
After a nuclear deal What next for Iranian oil and gas?

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On 2 April in Lausanne, after months of intense negotiations, Iran and the E3+3 (France, Germany, and the UK plus China, Russia, and the US) agreed on a framework deal for the resolution of the nuclear dispute. EU High Representative for Foreign Affairs and Security Policy, Federica Mogherini, and Iran's Foreign Minister, Mohammad Javad Zarif, issued a joint statement announcing that "solutions on key parameters of a Joint Comprehensive Plan of Action" have been found. While differences remain on several issues, including the scope of International Atomic Energy Agency (IAEA) inspections and sanctions relief, the statement has nevertheless raised hopes that a final deal may be reached this summer.

If accomplished, an agreement would bring an end to more than a decade of tensions between Iran and the international community. This would result in the lifting of several sanctions, which were adopted against Iran by the United Nations, the EU, and the US. Unsurprisingly therefore, Iran's economy and in particular its energy sector are now the subject of worldwide attention.

BACKGROUND

Iran possesses the biggest combined oil and natural gas reserves in the world. At 157 billion barrels, Iran's oil reserves are the world's fourth largest, while its natural gas reserves are the largest at 33.8 trillion cubic metres. Oil production reached its peak prior to the 1979 Islamic Revolution, at 6.1 million barrels per day in 1974. In the course of the revolution and the subsequent war with Iraq from 1980 to 1988, output collapsed to a low of 1.3 million barrels per day in 1981. After the war, production recovered but has remained substantially below pre-revolutionary levels. By the end of the 2000s, a post-revolutionary peak of 4.4 million barrels per day was reached. Already suffering from domestic mismanagement, since 2010, EU and US sanctions have led to a decrease of Iranian output, which dropped to 3.6 million barrels per day in 2014.

In contrast to oil, natural gas production has evolved more steadily, especially since the end of the Iraq war, when it markedly grew. From 13 billion cubic metres per year in 1988, production has risen to more than 173 billion cubic metres per year in 2014. However, despite this rapid increase Iranian natural gas production remains significantly below that of the world's largest producers: both Russia and the US are each producing substantially more than 500 billion cubic metres per year.

While the supply side has experienced drastic changes, Iran's consumption of oil and natural gas has been more constant. A combination of economic and population growth, as well as dramatic over-consumption due to extensive subsidies, have caused a substantial increase in domestic energy demand. Oil consumption doubled between 1988 and 2014 from 0.9 to 2.0 million barrels per day. As for natural gas, almost all increases in production were absorbed by the domestic market with demand rising from 13 to 170 billion cubic metres per year over the same period. Iran's domestic energy mix underwent a shift from oil to natural gas, which is the country's number one energy carrier since 2002.

Before the 1979 revolution, more than 90% of Iran's combined oil and natural gas production were exported. By 2014 a fundamental change had occurred, with more than 75% consumed domestically. Consequently the energy sector was integrated into the domestic economy and the relative importance of exports to Iran's political

economy declined. Iran's net-export capacity of oil and natural gas stood at 1.6 million barrels per day and 2.4 billion cubic metres per year in 2014, respectively.

Over the last few years, Iran's ability to export oil and natural gas was severely restricted. In the case of oil, international sanctions reduced exports and Iran was forced to stockpile substantial volumes. Today, the country is estimated to hold at least 30 million barrels, which could be made available to the international markets on short notice from a technical point of view. As for natural gas, the situation differs as Iran does not hold any substantial volumes for exports with Tehran choosing to prioritise domestic consumption. Domestic demand was further inflated by over-consumption while a series of policy and institutional conflicts have hampered the performance of the upstream sector. As a result, Iran has been a net-importer of gas for most of the past two decades (mainly from Turkmenistan), with international sanctions adding to domestic problems.

STATE OF PLAY

Iran is subject to a complex set of international sanctions. These have limited the development of the country's oil and natural gas production as well as Tehran's export ability. The energy sector is suffering particularly as a consequence of EU and US punitive measures, including an investment ban, an oil and natural gas embargo along with isolation from the international financial system.

Several institutions have adopted sanctions against Iran (especially since the mid-2000s, when the international dispute over Iran's nuclear programme intensified), including the UN Security Council, the US Government, US Congress, and the EU. Sanctions were not only imposed on the grounds of nuclear non-proliferation but also because of the alleged support of terrorist activities and human rights violations. Apart from the energy and financial sectors, Iran's arms and nuclear industries were targeted in addition to the imposition of travel and trade bans, as well as asset freezes.

