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A Post-Sanctions Iran and the Eurasian Energy Architecture

Challenges and Opportunities for
the Euro-Atlantic Community



Micha'el Tanchum

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Cover photo credit: Reuters/Morteza Nikoubazi. Gas facilities in Assaluyeh, Iran.

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TABLE OF CONTENTS

Executive Summary	1
1. Introduction	3
2. The Iranian Energy Market	4
3. Turkey and Azerbaijan	10
4. Russia	15
5. China	16
6. India	20
7. Conclusions	22
About the Author	24

EXECUTIVE SUMMARY

The removal of international sanctions on Iran carries the potential to radically restructure the Eurasian energy architecture and, as a consequence, reshape Eurasian geopolitics. The Euro-Atlantic community's interests will be most impacted by Iran's choice of export destinations for its natural gas delivered by pipeline. By defining the pattern of major energy flows through long-term supply contracts and costly pipeline infrastructure investment, the pattern of Iran's piped gas exports in the immediate post-sanctions period will influence the development of both China's "One Belt, One Road" (OBOR) initiative and the European Union's "Eastern Neighborhood" policy.

This report estimates Iran, within five years, will likely have 24.6 billion cubic meters of natural gas available for annual piped gas exports beyond its current supply commitments. Not enough to supply all major markets, Tehran will face a crucial geopolitical choice for the destination of its piped exports. Iran will be able to export piped gas to two of the following three markets: European Union (EU)/Turkey via the Southern Gas Corridor centering on the Trans-Anatolian Natural Gas Pipeline (TANAP), India via an Iran-Oman-India pipeline, or China via either Turkmenistan or Pakistan.

The degree to which the system of energy relationships in Eurasia will be more oriented toward the European Union or China will depend on the extent to which each secures Caspian piped gas exports through pipeline infrastructure directed to its respective markets. The relative power balance will be determined by the natural gas export volumes each receives from Iran and Turkmenistan. Without Iranian gas exports through TANAP, exports from Turkmenistan become critical for Europe's Southern Gas Corridor's long-term viability. If Beijing secures both Iranian and Turkmen piped gas exports to the exclusion of Europe, then China's OBOR initiative will become the organizing principle of the Eurasian energy architecture.

The Euro-Atlantic community has an opportunity in a post-sanctions environment to increase the EU's natural gas supply security and stabilize the EU's Eastern Neighborhood through integrated energy transport cooperation involving Turkey, Azerbaijan, Georgia, and Turkmenistan. This multilateral energy transportation cooperation would serve to constrain Russian strategic ambitions, incentivizing Russia to arrive at a fair pricing scheme with its EU customers. The same multilateral cooperation would also serve to channel China's OBOR strategy toward a Europe-to-China economic corridor that would increase the stability of Georgia, Azerbaijan, and Turkmenistan, thereby enabling enhanced political cooperation between these states and the Euro-Atlantic community.

Iran's energy relationships with Turkey and Azerbaijan are essential elements in this policy outcome. As the main

stakeholders in TANAP, Turkey and Azerbaijan have a critical role to play in incentivizing Iran to participate in the Southern Gas Corridor and to acquiesce to the Southern Gas Corridor's extension to Turkmenistan via the proposed Trans-Caspian Pipeline (TCP). An opportunity exists in the post-sanctions environment to induce Iran to accede to the TCP's construction, provided sufficient incentives are forthcoming.

Since Iran is the geographic pivot in China's OBOR initiative, robust Sino-Iranian geopolitical cooperation would secure China's growing economic domination in Central Asia, and further extend Chinese influence to the Caucasus and the eastern Mediterranean. China's strong oil relationship with Iran, its deep investment in Turkmenistan's gas production and pipeline infrastructure, and its recent agreement to construct most of Pakistan's section of the Iran-Pakistan pipeline place China in an advantageous position.

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While Iran will become a significant exporter of liquefied natural gas (LNG) to both Europe and China, Beijing will seek Iranian piped gas imports in addition to LNG. Chinese imports of sea borne Iranian LNG will face a strategic vulnerability in the South China Sea. Arriving on China's eastern seaboard, LNG imports also do not solve China's need to ensure a reliable gas supply to its western Xinjiang province. Iran's energy cooperation with China and Pakistan via Beijing's China-Pakistan Economic Corridor has already proven to be a geopolitical boon for Iran and will encourage Iran to participate more actively with China's OBOR initiative. Beijing will encourage Tehran to export Iranian gas via pipeline either from Turkmenistan or from Pakistan, thereby integrating Iran into the OBOR.

Iran will reemerge as an energy supply competitor with Russia both in Europe and Asia. Given Iran's and Russia's antithetical strategic interests in the Caucasus and Central Asia, Iran will weaken Russia's already enfeebled efforts to

establish the Eurasian Economic Union as an independent regional force, unless Russian-Iranian strategic coordination occurs under a Chinese-led trilateral framework among China, Russia, and Iran.

In the long term, Indo-Iranian energy cooperation will likely facilitate the creation of an alternative Europe-to-Asia corridor to the OBOR centered on the western Indian Ocean. An undersea Iran-Oman-India pipeline and the Indian-built Chabahar port on Iran's coast would comprise the central components of this corridor. For India, a dedicated pipeline for Persian Gulf natural gas imports would be an important geopolitical gain in its competition with China. It is in the Euro-Atlantic community's long-term interests to develop partnership opportunities with India.

The pattern of Iran's gas exports in the immediate post-sanctions period will shape the relationship between two competing orientations in the Eurasian energy architecture: a system of energy relationships reinforcing the EU's outreach to the Eastern Neighborhood alongside a system of energy relationships reinforcing China's OBOR integration project. To ensure a Eurasian energy architecture more favorable to EU and NATO interests, natural gas exports from Iran and/or Turkmenistan need to be included in the Southern Gas Corridor. In addition to enhancing the security of the EU's natural gas supply, an expanded Southern Gas Corridor will promote the extension of Euro-Atlantic influence in Eurasia.

1. INTRODUCTION

The removal of international sanctions on Iran will be one of the most consequential events for the global energy market in recent history. With the world's second largest natural gas reserves and the fourth largest oil reserves, Iran's unfettered participation in international energy markets will return it to the ranks of the world's most important energy producers. Most critical for the Euro-Atlantic community, a post-sanctions Iran carries the potential to radically restructure the Eurasian energy architecture and, as a consequence, reshape Eurasian geopolitics.

Iran's natural gas exports, more than its oil exports, will be the central factor impacting the Euro-Atlantic community's interests in the Eurasian energy architecture. One of this report's key findings is that Iran, within five years, will likely have 24.6 billion cubic meters (bcm) of natural gas available for annual piped gas exports beyond its current supply commitments.¹ Unable to supply all major markets with this volume, Tehran will face a crucial geopolitical choice for the destination of its piped exports. Iran will be able to export piped gas to two of the following three markets: European Union (EU)/Turkey via the Southern Gas Corridor (SGC) centering on the Trans-Anatolian Natural Gas Pipeline (TANAP), India via an Iran-Oman-India pipeline, or China via either Turkmenistan or Pakistan.

The degree to which the system of energy relationships in Eurasia will be more oriented toward the EU or China will be dependent on the extent to which each secures Caspian piped gas exports through pipeline infrastructure directed to its respective markets.

This report contends that the Euro-Atlantic community has an opportunity in a post-sanctions environment to increase the EU's natural gas supply security and stabilize the EU's Eastern Neighborhood through integrated energy transport cooperation involving Turkey, Azerbaijan, Georgia, and Turkmenistan. This multilateral energy transportation cooperation would serve to constrain Russian strategic ambitions, incentivizing Russia to arrive at a fair pricing scheme with its EU customers. The same multilateral cooperation would also serve to channel China's "One Belt, One Road" (OBOR)² strategy toward a Europe-to-China eco-

nomic corridor that would increase the stability of Georgia, Azerbaijan, and Turkmenistan, thereby enabling enhanced political cooperation between these states and the Euro-Atlantic community.

Iran's energy relationships with Turkey and Azerbaijan are essential elements in this policy outcome. As the main stakeholders in TANAP, Turkey and Azerbaijan have a critical role to play in incentivizing Iran to participate in the SGC and to accede to the SGC's extension to Turkmenistan via the proposed Trans-Caspian Pipeline. The relative power balance between the EU and China in the Eurasian energy architecture will be determined by the natural gas export volumes each receives from Iran and Turkmenistan.

Since Iran is the geographic pivot in China's OBOR initiative, robust Sino-Iranian geopolitical cooperation would secure China's growing economic domination in Central Asia, and further extend Chinese influence to the Caucasus and the eastern Mediterranean. While Russia stands to lose the most from a post-sanctions Iran, should Russia, China, and Iran coordinate their geopolitical and energy cooperation, the EU would be left significantly weakened and isolated in the Eurasian landmass. China's strong oil relationship with Iran, its deep investment in Turkmenistan's gas production and pipeline infrastructure, and its recent agreement to construct most of Pakistan's section of the Iran-Pakistan pipeline place China in an advantageous position.

The energy export patterns, particularly the gas export patterns, of the countries analyzed herein are determined by a calculus of geostrategic objectives in addition to a calculus of commercial profitability, with the former calculus often taking precedence over the latter. Therefore, the conventional guideline of energy economics that natural gas pipelines cease to be commercially competitive with liquefied natural gas (LNG) transport at distances greater than 3,704 km (2,000 nautical miles) will not necessarily compel countries to choose LNG transport over long pipeline projects.

The pattern of Iran's piped gas exports in the immediate post-sanctions period will shape the orientation of the Eurasian energy architecture. By defining the pattern of major energy flows through long-term supply contracts and costly pipeline infrastructure investment, Iran's piped gas exports will influence the development of both China's OBOR and the EU's "Eastern Neighborhood" policy.

¹ Author's estimate. See discussion in the main text.

² One Belt, One Road (OBOR) is now the collective term for China's Silk Road Economic Belt and Maritime Silk Road investment initiatives to develop energy and transportation infrastructure across Asia.

2. THE IRANIAN ENERGY MARKET

2.1 Overview

The magnitude of Iran's impact on the Eurasian energy architecture in the early post-sanctions period depends on the extent that Iran can increase its hydrocarbon energy production and how much of that additional production, particularly natural gas, will be available for export. According to the National Iranian Gas Company (NIGC), during the 2014-15 Iranian calendar year closing on March 20, 2015, Iran's annual gas production was 202 billion cubic meters (bcm), representing 10 percent year-on-year increase.³ Iran experienced modest growth in its natural gas production in 2014 as output from the South Pars field increased 75 million cubic meters per day (mcm/d) with more than 80 percent of South Pars's production growth occurring in the second half of 2014.⁴

As of January 2015, Iran has an estimated 158 billion barrels in proven crude oil reserves and 36 trillion cubic meters of proven natural gas reserves.⁵ Iran's 2014 oil production neared 3.4 million barrels per day (mb/d),⁶ approaching its 2010 3.7 mb/d level.⁷ However, sanctions have continued to depress Iran's oil exports,⁹ with Iran's March 2015 export level of 1.1 mb/d constituting 44 percent of its pre-2012 level of 2.5 mb/d.¹¹

2.2 The Natural Gas Sector

Almost all of Iran's current gas production is domestically consumed. While Iran exports a small volume of natural gas, primarily to Turkey, it has had to import gas from Turkmenistan.¹² In 2013, 90 percent of Iran's 9.2 bcm of



A gas flare near Gachsaran, Iran. Iran's natural gas exports will be the central factor impacting the Euro-Atlantic community's interests in the Eurasian energy infrastructure. Photo credit: Adam Jones/Flickr.

exports were sent to Turkey while 90 percent of Iran's 5.3 bcm of imports came from Turkmenistan.¹³ Iran's Turkmen gas imports equal 58 percent of its supply quota to Turkey. According to NIGC, annual exports in the Iranian calendar year 2014-15 rose to 9.7 bcm, representing a 4 percent increase.¹⁴ Iran's import volumes of Turkmen gas for the same period are difficult to estimate. It was reported in January 2015 that Iran imported 30 mcm/d,¹⁵ suggesting that Iranian year 2014-15 imports were between 6-11 bcm.

Iran's lack of growth in natural gas production stems from its inability to attract foreign investment and technology. The striking contrast between the magnitude of Iran's oil and gas reserves and the scale of its production capacity is in large part the result of the unattractive terms Iran offers to international oil and gas majors. Iran's entire energy sector is controlled by the state-owned National Iranian Oil Company (NIOC) and its subsidiaries. The "buy-back"

3 "Iran's Gas Production and Exports Rise," *LNG World News*, April 29, 2015, <http://www.lngworldnews.com/irans-gas-production-and-exports-rise>.

4 Dalga Khatinoglu, "Delivering Iranian Gas to EU Unlikely, Even in Long Time," *Trend News Agency*, December 23, 2014, <http://en.trend.az/business/energy/2346522.html>.

5 US EIA, "Iran," op. cit.

6 Ibid.

7 Sanctions did have an immediate impact on reducing production capacity which had fallen to 2.8 mb/d in July 2012. By 2011, Iran lost an estimated \$60 billion in foreign investments in its energy sector. However, the entrance of Chinese firms and revenues from increased exports resulting from the 2013 Interim Agreement helped Iran boost production.

8 Elham Hassanzadeh, *Iran's Natural Gas Industry in the Post-Revolutionary Period—Optimism, Scepticism, and Potential* (Oxford University Press, 2014), pp. 75, 77.

9 Prior to the EU's July 2012 import ban on Iranian oil, the EU constituted 25 percent of Iran's export market. Presently, China and India are the largest importers of Iranian oil followed by Japan, South Korea, and Turkey.

10 Kenneth Katzman, *Iran Sanctions* (Congressional Research Service, March 28, 2012), pp. 32-33.

11 Nidhi Verma, "IEA Sees Sharp Rise in Iran Oil Output in 3-5 Years Post Nuclear Deal," *Reuters*, April 12, 2015, <http://www.reuters.com/article/2015/04/12/us-iran-oil-ia-idUSKBN0N30RD20150412>.

12 Iran exports only to its immediate neighbors Turkey, Azerbaijan, and Armenia, with the latter two receiving about 0.92 bcm annually. See discussion further in text.

13 US EIA, "Iran," op. cit.

14 "Iran's Gas Production and Exports Rise," *LNG World News*, op. cit.

