

Pakistan's Energy Security: Viability of Regional Options

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Abstract

This paper is an attempt to address the issue of Pakistan's energy insecurity. Since a decade, Pakistan has been facing an acute energy crisis that has affected each segment of society. While highlighting Pakistan's energy mix and share of various resources, the paper intends to explore various options that have been adopted and highlight Pakistan's institutional vision to overcome the energy crisis. While briefly touching upon various indigenous projects and those under the China Pakistan Economic Corridor (CPEC), the paper intends to identify the significance of much delayed Iran-Pakistan (IP) gas pipeline project and Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline project and examine if they can help resolve Pakistan's energy problems.

Key words: Energy Security, Pipelines, IP, TAPI, CPEC.

Introduction

Energy is a vital force behind the development of modern societies. For the past few decades, energy security has not only been a major concern for developed countries to sustain their economic growth and to maintain their political clout, it has also gained immense importance for developing states in order to meet their development goals. This has been a significant, and often controversial issue for policymakers in Pakistan as well, where energy shortage has been a major variable

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responsible for the country's slow economic growth. Over the past few years, the gap between demand and supply has been constantly increasing. Pakistan has been endowed with substantial energy resources, its potential to generate energy from oil and gas is 1,250 Million Tonnes of Oil Equivalent (MTOE), while its potential to generate energy from indigenous coal is 1,540 MTOE.¹ Moreover, Pakistan's renewable energy potential accounts for 100,000 MW (hydro accounts for 56,721 MW, while wind can provide 43000 MW energy).² Despite this potential, the Government has been unable to utilise its indigenous resources mostly due to disagreements between the Centre and the provinces about the development of hydro power projects, and partly due to lack of Foreign Direct Investment (FDI), and the unhelpful security situation in the country. With the launch of counterterrorism operations, the latter situation has considerably improved resultantly leading to economic recovery. In this backdrop, the China Pakistan Economic Corridor (CPEC) now worth USD 62 billion has been launched that covers a wide range of energy projects – coal, wind, solar and hydro power projects, apart from infrastructure development.

This defines the concept of energy security and highlights the share of different resources in Pakistan's energy mix. The subsequent section touches upon the country's institutional vision, e.g., the Integrated Energy Plan (2009-22) and Pakistan Vision (2025) to meet the challenge of energy shortage in Pakistan. As a part of this vision, the paper briefly enumerates renewable energy projects that are covered under CPEC. The concluding section looks at the Iran-Pakistan (IP) gas pipeline project and Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline project as possible solutions to Pakistan's energy problems.

Energy Security

There have been different interpretations regarding the definition of energy security. For years, energy security was considered a purely economic issue determined exclusively by market dynamics, while foreign

¹ Ministry of Planning, Development & Reform, GoP, "Energy," *11th Five Year Plan 2013-18*, (Government of Pakistan, 2015), 203,
<http://www.pc.gov.pk/uploads/plans//Ch19-Energy1.pdf> .

² Ibid.

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policy analysts viewed it from a security perspective linked with energy politics and resource management.³ In a globalised and interdependent world, energy security has become an interdisciplinary subject that can influence a state's economy, its foreign and security policy. The European Commission defines the concept as:

The ability to ensure that future essential energy needs can be met, both by means of adequate domestic resources worked under economically acceptable conditions, or maintained as strategic reserves, and by calling upon accessible and stable external sources supplemented where appropriate by strategic stocks.⁴

Hence, it can be best defined within the parameters of security of supply and security of price. Price security can be ensured by removing the chances of fluctuation of prices, but it is difficult to achieve as prices vary from country to country due to various reasons, including the 'quality of crude oil, destination, taxes, exchange rates, and refining capacity.'⁵ For years, the Organization of Petroleum Exporting Countries (OPEC) has been playing a crucial role to keep oil prices stable, whereas no such mechanism exists for regulating the price of gas. While the security of supply can be enhanced by diversifying the sources – if more sources are available, there is likely to be more stability.⁶ Dependence on one or two sources can create vulnerabilities that can be exploited directly by producing states for political reasons or indirectly by major powers that may influence the policies of producing states. The International Atomic Energy Agency (IAEA) recognises four dimensions of the concept:

³ Virginia Comolli, "Energy Security," in *Europe and Global Security-Adelphi Series 50*, no. 414-415 (2010): 177-196 (177), <http://www.tandfonline.com/doi/full/10.1080/19445571.2010.539450>.

