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An ocean of reserves waiting to be tapped

The small buccaneers are giving way to the big drillers competing to explore this virgin territory, writes *Guy Chazan*

Richard Lowe faces a dilemma most oilmen can only dream about: what on earth is he to do with 14 billion barrels of crude?

Mr Lowe's company, a small London-listed explorer called Gulf Keystone, found the oil in question in Shaikan, in Iraqi Kurdistan, in 2009. It was one of the world's largest onshore discoveries in more than 20 years.

Stretching for miles under a ridge of brown, rugged hills near the Turkish border, Shaikan is huge. Yet its sheer size is problematic. "The big question is – where do you start?" says Mr Lowe, Gulf Keystone's drilling manager. "The field is almost too big."

Oil finds such as Shaikan have made Kurdistan, an autonomous region in the north of Iraq, one of the biggest draws in the global oil industry. It has attracted $10bn in investment from foreign oil companies – a vast amount for a country of only 4.9m people.

"It is almost the only place in the Middle East where the private sector can explore virgin territory," says Tony Hayward, the former chief executive of BP who runs the Kurdistan-focused oil explorer Genel Energy.

Initially, the region was the playground of wildcatters – small buccaneers with a big appetite for risk. But now the big boys are moving in. Over the past year, ExxonMobil, Chevron and Total have been grabbing some of the 45bn barrels of oil thought to lie underneath Kurdistan.

Ashti Hawrami, Kurdistan's minister of natural resources, forecasts a wave of consolidation as the majors swoop in. The number of operators in the region will, he says, soon shrink from 50 to 20 or less. "We're moving from the small and the beautiful to the large and the magnificent," he told the Financial Times.

Starting point: Gulf Keystone drilling in the oil-rich area of Shaikan

The big oil companies are coming despite a somewhat precarious legal environment. For years, Kurdistan has been embroiled in a bitter dispute with Iraq's central government over who owns the region's oil. Baghdad says the Kurdistan Regional Government, or KRG, lacks the authority to sign contracts with western energy groups and has declared them illegal.

In April 2012, the KRG suspended crude shipments from the region in protest at Baghdad's delays in disbursing $1.5bn owed to operators in Kurdistan.

Since then circumstances have improved. In August, the KRG restarted exports as a goodwill gesture and, a month later, the central government agreed to pay foreign companies what they were owed for their oil. The Kurdish authorities reciprocated by agreeing to increase exports.

The deal enabled Gulf Keystone to resume production at Shaikan after a near five-month hiatus. "It's a huge relief that we're able to start again," says Mr Lowe. Some 30 tankers a day are loading up at Shaikan and taking its crude to local refineries.

> 'Kurdistan will emerge as a leading contributor to global oil supplies by the end of this decade'

The September agreement was extraordinary in that it seemed to acknowledge the legitimacy of KRG contracts. Mr Hawrami says Baghdad realised that the most important priority was to make sure oil flows were resumed in full – regardless of which companies were producing it under what contracts. The view was "now Kurdistan must export the oil and we need the revenue," he says. "Any stranded oil is not to the benefit of Iraq." He called the deal "a win-win".

It is not hard to tell that Kurdistan is sitting on a bountiful resource. On the northern side of Gulf Keystone's Shaikan field, Mr Lowe points visitors

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Inside »

Locals dominate downstream supply and demand

Refining

Region approaches self-sufficiency, writes *Guy Chazan*

In the early days of Kurdistan's oil industry, local businessmen would turn up unannounced at oil wells and offer operators cash for their crude, which they then drove in tankers to primitive "teapot" refineries and turned into asphalt.

There are still a few teapots but these days much of Kurdistan's oil is piped straight into big modern refineries, which churn out everything from heavy fuel oil to high-octane petrol.

The largest of them, in Kalak, near Erbil, is a symbol of modernity in a region that had no refineries at all until a few years ago. Workers in crisp orange overalls sweep up dust from under the spotless pipework and gardeners tend beds of rose bushes and oleander. On its outer fringes, bulldozers churn up a huge construction site, part of an expansion led by US group Ventech Engineers to more than double Kalak's capacity.

Kurdistan's refining sector is growing fast, fuelled by the plentiful oil reserves discovered in the region in the past four years. It now has refining capacity of 100,000 barrels of oil a day, a figure that is set to rise sharply in the coming years. The region is almost completely self-sufficient in some refined products, such as fuel oil.

Unlike the upstream sector, Kurdistan's refining industry is almost the exclusive preserve of locals, among them KAR Group, one of the region's largest private companies, which operates Kalak.

This is a big change from the era of Saddam Hussein. "Before, Iraq didn't allow Kurds to enter strategic industries like refining," says Hejar Azad, KAR's process and site manager, who is overseeing Kalak's expansion. With autonomy, that has changed. "I am a Kurdish engineer and am managing a whole refinery."

KAR is now established on all links of the oil value chain. Kalak is supplied with crude from a huge oilfield near Kirkuk, the Khurmala Dome, which KAR operates, through a 40km pipeline built by KAR. The group plans to build a gas-fired power plant in the Khurmala area and recently raised financing for the project from the Czech Export Bank.