15 Dalga Khatinoglu, "Iran Leaps to Complete Potential Gas Export Routes," *Natural Gas Europe*, January, 13, 2015, <http://www.naturalgas-europe.com/iran-leaps-to-complete-potential-gas-export-routes>.

Table 1. Iranian Gas Consumption, 2013-15

Total Gas Consumption	Iranian Year 2014-15 (bcm)	Iranian Year 2013-14 (bcm)
Housing sector	90	88.9
Industrial sector	32.6	29.8
Power plants	50.3	36.8
Reinjection	33.9	32.9
Flaring	11.7	11.7
Export	9.7	9
Total	228.3 ¹⁶	209.1

Source: NIGC data as reported by the Shana News Agency and Trend News Agency.^{17 18}

contracts—short-term risk service contracts that Iran has offered to international oil companies (IOCs)—basically render these IOCs into limited-term contractors for NIOC.^{19 20}

The most glaring production gap is Iran's largest natural gas field, South Pars, located in the Persian Gulf adjacent to Qatar's North Dome field. Iran's South Pars field contains 40 percent of Iran's proven gas reserves. South Pars's production growth, however, has been extremely slow as its development is conducted primarily by NIOC since most international energy companies have abandoned the project. As of 2015, slightly over half of South Pars's twenty-four development phases are completed.²¹

South Pars's development will be Iran's first priority, while also developing its smaller existing gas fields and

the four new major fields discovered in 2011.²² If Iran succeeds in attracting sufficient foreign investment, it could almost double its gas production to 401 bcm annually within five years of the final investment decisions (FIDs).²³ Before exporting internationally, Iran will first need to allocate its gas production for the following uses: to satisfy Iran's overall increasing domestic consumption, to satisfy the increasing demand from the expansion of Iran's petrochemicals industry, and to satisfy the increasing demand for the reinjection of natural gas into its oil fields to enhance recovery.

At most, 80.2 percent of Iran's gross natural gas production will be marketed production, as Iran reinjects 12.4 percent of its gross production into oil wells to enhance recovery and flares 7.4 percent, according to the US Energy Information Agency.²⁴ Considering Iran's high rate of domestic petroleum consumption, the economic importance of foreign earnings from its oil exports, and the strategic importance of its position in East Asian oil markets, Iran will need to continue to improve its recovery rate, therefore gas reinjection into oil fields will remain a high priority. Iran announced that its gas reinjection rate for Iranian year 2014-15 was 93 mcm/d,²⁵ but will likely markedly increase, reaching 240 mcm/d, to enhance recovery and keep crude oil production sufficiently high.²⁶

16 There is a significant shortfall of 26.3 bcm between NIGC's total production figure of 202 bcm and NIGC's figures for total use shown in the chart. It is unlikely that Iran's gas imports account for the difference. The 202 production figure likely does not include flaring, in which case imports could have accounted for the rest of the deficit.

17 The figures for housing, industrial, power plants, and export are those announced by NIGC in Shana Agency news reports. The reinjection figure is based on the officially announced rate of 93 mcm/d, as reported in Trend. The figure for flaring is Trend's estimate for 365 days based on data NIGC announced for 360 days. 2013-14 figures are as reported in Trend.

18 Dalga Khatinoglu, "Iran's Gas Output Growth Clarified as New Year Looms," Trend News Agency, March 16, 2015, <http://en.trend.az/business/energy/2374592.html>; Dalga Khatinoglu, "Puzzle of Gas Re-injection in Iran; Economical or Not?," Trend News Agency, March 20, 2015, <http://en.trend.az/iran/business/2376060.html>.

19 BP, Conoco, ENI, Glencore, Inpex, Linde, Petronas, Reliance, Repsol, Royal Dutch Shell, Statoil, Total, and Vitol are among the energy firms that ended business in Iran by 2011 because of sanctions.

20 Katzman, *Iran Sanctions*, op. cit.

21 Development Phases 14-18 have not met their completion timelines and seem to have been delayed because of sanctions. However, at the time of writing, Phases 15 and 16 were nearing completion.

22 Forouz B (Persian Gulf) 793 bcm in-place reserves, Khayyam (on-shore) 277 bcm in-place reserves, Madar (Persian Gulf) 495 bcm, and Sardar-e Jangal fields (Caspian Sea) 1.5 tcm (although this last figure unconfirmed by outside sources).

23 Golnar Motevali, "Iran Seeks to Double Gas Output amid Sanctions, Official Says," *Bloomberg*, November 2, 2014, <http://www.bloomberg.com/news/articles/2014-11-02/iran-seeks-to-double-gas-output-amid-sanctions-official-says>.

24 US EIA, "Iran," op. cit.

25 Dalga Khatinoglu, "Puzzle of Gas Re-injection in Iran; Economical or Not?," op. cit.

26 US EIA, "Iran," op. cit., citing FGE Facts Global Energy.

The amount devoted to reinjection could be somewhat offset if, through increased foreign investment, improved oil production infrastructure captured and transported more natural gas, reducing the significant volumes Iran flares in its oil production.

In Iranian year 2014-15, according to NIGC, Iran's domestic gas consumption was 173.8 bcm.²⁷ NIGC told the state-owned Shana Energy News Agency that consumption from the household, commercial, and small industries sectors accounted for 90 bcm or 52 percent of total consumption, an annual increase of 2 percent.²⁸ In the same period, NIGC supplied 50.3 bcm to power plants, a year-on-year increase of 13.5 bcm or 37 percent.²⁹ Iran plans to increase gas delivery to power plants by approximately 14 percent.³⁰ According to NIGC, Iran's industrial sector received 32.6 bcm, representing 9 percent year-on-year rise.³¹ As economic development accelerates after sanctions are lifted, additional demand from Iran's industrial sector will likely increase rapidly.

Petrochemical products made from natural gas are one of Iran's few successful industrial exports. According to Iran's Association of Petrochemical Industry Corporations, Iran exported \$14 billion of petrochemical products in 2014-15, representing a 56 percent increase in earnings from the previous year.³² Iran's National Petrochemical Company (NPC) reported Iran's total petrochemical production during Iranian year 2013-14 was itself more than double NPC's reported level of 18.2 million tons in 2011-12,³³ which was affected by the 2012 intensification of the US and EU sanctions that banned Iranian petrochemicals. This ban was lifted as part of the Joint Plan of Action under the November 2013 Interim Agreement.³⁴

Iran has developed a significant position in Asian markets, with petrochemicals constituting a large proportion of Iran's non-oil exports to China. Expanding the productivity of its petrochemicals industry is one of Iran's top priorities.

27 "Iran Consumed 174 Bcm of Gas Last Year," *Natural Gas Asia*, April 5, 2014, <http://www.naturalgasasia.com/iran-consumed-174-bcm-of-gas-last-year-15211>.

28 Ibid.

29 "Natural Gas Production Up by 10%," *Shana*, April 26, 2015, <http://www.shana.ir/en/newsagency/239421/Natural-Gas-Production-Up-by-10>.

30 Dalga Khatinoglu, "Iran Leaps to Minimize Liquid Fuel Usage in Power Plants," *Trend News Agency*, May 13, 2015, <http://en.trend.az/business/energy/2394384.html>.

31 There is 0.9 bcm discrepancy between the overall consumption figure and the total of the sectoral amounts. This may be due to the fact that the figure for the domestic, commercial, and light industry is a rounded figure. There are also rounding differences between the figures reported to the Shana News Agency by NIGC's Gas Distribution Director Ebrahimi Naser and the company's Dispatching Director Manouchehr Taheri; "Natural Gas Production Up by 10%," *Shana*, op. cit.; "Iran Consumed 174 Bcm of Gas Last Year," *Natural Gas Asia*, op. cit.

32 "Iran Petrochemical Industry Ready for \$70bn in Investment," *Press TV*, April 19, 2015, <http://www.presstv.com/Detail/2015/04/19/406977/Petchem-ind-ready-for-70bn-investment>.

33 "Official: Iran's Petrochemical Exports Hit \$9bln," *Fars News*, May 9, 2015, <http://english.farsnews.com/newstext.aspx?nn=13930219000674>; Hassanzadeh, op. cit., pp. 145-146.

34 Katzman, *Iran Sanctions*, op. cit., p. 33; Kenneth Katzman, *Iran Sanctions* (Congressional Research Service, April 21, 2015), p. 11.

Tehran is seeking \$70 billion in investments to complete Iran's partially constructed petrochemical projects to raise annual petrochemical export revenues to \$40 billion.³⁵

However, Iran's ability to increase its gas allocation to the petrochemical sector requires a significant increase in gas production and/or reducing allocations to other sectors. In 2013-14, Iran was forced to decrease gas delivery to its petrochemical plants and caused a 7.5 million ton drop in petrochemical production.³⁶ The Iranian government's plan to raise annual petrochemical production to 100 million tons would require an annual allocation of approximately 26.9 bcm, or 13.3 percent of Iran's 2014-15 gas production.³⁷

PETROCHEMICAL PRODUCTS MADE FROM NATURAL GAS ARE ONE OF IRAN'S FEW SUCCESSFUL INDUSTRIAL EXPORTS.

If Iran raises its reinjection rate to 240 mcm/d and increases petrochemical production to 100 million tons while the current rate of increase in household and power plant consumption remains steady, 34-44 percent of an additional 200 bcm in Iranian gross natural gas production (68-88 bcm) would be available for LNG and piped gas export to international markets.³⁸

2.3 The Oil Sector

Iran's decision about where to export its natural gas will be affected by its oil relationships in the post-sanctions period. Iran's ability to maintain and expand its position in Asian oil markets in turn depends on its ability to improve recovery rates in its existing fields. Despite large reserves, Iran's oil industry confronts significant challenges. Iranian oil fields have relatively high decline rates (8-11 percent) and relatively low recovery rates (20-25 percent).³⁹ Additionally, Iran has not brought a new oil field on stream since 2007. More than capital investment, Iran desperately needs current technologies to enhance oil recovery in its existing fields.⁴⁰

35 Hassanzadeh, *Iran's Natural Gas Industry in the Post-Revolutionary Period*, op. cit., p. 147.

36 "Iran Warns of Gas Shortage Despite Production Increase," *Natural Gas Europe*, December 10, 2014, <http://www.naturalgaseurope.com/iran-warns-gas-shortage-while-supplying-increased-by-11>.

37 According to the 2013-14 production rate, 12.8 bcm (35 mcm/d) would have yielded 47.5 million tons of petrochemicals. Assuming the same gas consumption rate in production, 100 million tons in annual production would require 26.9 bcm.

38 The calculation assumes the same rate of flaring for the additional 200 bcm. The range depends on the increase in gas consumption by Iran's industrial sector aside from its petrochemical industry. And if Iran goes beyond the 70 bcm of gas delivery, it would need to replace the use of liquid fuels in its thermal power plants.

39 Eldar O. Kasayev, "Oil Markets Have Little to Fear from Iran for Now," *OilPrice.com*, May 8, 2015, <http://oilprice.com/Energy/Oil-Prices/Oil-Markets-Have-Little-To-Fear-From-Iran-For-Now.html>.

40 Ibid.

Nonetheless, Iran is the world's fifth largest oil producer. In 2014, Iranian crude oil and condensate exports rose almost 150,000 barrels per day (150 kb/d) to 1.4 million barrels per day (mb/d), responding to increased demand from China and, to a much lesser extent, India.⁴¹ Iran has set a target of increasing its oil export capacity by one million barrels per day within two months after the sanctions are lifted.⁴² In March 2015, Iran produced 2.8 mb/d of crude oil, and Iran could increase its production as high as 3.4 or 3.6 mb/d within months after sanctions.⁴³ In the first half of 2014, condensate and natural gas plant liquids production were 600 kb/d.⁴⁴ Iran's total crude oil and condensate production could reasonably reach 4-4.2 mb/d in the immediate post-sanctions period.⁴⁵

2.4 Foreign Direct Investment

To achieve full scale oil and gas production within five years after sanctions' end, Iran would require an influx of foreign direct investment (FDI) of over \$140 billion.⁴⁶ The timing of lifting sanctions will affect IOC investor confidence, determining the time frame in which final investment decisions (FIDs) are made. FID delays would increase Iran's timeline for achieving full production, allowing Iran's competitors to secure market share. Thus, the aforementioned factors impinging on the timing of FIDs serve as leverage over Iran's negotiating positions.

Iran's Minister of Petroleum Bijan Namdar Zanganeh leads the effort to revive Iran's oil and gas production. Zanganeh oversaw the reconstruction of Iran's critical infrastructure damaged during the 1980-88 Iran-Iraq war. The veteran bureaucrat is also experienced in negotiating with Western energy companies, having previously served as Minister of Petroleum in Mohammed Khatami's reformist government until his 2005 removal by then-newly elected President Mahmoud Ahmedinejad. Zanganeh's reinstatement by current Iranian President Hassan Rouhani is aimed at ensuring a better working relationship between Western energy majors and NIOC.⁴⁷ Despite Zanganeh's leadership, a post-sanctions Iran will have difficulty attracting IOCs to develop its hydrocarbon resources by offering buy-back

agreements. Production sharing agreements (PSAs) violate the Iranian constitution. To ameliorate this situation in the post-sanctions period, Iran is developing a new contract model called an Integrated Petroleum Contract (IPC) to offer IOCs some of the benefits of a PSA. Under the proposed IPC scheme, Iran will pay an IOC a share of the project's revenue via installments once production begins, with payment terms adjusted as the project's development progresses. The IPC terms could extend to a twenty-five-year period, doubling the period under present buy-back terms.

Iran's greatest need for foreign investment is in LNG infrastructure development, especially to meet Zanganeh's three-year target to start LNG exports.⁴⁸ Iran has no completed LNG infrastructure despite the goal of Iran's fourth Five-Year National Development Plan (2005-09) to produce 70 million tons of LNG by constructing six LNG plants.⁴⁹ By 2008, Iran had cancelled LNG plant construction contracts with Total, Repsol, Shell, and Petronas, resulting in the loss of 27 million tons (37.2 bcm) of production capacity.⁵⁰ All of Iran's subsequent efforts have been similarly aborted—most recently, Iran's September 2014 cancellation of China's CNOOC Group's \$3.3 billion contract to construct a plant to produce 10.5 million tons (14.5 bcm)/year.⁵¹ In late June 2015, the head of the National Iranian Gas Export Company (NIGEC) declared that Iran will export 40 million tons (55.2 bcm) of LNG, a volume approximately equivalent to the production capacity Iran has lost through its history of cancelled contracts.⁵²

To develop its LNG infrastructure, Iran will have to enlist US, European, Japanese, and South Korean companies that possess the proprietary technology to help develop liquefaction plants. ExxonMobil, ConocoPhillips, Shell, Total, Marubeni, and Mitsui each contributed to Iran's neighbor Qatar becoming the world's leading LNG producer.⁵³ The attempt to develop Iran's LNG industry remains one of the greatest sources of influence that Western IOCs and, perhaps, their home nations will use to leverage Iranian energy policy.