⁴ Gawdat Bahgat, "Energy Security: The Caspian Sea," *Minerals and Energy – Raw Materials Report 20*, no. 2 (2005): 3- 15 (5), <http://www.tandfonline.com/doi/full/10.1080/14041040500372139?scroll=top&needAccess=true>.

⁵ Ibid.

⁶ Ibid.

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availability (geological), accessibility (geopolitical), affordability (economic) and acceptability (environmental and social).⁷

Pakistan's Energy Mix

Before analysing regional options to resolve the energy crisis of Pakistan, it is desirable to have a look at the country's current energy scenario. To meet its energy needs, Pakistan relies on domestic as well as imported petroleum products. Of the energy sources, the share of gas is the largest one and is increasing. It contributes about 48.2 per cent of the total energy supply mix. Pakistan has one of the most developed gas transmission and distribution networks in the South Asian region – comprising 11,538 km transmission, 1,14,982 km distribution and 31,058 services gas pipelines to cater to more than 7.9 million consumers across the country by providing 4 billion cubic feet per day.⁸

Due to its enhanced share in energy consumption, the gap between demand and supply has been on the rise. The gap started with the replacement of gas being the cheaper source with oil but has increased due to stagnant gas production. The existing demand for natural gas has been about 6,000 Million Cubic Feet per Day (MMCFD) against the supply of 4,000 MMCFD, while it is estimated that demand is going to increase to 8,000 MMCFD.⁹

Given Pakistan's dependence on gas, depleting gas fields and the slow pace of new gas discoveries have created a demand-supply gap. To reduce this gap on short term basis, the Government has been pursuing the policy of gas load management that has been mostly restricted to the province of Punjab due to its meager share (5 per cent) in gas supply and its largest share (46 per cent) in gas consumption.¹⁰ This policy, however, does not offer a permanent solution.

⁷ Gawdat Bahgat, "Energy Security: The United Arab Emirates," *Asian Affairs* 43, no. 2, (2012): 268-279 (268), <http://www.tandfonline.com/doi/pdf/10.1080/03068374.2012.682371>.

⁸ Ministry of Finance, GoP, "Energy," *Pakistan Economic Survey 2015-16* (Government of Pakistan, 2016), http://www.finance.gov.pk/survey/chapters_16/14_Energy.pdf, 239.

⁹ Ibid.

¹⁰ Ministry of Finance, GoP, "Energy," *Pakistan Economic Survey 2014-15* (Government of Pakistan, 2015), 240, http://www.finance.gov.pk/survey/chapters_15/14_Energy.pdf.

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After gas, Pakistan is heavily dependent on oil. Indigenous oil resources are unable to meet demand so Pakistan has to import oil and oil-based products. Transport and power sectors are the two largest users of oil. During July-March FY 2015, the share of transport sector was 50 per cent and share of power was 42 per cent, while during July-March FY 2016, the share of transport and power in oil consumption increased to 55 per cent and 35 per cent respectively.¹¹ Despite Pakistan's vigorous oil exploration and development activity in 1980s and 1990s, most of these fields could not become operational and oil production could not gather momentum due to political and policy hurdles.

Hydel energy is the third important element in Pakistan's energy mix but despite estimated potential, only 11 per cent has been utilised so far.¹² 1960s and 1970s are called the golden period for energy when Mangla and Tarbela Dams were constructed as major hydro power projects, but in the subsequent years no major hydro project has been completed. Chinese cooperation has now been sought for the development of dams under the China Pakistan Economic Corridor (CPEC).

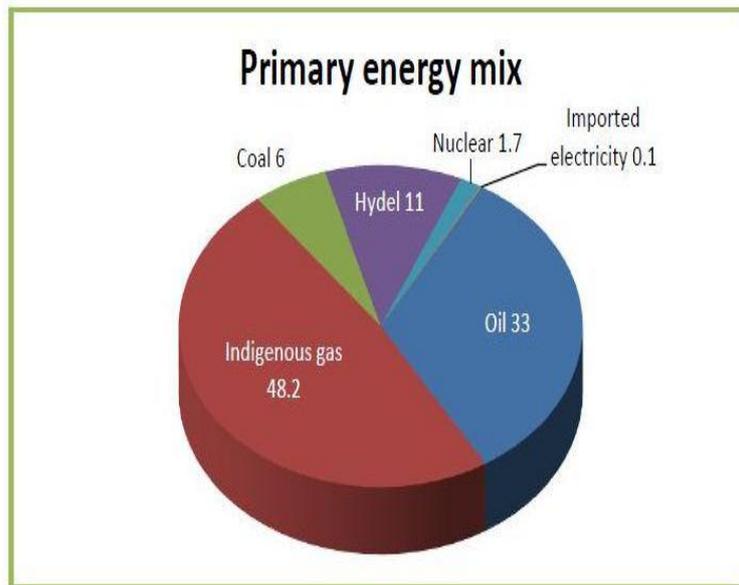
Coal has been a widely used source of energy in the world and contributes about 41 per cent to the world's electricity generation.¹³ Pakistan has proven coal reserves and is projected to have the seventh largest coal deposits in the world after the discovery of Thar coal. After independence in 1947, its contribution in energy consumption was 60 per cent that was subsequently reduced with the discovery of gas. Benazir Bhutto (1993-96) laid the foundation stone of the Thar coal power project at Keti Bunder in 1996 and currently, the share of coal in energy is 6 per cent while the share of nuclear energy in energy mix is about 1.7 per cent. Pakistan has always been subjected to nuclear technology denial policies of Western states, but now it plans to increase the share of nuclear energy.

