

# CAN IRAN REDUCE THE EU'S DEPENDENCE ON RUSSIAN GAS?

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Iran is one of the key energy producers in the Middle East. According to the BP statistics Iran has the largest world reserves of natural gas and the fourth largest reserves of oil in the world. Its strategic geographic position makes Iran capable of supplying Europe, its Middle Eastern neighbors, and South and East Asian countries with these resources.<sup>1</sup> Yet the difficult geopolitical situation around its nuclear program and the poor management of its energy industry have prevented Iran from becoming a gas exporter to the European Union (EU).

However, the recent Joint Comprehensive Plan of Action (JCPOA) on the Iranian nuclear program and the promising reforms of the Hassan Rouhani administration created hopes for invigorating Iran's export potential. Iran has not only declared that it plans to take back its market share in the world oil market, but it also announced its plans to increase its natural gas exports.<sup>2</sup> And as the EU-Russian relations deteriorated under the influence of the Ukrainian crisis, Iran is seen as a new alternative to the Russian gas supplies.

Currently the Russian gas company Gazprom is the main gas supplier to the European market. After the two gas crises in 2006 and 2009, when the gas supplies that were transported via Ukraine were interrupted, the reliability of Russia as the main exporter of gas to Europe was undermined. At the same time, the European Commission (EC) accuses Gazprom of uncompetitive practices and promotes liberalization of the gas market. Hence, the long term goal for the EU is to find alternative suppliers and build an internal gas market, which should be ideally based on the spot market principle instead of the long-term contracts preferred by Gazprom.

These disagreements led the European Commission and the European Parliament to study Iran as a possible alternative to Russia. After the JCPOA and the expected lifting of the economic sanctions, European companies can return to Iran, and the EU might try to establish closer economic cooperation with Tehran in energy issues.

Since this distinct perspective of gas supplies from Iran is a very timely topic and is often discussed in the media, this article tries to address the question of whether Iran can indeed

decrease the EU's import dependency on Russian gas. But firstly, it is necessary to determine the overall characteristics of the European and Iranian energy sectors and carefully analyze the issue. Thus the first part of the article will outline the state and perspectives of the European energy sector. It will stress that the European dependence on Russia is not only based on physical supplies of gas, but also on the nature of the market regulation, which can serve the interests of either Gazprom or the European Commission.

The next part will discuss the Iranian energy sector. The years of underinvestment and poor management have had a negative impact on the performance of the National Iranian Oil Company (NIOC) and its ability to produce enough oil and gas not only for exports, but also for domestic use. But it is not only the upstream sector that faces significant problems. The energy inefficiency of the Iranian economy, the large energy subsidies for the domestic use of energy and the large share of natural gas in the energy mix also limit Iran's export capabilities.

Yet, as the third section of the article shows, if the EU's goals are more modest, even a limited supply of natural gas from Iran can have a positive impact on the European gas market. Cheap gas on the European gas market might press Gazprom to change its long-term contract formulae in favor of a spot market principle. In other words, the EC can use cheap Iranian gas as leverage against Gazprom. But this project faces not only economic or "physical" (available volume of gas) constraints. As will be discussed in the fourth section, as long as the threat of re-imposition of sanctions remains, Iran might prefer other destinations for its gas exports.

## **THE EUROPEAN ENERGY SECTOR**

The European Union is one of the largest consumers and importers of energy resources.<sup>3</sup> Its domestic production of energy resources is declining, and the EU Member States are becoming more dependent on imports from countries outside the EU or from the non-EU countries in the European Economic Area (such as Norway). According to the European Commission, about 53% of the overall EU energy consumption depends on imports. The worst situation is that with petroleum, where the EU's import dependency reaches about 90%. Its dependency on natural gas is about 66%.<sup>4</sup> In the last twenty years overall gas production in the European Union has fallen by 56% and now the Member States import almost 300bcm of natural gas each year. In the next decade this volume will rise up to 340-350bcm/y.

Meanwhile, Russia is the main energy supplier to the EU, and its oil and gas market share is about 30%.<sup>5</sup> Yet disagreements about the nature of the gas market and uncertainties

surrounding the reliability of Russia as a gas supplier have forced the European Commission to pursue its broad strategy to reduce the European dependency on Russian gas.

