Research Paper

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Prospects for Iran's Oil and Gas Sector

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Summary

- Iran's oil and gas sector remains critical to the country's economic prospects. Its future depends not only on whether, and how quickly, sanctions are removed, but also on the terms that Iran is prepared to offer to the international oil companies (IOCs). Latterly, the low oil-price environment may mean that the sector's appeal to investors is diminished, even if sanctions are revoked.

- Iran has struggled to attract investors. In the 1990s attempts to secure international investment were ineffective because of the unfavourable terms on offer to IOCs and the operational problems that arose as the sector became increasingly politicized and less well organized.

- The current administration under President Hassan Rouhani is echoing opinions from that era on the need to increase the involvement of the private sector in the economy, although it is unclear how seriously such statements should be taken. Iran is in severe need of the technology and capital that would be available from IOCs for its oil and gas sector. Yet, while there has been much hype from the Iranian side about the high level of interest, the IOCs are only likely to be interested if the terms are advantageous.

- Iran has indicated that it could help Europe move away from over-reliance on Russian gas through the export of liquefied natural gas, and has proposed various pipeline routes. However, the drop in world oil prices from the latter part of 2014 reinforces Western countries' reluctance to commit to investment of this scale and complexity. Iran's own need for domestic gas and for gas for reinjection into oilfields, as well as the export deals planned with Oman, Iraq and Pakistan, would also reduce the volumes available for export to Europe. In this context, Western countries may well not consider such offers as anything other than a prospect for a decade's time.

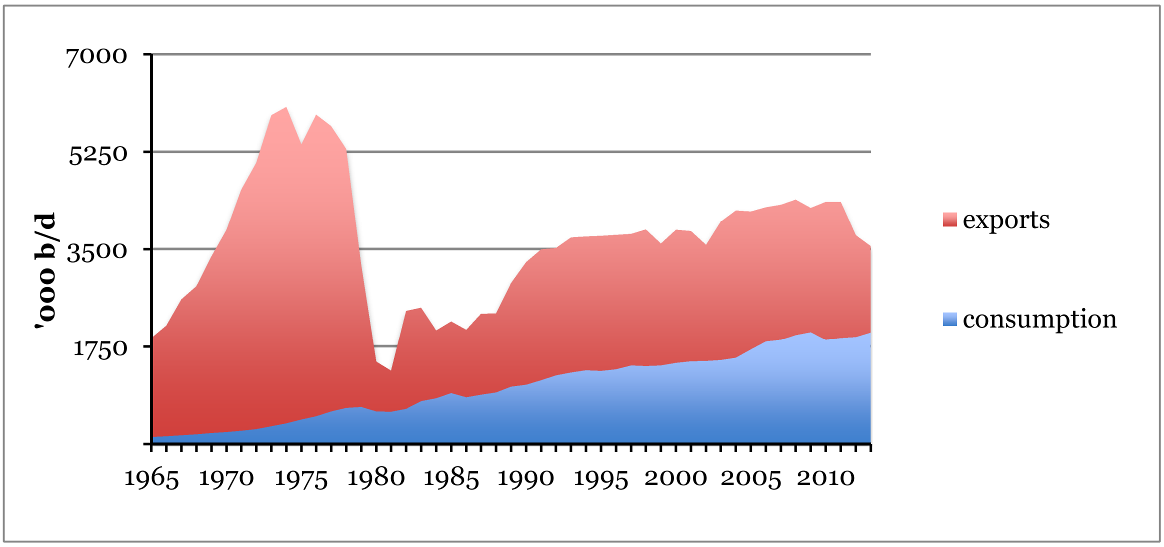
Introduction

Although Iran's economy is relatively diversified compared with the economies of other oil producers of the region,[1] the oil and gas sector remains key to the country's economic prospects. However, the sector is in desperate straits. Its future depends not only on whether, and how quickly, sanctions are removed, but also on the terms that Iran is prepared to offer to IOCs. A lower oil-price environment, if this is sustained, will also limit Iran's attractiveness to investors even if sanctions are revoked. To put this in context, this paper provides background on the history of the development of Iran's oil industry, and the problems that faced it in attracting investment even before the sanctions. It examines the impact of the sanctions and assesses the prospects for future production in the event of sanctions relief.

