationalization of most of IPC's concession



Figure 2: Early exploration in the KRI²⁵



2.2.2. *De facto independence: 1991–2004*

During the period of *de facto* independence from 1991 to 2004, there was some small development of Taq Taq for local use from 1994–6, with the KRG completing two wells, but UN sanctions and the unclear political situation meant that no international company could realistically operate in the region. The Kurds did not have the technical or financial resources to make significant progress on exploring or developing petroleum in their area. However, it is alleged that the KDP-controlled parts of the KRI were a conduit for smuggling oil by the Saddam Hussein regime.²⁶ The Kirkuk-area fields continued production, under the control of Baghdad.

2.2.3. *Arrival of international oil companies: 2004–10*

Following the US-led invasion and overthrow of the Saddam Hussein regime, a number of bold independent oil companies began to explore the KRI's oil potential. Though larger oil companies also assessed the region, they were deterred by the political risk and the lower perceived prospectivity as compared to the south of Iraq, where numerous underdeveloped giant fields were available. The Ministry of Natural Resources (MNR) was established in 2006, as the counterpart of the federal Ministry of Oil in Baghdad. It divided the region into exploration blocks, roughly following the known geological pattern and attempting to place one known structure per block (see Figure 3). Blocks were labelled with K and a number (K1, K2, up to K48); eight mountainous areas of more doubtful prospectivity were labelled with letters (A–H).

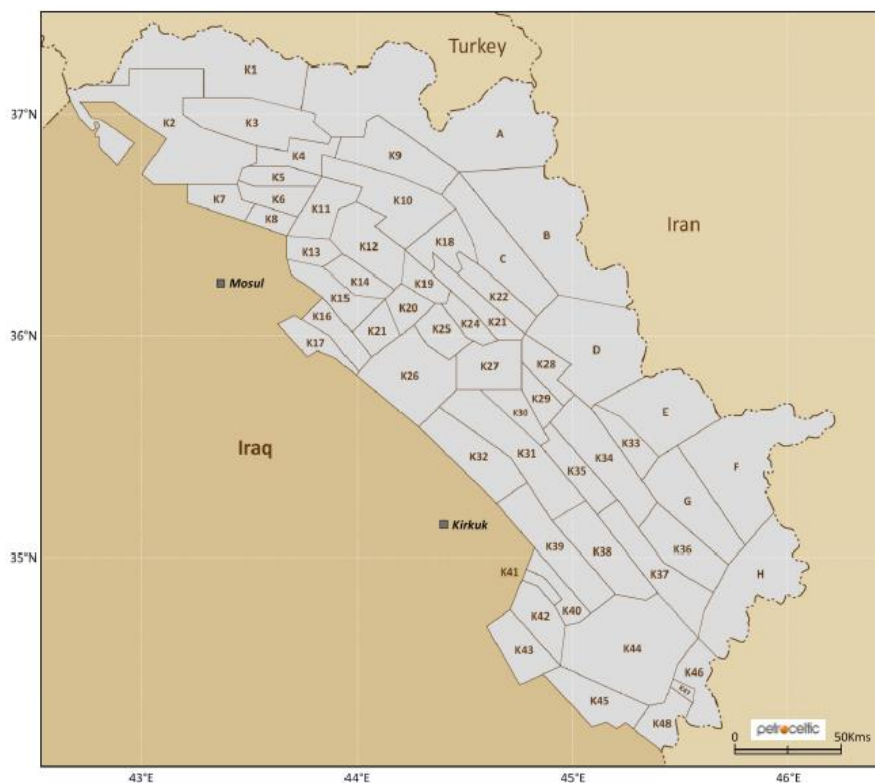
²⁵ PetroCeltic

²⁶ (Pollack, 2003, p. 81)



Natural Resources Minister Ashti Hawrami, appointed in May 2006, was the key figure in this policy. A former engineer with the Iraqi National Oil Company, he worked for the British National Oil Company on the North Sea during 1975–82, and thereafter in a number of consulting roles in the UK.²⁷ This is in notable contrast to most of his counterparts in the Ministry of Oil in Baghdad, who had no private-sector experience and had not worked outside Iraq or, like Dr Hussein Shahrstani, who were not oil-sector professionals. Aligned with the KDP, Dr Hawrami pushed the investor-friendly policy, promoted production-sharing contracts, and decided on the allocation of blocks to companies. His leadership has encouraged the Kurdish oil sector to develop much faster than it would otherwise have done; however, his confrontational style versus Baghdad has hindered any resolution of the various disputes over the oil sector.

Figure 3: Division of KRI into exploration blocks²⁸

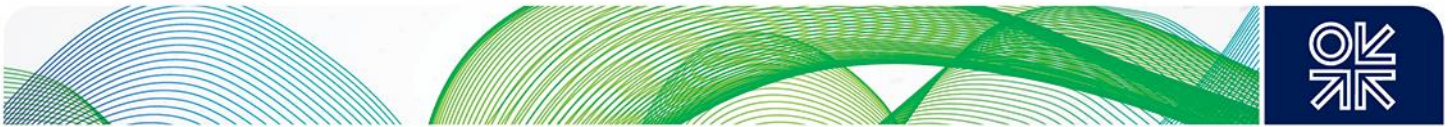


Genel Enerji, backed by large Turkish investors, moved first, signing a production-sharing contract (PSC) for the Taq Taq field in July 2002 (even before the fall of Saddam) and amending it in January 2004. Genel (which became Genel Energy in 2011 via a reverse takeover by former BP CEO Tony Hayward's Vallares investment vehicle) was joined in Taq Taq by the Swiss group Addax in July 2005, and production started at the end of 2008. Norway's DNO signed a PSC in 2004 and discovered the Tawke field in April 2006. Production began in June 2007 and ramped up sharply from June 2009 when exports began. Western Zagros Resources, a spin-off from Canada's Western Oil Sands,²⁹ was active in the KRI from 2004 and signed a PSC for the Kalar-Bawanoor exploration block in May 2006. According to Article 114 of the Iraqi Constitution, the KRG and the companies involved argue that their contracts are recognized as valid by virtue of being in force before the adoption of the

²⁷ Ashti Hawrami (Abdullah Abdulrahman Abdullah) – Minister of Natural Resources, 10 November 2009, KRG Cabinet, website of Kurdistan Regional Government, <http://cabinet.gov.krd/a/d.aspx?l=12&a=32579>.

²⁸ PetroCeltic

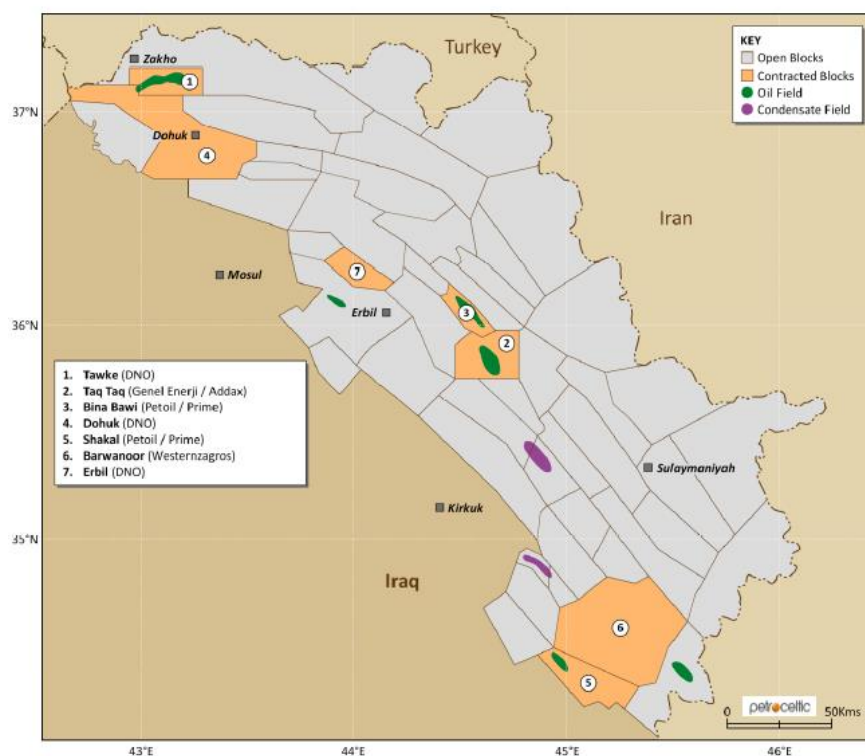
²⁹ Western Oil Sands was acquired by Marathon in July 2007, but Marathon chose not to retain the Kurdish assets, though it later entered the Harir and Sarsang blocks.



Constitution.³⁰ These contracts, therefore, have a different legal position from all subsequent PSCs signed by the KRG.

In 2007, a consortium of the UAE’s Dana Gas and Crescent Petroleum was awarded a service contract for the Khor Mor and Chemchemical gas fields; it rapidly proceeded to develop Khor Mor’s gas for local power generation. Under this contract, Dana Gas and Crescent (joined by OMV and MOL in May 2009 as the Pearl Petroleum consortium) are paid in condensate and liquefied petroleum gas – produced as by-products. Finally, the Khurmala field, the northern part of the Kirkuk field, previously under the operatorship of the federal North Oil Company, began production in July 2009, under the operatorship of KAR Group, a local Kurdish company. These awards set the stage for the initial phase of hydrocarbon exploration and development in the region (Figure 4 shows the situation up to 2006).

Figure 4: PSCs awarded in KRI by 2006³¹

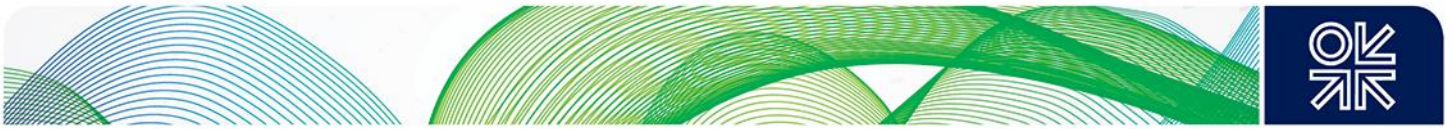


Although the underlying legal issues between the KRG and Baghdad were not resolved, progress in production, growing awareness of the region’s prospectivity, and frustrations with delays in opening up federal Iraq’s fields for development, led to an accelerating influx of medium-sized oil companies, with OMV, MOL, Korea National Oil Corporation, India’s Reliance Industries, and Alfa-Access-Renova (the Russian partners in the then TNK-BP) all signing in the latter part of 2007. Perhaps most notable was the USA’s Hunt Oil, which signed for Ain Sifni in September 2007 in the face of official American disapproval, since it was the largest company to sign for a PSC with the KRG to that date. Hunt Oil’s CEO, Ray Hunt, was a fundraiser and advisor to George W. Bush,³² and the Kurds saw the deal as

³⁰ ‘The Authority of the Kurdistan Regional Government over Oil and Gas under the Constitution of Iraq’, (legal opinion), http://cabinet.gov.krd/uploads/documents/James_R_Crawford_Kurdistan_Oil_Legal_Opinion_English_2008_07_09_h11m23s26.pdf.

³¹ PetroCeltic.

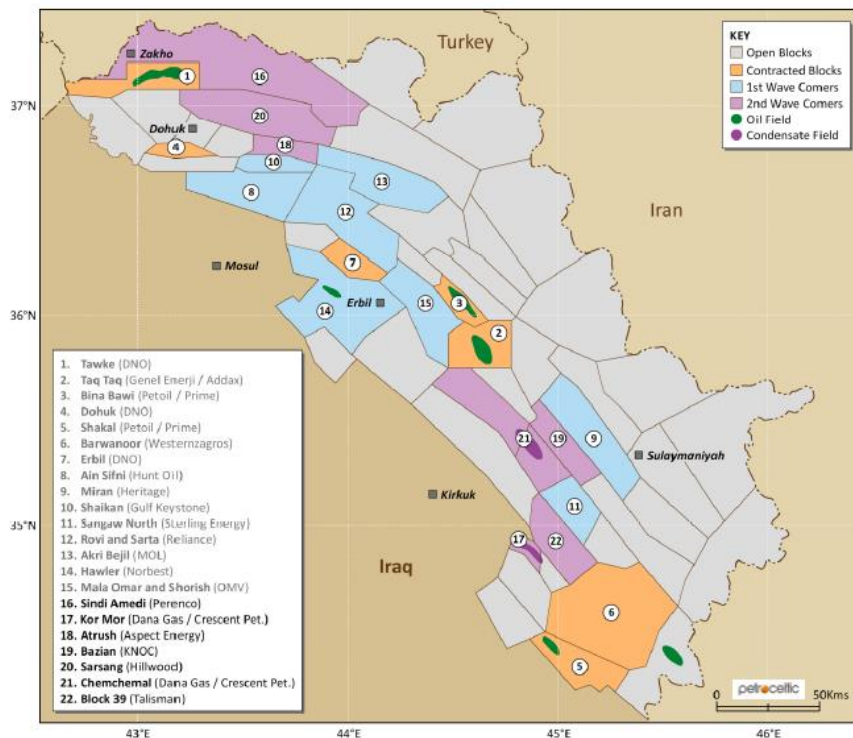
³² ‘Hunt Oil knew KRG oil deal in disputed territory’, Iraq Oil Report, 25 August 2011, www.iraqoilreport.com/politics/hunt-oil-knew-krq-oil-deal-in-disputed-territory-6108/



granting them tacit approval. Furthermore, Ain Sifni was in the 'disputed territories', lying within the legal boundaries of Ninewa province, though behind the 'Green Line'.

Further awards followed in 2008, to other mid-sized companies, with Korea National Oil Company and Talisman of Canada perhaps being the most notable. By then, a large part of the lower-lying part of the KRI, easier to operate in and perceived as being more prospective, had been licensed (Figure 5). In May 2009, Heritage (which later sold out to Genel) discovered the large Miran gas field, and in October 2009, Gulf Keystone discovered the Shaikan oilfield, the largest found in the KRI so far; it began test production in October 2010.

Figure 5: PSCs awarded in the KRI, end-2008³³

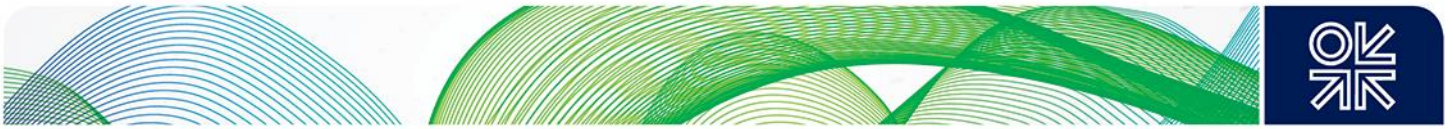


Federal Iraq's offer of technical service contracts for several, mostly giant, fields, primarily in the south of Iraq (First Round, for producing fields, June 2009; Second Round, for non-producing fields, December 2009; Third Round, for gas fields, October 2010; Fourth Round, for exploration blocks, May 2012) changed the situation considerably. Progress with the rounds, in the continuing absence of a federal oil and gas law, marked a gamble both by oil minister Hussein Shahrstani, and the international oil companies. The plunge in oil prices triggered by the global financial crisis made it imperative for Iraq to attract investment and boost production.

Although it is not clear what part the Kurds' contract awards played in prodding Baghdad to move, the federal government's success in signing up Shell, ExxonMobil, BP, CNPC, ENI, Petronas, CNOOC, Gazprom Neft, Total, Occidental, and several other major companies did deter them from considering entries into Kurdistan.³⁴ The enormous volumes of promised investment and production, with an implied plateau of 12 million bpd (barrels per day), deflected criticism of Baghdad's oil policy. The prospect of receiving a share of greatly increased federal oil revenues also increased the incentive for the KRI to remain within the federal Iraqi system. However, Baghdad possibly made a tactical error by

³³ PetroCeltic.

³⁴ Though it was not the only reason they did not enter the KRI at this time.



rejecting bids by Shell, Sinopec, and Turkey's TPAO for the Kirkuk field, which would have boosted production and cemented its control of the field.

2.2.4. The entry of ExxonMobil: 2011–mid 2014

In November 2011, the KRG greatly strengthened its position, and escalated the dispute with Baghdad, by signing PSCs for six exploration blocks with ExxonMobil. ExxonMobil was, as the world's largest non-state oil company, by far the largest player to enter the KRI to date, and hence brought great financial, technical, and reputational resources.³⁵ As noted in Section 0 below, some of the blocks were in territory disputed with the federal government, or were otherwise politically sensitive. The KRG perceived that the presence of ExxonMobil gave it additional weight with the US government,³⁶ although reportedly ExxonMobil only informed the State Department after the deal had happened. But most importantly, ExxonMobil was already active as operator of the giant West Qurna-1 project in federal Iraq, with implications discussed below (Section 0 below).

TAQA (an Abu Dhabi government-controlled company), Total, Chevron, and Gazprom Neft also took blocks in the KRI during 2012, bringing the financial strength, technical expertise, and implicit political backing³⁷ of major companies.

The blocks taken by ExxonMobil, together with the other awards, meant that by December 2012 almost the entire area controlled by the KRG was licensed (Figure 6), excluding some mountainous areas of doubtful prospectivity. New companies seeking to enter would therefore have to face elevated geological risk, or political risk (in the disputed territories), or take on blocks previously relinquished by other companies as being unattractive, or purchase stakes held directly by the KRG or by existing licence holders. Given the continuing uncertainty over oil export routes and payments, larger companies were unready to commit to buying smaller players such as Gulf Keystone or Western Zagros.³⁸

However, production from the Tawke, Taq Taq, and Shaikan fields was constrained by disputes over pipeline export access. From 2011 to December 2012, exports were possible via the federally owned Kirkuk pipeline, but this arrangement halted from January 2013, forcing operators to sell to the local market or export by truck.

³⁵ Though it must be said that ExxonMobil has chosen to proceed only slowly with its Kurdish blocks to date.

³⁶ Though see (Coll, 2012) for a more nuanced view.

³⁷ Even if this was more in potentiality than actuality.

³⁸ TAQA bought 17.98% of Western Zagros in October 2011 but sold it in November 2012 at a significant profit.