The European gas market is fragmented and monopolized by Gazprom, especially in the case of the Central and Eastern Member States. The bulk of the trade is realized by pipelines, and the prices are determined by the long-term contracts agreed by Gazprom (or some non-Russian supplier) and the wholesale buyer in the consuming nation. These sorts of long-term contracts include a “take or pay” clause, which obliges importers to buy an agreed upon volume of gas or else pay a fine. The gas prices are linked to the oil prices with a time lag of about six months.<sup>6</sup> Though Russia argues that this arrangement secures the gas supply for a period of 20-30 years, according to a growing opinion in the EU which is actively promoted by the Commission, Gazprom can effectively manipulate the gas market at the expense of consumers, who have to pay a too large contract price.<sup>7</sup>

Moreover, the price disputes between the Russian Federation and Ukraine in 2006 and 2009, which resulted in the disruption of the gas supplies to Europe, undermined Russia’s reputation of a reliable supplier.<sup>8</sup> Also, the recent military conflict in Ukraine has again put a question mark over the undisrupted supplies. These issues are clearly reflected in the 2014 European Energy Security Strategy, which states that “[t]he most pressing energy security of supply issue is the strong dependence [on] a single supplier.”<sup>9</sup> Therefore, “[t]he European Union must reduce its external dependency on particular suppliers [...]”<sup>10</sup> In both of these statements Russia is not mentioned but is clearly assumed to be the supplier the EU is dependent on.

As for remedies for this “external dependency” the European Commission basically proposes three strategic measures, which are already included in the EU’s primary law: firstly, it encourages energy efficiency and larger use of alternative energy sources; secondly, it actively pushes for diversification; and thirdly, it promotes the creation of the internal gas market with a larger role for the European Commission in its regulation.<sup>11</sup> The last point ultimately assumes a shift from a market based on long-term contracts to a spot market regulated by the Commission.

Though there is some progress on the renewables in the energy mix of some Member States it is clearly not enough to limit the import dependency.<sup>12</sup> Nevertheless, significant progress was achieved in the middle of 2009, when the EU adopted the so-called “Third Energy Package”, which was, according to the then Commissioner for Energy Günther Oettinger, a crucial prerequisite for the creation of the internal gas market.<sup>13</sup> The energy package presumes an increase of competitiveness on the gas market through a disintegration

of the vertically integrated companies such as Gazprom (i.e. those companies that control upstream, downstream and transportation) through the implementation of the unbundling principle. Under this provision an independent transmission operator shall provide a non-discriminatory third party access to the transmission infrastructure.<sup>14</sup>

The rationale for this measure is that if there are more traders on the market with an access to the pipeline the market will have higher liquidity, and competition will drive the prices down.<sup>15</sup> This logic led to the adoption of the non-binding but politically important Gas Target Model, which envisions a complete shift from a market regulated by long-term contracts, which are preferred by Gazprom, towards a spot market, where buyers can freely choose the source of natural gas.<sup>16</sup> This will effectively deprive Gazprom of its ability to dictate contract terms and give the European Commission an instrument to regulate the gas market.

The reason behind such an enthusiasm for the active promotion of the spot market principle was a temporary gas glut that appeared at the moment when the Third Energy Package was enacted. This gas glut was a result of the so-called shale gas revolution in the United States, in which LNG (primarily from Qatar) that was originally aimed at the American market was poured into the EU at almost knock-down prices. Furthermore, after the world economic crisis in 2008 the overall consumption in the EU declined. The effect of these events was that the spot market prices fell, while Gazprom's oil-linked long-term contract prices remained high and consequently its market share declined from 28% in 2008 to 23% in 2010. The low spot market prices helped the EU Commission to convince the energy intensive industries and the reluctant governments to support the transition to the spot market<sup>17</sup>

Thereafter, however, the situation stabilized. Due to the larger demand for LNG in Asia, LNG supplies to the European Union steadily declined, spot prices and Gazprom's long-term contract prices got closer to each other and Gazprom restored its market share.<sup>18</sup> To continue in the process of market integration and liberalization it is necessary to ensure the liquidity of the spot market. For this reason, the search for alternative suppliers would be necessary even without the recent political tensions with Russia, though the current conflict with it accelerated this process. As some recent reports suggest, the European officials are "quietly increasing the urgency of a plan to import natural gas from Iran, as relations with Tehran thaw while those with top gas supplier Russia grow chillier."<sup>19</sup> Thus, according to an internal document prepared for the European Parliament, Iran can be "a credible alternative to Russia."<sup>20</sup>