The context

To understand the current parlous state of affairs, it is essential to understand the recent historical context – beginning in 1977, when the Iranian Consortium, involving several international oil companies, drew up plans for large-scale secondary recovery based on gas reinjection for Iran's ageing oilfields.[2] These fields were showing very steep rates of decline and were struggling to maintain production. Thus, the drive for higher production, which had been a central focus of government policy since the 1973 oil shock, faltered at this time (figure 1).

Figure 1: Iran's oil exports and consumption, 1965–2013



Source: BP, *Statistical Review of World Energy 2014*.

[1] In 2011, according to IMF estimates, oil and gas accounted for some 15 per cent of GDP, 76 per cent of export earnings and 60 per cent of government revenues.
[2] A detailed account of the history of the sector to 2007 can be found in Stevens, P., Audinet, P. and Streiffel, S. (2007), *Investing in Oil in the Middle East and North Africa: Institutions, Incentives and the National Oil Companies*, Washington, DC, World Bank/ESMAP; http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/09/19/000020953_20070919115824/Rendered/INDEX/404050MNA.txt.

However, the Iranian Revolution and the war with Iraq in 1980–88 effectively prevented the implementation of these plans. Oil production was falling in any case during this period, following political disruptions and military action, meaning that the deteriorating state of the oilfields was effectively disguised. Following the end of the Iran–Iraq war, however, the field problems became increasingly obvious, with the National Iranian Oil Company (NIOC) struggling to maintain output capacity.

Iran's decision, in 1990, to open its upstream oil sector to international investment (through buy-back agreements) reflected both its concern that the sector was falling behind technologically and an ideological shift towards greater private-sector involvement in the economy, along with a political effort to reduce the country's isolation internationally. On all three counts there is a parallel with the current situation. It was known in the sector in 1990 that massive investment was required in order to implement the recovery programme that sought to tackle accelerating natural decline rates.[3] NIOC had at that time been unable to keep up with international advances in oil recovery technology. As will be set out below, the situation is similar today. In 1990 the economic policy debate began to shift, with some in government arguing for increased private-sector participation. The current administration under President Hassan Rouhani is echoing opinions from that era on the need to increase the involvement of the private sector in the economy, although it is unclear how seriously such statements should be taken. It has been suggested that Rouhani has halted the current privatization scheme in an attempt to end the negative developments that arose from the opening of the economy to private actors under his predecessors (where privatization benefited parastatal businesses). In terms of the wider political context, it was hoped in 1990 that European investment would help to mitigate the damage caused by US hostility to Iran after the Tehran embassy hostage crisis. In 2013 a central commitment of Rouhani's election campaign was to bring an end to the international isolation that had been entrenched under the presidency of Mahmoud Ahmadinejad.

Buy-backs

When the buy-back terms were announced in 1991, they were extremely unattractive. In effect, the Iranian government was judging the market by the outdated standards of the 1970s, at which time the IOCs were desperate to get upstream access in the Middle East and North Africa. This was no longer the case, and IOC interest was limited and extremely cautious. In 1995 the government, at last realizing that the existing terms were unrealistic, began attempts to improve the terms. The then oil minister, Bijan Zanganeh (who now holds the new oil portfolio in the Rouhani administration), introduced marginally better buy-back terms, and some agreements with IOCs followed.

The United States implemented the Iran and Libya Sanctions Act (ILSA) in 1996. This was seen as weak and ineffective, incorporating a large number of waivers and exceptions. However, IOC interest in the revised buy-back terms remained lukewarm, largely because these remained unattractive to them. The period of the contracts was too short; there was no upside benefit for the

[3] Ibid.

IOCs; participating IOCs could not book the reserves covered by the buy-back on their accounts; and they were too dependent on NIOC's operational control.

Where buy-backs were signed at this time, the IOCs only engaged because the agreements were the only means of getting access to Iranian resources, and the expectation was that soon Iran would introduce risk-sharing into the upstream. It is notable that this view was also held within NIOC and the oil ministry. Further delays arose simply because the ministry lacked the management capacity to negotiate the details of each agreement, and a large backlog developed. There was a similar situation concerning the development of the South Pars gas field, the development of which had been broken down into stages and offered to IOCs.