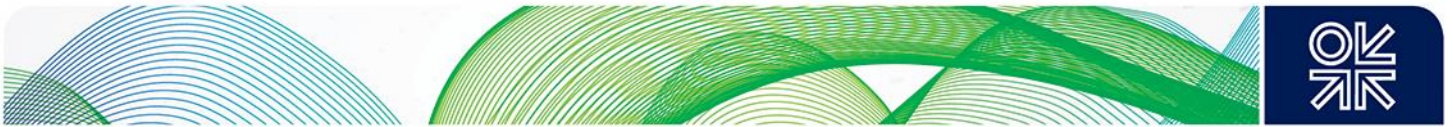
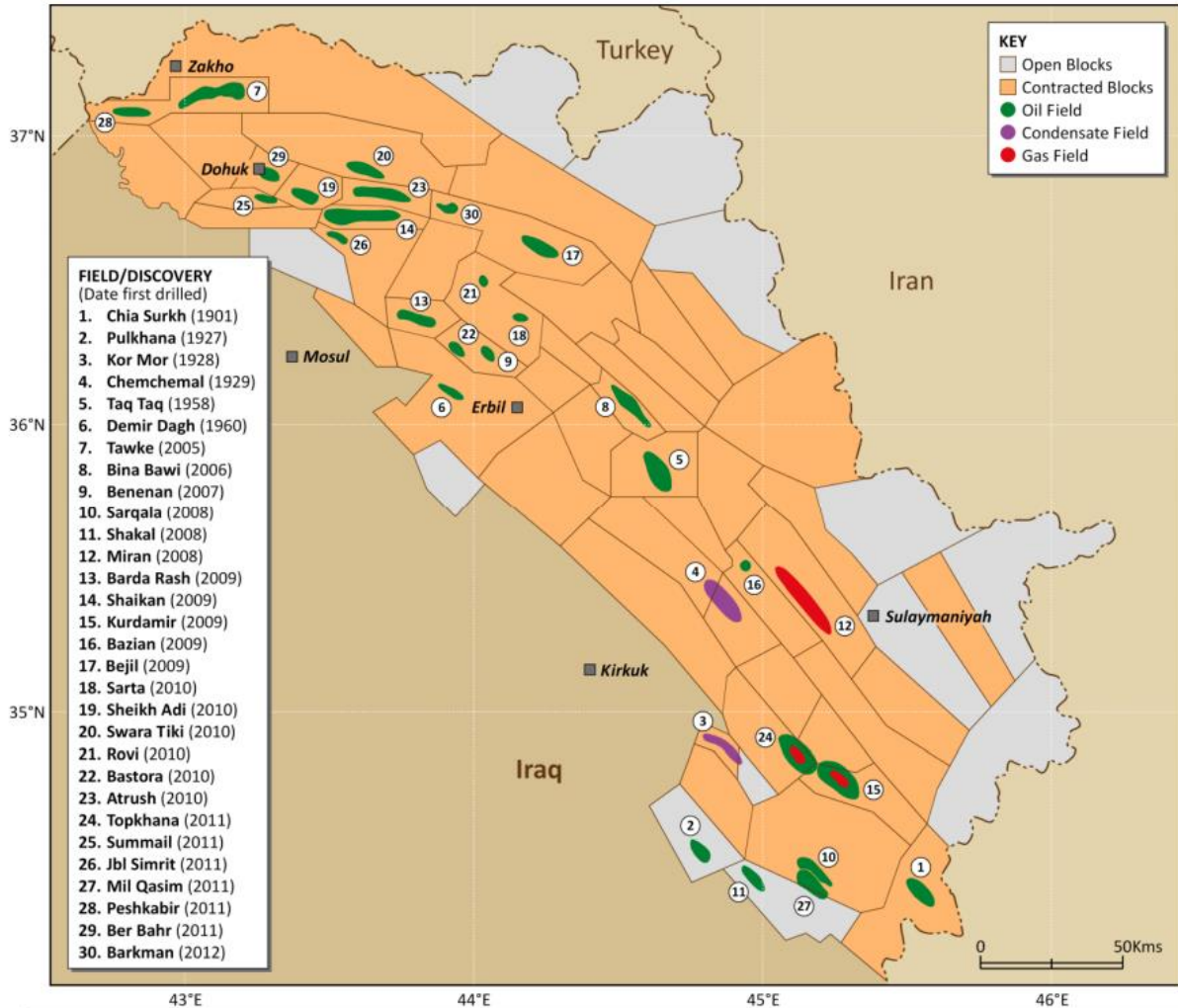


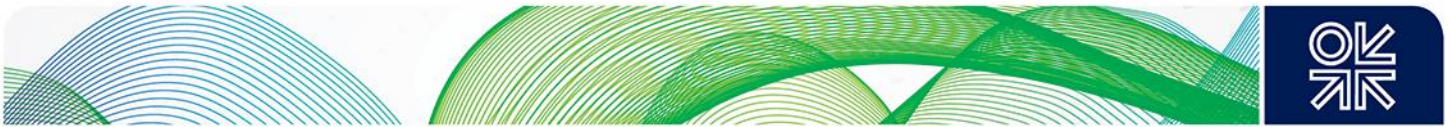
Figure 6: PSCs awarded in the KRI, December 2012³⁹



From December 2013, the KRG began to export and sell oil directly through its new pipeline to Turkey, without reference to Baghdad. The federal government had not sought to block trucked exports, which were in relatively small amounts, but from about November 2013 Baghdad responded to potential use of the pipeline by initiating legal action against the shippers and buyers of Kurdish oil, thus deterring most large traders and refiners, who were also major purchasers of oil from Baghdad. The Kurdish Ministry of Natural Resources sought to disguise the identity of its customers; this scheme included selling to, or via, Ashkelon in Israel, with which Iraq has no diplomatic relations and consequently where it could not take legal action.⁴⁰ As well as generating economic benefits, this deal was in line with the low-profile establishment of Israel–KRG ties, as the KRG sought to diversify its diplomatic alliances. Oil was transferred to other ships off the coast of Malta, and decoy ships were used to confuse Baghdad’s tracking. Hungary’s MOL, holding exploration and production assets in the KRI, was one company to buy Kurdish crude for its refinery. By November 2015, Natural Resources Minister Ashti Hawrami claimed that about ten countries were buying Kurdish oil.

³⁹ ‘The history of hydrocarbon exploration in Iraqi Kurdistan: 1901 to 2012’, David Mackertich and Adnan Samarrai, PetroCeltic, www.petroceltic.com/~media/Files/P/Petroceltic-V2/pdf/Mackertich-Samarrai-2013-Geol-Soc-Zagros-conference-presentation.pdf.

⁴⁰ ‘Exclusive: How Kurdistan bypassed Baghdad and sold oil on global markets’, Dmitry Zhdannikov, Reuters.com, 17 November 2015, <http://mobile.reuters.com/article/idUSKCN0T61HH20151117>



In January 2014, budget payments from Baghdad to the KRG were halted, leading to a deepening budgetary and economic crisis in the region. This is discussed further in Section 4.3.

2.2.5. The onslaught of ISIS: mid-2014 and beyond

In June 2014, ISIS seized the city of Mosul, Iraq's third largest, and made a rapid advance through the surrounding territories. Through June and July, there was little fighting between ISIS and the Peshmerga,⁴¹ but in August, ISIS overran the city of Sinjar, centre of the Yezidi religious group, and threatened to attack Erbil, until US air strikes assisted the KRG forces in retaking most of the lost territory. The lightly armed Peshmerga were revealed to have lost their combat edge during years of peace, and their military performance was hampered by the division of command between the PUK and KDP.

Following the fall of Mosul, Kurdish forces secured the city of Kirkuk and the surrounding oilfields of Kirkuk, Bai Hassan, and Jambur.⁴² The KRG began the process of connecting the Avanah Dome of the Kirkuk field (also linked by pipeline to Bai Hassan) to Khurmala so that oil could flow into the Kurdish pipeline system. In November 2014, the Kurdish news agency Rudaw reported that the newly secured Ain Zalah field (producing around 2 kbpd) was being linked by pipeline into the Kurdish export system.⁴³ It also appears that the Butmah and Sufaiya fields have been secured by Kurdish forces. These last three named fields, which lie north-west of Mosul, are small compared to Kirkuk, however.

The irruption of ISIS had, of course, major political and military consequences across the region, which cannot be dealt with in detail here. In terms of effects on the Kurdish oil industry, the militants' seizure of the Baiji refinery (Iraq's largest, which is located near Kirkuk) led to severe shortages of refined products, notably petrol (gasoline) and diesel, throughout northern Iraq and in the Kurdish region, making the KRG aware of its vulnerability. Oil companies withdrew most expatriate staff, though many later returned, and halted operations in blocks near the front lines. Wells of the small Khabbaz field, south-east of Kirkuk, were attacked by ISIS on several occasions – in January,⁴⁴ February,⁴⁵ and October 2015⁴⁶ – cutting 20 kbpd of production, which recovered to 11 kbpd after the field was retaken.

The fighting against ISIS and the influx of refugees into the KRI worsened the existing budget crisis, and made it even more urgent for the KRG to secure a reliable route for oil exports and payments. The World Bank estimated the overall cost of the influx of refugees and internally displaced people at \$1.4 billion.⁴⁷ The KRG has used the cost of the fighting against ISIS and of the refugee influx as justifications for the lack of payments to the IOCs. However, control of the Kirkuk area fields also considerably increased the immediate oil production available, with Avanah and Bai Hassan output freeing up oil from Khurmala for export.⁴⁸

ISIS and its antecedent groups in Iraq relied on smuggling and extortion of oil and products from the Baiji refinery to fund their activities, even when the area was notionally under central government

⁴¹ (Iraqi Kurdistan: The Essential Briefing, 2015)

⁴² 'Kurds take 2 vital oil fields near Kirkuk, increasing tensions with Iraqi gov't', 11 July 2014, CBSNews: www.cbsnews.com/news/kurds-take-2-vital-oil-fields-near-kirkuk-increasing-tensions-with-iraqi-government/.

⁴³ See also 'KRG solidifies hold on Ain Zalah', Iraq Oil Report, 26 March 2015, www.iraqoilreport.com/news/krq-solidifies-hold-on-ain-zalah-14284/.

⁴⁴ 'Kurds Recapture Oil Facility In Northern Iraq From ISIS', The World Post, 31 January 2015, www.huffingtonpost.com/2015/01/31/isis-oil-iraq_n_6584434.html.

⁴⁵ 'Iraq oilfield output suspended after IS fighting -oil minister', Mustafa Mahmoud, Reuters, 2 February 2015, <http://uk.reuters.com/article/2015/02/02/mideast-crisis-iraq-oil-idUKL6N0VC1SJ20150202>.

⁴⁶ 'North oil facilities face ongoing IS attacks', Iraq Oil Report, 3 February 2015, www.iraqoilreport.com/news/north-oil-facilities-face-ongoing-is-attacks-16671/.

⁴⁷ (World Bank, 2015)

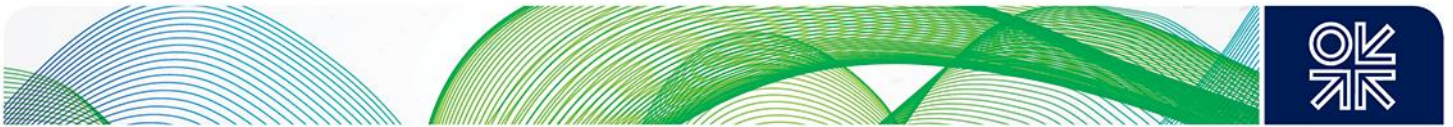
⁴⁸ 'Pipeline upgrade to boost Kurdish oil exports', Alexander Whitcomb, RÛDAW, 28 October 2014, <http://rudaw.net/english/kurdistan/281020142>.



control. More recently, as widely reported,⁴⁹ ISIS's direct control of oil facilities has expanded – mostly in Syria but including fields in Iraq it held for a period of time following the capture of Mosul. Kurdish traders were reportedly active in this trade through long-established networks,⁵⁰ transporting ISIS oil by truck and on-selling it to Turkey and Iran or refining it locally. Although the KRG made efforts to clamp down on the smuggling in late 2014, the extent of complicity with senior figures remains unclear.

⁴⁹ e.g. 'Inside Islamic State's oil empire: how captured oilfields fuel Isis insurgency', *The Guardian*, 19 November 2014, www.theguardian.com/world/2014/nov/19/sp-islamic-state-oil-empire-iraq-isis; 'Isis Inc: how oil fuels the jihadi terrorists', *The Financial Times*, 14 October 2015, www.ft.com/intl/cms/s/2/b8234932-719b-11e5-ad6d-f4ed76f0900a.html#axzz3s7CJcXo.

⁵⁰ e.g. 'First Kurds arrested for smuggling ISIS oil', Alexander Whitcomb, RÛDAW, 13 November 2014, <http://rudaw.net/english/kurdistan/131120142>.



3. The KRI's Hydrocarbon Sector

The potential of the KRI's oil and gas sector depends on its geological endowment, legal framework, and infrastructure. From a consideration of these, this section outlines the current status and outlook for oil and gas production and exports, and the region's finances.

3.1. Geography and petroleum geology

The geography and petroleum geology of the KRI has a profound impact on the development of its hydrocarbon industry.

The region's hydrocarbon geology, which is rather similar to that of the Iranian Zagros, presents a thick stack of mostly platform carbonates (limestones and dolomites) from the Upper Palaeozoic through to the Miocene, with subordinate shales and evaporites. This sequence contains numerous petroleum source rock/reservoir-seal pairs with the Triassic, Jurassic, Cretaceous, and Tertiary all productive in various areas, while the regionally gas-prolific Permo-Triassic play has not yet been tested. By comparison, in federal Iraq and Iran, discovered Jurassic reservoirs are minor and Middle and Upper Triassic reservoirs are virtually unknown (outside parts of northern Iraq), though they are present in Syria. Jurassic and Triassic reservoirs are most important in the area around Dohuk, in the northern KRI; Tertiary, Cretaceous, and Jurassic reservoirs around Erbil; and Tertiary reservoirs in the far south of the KRI.

Fields discovered to date are in structural traps formed by compressional deformation during the collision of the Arabian, Central Iranian, and Anatolian plates from the Oligocene onwards.⁵¹ These trend south-east to north-west in the southern part of the KRI (as in the Iranian Zagros), and west-east in the northern part (as in the Taurus Mountains of Turkey). A wide variety of hydrocarbon types have been discovered, from gas and gas-condensate to light and heavy oil, often in the same field – for instance Shaikan which has very heavy oil in the Cretaceous, heavy oil in the Jurassic, and light oil and gas in the Triassic.⁵² The pattern of hydrocarbon types across the region is quite complicated, but broadly speaking shows more oil in the northern KRI, with heavy oil at Shaikan (east of Dohuk), and more gas in the central and southern areas. The Kirkuk area produces light oil with an API gravity around 34–35°. Further south, in disputed territories in the Diyala governorate, are a number of undeveloped gas-condensate fields.

Perceived exploration risks include the breaching of shallow reservoirs (suggested by oil seeps); discordant structuration which means that surface geology is not always a guide to the deeper hydrocarbon trap; lack of knowledge of Jurassic and Triassic reservoirs which have been little-explored in federal Iraq; and concerns over the reservoir quality of fractured carbonates with often low matrix permeability.

This geological background has a number of important implications.

- Fields, though large by recent global standards, are relatively small compared to those in federal Iraq or Iran;
- Some fields are found in the flat plains of the foreland (around Erbil, for example), but many are located in mountainous territory, up to 2000 metres elevation, or in badlands, cut by deep gorges (see Figure 7), which complicates access and seismic imaging.

⁵¹ (Talebian & Jackson, 2004); (Hatzfeld, et al., 2011).

⁵² 'Competent Person's Report on Certain Petroleum Interests of Gulf Keystone Petroleum and its Subsidiaries in Kurdistan, Iraq', ERC Equipoise Ltd., September 2015, www.gulfkeystone.com/media/92461/erce_gkp_cpr_2015-09-30_final.pdf.



Figure 7: Rawanduz Gorge, Kurdistan Region of Iraq⁵³

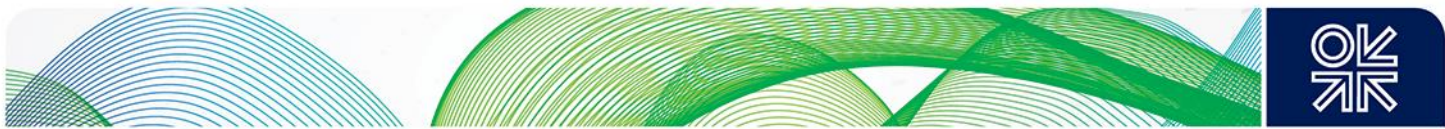


- Complicated structuration has led to dry wells (such as Kewa Chirmila) and more involved reservoir geology (such as Shaikan). Numerous prospects remain, but with most of the obvious structures having been tested, further exploration will require 3D seismic surveys and a focus on deeper or more subtle structures such as sub-thrust anticlines.
- Fractured carbonate reservoirs are potentially highly prolific, with flow rates exceeding 20 kbpd from some wells. However, fractured reservoirs present variable productivity across structures and complicate reservoir management, with some companies having to make heavy reserves write-downs – for example Afren at its Barda Rash field in January 2015⁵⁴ and MOL of its Akri-Bijeel field in September 2015.⁵⁵
- The distribution of hydrocarbon phase and quality is complicated and hard to predict across the region.
 - Hydrogen sulphide, toxic and corrosive, is common and contributes to extra costs, safety issues and, on some occasions, well-control incidents.
 - Heavy oil, particularly in the large Shaikan field, is more expensive to develop, has lower recovery rates, and fetches a lower sales price than lighter oil.
 - Gas, though useful for domestic power generation and strategic for exports to Turkey, realizes a lower value than oil, and requires infrastructure development and more sophisticated commercial arrangements, favouring larger companies. Unlike federal Iraq, most of whose discovered resources are oil, several large gas fields have been discovered in the KRI, with potential for further discoveries by deeper drilling.

⁵³ 'Canyon, north eastern Kurdistan', by Jim Gordon, (originally posted to Flickr as 'Canyon, north eastern Kurdistan'). Licensed under CC BY 2.0 via Commons - https://commons.wikimedia.org/wiki/File:Canyon,_north_eastern_Kurdistan.jpg#/media/File:Canyon,_north_eastern_Kurdistan.jpg.