## **THE ENERGY SECTOR OF IRAN**

In spite of the fact that Iran sits on 33.8 trillion cubic meters of natural gas (which is about 18.2% of the world reserves) it has been unable to fully develop its export potential. It exports less than 10bcm/y to Turkey, around 2bcm to Armenia and only 0.5bcm to Azerbaijan.<sup>21</sup> This is caused by an excessive domestic consumption of natural gas and the generally poor state of the Iranian energy industry. Iran has a highly imbalanced energy sector with a lot of structural problems, which include the underinvestment in the upstream sectors, the poor management of the Iranian National Oil Company (NIOC) and the low energy efficiency of the economy, which is constrained by subsidies for energy consumers. All this can prevent the rapid growth of the Iranian gas exports into other world markets, including Europe.

### ***The Upstream Sector: Challenges and Perspectives***

#### **Oil**

As the sanctions on Iran are expected to be lifted Iran is planning to make a comeback on the world energy markets.<sup>22</sup> The Iranian Minister of Petroleum Bijan Namdar Zanganeh has already declared that NIOC plans to raise its production to a pre-sanction level (about 4mn b/d) and to regain its lost market share. Indeed, the sanctions imposed by the European Union in 2010 and 2012 severely hit Iran's energy industry as Iran lost access to foreign capital, technology and European energy markets, and the oil trade became increasingly difficult.<sup>23</sup> Between 2011 and 2013 Iran experienced an almost 20% fall in its crude oil production, and its exports were halved.<sup>24</sup> According to the Russian Energy Research Institute of the Russian Academy of Science (ERI RAS), which made a model of the global energy outlook up to 2040, after the sanctions are lifted, Iran will be able to increase its oil production up to 265mn tons (or about 5mn b/d) by 2020, but subsequently its production is bound to decline to 230mn tons (4.6mn b/d) by 2040.<sup>25</sup>

A decline in Iran's production capacity is inevitable since most of its oil fields are at a mature stage with high natural decline rates.<sup>26</sup> To maintain its production levels Iran has to enhance its oil recovery projects. This involves significant quantities of gas and water re-injections. In 2008 the volume of gas re-injections was about 26bcm/y, and in 2015 it is supposed to reach 64bcm/y.<sup>27</sup> However, according to the available data, since 2011 the gas re-injections have actually never reached more than 60% of the planned targets.<sup>28</sup> Until the imposition of the anti-Iranian sanctions, petroleum constituted almost 80% of Iran's total export value; therefore, a priority should be to provide gas for re-injections rather than export.<sup>29</sup>

## **Gas**

Natural gas accounts for 61% of the Iranian energy mix.<sup>30</sup> Just in the last decade Iran's gas production grew twofold, and between 1989 and 2014 the production increased eightfold. Yet this was accompanied by skyrocketing consumption as the domestic energy mix shifted from oil to gas.<sup>31</sup> Consequently, the rates of natural gas production and consumption have been almost equal. Moreover, due to the unchecked consumption between 1997 and 2012 Iran became a net gas importer buying gas from Turkmenistan. According to the EIA, the recent drop in imports was a result of sanctions on financial transactions rather than increased domestic production or energy efficiency.<sup>32</sup> Iran thus still struggles to satisfy domestic demand and experiences a large energy deficit.<sup>33</sup>

Nevertheless, when the sanctions are lifted Iran is expected to dramatically increase its natural gas production. According to ERI RAS Iran could make "the most significant contribution to increased global supplies of natural gas."<sup>34</sup> In the period 2010–2040, under the most favorable conditions Iran could be able to increase its natural gas production almost 2.5 times, reaching almost 370bcm, compared to the current 172bcm.<sup>35</sup> This will mainly depend on the pace of the development of the giant South Pars field in the Persian Gulf.

## **South Pars**

South Pars contains approximately 40% of the Iranian natural gas reserves and represents about 5% of the global reserves.<sup>36</sup> Given that the production capacity on most of the other operational fields has already peaked, successful development of the South Pars field is a strategic priority for the Iranian government.<sup>37</sup> The whole project is divided into twenty-four phases with total costs exceeding \$100bn.<sup>38</sup> Its development is, however, lagging behind the schedule.<sup>39</sup>

Iran has completed the first ten phases, Phase 12 with a capacity of 30.66bcm/y was launched in 2014, and phases 15 and 16 with a total capacity 20.44bcm/y are to be completed in 2015. The next two phases - 17 and 18 (20.44bcm/y) - shall start production in 2016. The rest of the project will be finished only during the first half of the next decade.<sup>40</sup> Assuring assistance from the international energy companies is crucial for the South Pars development, but this has always been a problem.<sup>41</sup> According to Minister of Petroleum Zanganeh, Iran "urgently" needs approx. \$40bn for the South Pars project.<sup>42</sup> But even before the 2010 sanctions, when European companies were banned from investing in the country's oil and gas industry, Iran struggled to attract the necessary foreign investment.