Kalak is expanding fast. Its capacity of 40,000 barrels a day will rise to 100,000 b/d early next year with the expansion. Kalak will then supply 75 per cent of local demand for products such as high-octane gasoline.

Others are also moving ahead. The Bazian refinery, near Kurdistan's second city of Suleimaniya, was taken over in 2009 by a local trading company, Qaiwan. It is being upgraded by Ventech to increase its capacity to 34,000 b/d.

Innovative logistics are needed for such a remote, landlocked region. For Kalak, Ventech designed and built a fully engineered refinery complex at its facility in Texas and shipped it to the Turkish port of Mersin, from where it was sent overland to Kurdistan.

Part of the success of the refining sector lies in the chosen model. Feedstock is supplied by the government and the refined products go to the government. Refiners are paid a per-barrel processing fee. "It gives you guaranteed cash flow and it is a low, manageable risk," says Baz Karim, KAR chief executive.

In contrast, refiners in the rest of Iraq must buy the feedstock from the government, usually at a small discount to the world price of crude, and sell the refined product into the local market themselves. Yet with the price of gasoline and diesel in Iraq kept artificially low by government fiat, it is hard for refiners to make money.

Deterred by such terms, investors have tended to steer clear of the Iraqi refining industry. The government has responded by changing its model: it is inviting investors to develop one of the country's big oilfields, Nasiriya, and build a refinery nearby as part of an integrated project. Any products surplus to the needs of the local market can be exported. It is still unclear whether this new approach will attract the same level of interest as Kurdistan's downstream industry has.

Meanwhile, the northern region's prospects are undimmed. The industry is underpinned by strong growth in demand for refined products locally. The recently built Erbil International Airport, for example, has increased the appetite for jet fuel and other downstream opportunities beckon. Mr Karim speaks of branching into petrochemicals and producing pesticides, fertilisers and detergents.

Local companies hope to expand their reach into the south, despite the political differences between Erbil and Baghdad. The regional government has spoken of Kurdistan becoming a net exporter of refined products next year. "Our goal is to meet all of Kurdistan's needs and, if we can, help neighbouring governorates, which also have a shortage," says Mr Karim.

Buyouts on way as companies run legal risks to venture north

Oil majors Takeovers of region's smaller frontier players beckon, says *Guy Chazan*

Tanked up: trucks wait to be loaded at the Taq Taq oilfield near Erbil, one of Kurdistan's main production areas Reuters

Kurdistan's energy landscape is changing – fast. Nothing demonstrated this better than the advent of ExxonMobil last year. Finally, a region that had been the preserve of wildcatters was attracting supermajors too.

They came not only because of the spectacular exploration success of their smaller rivals, but also because of disappointment with southern Iraq, where investment terms have proved unattractive and security is still a huge problem. They came despite lingering doubts about the legitimacy of Kurdistan's production-sharing contracts, which Baghdad insists are illegal. Indeed, their disregarding of the legal risks is seen in Erbil as a vindication of the region's approach.

"It is an endorsement that our policy was right," says Ashti Hawrami, minister of natural resources for the Kurdistan regional government.

The supermajors' arrival is part of a wave of consolidation that is changing the shape of Kurdistan's oil sector. With almost the whole region licensed out, apart from some acreage high in the Zagros mountains, companies that want to enter the region or increase their exposure will have to buy up smaller rivals or acquire stakes in their properties. It is a field day for the mergers and acquisitions industry.

The supermajors are expected to lead the consolidation wave. But one of the most active players is much smaller – the oil explorer Genel Energy, headed by former BP chief executive Tony Hayward.

In 2002, Genel Enerji, as it was called then, was the first oil company to sign a contract with the Kurdish authorities, to exploit the Taq Taq oilfield. Last year, the Turkish group was bought for $2.1bn by Vallares, a cash shell created by Mr Hayward and Nat Rothschild, the financier, and floated on the London Stock Exchange. The company is now the largest oil producer in Iraqi Kurdistan.

Mr Hayward says Genel will be one of three to four big players that will dominate the industry along with "a dozen or so participants". He predicts an "enormous amount of M&A activity" in the coming years.

The changes to Kurdistan's oil landscape are typical for the energy industry. As a rule, frontiers are opened up by enterprising wildcatters unfazed by the geopolitical and geological risks. Once they have discovered oil, they are superseded by larger entities with the capital and expertise to produce it. Mr Hawrami calls it Kurdistan's "second phase of development".

> 'There are few land-based exploration opportunities these days, so Kurdistan stacks up quite well'

"It is a normal way for the oil industry to develop in any region," he says. "We saw it happen in the rest of the Gulf a long time ago and in west Africa." But in Kurdistan this process has been extraordinarily fast. In the past year, Exxon, Total, Chevron and Gazprom Neft have all piled in.