2.5 Overview of Iran's Geostrategic Imperatives

With the end of sanctions and an ensuing détente between Tehran and Washington, Iran's perception of the

41 US EIA, "Iran," op. cit.; Benoit Faucon, "China Boosts Iran's Crude Exports," *Wall Street Journal*, February 13, 2015, <http://www.wsj.com/articles/SB10001424052702303704304579380291865386108>.

42 Iran reportedly has enough oil in floating storage to export 180 kb/d for six months. Exports from floating storage could be used to offset a shortfall in the expansion of production capacity; International Energy Agency, *Oil Market Report* (April 15, 2015), <https://www.iea.org/media/omrreports/fullissues/2015-04-15.pdf>.

43 Ibid.

44 US EIA, "Iran," op. cit.

45 Joshua Posaner, "Iran Puts Asia First for Gas Exports—Zanganeh," *Interfax*, May 8, 2015, <http://interfaxenergy.com/gasdaily/article/16057/iran-puts-asia-first-for-gas-exports-zanganeh>.

46 Iran's Fifth Five-Year Development Plan (2011-15) called for attracting \$140 billion of investments in its upstream oil and gas facilities and as well as transportation infrastructure for annual gas exports of 75 bcm, including both pipeline and LNG exports. Petroleum Minister Zanganeh has called for \$180 billion in investments; "Iran Plans \$180 Billion Energy Investment," *Press TV*, May 7, 2015, <http://www.presstv.com/Detail/2015/05/07/409935/Iran-oil-trade-germany>.

47 US EIA, *Oil Market Report*, op. cit.

48 Posaner, "Iran Puts Asia First for Gas Exports—Zanganeh," op. cit.

49 Dalga Khatinoglu, "Iran's LNG Dreams Relying on China," *Trend News Agency*, September 3, 2012, <http://en.trend.az/iran/2061289.html>.

50 Ibid.

51 The CNOOC contract cancellation is but one instance in Iran's long pattern of cancelling contracts with China's energy companies. Other notable examples are Iran's 2012 cancellation of CNPC's contract to work on South Pars's development and its April 2014 cancellation of CNPC's contract to develop the Azadegan oil field. In most cases, Iran has cited production delays as the cause.

52 "Iran to Resume Abandoned LNG Project," *Press TV*, June 25, 2015, <http://www.presstv.ir/Detail/2015/06/25/417492/iran-gas-lng-exports-sanctions-kameli>.

53 The South Korean companies Samsung Heavy Industries and Daewoo Shipbuilding & Marine Engineering (DSME) have become industry leaders in floating liquid natural gas (FLNG) plant construction. Samsung is building Shell's Prelude FLNG plant, while DSME has received contracts to construct FLNG plants from Petronas and ENI.

United States as a military threat will greatly diminish. Iran's and Russia's opposing geostrategic interests would then return to the forefront of their relationship, rendering Russia one of Iran's greatest geopolitical challenges in Eurasia.⁵⁴

A post-sanctions Iran will emerge as Russia's most threatening competitor in the Eurasian energy market. Russia has demonstrated its willingness to cancel contracts and resort to the use of force to maintain its predominant position in the EU gas market. The Ukraine crisis has signaled to Tehran's decision-makers the lengths to which Moscow will go to expand Russian control over its neighbors' transportation and distribution infrastructure. The matter was brought close to home for Tehran with Russia's June 2015 announcement that the state-controlled energy firm Gazprom will purchase Armenia's 41 km section of the Iran-Armenia natural gas pipeline. Iran has a strong strategic interest in the preservation of the political sovereignty of its northern neighbors Azerbaijan and Turkmenistan, including through cooperation with Turkey to limit Russian influence in the South Caucasus and Caspian basin. Iran can most effectively secure this interest by exporting natural gas to Europe via TANAP.

2.6 Iran's Intentions toward the European Gas Market

Petroleum Minister Zanganeh's public statements have emphasized Iran's preference to sell natural gas to Asia rather than Europe, claiming that this "Asia first" policy is based on the commercial rationality of gas prices.⁵⁵ This report contends that the "Asia first" discourse does not reflect Iran's final position on the issue. Iran's current posture accomplishes four key objectives: 1) To assuage Moscow that Iran will not pose a threat to its position in the European gas market and provide a conciliatory tone for Russian

public consumption;⁵⁶ 2) To reassure Beijing that the reliability of its supply is not threatened. These first two reasons are also important for Iran's bid for full Shanghai Cooperation Organization (SCO) membership; 3) To stake out a hard bargaining position to receive better terms from Turkey and Azerbaijan; and 4) To create an incentive for Western companies who hold monopolies over critical LNG technology to offer Iran better terms in exchange for "conceding" to participate in the SGC.

A POST-SANCTIONS IRAN WILL EMERGE AS RUSSIA'S MOST THREATENING COMPETITOR IN THE EURASIAN ENERGY MARKET.

Zanganeh's statements also seem intended to retract remarks made by Iran's Ambassador to Azerbaijan Mohsen Pak Ayeen indicating a serious Iranian commitment to explore how to participate in TANAP.⁵⁷ The discrepancy demonstrates that there are divisions within the government on Iran's energy policy. While Iran's Foreign Ministry and President focus on the geopolitical importance of Iran's energy relationships, Zanganeh focuses on their commercial rationality. In 2014, Zanganeh himself alluded to the divide when he claimed that Iran no longer needed natural gas from Turkmenistan due to a rise in Iran's domestic gas production, but imports Turkmen gas to promote political and economic relations with Turkmenistan.⁵⁸ Zanganeh's assertion seems to have been demonstrated by President Rouhani's March 2015 announcement that Iran would increase its imports of Turkmen gas.⁵⁹ Apparently aiming to lure Turkmenistan away from exporting its gas to Europe via Azerbaijan, Rouhani also suggested Iran could serve as transit state for Turkmen gas.

Moreover, the expressed rationale behind Iran's "Asia first" discourse does not stand up to scrutiny. During late winter 2015, the United Kingdom's National Balancing Point⁶⁰ gas

54 The recognition that Iran potentially faces increasingly adversarial relationship with Russia was publically reflected in an early May 2015 article published on the semi-independent Iranian website *Iran Diplomacy* managed by Seyed Mohammad Sadegh Kharazi, Iran's former Ambassador to the United Nations. The Persian-language article entitled "Russia Looks at Iran as a Tactical Weapon," with startling directness, claimed that Russian-Iranian cooperation is a temporary phenomenon that will soon end as the two countries do not share long-term strategic interests. It further suggested that Russia is an unreliable strategic partner based on its recent behavior. Since Kharazi served as Iran's Ambassador to France under the former reformist President Mohammad Khatami and is currently Khatami's close adviser on matters of foreign policy, including the "Dialogue among Civilizations" initiative, the article may reflect a general line of geopolitical thinking among Iran's reformist faction. See *Iranian Diplomacy*, <http://www.irdiplomacy.ir/fa/page/1946606/%D8%B1%D9%88%D8%B3%D-B%8C%D9%87+%D9%88+%D9%86%DA%AF%D8%A7%D9%87+%D8%A7%D8%A8%D8%B2%D8%A7%D8%B1%D-B%8C+%D9%88+%D8%AA%D8%A7%DA%A9%D8%AA%-DB%8C%DA%A9%DB%8C+%D8%A8%D9%87+%D8%A7%D-B%8C%D8%B1%D8%A7%D9%86+.html> (in Farsi).

55 In responding to a question at the early May 2015 Berlin Energy Security Summit about the possibility of Iranian piped gas exports to Europe, Zanganeh said, "Asia is now in a better situation. It's all about money and the prices. The price in Europe is not attractive to us when it comes to gas exports." See Posaner, "Iran Puts Asia First for Gas Exports—Zanganeh," op. cit.

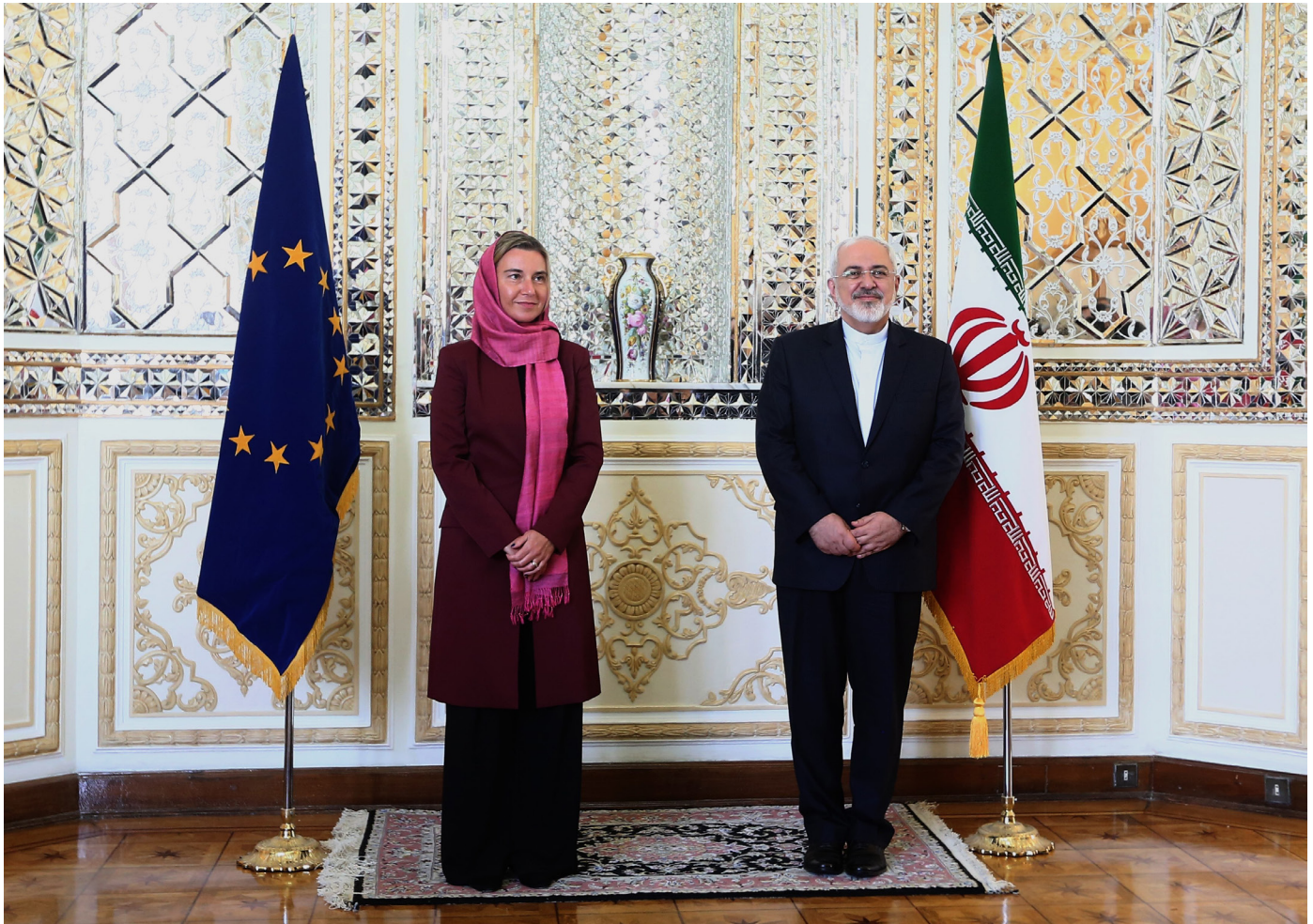
56 Zanganeh's comments were highlighted in the Russian business newspaper *Kommersant*. See Yuriy Barasukov, "V Yevrope Proveli Polosu Otchuzhdeniya [In Europe, We Established a Trackside]," *Kommersant*, May 15, 2015, <http://www.kommersant.ru/doc/2726153>.

57 "Iran May Hold Talks with TANAP Shareholders Putting Forward Useful Proposals," Azerbaijan Press Agency (APA), May 5, 2015, http://en.apa.az/xeber_ambassador__iran_may_hold_talks_with_ta_226670.html.

58 "Iran Does Not Need to Import Natural Gas from Turkmenistan," *GulfOilandGas.com*, August, 13, 2014, <http://www.gulfoilandgas.com/webpro1/main/mainnews.asp?id=37788>.

59 "Iran to Increase Imports of Turkmen Gas; Rouhani," *Daily Mail Online*, March 11, 2015, <http://www.dailymail.co.uk/wires/afp/article-2989831/Iran-increase-imports-Turkmen-gas-Rouhani.html>.

60 The National Balancing Point (NBP) is a virtual gas trading location whose price is widely accepted as an indicator for Europe's wholesale gas market.



The High Representative of the European Union for Foreign Affairs and Security Policy Federica Mogherini meets with Iranian Foreign Minister Javad Zarif in Tehran, July 28, 2015. *Photo credit: European External Action Service.*

price was higher than spot LNG prices in North East Asia.⁶¹ With the flattening of LNG prices between Europe and Asia, North East Asian LNG markets are no longer as attractive as they once were. Transporting Iranian gas from South Pars to the EU border via TANAP, by the most conservative estimate, would entail a distance of 3,341 km, below the 3,704 km cut-off. Because North East Asian LNG spot prices are not expected to rise in the near term, piped gas exports to EU markets will not be as unprofitable as Iranian officials have claimed.

Perhaps most indicative, Iran has repeatedly raised the issue of reviving the Nabucco pipeline project since the November 2013 Interim Agreement. While a standalone, dedicated pipeline for Iranian gas would be a political boon for Tehran, this report considers the Iranian proposal to be aimed primarily at Azerbaijan to attain concessions for Iran's participation in TANAP. Iran's push to revive the Nab-

ucco pipeline dispels the notion of its supposed disinterest in the European market. The Nabucco pipeline was intended to transport gas from Erzurum, Turkey via Bulgaria to Baumgartner an der March, Austria. The real possibility that Europe would receive natural gas from Iran constituted a significant initial impetus for the EU to undertake the Southern Gas Corridor project and develop the now defunct Nabucco pipeline.