Besides the gas shortages on the domestic market, the delays in the South Pars project led to an insufficient amount of gas for re-injections, which led to a failure to meet the oil production targets and Iran's OPEC quota.<sup>43</sup> The lifting of the economic sanctions is, however, a necessary but not sufficient condition for ensuring the access of FDI to Iran's energy sector and boosting its production. The mismanagement of the Iranian energy industry, the unfavorable investment climate and high subsidies for energy consumers are long term problems which the current Rouhani administration has to address.

### ***Mismanagement and Foreign Partners***

Contrary to public perceptions, Iran has a significant political pluralism.<sup>44</sup> Yet this pluralism has a negative impact on the development of a clear energy strategy.<sup>45</sup> The Iranian energy industry suffers from the absence of a clear delegation of power, which leads to political interference from various political actors. A common problem in many oil producing nations is that national oil companies are, on the one hand, under pressure to increase their investment in the development of energy resources, and on the other, they provide the government with finances for social programs at the expense of the company's budget.<sup>46</sup> Thus members of government who are also an oil company's top executives find themselves in a contradictory position.

The President and Vice President of Iran preside over the general assembly of NIOC that determines a company's budget and the general guidance. The Minister of Petroleum as a chairman of NIOC's board of directors implements this policy. NIOC's budget is then approved by the Ministry of Planning and the Majlis. In the Majlis, members of the parliament can promote their own political agenda and are often engaged in political infighting with the incumbent administration. Moreover, as NIOC's budget has a law status, the Guardian Council may check its consistency with the Islamic law. The final outcome is thus a compromise between various political actors.<sup>47</sup>

Similarly, the frequent reorganization of the NIOC structure has had a negative impact on NIOC's performance. For example, the result of President Ahmadinejad's battle against the "oil mafia" (which was supposedly connected to Hashemi Rafsanjani, a former president and one of Ahmadinejad's political rivals) was that the Revolutionary Guards with their affiliated companies gained a significant control over the oil and gas industry with a negative impact on the sector efficiency.<sup>48</sup>

Despite the fact that Iran needs foreign investment and technology this politization and Iran's poor investment climate prevent any building of strong relationships with international

oil companies (IOCs). In 1990 Iran made a strategic decision to open its energy sector to the international investors and introduced buy-back contracts. As Stevens explains, this decision reflected “its concern that the sector was falling behind” and was an attempt to break the country’s isolation.<sup>49</sup> Although some European companies entered the Iranian market since then, the conditions that were offered by the Iranian government were not attractive enough for most foreign investors.

According to the Iranian constitution only the state can own the country’s natural resources, and Iranian law does not allow production-sharing agreements.<sup>50</sup> Instead, Iran utilizes buy-back contracts, which resemble service contracts wherein IOCs operate with a fix rate of return with a payback period between five and seven years and cannot book the reserves.<sup>51</sup> IOCs have to invest their own capital and expertise for the development of oil and gas in Iran, but when the production is launched NIOC takes over the operatorship and repays the IOCs’ capital costs through the oil and gas revenues.<sup>52</sup> Besides that, the Majlis became involved in the monitoring of the buy-back agreements, which again brought domestic political considerations into the relationships with foreign partners.<sup>53</sup> Despite the fact that Iran has several times changed the structure of the buy-back contracts, this scheme has never provided enough incentives for the IOCs to massively invest in the upstream sector. As a consequence, up to the imposition of the EU sanctions in 2010 and 2012 only a few contracts on oil production were struck.<sup>54</sup>

Iran is planning to introduce new terms for the buy-back contracts, which will be closer to the production sharing agreements that are more typical in the oil and gas industry. It is expected that under the new terms the IOCs would be able to establish joint ventures with NIOC to “manage oil and gas explorations, development, and production projects”<sup>55</sup> and that investment risks will be more equally distributed.<sup>56</sup> The final draft of the new contracts will be presented during the Iranian Oil and Gas Summit in February 2016, which shall coincide with the sanction relief.<sup>57</sup>