¹¹ Ministry of Finance, GoP, "Energy," *Pakistan Economic Survey 2015-16*, 239.

¹² Ministry of Planning, Development & Reform, GoP, "Energy," 203.

¹³ WCA, "Coal and Electricity" (London: World Coal Association), accessed January 14, 2018, <http://www.worldcoal.org/coal/uses-coal/coal-electricity>.

Figure-1: Pakistan's Energy Scenario (%)



Source: Energy Year Book 2013.

Pakistan's Institutional Vision

Integrated Energy Plan (2009-22)

While highlighting Pakistan's energy situation, it is imperative to discuss the Government of Pakistan's institutional vision in this regard, which principally includes the Integrated Energy Plan (2009-22) and Vision 2025. The Integrated Energy Plan (2009-22) was formulated under Pakistan Peoples Party (2008-13) with the objective to revamp energy resources of the country. It emphasised achieving self-reliance by increasing the use of indigenous resources and reducing Pakistan's dependence on imported hydrocarbons. It identified that despite large transmission and distribution gas grid in Pakistan, natural gas is going to remain Pakistan's major energy source in the near future, therefore, the country should also import gas in the form of LNG or through cross-border gas pipelines. On the contrary, it also proposed reducing reliance

on gas to 28 per cent and to reduce share of oil from 30.5 per cent in 2008 to 20 per cent by 2022.¹⁴ Due to huge coal deposits in the country, its share was expected to increase from 9.2 per cent in 2008 to around 15 per cent by 2022. It was recommended to create an integrated coal policy that would encourage the development of mining infrastructure as well as support infrastructure such as development of roads and uninterrupted water supply.¹⁵

The Plan proposed pursuing vigorous policies to increase the share of renewable and alternative energy resources to 12 per cent of the total energy mix. It suggested introducing run-of-the-river and micro hydel projects (e.g. share of hydel energy should be increased to 20 per cent by 2022), wind and solar energy projects and enhancing local bio-diesel and ethanol production.

Apart from technical and political reasons, Pakistan has been lacking a consistent energy policy. Energy issues have been dealt with on ad hoc basis while adopting a project-oriented approach rather than goal-oriented approach. The prime examples are Independent Power Procedures (IPPs) of 1990s and Rental Power Plants (RPPs) of 2008. IPPs enhanced power generation capacity by more than 5,000 MW, but costly furnace oil created price hikes. As far as RPPs are concerned, due to lack of transparency they only gave rise to controversies and wastage of public money. The Integrated Energy Plan also highlighted these issues and suggested some remedies to tackle these problems.

Pakistan Vision 2025

The current Pakistan Muslim League (N) Government that took power in 2013 while highlighting its policy priorities recognised ‘sufficient, reliable, clean and cost-effective availability of energy’ indispensable to ensure sustainable economic growth and development.¹⁶ The document ‘Pakistan Vision 2025’ not only identified the need for investing in energy

¹⁴ Ministry of Finance, GoP, *Integrated Energy Plan 2009-2022*, report (Government of Pakistan, 2009), 36, [http://climateinfo.pk/frontend/web/attachments/data-type/MoF_EEG%20\(2009\)%20Integrated%20energy%20plan%202009-22.pdf](http://climateinfo.pk/frontend/web/attachments/data-type/MoF_EEG%20(2009)%20Integrated%20energy%20plan%202009-22.pdf).

¹⁵ *Ibid.*, 37.

¹⁶ Ministry of Planning, Development & Reform, GoP, *Pakistan 2025: One Nation- One Vision* (Government of Pakistan, 2014), 59, <http://fics.seecs.edu.pk/Vision/Vision-2025/Pakistan-Vision-2025.pdf>.