Among Iran's several overtures concerning Nabucco, Tehran's offers to Austria and Bulgaria prove most telling. In September 2014, Rouhani informed his Austrian counterpart that Iran was ready to supply gas to Europe via the Nabucco pipeline, asserting that "the Islamic Republic can be a reliable supplier of energy for Europe."⁶² A few weeks after Bulgaria's March 2015 formal notification to the European Commission that Bulgaria wanted to revive the Nabucco project, Iran's Ambassador to Bulgaria met with Prime Minister Boyko Borisov and his Energy Minister Temenuzhka Petkova to discuss Iran's participation in the

61 Ed Cox, "Asian Spot Gas Prices below Britain for First Time since 2010," ICIS, February 4, 2015, <http://www.icis.com/press-releases/asian-spot-gas-prices-below-britain-for-first-time-since-2010/?cmpid=ILC>; Anna Siryaevskaya, "Sinking Gas in Asia Sees Tankers Heading West: Chart of the Day," *Bloomberg*, February 6, 2015, <http://www.bloomberg.com/news/articles/2015-02-06/sinking-gas-in-asia-sees-tankers-heading-west-chart-of-the-day>.

62 Brue Pannier, "Iran Seeking Role in Selling Gas to Europe," *Radio Free Europe/Radio Liberty*, April 27, 2015, <http://www.rferl.org/content/russia-iran-gas-supply-europe/26862739.html>.

Map 1. The Eurasian Pipeline Network



Image credit: Atlantic Council.

pipeline.⁶³ Tehran's Nabucco overtures reflect its multilayered diplomacy designed to position Iran in the European gas market. Bulgaria has been adversely affected by Moscow's cancellation of the South Stream pipeline in favor of the "Turkish Stream"⁶⁴ route that will bypass Bulgaria. Tehran's overture to Bulgaria indicates Iran will not hesitate to exploit opportunities emerging from the EU's efforts to reduce its dependence on Russian gas supplies.

3. TURKEY AND AZERBAIJAN

3.1 Introduction

Ankara and Baku are seeking to incorporate more suppliers into TANAP to ensure the SGC's long-term sustainability as an energy transportation corridor to Europe. The central questions concerning Iran's energy relationships with Turkey and Azerbaijan are whether and in what manner Iran will participate in TANAP and whether Iran will acquiesce to Turkmenistan's participation in TANAP.

With a 16 bcm initial capacity, TANAP will transport natural gas from the second development phase of Azerbaijan's offshore Shah Deniz field (SD2).⁶⁵ Expected to be fully operational in 2019, TANAP will provide Turkey with

63 "Iran Tabled Rebirth of Nabucco at Meeting with Bulgaria PM, Ambassador Says," Novinite Sofia News Agency, April 30, 2015, <http://www.novinite.com/articles/168258/Iran+Tabled+Rebirth+of+Nabucco+at+Meeting+with+Bulgaria+PM%2C+Ambassador+Says>.

64 The Turkish Stream, consisting of four pipelines with an aggregate annual capacity of 63 bcm, is intended to transport Russian gas across the Black Sea to Turkey for further delivery to the EU. Russia proposed the Turkish Stream upon cancelling the South Stream pipeline project that sought to transport Russian gas across the Black Sea to the EU via Bulgaria.

65 SD2 and the SGC will bring Caspian natural gas to the European market for the first time. The production of SD2 gas and its transport via the expanded SCP-X pipeline to the Georgia-Turkey border will cost an estimated \$28 billion. BP, SD2's largest shareholder (28.8 percent), is the lead operator. The other consortium members are Turkey's TPAO (19 percent), Azerbaijan's SOCAR (16.7 percent), Malaysia's Petronas (15.5 percent), Russia's Lukoil (10 percent), and Iran's NIOC (10 percent).

6 bcm, leaving the remaining 10 bcm for sale to the EU.⁶⁶ A standalone, dedicated pipeline for the SGC, TANAP will circumvent the inefficiencies in Turkey's existing gas transmission system operated by Turkey's state-owned pipeline company BOTAS.⁶⁷

TANAP's export volume to Europe is expected to increase at least 1 bcm per year. Slated to transport 31 bcm by 2026 and, with infrastructure expansion, ultimately 60 bcm, TANAP's increasing capacity has important geopolitical ramifications for the Caspian Basin as the pipeline will likely need to transport gas from other regional producers besides Azerbaijan, particularly Iran and/or Turkmenistan.⁶⁸ If Baku continues to exploit its existing gas reserves at the current pace, it will completely deplete its reserves in forty years.⁶⁹ Therefore, despite facing price competition from Iran and Turkmenistan in the short term, transporting either Iranian or Turkmen gas via TANAP is in Azerbaijan's long-term economic and strategic interests.

Likewise, expanded gas deliveries to Turkey via TANAP are important to the Turkish economy. Turkey relies on Russian gas for over 60 percent of its supply mix.⁷⁰ As Turkey's consumption rate continues to increase, Ankara regards the reliable supply of reasonably priced Caspian natural gas delivered via TANAP as a strategic imperative.

The minimum commercially significant, annual volume of gas for Iran to transport via TANAP is 7 bcm, slightly less than half of the 16 bcm total Azerbaijan will initially transport and 70 percent of Azerbaijan's initial exports to the EU.⁷¹ With TANAP's scheduled capacity expansion to 23 bcm by 2023, the SCG could accommodate Iran's 7 bcm.⁷² This volume also equals 70 percent of BOTAS's estimate of Turkey's 2023 demand increase over present consumption levels.⁷³ Alternatively, Turkmenistan could export the same volume via TANAP. With the pipeline's

further scheduled capacity expansion in 2026, TANAP could transport a total of 15 bcm of Iranian and/or Turkmen gas.

Both Turkey and Azerbaijan consider TANAP's success a matter of vital national interest, albeit for different reasons. For Turkey, TANAP, as the transit route for Caspian gas to reach the EU, forms a central pillar in Ankara's strategic policy to become an international energy transportation hub. For Azerbaijan, TANAP is the central pillar of Baku's strategic policy to develop international stakeholders in Azerbaijan's political sovereignty through the construction of energy infrastructure. From a purely commercial standpoint, it would be more efficient for Azerbaijan to sell its gas to Turkey at the border instead of the State Oil Company of the Azerbaijan Republic (SOCAR) constructing an \$11 billion pipeline across the length of Turkey.

In the aftermath of the 2008 Russian-Georgian war, Turkey and Azerbaijan began to formalize a strategic partnership to bolster their mutual security vis-à-vis Moscow in the wider Black Sea/South Caucasus region. The SGC, particularly TANAP, is the outcome this partnership. Against the backdrop of Russia's 2014 annexation of Crimea, continued sponsorship of low-intensity conflict in eastern Ukraine, Black Sea naval build-up, and ongoing presence in the Georgian breakaway regions of Abkhazia and South Ossetia, the creation of a Baku-Bosporus energy transportation corridor has assumed a new strategic urgency.

3.2 The Turkish-Iranian Energy Relationship

While Ankara and Baku have a common interest in Iran's participation in TANAP, Turkey's energy relationship with Iran differs significantly from Azerbaijan's relationship. Turkey receives about 20 percent of its natural gas from Iran.⁷⁴ Although Turkish imports constitute almost 90 percent of Iran's gas exports, Turkey pays Iran a higher price than it pays to other suppliers.⁷⁵ In 2013, Turkey paid \$349/1,000 m³ for Azerbaijani gas and \$406/1,000 m³ for Russian gas.⁷⁶ In contrast, Turkey paid \$507/1,000 m³ for Iranian gas.⁷⁷ The pricing of Iran's gas exports to Turkey remains a principal source of tension between Ankara and Tehran.⁷⁸

66 Sabina Ahmadova, "TANAP to Create Long-Term and Strong Relations with European Countries," Trend News Agency, May 30, 2014, <http://en.trend.az/capital/energy/2280044.html>; BP, "Shah Deniz Final Investment Decision Paves Way for Southern Corridor Gas Link with Europe," December 17, 2013, <http://www.bp.com/en/global/corporate/press/press-releases/shah-deniz-final-investment-decision-paves-way.html>; Gulmira Rzaeva, *The Outlook for Azerbaijani Gas Supplies to Europe: Challenges and Perspectives* (Oxford Institute for Energy Studies, June 1, 2015).

67 SOCAR is the lead shareholder (58 percent) in TANAP followed by BOTAS (30 percent) and SD2 consortium leader BP (12 percent). Unlike SD2, neither Iran nor Russia has a stake in TANAP.

68 Aynur Aliyeva, "TANAP Partners Intend to Realize Project at Their Own Expenses," APA, February 15, 2014, <http://en.apa.az/print/207160>.

69 Elnur Soltanov, "The Emerging Patterns of Azerbaijan's International Energy Policy: Continuities and Changes," *Caucasus International* vol. 2, no. 2, summer 2012, pp. 89-90.

70 Zeynep Cermen, "Turkmenistan's Gas Will Flow to Europe via Turkey," *SES Türkiye*, July 1, 2014, http://turkey.setimes.com/en_GB/articles/ses/articles/features/departments/world/2014/07/01/feature-01.

71 To justify the cost of a 2,250 km pipeline from Iran's South Pars field to Turkey, the pipeline diameter size needs to be commensurate with the length, approximately 24 inches or greater, making approximately 7 bcm annually the minimum commercially viable capacity.

72 Gulmira Rzaeva, *Natural Gas in the Turkish Domestic Energy Market* (Oxford Institute for Energy Studies, 2014), p. 58.

73 Ibid., p. 27.

74 US EIA, "Turkey-International Energy Data and Analysis," August 6, 2015.

75 US EIA, "Iran," op. cit.

76 İsmail Altunsoy, "Rusya Doğalgaza Yüzde 8 Değil, Yüzde 4 İndirim Yaptı [Russia Gave a 4% Discount on Turkey's Natural Gas Imports, Not 8%]," *Zaman*, March 30, 2013, http://www.zaman.com.tr/ekonomi_haber-inceleme-rusya-dogalgaza-yuzde-8-degil-yuzde-4-indirim-yapti_2071769.html; "Costs and Capacity Hinder Turkish Gas Sector," *Natural Gas Europe*, November 4, 2013, <http://www.naturalgaseurope.com/turkish-gas-sector>.

77 Altunsoy, "Rusya Doğalgaza Yüzde 8 Değil, Yüzde 4 İndirim Yaptı [Russia Gave a 4% Discount on Turkey's Natural Gas Imports, Not 8%], op. cit.

78 Turkey signed a twenty-five-year contract with Iran in 1996 that went into effect in 2001. While the contract's exact pricing formula was not publicly disclosed, the price was linked in some manner to oil price averages. The high gas price reflects the pricing formula's inelastic response to the drop in oil prices and Iran's refusal to discount the price. See BOTAS, "Natural Gas Sale and Purchase Agreements," <http://www.botas.gov.tr/index.asp>.

For Turkey to introduce more Iranian gas into its supply mix, the additional Iranian imports must be delivered via TANAP because BOTAŞ's transport system lacks sufficient capacity east of Ankara. Iranian gas imports currently encounter a bottleneck across eastern Turkey from Horasan to Ankara. Importing Iranian gas under a contract with a "take-or-pay" (ToP) obligation, BOTAŞ has defaulted on its ToP obligation in 2008, 2009, and 2010. In 2009, BOTAŞ paid Iran \$2 billion in ToP penalties. If Iran's natural gas was transported via TANAP, thereby avoiding the Horasan to Ankara bottleneck, Turkey could purchase greater volumes and deepen its economic relationship with Iran.

3.3 The Azerbaijani-Iranian Energy Relationship

The demarcation of the Caspian Sea's boundaries forms the principal source of tension in the Azerbaijan-Iran energy relationship, as Baku and Tehran maintain conflicting claims over offshore energy reserves. Prominent among the disputes are Azerbaijan's Araz-Alov-Sharg hydrocarbon blocks, a 1,400 km² area containing an estimated 700 bcm of natural gas. Called "Alborz" by Iran, Tehran disputes Baku's ownership of all three fields. Iran claims the Alov field, 120 km southeast of Baku, is partially located in Iranian territorial waters. In 2001, two BP research vessels were driven off the Alov field by an Iranian gunboat. Operator BP has not returned to the area since the incident and no work has commenced on the field.⁷⁹

Nevertheless, Azerbaijan and Iran engage in limited energy cooperation. Azerbaijan maintains a twenty-five-year contract with Iran to supply gas to the Nakhchivan Autonomous Republic, the Azerbaijani exclave separated from the rest of Azerbaijan by Armenian territory. Although Iran charges Azerbaijan a high transit fee of 15 percent of the offtake value, Iran still provides a vital service in support of Azerbaijan's territorial integrity.

3.4 Turkmenistan, TANAP, and the Eurasian Energy Architecture

The SGC's long-term viability requires the participation of other Caspian littoral states—particularly, Turkmenistan—if Iran does not participate. Thus, Turkmen gas exports to Europe via the SGC form a critical policy objective for Turkey and Azerbaijan, significantly impacting their future energy relationships with Iran, as Tehran has consistently opposed the undersea pipeline necessary for Turkmen gas exports. With the world's fourth largest proven reserves, Turkmenistan represents an important alternative source of natural gas alongside, or in place of, Iran for both Turkey and the EU as they seek to alleviate their dependency on Russia.⁸⁰ TANAP makes Turkmen

gas exports to Turkey and the EU possible. Ankara has declared its intention to incorporate 5-6 bcm of Turkmen natural gas into TANAP.⁸¹

The export of Turkmen gas via TANAP involves the construction of a \$5 billion, 300 km undersea Trans-Caspian Pipeline (TCP) between Turkmenistan and Azerbaijan. The TCP's construction requires a political reconciliation between Turkmenistan and Azerbaijan, divided over the disputed Serdar (Turkmen)/Kyapaz (Azeri) hydrocarbon field located 145 km from Azerbaijan's coast. Absent a boundary settlement, Baku and Ashgabat would need to either compartmentalize the issue or expediently agree to joint development terms.

THE GREATEST OBSTACLE TO THE TRANS-CASPIAN PIPELINE CONSTRUCTION HAS BEEN IRAN'S AND RUSSIA'S CONSISTENT OPPOSITION TO THE PROJECT.