The case of Exxon, which is not only moving into Kurdistan but out of southern Iraq, is the most striking. Baghdad reportedly told Exxon it could either work in Kurdistan or in the south, where it has a stake in a multi-billion-dollar project called West Qurna 1, but not in both. Exxon plumped for the north and told Iraqi officials earlier this month it was looking to sell its West Qurna stake.

Chevron spent years trying to enter southern Iraq but ended up as the only supermajor without a deal. "We never did see terms that met our investment criteria," says Ian MacDonald, head of Europe, Eurasia and Middle East exploration and production at Chevron. Kurdistan was, in contrast, highly attractive. "There are probably very few land-based exploration opportunities in the world these days, so it stacks up quite well," he says.

Part of the attraction is the ease of working there. Mr MacDonald says Erbil has plenty of office space, the big oil service companies all have a presence, oilfields are easily accessible, the roads and airports are good and, in stark contrast to many oil-producing countries, work visas are easy to obtain.

Even the question of the contracts' legality is not a concern. "As far as we are concerned, the contracts were developed and approved in accordance with Iraqi law," he says.

Companies such as Chevron are expected to expand their positions in Kurdistan by gobbling up smaller rivals. But Genel, which has spent close to $1bn on acquisitions over the past year, will be at the forefront of the M&A wave. The company has big interests in Taq Taq and another of the main producing fields, Tawke. It has built up a large stake in the Bina Bawi exploration licence, which lies alongside Taq Taq, and recently took full control of the huge Miran natural gasfield. It has a $900m war chest it can spend on more acquisitions, in Kurdistan and beyond.

Though the arrival of the majors has made Kurdistan look much less risky, further progress could depend on the deadlock between Baghdad and Erbil over the governance of oil and gas. The two sides reached an agreement in September that eased tensions, with Baghdad releasing export revenues to Kurdistan-based contractors and the Kurdistan regional government agreeing to increase its exports, which it had suspended earlier in the year.

Companies received the first instalment of the funds from the KRG earlier this month. But Baghdad has yet to release the second tranche, worth around $300m.

There are other potential headaches. Contractual terms for some operators have been altered in favour of the KRG, according to analysts at Macquarie Research, via the introduction of so-called "infrastructure capacity payments", under which companies have to hand over a bigger proportion of their oil production to the regional government.

On the delay in payments, Mr Hayward says he is unconcerned and so far sees no reason to call the September agreement into question. But he remains realistic: "You live in hope but plan for the worst."

Case study
Chia Surkh

Chia Surkh has always had a BP connection. Tucked away in the south of Kurdistan, the oilfield was first drilled in the early 1900s by George Reynolds, the oil pioneer and William Knox D'Arcy's head of exploration. But he was sent from there to Iran, where his discoveries laid the foundations for the Anglo-Persian Oil Company, later to become BP.

Chia Surkh languished in oblivion but was re-explored in 1950 by Iraq Petroleum, a consortium of western oil majors that included BP. Iraq Petroleum discovered oil but had its hands full developing the Rumaila field in southern Iraq. Chia Surkh was abandoned again.

Now there is a third attempt to unlock its riches. Genel Energy, led by ex-BP chief executive Tony Hayward, is drilling there, with results expected early next year.

Guy Chazan

Regional government carves out pro-business identity

Diversification

KRG uses resource boom to fuel wider economic growth, writes *Simeon Kerr*

Erbil, the capital of Iraqi Kurdistan, feels like a frontier boom town. The hotels are full of ageing US oil engineers excited about the prospects of recovery in the mountains of the area.

But unemployed youths act as a reminder of the need for the semi-autonomous Kurdish regional government (KRG) to turn the oil boom into broader economic growth.

The KRG has tailored its own investment law since 2006, helping carve out a more pro-business identity than elsewhere in Iraq. As in the oil and gas sectors, the different environment is persuading some companies to move their operations out of Iraq into the safer and more liberal environs of Erbil and the region's second city of Suleimaniya.

While some overseas investors complain of cumbersome bureaucracy and corruption, analysts say these impediments are dwarfed by the similar problems elsewhere in Iraq.

The KRG's investment board has licensed 450 projects, valued at about $22bn, of which some $12bn has been mobilised to date. Foreign investors make up 20 per cent of the projected investment total.

Herish Muharam, chairman of the investment board, says half the projects have come from real estate and housing, given the need for fast returns and the ballooning demand for property.

Mr Muharam says the authorities are targeting sectors beyond real estate to diversify the economy and produce more jobs and export revenue.

The authorities have been heavily promoting all sectors to foreign and domestic investors but a year ago the investment board decided to focus on industry, agriculture and tourism.

Back in 2006, the Kurdish region had to import all its energy. Now, ample gas resources fuel a 2,000MW power sector, with contracts awarded to supply 4,000MW by the end of 2014, reaching up to 6,000MW a few years later.

Having increased domestic power production from three hours a day to almost full service in the main cities, the Kurdish region could target exports via a shared electricity grid.

"Power generation is . . . an area [where] we have competitive advantage over our neighbours," says Qubad Talabani, head of the department of co-ordination and follow-up at the KRG. "The next stage will be to export power."