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sector through public and private sector collaboration to reduce the demand-supply gap, but also emphasised the need to create and to encourage a culture of energy conservation and efficiency.¹⁷

Vision 2025 set the following goals: to eliminate electricity demand-supply gap by 2018 and to produce 25,000 MW by 2025; to revamp energy generation mix between oil, gas, hydro, coal, nuclear, solar, wind and biomass – with regard to indigenoussness, economic feasibility, risk assessment and environmental impact.¹⁸ It also stresses on the need for completion of two major hydel projects: Diamer-Bhasha and Dasu dams and emphasises the need to utilise the potential of Thar coal and completion of Gadani Energy Park with 6600 MW capacity.¹⁹

The document calls for tapping Pakistan's potential for alternative energy and completion of new nuclear power generation plants. It suggests maximising distribution efficiency and minimising losses through investment in transmission and distribution infrastructure. Transmission and distribution losses due to technical issues and electricity theft pose the most serious challenge. Transmission and distribution losses in Pakistan (25 per cent) are much higher than in Organisation for Economic Co-operation and Development (OECD) countries (7 per cent), as well as Korea (3.6 per cent) and China (8 per cent). Dealing with this issue would not just add additional energy in the grid but would reduce the cost of energy as well.²⁰ Apart from focusing on demand management and energy conservation, the document recommends introducing institutional reforms and strengthening regulatory frameworks to improve transparency and efficiency.²¹

A comparison of the Integrated Energy Plan and Vision 2025 shows that both have recognised the need to focus more on renewable sources of energy, but neither has touched upon issues confronting the implementation process, nor is there any indication about when and how self-reliance is going to be achieved.

Resource constraints and lack of foreign investments have made it impossible to utilise indigenous resources. China, as part of its One Belt,

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

One Road (OBOR) initiative, proposed CPEC to link Gwadar to Kashgar. The energy projects under CPEC serve as the backbone of the current Government's energy policy. USD 15.5 billion worth of coal, wind, solar and hydro energy projects have been launched and after getting mature would add 10,400 MW of energy to the national grid.²² These projects include coal fired projects at Port Qasim (Sindh), Sahiwal (Punjab), at coal fields in Thar (Sindh), Gwadar coal/ LNG/oil power plant, HUBCO coal fired power plant, Hub, (Balochistan), Rahimyar Khan coal power plant, Quaid-i-Azam Solar Park, Bahawalpur (Punjab) and Muzaffargarh Coal Project (Punjab).²³ Wind energy projects include the 50 MW Dawood Wind Farm at Bhambore, UEP 100 MW Wind Farm at Jhimpir, 50 MW Wind Farm at Sachal, and Pakistan Wind Farm at Thatta in the province of Sindh.

Hydro power projects include Suki Kinari power project (Khyber Pakhtunkhwa), Karot hydro power project (Azad Kashmir and Punjab), Kohala power project (Azad Kashmir) etc.²⁴ Moreover, Gadani Power Park and Matiari to Lahore transmission line and Matiari to Faisalabad transmission line are also part of the CPEC energy projects. Energy projects under CPEC would help alleviate some of Pakistan's energy problems but due to the country's heavy reliance on gas and large transmission and distribution gas grid, it is imperative to explore regional resources to meet the haunting energy challenge.

Viability of Gas Pipeline Options – IP and TAPI

The projects under CPEC are of immense importance as these are going to utilise Pakistan's renewable and alternate energy potential, but IP and TAPI gas pipeline projects are viewed as possible alternatives that can also contribute in enhancing Pakistan's energy security.

²² Ministry of Finance, GoP, "Energy," *Pakistan Economic Survey 2014-15*, 240.

²³ "CPEC-Energy Priority Projects," *China Pakistan Economic Corridor Official Website*, accessed January 14, 2018, <http://www.cpec.gov.pk/energy>.

²⁴ *Ibid.*

Rationale behind Pipeline Initiatives

The post-Cold War era ushered in new age of globalisation and enhanced economic interdependence. Due to these new dynamics, ‘politics of pipelines’ gained importance. Notwithstanding the cost-effectiveness of pipelines, states have remained reluctant to pursue pipeline projects due to security and transit concerns and despite high capital costs associated with LNG infrastructure, transporting gas in the liquefied form had been the most convenient mode for transportation for years, sparing states the problems associated with pipelines.²⁵ Opponents and proponents of pipeline projects present contesting views. Proponents claim that pipeline projects are feasible when:

- a large supply of gas is available near energy deficient regions;
- suppliers and recipient states share territorially contiguous distances over land; and,
- large suppliers do not have access to sea outlets (such as Central Asian Republics).²⁶

Pipelines are perceived as tools to increase diplomatic as well as political clout of states apart from meeting energy needs.