⁵⁴ 'Afren plunges amid Kurdistan writedown', Michael Kavanagh, *The Financial Times*, 12 January 2015, www.ft.com/intl/cms/s/0/b2b55bb0-9a79-11e4-8426-00144feabdc0.html.

⁵⁵ 'MOL – MOL Downgrades Akri-Bijeel Block Potential', Kamil Kliszcz, mDomMaklerski.pl, 8 September 2015, www.mdm.pl/ds-server/19432?ticketSource=ui-pub.



These challenges are not unusual or unique in a global context, but they do raise the costs, risks, and complexity of investing in the KRI. In particular, some smaller companies have struggled technically to develop their discoveries, a problem exacerbated by delays in receiving payments for oil exports (as discussed below). However, the high flow rates per well do mean that a relatively modest drilling effort can quickly raise production capacity.

The region is landlocked and hence requires import and export routes through Turkey, Iran, or federal Iraq.⁵⁶ This raises the costs of field development and of exporting oil, gas, and refined products. Most importantly, it means the KRG is, and for the foreseeable future will remain, dependent on its neighbours to export its hydrocarbon production. For practical purposes, this mostly means Turkey, due to its engagement and improving relations with the KRG since 2005, and to the presence of the Iraq–Turkey pipeline giving access to Ceyhan, a major oil export terminal on the Mediterranean. Practically also, Turkey, as a large and fast-growing gas market, is the most logical destination for future Kurdish gas exports.

Though it is primarily oil which has been developed to date, with some gas for domestic use, the KRI is also rich in gas resources. It has, at the current stage of exploration, much more non-associated gas (gas not produced as a by-product with oil) than federal Iraq.⁵⁷ This complicates development for companies in the southern KRI who, as well as various political and community issues, face a lack of pipeline infrastructure and a relatively long distance for transporting oil and gas to Turkey, the key export market.

However, under the right political circumstances, the KRI could be a potential complementary partner in supplying gas to federal Iraq, to meet the country's severe electricity crisis. Currently, the federal government is moving ahead with gas imports from Iran at reportedly expensive prices.

3.2. Reserves and resources

The KRI has been one of the most active areas for onshore oil and gas exploration in recent years. By December 2014, a total of 189 exploration and appraisal wells had been drilled, 169 of them in the modern period of the region's exploration (from 2005 onwards). By 2012, the commercial success rate amounted to around 55–60 per cent, exceptional by global standards.⁵⁸ Exploration since then has been at a somewhat lower level with fewer large discoveries, at least those that have been publicly reported.

There is no clear consensus on Kurdistan's estimated oil and gas resources. According to the US Geological Survey (USGS), undiscovered resources in the Zagros fold belt of Iraq, a large part of which falls in the KRI, amount at a mean estimate to 41 billion barrels of oil and natural gas liquids and 54 trillion cubic feet of gas.⁵⁹ The Ministry of Natural Resources (Kurdistan region) (MNR), estimates oil reserves of 45 billion barrels, a figure which is widely quoted in the media without any real technical basis, while the International Energy Agency (IEA) estimated in 2012 that the KRI contained 4 billion barrels of proved reserves.⁶⁰ MNR and USGS estimates are much higher because the resource estimates include unproved resources and exploration potential. The KRG recently increased its oil resource estimate from 45 billion barrels to 70 billion barrels,⁶¹ although this has not been independently verified and this number likely includes at least some resources in disputed areas – especially Kirkuk.

⁵⁶ (Mills, 2013).

⁵⁷ Large gas resources could probably be found in federal Iraq by drilling deeper reservoirs and exploring the Western Desert.

⁵⁸ Typical global success rates are around 30%; e.g. 'International Mid-Cap Exploration Performance 2008 – 2009', Richmond Energy, Finding Petroleum Conference, London January 2010, www.findingpetroleum.com/files/etb1/richmond.pdf.

⁵⁹(United States Geological Survey, 2000).

⁶⁰ (International Energy Agency, 2012).

⁶¹ 'Kurdistan Oil Consolidation - Waiting for Godot?', 3 May 2015, LinkedIn.com, <https://www.linkedin.com/pulse/kurdistan-oil-consolidation-waiting-godot-joanna-southcott>.



From company reports and public data sources, proved oil reserves can be estimated at 7 billion barrels and discovered contingent resources at 3.8 billion barrels, totalling 10.80 billion barrels. Stock-tank oil initially in place (STOIP), the volume of oil in a reservoir prior to production, both recoverable and non-recoverable, is approximately 50 billion barrels of oil.⁶² Increases in the recovery factor, likely with further development and application of secondary and tertiary recovery methods, could probably achieve ultimate recovery of 20–25 billion barrels of the STOIP, and possibly more. Further reserves will be added by extensions of known fields, and new discoveries. These figures exclude the Kirkuk area (Kirkuk, Bai Hassan, Jambur, and Khabbaz), which add another 4.4 billion barrels of remaining reserves,⁶³ therefore increasing the KRI's oil reserves by 40 per cent.

For gas resources, the MNR estimates 25 trillion cubic feet (708 billion cubic metres) of proved gas reserves and 99–198 Tcf (2800–5600 bcm) of unproved gas resources, or alternatively a total of around 177 Tcf (5000 bcm⁶⁴). However, discovered reserves amount to 7 Tcf (200 bcm) of proved plus probable reserves, and 22 Tcf (615 bcm) of contingent resources (gas discovered but without a commercial development plan),⁶⁵ The majority of this gas is found in the central and southern parts of the KRI. The Kirkuk area adds about 2 Tcf of sales gas,⁶⁶ though this could be increased by capturing currently flared gas.

These reserve figures are likely to increase substantially as further exploration proceeds, and field appraisal and development allows for more resources to be moved into the proved and probable reserve categories. Reserves of major fields found in the region are shown in Table 1.

Table 1: Reserves of major fields in the KRI⁶⁷

Field	Oil ⁶⁸ proved + probable reserves and contingent resources (million bbl)	Gas proved + probable reserves and contingent resources (trillion cubic feet)
Khurmala	2726	3.6 ⁶⁹
Shaikan	1001	1.3
Atrush	854	0.1
Tawke	731	0.1
Taq Taq	579	0.1
Kurdamir	541	2.3
Sheikh Adi	531	0.4
Pulkhana	409	NA
Topkhana	55	1.7
Chemchemical	110	3.4
Khor Mor	138	4.4
Miran	34	3.5
Bina Bawi	45	4.9
Summail	0	1.4

⁶² Assuming a 35% recovery factor for oil, for fields where oil-in-place figures are not available.

⁶³ Wood Mackenzie. Again, this could probably be increased by improved reservoir management and secondary and tertiary recovery.

⁶⁴ 'KRG plans 10 bcm in natural gas exports to Turkey in two years', *Hurriyet Daily News*, 20 November 2015, www.hurriyetcdailynews.com/krg-plans-10-bcm-in-natural-gas-exports-to-turkey-in-two-years.aspx?pageID=238&nID=91471&NewsCatID=348.

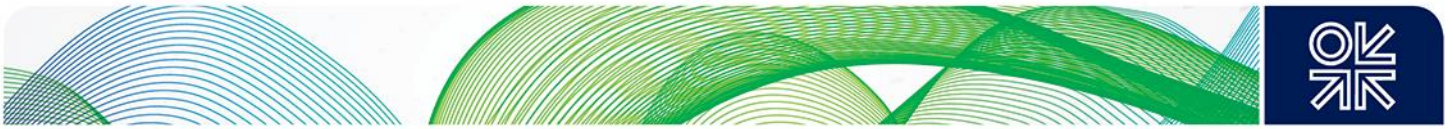
⁶⁵ Estimates from company reports.

⁶⁶ Wood Mackenzie.

⁶⁷ From company reports; Wood Mackenzie; author's research. Other fields bring the total up to the reported 29 Tcf.

⁶⁸ Includes condensate and natural gas liquids.

⁶⁹ Associated gas.



For comparison with other producing countries of similar production potential, Azerbaijan has 7.0 billion barrels of proved oil reserves, Colombia 2.4 billion bbl, Ecuador 8.0 billion bbl, Egypt 3.6 billion bbl, and Oman 5.2 billion bbl. Federal Iraq, excluding the KRI, officially has 150.0 billion bbl of proved reserves.⁷⁰ Considered as an independent country, the KRI's reserves would be the seventh-largest in the Middle East, although a long way behind the heavyweights such as Saudi Arabia and Iran.

In gas, 29 Tcf of reserves are relatively modest, somewhat more than Oman, but much less than its heavyweight neighbours federal Iraq and Iran. However, the relatively low level of domestic consumption, and the fact that most of these gas reserves are non-associated (not produced as a by-product with oil), allows for potential exports. It is likely that further exploration and deeper drilling will discover further gas resources.

The KRI also has significant potential for metallic and non-metallic minerals, but these have remained mostly undeveloped,⁷¹ with all attention focused on the hydrocarbon sector.

3.3. Production-sharing contracts

The KRG has used production-sharing contracts (PSCs), in contrast to the service contracts employed by federal Iraq. The sole exception is the service-type contract signed for the Khor Mor and Chemchemal fields with Dana Gas and Crescent Petroleum (later joined in the Pearl Petroleum consortium by OMV and MOL).⁷² By January 2015, the KRG had concluded 52 PSCs.

The KRG has not held formal 'bid rounds' or auctions for exploration rights, as is the usual (though not universal) practice. Instead, the PSCs have been negotiated individually and so are all slightly different. The paucity of interested companies in the early years, and the later disputes with Baghdad, are part of the reason for this approach. Most of the PSCs and associated agreements have been made public by the MNR,⁷³ with the notable exceptions of the Khor Mor contract and the ExxonMobil contracts. However, these contracts are also typically modified by side letters which are not public.

The Kurdish PSCs follow a fairly standard industry format, with a royalty (10 per cent of gross revenues) to the government, cost recovery from a fixed share (usually 40–50 per cent) of oil and gas revenues, and profit sharing (approximately 30 per cent reducing to 15 per cent over time) of the remaining revenues based on an 'R-factor' (ratio of cumulative revenues to cumulative costs), hence reducing the contractor's share as profitability increases.

The KRG has typically held a 20–25 per cent carried interest in the PSCs (in other words, it does not cover its share of exploration costs, but can take a 20–25 per cent interest in a commercial discovery). Many of the contracts held an interest (typically of 20 per cent) in trust, with the intention that it would later be assigned, thus keeping the door open for larger companies to enter. By now, most of these interests have been awarded.

Furthermore, many of the PSCs have been modified by introducing or increasing 'capacity-building payments', intended to be used for infrastructural development. These can be either direct cash payments or reductions in the contractor's share of profit oil (with typically 30 per cent of contractor profit oil being reclaimed by the government). This has been a method for the KRG to increase its take of profits from the fields as the region's prospectivity has been established.

Contracts initially signed separately in the northern and southern KRI were 'harmonized', in the process reducing the IOCs' equity stake. Increasingly tightening the terms has been justified by the

⁷⁰ All reserves figures from BP Statistical Review of World Energy (2015), and include crude oil and other petroleum liquids.

⁷¹ 'Monthly Export and Production Data', Ministry of Natural Resources, Kurdistan Regional Government, 25 August 2013, <http://mnr.krg.org/index.php/en/mining>.

⁷² The Khurmala contract with KAR is not available, but is also understood to reflect a service-type arrangement.

⁷³ 'KRG Ministry of Natural Resources Production Sharing Contracts', Kurdistan Regional Government, <http://cabinet.gov.krd/p.p.aspx?l=12&p=1>.



improving perceptions of the region's prospectivity, and by the sunk costs already incurred by the initial entrants. This 'obsolescing bargain'⁷⁴ is familiar from many new petroleum provinces, repeated in recent history in Kazakhstan, Uganda, and elsewhere, but it does deter further investment in the KRI, especially when combined with the region's other challenges.

The Kurdish PSCs have been criticized as giving an excessive share of revenue to the contractor, with one Iraqi analyst commenting:

The comparative assessment of the singed [*sic*] LTSCs [Long-Term Service Contracts] and KRG's PSCs would lead to one conclusion: the LTSCs give more to Iraq while the KRG PSC [*sic*] is more attractive to IOCs. If one applies the Constitutional principle of 'best interest for the Iraqi people', LTSCs serve, in my views, the best interest of the Iraqi people more than KRG's PSCs do.⁷⁵

However, the PSCs are a familiar industry model, and are a pragmatic means of attracting IOCs to an area which (at least in 2005) had largely unknown hydrocarbon prospectivity, has smaller and more difficult fields than federal Iraq, and has continued to display a high level of political risk, manifested in the difficulty companies have had in receiving regular payments for their oil exports. PSCs are used in other comparable countries, including Azerbaijan, Qatar, Libya, Oman, Egypt, and Algeria. In contrast, the federal Iraqi service contracts have been reluctantly accepted by the IOCs for giant, low-cost discovered fields, but have attracted little interest for exploration. There would simply have been little or no exploration in the KRI had it offered service contract-type terms.

At current low oil prices, the Iraqi technical service agreements (TSAs) also have the disadvantage that the government is obliged to reimburse the contractor immediately for costs, which puts strain on the federal budget. Table 2 compares the revenue split for the two contracts at low and high oil prices, for 100 barrels produced at a cost of \$10 per barrel. As can be seen, the KRG PSC is considerably more attractive for the contractor (lower government take) at high prices, but at low prices, the difference between it and the federal Iraqi TSA is not so great. Note that this is only a very crude comparison, and a full analysis should allow for the time value of money (discounting), exploration risk, payment delays (for both contracts), the target plateaux and trigger dates in the TSAs, and the generally higher cost and smaller size of the KRI's fields.

⁷⁴ (Vernon, 1971).

⁷⁵ 'Dialogue on Contentious Oil Issues in Iraq', Iraq Energy Institute, 19 August 2013, www.iragenergy.org/library/interviews.php?detailof=120&content=Dialogue-on-Contentious-Oil-Issues-in-Iraq.



Table 2: Iraq TSA and KRG PSC comparison⁷⁶

	\$40 per barrel		\$100 per barrel	
	Federal Iraq TSA	KRG PSC	Federal Iraq TSA	KRG PSC
Revenues (100 barrels)	4000	4000	10 000	10 000
Royalty	0	400	0	1000
Revenues available for remuneration	2000	1800	5000	4500
Costs	1000	1000	1000	1000
Revenues after cost recovery	1000	2600	4000	8000
Profit to contractor	200	291	200	896
Tax	50	0	50	0
Profit to contractor after tax	150	291	150	896

Unlike many significant oil- and gas-producing countries, the KRG has not established a functional national oil company, with most of the roles of such an entity still being carried out by the MNR which, like the federal Ministry of Oil (MoO), acts as ministry (setting strategies and policies, and managing the flow of hydrocarbon revenues), regulator (awarding and controlling licences), and oil company (though unlike MoO's subsidiaries, it does not operate fields itself, but it does manage the KRG's minority shares). The Kurdistan National Oil Company (KNOC) and Kurdistan Exploration and Production Company (KEPCO) still exist only as paper entities, while the Kurdistan Oil Marketing Organization (KOMO) is still finding its feet in replacing the federal State Oil Marketing Organization (SOMO) in handling oil sales. This approach reflects a lack of expertise, or of a pre-existing hydrocarbon bureaucracy, and the exigencies of other issues, as well as Minister Hawrami's personal preference and style.

3.4. Infrastructure

Although there has been substantial government and private investment in the KRI over the past ten years, the current level of infrastructure – both general and petroleum-specific – has significant limitations. Again, this imposes additional costs on oil and gas operators. More significantly, it constrains petroleum development and encourages geographic variations. Existing and planned infrastructure is shown in Figure.

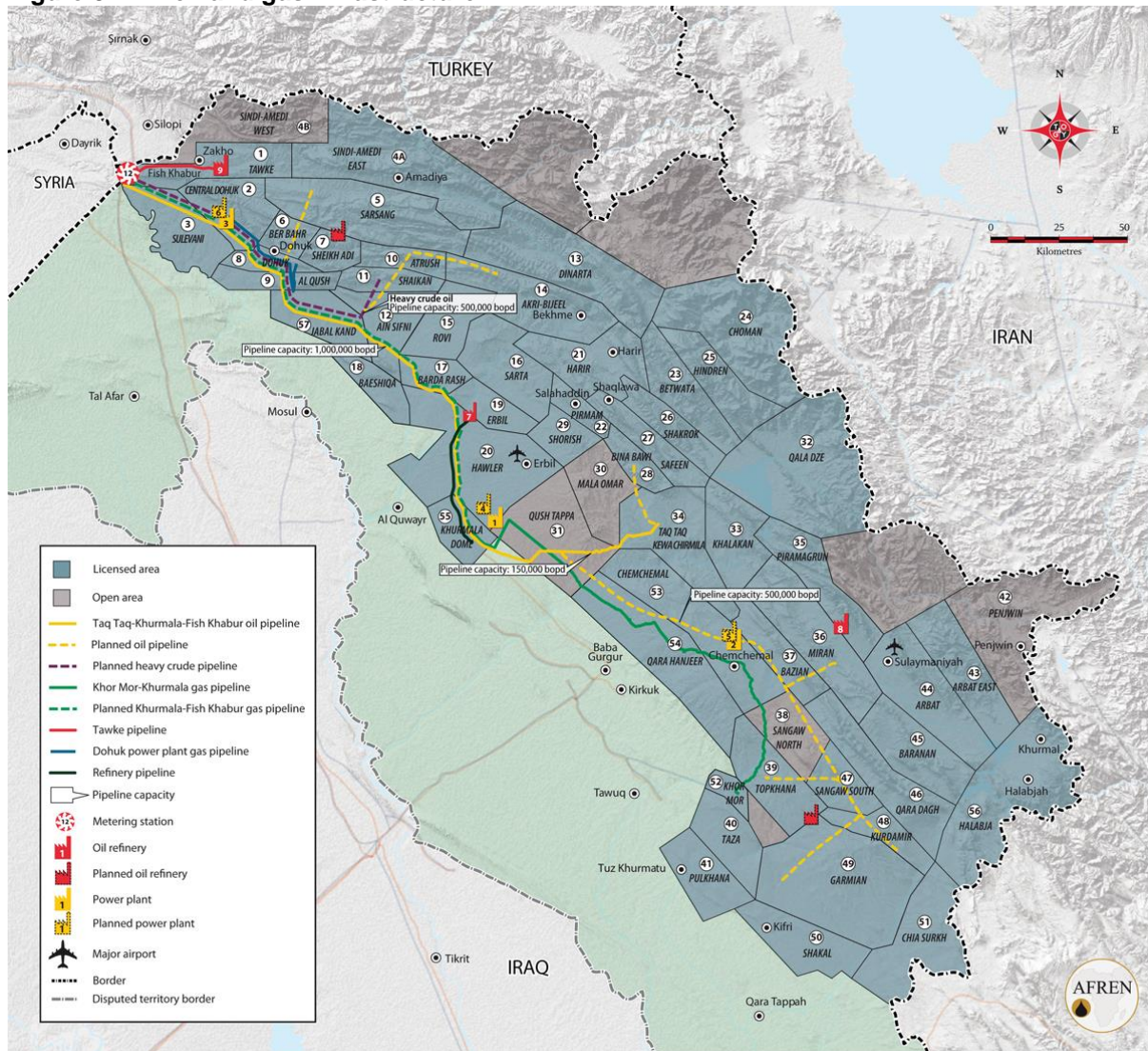
Pipelines have progressed to support oil exports. The Khurmala–Dohuk pipeline was originally constructed as a gas pipeline in 2013, but was then converted to carry crude oil, with 700 kbpd capacity. It is connected to the Taq Taq field, while a separate short pipeline brings oil from Tawke to the Turkish border at Fish Khabour. Planned spurs would link the Sarsang, Shaikan, Atrush, and Akri-Bijeel blocks. A major southward extension of the pipeline system would be required for fields in the southern KRI to export to Turkey.