An additional hurdle to the TCP's construction is Turkmenistan's policy commitment to avoid involvement in external pipeline projects or assume any obligations for gas disruptions abroad. With Turkmenistan willing to do little more than deliver gas to its border, the TCP's construction has required concerted effort from the other interested parties to advance the project.

To this end, Maros Sefcovic, the European Commission Vice President in charge of Energy Union, participated in the May 1, 2015 Ashgabat quadrilateral summit of the EU, Turkey, Azerbaijan, and Turkmenistan. Resulting in the Ashgabat Declaration outlining the parties' next steps for bringing Turkmen gas to Europe, the European Commission Vice President emerged from the summit asserting "Europe expects supplies of Turkmen gas to begin by 2019."⁸² The summit also empowered the W-Stream Company, a reconfiguration of the White Stream Pipeline company, to carry the TCP project forward as the parties search for IOCs join a TCP consortium.⁸³

79 Statoil, "Azerbaijan," *Statoil Annual Report 2011*, <http://www.statoil.com/annualreport2011/en/ouroperations/businessareas/developmentandproductioninternational%28dpi%29/internationalfields/pages/azerbaijan.aspx>.

80 Joao Peixe, "Turkmenistan's Proven Natural Gas Reserves Almost Doubled in New BP Review," *OilPrice.com*, July 22, 2012, <http://oilprice.com/Latest-Energy-News/World-News/Turkmenistans-Proven-Natural-Gas-Reserves-Almost-Doubled-in-New-BP-Review.html>.

81 Ali Ünal, "Turkey to Increase Its Stake in TANAP" *Daily Sabah*, March 29, 2014, <http://www.dailysabah.com/energy/2014/05/30/turkey-to-increase-its-stake-in-tanap>.

82 Marat Gurt, "Exclusive—European Union Sees Supplies of Natural Gas from Turkmenistan by 2019," *Reuters*, May 2, 2015, <http://uk.reuters.com/article/2015/05/02/uk-turkmenistan-gas-europe-exclusive-idUKKBN0NN0FI20150502>.

83 Trans-Caspian Pipeline, <http://w-stream-pipeline.candc6.us/>.

The greatest obstacle to the TCP's construction has been Iran's and Russia's consistent opposition to the project.⁸⁴ Iran has offered itself as a transit state for Turkmen gas to reach Turkey and the EU market.⁸⁵ Sefcovic acknowledged that this option was discussed in Ashgabat along with the TCP. Iran lacks sufficient capacity to transport commercially significant volumes of Turkmen gas. Iran would have to undertake a massive infrastructure expansion requiring a minimum of five years, assuming Tehran obtained the prerequisite financing.⁸⁶

3.5 Iran and TANAP: Possible Incentives Baku and Ankara Can Offer Tehran

To prevent the return of Russian hegemony over the countries along Iran's northern border, Tehran has a geo-strategic interest in participating in TANAP and acceding to Turkmenistan's participation as well. At the same time, Tehran would require assurances that its regional interests would not be threatened.

On April 4, 2015, two days after the Comprehensive Framework Agreement, SOCAR's President Rovnag Abdullayev told the press, "After lifting sanctions against Iran, the relevance of TANAP will grow even more. For future gas export from Iran, the Trans Anatolian line would be the only option to deliver it into the world markets."⁸⁷ Echoing SOCAR's overture, Turkey's Minister of Energy Taner Yıldız declared Ankara's openness to Iran joining TANAP.⁸⁸

However, Abdullayev's pronouncement that Iran will be compelled to export natural gas via TANAP for lack of alternatives may be too optimistic. Sixteen days after Abdullayev's remarks, China signed an agreement with Pakistan to finance and construct most of Pakistan's uncompleted portion of the Iran-Pakistan pipeline. The Iranian section is already completed. TANAP will likely face competition from the Iran-Pakistan pipeline at the onset of the post-sanctions period. With the possibility of extending the Iran-Pakistan pipeline to western China, Beijing has strategic motivations to encourage Tehran to export its gas to Pakistan rather than the EU.

SOCAR could allow Tehran a commercial stake in TANAP by selling a portion of its shares to Iran. Abdullayev acknow-

ledged SOCAR was prepared to consider an Iranian bid for an equity share in TANAP after sanctions end.⁸⁹ SOCAR previously announced its willingness to sell up to 8 percent of its 58 percent stake in TANAP to a new shareholder.⁹⁰ Iran's Ambassador to Azerbaijan Pak Ayeen has indicated Iran's interest in acquiring an equity share in TANAP.⁹¹

Beyond an equity share in TANAP, there are other incentives Turkey and Azerbaijan can offer Iran to export gas via TANAP or to not obstruct Turkmen gas exports along the same pipeline.

3.4.1 Turkey's Incentives to Iran: Putting Bilateral Trade First

Turkey's key to incentivizing Iran is Ankara's compartmentalization of its rivalry with Tehran in Syria and other parts of the Arab Middle East. Iran's willingness to insulate its economic relationship with Turkey from their geopolitical rivalry was demonstrated by Tehran's reception of the April 7, 2015 visit by Turkey's President Recep Tayyip Erdoğan despite his incendiary remarks about Iran's role in the Middle East made prior to the visit.⁹² Amid the calls from Iranian parliamentarians and other notable political figures for Rouhani to demand an apology from Erdoğan and cancel his visit, Iran's ILNA news agency, considered close to Iran's reformist faction that supports Rouhani, ran an article about the importance of preserving relations with Turkey by compartmentalizing their foreign policy conflicts.⁹³ For Iran, and particularly its reformist faction, Turkey represents an important economic partner and avenue to the West.

President Erdoğan did visit Tehran, meeting with his Iranian counterpart and Iran's Supreme Leader Ali Khamenei. Focused on raising Turkish-Iranian bilateral trade to \$30 billion from its current \$14 billion level,⁹⁴ Erdoğan pressed the Iranian side on the gas price issue by suggesting that Turkey would significantly increase its gas imports if Iran

84 Ashgabat's refusal to issue Western IOCs an equity stake in its fields has generally hampered the development of Turkmenistan's production and transportation infrastructure, negatively impacting prior efforts to establish the TCP. Similar to Iran, PSAs violate Turkmenistan law, which precludes the private ownership of land.

85 "Turkmen Gas Could Reach Europe through Iran: EU," AFP, May 1, 2015, <http://www.hurriyetdailynews.com/turkmen-gas-could-reach-europe-through-iran-eu-.aspx?pageID=238&nID=81821&NewsCatID=348>.

86 "EU, Turkmenistan Discuss Iran Gas Route," Press TV, May 1, 2015, [http://www.presstv.ir/Detail/2015/05/01/408978/Iran-EU-Turkmenistan-gas; Sohbət Karbuz quoted in Huseyn Hasanov, "Turkmenistan in Talks with Azerbaijan, Turkey on Gas Export to Europe," Trend News Agency, April 7, 2015, http://en.trend.az/business/economy/2381151.html](http://www.presstv.ir/Detail/2015/05/01/408978/Iran-EU-Turkmenistan-gas; Sohbət Karbuz quoted in Huseyn Hasanov,).

87 "Azerbaijan Eyes Iranian Gas for TANAP," *Natural Gas Europe*, April 6, 2015, <http://www.naturalgaseurope.com/azerbaijan-iranian-gas-tanap-sanctions-23048>.

88 Ovunc Kutlu, "Iran Can Join TANAP to Provide Gas to Europe: Azerbaijan," Anadolu Agency, June 3, 2015, <http://aaenergyterminal.com/news-Region.php?newsid=5529428>.

89 Ilgar Gurbanov, "Iran and the Southern Gas Corridor," *Natural Gas Europe*, April 29, 2015, <http://www.naturalgaseurope.com/removal-of-iran-sanctions-and-southern-gas-corridor-23389>.

90 "Iran May Hold Talks with TANAP Shareholders Putting Forward Useful Proposals," APA, May 5, 2015, http://en.apa.az/xeber_ambassador__iran_may_hold_talks_with_ta_226670.html; At the time of going to press, Kenan Yavuz, the chairman of SOCAR's Turkish subsidiary SOCAR, Turkey Energy announced that the subsidiary would purchase 7 percent of SOCAR's stake in TANAP. "Turkey Energy to Purchase Stake in TANAP," *Natural Gas Europe*, August 27, 2015, <http://www.naturalgaseurope.com/socar-turkey-energy-to-purchase-stake-in-tanap-25173>.

91 Ibid.

92 Days before the Comprehensive Framework Agreement, Erdoğan told news channel France 24, "Iran is trying to dominate the region . . . This is really not tolerable and Iran has to see this." Humeyra Pamuk, "Turkey's Erdogan Says Can't Tolerate Iran Bid to Dominate Middle East," Reuters, March 26, 2015, <http://www.reuters.com/article/2015/03/26/us-yemen-security-turkey-idUSKBN0MM2N820150326>.

93 "Tahlil-e Mir-Mahmoud Mousavi az Olaviat-hay Siasat-e Khareji-e Iran dar Mantaqeh, [The Analysis of Mir-Mahmoud Mousavi of Iran's Foreign Policy Priorities in the Region]," ILNA, April 21, 2015, <http://goo.gl/t9pg95>.

94 "Differences Remain between Turkey, Iran as Erdogan Visits Tehran," *Today's Zaman*, April 7, 2015, http://www.todayzaman.com/anasayfa-differences-remain-between-turkey-iran-as-erdogan-visits-tehran_377323.html.

lowered the price.⁹⁵ Erdoğan's visit indicates both countries will find their economic relationship of sufficient necessity to compartmentalize their rivalry for influence in the Arab Middle East. Iran's hesitation to export gas via TANAP can perhaps be mollified through trade incentives, particularly Ankara's willingness to move closer to Tehran's position on the price Turkey should pay for future Iranian gas imports.

3.4.2 Azerbaijani Incentives to Iran: Shared Development and Technical Services

One of the most significant incentives Azerbaijan can offer Iran is the joint development of fields disputed between them. The incentive could pair disputed fields under development by Azerbaijan, such as the Araz-Alov-Sharg area, with disputed fields under development by Iran, such as the Sardar-e Jangal field. Iran estimates that Sardar-e Jangal holds 1.5 trillion cubic meters (tcm) of natural gas, although the figure has not been confirmed.⁹⁶ Azerbaijan has cast doubts whether Sardar-e Jangal is actually located in Iranian territorial waters.

Baku could offer Tehran quality oil services at affordable prices through SOCAR's joint venture companies and alliances, such as the SOCAR-SAIPEM ASIA alliance with the ENI satellite company SAIPEM. SOCAR's network of relationships with international energy companies provides it a competitive advantage over the relatively isolated NIOC. With the end of sanctions this advantage will prove temporary, providing Azerbaijan with a compelling reason to exploit its advantage in the immediate term.

This level of cooperation will become increasingly important as Azerbaijan intensifies its search for new fields to offset the depletion of its existing gas reserves. Without such cooperation in the absence of a boundary demarcation settlement, intensified exploration and development of disputed fields will greatly increase the risk of violent conflagrations between Azerbaijan and Iran. With its considerable energy assets in the Caspian Sea, Azerbaijan would lose more than Iran in the event of a deterioration of the maritime security environment.

Azerbaijan can also incentivize Iran through providing advantageous gas storage terms. Although Iran's two storage facilities are undergoing expansion and a third facility is slated for construction, Tehran does not possess sufficient gas storage capacity to meet Iran's winter shortfall in gas production.⁹⁷ Azerbaijan's Kalmaz and Garadag gas storage facilities have a surplus storage capacity of 2 bcm, the same as Iran's entire 2014 storage capacity.⁹⁸ Once completed,

Azerbaijan can also make its new Nakhchivan storage facility available to Iran.

Azerbaijan's most important incentives for Iran lie outside the energy realm. Tehran is wary of Azerbaijan's influence on Iran's sizable Azeri minority, comprising up to 25 percent of Iran's population.⁹⁹ In May 2015, Tehran enlisted Baku's cooperation for an Azeri language television network in Iran whose programming will focus on cultural and economic ties between Iran and Azerbaijan.¹⁰⁰ Since the Iranian state considers Azeri ethno-nationalism an existential threat, Baku could likely leverage further cooperation of this kind with Tehran to elicit Iran's cooperation in relation to TANAP.

With the lifting of sanctions, Azerbaijan will have a unique opportunity to change the nature of its engagement with Iran. Both nations share a common concern about how a resurgent Russia will attempt to exert its influence in the South Caucasus and Caspian basin. No longer politically reliant on Moscow in the international arena, Tehran will be more amenable to Azeri overtures at the opening of the post-sanctions period. More generally, with the possibility of cooperation with the Euro-Atlantic community in the post-sanctions period, Iran will be recalibrating its posture toward Russia.

⁹⁵ Ibid.

⁹⁶ "Newly Found Gas Field Boosting Growth in North of Iran," *Petro Energy Information Network*, January, 9, 2012, <http://www.shana.ir/en/newsagency/183090>.

⁹⁷ Iran's roughly 2 bcm of stored gas in autumn 2014 was insufficient to meet the spike in winter demand despite South Pars's increased production of 60 mcm/d by December 2014.

⁹⁸ Dalga Khatinoglu, "Five Points of Iran—Azerbaijan Energy Cooperation," *Trend News Agency*, November 17, 2014, <http://en.trend.az/business/energy/2333794.html>.

⁹⁹ Brenda Shaffer, *Borders and Brethren—Iran and the Challenge of Azerbaijani Identity* (MIT Press, 2002) p. 221.

¹⁰⁰ Umid Niayesh, "Iran Prizval Azerbaydzhan k Sotrudnichestvu s Telekanalom na Azerbaydzhanskom Yazyke [Iran has Called on Azerbaijan to Cooperate with Azeri-Language TV Channel]," *Trend News Agency*, May 13, 2015, <http://www.trend.az/azerbaijan/society/2394166.html>.