Notwithstanding the views of proponents, opponents of pipeline projects put forward following factors that hinder the actual materialisation of such projects:

- security of supplies through transit states;
- unlike the oil market, the gas market is more aggregated and does not have a fixed world price; and,
- given the lack of a legal regime to regulate contractual terms and conditions, stronger states might get encouraged to influence contracting parties, eventually leading to disagreement and conflict.²⁷

²⁵ Shebonti Ray Dadwal, “Can the South Asian Gas Pipeline Dilemma be Resolved through a Legal Regime?” *Strategic Analysis* 35, no. 5 (2011): 757-769 (758).

²⁶ Ibid.

²⁷ Ibid.

Iran-Pakistan (IP) Gas Pipeline Project

The proposed Iran-Pakistan-India (IPI) gas pipeline project was initially a bilateral initiative between Iran and India and Pakistan was not part of the original plan but had to provide an overland transit facility. Given the lack of trust and confidence between India and Pakistan and the subsequent domestic opposition to be an economic partner, the project could not materialise. It was revived by President Musharraf's Government (2002-07) when Pakistan agreed not only to provide India transit facility but to import Iranian gas for domestic use as well. The project seemed to offer economic benefits in the form of transit fee and economic opportunities. Moreover, rising oil prices in international market persuaded the government to substitute oil with natural gas for power generation.²⁸

Keeping in view, Indian apprehensions about security of supply, Iran as a supplier state, agreed to provide 'sovereign guarantees' to India as it not only accepted Indian demand of supplying an equal amount of LNG to India at the same price (in case of disruption of supplies by Pakistan), but also assured India to disrupt gas supply to Pakistan in any such case.²⁹ To further allay Indian concerns, and to ensure uninterrupted gas supply, Iran even suggested a tripartite (India-Iran-Pakistan) agreement with global financial institutions like the World Bank and the Asian Development Bank (ADB) as its guarantors.³⁰ Apart from Pakistan-centric concerns, Indian disagreement over the price of gas with Iran, and US opposition are the factors that led India to distance itself from the project and in 2008 finally withdraw from the deal.

India's refusal to join the project transformed it into Iran-Pakistan gas pipeline project and a bilateral agreement between Pakistan and Iran was signed on March 11, 2013, by former President of Pakistan Asif Ali Zardari and former President of Iran Mahmoud Ahmadinejad.

Prospects and Challenges

Many complicated issues relating to Iran-Pakistan gas pipeline have hindered progress on the project so far. The most challenging task in its

²⁸ Ibid., 315.

²⁹ Ibid., 316.

³⁰ Ibid.

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realisation has been the issue of US sanctions on Iran. The United Nations and European Union related sanctions were exclusively due to the Iranian nuclear programme, but the long list of US' economic and political sanctions against Iran date back to the 1979 Tehran Hostage Crisis when President Carter ordered to freeze Iranian assets subject to US jurisdiction, and later on additional sanctions were imposed when the US added Iran to its list of countries that support terrorism.³¹ President Clinton announced a comprehensive ban on the US trade and investment in Iran through an executive order, which was renewed by George Bush and even expanded by Barack Obama in 2010. In this regard, Iran Sanctions Act (ISA) has been an important extra-territorial set of sanctions. The focus of Obama Administration had been to curtail oil revenues of Iran. The extra-territorial nature of sanctions on Iran authorised the American President to take measures against non-US business investment in Iran's energy sector.³²

The basic purpose of enforcing ISA was to check investments in Iran's energy sector and the definition of investment included equity and royalty arrangements and any contract that included responsibility for the development of petroleum resources of Iran, including pipelines to and through Iran.³³

As far as the applicability of ISA regarding energy pipelines is concerned, the definition and interpretation of 'investment' was amended many times. In March 2012, Secretary of State, Hillary Clinton made it clear that the Obama Administration interpreted the provision to be applicable from the start of pipeline construction.³⁴ Regarding Iran-Pakistan gas pipeline project, Pakistan was warned by Richard Holbrooke, US Special Representative for Afghanistan and Pakistan (2009-10) against the upcoming sanctions on Iran and its negative impact on the pipeline project. Ironically, no gas pipeline projects involving Iran have so far been sanctioned. Turkey has been one of the largest buyers of Iranian oil and

³¹ Zachary Laub, "International Sanctions on Iran" (New York: Council on Foreign Relations, 2015), www.cfr.org/background/international-sanctions-iran.