The board of investment is backing the use of excess power supply for the development of industrial zones in the region's three largest cities, Erbil, Suleimaniya and Dohuk. These investment zones will be complemented by smaller industrial zones in rural areas.

In tourism, the government is building three resorts in cool hilly countryside areas, popular destinations for Iraqis. Tourism should be a leading job provider, with unemployment put at 14 per cent in the region, but officials say many jobseekers look down on hospitality work as menial.

"Graduates are . . . saying they only want a government job," says Mr Talabani, "that's the mindset that we have to shift."

The investment board's Mr Muharam says there has been progress in channelling Kurds into the private sector. When Erbil's airport opened, foreigners took most jobs but training programmes have allowed them to be replaced by locals.

The government hopes that agriculture can strengthen the economy by producing jobs and reducing the region's dependence on its neighbours.

The markets are full of Turkish goods and Iranian

> 'In energy, we have competitive advantage. The next stage will be to export power'

livestock but the authorities say they will prioritise investments that bring some self-sufficiency to this landlocked territory.

Mr Muharam says the KRG supports farmers with long-term interest-free loans to help people return to their villages after Saddam Hussein cleared rural areas to stymie rebellions in the 1980s.

Expanding the electricity grid has connected about 80 per cent of the region's villages to continuous power supply, he adds.

The increasingly dependable electricity grid is one of the major factors luring foreign investors to the region. Other advantages include no need for local partners and guaranteed repatriation of profits, and freehold investment.

The investment board is pondering options for a public-private-partnership model for the vast number of infrastructural projects, from schools and hospitals, to sewage plants and roads.

These will need some tweaks to the 2006 investment law, such as an extension of the 10-year tax break for investors.

Businessmen say safety, rather than regulatory advantages, remains the biggest attraction, though tensions with Baghdad continue to worry investors.

There are limits to Erbil's autonomy, with reform to financial services remaining the purview of federal law. The KRG says it is working with Baghdad to introduce reforms to encourage Iraqi banks to become "more than vaults", as one official puts it, and start lending to investment projects.

Acknowledging the region's uncertainty, Mr Talabani believes that the KRG can develop its niche as the investment destination of choice.

Looking to recent European history as a template for development, he believes Slovenia's progress during the troubles there is a model worth pursuing.

"When all around them were killing each other, Slovenia . . . got on with making money and developing infrastructure," he says. "We would like to be the Slovenia of the region."

Reserves waiting to be tapped

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to crude oil oozing out of the limestone rock and dribbling down in dense black seeps.

Iraqi geologists knew about the area's potential. "These fields should have been discovered 30 or 40 years ago," says Mr Lowe. Leaving them untapped was, he says, part of a policy of neglect designed to keep the Kurdish population down. Instead, Iraq focused on the huge fields around Basra and Kirkuk.

That has redounded to the Kurds' advantage. "If these oil reserves had been developed 30 years ago, all the benefit would have gone to Saddam Hussein and his family," says an Erbil-based diplomat. "It's the only time the Kurds have been thankful to Saddam for something."

It was only after 2006, when Mr Hawrami was appointed minister, that Kurdistan's oil industry really took off. He has been credited with creating Kurdistan's oil sector – with its complex contractual and regulatory framework – from scratch.

"It's an amazing achievement in difficult circumstances," says one diplomat.

Unlike the oilfields of southern Iraq, which had export pipelines linked to the Gulf, Kurdistan's were stranded, with no outlet to wider markets. The area was largely unexplored and there was confusion over whether they had the right to sign their own contracts.

But according to Mr Hawrami's view of Iraq's 2005 constitution, under which the country's oil and gas was "owned by the peo-

> 'If this oil had been developed 30 years ago, the benefit would have gone to Saddam Hussein'

ple of Iraq in all the regions and governates", they did. He started allocating blocks of exploration acreage in production-sharing agreements – contracts that offer oil companies the potential for handsome profits.

Initially, small companies took the bait but their success encouraged larger competitors. Mr Lowe says seven out of 10 exploration wells drilled in Kurdistan are commercially successful – a "strike rate" with few parallels.

As the oil companies' presence expanded, Kurdistan changed – fast. In the early days, Erbil was a provincial backwater and, as in all of Iraq, power came on for only a couple of hours a day. The city had one decent hotel, the Sheraton, built in the late 1970s. It felt like a "Wild West frontier town", recalls one oil engineer who lived there then.

Now it is booming. Planes full of businessmen fly into Erbil's new international airport from Dubai, Vienna and Istanbul. Five-star hotels tower over a cityscape dotted with cranes and vast construction sites.

The pace of development will increase. In 2008, there were only three drilling rigs in Kurdistan. This year there are 24 and next year there will be 40. Production, at about 200,000 barrels a day, will reach 250,000 b/d next year. By 2015, Kurdistan hopes to be exporting 1m b/d.