### ***Subsidies***

Besides the setbacks in the upstream industry, the energy inefficiency caused by the massive subsidies for energy consumption and especially gas also limits Iran’s export potential.<sup>58</sup> Since the Iranian gas prices have been kept much below the world level,<sup>59</sup> the consumption “grew significantly more than [the] average annual GDP (4.1%) and at almost the same rate as production (9.5%).”<sup>60</sup> In 2010 President Ahmadinejad tried to improve the situation and introduced a major subsidy reform. By 2015 individual consumers were supposed to pay 75%

of the export price, and by 2020 industrial consumers were to pay 65% of the export price. Yet, in order to limit the impact on the individual consumers, the government provided a partial compensation for the households that amounted to about \$18.20 per household, which altogether made up about 50% of the sum that was earned after the subsidy cuts.<sup>61</sup> Moreover, “in the last three years since the reform, energy prices remained fixed, declining in real terms by over 60%.”<sup>62</sup> Current President Rouhani also tries to improve the situation and continues in the subsidy reform.<sup>63</sup> Thus, in recent times, the prices of petrol and gas for domestic and commercial consumers increased by 43% and 15%, respectively.<sup>64</sup> Nevertheless, despite the recent progress on the subsidy front, the overall gas consumption will increase as the Iranian government plans a gasification of 3mn households and aims to provide gas for 19,000 industrial units by 2018.<sup>65</sup>

Also, the country’s power generation heavily depends on natural gas. About 70% of the power generation is supplied by natural gas, and in the last ten years the power generation capacity almost doubled and it is projected that there will be further growth.<sup>66</sup> Yet in the future the growth of Iran’s natural gas consumption might not be as steep as it was in the previous decades. Besides the subsidy cuts Iranian government set an objective to decrease the energy intensity of the economy by 50% by 2021. Today, energy waste reportedly accounts for about a quarter of all energy consumption in the country.<sup>67</sup> Thus if the government’s plan is successful the country’s export potential will be significantly improved. But since similar plans have already been announced by the previous administrations with no meaningful progress, the reason for skepticism still remains.

### ***Gas Export Capacity***

As Jalilvand notes, Iran “adopted a series of conflicting policy goals during the last few years.”<sup>68</sup> It allowed for a rise of domestic gas consumption, while at the same time it was presenting ambitious export goals for itself. Similarly, its focus on oil production and export will divert more gas into re-injections rather than into export. As for today, the national priorities of the Iranian gas industry are stated in the following order: “firstly, domestic consumption; next, reinjection in the maturing fields, and only thirdly exporting gas.”<sup>69</sup>

Of course, the aforementioned discussion on the strategic thinking (or the lack of it) in the energy industry suggests that these priorities are far from certain. Nonetheless, if the projections for the Iranian re-injections are correct, it means that the volume of gas available for export will be very limited despite the considerable growth of production. In 2015 the re-injections are supposed to reach 64bcm.<sup>70</sup> Iran also plans to finish Phases 15 and 16 of South

Pars in the same year. Together with Phase 12, which was launched in 2014, they will produce about 50bcm/y – which is not enough to cover the rising volumes of re-injections in the very same years.

The South Pars project shall be completed during the first half of the next decade, and the new phases shall provide about 143bcm of gas annually. By 2030 the total gas production may rise up to 250 bcm/y, but re-injections might reach 90 bcm/y.<sup>71</sup> Thus about 160bcm/y are left for both domestic consumption and export (for comparison, in 2013 the Iranian total gas production was 164bcm). This point is important, since Iran was unable to reach its production and export targets even before the last round of the harsh economic sanctions.

The high domestic consumption of natural gas still hinders Iran's gas exports to the EU. After 2012, when the EU declared an embargo on oil and gas imports, the Iranian annual GDP growth rate collapsed and the same happened with the country's industrial production. At the same time, its gas consumption rather plateaued. Hence, after the economic sanctions are lifted, we can expect a rapid rise of the domestic consumption as Iran recovers its economy and boosts its oil production.<sup>72</sup> In the most optimistic scenario the overall gas exports from Iran can reach 30bcm/y only in 2025 at the earliest.<sup>73</sup>

## **THE PROSPECTS OF THE EU-IRANIAN COOPERATION**

Until 2012, when the EU imposed an embargo on oil imports, Iran was the sixth largest supplier of petroleum to the EU Member States, but due to its large domestic consumption Iran has not yet started its gas export to the EU. In spite of this fact, Iran actively promotes its gas export plans to Europe as well as to its neighbors. For instance, in 2008 Iran proposed the new project of the Persian Gas Pipeline, which, according to Tehran, would supply approx. 25-30bcm/y to Europe from South Pars via Turkey.<sup>74</sup> Yet as the preceding section showed this volume will be available only in 2025 at the earliest. Otherwise, the export will come at the expense of domestic consumption, which will be politically unacceptable.