³² Ibid.

³³ Kenneth Katzman, *Iran Sanctions*, report (Washington, D.C.: Congressional Research Service, 2018), <https://www.fas.org/sgp/crs/mideast/RS20871.pdf>.

³⁴ Ibid.; Kenneth Katzman, *Iran Sanctions*, report (Washington, D.C.: Congressional Research Service, 2014), <https://pdfs.semanticscholar.org/f9d0/91fb189dd4296c18e6faae01a8d87f4f9e43.pdf>.

has been a consumer of Iranian gas through a pipeline, constructed in 1997. During its construction, the US State Department testified that Turkey would be importing gas from Turkmenistan not from Iran under a swap arrangement, and the State Department did not define it as a violation of ISA.³⁵ The direct Iranian gas imports to Turkey started in 2001 and increased with the construction of the second pipeline in 2013, but no ISA sanctions were imposed due to US State Department's assurance that the pipeline was essential for ensuring Turkey's energy security.³⁶

Despite the threat of sanctions, Pakistan's Government signed the Pipeline Agreement with the Iranian Government in 2013, but work on the project could not gather momentum because national and international investors had remained reluctant to invest in the project due to the fear of sanctions.

The signing of the interim nuclear deal between Iran and P5+1, in November 2013 offered Iran limited sanctions relief, but the US restrictions on energy trade, including ban on foreign investment and technical services to Iran's energy sector remained in place. While the final nuclear deal between Iran and P5+1 that is known as the Joint Comprehensive Plan of Action (JCPOA), finalised on July 14, 2015 provided Iran broad relief from US, EU and UN sanctions on Iran's energy, financial, shipping, automotive and other sectors.

Under the JCPOA, the US sanctions targeting foreign firms' involvement in those sectors were waived or terminated. The JCPOA did not commit the US to suspend sanctions on Iran regarding terrorism, human rights abuses, arms sales to Iran and sales of proliferation sensitive technology i.e. ballistic missile technology. Many states have resumed oil imports from Iran, but as far as IP is concerned, the Government of Pakistan has to work out a comprehensive plan to materialise the project.

Another hurdle in the project has been the issue of pricing. India withdrew from the project while citing high price factor. A view of Iran's gas contracts shows that Iran had signed Memorandum of Understandings (MoUs) with other states – United Arab Emirates (UAE), Oman, Bahrain,

³⁵ Kenneth Katzman, *Iran Sanctions*, report (Washington D.C.: Congressional Research Service, 2016), digital.library.unt.edu/ark:/67531/metadc847716/m1/50/.

³⁶ *Ibid.*, 43.

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Kuwait and Syria, but none of them resulted in General Sales Price Agreement (GSPA).³⁷ Apart from other reasons, price disagreements have been the contributing factor in disrupting the negotiation process. For example, as a result of Iran's contract with UAE, a pipeline was constructed in 2008, but two countries had disagreements over pricing as Iranian gas was five times more costly than Qatar's exported gas.³⁸ Similarly, Iran is the second largest gas supplier to Turkey after Russia, and supplies 10 billion cubic meters of natural gas to Turkey annually. In March 2012, Turkey's State Oil and Gas Company Botas appealed in the International Court of Arbitration against Iran's high gas prices. The international tribunal in its ruling ordered Iran to pay USD 1.9 billion as compensation to Turkey.³⁹

In this regard, another concern is that Iran itself has been importing gas from Turkmenistan at the price of 4 USD/MMBTU and it is presumed that this price has not been linked to crude oil, while Iran intended to export gas at 14 USD/MMBTU which is subject to periodic revisions in accordance with prevailing market conditions.⁴⁰

It has been reported that the Ministry of Petroleum and Natural Resources sought permission from the Federal Cabinet to reopen talks with the Iranian Government about the gas deal regarding gas price review and extension in timeframe. Pakistan desires to ask Iran to extend Gas Sales Purchase Agreement with penalty clause up to December 2018.⁴¹ Though Iran had already waived off the penalty worth USD 1 million/

³⁷ Arshad H. Abbasi, Fareeha Mehmood, Ayesha Wasti, Maha Kamal and Zohra Fatima, "Rethinking Pakistan's Energy Equation: Iran-Pakistan Gas Pipeline" (brief, Sustainable Development Policy Institute, 2013), <http://www.sdpi.org/publications/files/IP-Report.pdf>.

³⁸ Ibid.