To achieve that will need a major reconfiguration of the region's export infrastructure. The current Baghdad-controlled pipeline is plagued by bottlenecks. Many believe that Kurdistan will build its own pipeline into Turkey, giving it full control over exports. If that happens, the KRG will receive oil revenues directly from Turkey, rather than via Baghdad.

This will give the KRG the economic independence many Kurds have long craved and build on the close relationship evolving between Kurdistan and its neighbour, Turkey.

"Kurdistan is going to emerge as a major contributor to global oil supplies by the end of this decade – possibly sooner," says Mr Hayward.

Bargaining with Baghdad set to continue

Export Mutual need is likely to forge a fresh working relationship, says *Guy Chazan*

One of the things that puzzles observers about Kurdistan's growing attractiveness to the supermajors is its remoteness. The region is landlocked, without its own export infrastructure, dependent for access to international markets on a faraway – and often hostile – central government.

Yet that could be changing. Recent developments suggest Kurdistan might finally be breaking out of its isolation – with the help of a large neighbour to the north.

In May, Turkey agreed a broad energy partnership with Kurdistan's regional government (KRG), which is aimed at paving the way for direct exports of Kurdish oil and gas to Turkey, bypassing the existing Iraqi pipelines and liberating the region's oil industry from Baghdad control.

There are plenty of caveats. Diplomats say Turkey would never want to be seen as encouraging the break-up of Iraq, so would be unlikely to conspire with the KRG to break Baghdad's monopoly over Iraqi oil exports.

On the other hand, Turkey has its own energy needs to consider. It is one of the fastest-growing economies in Europe, yet has limited natural resources. It consumes 700,000 barrels of oil a day, yet produces only a tenth of that domestically. "We get almost half of our imports from Iran," says one Turkish diplomat. "We have to diversify."

Direct exports to Turkey, unmediated by Baghdad, have started on a tiny scale. Since the May agreement, Kurdistan dispatches truckloads of condensate – a byproduct of natural gas – across the border into Turkey, which sends back refined products. Recently, this deal was expanded, with the KRG selling naphtha and fuel oil to Turkey.

Expansion of this relationship will depend on new infrastructure. The main path for exports of Kurdistan oil is through a pipeline from the vast Kirkuk oilfield in the north of Iraq to the Turkish Mediterranean port of Ceyhan. Yet KRG exports through Kirkuk-Ceyhan have been fitful. Baghdad's withholding of payments due to oil companies operating in Kurdistan prompted the KRG to block oil flows in protest in April.

In September, a truce was called, with Baghdad agreeing to resume payments and Erbil pledging to gradually expand exports through the Kirkuk-Ceyhan line.

Many observers fear the deal will not last long. A recent report by Macquarie Research said a solution would only be found once a "broader Iraqi oil and gas law, governing the operation and regulation of the entire Iraqi oil and gas industry", had been agreed and ratified. Iraq has been trying to pass such a law for years.

The KRG is pressing ahead with its own export plans and has mooted the idea of a pipeline with a capacity of 1m b/d that would run from the Khurmala Dome oilfield, in the south of the region, to Fish Khabur on the Iraq-Turkey border, where there is a pumping station controlled by the Iraqi state oil marketing company SOMO. There it would tie into the existing Kirkuk-Ceyhan line.

> 'Kurdistan will ultimately export as part of Iraq, not as an independent entity'

Here, an ambiguity arises. Tying the pipeline in at Fish Khabur would mean Baghdad retained control of Kurdistan exports. But analysts say that if relations between Erbil and Baghdad broke down, the KRG could tie in the pipeline across the border in Turkey, giving it much more control over its own exports and a real chance of economic independence.

Turkey will "provide the export solution if (when) relations between Kurdistan and Baghdad break down", Macquarie reports.

Oil executives working in Kurdistan do not believe it will come to that. The direct pipeline idea is, in the words of one, a "plan B" that can be used by the KRG as a negotiating tool in talks with Baghdad over revenue-sharing and control of resources. "I believe they'll ultimately be exporting as part of Iraq, not as an independent entity," the executive says. Plan B – a "real, tangible Turkish option" – will "never be used in anger".

The pipeline network is coming up against capacity constraints and the Kirkuk-Ceyhan line is in a bad state. "No week passes without several hours of shutdowns, almost on a daily basis," says Ashti Hawrami, Kurdistan's minister of natural resources. On the Turkish side of the border, one of Kirkuk-Ceyhan's lines is idle. Mr Hawrami would like this turned into a dedicated pipeline for Kurdistan's heavy oil to avoid having to blend it with the lighter, higher-quality oil produced in other fields.

Work is under way on a new network. KAR Group, one of Kurdistan's biggest private companies, has nearly completed a pipeline linking the huge Taq Taq field to Khurmala. That means Taq Taq's oil will be able to feed into the Kirkuk-Ceyhan line.

Tendering proceeds for the main 1m b/d pipeline to Fish Khabur to help Kurdistan hit its target of exporting 1m b/d by 2015. "Within 18 months to 2 years, we'll have all the infrastructure [we need]," says Mr Hawrami.