4. RUSSIA

4.1 Introduction

Russia is one of the world's largest energy producers, possessing the world's largest natural gas reserves and the seventh largest oil reserves. However, without a sufficient number of year-round, accessible ports during long and severe winter conditions, Russia finds itself essentially land-locked and exports most of its energy via overland routes. Russia depends on transit states along its borders for transport of approximately 40 percent of its oil exports and the bulk of its natural gas exports. Politics often triumphs commercial interests when it comes to Russia's decision-making related to the Eurasian energy architecture. Russia regards its political dominance of neighboring transit states as a vital strategic interest. Moscow assiduously asserts its influence through measures ranging from quasi-covert, hybrid warfare in Ukraine to proposing the establishment of the Turkish Stream pipeline. The latter is consistent with Russia's long-term pattern of costly transportation infrastructure investments to bypass transit states as well as purchasing routes of potential competitors. These policies raise concerns about Russia's reliability as a supplier and will encourage both the EU and China to look to Iran as an alternative.

The EU is Russia's largest trading partner, with natural gas and oil constituting 75 percent of Russia's EU exports.¹⁰¹ Because almost 80 percent of its gas exports to Europe transited Ukraine, Russia built the Yamal-Europe natural gas pipeline connecting Russia's massive hydrocarbon facility in Siberia's Yamal peninsula to Germany through Belarus and Poland. Extending over 4,100 km, the pipeline's 2006 completion took twelve years and cost an estimated \$36 billion.¹⁰² The costly investments in Yamal and bypass pipelines have caused Russia to neglect its development of smaller gas fields closer to Europe, causing doubts about Russia's ability to meet its supply commitments for the proposed Turkish Stream pipeline.¹⁰³ After 2025, Turkish Stream's annual transmission of 63 bcm will likely require Russia to transport gas from its Yamal facility, increasing the real cost of the Turkish Stream project by 38-50 percent.¹⁰⁴ The resulting reduced profitability of Russia's gas exports to Europe would prompt Russia to raise the price it charges.

101 European Commission, Trade, "Russia," <http://ec.europa.eu/trade/policy/countries-and-regions/countries/russia/>.

102 Hydrocarbons Technology Market & Customer Insight, "Yamal—Europe Gas Pipeline, Russia," <http://www.hydrocarbons-technology.com/projects/yamal-europegaspipe/>.

103 Adnan Vatansever and David Koranyi, "Lowering the Price of Russian Gas: A Challenge for European Energy Security," Atlantic Council, March 26, 2013, p. 5, <http://www.atlanticcouncil.org/publications/issue-briefs/lowering-the-price-of-russian-gas-a-challenge-for-european-energy-security>.

104 The same problem existed with Turkish Stream's predecessor South Stream. This estimate is based on the discussion of South Stream in Frank Umbach, "Energy: Russia's South Stream Pipeline Project Aims to Regain Geopolitical Influence," Geopolitical Information Service (GIS), October 1, 2013, p. 3.



Iranian President Hassan Rouhani (center left) talks with Russian President Vladimir Putin (center right) during Caspian Sea Summit in Astrakhan, Russia, September 29, 2014.

Photo credit: kremlin.ru.

The commercial viability of Russia's pending gas exports to China is likewise questionable. Shortly after Russia's annexation of Crimea, Moscow signed a thirty-year contract with Beijing for Russian natural gas exports to China. The \$400 billion agreement not only gives Russia a significant share of China's import market, it provides Moscow with another lever to use in maintaining Russia's predominant position in the European energy market. However, Russia agreed to sell China its gas at a significantly lower price than what it could receive in European markets. As a result, the commercial profitability for Russia may be negligible and similarly prompt Russia to seek a higher price for its gas, putting the reliability of China's gas supply mix into question.

4.2 Iran as Energy Competitor to Russia

Due to Iran's large hydrocarbon reserves and its central geographic location, Moscow views Tehran as an actor in energy markets in Moscow's own image. A report by the influential Moscow-based Center for Policy Studies (known by its Russian acronym PIR Center) described Iran as "a supplier that can deliver to several regional markets and to redirect flows, thereby affecting the supply and demand balance, as well as getting the greatest possible profit."¹⁰⁵

The PIR Center report reiterates statistics from an official Russian study jointly produced by the Russian Academy of Sciences and the Analytical Center for the Government of the Russian Federation that estimates that Iran's 2040 annual gas production could reach 370 bcm.¹⁰⁶ Written before the precipitous drop in oil prices, the joint report anticipates a collapse of gas prices by 2040. Because of the cost advantage of developing Iranian gas fields compared to Russian fields, the joint report forecasts Russia will lose

105 Irina Mironova, "Rossiya i Iran na Mirovykh Gazovykh Rynkakh: Budushaya Konkurentsia Neizbezhna?," *Index Bezopasnosti* no. 1 (112), vol. 21, p. 59.

106 "Outlook for Energy in the World and in Russia until 2040," cited in Irina Mironova, "Rossiya i Iran na Mirovykh Gazovykh Rynkakh: Budushaya Konkurentsia Neizbezhna?," op. cit.

70 bcm in market share and Iran will gain 120 bcm in global markets.¹⁰⁷ The combined effect of a sanctions-free Iran and continued sanctions against Russia will accelerate the changes in market share. If Iran can attract IOC investment in 2015/16, Russia could experience such demand destruction as early as 2020/21.

4.3 Iran as a Geopolitical Rival to Russia

Moscow's unwavering policy to expand Russian control over its neighbors' energy transportation and distribution infrastructure and its steadfast efforts to reassert some form of hegemony in the former Soviet republics inevitably will clash with Iran's national interests. A clear example is Russia's early June 2015 announcement that it will purchase Armenia's 41 km section of the Iran-Armenia natural gas pipeline. Completed in 2008, the pipeline could potentially have helped Armenia reduce its dependence on Russian energy supplies. To maintain its hegemony over Yerevan, Moscow sells Armenia natural gas for half the price that it sells to Europe.¹⁰⁸ Nonetheless, Russia deemed it necessary to own Armenia's only supply route free from its control.

Iran exports a small volume of natural gas (approximately 0.5 bcm) to Armenia annually.¹⁰⁹ Although Russia supplies Armenia with four times that amount, Moscow felt compelled to exert its control over Iran's market share. The lesson will not be lost on Tehran's policymakers. Iran has a clear geostrategic imperative to cooperate with China's OBOR initiative to guarantee Iran's interests in the Caucasus and Central Asia. Iran has similar geostrategic interests to cooperate with Turkey and Azerbaijan in the greater Caspian basin region, if Ankara and Baku offer credible assurances to Tehran.

While Tehran has been careful in its public statements to avoid the appearance of being Moscow's energy and geopolitical competitor, Russia's position in the Eurasian energy architecture will be considerably weakened by a post-sanctions Iran, especially as Tehran and Beijing deepen their cooperation.

5. CHINA

5.1 Introduction

In April 2015, China overtook the United States as the world's top crude oil importer for the first time.¹¹⁰ Eighty percent of China's oil imports pass through the chokepoint of the Malacca Strait in the increasingly contentious South China Sea.¹¹¹ The world's third largest LNG importer,¹¹² China also faces the same dilemma with its tanker-borne supplies of LNG. Eliminating this vulnerability in its crude oil and LNG supply lines is one of China's highest priorities and will prompt China to seek Iranian piped gas imports to ensure the reliability of its supply.

One of China's most immediate prospects for bypassing the South China Sea would be oil and gas pipelines from the Chinese-built port in Gwadar, Pakistan. The combined land-sea route from the Persian Gulf via Gwadar to China's western border is approximately 2,395 km in contrast to the roughly 12,000 km sea route to China's ports in the east.¹¹³ The Gwadar port offers China the important advantage of transshipping Persian Gulf energy without needing to circumnavigate India. Oil and gas imports via pipelines from Gwadar would reduce costs and avoid exposing China's supply route to the Indian Navy, the PLA Navy's main Asian rival in the Indian Ocean.

China's objective to develop its vast northwestern province of Xinjiang creates a geopolitical imperative for piped gas imports. Home to the restive Uighur minority, Beijing seeks to rapidly develop the province to secure its integration within China. As China's gateway to Central Asia, Xinjiang is a critical launching point for China's OBOR initiative. The closest Chinese port to Xinjiang's capital Urumqi is the northern Tianjin port located on the coast near Beijing. The highway distance between Tianjin and Urumqi is approximately 3,264 km.¹¹⁴ The distances from China's major ports are considerably longer. To secure Xinjiang's gas supply, Beijing may add Iranian piped gas to its supply mix to supplement gas imported from Turkmenistan.

Iran's shared borders with Turkmenistan, Afghanistan, and Pakistan mean Beijing will look to Tehran to play a key role in China's OBOR initiative, with energy as the central element in the Iran-China relationship.

¹⁰⁷ Ibid., pp. 65-66.

¹⁰⁸ Carolina Novac, "The Future of Russian Gas Prices in Europe," Energy Policy Group, http://www.enpg.ro/details-155-The_Future_of_Russian_Gas_Prices_in_Europe_by_Carolina_Novac.html.

¹⁰⁹ "Armenia to Sell Iran Gas Pipeline to Gazprom," Press TV, June 5, 2015, <http://www.presstv.com/Detail/2015/06/05/414428/Iran-gas-armenia-pipeline-gazprom>.

¹¹⁰ "China World's Top Crude Buyer," *Iran Daily*, May 11, 2015, <http://www.iran-daily.com/News/117811.html>.

¹¹¹ Shaofeng Chen, "China's Self-Extrication from the 'Malacca Dilemma' and Implications," *International Journal of China Studies* vol. 1, no.1, January 2010, p. 2.

¹¹² BG Group, "Global LNG Market Outlook 2014-15," <http://www.bg-group.com/480/about-us/lng/global-lng-market-outlook-2014-15/>.

¹¹³ Wang Ting, "China Gets 40-Year Rights at Pakistani Port," *China Daily*, April 14, 2015, http://www.chinadaily.com.cn/world/2015-04/14/content_20433493.htm.

¹¹⁴ The Straight Line Distance is approximately 2,555 km.

5.2 The China-Iran Energy Relationship: The Oil Sector

According to Chinese customs data, Iran-China 2014 bilateral trade was an impressive \$52 billion, marking a \$12 billion increase over their 2013 trade volume.¹¹⁵ A large portion of the bilateral trade growth came from Iranian oil exports to China, which increased by 30 percent in the period.¹¹⁶ China imports 60 percent of its oil supply, a figure projected to increase to 75 percent by 2035.¹¹⁷ Iran currently constitutes China's third largest crude oil supplier,¹¹⁸ with Beijing looking to increase Iranian imports to ensure the reliability of its supply. Since the Comprehensive Framework Agreement, Iran accounts for approximately 12 percent of China's crude oil purchases, increasing 10 percent in the first half of 2015.¹¹⁹

CHINA WILL REMAIN THE LARGEST IMPORTER OF IRANIAN OIL AND, THEREFORE, IRAN'S LARGEST TRADE PARTNER.

China's April 2015 Iranian oil imports were 707.4 kb/d, a 10.8 percent increase over its March 2015 imports and considerably exceeded the 2014 average of roughly 550 kb/d.¹²⁰ Five days after the Comprehensive Framework Agreement, an Iranian energy delegation including Petroleum Minister Zanganeh and NIOC Director of International Affairs Mohsen Ghamsari visited Beijing for talks on boosting exports and joint investment.¹²¹ According to Iranian media, NIOC officials met with major Chinese importers including Unipet, Sinopec, and Zhuhai Zhenrong.¹²² About two weeks prior to the Comprehensive Framework Agreement, NIOC reportedly agreed to supply 50 percent more condensate to Zhuhai Zhenrong.¹²³ Starting with an additional 100 kb/d in August 2015, China will receive a yearly

total of 600,000 barrels of Iranian condensate.¹²⁴

China will remain the largest importer of Iranian oil and, therefore, Iran's largest trade partner. Also critical to China's oil relationship with Iran is China's investment position in the development of Iran's oil industry. Following the 2012 intensification of Western sanctions, China constituted almost half of Iran's oil export market. Concomitantly, China's NOCs became the largest foreign investors in Iran's oil development projects.¹²⁵

China is assisting Iran's development of the North Azadegan oil field, with the CNPC-managed \$1.8 billion Phase I development expected to produce 75 kb/d starting late 2015/2016.¹²⁶ The Azadegan field, one of Iran's largest oil finds in the past thirty years, contains an estimated 5.2 billion barrels of recoverable reserves.¹²⁷ In April 2014, Iran cancelled its contract with CNPC for South Azadegan's development citing production delays. Seeking to repair the damage to Sino-Iranian energy cooperation, Iran and CNPC agreed to terms in May 2015 for CNPC to conduct North Azadegan's Phase II development.¹²⁸

5.3 The China-Iran Energy Relationship: The Gas Sector

Although natural gas accounts for a small portion of China's energy supply mix, China's gas consumption rate is rapidly rising. By 2020, natural gas will supply 10 percent of China's total energy consumption.¹²⁹ While its own proven gas reserves are estimated at 4.92 tcm, China nevertheless will be increasingly dependent on imported sources in the near future.¹³⁰ Since China became a net gas importer in 2007, demand has outpaced domestic production at an accelerating rate.¹³¹ In 2013, China's imports rose to 32 percent of its natural gas supply mix.¹³² A post-sanctions Iran will become a key supplier of natural gas to China as Beijing seeks to secure the reliability of its supply, both by means of piped gas and LNG.

Most of China's LNG imports are used to satisfy demand in the eastern urban centers on China's coast near the receiving terminals. Currently, Qatar dominates China's LNG

115 Peter Ford, "Iran Nuclear Talks: Can China Keep Negotiations on Track?" *Christian Science Monitor*, March 30, 2015, <http://www.csmonitor.com/World/Asia-Pacific/2015/0330/Iran-nuclear-talks-Can-China-keep-negotiations-on-track-video>.

116 Ibid.

117 BP, "Energy Outlook 2035—Country Insights: China," <http://www.bp.com/en/global/corporate/about-bp/energy-economics/energy-outlook/country-and-regional-insights/china-insights.html>.

118 Chen, op. cit., p. 6.

119 FNA, "China's Iran Oil Imports in April at 11-Month High," *Fars News Agency*, May 22, 2015, <http://english.farsnews.com/newstext.aspx?nn=13940301000623>.

120 "Asian Imports of Iran Crude Rise 12% in April," *Reuters*, May 29, 2015, <http://www.gulf-times.com/eco-bus.%20news/256/details/441146/asian-imports-of-iran-crude-rise-12%25-in-april>.

121 "Iranian, Chinese Officials to Hold Oil Talks," *Iran Daily*, April 7, 2015, <http://www.iran-daily.com/News/115047.html>, accessed May 17, 2015.