⁷⁶ Individual contracts vary slightly from the typical terms illustrated here. Assumes that the KRG project has reached the lowest profit-oil tranche; \$2 per barrel fee for Iraq TSA, with R-factor removed after renegotiation. Bonus payments and government equity excluded.



The Turkish section of the Kirkuk–Ceyhan pipeline has a nominal capacity of 1.6 Mbpd but an operational capacity of around 500–600 kbpd. It will therefore require rehabilitation to accommodate the planned volumes of Kurdish oil exports.

Figure 8: KRI oil and gas infrastructure⁷⁷



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Most significantly, the KRI still lacks significant gas infrastructure. A gas pipeline runs from Khor Mor via the undeveloped Chemchemical field and the Bazian power plant, to the Erbil power plant. A short pipeline links the Summail field with the Dohuk power plant. Otherwise, processing plants and pipelines for domestic gas transmission to power plants, and export to Turkey, still need to be constructed. This presents a challenge of planning and coordination, given the existence of a number of medium-sized gas fields as well as the desire to capture associated gas from oilfields. The export pipeline to Turkey will most likely follow the existing Khor Mor–Khurmala gas pipeline and the Khurmala–Fish Khabour oil pipeline to the Turkish border.

⁷⁷ Kurdistan Ministry of Natural Resources.



Under the current commercial arrangements, Genel (operator of Miran and Bina Bawi) will supply raw gas at a low price (\$0.78 per MMBtu) to the MNR, which will arrange for processing and transport to Turkey. A similar arrangement for other fields, with the MNR acting as aggregator, is simpler in concept than coordinating numerous operators, but in practice, given the MNR's lack of finance and expertise, it will probably need another technical partner and investor to complete the required infrastructure. The gas resources in the southern part of the KRI (Topkhana, Kurdamir, Chia Surkh, and Shakal) will require an extension of the pipeline network. This also represents a challenge of coordinating the PUK- and KDP-dominated areas of the Kurdish region.

3.5. Oil production, demand, and exports

In January 2014, the last month with detailed MNR figures available, Tawke produced 38 kbpd, Shaikan 8.7 kbpd, Taq Taq 84 kbpd, Khor Mor 20 kbpd (condensate and LPG), and Khurmala 84 kbpd. On an estimated basis, average 2014 production came from Tawke (91 kbpd in 2014), Taq Taq (103 kbpd), Khurmala (approximately 100 kbpd), and Shaikan (23 kbpd), with condensate and LPG from Khor Mor (26 kbpd). Smaller amounts have been produced from Sarqala, Barda Rash, Swara Tika, Demir Dagh, Akri Bijeel, and Miran under long-term tests or early production systems, totalling about 50 kbpd in 2014.

By October 2015, the MNR reported that it had exported 439 kbpd from its own fields to Turkey, and 156 kbpd from North Oil Company-operated fields (Kirkuk and environs, still notionally under federal government jurisdiction⁷⁸). Excluding three days of shut down due to pipeline sabotage, the figures were 487 kbpd of KRG-operated crude and 174 kbpd of NOC crude. In previous deals with Baghdad, and under the December 2014 revenue-sharing deal, KRG oil sales per pipeline were handled by the federal State Oil Marketing Organization (SOMO), but by October 2015, no KRG oil had been delivered via SOMO.

Field developments have been held back by the threat of ISIS, the region's budgetary crisis, and the halt in IOC investment, with Tawke and Taq Taq showing some declines in production. However, to give some examples of continuing production growth, the capacity of Tawke field facilities is being expanded to 200 kbpd, that of Taq Taq to 200 kbpd, development of HKN's Sarsang block has been approved with a production target of 50 kbpd, TAQA's Atrush field is to start in mid-2016 with initial production of 30 kbpd, Oryx Petroleum's Hawler block is planned to reach 12–15 kbpd by the end of 2016, and a development plan has been filed for Western Zagros's Kurdamir field. Should they proceed, these developments will be funded by the international oil companies, though some of the smaller ones may need to raise additional capital in a difficult market.

Figure9 shows a forecast for KRI oil production. Assuming oil exports are not constrained and the fields receive sufficient investment, production could reach its target of 1 million bpd of exports, targeted by Minister Hawrami for the end of 2016, during 2018 or 2019. However, the sustained investment required is heavily dependent on establishing a regular and sizeable payment by the KRG to the IOCs.

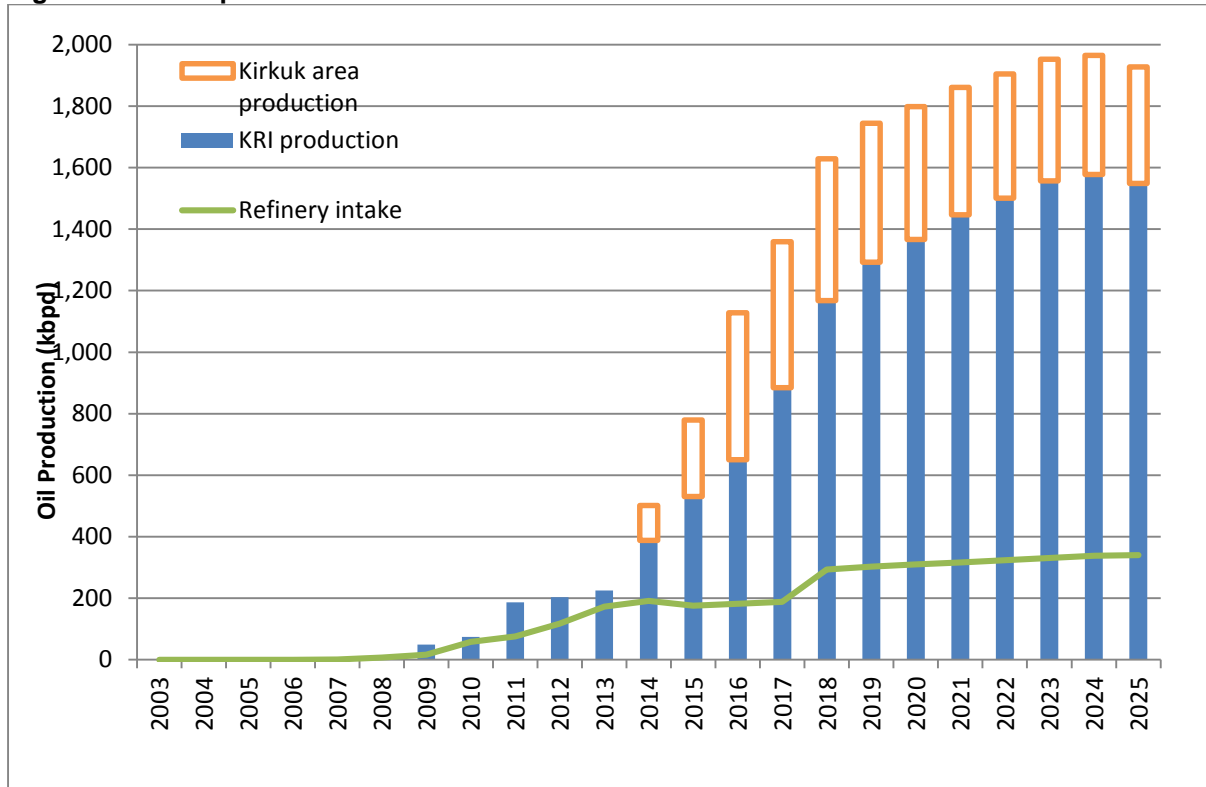
This production total excludes Kirkuk, which adds another 150 kbpd of exports (and effectively more, since Kirkuk crude is supplying KRG domestic refineries and hence freeing up other crude for export). Kirkuk production could be boosted to a level above 200 kbpd with some remedial work, and the surrounding fields of Bai Hassan, Jambur, and Khabbaz could add another 250 kbpd. However, Kirkuk capacity will decline without substantial investment and technical assistance, which BP had formerly been providing by agreement with the Ministry of Oil in Baghdad.

⁷⁸ It is not always clear which sectors of Kirkuk are included by MNR in its 'NOC-operated' total.



Kirkuk is thus currently very important for the region’s export targets and budget, but could become less so as the KRG’s own fields are expanded. From the mid-2020s, production growth will slow down, and additional developments or extensions of known fields will be required.

Figure 9: KRI oil production⁷⁹



Oil exports were initially by truck to Turkey and Iran, and this has continued even with the start of pipeline exports to Turkey. In 2015, about 55 kbpd were reportedly trucked from fields to be injected in the export pipeline, while 10 kbpd of heavy oil (probably from Shaikan) were exported by truck to Turkey.⁸⁰ Trucks as well as pipelines from Khurmala and Taq Taq were used to feed the Kalak and Bazian refineries. Further volumes of both crude oil and products are exported by truck and not reported in these MNR figures.

The KRI contains two (moderately) large refineries: Kalak (near Erbil), with 100 kbpd capacity due to be expanded to 185 kbpd by 2018, and Bazian with 34 kbpd, being expanded to 100 kbpd by 2018. Kalak is owned by KAR Group (operators of the Khurmala field) and Bazian by Qaiwan (another Kurdish local company). DNO operates a 5 kbpd refinery at its Tawke field, and there are numerous small and rudimentary ‘topping plants’ run by local companies throughout the region. With the topping plants, the region’s total refining capacity is about 170–200 kbpd. The MNR has a policy of closing unlicensed topping plants and consolidating others into larger units. It has also tendered for the construction of three new refineries totalling 150 kbpd of capacity, in Sulaymaniyah, Dohuk, and Erbil,⁸¹ though it might be better to concentrate on expanding the two main refineries. The region currently has a large surplus of naphtha and heavy fuel oil, but is short of diesel and gasoline, the

⁷⁹ MNR; company reports; Wood Mackenzie; author’s estimates.

⁸⁰ ‘The Movement of Oil and Refined Products by Trucking in the Kurdistan Region, A daily estimate of tanker journeys based upon current activities in the oil and gas sector’, Ministry of Natural Resources, Kurdistan Regional Government, November 2015, http://mnr.krg.org/images/pdfs/The_Movement_of_Oil_and_Refined_Products_by_Trucking_in_the_KRG.pdf.

⁸¹ ‘KRG to tender three new refineries’, Iraq Oil Report, 24 July 2015, www.iraqoilreport.com/news/krg-to-tender-three-new-refineries-15378/.



shortfall being imported from Turkey. The planned refinery expansions should make the region a significant net exporter of oil products.

3.6. Gas production, demand, and exports

Gas production in the KRI stands at around 3–4 bcm annually,⁸² and is currently entirely for domestic use; the Khor Mor field supplies power plants at Bazian and Erbil, while the Summail field, which was supplying the Dohuk power plant, has run into production problems.

The addition of Kirkuk to the KRG's control adds about 2.5 bcm annually, which could increase if more currently flared gas is captured. However, most of this gas is required for local power generation. Miran and Bina Bawi could produce about 11 bcm between them, with 5 bcm from an expansion of Khor Mor and 6 bcm from Chemchemical (depending on a resolution of the MNR's dispute with Dana Gas). Flared gas from Khurmala could add another 2 bcm.

Figure 10 shows an outlook for KRI gas production and demand, assuming timely development of required infrastructure. With about 8 bcm per year of current demand, there is a deficit, reflecting oil-fired power generation that could be substituted with gas. Conversion of power plants to combined-cycle operation will reduce demand in the short term, as will the region's economic crisis. Gas demand is mostly for power, with growing use in industry, initially primarily for cement. A gas grid for residential and commercial use could be developed in future covering the major cities; the Kurdish region is cold in winter (Sulaymaniyah average January temperature of 3.8 °C, with snow frequent). However, given the relatively small population, and the landlocked location which is unfavourable for large-scale gas-based industries, the domestic market is likely to remain modest. For comparison, the KRG foresaw 16 bcm of domestic demand by 2015,⁸³ but this has not been reached due to the economic crisis and delays in connecting power plants to gas supply.

The KRI could thus have a substantial surplus of gas for export – some 12 bcm by 2018 rising to 21 bcm by 2020.⁸⁴ This would require a fast pace of gas development, supported by gas sales agreements with Turkey (or other markets). The November 2013 agreement signed with Turkey included 4 bcm of Kurdish gas exports by 2017, 10 bcm by 2020, and a possible increase to 20 bcm by 2025. In November 2015, Minister Ashti Hawrami confirmed plans to export 10 bcm of gas to Turkey by 2017–18, a target that might slip to 2019.⁸⁵ This gas would mostly come from the Bina Bawi and Miran fields, operated by Genel Energy. By the early 2020s, exports could reach 20 bcm per year.⁸⁶

⁸² Excluding production from the Kirkuk area and Khurmala, most of which is flared.

⁸³ Ministry of Natural Resources.

⁸⁴ Author's calculations.

⁸⁵ 'KRG plans 10 bcm in natural gas exports to Turkey in two years', *Hurriyet Daily News*, 20 November 2015, www.hurriyetdailynews.com/krg-plans-10-bcm-in-natural-gas-exports-to-turkey-in-two-years.aspx?pageID=238&nID=91471&NewsCatID=348.

⁸⁶ 'Turkey goes from a transit country to an energy hub', Begüm Tunakan, *Daily Sabah: Energy*, 20 November 2015, <http://www.dailysabah.com/energy/2015/11/21/turkey-goes-from-a-transit-country-to-an-energy-hub>

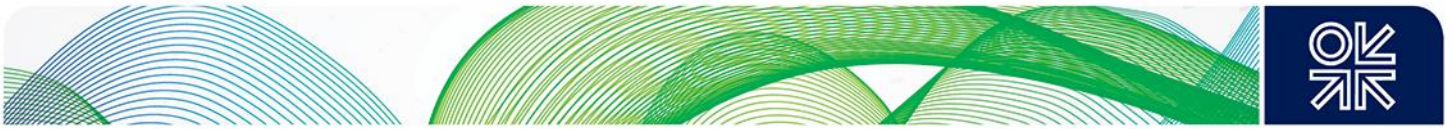
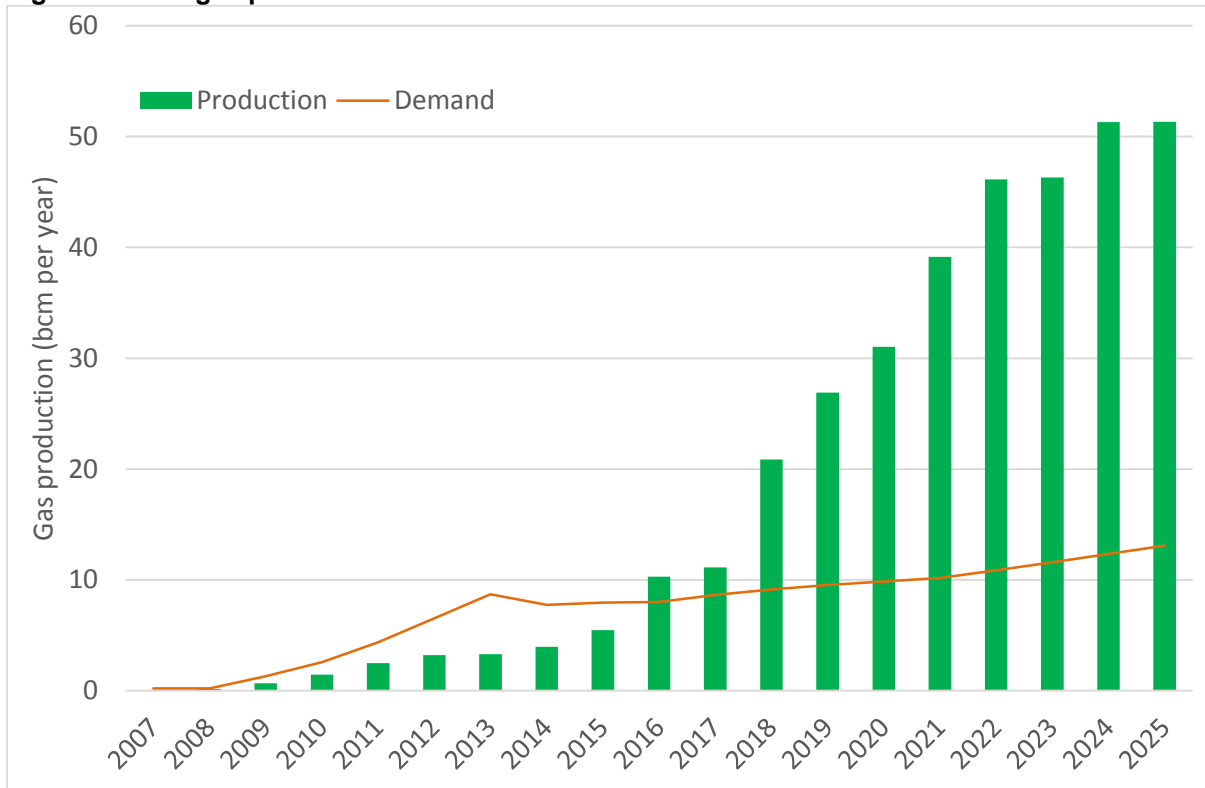


Figure 10: KRI gas production and demand⁸⁷

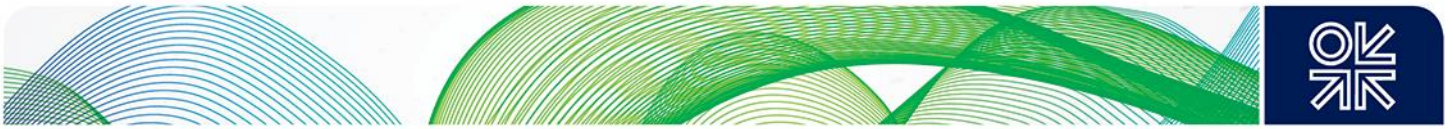


Turkey currently receives about 28 bcm of gas from Russia, 3.5 bcm from Azerbaijan, 9.5 bcm from Iran, and the remainder of almost 50 bcm of consumption from LNG imports and some minor domestic production. The south-eastern regions of Turkey can currently only be supplied by Iranian gas, which has frequently been interrupted in winter due to Iran’s own shortages (though this did not occur in the 2014/15 winter). Iranian gas is high-priced, while Turkey has a keen interest in diversifying its gas supplies away from heavy dependence on Russia. The completion of the TANAP pipeline from Azerbaijan in 2018 will assist with diversification, but growing Turkish demand should require additional supplies.