Bijan Mossavar-Rahmani, executive chairman of DNO, one of the small oil companies active in Kurdistan, is confident that some export solution will ultimately be found that satisfies everyone. "The history of the oil industry has been [that] we make large discoveries and they find their way to market."

Unlocking potential: Kurdistan may be starting to break out of its isolation Reuters

Plans develop to raise foreign sales

Gas

Prospect of contracts with Turkey and Europe attracts investors, writes *Simeon Kerr*

In 1958, Majid Jafar's grandfather, then the Iraqi development minister, opened two hydroelectric dams in the mountains of Iraqi Kurdistan.

Until a joint venture between the Jafar family's Crescent Petroleum and its affiliate Dana Gas started to produce Kurdish gas in 2008, there had been no new power-generation facility in the northern region of Iraq for 50 years.

"Baghdad made Kurdistan dependent on the rest of Iraq for its power – it could soon be the other way round," says Mr Jafar, chief executive of Crescent and a director of Abu Dhabi-listed Dana Gas, in which Crescent holds a 22 per cent stake.

Power produced in Kurdistan has risen from zero to 2,000MW, led by private sector investment, and is expected to reach 6,000MW over the next few years, which would be enough to supply other regions of Iraq.

The rest of Iraq has a basic electricity shortfall of 5,000-6,000MW. "The irony is that flared gas alone in Iraq could produce that," says Mr Jafar, who is critical of the statist approach of Baghdad, which has spent $18bn over the past decade without managing to deliver a steady supply of electricity.

Iraq's loss is a win for the Kurdish regional government. Exporting electricity to the rest of Iraq is one of the KRG's main goals for diversification of the economy, according to Qubad Talabani, head of the KRG's department of co-ordination and follow-up.

Dana Gas controls the Khor Mor field, which produces gas and condensates. The gas is used to fuel power stations in nearby Suleimaniya and the capital, Erbil.

Another United Arab Emirates-based firm, Abu Dhabi National Energy, or Taqa, recently bought a 50 per cent stake in the Suleimaniya power plant, one of two facilities operated by Mass Global Investment.

The promotion of gas as a feedstock for industry is, for now, stymied by a national gas pricing policy, a function of federal lawmaking at the national level made trickier by on-the-ground tensions between Baghdad and Erbil.

Beyond power, however, it is the prospect of exporting gas to neighbouring markets that is stimulating the interest of other oil companies.

If Kurdish oil contracts have boosted the region's autonomy, the development of its gas reserves promises to consolidate financial self-sustainability.

The region's gas plans could prove even more decisive as it considers building long-term gas pipelines into Turkey. This could tie northern Iraq into long-term sales contracts with Turkey and even Europe.

The KRG oil minister has said he expects the region to export around 10bn cubic metres of gas a year to Turkey, and potentially much more to the EU. The region could hold as much as 5.7tn cubic metres (tcm) of gas. Iraq as a whole is believed to have the world's 10th-largest reserves, at 3.2tcm.

Dana Gas, which produces 10.2mcm of gas a day, plans to double output. Northern Iraq as a whole could raise production to a few billion cubic metres a day, says Mr Jafar – "easily enough to supply Turkey and Europe".

> Overarching political concerns will continue to mar confidence

The gas story has attracted Anglo-Turkish Genel Energy, which this year took control of Heritage Oil's Maran acreage. The investment vehicle, run by Tony Hayward, former BP chief executive, is placing gas at the centre of its Kurdish strategy, even though markets are keener on the more fungible commodity of oil.

Mr Hayward says he is in talks with state and private Turkish companies. "[The acreage] is 180km from the biggest gas short in the world," he says, referring to Turkey's large gas demands. "Turkey is a market that pays international prices [for gas]." The pipeline, however, is perhaps the easiest element of the equation.

The overarching political concerns amid rising military tensions will continue to mar confidence.

"There has to be some settlement with Baghdad to really move things forward," says Stuart Joyner, an analyst at Investec Securities.

Shaikan sour throws up mix of production headaches

Heavy oil Companies such as Gulf Keystone are investing to guard against costly chemical and geological hazards, writes *Guy Chazan*

Dark forces: Shaikan provides many obstacles and dangers

Gulf Keystone's wells in Kurdistan's vast Shaikan field come with some important safety features – big yellow-and-green-striped showers and special basins equipped with eyewash. They are a defence against an invisible but lethal enemy.

Shaikan's oil is laced with hydrogen sulphide, or H_2S, a highly toxic and flammable gas. A concentration of 600 parts per million can kill a human being, while much smaller amounts can break high-strength steel.

Oilmen face a number of hazards in Kurdistan: in summer, scorpions roam the rocky hills, and in winter, snowdrifts can reach waist height. But the presence of H_2S is of a whole different order.

It epitomises the challenges the industry faces here. Kurdistan is thought to have 45bn barrels of oil to be found, and 50-100tn cubic feet of natural gas. But the oil is rarely of the light, sweet variety so highly prized by refiners.