A nuclear accord would substantially benefit Iran's energy sector, especially regarding co-operation with Europe. Unlike US sanctions, the EU's energy and financial sanctions were adopted only in relation to Iran's nuclear activities. As such, a nuclear accord would open the door for trade between the two sides as well as the return of European energy companies (some of which already have declared their interest). Moreover, at least in some form, Iran would be able to access the European banking system again, including access to the SWIFT network.

However, a nuclear accord is unlikely to resolve all the problems related to sanctions. As of early June 2015, the E3+3 are willing to lift but not to terminate sanctions. Rather, current sanctions are to be transformed into 'snap-back sanctions', which would be reinstated automatically, should Iran (be perceived to) violate the nuclear accord. As such, there would be an imminent risk that Iran-related activities might become subject to sanctions again. This is a serious obstacle to major investments in the energy sector, which normally materialise only in the mid to long term.

Furthermore, only some of the US sanctions against Iran's energy and financial sectors were imposed because of the nuclear programme. Sanctions related to terrorism and human rights violations are likely to remain intact. Moreover, US courts have increasingly applied US jurisdiction in relation to Iran extraterritorially. Thus, possibly facing severe punishments from US courts, at present or in the future, companies with business interests in the US might be reluctant to engage fully in the Iranian energy sector. For the same reason, European banks might also be hesitant to facilitate the financing of projects.

Furthermore, sanctions relief is unlikely to happen immediately after a nuclear deal is concluded. According to the Lausanne Framework Agreement, sanctions would be lifted only after the IAEA has confirmed that Iran abides by the deal. This would involve the dismantling of centrifuges and the modification of nuclear facilities as well as IAEA verification, which is likely to take several months. Therefore it would take at least until early 2016 before energy-related sanctions are lifted.

While both domestically and internationally, sanctions are attracting the bulk of attention, Iran's energy sector is also facing other important challenges. First, the country has an extremely poor level of energy efficiency. Both in comparison to regional and global standards, Iran consumes substantially more energy per each unit of economic output. Domestic over-consumption was triggered by extensive subsidies, which at times have amounted to the largest worldwide. Since 2010, the state has been cutting subsidies and increasing domestic prices for oil products, natural gas, electricity and other goods. While prices will, eventually, be linked to international benchmark prices, in the meantime the increase of domestic prices carries the risk of social and political tensions given that the living

conditions of low-income households have significantly worsened. As a result of inflation, cash handouts have failed to offset the impact of price increases for low-income households. With regards to the pattern of domestic consumption, successful subsidy reform implementation is crucial for improving energy efficiency and reducing domestic consumption. As long as domestic over-consumption exists, Iran's export capacity will remain constrained, especially in the case of natural gas.

Second, the contractual framework under which international companies are allowed to enter Iran's energy sector represents a considerable hurdle for international investment and technology. Against the backdrop of extensive foreign interference and exploitation in the nineteenth and twentieth centuries, the Islamic Republic's constitution forbids foreign ownership of Iranian energy reserves. As a result, foreigners can only engage in the country's energy sector as service providers under a rather restrictive 'buyback-scheme'. This has led to frequent complaints on behalf of international companies, which claim that the commercial terms of the scheme are too unattractive – despite the fact that production costs for Iranian oil and natural gas are among the lowest worldwide. The government of President Hassan Rouhani has announced the launch of a new scheme, the 'Iran Petroleum Contract'. However, it remains to be seen what the terms of this contractual scheme will eventually look like. If Iran wishes to attract international investments and technology on a broader scale after the lifting of sanctions, the concerns of international energy companies will need to be accommodated in some form.

Third, Iran's energy sector also suffers from mismanagement and conflicting policy goals. The responsibilities of the Ministry of Petroleum and the National Iranian Oil Company (as well as its many subsidiaries) often overlap. Moreover, the energy sector is also subject to frequent interference by the extremely factionalised political system. This has resulted in substantial losses of managerial efficiency along the production chain. Moreover, Iran *de facto* adopted a series of conflicting policy goals during the last few years. For example, ambitious natural gas export goals were announced while domestic consumption was actively encouraged. As a consequence, natural gas exports have remained marginal. The issue of co-operation with international companies is another case in point. The goal of achieving 'independence' is repeatedly proclaimed while at the same time international companies are invited to become engaged in the country. These factors add a significant level of uncertainty to the equation, which is negatively affecting the performance of the Iranian energy sector.

PROSPECTS

Against the backdrop of these developments, what could be expected from Iran's energy sector in the aftermath of a nuclear accord?

As discussed above, relief for energy and financial sanctions is likely to happen along the following lines. The EU and UN would lift their sanctions (the EU's energy and financial sanctions are of particular importance in this context) while several energy and financial sanctions by the US would remain. Those sanctions to be lifted would be transformed into snapback sanctions, which would be reinstated should Iran violate the nuclear deal.