Operational problems

A further problem began to develop as the sector became increasingly politicized and less well organized. Iran began to restructure the oil sector in the late 1990s, with a view to a programme of privatization. However, the decision to appoint a separate head of NIOC and split the company into more than 100 operating units confused lines of responsibility. This impeded the operation of the oil sector.

At the same time, different political institutions were at odds over policy towards the oil sector. While elements within both the oil ministry and NIOC favoured foreign investment and privatization, they met stiff resistance from economic conservatives in the Majlis and the Council of Guardians.[4] Despite the existence of three groups that had responsibility for examining and monitoring buy-back agreements, the energy commission of the Majlis expressed its concern over a 'lack of transparency'.[5] As a consequence, the commission demanded greater influence over the operation of the contracts. Oil company officials became reluctant to take decisions, knowing they would be scrutinized and targeted by parliamentary investigations. In this political context, the few buy-back deals that were struck were either with Iranian firms or with other state-owned oil companies, rather than with IOCs.

Problems with political interference reached a peak following the election of Mahmoud Ahmadinejad in 2005. The considerable expertise that had kept the hydrocarbons sector in operation during revolution and war was effectively ebbing away at this time, as significant numbers of senior technical, engineering and commercial staff departed from both NIOC and the oil ministry.

South Pars gas

At the same time, progress on the development of the South Pars gas field, contracts for which were being assigned to IOCs in stages, was also behind schedule – a significant impediment being the problems in securing the necessary inputs from service companies. There were attempts to develop

[4] The 12-member Council of Guardians, made up of clerics and lawyers, is able to veto legislation that it judges to be incompatible with Islamic teachings or with the constitution.
[5] Stevens et al., *Investing in Oil in the Middle East and North Africa.*

other, newer fields at the same time, which stretched both technical and managerial competences to the limit. The delays on South Pars have attracted considerable criticism from within Iran, not least because Qatar's North Field (the entire field lies across the territory of the two countries) has been developed more rapidly. Gas and liquids flow across borders, meaning that Qatar has effectively been lifting Iranian hydrocarbons.[6]

The result of the poor progress on South Pars has been periodic gas shortages within Iran. Furthermore, the availability of gas for reinjection into the oilfields will be a key determinant of the ability of the sector to implement the secondary recovery programme that it so urgently needs.

Domestic oil consumption

A further problem for the sector has been the rise in domestic oil consumption. As can be seen from figure 1, this eats inexorably into the amount of oil available for export. Serious efforts were begun in 2007 to slow this expansion in the rate of consumption. Initially, rationing of petrol and diesel was introduced via smart cards, coupled with a 25% increase in price that was partially offset by direct cash payments to low-income groups. Then some three months later, motorists were allowed to buy more than the ration if they were willing to pay even higher prices.

The real reform came at the end of 2010, when the state provided direct payments to families to compensate for the removal of subsidies more generally. The programme proved to be effective initially, and oil consumption for transportation fell markedly. The National Iranian Oil Products Distribution Company stated in July of that year that rationing had resulted in savings on gasoline consumption amounting to some $11 billion. As early as mid-2008, however, concerns were being raised about the effectiveness of the programme, specifically with regard to the very large numbers of exemptions to the scheme. Furthermore, the plan to scrap 1.2 million old, fuel-inefficient cars by 2010 was abandoned. Meanwhile, Iran also began to change its domestic energy mix from oil to gas, leading to a considerable expansion of gas infrastructure and consumption.

Sanctions

The difficulties within the oil and gas sector were aggravated as the European Union (EU) began to introduce financial sanctions against Iran. As previously noted, ILSA had been fairly ineffective, reflecting of its relatively lax application. However, once the EU began to impose financial sanctions in 2011, these had a seriously negative effect on the Iranian economy generally and on the oil sector in particular – it being very difficult to trade oil without access to letters of credit.