The development of Turkish gas import requirements depends on several factors, such as the economic situation; plans for Russia’s ‘Turkish Stream’ pipeline; Iran’s intentions to expand its sales to Turkey; and in the longer term the development of nuclear and other energy sources. However, depending on the competitiveness of pricing versus alternative suppliers, and the flexibility of Turkish infrastructure and contractual commitments, it does appear feasible that Turkey could take 10 bcm of Kurdish gas from the early 2020s, increasing to 20 bcm by the mid-2020s – partly representing new demand and partly displacing LNG and Iranian (or Russian) gas.

Accessing Kurdish gas is perhaps less urgent for Turkey than it appeared a year ago, with political turmoil; the threat to a new gas pipeline posed by the PKK; the slowing Turkish economy; and lower international oil and gas prices which ease the burden of expensive energy imports. On the other hand, the upset in relations with Russia, following Turkey’s shooting down of a Russian plane in November 2015, has reminded Turkey of its dependence on Russian gas. This, and the likely cancellation of ‘Turkish Stream’, has improved the prospects for Kurdish gas exports to Turkey, where

⁸⁷ Wood Mackenzie; author’s calculations.



however the KRG faces competition from Azerbaijan, Qatari LNG, and possibly Israel following December 2015 moves to Turkish-Israeli détente.

An alternative for the KRG would be to export gas to federal Iraq. Based on its geographic proximity, especially to the southern part of the KRI, and its high-priced gas import deal with Iran, federal Iraq could potentially be a more lucrative market. It would also create some mutual dependency and hence an incentive to maintain reasonable relations. However, insecurity in Diyala and mistrust between Erbil and Baghdad would make it a challenging deal to conclude. Alternatively, the KRG could step up its domestic power generation and export electricity to federal Iraq (which suffers from severe shortages) and/or Turkey.

3.7. Exports and finances

Until 2014, the KRG's budget was largely provided by transfers from Baghdad, and hence effectively derived from oil production in southern Iraq. Revenues grew substantially from 2010 to 2013, primarily due to increasing transfers from the federal Iraqi budget (as oil production grew and prices rose). Actual revenues rose from about 11.4 trillion Iraqi dinars (\$9.2 billion) in 2010 to 18.4 trillion dinars (\$15.0 billion) in 2013. Federal budget-sharing is discussed further in Section 4.1.

Transfers from the federal budget represented about 80 per cent of the KRG's budget until their interruption, and were supplemented by autonomous oil exports, taxes and customs duties, and fees collected locally. In 2013, 36.6 per cent of the KRG's budget went on wages and salaries and 13.9 per cent on benefits, pensions, and salaries, totalling around \$708 million monthly, with 1.4 million people on the government payroll. Subsidies for electricity, water, and agriculture consumed about \$2.4 billion per year.⁸⁸

The cut-off of federal government revenues from 2014 led to a severe budgetary and economic crisis, which worsened into 2015 and led to unpaid salaries and widespread protests. The KRG has attempted to meet budgetary needs by borrowing – from local private Kurdish entities, from Turkey, and from pre-payments by oil customers. With these sources of finance reaching their limits, the KRG sought, in June 2015, to raise an international bond⁸⁹ of \$0.5 billion, with the option to increase later, at an interest rate of 11–12 per cent. However, this was very difficult, given that the KRG is a non-sovereign entity which does not have full control of its main revenue source.

As of April 2015, the KRG's total debt was estimated at \$17 billion⁹⁰—\$1.3 billion in unpaid salaries, \$1.1 billion of governorates' debt, \$10 billion to private banks (local and Turkish), \$3 billion to the Turkish state, and at least \$1.6 billion to international oil companies and contractors. A further \$1.147 billion was owed to oil traders at the end of 2014,⁹¹ which has probably grown since then to \$1.5–1.8 billion. If, by analogy with the bond offering, the KRG were to pay 11 per cent interest on its external and bank borrowings, that would amount to some \$1.4 billion annually (it is understood that it does not pay interest on the local bank borrowing, but that will not be sustainable for the region's financial system).⁹²

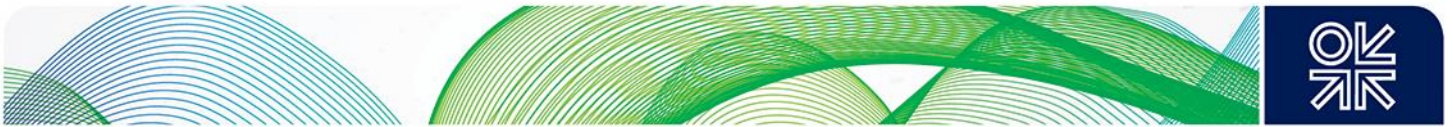
⁸⁸ All budget figures from (World Bank, 2015).

⁸⁹ 'Deutsche and Goldman ignite an oil war in Kurdistan', John Dizard, *The Financial Times*, 17 July 2015, www.ft.com/intl/cms/s/0/6b707e88-2c69-11e5-acfb-cbd2e1c81cca.html#axzz3s7CJCnXo.

⁹⁰ 'Iraq's Kurdistan Regional Government (KRG) faces financial crisis with \$17B debt', Anadolu Agency, *Daily Sabah: Economy*, 11 April 2015, www.dailysabah.com/economy/2015/04/11/iraqs-kurdistan-regional-government-krq-faces-financial-crisis-with-17b-debt. Or \$22 billion according to other estimates: 'The KRG Bond: A Double-Edged Sword', *The Kurdistan Tribune*, 3 July 2015, <http://kurdistantribune.com/2015/the-krq-bond-a-double-edged-sword/>.

⁹¹ 'New details of KRG oil deals reveal latent risks', Patrick Osgood, Rawaz Tahir, and Ben Van Heuvelen, *Iraq Oil Report*, 29 October 2015, www.iraqoilreport.com/news/new-details-of-krq-oil-deals-reveal-latent-risks-16840.

⁹² Although a sovereign, KRG, or at least a region with full control over its revenue streams, would presumably be able to attract a lower interest rate in future.



Despite the KRG's success in gradually finding buyers for its oil and in evading legal challenges from Baghdad, these manoeuvres have come at the cost of substantial discounts for its crude, which partly explains its willingness to contemplate the revenue-sharing deal with Baghdad in December 2014.

By December 2014, total outstanding payments due to DNO, Dana Gas, Genel Energy, and Gulf Keystone totalled \$1.632 billion.⁹³ KAR Group, Crescent Petroleum, and Addax (a Sinopec subsidiary), whose financial statements are not public, were probably also owed substantial sums. Companies which had not begun exports had unused cost recovery balances which probably reach into the billions of dollars, but will not become due until they have sufficient sales revenues.

These figures do not include any possible arbitral award to Crescent and Dana Gas in their ongoing case against the KRG, in which they were claiming \$1.9 billion, of which \$1.12 billion was underpayment for condensate and LPG (up to September 2013 – a sum which will consequently have increased further subsequently). As of 17 October 2014, the KRG was instructed by the London Court of International Arbitration to make an interim payment of \$100 million, which it did not do by the deadline of 17 November 2014, and consequently Dana Gas has sought to enforce the order, the validity of which was confirmed by a judgement of 20 November 2015.⁹⁴ On 29 November 2015, Dana Gas said that it had been awarded \$1.981 billion for unpaid condensate and LPG, with a judgement on compensation for the delayed development of the Khor Mor and Chemchemal fields still to be made.⁹⁵ As well as the financial burden of this award on the KRG, its enforcement could create problems as attempts are made to seize assets, possibly including oil shipments.

Some irregular payments for exports were made by the KRG in 2014 and February 2015. From September 2015, it attempted to make regular payments to the main oil producers – DNO, Genel, and Gulf Keystone (and Addax, owned by Sinopec). In September 2015, a total of \$75 million was paid to Genel, DNO, and Gulf Keystone, and a further payment was made in October, but these payments are minor compared to the amount owing.

For illustration, the Taq Taq partners were paid \$30 million for October 2015, while the field produced 113 kbpd in the third quarter of 2015, generating an estimated \$140 million in revenues had all the oil been exported. Of these revenues, the partners would have been entitled to 36 per cent (\$50 million) for cost recovery, and 21 per cent of the remainder (\$16 million) for profits, illustrating that the current level of payments is well short of even repaying the companies' costs.

The lack of payments put severe stress on the smaller companies in the KRI, notably Gulf Keystone which officially put itself up for sale in February 2015 (having been engaged in possible takeover discussions for some time before that). Genel and DNO have larger financial resources, but Genel announced in October 2015 that it would reduce investment and production outlook until regular payments were established.⁹⁶ Such companies may face concerns of 'use it or lose it', with the MNR putting pressure on them to proceed with development, even while being uncertain of payment streams. In an environment of low oil prices and given the attendant risks in the KRI, this would force a distressed sale. If a major oil company, for instance ExxonMobil or Chevron, were to buy the assets, they would be in a stronger position *vis à vis* the MNR to stall indefinitely while waiting for an improvement in the commercial outlook. It does not appear that many major international companies not yet present are eager to enter the KRI currently. The MNR thus risks overplaying its hand if it pushes the IOCs too hard.

⁹³ From company reports.

⁹⁴ England and Wales High Court (Commercial Court) Decisions, Neutral Citation Number: [2015] EWHC 3361 (Comm), Case No: CL-2015-000272, 20 November 2015, www.bailii.org/ew/cases/EWHC/Comm/2015/3361.html.

⁹⁵ 'Disclosure Pursuant To Article 33 of the Regulations of the Abu Dhabi Stock Exchange as to Disclosure And Transparency', Danagas, 29 November 2015, www.adx.ae/English/News/Pages/20151129095017986-DANA-EN.PDF.

⁹⁶ 'Genel hopes for better as Kurdistan troubles hit forecasts', *The Financial Times*, 20 October 2015, www.ft.com/intl/cms/s/0/0d2a44d6-7736-11e5-a95a-27d368e1ddf7.html.



The lack of payments is not an immediate problem for companies still in the exploration phase, such as ExxonMobil. However, and particularly in the current environment of low oil prices, it does mean that even large companies are unlikely to proceed to full-scale development of their discoveries until the financial situation is clearer. That in turn creates a vicious cycle in which the KRG accumulates more debt and obligations but, without rising oil production and exports, is unable to increase its revenues. That prevents it from reimbursing oil companies, slows the building of vital infrastructure, and also risks political unrest and a weakening in the fight against ISIS, which further hamper economic growth. The situation is having a significant negative impact on the KRG's investor-friendly image.

With no other sizeable revenue sources, the future budget outlook depends primarily on oil prices and export levels. Current exports of around 600 kbpd (including Kirkuk) receive a significant discount to the Brent benchmark because of oil quality, transport costs, and concerns over legal opposition from Baghdad, totalling around \$10 per barrel.⁹⁷

Minister Hawrami had stated that oil traders had committed to make advance payments of \$850 million per month, with the KRG obliged to supply at least 525 kbpd. With the KRG's own exports at 439 kbpd in October 2015, reaching the agreed export level requires the addition of some oil from Kirkuk (particularly as Kirkuk-area crude is required to meet KRI refinery demand to free up other crude for export). Brent crude averaged \$49.56 per barrel in October 2015, suggesting a price for Kurdish oil exports of around \$40 per barrel, which would yield \$744 million in revenues. This is clearly insufficient to meet the agreed \$850 million target, and November 2015 prices were even lower (\$44.27 per barrel). If the KRG were to maintain oil company payments at \$75 million per month (as noted, this still does not cover their costs), the remaining \$670 million would be insufficient to meet its current expenditures, let alone debt service and investment. Without the oil from Kirkuk, the fiscal situation would be considerably worse.

Attaining a sustainable budget situation clearly requires a combination of cost cuts (subsidy reform alone could save \$200 million monthly), external aid, borrowing, and attracting international investment for infrastructure, and revenue growth – most likely through expanded oil and gas exports. Oil prices might recover, but the KRG would be unwise to bet on this possibility. However, regularizing oil export arrangements and hence cutting the price discount would be a help.

In the longer term, as noted, oil exports could reach 1 million bpd – though this depends on resolving the vicious cycle of non-payments and insufficient investments. Export of 1 million bpd by late this decade, at current oil prices, would yield about \$14.6 billion of annual revenues (\$1.2 billion monthly). Subtracting the IOCs' cost recovery and profit share would leave around \$11.5 billion. At these levels, current expenditures plus debt service would be sustainable, with about \$1.6 billion annually remaining for additional spending and investment, representing less than 15 per cent of the current budget. At a realized oil price of \$50 per barrel (instead of \$40), the surplus over current expenditure levels would reach almost \$5 billion per year.

Gas exports of 20 bcm, at a border price of around \$3.50–5 per MMBtu (allowing for pipeline tariffs to markets within Turkey), could earn around \$2.5–3.5 billion in annual revenues. Subtracting field and pipeline development costs and the IOCs' share of profits might leave around \$1.5–2.5 billion for the KRG annually. Gas revenues would therefore help but are secondary in comparison to oil.

Annual oil and gas earnings of around \$13.5 billion would amount to \$2600 per person. At \$40 per barrel and \$5 per MMBtu gas prices, on rough estimates, this *per capita* level would be more than Azerbaijan (around \$1600 per person), federal Iraq (\$1700), and Algeria (\$2200) but less than Saudi Arabia (\$5800⁹⁸).

⁹⁷ 'New details of KRG oil deals reveal latent risks', Patrick Osgood, Rawaz Tahir, and Ben Van Heuvelen, Iraq Oil Report, 29 October 2015, www.iraqoilreport.com/news/new-details-of-krq-oil-deals-reveal-latent-risks-16840.

⁹⁸ This includes all residents; for Saudi nationals only, the figure would be higher.

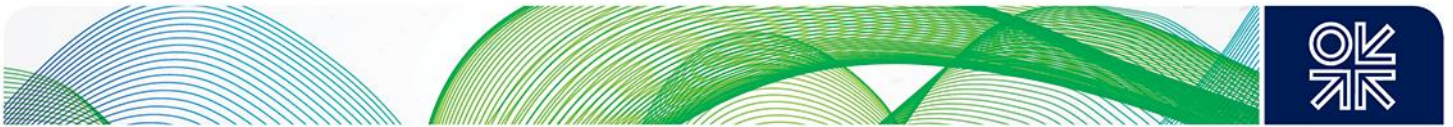


To make a comparison, which seems rather hypothetical under current circumstances, federal Iraqi oil revenues (which amount for nearly all the budget) total \$42.6 billion for January–October 2015 and look set to reach around \$50 billion for the full year. Assuming the federal government would not take on debt specifically to fund the KRG, then the KRG's share of this under the former revenue-sharing agreements would be \$5.5 billion (for an 11 per cent share) or \$8.5 billion (for a 17 per cent share). Even at current Kurdish production levels, its independent exports (including Kirkuk) exceed this level.

In the longer term, a diversification of the economy and government revenue base is vital, but hard to achieve, as many oil-exporting states have found. The KRI's landlocked position, surrounded by regional conflicts and with inadequate transport links to outside markets, makes development of export-oriented industries difficult. Without giving a comprehensive analysis of possible economic development routes, it can be observed that important steps include: maximizing the contribution of the hydrocarbon industry; utilizing gas domestically, in power and industry; raising the skill level of the indigenous petroleum workforce and administration; tackling corruption; and reducing energy subsidies. A possible method to cut corruption and subsidies while reducing poverty would be a 'resource dividend' to the KRI's residents;⁹⁹ this (at 10 per cent of revenues) was actually provided for in the draft of the KRG's Petroleum Act.¹⁰⁰

⁹⁹ Discussed in many places, but see for instance (Moss, 2012), (Widerquist & Howard, 2012).

¹⁰⁰ Revenue Management and KRG Draft Petroleum Act, press release 22 October 2006, Office of the KRG Minister for Natural Resources, Kurdistan Regional Government, <http://mnr.krg.org/index.php/en/press-releases/108-revenue-management-and-krq-draft-petroleum-act>.



4. Pipeline Politics: Oil, Economics, Law, and Politics in the KRI since 2005

The development (and lack of development) of the KRI's petroleum sector has been profoundly affected by the political context over the past century, at three levels: within the Kurdish region itself, within Iraq, and in the surrounding region (including the intervention of extra-regional powers, mainly the USA).

4.1 The KRI's political economy

The KRG was constitutionally guaranteed a share of the national budget, which was set by a process of haggling (not codified in the Constitution) at 17 per cent, after the deduction of 'sovereign expenses' (foreign affairs, military, and so on), in line with the estimated share of the KRI in Iraq's total population. In practice, by the end of the Maliki government, the Kurds argued that the share they actually received amounted only to 11–13 per cent¹⁰¹ because of inflation of the 'sovereign expenses'. Nevertheless, with Iraq's oil revenues rising with production and global oil prices, and the addition of some of its own direct oil earnings, fees, and customs duties, as well as attracting substantial foreign investment, the KRG was able, from 2005 onwards, to make great progress in developing its infrastructure, administrative structures, and the standard of living of its people.