The impact of sanctions relief would be multifaceted. Energy trade would benefit more while investments would remain complicated by the looming threat from snapback sanctions as well as US unilateral sanctions. Moreover, the impact of sanctions relief would be bigger for oil than for gas.

Immediately after the beginning of sanctions relief, Iran would be able to access (at least some) currently frozen assets from international banks, which are estimated to amount to \$120 billion in total. Amongst other things, this capital could be used for investment in the energy sector and thereby contribute to the maintenance/increase of Iran's oil and natural gas production.

As for exports, Iran's stockpiles hold at least 30 million barrels of oil. In addition, in about three months after the lifting of sanctions Iran could increase its production by 0.8 million barrels per day, according to the IEA. These volumes could be made available to the international markets from a technical point of view in a rather short time. The major question in this context is Iran's marketing strategy: i.e. whether and to which extent discounts would be offered. Currently, supply in the international oil markets is strong and with OPEC's decision of June 2015 to keep production unrestrained this situation is unlikely to change in the upcoming months. Demand for Iranian oil at current price levels will therefore be rather modest.

Thus, a nuclear accord would pave the way for Iranian oil to return to the international markets on a bigger scale while the volume of additional Iranian oil exports would essentially depend on the price at which the oil is to be sold.

Should Iran seek to recover its pre-sanctions market share through an aggressive pricing strategy, this could contribute to a further decline of global oil prices. Producers of unconventional oil, especially in North America, might fight themselves under additional pressure as a result.

In the case of gas, the situation is different. This is because the reasons behind Iran's marginal level of gas exports are primarily domestic and sanctions constitute 'only' an additional layer of obstacles. While allowing for Iranian gas exports in principle, sanctions relief is unlikely to bring about fundamental change in the short-term.

Until Iran addresses its manifold domestic challenges, the country's capacity to increase its gas exports will remain constrained. It is likely that Iranian production will continue to increase substantially as more phases of South Pars field come into production. However, the bulk of Iranian production will continue to be absorbed almost exclusively by the domestic market as it would take some time before consumption patterns improve, even if subsidies are eliminated over the next years. Moreover, sanctions relief would also stimulate economic growth, creating further domestic demand for natural gas.

It seems realistic that only in the mid- and long-term, Iran could create an export capacity of several dozen billion cubic metres, which would allow for exports on a substantially bigger scale compared with today. Meanwhile, the only export projects with the prospect of materialization in the short- to mid-term are regional, namely those to Iraq, Pakistan and possibly Oman. Internationally, sanctions relief is therefore unlikely to turn Iran into a major natural gas exporter in the short-term.

Sanctions relief would also open the door for co-operation on the development of Iran's energy sector, especially with Europe. This could include the advancement of upstream facilities, the improvement of energy efficiency in the Iranian downstream market as well as other fields like renewable energy. However, it remains to be seen how snapback sanctions and the announced new contractual scheme for co-operation with international energy companies will affect the extent of international engagement.

Overall, sanctions relief following a nuclear accord between Iran and the E3+3 would obviously have a positive impact on Iran's energy sector. Iran would benefit from the possibility to increase oil exports and from access to currently frozen assets, which could be used for investments. Beyond this, however, change is likely to happen only in the mid and long term as a series of non-sanctions related issues would need to be resolved, too. This is especially the case for natural gas exports and co-operation with international companies. Hence, a nuclear accord between Iran and the E3+3 is unlikely to have radical short-term effects on the international energy markets. At the most, it could re-inforce the strong supply of oil in the international markets.

The same holds true for the impact on European energy. Nevertheless, the consequences of a nuclear deal for Europe's energy industry would be mostly positive. Unlike the US, the EU would suspend all energy and financial sanctions, paving the way for oil and natural gas co-operation with Iran. European countries could start importing Iranian oil again immediately after the implementation of sanctions relief, possibly at discounted prices. Moreover, energy consumers could benefit from lower international prices, should Iranian oil enter the global markets (though European energy producers with higher production costs would be affected negatively, as for example in the case of renewables or unconventional). Despite the above discussed obstacles, European companies could also re-establish and expand activities in Iran's upstream and downstream sectors.

However, in the upcoming years Iran will continue to remain only a theoretical option for the Southern Gas Corridor and Europe's efforts to diversify natural gas imports. Not only the infrastructure for the delivery of Iranian gas to the European market is missing but, for the time being, also the very gas that Europe seeks to import does not exist. Moreover, Petroleum Minister Bijan Zanganeh has announced that exports to Europe are not on top of Iran's agenda as domestic demand, regional exports, and trade with Asia assume priority.

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