³⁹ "Turkey to Receive USD 1.9b from Iran over Gas Dispute," *Financial Tribune*, January 25, 2017, <https://financialtribune.com/articles/energy/58155/turkey-to-receive-19b-from-iran-over-gas-dispute>.

⁴⁰ This price has been mentioned in Abbasi et al., "Rethinking Pakistan's Energy Equation: Iran-Pakistan Gas Pipeline." While in "Pakistan in Talks with Iran to Renegotiate IP Project GSPA," *News International*, January 19, 2017, <http://www.thenews.com.pk/print/180093-Pakistan-in-talks-with-Iran-to-renegotiate-IP-project-GSPA>, the agreed price under GSPA has been mentioned as USD12 per (MMBtu) if crude oil price stood at USD 100/bbl in the international market.

⁴¹ Khalid Mustafa, "IP Gas Project may soon See Light of Day," *News International*, November 18, 2016, <https://www.thenews.com.pk/print/165700-IP-gas-project-may-soon-see-light-of-day>.

daily which was due on Pakistan from January 01, 2015 over delaying the construction of the gas pipeline and extended the time limit.⁴² It is reported that Iran is willing to renegotiate the price of gas as a draft amendment had been shared with Iran.

Apart from issues of sanctions and pricing, the emerging geopolitical environment in the Middle East may hamper or further delay the IP project. Pakistan needs to follow a balanced and neutral policy vis-à-vis Iran and Pakistan's Gulf allies, since this project can help meet Pakistan's energy needs as well and become a confidence building measure to reconcile conflicting issues between the two states.

TAPI Pipeline Project

The TAPI (Turkmenistan-Afghanistan-Pakistan-India) is a gas pipeline project to connect energy rich Central Asia with energy deficient South Asia via a gas pipeline. TAPI was initially designed to supply gas to Pakistan through Afghanistan, but later India also joined the project. The proposed gas pipeline would pass through Turkmen city of Daulatabad to Fazilaka, India, via Herat-Helmand-Kandahar (Afghanistan), and Quetta-Multan (Pakistan). Turkmenistan has begun construction work on the 214 km section of the pipeline in its territory.⁴³ A gas Sale and Purchase Agreement was signed in 2013 to establish the pricing mechanism, according to which the price of Turkmen gas would be almost 20 per cent lower than the price of Brent crude oil.⁴⁴

Before constructing the gas pipeline, determining the technical aspects, the route survey, detailed engineering and feasibility study has been a prerequisite and survey and study has to be undertaken first in Pakistan, later extended to Afghanistan.

The US supports the TAPI project because it serves its own geopolitical objectives. Though TAPI is not a new project, it was initiated in 1990s, initially UNOCAL (Union Oil Company of California), a US led

⁴² Ibid.

⁴³ "Initial Investment Agreement for TAPI Pipeline Signed," *Economic Times*, March 4, 2016, <http://economictimes.indiatimes.com/industry/energy/oil-gas/initial-investment-agreement-for-tapi-pipeline-signed/articleshow/51255471.cms>.

⁴⁴ "Work on TAPI Pipeline to Begin in Pakistan Tomorrow: Official," *Economic Times*, March 2, 2017, <http://economictimes.indiatimes.com/industry/energy/oil-gas/work-on-tapi-pipeline-to-begin-in-pakistan-tomorrow-official/articleshow/57429487.cms>.

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consortium of California and Argentina's Bidas were interested in the pipeline project.⁴⁵ The idea could not be transformed into reality due to deteriorating law and order situation in Afghanistan. The Russian factor also came into play as in the late 90s, Russia was reasserting its influence in Central Asia and the Russian oil conglomerate Gazprom having rights over gas reserves in the country dismissed the idea of the Trans-Afghan Pipeline (TAP).⁴⁶

Prospects and Challenges

The proposed TAPI project if implemented would present greater economic and political opportunities for all participating states. Apart from meeting Pakistan's energy needs by generating 5-6,000 MW electricity for Pakistan,⁴⁷ TAPI can provide Pakistan an alternate source of energy, and in case of materialisation of Iran-Pakistan gas pipeline project, TAPI could reduce Pakistan's dependence on one source of imported gas. Likewise, the actualisation of the project will enable both Pakistan and Afghanistan to generate revenue by getting transit fee and create employment opportunities for the people of Pakistan and Afghanistan.