Hence, Iranian gas cannot be considered to be an alternative to Russian gas. Nevertheless, if the EU sets a more modest goal, Iran can play a role in the European energy security strategy. In this regard, the EU can try to replicate the situation from 2009, when the inflow of cheap gas opened a window of opportunity for the EU Commission to push further with gas market integration at the expense of Gazprom. According to ERI RAS, “the breakeven price for Iran's new fields is below 50 \$ [sic] 2010 per thousand cubic meters which [...] makes gas from [Iranian] projects highly competitive.”<sup>75</sup> An inflow of cheap Iranian gas can lead to a 10% decrease of spot market prices in Europe.<sup>76</sup> Furthermore, the rise of liquidity on the EU

market supplied by the Iranian gas might force Gazprom to further amend its long-term contracts, as was the case in the period between 2009 and 2012.<sup>77</sup>

In other words, the EC might use cheap Iranian gas as leverage against Gazprom and further diminish its dominant position on the European gas market - if not through a significant lowering of its market share, then through lowering its regulatory power, which is stemmed in the rigid form of the long-term contracts. Nonetheless, even this goal requires direct foreign investment in the Iranian energy sector. As Vakshhouri estimates, Iran's whole oil and gas sector will need about \$200-250bn in investment in upstream, midstream and downstream over the next five years.<sup>78</sup> Meanwhile, European companies from France, Germany, Italy, Spain and other nations already expressed their interest in entering Iran.

Investment in upstream can improve the Iranian recovery potential for both oil and gas, especially in the case of the South Pars gas field. The level of foreign engagement will depend on the reform of the buy-back contracts. The final draft of the law shall be presented in February 2016 at the Iranian Gas Forum in London.<sup>79</sup> But it will take some time before the Majlis votes this draft into law, and as it was explained, this might be problematic. In the past, the Guardian Council already issued its disapproval for the buy-back contracts with the argumentation that they contradict to the Islamic law. This decision was later overruled by the Expediency Council.<sup>80</sup> But this time, the bill will support an even more radical version of the contracts.

In the case of downstream, assistance in the energy efficiency programs provided by the EU or its Member States as well as IOCs' investment in renewables, power generation and so forth would help Iran to decrease the energy intensity of its economy. This is particularly important, since gas accounts for a 70% share in the power generation, while the power plants' efficiency rate is only 37%.<sup>81</sup> Furthermore, improvement of transmission capacities, as electricity is currently transmitted with large losses, will release some gas for exports. Overall, the Iranian energy efficiency program will require approx. \$192bn of investment.<sup>82</sup> However, investment from abroad can only be secured if there is a significant subsidy reform, and this will be a very politically sensitive issue. Here, Iran and the EU can restore the "Comprehensive Dialogue", which was launched in 1998 but, due to disagreements over the Iranian nuclear program, suspended in 2002.<sup>83</sup> This dialogue included the joint Working Group for Energy and Transport, which also focused on issues related to energy efficiency.<sup>84</sup>

Yet for Iran Europe is only one of several potential markets. During the last decade Iran has tried to negotiate supply contracts with various countries in its region, including Oman, the United Arab Emirates, Bahrain, Syria, Pakistan and India.<sup>85</sup> All of these attempts failed. In

2014, however, Iran started negotiations with Oman and India for an underwater pipeline with a capacity of about 11bcm/y.<sup>86</sup>