The KDP's control over the oil portfolio has been extremely important in increasing its powers versus the rival PUK. It makes them the key interlocutors with Turkey, and gives them access to additional sources of funding and patronage. The KDP has also been able to slow down the development of hydrocarbon resources in the southern KRI versus those in its northern heartlands. However, it remains to be seen how the recent acquisition of PUK-dominated Kirkuk, with its oilfields, affects the balance of power between the three major parties (KDP, PUK, and Gorran).

The KRG has thus rather quickly developed a political economy showing many of the features of the classic 'rentier state'¹⁰² – a lack of domestic taxation, heavy subsidies to the populace, a high degree of state employment (much of it non-productive), the prevalence of patronage and corruption, and an authoritarian government albeit with democratic elements.

However, the KRI is in a weaker position than many other rentier states. It does not have control over its main source of revenues – depending either on unreliable transfers from Baghdad or, more recently, on oil exports through Turkey that are subject to legal, security, and political vagaries. Unlike many other oil exporters, it has not had the time or opportunity to build up financial reserves in a sovereign wealth fund – instead, it has accrued substantial debt. As a non-sovereign entity, it is also limited in other options such as international borrowing or issuing currency.

Unlike many Middle Eastern 'rentier' states, the KRG has an elected government, albeit with authoritarian tendencies and substantial powers to manipulate or subvert the political process. Opposition parties, particularly Gorran, have maintained a lively scrutiny of the oil sector and budget, and, alongside his acknowledged success in developing the region's oil sector, Minister Hawrami has been subject to allegations of corruption and mismanagement.

As in many major oil and gas producers (federal Iraq, Kuwait, Iran, Saudi Arabia, Algeria, Nigeria, Venezuela, and others), energy subsidies have become a severe burden. Low prices for gasoline, diesel, gas, and electricity encourage inefficient use and over-consumption. In the case of the KRI, domestic consumption is still small compared to oil and gas export potential over the next few years,

¹⁰¹ 'Determined to Grow: Economy', Kurdistan Region Review, Invest In Group, 7 October 2013, <http://investinggroup.org/review/236/determined-to-grow-economy-kurdistan/>.

¹⁰² e.g. (Beblawi, 1987), (Mahdavy, 1970).



but subsidies represent a heavy burden on the budget. For example, in the case of diesel burnt at the Dohuk power plant (which is said to cost \$100 million per month¹⁰³), electricity is then sold to residential consumers at around 1.9 US¢ per kilowatt hour (and often not paid for at all), although estimated generation costs are more than 11 US¢ per kWh.¹⁰⁴

This financial situation puts oil companies and the MNR in a vicious cycle. Without regular payments to the operators that at least recompense their costs, they will not invest to expand production, nor can the MNR invest in other vital infrastructure such as gas processing plants and pipelines. But increased production is needed to generate revenues for that repayment. Evidence of regular payments is also needed before major oil companies capable of executing large field developments and gas export projects will be ready to acquire smaller operators in the KRI.

Community issues have also surfaced for some operators. ExxonMobil has faced protests near Sulaymaniyah,¹⁰⁵ Gazprom Neft in Halabja,¹⁰⁶ and HKN has had labour problems in Sarsang.¹⁰⁷ Typical reasons for the protests include environmental worries, clashes over land-use and inadequate compensation, allegedly insufficient consultation, working conditions, and requests for local employment – with Kurdish employees from other areas sometimes not being acceptable in the district. But some disputes may have political roots related to intra-Kurdish competition, while some protesters have adduced corruption and the wish for better relations with Baghdad. Such disputes may become more frequent and intense as the KRG's oil activities expand into the contested territories around Kirkuk and elsewhere.

4.2 Constitutional and legal debates

The dispute over the exact rights of the KRI over oil and gas resources in its territory stems from the vagueness of the Iraqi Federal Constitution approved by referendum in 2005, which was implemented in 2006. This vagueness was intentional; given the haste with which the Constitution was agreed, numerous sensitive issues had to be finessed or, in effect, left open for future rounds of negotiation. The Constitution provided for a system of 'asymmetric federalism',¹⁰⁸ whereby the KRG (and any other provinces that passed various hurdles to organize themselves in a region), had various powers that were retained by Baghdad in the case of the rest of the country.

Article 110 of the Federal Constitution lists powers reserved to the federal government; oil-related powers are not included in this list. However, powers relevant to the oil- and gas sector – including 'formulating foreign sovereign economic and trade policy' and 'regulating commercial policy across regional and governorate boundaries in Iraq' – are included.

Article 111 mentions that oil and gas are 'under the ownership of all the people of Iraq in all the regions and governorates'.

Article 112 states:

The federal government, with the producing governorates and regional governments, shall undertake the management of oil and gas extracted from present fields, provided that it distributes its revenues in a fair manner in proportion to the population distribution in all parts of the country, specifying an allotment for a

¹⁰³ (World Bank, 2015). This will be \$50 million per month or less following the fall in international oil prices.

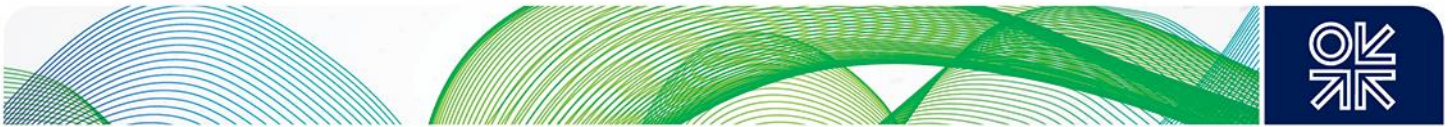
¹⁰⁴ For generation running on diesel. Author's estimates.

¹⁰⁵ 'Kurdish residents' protests stop Exxon Mobil work in Kurdistan Region', *Shafaq News*, 16 July 2014, <http://english.shafaq.com/business/10551-kurdish-residents-protests-stop-exxon-mobil-work-in-kurdistan-region.html>

¹⁰⁶ 'Protesters Force Gazprom Neft to Quit Halabja Block', Osamah Golpy, RÛDAW, 5 October 2014, <http://rudaw.net/english/business/05102014>.

¹⁰⁷ 'Ministry of Natural Resources statement on HKN Energy incident in Kurdistan Region', 2 April 2013, Press Release, Ministry of Natural Resources Kurdistan Regional Government, <http://mnr.krg.org/index.php/en/press-releases/152-ministry-of-natural-resources-statement-on-hkn-energy-incident-in-kurdistan-region>.

¹⁰⁸ 'Histories of Political Imagining: Another Iraq Deadline Passes', Reidar Visser, *Historiae.org*, 17 September 2006, www.historiae.org/regions.asp; (Zedalis, 2012).



specified period for the damaged regions, which were unjustly deprived of them by the former regime, and the regions that were damaged afterward in a way that ensures balanced development in different areas of the country, and this shall be regulated by a law.

The second section of the Article reads:

The federal government, with the producing regional and governorate governments, shall together formulate the necessary strategic policies to develop the oil and gas wealth in a way that achieves the highest benefit to the Iraqi people using the most advanced techniques of the market principles and encouraging investment.

Based on the mention in Article 111 that all the Iraqi people own the country's oil and gas, Baghdad has taken the position that the KRG did not have the right to sign independent oil contracts, while the KRG continued to sign such contracts from 2005 onwards. The federal Ministry of Oil (MoO) also objected to the use of PSCs, instead of its service contract model.¹⁰⁹ It was contended that the Article 112 position that 'this shall be regulated by a law', by its use of the singular, implied that a single federal oil law should be passed (obviating any need for the KRG to pass its own law).

Conversely, the KRG has maintained that it does have the right to manage its oil resources, relying on the definition of 'present fields' (in Article 112). This has generally been taken to mean fields producing oil or gas as of the date of the Constitution. The Khurmala field, which is geologically just at the northern end of the Kirkuk field, was not developed at the time of passing the Constitution (it had been awarded by Baghdad to a consortium of a Turkish company, the Kurdish KAR Group, and a UK firm¹¹⁰), and so has been taken not to be a 'present field'. The KRG took control of it from the federal North Oil Company in 2008 and, as noted, KAR has been developing the field since then. Otherwise, the KRG does not contain any fields that would be considered 'present fields' under this definition, though its post-ISIS expansion has brought several present fields under its control. Similarly, the KRG was not a 'producing ... regional government' (Article 112) as of the approval of the Constitution, since it was not producing 100 000 barrels of oil per day, the specified threshold.¹¹¹ Therefore the KRG takes the position that non-producing fields fall under the scope of Article 115 of the Constitution, assigning all powers not specifically reserved to the federal level to the regional or governorate government.¹¹² The KRG has also argued that the four PSCs it signed prior to the Constitution's entering into force (with Genel, DNO, Addax, and Western Zagros) are grandfathered and hence remain valid.

Articles 126(4) and 142 give the KRG the right to veto amendments to the Constitution affecting its regional powers.

By the second section of Article 112, the KRG accepts that it should jointly formulate strategic policies with the federal government (a vague provision), but that this is not the exclusive responsibility of Baghdad, and does not include authority over the granting of contracts to IOCs. In its view, the ownership of oil and gas by the Iraqi people requires a sharing of the revenues (so that it benefits from a share of revenues generated from fields around Basra while sharing revenues from Kurdish fields), but not central managerial control.

¹⁰⁹ e.g. 'Iraq reaffirms Kurdish oil contracts are illegal until ministry ratification', *Hurriyet Daily News* 10 June 2009, www.hurriyet.com.tr/english/finance/11837103.asp?scr=1.

¹¹⁰ 'Iraq: New contract awarded to develop Khurmala Dome oilfield', energy-pedia, 24 december 2004, www.energy-pedia.com/news/iraq/new-contract-awarded-to-develop-khurmala-dome-oilfield.

¹¹¹ 'Are Kurdistan's oil contracts constitutional?', Ben Holland, CMS Cameron McKenna, Energy in the Middle East 2012, www.cms-cmck.com/Hubbard.FileSystem/files/Publication/63538de4-c6c3-47ee-aea9-c58e03f60e57/Presentation/PublicationAttachment/de7979f5-590b-44a9-ae76-c5d5fc52b686/ADIPEC%20BH%20Kurdistan%20copy.pdf.

¹¹² Although a key part of the KRG's position on its hydrocarbon resources, this argument has had the consequence of weakening the KRG's case for sovereign immunity in its arbitration with Dana Gas – see England and Wales High Court (Commercial Court) Decisions, Neutral Citation Number: [2015] EWHC 3361 (Comm), Case No: CL-2015-000272, 20 November 2015, www.bailii.org/ew/cases/EWHC/Comm/2015/3361.html, paragraphs 35–37.



In practice, the constitutional provisions are open to a wide range of interpretations. The Kurds have used their presence in the federal government and parliament to advance their interests, including blocking legislation unfavourable to them. (Non-Kurdish politicians and parties have been just as culpable in obstructing a federal oil law.) Negotiations over the oil law have brought in many other issues, particularly the final status of Kirkuk, and these issues are so intractable that the principle of 'nothing is agreed until everything is agreed' has inevitably led to deadlock. In the absence of the threat of force by the federal government, overwhelming political power, or a 'grand bargain', even extensive mediation by the USA has been unable to bring the parties to agreement.

In February 2007, negotiations over a national Hydrocarbon Law finally broke down, and the KRG passed its own Oil and Gas Law on 6 August 2007,¹¹³ giving a substantive legal basis to the existing PSCs. In 2011, the federal Ministry of Oil compiled a Federal Oil and Gas Law, which was approved by the Council of Ministers on 25 August 2011,¹¹⁴ but not by the Parliament (nor is it likely to be).

In 2007 the MoO introduced a policy of black-listing companies active in the KRI from participation in its licensing rounds,¹¹⁵ and in January 2008 it halted oil exports to SK Energy of South Korea and to OMV, after they signed PSCs with the KRG.¹¹⁶ The policy of black-listing and the general opposition to independent Kurdish oil contracts was particularly associated with Dr Hussein Shahrstani, Iraqi oil minister from May 2006 to December 2010, and deputy prime minister with special responsibility for energy from December 2010 to September 2014.

In June 2009, the MoO reiterated its position that the Kurdish PSCs were illegal unless and until ratified by itself. Initially, this affected only those companies which had not won contracts in federal Iraq. However, the decision of ExxonMobil in 2011 to take up exploration blocks in the KRI while retaining its interest in the West Qurna-1 development in southern Iraq weakened this policy – although ExxonMobil paid a price in months of angry negotiations with the MoO and ultimately reduced its share in West Qurna-1.

At around the same time, Gazprom Neft and Total also took up blocks in the KRI, but did not attract much condemnation, with only some protest from the MoO against Gazprom Neft, which has the benefit of Russian political backing. However, their interests in federal Iraq are much smaller and lower in profile than ExxonMobil's (Total only holding a non-operated stake). To date, though, despite rumours about Shell, Statoil, and others, no other oil company has taken up contracts in both the KRI and federal Iraq.¹¹⁷ Chevron was blacklisted by the MoO in July 2012 when it bought the Rovi and Sarta blocks from Reliance, but although a large company, it had no projects in federal Iraq.¹¹⁸

In February 2011, it was understood that the KRG and the federal Iraqi government had reached an agreement for 50:50 sharing of revenues from oil exported from the KRI.¹¹⁹ Nouri Al Maliki, Iraq's prime minister at the time, said that the Kurdish PSCs would be respected.

The withdrawal of American troops from Iraq by the end of 2011 weakened the leverage of US diplomats, who had often sought to reconcile the two sides (a role which nevertheless has continued to the present day). In April 2012, the KRG halted oil exports in a renewed dispute with Baghdad,

¹¹³ Oil and Gas Law of the Kurdistan Region – Iraq, Law No. (22) – 2007, The President, Presidency of the Region, Kurdistan Region – Iraq, http://cabinet.gov.krd/uploads/documents/Kurdistan%20Oil%20and%20Gas%20Law%20English_2007_09_06_h14m0s42.pdf

¹¹⁴ (Abul Failat, 2013).

¹¹⁵ 'Iraq nullifies Kurdish oil contracts', 24 November 2007, Al Arabiya News, www.alarabiya.net/articles/2007/11/24/42056.html.

¹¹⁶ 'Factbox: Oil deals with Kurdistan', Reuters, 5 April 2012, www.reuters.com/article/2012/04/05/us-iraq-kurdistan-oil-deals-idUSBRE8340DV20120405.

¹¹⁷ Other than Oryx Petroleum, which holds blocks in the KRI as well as an exploration licence of doubtful legality concluded directly with the Wasit provincial government in southern Iraq.

¹¹⁸ 'Iraq blacklists Chevron for Kurdish oil deals', Reuters, 24 July 2012, www.reuters.com/article/us-iraq-chevron-idUSBRE86N12A20120724.

¹¹⁹ (International Crisis Group, 2012).



before a further agreement was reached in September 2012. But in November 2012, the two sides engaged in a military confrontation over Prime Minister Al Maliki's establishment of the Dijla (Tigris) Operations Command, which was perceived as an attempt to reassert Baghdad's control over the disputed territories.¹²⁰ In March 2013, Prime Minister Maliki, with the support of the party of Muqtada Al Sadr and Saleh Al Mutlaq's Front for National Dialogue (a largely Sunni Arab party), passed a budget, despite Kurdish opposition, which provided for cutting off budget payments to the KRG.¹²¹

This moved the focus of the dispute to the rights of the KRG to export oil independently of Baghdad. Initial exports from Tawke and Taq Taq had been done by truck via Turkey and Iran, partly as swaps for refined product imports. Although considered 'smuggling' by Baghdad, the federal government did not attempt to take legal action.

In May 2013, Turkish Prime Minister Erdoğan announced that Turkey would conclude oil export arrangements with the KRG separately from Baghdad. A newly formed state entity, Turkish Energy Company, took up exploration interests in the KRI, covering the Pulkhana field and the Khalakan, Arbat, Hindren, Jabal Kand, and Choman blocks. Pulkhana and Jabal Kand are both in disputed territories (Jabal Kand lying between Dohuk and Mosul) while Choman adjoins the Iranian border, though it may simply be the case that these were some of the few blocks remaining unallocated.

In November 2013, the KRG and Turkey concluded a wide-ranging energy deal which covered export pipelines and gas exports.¹²² Turkish Energy Minister Taner Yıldız proposed that revenues would be deposited into an 'escrow' account at a state bank, which turned out to be Halkbank (which has also handled Turkey's energy transactions with Iran), pending resolution between Baghdad and Erbil, and would be split 17 per cent to the KRG and 83 per cent to the federal government. This would, in practice, have increased the Kurdish share of revenues since it avoided the deduction of national-level expenses by Baghdad.

Of course, this intervention by Turkey was unacceptable to the Iraqi central government, which considered it a sovereign matter, while the KRG's access to the account seemed to obviate the idea of the funds' status of being held in escrow. Baghdad claimed that this arrangement was unconstitutional and also that it violated the Iraq–Turkey pipeline treaty (of 1973, updated by the Iraq–Turkey Pipeline Expansion Agreement dated 30 July 1985¹²³), which had been updated in September 2010.¹²⁴ The joint declaration issued on 19 September 2010 by the Iraqi and Turkish oil ministers, on the occasion of the 2010 amendment, stated that the parties:

... confirm their commitment that the sole sovereign authorities for the exploration of Iraqi hydrocarbon resources are the Iraqi Federal Ministry of Oil and (SOMO).

This was an interesting move by Turkey, as it has subsequently weakened the Kurdish position, arguably to the detriment of Turkish access to Kurdish oil, while increasing Ankara's leverage over Erbil.

On 12 December 2013, the KRG began to take advantage of the agreement with Turkey, beginning systematic exports through the Iraq–Turkey pipeline to Ceyhan. In January 2014, the federal government made an offer that Kurdish oil exports through Turkey would be allowed on Baghdad's

¹²⁰ 'Iraqi Kurds send more troops into standoff with Iraq army', Reuters, 24 November 2012, www.reuters.com/article/2012/11/25/us-iraq-kurds-idUSBRE8A000320121125.