122 Ibid.

123 Chen Aizhu, "UPDATE 1-Iran to Supply China More Condensate under New Contract—Sources," *Reuters*, April 3, 2015, <http://www.reuters.com/article/2015/04/03/zhenrong-iran-condensate-idUSL3N0X01K220150403>.

124 International Energy Agency, *Oil Market Report* (April 15, 2015), <https://www.iea.org/media/omrreports/fullissues/2015-04-15.pdf>.

125 "Iranian, Chinese Officials to Hold Oil Talks," *Iran Daily*, op. cit.

126 Eldar O. Kasayev, "Oil Markets Have Little to Fear from Iran for Now," op. cit.

127 Iran's NIOC is responsible for the operation of South Azadegan, whose Phase I development is expected to yield an estimated production of 320,000 bbl/d.

128 "Iran Awards New Oil Project to China Company," *Press TV*, May 5, 2015, <http://presstv.com/Detail/2015/05/05/409557/Iran-oil-China-Azadegan>, accessed May 12, 2015.

129 US EIA, "China: Analysis," updated February 4, 2014, <http://www.eia.gov/countries/cab.cfm?fips=CH>, accessed May 3, 2015.

130 US EIA, "China—International Energy Data and Analysis," May 14, 2015.

131 Ibid.

132 Ibid.

import market with a 38 percent market share.¹³³ With the expansion of China's LNG and pipeline infrastructure, Iran—whose South Pars field adjoins Qatar's North Dome gas field in the Persian Gulf—has the potential to become one of China's principal LNG suppliers if Tehran can attract Western energy majors to develop Iran's LNG production infrastructure.

For both LNG and piped gas, Iran will need to rapidly develop its South Pars field, whose full development will require a capital expenditure upwards of \$40 billion.¹³⁴ Iran cancelled CNPC's contract to participate in South Pars's development in August 2012 due to its construction delays. The April 2015 Beijing talks led by Petroleum Minister Zanganeh and NIOC International Affairs Director Ghamsari were also aimed at attracting CNPC to rejoin the effort to complete South Pars's remaining development phases.¹³⁵ The end of sanctions will enable CNPC to easily obtain equipment from US and European companies, enticing CNPC to resume work on the project. In his Beijing press comments, Ghamsari claimed Iran had negotiated contracts with European firms for LNG infrastructure development and would thus receive the needed proprietary technology once sanctions end.¹³⁶

Despite Iran's expressed enthusiasm for Asian LNG exports, piped gas from Iran to China is likely to have the most immediate impact on the Eurasian energy architecture at the onset of post-sanctions period. China's piped imports have outpaced its LNG imports since 2012. In 2014, China's total piped gas imports were 31.7 bcm, representing a 20 percent increase over 2013.

Turkmenistan is China's principal supplier, accounting for almost 50 percent of China's overall gas imports.¹³⁷ In 2014, Turkmenistan transported 25.9 bcm to China, short of its 30 bcm target.¹³⁸ Ashgabat has assured Beijing it will meet its 2015 quota of 40 bcm. Turkmenistan is central to China's strategy for the security of its natural gas supply. A CNPC-led consortium developed Turkmenistan's Galkynysh gas field, the world's second largest, and CNPC is the sole service contractor for Galkynysh's Phase II development. In May 2014, Ashgabat and Beijing signed the China-Turkmenistan Friendly Cooperation Agreement formalizing Turkmenistan's participation in China's OBOR initiative. As part of that agreement, Ashgabat will supply Beijing with

over 65 bcm of natural gas by 2020. To accommodate the increase, Beijing expanded the Central Asia–China gas pipeline system by constructing two additional lines traversing different routes from Turkmenistan to Xinjiang province.¹³⁹

Beijing will be keen to receive piped gas from Iran to ensure the reliability of China's supply despite signing a thirty-year contract with Gazprom in 2014 for the annual import of 38 bcm of Russian gas.¹⁴⁰ China will pay Russia a lower price than what Russia receives from gas sales in European markets.¹⁴¹ To ensure Russia's construction of the pipeline from its Siberian fields to the Chinese border, Beijing extended Moscow a \$50 billion loan.¹⁴² Even if Russia's pipeline construction occurs on time and on budget, it may prove insufficiently profitable for Russia's debt-ridden Gazprom to transport its gas to China. China will be too vulnerable to withstand Russian pressure on its gas supply should Moscow decide it wishes to seek more favorable terms.

5.3.1 The Central Asia-China Pipeline System

The expansion of the Central Asian pipeline network to China offers the possibility of transporting Iranian gas to China via Turkmenistan. Construction on Line D began in September 2014 and will add an additional annual capacity to the system of 30 bcm.¹⁴³ If Line D is completed by its 2020 target,¹⁴⁴ the total 85 bcm capacity Central-Asia-China pipeline system could accommodate gas from Iran, provided Tehran constructs sufficient transportation infrastructure from its southern fields to the Turkmen border.

Because Tehran imports Turkmen gas to supply Iran's northern regions during winter, the pipeline infrastructure between Iran and Turkmenistan already exists. The two cross-border pipelines connecting Turkmenistan and Iran have a total annual capacity of 16 bcm.¹⁴⁵ Ashgabat could possibly incentivize Iran's acquiescence to the TCP by offering Tehran a portion of its piped gas trade to China. Beijing has vested interests in ensuring Turkmenistan remains immune to Moscow's efforts to reassert its dominance. Similarly, Iran does not wish to see the return of a Russian presence on its northern border. Therefore, Tehran also maintains an interest in the preservation of Turkmenistan's political sovereignty.

133 Naser al-Tamimi, "Qatar Looks East: Growing Importance of China's LNG Market," *Al Arabiya*, November 24, 2014, <http://english.alarabiya.net/en/views/business/2014/11/24/Qatar-looks-East-Growing-importance-of-China-s-LNG-market.html>.

134 Chen Aizhu, "Iran Seeks to Mend Fences with Chinese Oil Firms to Get Projects Going," *Reuters*, April 9, 2015, <http://uk.reuters.com/article/2015/04/09/china-iran-oil-idUKL4N0X61WH20150409>.

135 Ibid.

136 Ibid.

137 Katya Golubkova and Chen Aizhu, "UPDATE 1-China and Russia Still Haggling over Gas Price ahead of Putin Visit," *Reuters*, May 14, 2014, <http://www.reuters.com/article/2014/05/14/russia-china-gas-idUSL6N0004KE20140514>.

138 Iham Shaban, "Milestone Year for Turkmen Gas Export to China?," *Natural Gas Europe*, February 10, 2015, <http://www.naturalgaseurope.com/milestone-year-in-turkmen-gas-export-to-china>.

139 Micha'el Tanchum, "Between Prosperity and the Taliban: Will IS Tip the Balance in Turkmenistan?," *Central Asian Caucasus Analyst*, October 29, 2014, <http://www.cacianalyst.org/publications/analytical-articles/item/13079-between-prosperity-and-the-taliban-will-is-tip-the-balance-in-turkmenistan?.html>.

140 Jane Perlez, "China and Russia Reach 30-Year Gas Deal," *New York Times*, May, 21, 2014, http://www.nytimes.com/2014/05/22/world/asia/china-russia-gas-deal.html?_r=0.

141 Ibid.

142 Ibid.

143 CNPC, "Flow of Natural Gas from Central Asia," <http://www.cnpc.com.cn/en/FlowofnaturalgasfromCentralAsia/FlowofnaturalgasfromCentralAsia2.shtml>.

144 Song Yen Ling, "Fourth Link of Central Asia-China Gas Pipeline to Start Construction This Year," *Platts*, March 10, 2014, <http://www.platts.com/latest-news/natural-gas/beijing/fourth-link-of-central-asia-china-gas-pipeline-26749048>.

145 Sara Rajabova, "Turkmen Gas Delivery Through Iran—Reality or Possibility?," *AzerNews*, March 16, 2015, <http://www.azernews.az/analysis/79050.html>.

5.3.2 China and the Iran-Pakistan Pipeline

Beijing can potentially import Iranian gas through Pakistan by extending the Iran-Pakistan (IP) pipeline to Xinjiang. The IP pipeline was originally conceived in 1995 as the Iran-Pakistan-India (IPI) pipeline until New Delhi's 2009 withdrawal from the project under pressure from Washington. Languishing for twenty years, the IP pipeline was revived by China after the Comprehensive Framework Agreement. On April 20, 2015, Beijing signed an agreement with Islamabad to construct a pipeline from Pakistan's Chinese-built Gwadar port to Nawabshah, where it can join Pakistan's domestic gas distribution network.¹⁴⁶ A boon for energy-starved Pakistan, the IP pipeline will deliver approximately 8.2 bcm annually from South Pars,¹⁴⁷ enough gas to generate 4,500 megawatts of electricity, covering Pakistan's current shortfall in power production.¹⁴⁸

The agreement signed during Chinese President Xi Jinping's high-profile visit to Pakistan is part of a \$46 billion infrastructure package to establish the China-Pakistan Economic Corridor (CPEC), extending from the Gwadar port on the Indian Ocean to China's westernmost city Kashgar (Kashi) in Xinjiang.¹⁴⁹ A CNPC subsidiary will construct the IP pipeline financed by a \$2 billion Chinese loan covering 85 percent of the construction cost.¹⁵⁰ The project also includes the construction of an LNG terminal at Gwadar. Iran has already built its section of the pipeline to the Pakistani border. Islamabad has promised to construct the remaining 80 km of the pipeline from the Iranian border to Gwadar once sanctions end.¹⁵¹ Extrapolating from CNPC's construction times for Lines C and D of the Central Asia-China pipeline system, a Nawabshah to Kashgar pipeline to transport Iranian gas would take five to seven years to construct, accounting for the terrain. Thus, the possibility of Iranian gas exports to China would occur roughly at the same time that TANAP's capacity expansion would allow for the transport of Iranian gas to Europe.

The IP pipeline and Beijing's CPEC initiative provide a poignant example of how China-Iran energy cooperation

can alter the geopolitical calculus of regional actors such as Pakistan. Islamabad has remained remarkably neutral in the Saudi-Iranian conflict in Yemen, despite Riyadh's requests for military assistance. Pakistani Prime Minister Nawaz Sharif's refusal to send ground forces and other military support contrasts markedly with his first term as Prime Minister, when he sent ground forces to the Kingdom during the Persian Gulf War to defend the Saudi monarchy from Iraq's Saddam Hussein.

Pakistan's new position reflects its perception of Iran as a reliable supplier of gas and oil, predominantly due to Tehran's energy relationship with Beijing. With President Xi Jinping's assurance that Beijing will support Islamabad against a Saudi backlash, backed by Beijing's \$46 billion investment package, Sino-Iranian cooperation has succeeded in dissolving the longstanding strategic alliance between the Saudi monarchy and Pakistan.

146 "Iran Backs Pipeline to China Under 'One Belt, One Road' Initiative," Press TV, April 25, 2015, <http://www.presstv.ir/Detail/2015/04/25/408042/Iran-China-gas-pipeline-sanctions-trade-nuclear-zarif-kerry-obama-rouhani-Pakistan>.

147 Inter State Gas Systems (PVT) Ltd., "Iran-Pakistan Gas Pipeline (IP)," <http://www.isgs.pk/projects/iran-pakistan-gas-pipeline-ip-3>.

148 Dalga Khatinoglu, "China's \$46B Investment in Pakistan, Iran's Hopes and Fears," *AzerNews*, April 21, 2015, <http://www.azernews.az/analysis/80757.html>.

149 Teddy Ng, "Iran Backs Pipeline to China Under 'One Belt, One Road' Initiative: Ambassador," *South China Morning Post*, April 23, 2015, <http://www.scmp.com/news/china/policies-politics/article/1774422/iran-wants-help-energy-pipeline-expansion-part-chinas>; "Iran Backs Pipeline to China Under 'One Belt, One Road' Initiative," Press TV, April 25, 2015, <http://www.presstv.ir/Detail/2015/04/25/408042/Iran-China-gas-pipeline-sanctions-trade-nuclear-zarif-kerry-obama-rouhani-Pakistan>.

150 Irfan Haider, "Details of Agreements Signed during Xi's Visit to Pakistan," *Dawn*, April 20, 2015, <http://www.dawn.com/news/1177129/details-of-agreements-signed-during-xis-visit-to-pakistan>.

151 "Iran Backs Pipeline to China Under 'One Belt, One Road' Initiative," op. cit.

6. INDIA

6.1 Introduction

India could prove to be the ultimate arbiter in the Eurasian energy architecture. The sheer size of India's territory, its economy, and its population along with its youthful growth demographic and two strategic coastlines at the heart of the Indian Ocean render India the sole Asian nation posing an obstacle to China's realization of its OBOR initiative to dominate the orientation of Eurasian energy and commercial markets. The World Bank's June 2015 *Global Economic Prospects* report for the first time placed India ahead of China as the growth leader among the world's major economies.¹⁵² The report estimates India's growth rate will reach 7.5 percent while China will post a 7.1 percent growth rate.¹⁵³ The fourth largest energy consumer following China, the United States, and Russia,¹⁵⁴ India's accelerating economic growth is driving its deepening dependence on oil and gas imports.

In the immediate post-sanctions period, India's interaction with Iran, while important, will be of secondary significance. The two major projects shaping the Indo-Iranian energy relationship are India's construction of Iran's deep-water port at Chabahar and a possible undersea natural gas pipeline to export Iranian gas to India via Oman. Although India is a latecomer to large-scale infrastructure initiatives abroad, Indo-Iranian cooperation in these two projects can serve as the foundation for an energy and commercial trade corridor that could compete with China's OBOR.

6.2 Chabahar: India's OBOR Alternative, Iran's Export Hub

India's construction of Iran's first deep-water port to meet modern shipping standards will radically transform Iran's geo-strategic position in the Eurasian energy architecture by turning Iran into the key transit node for the most cost-effective transportation corridor for European-Indian Ocean trade. New Delhi's drive to construct the Chabahar port with transportation corridors running northward is motivated by its rivalry with Beijing and the progress of Beijing's OBOR initiative. This situates Iran as the central hub in the emerging pattern of Europe-to-Asia maritime trade, also contributing to Iran's development as an LNG exporter.