It is noticeable that in all the previous negotiations the maximum volume that Iran has proposed for its gas exports, with the exception of the Persian Gas Pipeline, never exceeded 10-11bcm/y. This is probably the maximum volume that Iranian officials are expected to release for exports in the near future, while the Persian Gas Pipeline, with a capacity of 25-30bcm/y, could well be a PR move to attract foreign investors. It seems therefore more plausible that Iran plans to build IGAT-9, which would have a capacity of 25-30bcm/y and stretch from South Pars to its northern regions, where a part of the gas would be consumed, and then through interconnectors it would transmit the remaining 10bcm/y to Europe via the Turkish Trans-Anatolian Pipeline (TANAP). The recent announcement that building a separate pipeline to Europe is not economically viable under the low prices proves the likeliness of this way of thinking.<sup>87</sup>

Another option for Iran is to focus on the LNG projects. LNG exports can provide substantive flexibility in case a crisis between the EU and Tehran emerges. Before the sanctions were imposed Iran worked with Germany's Linde AG to build a liquefied gas plant with a capacity of 10.8mtpa or almost 15bcm/y. Although Iran already invested \$2.5bn in it, the sanctions forced Linde to exit the project. However, even if cooperation on the LNG terminals is resumed, it will take about 6-8 years to finish the construction.<sup>88</sup> Moreover, land-based terminals are expensive and often require long-term contracts to secure a return on the investment.<sup>89</sup>

The long-term contracts, however, run against the Commission's interests. The alternative is that Iran can supply gas via an underwater pipeline to Abu Dhabi's LNG plant at Das Island, which otherwise will run out of fuel by 2019, and then send liquefied gas to Europe. But the price will still be too large. In summer 2015, the information was leaked that Iran is in talks with "some unnamed company" for the purpose of renting a floating LNG vessel that is less expensive than a land-based terminal. This unnamed company was probably Royal Dutch Shell, which operates such facilities and has approx. \$2bn worth of debts to Iran, which it has not repaid due to the imposed sanctions.<sup>90</sup> Accordingly, Shell may partly compensate this debt by providing the floating facility and participating in the development of South Pars. Yet with no long-term contracts there is no guarantee that Iran will ship LNG to Europe. On the other hand, though, there are probably hopes in Europe that the expected worldwide rise of the LNG supply will push prices down in the EU, whatever the source of the gas is.<sup>91</sup>

Iran might well be focused on exports to the neighboring countries, whose demand for gas and electricity is soaring. Iran has already built its part of the pipeline to Pakistan, while Islamabad, due to sanctions, has been delaying the construction on its territory.<sup>92</sup> After the nuclear deal the problem might be resolved. Pakistan is an energy deficit country, and thus Iran can safely secure its market share in it, while in Europe it will have to compete with Gazprom.<sup>93</sup>

## **POLITICAL IMPEDIMENTS**

Another problem for the cooperation between Iran and the EU is the unresolved question of sanctions. Under the JCPOA the European sanctions will be lifted on the so-called “Implementation Day”, when the International Atomic Energy Agency (IAEA) will confirm that the Islamic Republic has fulfilled all its obligations under the JCPOA. This day will come in early 2016. But the nuclear deal has a “snapback provision”, which means that for a period of up to eight years the sanctions can be re-imposed if Iran violates the agreement.<sup>94</sup> This will make western investors cautious about doing business in Iran.<sup>95</sup>

For its part, Tehran might well pursue its gas export strategy of binding Iran and the EU together in order to make EU Member States more reluctant to re-impose sanctions in case of a disagreement over whether Iran is faithfully implementing the JCPOA. Hence, from a strategic perspective, building strong ties with the western energy companies, making the new buy-back contracts extremely attractive for the IOCs, boosting its exports to the EU and forging economic ties with the EU Member States are necessary measures for Iran to keep a space for maneuver for itself within the stringent JCPOA.

There are two downsides of this strategy, however. First, this strategy is purely speculative, and the behavior of the European Union and the US is beyond Iranian influence. Moreover, the significant volume of oil imported from Iran before 2012 did not prevent the EU from sanctioning the Iranian energy industry. Another problem relates to the entrenched interests of the Iranian Revolutionary Guard Corps (IRGC). Companies affiliated with them have gradually gained a significant stake in the Iranian economy and especially in the energy industry. The IRGC is also believed to be a major proponent of the Iranian nuclear program.<sup>96</sup> Since their nuclear agenda was curtailed they will probably try to compensate their loss in the energy industry. Already in September 2015 NIOC denied the French company Total the development of Phase 11 of South Pars, despite an earlier meeting between the French foreign minister Laurent Fabius and Zanganeh, where the former tried to secure the French interests in the Iranian energy sector.<sup>97</sup>