Then, at the start of 2012, the EU introduced an embargo against imports of crude oil from Iran. This compounded the impact of the existing embargo imposed by the United States, coupled with the EU's tightening of financial sanctions. Inevitably, the result was a significant fall in Iranian exports – the US government, for example, has claimed that Iran's oil exports have fallen by 60 per

[6] There is speculation that the ongoing moratorium by the Qatari government on further gas developments based on the North Field is because of Iranian pressure on Qatar.

cent since the introduction of the EU embargo – although the precise numbers are, unsurprisingly, somewhat open to dispute.

Clearly, however, the overall decline in export revenues will have been greater than the decline in physical export volumes, because Iran has had to offer considerable discounts on crude prices in order to induce consumers to buy the crude. There is, meanwhile, uncertainty as to the technical impact of shutting in wells on the level of Iranian capacity. It seems likely that closing wells does nothing to improve the recovery factor, and that it may actually reduce it significantly, adding to the problems likely to confront the sector in the future.

Prospects for production

The oil and gas sector in Iran is in critical need of technology, capital and markets if it is to attempt to recover from its current condition. A central problem is that the government has continually raided the investment pot that NIOC required for its development plans. Realistically, the only way the sector’s needs can be met is to bring the IOCs into the upstream on a major scale. The two obstacles to this hitherto have been the economic sanctions and the unattractive terms of the existing buy-back agreements.

Attracting future investment

In the event that a final agreement on Iran’s nuclear programme is reached in 2015 which allows the IOCs to enter Iran from late the same year, the extent of participation by these companies will depend on their level of willingness to invest. This in turn will be contingent on two factors: the terms offered by Iran; and the terms offered by competing producer countries.

This last point is extremely important. The major IOCs are encountering problems with their investment strategies, and their shareholders are increasingly disillusioned with the ability of the oil companies to deliver value as reflected in the dividends and share prices. When, in October 2013, the five major IOCs made public their capital spending plans for 2014, ExxonMobil, Chevron, Shell and BP all announced increased investments, reflecting the fact that they now have to drill more difficult wells in order to find and develop new fields. Only Total announced a cut in capital expenditure, and it was the only one of the five that saw its share price rise. This implies that the industry is faced with a contraction in its future investment capabilities. If Iran is to attract some of this diminishing pot, it must therefore offer increasingly favourable terms. This need for advantageous terms is strongly reinforced given the collapse in oil prices since June 2014.

At the same time, a number of other countries may well open their upstream activities to IOC investment. For example, Mexico adopted a major constitutional reform at the end of 2013 that would allow foreign investment in the upstream. While the full details of the opening are yet to emerge, the pressures are strong for the emergence of some form of risk-sharing production-sharing agreement (PSA). Iraq is increasingly struggling to attract foreign investment, and will encounter serious problems in increasing output capacity if it does not act to address such difficulties. A number of other, smaller potential producing countries – notably in East Africa – are also opening up and offering attractive terms. Whatever terms are offered by Iran, they will have to compete with these other options for IOCs.

Iran's last attempt to attract IOCs with revised terms (before sanctions resulted in serious barriers to involvement) was in late 2003, when it offered 16 exploration blocks on terms that gave participating IOCs an automatic right of development and a decision role in operations. While this initiative was initially welcomed by the IOCs, their interest cooled as it became clear that the acreages on offer, located in various border areas, were unattractive both geologically and geographically.[7]

In the event, deals under the new terms were signed either with Iran's parastatals or as joint ventures with other domestic oil companies. There was a strong sense that much of the interest was strategic, suggesting that in fact many of the deals were still not particularly attractive in commercial terms.

Attracting investment from the IOCs will require a better balance between risk and reward than has been the case in the past. This conclusion is reinforced because, leaving aside the nuclear issue, the international oil industry is deterred from investing in Iran by the perception that the domestic political situation is uncertain.

The Iranian authorities are well aware of this. One of Bijan Zanganeh's first actions following his appointment as Rouhani's oil minister was to create a committee within the ministry to consider revisions to contract terms. Together with the removal of international sanctions, the outcome of the committee's deliberations will be critical to the future of Iran's oil and gas sector. Some form of PSA, albeit perhaps in disguised form, will be essential. However, it is not yet clear whether the Rouhani administration can overcome the constraints both in constitutional terms and in Iran's institutions of state more widely – where the issue of opening the upstream has historically tended to be treated as a political football. Originally, the new terms were to be announced at a major conference in London in November 2013. This was postponed, and according to a statement by Rouhani at the World Economic Forum in Davos in January 2014, the new terms of the 'Iran Petroleum Contract' were to be ready in September of that year. The latest official line is that the terms will now be released in 2015.