Among Iran's strategic weaknesses is its lack of deep-water ports. Iran's southern ports, such as Bandar Abbas that handles 85 percent of Iran's seaborne trade, can only receive 100,000 ton cargo ships. Cargo from more commonly used 250,000 ton vessels must first be offloaded in the

United Arab Emirates and then sent on smaller ships that can dock in Iran. Aside from the considerable revenue loss, Iran is vulnerable to a UAE closure of its seaborne trade in the case of conflict between Iran and the UAE or its Gulf Cooperation Council (GCC) allies. Unlike Bandar Abbas in the congested Strait of Hormuz, Chabahar is situated further east and is the only Iranian port with direct access to the Indian Ocean.

INDIA'S CONSTRUCTION OF IRAN'S FIRST DEEP-WATER PORT TO MEET MODERN SHIPPING STANDARDS WILL RADICALLY TRANSFORM IRAN'S GEO-STRATEGIC POSITION IN THE EURASIAN ENERGY ARCHITECTURE.

For India, the Chabahar port will serve as the Indian Ocean outlet for New Delhi's grand International North-South Transit Corridor (INSTC) initiative. With India's overland access to Central Asia blocked by Pakistan and China, Chabahar with the INSTC running northward through Iran and Afghanistan will provide India with vital access to Central Asian, Russian and, ultimately, European markets, enabling India to effectively compete with China. Compared to the current Indian Ocean-Europe transport route through the Red Sea, Suez Canal, and the Mediterranean Sea, the Chabahar-based INSTC is estimated to be 40 percent shorter and will reduce Indian trade costs by 30 percent.¹⁵⁵

India began developing the Chabahar port in 2002 in response to China's construction of Pakistan's Gwadar port, approximately 72 km east of Chabahar.¹⁵⁶ India then ceased construction on the project under US pressure as Washington sought to toughen international sanctions on Iran. However, when a Chinese state-owned firm took over Gwadar's management from a Singaporean company in 2012, New Delhi resumed Chabahar's construction, overriding Washington's objections. In May 2015, India's Minister for Shipping and Road Transport visited Tehran where he signed a memorandum of understanding (MOU)

152 World Bank, *Global Economic Prospects* (Washington, DC: June 2015), <http://www.worldbank.org/en/publication/global-economic-prospects>.

153 Ibid.

154 US EIA, "India—International Energy Data and Analysis," June 26, 2014.

155 Meena Singh Roy, "India's Gateway to Central Asia," *Strategic Analysis*, November 2012, http://www.idsa.in/strategicanalysis/36_6/IndiasGatewaytoCentralAsia_MeenaSRoy.

156 "Why This Iran Port Is Important," *Economic Times*, October 23, 2013, http://articles.economicstimes.indiatimes.com/2014-10-23/news/55358943_1_gwadar-chabahar-port-chahbahar.

to expedite the Chabahar port construction. India committed \$85 million for construction of a container terminal and a multi-purpose cargo terminal during the port's first development phase along with \$110 million for the port's second phase development.¹⁵⁷

New Delhi's INSTC will include multi-modal transportation routes running from the Iranian port through Iran and Afghanistan providing India long denied access to Central Asia. India has had difficulty establishing a position in Central Asian oil and gas production, in part due to its lack of direct access to the region. The INSTC would help eliminate the geographic leverage that Russia and China exert over the Central Asian states' exports and, therefore, their economies.



Iran's Chabahar port at night. Iran hopes that the development of Chabahar will boost trade. *Photo credit: Ksardar1359/WikiMedia.*

Iran's Chabahar investments focus on establishing the port as the third major hub of Iran's growing petrochemicals industry. With its access to Indian Ocean trade routes, the new petrochemical complex at Chabahar will provide a significant cost reduction for Iranian petrochemical exports over its existing complexes at Asaluyeh and Bandar Imam. To establish this cornerstone of Iran's ambitious plan to expand its petrochemical sector, Tehran allocated a 14 km² area for the construction of Chabahar's petrochemical complex and has already begun construction on the complex's road, electricity, and water infrastructure.¹⁵⁸ The complex will consist of sixteen petrochemical plants producing a wide range of olefins and aromatics as well as urea, ammonia, and methanol. The Chabahar petrochemical complex's total development is expected to require a cumulative investment from Iranian and foreign sources of \$80 billion.¹⁵⁹ Therefore, in the post-sanctions environment, Iran will seek to attract foreign investment to complete the project.

6.3 Iran Undersea Gas Export Route to India

Exploiting the proximity of India's Arabian Sea coast to natural gas reserves in the Persian Gulf, energy compa-

nies from the Gulf countries and India have been steadily advancing a project to transport natural gas, through an undersea pipeline to India. In a post-sanctions environment, India would receive most of its Iranian gas imports via a pipeline extending from Oman to India, which, if constructed, would fundamentally alter the pattern of energy exports in the Arabian Sea.

Although the initiative can be traced back to the early 1990s, negotiations between New Delhi and Muscat concerning the pipeline only restarted in earnest in February 2015 upon an agreement concluded between India's External Affairs Minister Sushma Swaraj and Oman's Foreign Minister Yusuf bin Alawi bin Abdallah. Technological advancements increasing the project's feasibility were cited by the Ministers as the factor motivating the agreement,¹⁶⁰ presumably referring to a feasibility study conducted by the New Delhi-based South Asia Gas Enterprise (SAGE). SAGE's feasibility study analyzed the transport of natural gas from Iran's South Pars field via Oman to India's west coast based on a 31 mcm/d volume, the exact volume India expected to receive from Iran before withdrawing from India-Pakistan-Iran pipeline.¹⁶¹

A week prior to the Comprehensive Framework Agreement, Fox Petroleum issued a proposal for the construction of the Oman-India Multi-Purpose Pipeline (OIMPP), a deep water pipeline system to transport Iranian natural gas via Oman to a receiving terminal on India's coastal state of Gujarat. Costing an estimated \$5.6 billion, the 1,600 km pipeline would transport 8 tcm over a twenty year period.¹⁶² Citing recent advances in deep-sea pipeline technology, Fox Petroleum's Chairman Ajay Kumar asserted that gas imports to India via OIMPP would be less expensive than India's LNG imports by \$1.5-2 per million British thermal units.¹⁶³

The same pipeline system could also be used for the transport of natural gas from Qatar to India, thereby creating a nexus of Persian Gulf natural gas suppliers for one of the world's fastest-growing economies. The potential would exist for Turkmenistan to export its gas to India across Iran and via the undersea pipeline, possibly providing New Delhi and Ashgabat an alternative to the long-delayed Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline. Should Indo-Iranian cooperation succeed in establishing these two projects, the western Indian Ocean could become the central node in an alternative energy and commercial trade corridor to the OBOR, connecting Europe through Iran to India and Southeast Asia.

157 Sohini Das, "Govt Keen to Speed up Work on Iran's Chabahar Port," *Business Standard*, June 6, 2015, http://www.business-standard.com/article/economy-policy/govt-keen-to-speed-up-work-on-iran-s-chabahar-port-115060600875_1.html.

158 Ashok K. Behuria and M. Mahtab Alam Rizvi, "India's Renewed Interest in Chabahar: Need to Stay the Course," Institute for Defence Studies and Analyses (IDSA), May 13, 2015, http://www.idsa.in/issuebrief/IndiasRenewedInterestinChabahar_BehuriaRizvi_130515.html.

159 Ibid.

160 "India, Oman to Restart Undersea Gas Pipeline Talks," *Natural Gas Asia*, February 19, 2015, <http://www.naturalgasasia.com/india-oman-to-restart-undersea-gas-pipeline-talks-14818>.

161 "Iran Backs Deep-Sea Gas Pipeline to India," *Hindu*, December 17, 2013, <http://www.thehindu.com/news/international/world/iran-backs-deepsea-gas-pipeline-to-india/article5466999.ece>.

162 "Fox Petroleum Proposes to Build Oman-India Multi-Purpose Pipeline Project," *Oil and Gas Financial Journal*, March 25, 2015, <http://www.ogfj.com/articles/2015/03/fox-petroleum-proposes-to-build-oman-india-multi-purpose-pipeline-project.html>.

163 Ibid.

7. CONCLUSIONS

The pattern of Iran's gas exports in the immediate post-sanctions period will shape the relationship between two competing orientations in the Eurasian energy architecture: a system of energy relationships reinforcing the EU's outreach to the "Eastern Neighborhood" alongside a system of energy relationships reinforcing China's OBOR integration project. To ensure a Eurasian energy architecture more favorable to EU and NATO interests, Caspian natural gas suppliers besides Azerbaijan need to be included in the SGC, namely Iran and/or Turkmenistan.

Iran's LNG Production: 14.5-55.2 bcm by 2020

If Iran meets all its production and development targets, it will be able export an additional 68-88 bcm annually by 2020. One of Iran's highest export priorities will be LNG markets, in Europe as well as Asia. The continued flattening of LNG prices between Europe and Asia would likely result in Iranian LNG exports to the EU. Iran has set an LNG export target of 40 million tons (55.2 bcm).¹⁶⁴ This target could be met if Iran succeeds in completing all the projects contracted with Western IOCs prior to the imposition of sanctions. Iran's most recent LNG plant construction project, a contract cancelled in September 2014, was intended to have an annual production capacity of 10.5 million tons (14.5 bcm). Using this plant as the measure for the minimum LNG infrastructure Iran could achieve in five years, Iran's LNG export capacity by 2020 will range from 14.5 bcm to 55.2 bcm.

Iran's Two of Three Choice for Piped Gas Exports: EU/Turkey, India, or China

If Iran reaches its 40 million ton LNG export target, Iran would have 12.8 to 32.8 bcm available for piped exports. In this instance, Tehran would face a stark geopolitical choice for the destination of its piped exports. Iran is already committed to deliver 8.2 bcm annually to Pakistan via the Iran-Pakistan pipeline. In ideal circumstances for gross gas production, Iran would have 24.6 bcm remaining for piped exports. Iran could export piped gas to two of the following three export markets: EU/Turkey via TANAP, India via an Iran-Oman-India pipeline, or China via either Turkmenistan or Pakistan.

China Seeks Iranian Piped Gas Imports and Iran's OBOR Integration

China possesses compelling geopolitical interests in piped gas imports from Iran in addition to LNG. Iranian LNG imports would still carry the same risks to China's security of supply because of the maritime route such exports would have to traverse. Furthermore, LNG imports do not resolve China's need to ensure a reliable supply of gas to Xinjiang province. Iran's energy cooperation with China and Pakistan via Beijing's China-Pakistan Economic Corridor has

already proven to be a geopolitical boon for Iran and will encourage Iran to participate more actively with China's OBOR initiative. With China's need to provide reliable and affordable gas supplies to its western Xinjiang province, Beijing will encourage Tehran to export Iranian gas via pipeline either from Turkmenistan or from Pakistan, thereby integrating Iran into the OBOR.

India Seeks Iran-Oman-India Pipeline and Iran's Cooperation for INSTC as OBOR Alternative

For India, a dedicated pipeline for Persian Gulf natural gas imports would be an important geopolitical gain in its competition with China. In addition to the claimed commercial advantage for India of undersea piped gas imports over surface-borne LNG imports, New Delhi will have a strong political will to actualize Iranian piped exports via an Iran-Oman-India pipeline. In the long term, Indo-Iranian energy cooperation will likely facilitate the creation of an alternative Europe-to-Asia corridor to the OBOR centered on the western Indian Ocean. An undersea Iran-Oman-India pipeline and especially the Chabahar port would comprise the central components of this corridor. It is in the Euro-Atlantic community's long-term interests to develop partnership opportunities with India and its INSTC initiative.

A Post-Sanctions Iran Will Undermine Russia's Position

Irrespective of the relative amount of LNG to piped gas that Iran exports, Iran will reemerge as an energy supply competitor with Russia both in Europe and Asia. Given Iran and Russia's antithetical strategic interests in the Caucasus and Central Asia, Iran will weaken Russia's already enfeebled efforts to establish the Eurasian Economic Union as an independent regional force, unless Russian-Iranian strategic coordination occurs under a Chinese-led framework for trilateral cooperation.

Turkey and Azerbaijan Can Incentivize Iran to Export via TANAP

Iran can be encouraged to transport 7 bcm annually through TANAP through sufficiently effective incentives offered by Turkey and Azerbaijan. Iran may be induced to send this amount provided it receives favorable terms for an equity share in TANAP.

The Trans-Caspian Pipeline: Iranian Acquiescence Possible, Azeri-Turkmen Cooperation Probable

Given Iran's geopolitical interest in the preservation of Turkmenistan's sovereignty, Iran may be induced to accede to the construction of the TCP and Turkmen gas exports to Europe via the SGC, with sufficient incentives from Turkmenistan and from Azerbaijan and/or Turkey. Turkmenistan could incentivize Iran to accept the TCP by

¹⁶⁴ See discussion in section on Iran's natural gas sector.

offering favorable terms to Tehran for the export of Iranian gas across its territory to China. Because of Turkmenistan's need for alternative export markets and supply routes to alleviate its dependency on China, Ashgabat will be more responsive to efforts to develop the TCP and more receptive to Azerbaijani overtures for resolving the dispute over the Serdar/Kyapaz field. With a post-sanctions Iran as an export competitor, Ashgabat will be further inclined to cooperate with Azerbaijan.

EU-China Eurasian Energy Architecture Power Balance Depends on Iranian and Turkmen Exports

The relative power balance between the EU and China in the Eurasian energy architecture will be determined by the natural gas export volumes each receives from Iran and Turkmenistan. Without Iranian piped gas exports via TANAP, exports from Turkmenistan become critical for the SGC's long-term viability. If Beijing secures both Iranian and Turkmen piped gas exports to the exclusion of Europe, then China's OBOR initiative will become the organizing principle of the Eurasian Energy architecture.

An Expanded SGC Will Promote the Expansion of Euro-Atlantic Influence in Eurasia

The expanded multilateral energy transportation cooperation of an SGC with additional Caspian Basin suppliers would fundamentally alter the Eurasian energy architecture and strengthen the influence of the EU and NATO throughout the Eastern Neighborhood. In addition to enhancing the security of the EU's natural gas supply, the Euro-Atlantic community could create a Eurasian energy architecture that promotes both stability and the development of Euro-Atlantic political norms in the Caucasus and Central Asia.

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Micha'el Tanchum is a Nonresident Senior Fellow at the Atlantic Council's Global Energy Center and the Eurasian Energy Futures Initiative. His area of research is the geopolitics of energy, with a special focus on the strategic implications of newly emerging patterns of energy connectivity in Eurasia and the Arabian Sea/

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