Shaikan's oil, for example, is heavy: when refined, it elicits a high proportion of "bottom-of-the-barrel" products such as bitumen and asphalt. That means it tends to trade at a discount to lighter crudes. Sour oil such as Shaikan's, with its high sulphur content, requires special handling, because sulphur can corrode refining and processing equipment.

The evidence so far suggests Kurdistan has more of the heavy, sour oil than the easy stuff. "There is just as much chance of finding harder-to-commercialise gas and heavy oil as there is light/medium-quality crude oil," analysts at Macquarie Research said in a recent note.

That has big implications for Kurdistan's oil production. Macquarie says uncertainties about reservoir quality in the region mean only around 15 per cent of its heavy oil might be recoverable, compared with 25 per cent for medium to light oil.

Gulf Keystone says it does not have enough production history from Shaikan to know how the reservoir will behave, but the company is taking a 20 per cent recovery factor as a starting point.

There are other problems. The mountainous terrain of Shaikan means there is a great deal of tectonic tension in the rock, which leads to instability in the drilled hole. "You have to really steer the drill bit," says Richard Lowe, Gulf Keystone's drilling manager.

Drillers also complain of "losses" – when drilling mud, which is used to cool the drill bit and control pressure in the well, leaks into the rock formation. "Sometimes there are 100 per cent losses, where you can't get any of the drilling mud back up again," Mr Lowe explains. Engineers get round this by temporarily blocking fractures in the rock, but it is a complicated process.

The problems at Shaikan mean costs there are higher than at other fields. Genel Energy says it can produce oil at its Taq Taq field for \$7-\$8 a barrel – partly because the crude is light, with few impurities. Gulf Keystone says its production costs will be more like \$10 a barrel. But that is still much lower than the average in the industry. Finding and development costs in the Gulf of Mexico can be as high as \$30 a barrel.

> The oil in Kurdistan is rarely of the light, sweet variety so highly prized by refiners

Still, for Gulf Keystone, problems such as the presence of H_2S are a major headache. So far, the company has been using a scavenger – a chemical that reacts with the hydrogen sulphide and converts it to an inert, non-hazardous salt. But the high salt content of the resulting oil makes it unsuitable for export.

The problem will ease in a few months when Gulf Keystone gets two production facilities, capable of producing 40,000 barrels a day, up and running at Shaikan. These will process the oil, remove the impurities and make sure it meets the specifications for Iraq's Kirkuk-Ceyhan pipeline into Turkey. Gulf Keystone is due to submit its field development plan to the Kurdish authorities in the next few weeks, making it one of the first companies to do so.

But some officials are saying Shaikan might need its own dedicated heavy oil pipeline, because the quality of its oil is so different from that produced in other fields. That, Macquarie says, could slow down the development of the field.

For the moment, some 30 tankers a day are taking crude from Shaikan to refineries in Suleimaniya and Erbil. Selling into the domestic market is not as lucrative as exporting it, but Shaikan's oil still fetches around \$80 a barrel – roughly the market price of high-sulphur fuel oil.

The company plans to increase output to 100,000-150,000 b/d by about 2015, though without a new export pipeline it might struggle to reach that target.

For all the difficulties, Mr Lowe would not swap his job in Shaikan for anything. "This is a very exciting place to work," he says. "We are really in the sweet spot."

Keen interest in disputed deal

Court case

Judgment will be closely watched by retail investors, says *Michael Kavanagh*

Gulf Keystone announced yet more exploration success last month – this time at its Sheikh Adi block on a test well delivering more than 4,000 barrels a day – adding to the company's claims to control "world class acreage" in the region.

But the task of exploiting commercially an expanding resource base in the region has been complicated by court action by former advisers to the company who are claiming up to \$1.62bn in compensation and damages.

In a case that began in October in London's high court, the company led by Todd Kozel, executive chairman, is vigorously contesting claims by Rex Wempen, a former US special forces soldier, and his brother Eric that they were unfairly cut out of deals to acquire blocks in Kurdistan.

Judgment on the case, closely watched by retail investors, is not expected until early next year. However, many analysts argue that a clear resolution of claims is necessary for the company to emerge as a takeover target for oil majors that are finally willing to invest in Kurdistan.

Gulf Keystone is currently valued at £1.67bn based on a share price of 191.5p. That is a fraction of the 943p price hit in February that temporarily established Gulf Keystone as the most valuable company on Aim, London's junior market.

Valuations presented to court by Excalibur's advisers suggest that Gulf Keystone's main asset, its share in the Shaikan block, could be worth as much as \$5.2bn, while its share in another block, Akri-Bijeel, is worth \$395m more.

Gulf Keystone had placed a substantially lower value on the blocks – though both sides agreed that Excalibur would not reveal this alternative price-sensitive estimate in its opening submissions.

The role of Excalibur Ventures, Mr Wempen's vehicle, in providing early introductions and advice to Mr Kozel is not disputed.

But Gulf Keystone has argued that Mr Wempen antagonised Ashti Hawrami, Kurdistan's minister of natural resources, and that Excalibur Ventures failed in 2007 to come up with the millions of dollars needed to win part of a controlling stake in Shai-kan block, along with a share in Akri-Bijeel block.