¹²¹ 'The fracturing of Iraq', Petroleum Economist, 20 August 2014, www.petroleum-economist.com/Article/3371513/The-fracturing-of-Iraq.html.

¹²² 'Turkey, Kurdistan cement massive energy deal', Ben Van Heuvelen, Iraq Oil Report, 29 November 2013, www.iraqoilreport.com/politics/turkey-kurdistan-cement-massive-energy-deal-11574/; 'Turkey energy deal with KRG lacks transparency', Olgu Okumuş, Al-Monitor, 8 January 2014, www.al-monitor.com/pulse/originals/2014/01/turkey-krq-energy-deal-oil-pipeline-agreement.html.

¹²³ 'Trouble or promise in the pipeline?', Richard Devine and Patricia Tiller, Baker Botts, March 2014, http://files.bakerbotts.com/file_upload/documents/PetroleumEconomistArticle3.12.pdf.

¹²⁴ 'Iraq, Turkey sign renewed oil pipeline accord', Reuters, 19 September 2010, <http://uk.reuters.com/article/2010/09/19/iraq-turkey-pipeline-idUKLDE68I04V20100919>.



terms, with the federal State Oil Marketing Organization (SOMO) handling the sales, and revenues passing through the Development Fund for Iraq (DFI), the repository of all Iraqi oil sales. The KRG proposed a separate account at the DFI, which would have been under its control, but this was rejected by Baghdad.¹²⁵

In response, the federal government cut off the KRG's budget, making only a limited payment in March 2014. It also began legal action to try to block these independent Kurdish oil exports, most notably in the case of the United Kalavryta, a tanker carrying oil from the KRI, which was moored off the coast of Texas from June 2014 to January 2015, while lawyers for Baghdad claimed the oil was stolen property, filing a case to block anyone from buying or unloading the oil. Another tanker had trouble unloading its cargo in Morocco. The KRG responded by issuing a notice to buyers from SOMO that it would take legal action against them for the Oil Ministry's failure to pay it its share of revenues,¹²⁶ but this had little effect.

SOMO, a unit of the Ministry of Oil (federal government), was given the right to market oil by Order 1075 of the Revolutionary Command Council, issued by the former regime in 1976.¹²⁷ However, the KRG considers that its Law No.5 of 2013, giving it the right to export oil to meet shortfalls from budget payments received from Baghdad, overrides this order.

The progress made by the KRG in asserting control over its oil resources did not go unnoticed elsewhere in Iraq. In September 2013, the Ninewa Provincial Council voted to give Governor Atheel Nujaifi the power to negotiate deals with companies for oil exploration and development in the governorate.¹²⁸ Though not able to be practically implemented, and overtaken by the events of mid-2014, this highlighted the implications and attractions of the Kurdish oil policy to other governorates or future regions of Iraq: the opportunity for independent management of their hydrocarbon resources, economic development and, of course, potential profit.

Basra, too, has periodically raised the issue of greater autonomy, with some unsuccessful moves towards having it declared a region, like the KRI.¹²⁹ In November 2015, the Basra Provincial Council threatened to take control of several oilfields if it did not receive unpaid budget allocations.¹³⁰ But the central government would bitterly oppose such moves, which would threaten the entire financial basis of the Iraqi state.

4.3 The December 2014 deal and after

Dr Adel Abdel Mehdi, oil minister from September 2014 to the present, under the new Prime Minister Haider Al 'Abadi (who replaced Nouri Al Maliki in September 2014), has generally adopted a more conciliatory approach than Dr Shahrstani, but this has still failed to produce a lasting resolution of the major outstanding issues with the KRG.

In the face of the ISIS assault, US and Iranian pressure for national unity, and acute budgetary pressures triggered by war costs and the falling oil prices, a preliminary deal was struck in November

¹²⁵ 'The fracturing of Iraq', *Petroleum Economist*, 20 August 2014, www.petroleum-economist.com/Article/3371513/The-fracturing-of-Iraq.html.

¹²⁶ 'KRG notice to all crude oil buyers from SOMO', press release, Ministry of Natural Resources, Kurdistan Regional Government, 9 July 2014, <http://mnr.krg.org/index.php/en/press-releases/391-krq-notice-to-all-crude-oil-buyers-from-somo>

¹²⁷ 'Trouble or promise in the pipeline?', Richard Devine and Patricia Tiller, Baker Botts, March 2014, http://files.bakerbotts.com/file_upload/documents/PetroleumEconomistArticle3.12.pdf.

¹²⁸ 'Nujaifi begins IOC talks in Ninewa', Ben Lando and staff, *Iraq Oil Report*, 18 September 2013, www.iraqoilreport.com/news/nujai-fi-begins-ioc-talks-ninewa-11314/.

¹²⁹ 'Basra, Iraq's Economic Capital, Wants Southern Federal Region', Ahmad Wahid, *Al-Monitor*, 13 September 2012, www.al-monitor.com/pulse/politics/2012/09/basra-federal-region.html, 'Basra moving toward independence', Ali Mamouri, *Al-Monitor*, 30 December 2014, www.al-monitor.com/pulse/originals/2014/12/iraq-division-federal-regions-basra-independence.html.

¹³⁰ 'Basra leaders threaten independent oil deals', Ali Abu Iraq and Ben Lando, *Iraq Oil Report*, 9 November 2015, www.iraqoilreport.com/news/basra-leaders-threaten-independent-oil-deals-16983.



2014 for sharing oil revenues. In December 2014, the KRG and the federal government in Baghdad under Prime Minister Al 'Abadi reached agreement for the KRG to receive 17 per cent of the federal budget (minus allowed federal deductions);¹³¹ this amounted to about \$1.1 billion per month, plus additional payments for supporting the Peshmerga military. In return for this, the KRG was to export 550 kbpd of oil through its pipeline system consisting of 250 kbpd of 'Kurdish' oil, and 300 kbpd of oil produced from Kirkuk and surrounding fields¹³² which were operated by North Oil Company. By this point, the federal Kirkuk–Ceyhan pipeline was entirely inoperable due to the activities of ISIS, and Baghdad's only option for exporting Kirkuk crude was to use the connection to the KRG's new pipeline. In addition, the Kurdish Peshmerga forces had taken physical control of most of the fields around Kirkuk to deny them to ISIS.

However, the deal never operated close to the agreed parameters. The KRG did not export the agreed quantities of oil, claiming, with some justification, that it was ramping up production and the 550 kbpd figure should be taken as an average over the course of the year. However, it was also exporting some of its oil independently, outside the remit of the agreement. At the same time, Baghdad, which was suffering a severe liquidity squeeze due to the falling price of oil and the war against ISIS, failed to make its agreed payments in full. It paid \$200 million in January, and about \$2 billion in total by June. Baghdad, for its part, blamed the Kurdish failure to export the agreed amounts.

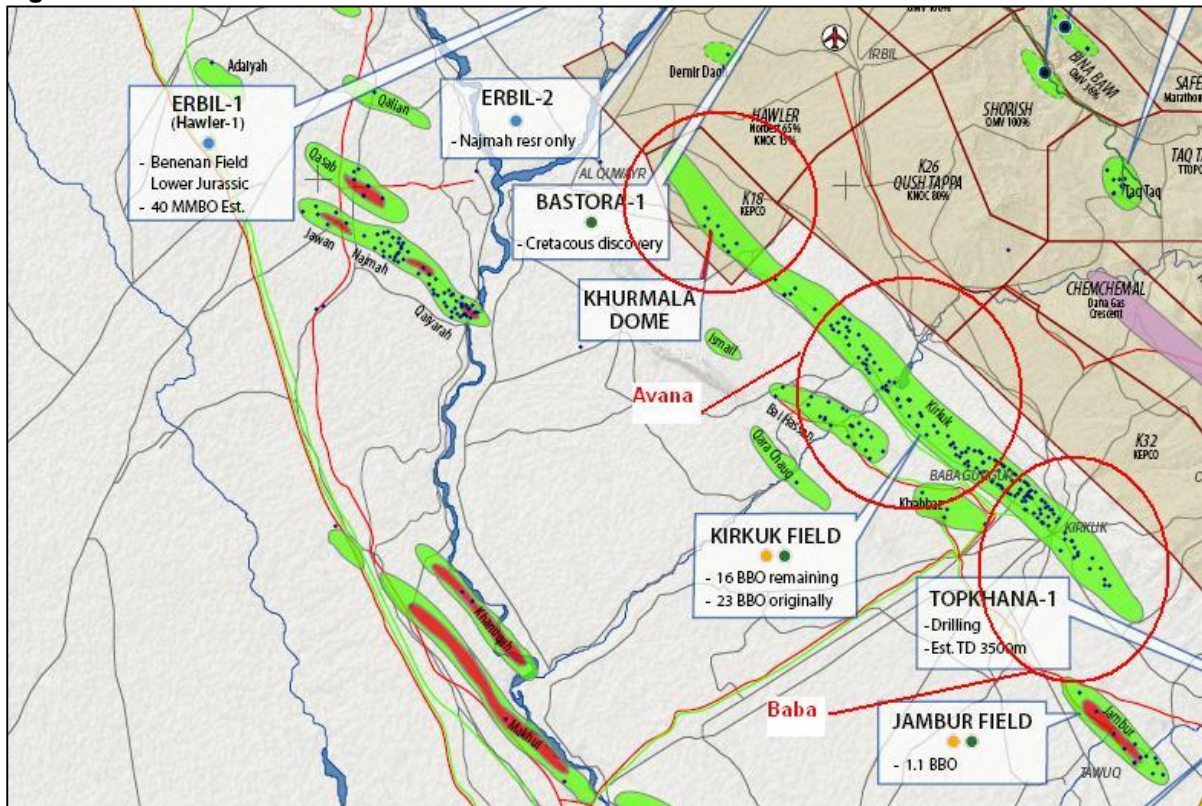
The agreement, in any case, had numerous holes. The exact status of the Kirkuk-area fields was not defined, for instance, with the KRG claiming Avanah (the middle part of Kirkuk) and Bai Hassan, as they fall within the Makhmur district (Figure 11 shows the location of Avanah, Bai Hassan, Baba Gurgur, Khurmala, and other relevant parts of the Kirkuk-area fields). The Kurds interpreted the export target as an average over the year, as their production was increasing, not as a monthly target to be met from January onwards. Baghdad claimed that transfers should be based on its actual expenditure, which was lower than budgeted. In the broader picture, federal Iraq, running a deficit that is likely to approach 20 per cent of GDP in 2016, seems unlikely further to expand its debts to fund a region that may well become independent and certainly is unlikely to make any contribution to repaying those debts.

¹³¹ 'Iraq: The Fragile Economy of a Fragile State', Nussaibah Younis and Sali Mahdy, Atlantic Council, 30 September 2015, www.atlanticcouncil.org/blogs/menasource/iraq-the-fragile-economy-of-a-fragile-state.

¹³² 'Oil deal a sign of hope between Baghdad, Erbil', Mushreq Abbas, Al-Monitor, 5 December 2014, www.al-monitor.com/pulse/originals/2014/12/iraq-kurdistan-oil-agreement-relations.html#.



Figure 11: Location of sectors of Kirkuk-area fields¹³³



By June 2015, the KRG had reverted almost entirely to selling oil itself.¹³⁴ By September 2015, none of the KRG's oil sales were conducted via the federal Ministry of Oil's SOMO.¹³⁵ The KRG's Deputy Prime Minister, Qubad Talabani, said in October 2015 that the KRG would no longer sell oil via SOMO, although it was open to a new revenue-sharing deal.

With the return to entirely independent oil sales, Natural Resources Minister Hawrami stated that, in return for at least 525 kbpd of exports, traders had committed to advance payments of \$850 million per month, an implied price of \$52–54 per barrel.¹³⁶ Brent crude prices were below this as of October 2015, and Kurdish crude receives a substantial discount because of the attendant legal uncertainties and the absence of many big buyers. This results in the KRG accumulating debts to the traders, which will have to be repaid by increased oil shipments.

¹³³ Base map from Shamaran Petroleum, www.shamaranpetroleum.com/i/pdf/Kurdistan-Map.pdf

¹³⁴ 'Kurdistan ramps up independent oil sales', Humeyra Pamuk, Ahmed Rasheed, and Isabel Coles, Reuters, 29 June 2015, www.reuters.com/article/2015/06/29/iraqi-kurdistan-oil-idUSL5N0ZF2YO20150629.

¹³⁵ 'Iraqi Kurdistan increases independent oil sales', Wil Crisp, MEED, 6 October, 2015, www.meed.com/newsletter/sectors/oil-and-gas/oil-upstream/iraqi-kurdistan-increases-independent-oil-sales/3215109.article.

¹³⁶ 'New details of KRG oil deals reveal latent risks', Patrick Osgood, Rawaz Tahir, and Ben Van Heuvelen, Iraq Oil Report, 29 October 2015, www.iraqoilreport.com/news/new-details-of-krq-oil-deals-reveal-latent-risks-16840; 'MNR: Setting the Record Straight on Oil Export and Revenue so that the People of Kurdistan Can Judge for Themselves', press release, Ministry of Natural Resources, Kurdistan Regional Government, 20 August 2015, <http://mnr.krg.org/index.php/en/press-releases/474-mnr-setting-the-record-straight-on-oil-export-and-revenue-for-the-people-of-kurdistan-to-judge-for-themselves>.



4.4 The IOCs

In the literature concerning the KRG's oil policies and ambitions, little has been said about the motivations and aims of the international oil companies who have entered the KRI – and those who chose not to enter.

With the arguable exception of the Turkish Energy Company, IOCs have been motivated by the pursuit of profitable opportunities rather than 'strategic' considerations. This is a contrast with federal Iraq where IOCs bid very stringent terms, feeling they could not afford to be left out of the competition for giant, low-cost discovered oilfields.

The smaller IOCs who initially entered the KRI have mostly, in the typical business model of their type, aimed to make substantial discoveries and then sell out to a larger company. Addax, which was acquired by Sinopec in 2009, is the most successful example (it also had assets in West Africa, which were probably the greater attraction). Other smaller companies, notably Gulf Keystone and Western Zagros, have not yet been sold despite extensive interest. Gaps in expectations, and the difficulty in valuing their assets given continuing export and payment hurdles, have so far prevented a deal, though both companies have struggled financially to continue, and will be challenged to develop their discoveries fully. Other companies have withdrawn after discoveries were found to be inconclusive or non-commercial, such as Vast and Niko (Qara Dagh), and PetroCeltic (Dinarta), while Afren encountered severe financial difficulties partly, though not wholly, related to its Barda Rash block.

Other small/medium-sized companies, notably DNO and Genel, have the benefit of a sounder financial base and have made more progress in field development. Genel in particular has expanded its interests beyond Taq Taq and Tawke by taking shares in other blocks, notably Miran and Bina Bawi (making it the proponent of a gas export strategy), and Chia Surkh. The rumours of a merger with New Age,¹³⁷ though it is primarily Africa-focused, would add the Khalakan block (including the Shewashan light oil discovery) to Genel's portfolio. Meanwhile, Crescent and Dana Gas, which were early entrants and had a gas monetization and export strategy based on the Khor Mor and Chemchemal fields, have been unable to progress due to their dispute with the KRG. OMV and MOL, partners in the Pearl Petroleum consortium and holders of other blocks, may have hoped to supply gas to their Nabucco pipeline, which was intended to bring Middle Eastern and Caspian gas to central Europe, but that project was cancelled in 2013.

Other mid-sized, mostly European companies, such as Repsol and Maersk, see the KRI as an area offering reasonably sized low-cost opportunities on good fiscal terms, where they can capitalize on their technical skills without the intense competition from the larger IOCs that they encounter in most of the rest of the Middle East.

The IOCs with a substantial asset base outside the KRI, and particularly companies such as ExxonMobil, Chevron, and Total, can afford to explore at a measured pace and only proceed to development when the payment situation is clarified. They could ultimately consolidate the interests of smaller companies to build up a dominant position, but appear in no hurry to do so. Other IOCs, such as Shell, are reported to have considered entering the KRI, but decided against it because of the relatively small size of the opportunities and the difficulties it would cause them in relations with the federal government.

Unlike southern Iraq, state-owned international companies have played only a minor role in the KRI. Sinopec, as noted, entered via its purchase of Addax, while the other two leading Chinese state firms, CNPC and CNOOC, have major positions in federal Iraq. The Korea National Oil Corporation has had poor technical results and been dogged by allegations of corruption. Russia's Gazprom Neft, which also operates in federal Iraq, has made relatively low-profile progress on exploration of the Halabja block and development of the Garmian, Kurdamir, and Shakal blocks. TAQA, partly owned by the Abu

¹³⁷ 'Hayward Oil Firm In £2bn New Age Merger Talks', Mark Kleinman, SkyNews, 24 November 2015, <http://news.sky.com/story/1593628/hayward-oil-firm-in-2bn-new-age-merger-talks>.



Dhabi government, is developing the Atrush block. Other state companies are conspicuous by their absence.

Unlike most of the Middle East (with the partial exception of Egypt, Oman, and Yemen), the KRI has represented a very active market for asset acquisitions, though the pace has slowed since 2012. Major acquirers have been Sinopec, Genel, as noted, and Repsol which, by its purchase of Talisman in 2014, considerably strengthened its KRI position (though Talisman was considering selling its Kurdish assets).

4.5. Oil, gas, and external relations

The KRG has sought to use the award of oil contracts to bolster its political position, in at least three ways. Firstly, it has awarded blocks in geographically strategic locations, to cement its claim over 'disputed territories' and to seek to bolster potential political support should a neighbouring power attack it. This was notable particularly in the award of the ExxonMobil blocks in late 2011, with Penjwin on the Iranian border (though later relinquished), and Qara Hanjer (near Kirkuk), Al Qush and Bashiqa (both near Mosul) in territories disputed with Baghdad.¹³⁸ Of course, Al Qush and Bashiqa are now also close to the front lines with ISIS.

Secondly, it has presented a media-savvy, investor-friendly and pro-Western image, which was important in garnering support in Washington when the city of Erbil appeared threatened by the ISIS advance in August 2014. This is in contrast to federal Iraq, where international investment has been deterred by insecurity, corruption, and bureaucracy, even though investment in the oil sector there has been far larger than in the KRI.