Thus, it might be in the Iranian interest to focus rather on the Asian markets, including China and India.<sup>98</sup> This option might be attractive, especially when China is building alternative financial institutions such as the New Development Bank and the Chinese version of SWIFT.<sup>99</sup> China already expressed its willingness to finance the gas pipeline to Pakistan and plans to increase the bilateral trade with Iran to \$200bn per year from the current \$50bn in the next ten years.<sup>100</sup> In contrast, today the value of the trade between Iran and the EU is about \$6bn.<sup>101</sup> It is also possible that Iran, Russia and other “like-minded states” together with China and the rest of the BRICS countries will jointly cooperate on a number of economic projects, including energy projects, in order to become less dependent on the western investment, technology and financial institutions. This will make them immune to the Western sanctions. The last proposal on oil and gas swap deals, which was raised during the meeting between the Russian Minister of Energy Alexander Novak and his Iranian counterpart Zanganeh, might fit into this scenario.<sup>102</sup>

## **CONCLUSION**

The problem of the EU’s energy dependency on Russia has two elements. The first element relates to the physical volumes of gas that Russia supplies through the pipeline network. With the two energy crises in 2006 and 2009 along with the general worsening of the Russia-EU relations, this dependence is perceived as problematic from the security of supplies perspective. Secondly, Gazprom and the European Commission promote different views of the European gas market. Gazprom wants to keep its almost monopolistic position and determine the terms of trade in the long term contracts. The Commission, on the other hand, wants to establish a liberalized competitive spot market that will be regulated by the Commission’s guidelines. In order to achieve this goal the EU needs to secure alternative supplies of cheap gas. After the successful resolution of the Iranian nuclear program, Iran, with its vast gas resources, is often named as a potential alternative supplier.

An analysis of the Iranian energy industry shows, however, that exports of substantive volumes of natural gas to the EU (around 30bcm/y) cannot be expected before 2025. Iran’s gas export is limited by the large domestic gas consumption, gas re-injections into the maturing oil fields, poor management of the energy industry and the difficulty of attracting foreign investments into the upstream sector. These are the long-term problems that existed even before the last two rounds of sanctions in 2010 and 2012. Therefore, if Iran is to attract foreign investments, it is not sufficient to lift the economic sanctions, as Iran must implement a politically sensitive reform of its energy sector.

First of all, it is necessary to reform the buy-back contracts to make them more attractive for IOCs, which can provide the needed technology for oil and gas production. Secondly, Iran must move forward with the subsidy reform program that is necessary to improve the energy efficiency of the economy. Third, depolitization of the energy industry and improvement of the NIOC management are two other important tasks for the Iranian government. It is not clear, however, if President Rouhani will have the power to scale down the IRGC's grip over the energy sector. But if the reforms are successfully implemented, European companies might be willing to invest not only in the upstream sector, but also into downstream and provide technology for the improvement of the energy efficiency and for the use of renewables. The EU, on a bilateral basis, can help Iran on this front.

Yet in the near term, since Iran plans to increase its oil production and export, the priority will be probably put on the gas re-injections. It is unlikely, therefore, that Iran will be able to export more than approx. 10bcm/y of natural gas. If, however, the European goal is not to diminish the gas exports from Russia as such, but to change the structure of the gas market, the EU can even use limited volumes of gas from Iran, though preferably in combination with some other sources, to fill the European spot markets with a cheap gas in order to decrease the gas prices relative to Gazprom's long-term contract prices. This will further pressure Gazprom to make some concessions and amend its contract formulae, as was already the case in 2009. Iran, from its perspective, can use gas deliveries to Europe as a hedge against the snap-back provision, and this hedge might provide Iran with a space for maneuver in the framework of the JCPOA. Yet Iran's oil exports to the EU did not prevent the sanctions against Iran. Thus Tehran might prefer to engage with non-Western nations such as China, India or Russia in regard to its oil and gas exports. The new alternative financial institutions promoted by China can diminish the Iranian vulnerability to the Western sanctions. To prevent this scenario the EU must clarify the conditions under which it might "snap back" its sanctions. Similarly any future cooperation between NIOC and IOCs shall be also accompanied by political support from the side of the EU.

In sum, Iran cannot limit the European dependency on Russian gas on its own. Though the EU can use Iranian gas supplies as a means to pressure Gazprom to change its contract terms, the poor state of the Iranian energy sector and the political uncertainty involved hinder any attempts to use Iran as an alternative supplier.

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