The delays in making public the new contractual terms have certainly been influenced by the continued presence of sanctions. However, there may be another reason for the delay. The new contract appears to involve the creation of joint ventures between the IOCs and NIOC, and will allow 'shared ownership' of the oil produced under its terms. It would seem that the new arrangements are thus a form of PSA by another name. While such a deal will be required as a minimum by the IOCs, this is likely to be controversial within Iran. It could well be the case that problems in getting the new terms accepted by Iran's domestic interests also are contributing to the slow progress. Zanganeh has on several occasions emphasized that the new arrangements would not be subject to scrutiny by the Majlis and would instead require only cabinet approval. This may involve a degree of wishful thinking on the part of the oil ministry, however.

[7] Stevens et al., *Investing in Oil in the Middle East and North Africa.*

Production levels

Clearly, the terms of any final nuclear agreement will be crucial as to how soon sanctions can be removed. Even if it happens that sanctions are revoked quickly, it will be some considerable time before production capacity begins to rise. Certainly, nothing significant could be expected before 2016, and Zanganeh's claim following the OPEC meeting in December 2013 that Iran would return to oil output of 4 million b/d at some point 'next year' proved to be hopelessly optimistic. Most observers suggest that 3–3.5 million b/d is a more realistic target over a period of a year after the removal of sanctions, if not longer. Iran will have to try to recover the oil markets that it has lost during the embargo. At the least, this will involve offering very heavy discounts on price.

Conclusions: Prospects for cooperation with IOCs and the West

Iran desperately needs the technology and capital for its oil and gas sector that would be available from the IOCs. There has been much hype from the Iranian side about the high level of interest from IOCs – and certainly since the election of Rouhani there have been many unofficial 'side meetings' between oil ministry officials and the IOCs (notably both in New York during Rouhani's visit for the UN General Assembly in September 2013, and in Vienna during the OPEC meeting in December that year). The IOCs are of course interested in getting access to Iran's hydrocarbons, but most definitely not at any price.

Iran has also indicated that it could help Europe to diversify away from over-reliance on Russian gas. Zanganeh stated in May 2014 that Iran was 'always willing' to export gas or liquefied natural gas to Europe.[8] In the same month the Iranian deputy oil minister for international and trade affairs, Ali Majedi, suggested that Europe could import Iranian natural gas in volumes of between 4 million cu m and 50 million cu m per day via pipeline through Turkey; alternative pipeline routes, he proposed, could run via Iraq, Syria and Lebanon, or via Armenia, Georgia and the Black Sea.

As yet – and given the absence of infrastructure for exports to Europe, and the likely difficulty of raising the very large sums in domestic and foreign investment that would be needed for such development – there has been no formal response from Western countries to these offers. The drop in world oil prices from the latter part of 2014 reinforces their reluctance to commit to investment of this kind. Iran's own need for domestic gas and for gas for reinjection into oilfields, as well as the export deals planned with Oman, Iraq and Pakistan, would also reduce the amounts available for export to Europe. In this context, Western countries may well not consider such offers as anything other than a prospect for 10 years' time.

[8] Rucknagel, C., 'Iran Says Ready To Ship Natural Gas To Europe', 15 May 2014, Radio Free Europe; http://www.rferl.org/content/iran-says-ready-to-supply-natural-gas-to-europe-/25386226.html.

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Professor Paul Stevens is a Distinguished Fellow at Chatham House. Between 1993 and 2008 he was professor of petroleum policy and economics at the Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, a chair created by BP. He is now professor emeritus at the University of Dundee and a visiting professor at University College London (Australia). Professor Stevens has published extensively on energy economics, the international petroleum industry, economic development issues and the political economy of the Gulf. He also works as a consultant for many companies and governments. In March 2009 he was presented with the OPEC Award in recognition of his outstanding work in the field of oil and energy research.

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