Excalibur has claimed it was cheated out of a 30 per cent interest in Gulf Keystone's assets that should apply under the terms of a collaboration agreement struck with Texas Keystone, Gulf's sister company, in 2006.

The defence has argued that Mr Kozel attempted to include Excalibur as an investing partner in the months before the granting of the production sharing contract and then, in the immediate aftermath, through a "farm-in agreement".

But Excalibur was "not within a country mile" of securing funds that it initially signalled it might secure through UBS, the Swiss bank.

And Gulf added that it was rebuffed in attempts to include Excalibur in investing in Kurdistan because of the KRG oil ministry's concerns about Excalibur's technical and financial capacity to develop the field.

Economics and energy interests ease old cross-border tensions

Turkey

Secessionist worries remain but trade ties grow stronger, writes *Simeon Kerr*

Massoud Barzani, Kurdistan region president (left) and Turkey's foreign minister, Ahmet Davutoglu Reuters

The ballroom of Erbil's top hotel was packed last month as the great and the good of Kurdish society came to celebrate Turkey's national day. Ministers swapped gossip with oil barons over kebabs as they relished Ankara's hospitality.

The congratulatory speeches, made in the presence of the prime minister of the autonomous Kurdish regional government (KRG) and the Turkish consul-general, highlighted the sea change in relations between Ankara and Erbil.

Since 2007, economic and energy security ties have combined to redefine what was once a frosty, at times combustible, relationship.

Turkey's historic concerns about the self-determination of Iraqi Kurds, which has led to secessionist tendencies among its own Kurdish minority, have been supplanted by a new economic and energy partnership.

"The Turkish relationship in Iraq is evolving," says one Turkish official. "We are here now. This is not a tactical move on our side – it is a durable strategy."

Only four years ago, the Turks invaded northern Iraq to hunt down Kurdish insurgents, who base themselves in the mountains near the Turkish border.

If Ankara used to regard Erbil as part of its Kurdish problem, the KRG is now viewed as part of the solution. Past tensions are glossed over by Turkish officials, who say Ankara and Erbil have found common cause in confronting what they regard as the increasing authoritarianism of Nouri al-Maliki, the Iraqi prime minister.

Turkey, the booming economy of which depends heavily on energy imports from Russia and Iran, is also looking for alternative sources of supply, officials say.

Turkish companies are reportedly in talks to take oil acreage in the KRG-controlled area after their compatriots lost exploration rights in southern Iraq in apparent political retaliation for Ankara's tough approach. Firms drilling for Kurdish gas hope to export to Turkey, and beyond to Europe.

"But Ankara faces a dilemma," says Hugh Pope, Turkey analyst at International Crisis Group. "It has two objectives: one is to ensure territorial integrity of states to make sure Kurds do not gain critical mass, but if it is also pursuing a track that leads to a separate oil and gas story for the Kurds, that is a major development.

"This contradiction in Turkish policy has not been clarified, so where does this end up?"

The immediate result has been an expansion of the region's already strong trade ties. Sinan Celebi, the KRG's minister of trade and industry, says the volume of trade with Turkey has grown threefold in recent years. Of the \$10bn-\$12bn in trade between Turkey and Iraq, three-quarters is with the KRG. Turkey is the dominant partner, with around 80 per cent of trade consisting of Turkish imports to Kurdish regions.

The deeper trade relationship has led to a sharp rise in Turkish companies operating in Kurdistan: up threefold to 1,100 in the past three years alone.

There are now 30,000 Turks in Iraq's Kurdish region. Hundreds of trucks cross the land border each day, while bus services and frequent flights linking Kurdish regions to Turkish airports are increasingly busy. Indeed, the Turkish consulate in Erbil – unthinkable a few years ago – is thronged every day with hundreds of visa applicants.

Mr Celebi, who hails from Erbil's historic Turkmen community and holds Turkish nationality, says the KRG will continue to develop closer ties with Ankara. "We want zero problems with our neighbours," he says.

Like other Kurdish officials, Mr Celebi concedes tensions with Baghdad are growing but he also believes they can be handled.

In the meantime, most Kurds are willing to take the financial benefits of Turkey's pragmatic business-first approach, as well as Ankara's geopolitical support in the stand-off with Baghdad, which occasionally threatens to spill over into border violence.

Some Kurdish officials still harbour suspicions about Turkish intentions. "This is all about money, and exploiting us here in Kurdistan," says one official. "Once they have what they want, it will change."

Turkey may be the KRG's biggest trade partner but it lags behind states such as Egypt in the more productive area of direct investment. But most officials and businessmen believe binding Turkey into a partnership, even if it is defined by trade and, eventually, energy exports, can only enhance the KRG's options in the longer term.

The political and economic love-in with Turkey is upsetting the Kurds' other neighbour, Iran.

"The Iranians are always complaining that we give all the good contracts to the Turks," the Kurdish official says. "I tell them, well, send us companies, not spies."

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