Thirdly, the KRG has awarded licences to a broad spread of companies, with particular stress on attracting Western firms (at first mostly the USA, Canada, and the UK), and Turkey because of its regional importance (the specially established Turkish Energy Company, as well as Genel Enerji in the early days, and some smaller private Turkish players). Later on more continental European companies have become involved, including from France (Total), Spain (Repsol), Hungary (MOL), Austria (OMV), and Denmark (Maersk). Of non-Western firms, Sinopec, via Addax (China), Gazprom Neft (Russia), and TAQA, Crescent, and Dana Gas (UAE) are notable. Conspicuously absent is Iran, which has been constrained by sanctions and adds little technically or financially, despite its regional political and military importance.

Of course, the strategic forethought of this policy should be not be overestimated, and the entry of smaller companies in particular is also driven by opportunism (on both sides), and the financial attractiveness of deals they may offer.

The future position of the KRG may also become significant with regards to OPEC. Iraq, of course, is a founder member of OPEC, but has not been bound by the organization's quotas since the 1990–91 Gulf War. Its plans for rapid production growth, though only very partly realized so far, do bring it into a possible collision course with Saudi Arabia, as the leading OPEC country. It is very unlikely that the KRG would comply with any central government directives on reducing production, and this in turn makes it extremely difficult for Baghdad to accept any quotas, on which the Kurds could 'free ride'.

If the KRI were to become *de jure* independent, it would of course have the choice of joining OPEC, but a variety of historical (such as hostility to Arab nationalism) and economic factors (the constraints of IOCs seeking to maximize production under their PSCs; the need to meet revenue targets and debt service) suggest it is improbable it would do so. Similar-sized producers, such as Azerbaijan and Kazakhstan (newly-independent in 1991), Colombia, and Oman have not seen the need to join OPEC.

¹³⁸ 'Exxon, Kurdistan visit disputed Iraqi oil block', Ahmed Rasheed, Reuters, 1 February 2013, www.reuters.com/article/2013/02/01/iraq-exxon-idUSL5N0B0HPU20130201.



The KRG's (and particularly the KDP's) good relations with Turkey have been essential to its strategy *vis à vis* Baghdad, as well as meeting domestic Turkish objectives. Oil exports are a useful source of pipeline revenues, directly and indirectly benefit Turkish investors in the KRI, and add to global oil supplies, but they are not in themselves a key strategic benefit for Turkey. Gas exports, however, are highly strategic. They diversify Turkey's gas supplies, reducing dependence on Russia and Iran. They should be at a lower price than existing contracts, hence bringing down the overall import bill and Turkey's current account deficit (though the fall in global oil and gas prices since mid-2014 has eased this concern somewhat). They strengthen Turkey's negotiating hand versus other suppliers, and potentially contribute to its ambition of becoming an energy hub, actively trading and benefiting from oil and gas imports and exports, not just a passive transit state.

However, the KRG's energy policy exposes it to new risks. Most particularly, its economic lifeline, the oil (and future gas) exports to Turkey, make it politically and financially reliant on Ankara. It risks trading dependence on Baghdad, where it at least has political representation via the presidency, parliament, and several ministries, for dependence on Turkey. Despite its current good relations with Ankara, it cannot be guaranteed that this will continue, given the volatile regional situation, and the persistent issues of the Kurdish population within Turkey. Gas exports would somewhat strengthen the KRG's position, as it would make part of Turkey dependent on reliable Kurdish supplies. With no fiscal buffers, even a short halt to exports immediately threatens the viability of the KRG.

The export routes are also physically vulnerable. In July 2015, the Kirkuk–Ceyhan oil pipeline was attacked within Turkey, with the PKK reportedly taking credit.¹³⁹ This attack was in response to the renewed fighting between the PKK and Turkish authorities, breaking a ceasefire that had started in 2013. Although the pipeline was quickly repaired, as it has been after numerous past attacks, the sabotage was a threat not only to the Turkish state, but to the KRG. Though it has tried to build regional and international alliances, the KRG's reliance on this single export route is not easily reduced: the Syrian civil war prevents an alternative Mediterranean route; Iran is unlikely to facilitate large-scale Kurdish oil and gas exports; and sales to or via federal Iraq would require a reset of relations.

4.6. Political conclusions

The political position of the KRG in relation to its petroleum resources is of interest, both as a topic in its own right, and for the light it casts on the situation of comparable countries or regions.

The success of the KRG, at least until its recent budget crisis, and the wealth and power amassed by its leadership, has been a source of envy or inspiration to other parts of Iraq seeking greater autonomy, most notably the governorate of Basra, which produces most of Iraq's oil and so funds the government in Baghdad, but remains mired in poverty and corruption. Even within the KRI, the control of its hydrocarbon resources has strengthened the KDP versus the PUK, but both of the established parties have benefited from opportunities for patronage and corruption. This, in turn, spurred the rise of Gorran, as well as discontent from Kurds not connected to the big political and business families.

Similarly, any autonomous Sunni Arab region in north-western Iraq, perhaps established following the expulsion of ISIS, would probably want similar rights over its hydrocarbon resources, as indicated by the Ninewa Provincial Council decision in September 2013.

¹³⁹ 'Striking Pipeline, Kurdish Militants Deal Blow to Fellow Kurds', Keith Johnson, *Foreign Policy*, 30 July 2015, <http://foreignpolicy.com/2015/07/30/kurdish-militants-strike-pipeline-deal-blow-to-fellow-kurds/>; though the PKK later blamed this on a local unit acting without authorization.



5. Conclusions: the Future of the KRI's Hydrocarbon Industry

The future of the KRI's hydrocarbon industry depends on the KRG's ability to resolve its fiscal and political crisis; on the evolution of national (Iraqi) politics and the KRI's possible independence; and on the regional political situation.

The KRI could become a significant oil and gas exporter, but this is critically dependent on export routes and on establishing a reliable stream of payments to the IOCs to allow them to continue investing. Exports of around 1 million bpd of oil and 10 bcm of gas by the early 2020s, rising to 20 bcm per year by the mid-2020s, are plausible given the discovered resource base and current stage of development. If achieved, this would probably be accompanied and facilitated by a significant consolidation of the current operator base under a number of larger companies. This would go along with the development of associated domestic refineries, pipelines, and gas-fired power plants.

Stabilization of oil production at these levels beyond 2025 will require increases in reserves in discovered fields, and/or new exploration successes. Exploration activity and discoveries have been down significantly over the last two years.

Even these levels of hydrocarbon exports would leave the KRG in a vulnerable fiscal position. Financial security requires major fiscal and wider economic and governance reforms. A significant (and mostly unanticipated) rise in global oil prices would certainly ease the fiscal crisis but would only be a temporary palliative in the absence of these reforms.

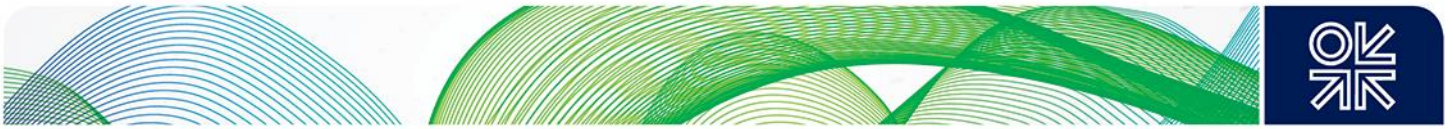
The KRI will also continue to be exposed to the regional political issues and to the rivalries and domestic political imperatives of its larger neighbours, particularly federal Iraq and Turkey, but also Iran. Formal independence for the KRI, if achieved, would simplify some oil sector matters (for instance hydrocarbon exports, payments, legal status of PSCs, fiscal and borrowing capacity). However, it would introduce numerous new disputes and uncertainties, both internationally and domestically (for instance, the future of KRG democracy and the power balance between the KDP, PUK, and Gorran).

The destruction of ISIS and an end to the Syrian crisis would, if and when achieved, significantly improve the perceived security and business environment of the KRI, and free up resources from military and humanitarian expenditure. Such outcomes may also, in the longer term, open up export routes via Syria for Kurdish oil and gas. However, they would elevate the vexed question of intra-Kurdish rivalries.

Periods of cooperation with Baghdad have been interrupted by serious disputes and breakdowns of relations. The KRG and federal Iraq have much to gain from a constructive relationship – for example, joint production of the Kirkuk-area fields; the use of Kurdish pipelines for the export of federal oil interrupted by ISIS; marketing of Kurdish crude at better prices; investment by major IOCs in both federal Iraq and the KRI; and Kurdish gas and power exports to federal Iraq. In a wider context, Baghdad has an interest in the continuing stability of the KRI as its Peshmerga military are essential to the fight against ISIS.

However, these common interests are overshadowed by deep differences, for instance over Kirkuk and the 'disputed territories', and over federal budget-sharing. If and when ISIS is expelled from provinces in northern Iraq, the KRG's relations with communities in those areas, and with a possible autonomous Sunni region, will gain added importance, with room for both cooperation and conflict. It will take constructive, even visionary, leadership on all sides, with substantial help from international mediators, to find mutually beneficial solutions to these controversies.

Relations with Turkey will only gain in salience for an increasingly autonomous KRI. Full development of the region's oil depends on export routes, and of its gas on the Turkish market. Turkish engineering and construction firms, lenders, and investors are also critical to the KRI's economy. But the deepening complexity of the Syrian conflict, the further involvement of Russia, the Turkish



confrontation with the PKK and Syrian Kurds, the heightened role for Western countries in fighting ISIS, all shape this relationship in complicated and unpredictable ways.

5.1 Relevance for other hydrocarbon provinces

As noted, the KRI is one of the few recent examples of the discovery and development of a significant new onshore hydrocarbon province. As such, it has lessons both for new oil-producing countries, and for IOCs. Without conducting a full comparative study, at least some of these lessons can be adduced.

- 1) Small- and mid-size IOCs played the greatest early role in exploration and development. Larger IOCs, such as ExxonMobil, only entered once the province had been substantially geologically de-risked (and when political developments elsewhere made it appear more favourable). A similar pattern is seen in the Eastern Mediterranean, Uganda, and Kenya (big IOCs have played the leading role in more technically challenging, high-cost areas such as the Brazilian deep-water and Arctic). However, larger IOCs are usually required to provide capital and financial and technical expertise for full-scale development (Rajasthan is an exception, but the fields in this case were smaller).
- 2) Kurdish state companies have played a minimal role in the exploration and development of the region. The choice of a private sector-based model was realistic given the lack of an indigenous energy industry or bureaucracy. This contrasts with much slower progress in federal Iraq, despite its existing skills base, infrastructure, large low-cost resources, and presence of numerous major IOCs. Though strongly supported by Iraqi nationalist opinion, by various former Iraq National Oil Company (INOC) and MoO officials, and by some Western commentators,¹⁴⁰ the state-dominated model has been blamed for excessive bureaucracy, slow development of needed infrastructure, and exacerbation of corruption. Whatever the merits of the various legal arguments, it is clear that there would have been minimal development of the KRI's hydrocarbon resources under the model espoused by Baghdad. The same is true of the expansion of the KRI's refining and power generation sectors.
- 3) Personalities are important. The trajectory of the KRI's hydrocarbon sector would be very different if its leadership had not pushed for constitutional provisions allowing them substantial control over their resources; or if Minister Hawrami had tried to pursue a more state-dominated approach like Baghdad's rather than relying on international companies and production-sharing contracts. Conversely, reconciliation between Baghdad and Erbil might have been easier under less uncompromising oil ministers on each side.
- 4) Unlike in federal Iraq, local Kurdish private companies have had a significant role, with KAR Group and Qaiwan active in oil development and refining. Although it creates openings for 'crony capitalism' and patronage politics, the development of local private oil sector capabilities can help satisfy nationalist opinion while avoiding the pitfalls of a monopoly state company. The success of this depends on how quickly such companies can acquire the required financial resources and technical and managerial skills, with KAR Group, for instance, making extensive use of international advisers.
- 5) Political risk to the development of hydrocarbons manifests itself in many forms, even in the case of a broadly pro-business, pro-Western government with reasonable internal security, such as the KRG. Such risks have ranged from local community opposition and domestic corruption, all the way to broader regional conflicts and obstructions to pipelines.
- 6) Fiscal terms are not immutable. Governments will almost always exploit the 'obsolescing bargain' to increase their fiscal take from successful new oil and gas provinces, even at some cost to

¹⁴⁰ e.g. (Muttitt, 2012).



investor confidence and a slowing of field development. This has been seen in the KRI as in Uganda, Tanzania, Israel, India (Rajasthan), and other recent areas of new discoveries.

- 7) For landlocked countries, pipeline access to markets is critical. This was demonstrated clearly in the former Soviet Union during the 1990s (one example is the importance given by the USA to promoting the BTC oil pipeline from Azerbaijan to the Mediterranean, to bypass both Russia and Iran). Uganda and newly-independent South Sudan have also faced difficulty with pipelines transiting neighbouring states.
- 8) Politics can play a leading, even dominant, role in hydrocarbon development. The extreme volatility and salience of national and regional politics in the KRG's oil policy is exceptional, but comparable to that around the Soviet successor states, or the development of offshore East Mediterranean gas resources.

5.2 Relevance for other resource-rich sub-national regions

Numerous other resource-rich regions of larger countries have sought greater control over their resources, to retain the revenues and encourage economic development, gain greater autonomy, or as a step towards independence. Examples include Alberta within Canada; Scotland within the UK; Biafra from Nigeria in 1967–70; Katanga (metals) from the Republic of Congo-Léopoldville (later Zaïre, now the Democratic Republic of Congo) in 1960–3; Somaliland and Puntland as breakaway states from Somalia; Cyrenaica (Barca) within Libya; Western Sahara (with phosphates, and possibly oil and gas) and Morocco; Baluchistan (gas) within Pakistan; South Sudan from Sudan; and a proposed federal structure within Yemen.

Numerous lessons could be drawn from the Kurdish case for other such cases of 'resource regionalism'. This is not the focus of the current study, but some of the key points include:

- The problem of vague constitutional provisions, whose ambiguity is necessary to reach agreement but which then lead to continuing disputes. This includes the demarcation of territories of a federal region or a new state, which has been a continuing problem for Sudan/South Sudan.
- The resort to force or the threat of force, rather than legal mechanisms, to settle such disputes, especially where one party does not trust the relevant legal authorities (for example, a federal supreme court), as in Libya, Yemen, and Sudan/South Sudan.
- The creation of 'facts on the ground', for instance by occupying key oilfields, building pipeline infrastructure, signing contracts with reputable international oil companies, or exporting oil on an independent basis, as in Western Sahara (by the Moroccan government), 'federalists' within Libya, and Somaliland and Puntland.
- The importance of backing from outside actors, whether oil companies, 'rogue traders', or governments, to bolster the position of the new state. Outside government support was crucial, for instance, for Katanga and Biafra. The USA was important in supporting the independence of South Sudan while China, with major oil investments, has played a mediating role there subsequently. Separatist or newly independent states usually lack the technical and commercial capacity to develop or operate natural resource developments themselves, or to market the output, and require the backing of able international oil or mining companies and trading houses. Even the more capable national/state oil companies have rarely succeeded in discovering and developing new petroleum provinces on their own.
- The difficulty of devising workable federal mechanisms in a country with traditions of highly centralized government, an unresolved problem in Libya and Yemen.
- The criticality of securing access to resource revenues for national economic viability, as in South Sudan.
- The vulnerability of landlocked states to interdiction of their oil/gas export routes (as in the case of South Sudan).



6. References

- Abul Failat, Y. (2013). 'The Iraqi Federal Oil and Gas Law 2011: Exploration, Exploitation and Expropriation', *International Energy Law Review*(4), 141–53.
- Beblawi, H. (1987). 'The Rentier State in the Arab World', *Arab Studies Quarterly*, 9(4), 383–98.
- BP (2015). *BP Statistical Review of World Energy 2015*.
- Coll, S. (2012). *Private Empire: ExxonMobil and American Power*, Penguin.
- Hatzfeld, D., Authemayou, C., Van der Beek, P., O., B., J., L., B., O., . . . F., Y.-F. (2011). 'The kinematics of the Zagros Mountains (Iran)', in P. Leturmy, & C. Robin, *Tectonic and Stratigraphic Evolution of Zagros and Makran during the Mesozoic–Cenozoic* (pp. 19–42), London: London Geological Society.
- International Crisis Group (2012). *Iraq and the Kurds: the High-Stakes Hydrocarbon Gambit*.
- International Crisis Group (2015). *Arming Iraq's Kurds: Fighting IS, Inviting Conflict*.
- International Energy Agency. (2012). *World Energy Outlook Special Report: Iraq Energy Outlook*.
- Iraqi Kurdistan: The Essential Briefing (2015). *Strategic Comments*, 21(2).
- Mahdavy, H. (1970). 'The Patterns and Problems of Economic Development in Rentier States: the case of Iran', in M. Cook, *Studies in the Economic History of the Middle East* (pp. 37–61), London: Oxford University Press.
- Mills, R. (2013). 'Northern Iraq's Oil Chessboard: Energy, Politics and Power', *Insight Turkey*, 15(1), 51–62. Retrieved from http://file.insightturkey.com/Files/Pdf/20130107123353_insight_turkey_vol_15_no_1_commentaries_05_mills.pdf.
- Moss, T. (2012). *The Governor's Solution: How Alaska's Oil Dividend Could Work in Iraq and Other Oil-Rich Countries*, CGD Books.
- Muttitt, G. (2012). *Fuel on the Fire: Oil and Politics in Occupied Iraq*, The New Press.
- Pollack, K. (2003). *The Threatening Storm: What Every American Needs to Know Before an Invasion in Iraq*, Random House.
- Talebian, M., & Jackson, J. (2004). 'A reappraisal of earthquake focal mechanisms and active shortening in the Zagros mountains of Iran', *Geophysics Journal International*, 156(3), 506–26.
- United States Geological Survey (2000). *World Petroleum Assessment*.
- Vernon, R. (1971). *Sovereignty at Bay: The Multinational Spread of US Enterprises*, New York: Basic Books.
- Widerquist, K., & Howard, M. W. (2012). *Exporting the Alaska Model: Adapting the Permanent Fund Dividend for Reform Around the World*, Palgrave Macmillan.
- World Bank. (2015). *The Kurdistan Region of Iraq: Assessing the Economic and Social Impact of the Syrian Conflict and ISIS*, World Bank Publications.
- Zedalis, R. J. (2012). *Oil and Gas in the Disputed Kurdish Territories*, Routledge.