TAPI presents economic opportunities for Afghanistan as well since it will likely earn USD 400 million annually from the pipeline.⁴⁸ According to Integrity Watch Afghanistan Report (2015), Afghanistan's 'national budget for 2016 was set at USD 7.331 billion' otherwise since 2001, foreign aid has been the largest contributor to the Afghan annual budget.⁴⁹ Afghanistan considers TAPI a project of immense importance as other projects such as a power transmission project, a railway project and a fiber optic project will be built along the TAPI pipeline route.⁵⁰

⁴⁵ Riaz Mohammad Khan, *Afghanistan and Pakistan: Conflict, Extremism, and Resistance to Modernity* (Karachi: Oxford University Press, 2011), 175.

⁴⁶ Ibid.

⁴⁷ Nazir Hussain, "Diplomacy and International Dimension of Energy Management," in *Solutions for Energy Crisis in Pakistan*, ed. Mushir Anwar (Islamabad: Islamabad Policy Research Institute, 2013), 141.

⁴⁸ Catherine Putz, "Afghanistan shouldn't Start Counting TAPI Revenue just yet," *Diplomat*, February 24, 2017, <http://thediplomat.com/2017/02/Afghanistan-shouldn't-start-counting-tapi-revenue-just-yet/>.

⁴⁹ Ibid.

⁵⁰ Ibid.

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Turkmenistan is believed to have the fourth largest gas reserves in the world next to Russia, Iran and Qatar. Due to lack of alternatives, it depends on Russia for gas exports, TAPI would enable it to diversify its supply routes, expand its customer base and enhance its revenue base.⁵¹

The most significant hurdle in the actualisation of the project is the precarious security situation of Afghanistan that makes investors fearful as well as serious concerns regarding capability of Afghan security forces to protect the pipeline route. The Afghan Government has pledged to raise a security force comprising of 7,000 personnel to guard the TAPI pipeline.⁵² Reportedly in a statement, the Taliban assured that:

...they not only back all national projects which are in the interest of the people and result in the development and prosperity of the nation but are also committed to safeguarding them.⁵³

Moreover, India-Pakistan rivalry can have negative impact on the project. India not only abandoned the IP project, but also withdrew from the tri-nation Myanmar-Bangladesh-India pipeline project that was to run through the Arakan state in Myanmar, through the northeastern states of Mizoram and Tripura in India, before crossing into Bangladesh and finally to Kolkata in West Bengal.⁵⁴ This project could not reach completion due to Indian differences with Bangladesh over transit rights. Delay from Indian side led Myanmar to explore new options for exporting gas, while ending prospects for Myanmar-India gas pipeline in the near future.

⁵¹ Saman Zulfqar, "Materializing the Pipedream," *Daily Times*, December 25, 2015, www.dailytimes.com.pk/opinion/25-ec-2015/materialising-the-pipe-dream.

⁵² Mir Sherbaz Khetran, "Turkmenistan-Afghanistan-Pakistan-India (TAPI) Gas Pipeline" (brief, Institute of Strategic Studies, Islamabad, 2017), http://www.issi.org.pk/wp-content/uploads/2017/02/Final_IB_Khetran_dated_16-2-2017.pdf.

⁵³ Catherine Putz, "Taliban Pledge to Protect Infrastructure Projects," *Diplomat*, December 1, 2016, <http://www.thediplomat.com/2016/12/taliban-pledge-to-protect-infrastructure-projects/>.

⁵⁴ Dadwal, "Can the South Asian Gas Pipeline Dilemma be Resolved through a Legal Regime?" 760-761.

Conclusion

Pakistan, to ensure political stability, achieve economic development, and to raise the living standards of its people has to solve the problem of energy insecurity. Due to economic constraints, Pakistan has not been able to develop indigenous resources, but CPEC has now provided it with an opportunity to utilise its resources with Chinese investment on short, medium and long-term basis. Given Pakistan's dependence on gas, its share in the total energy mix of Pakistan, and a large transmission and distribution gas grid, it is imperative to opt for pipeline projects to import natural gas. These projects can considerably contribute to Pakistan's energy mix to sustain economic growth. Moreover, while having greater economic viability, these can make Pakistan achieve its long aspired dream of transforming itself into a hub of trade and transit activity.

IP and TAPI gas pipeline projects which date back to the mid-90s are economically viable projects having potential to meet the increasing energy needs of various states, but both have not gained momentum due to geopolitical rivalries of regional as well as extra regional states. The Iran-US relations and the extraterritorial nature of sanctions on Iran overshadowed the IP project. Apart from other factors, the security situation in Afghanistan has been the main cause of delay for TAPI. These projects can become harbingers of peace by linking energy rich Central Asia and Gulf region with energy starved South Asia by creating interdependence among the states who may then have incentives to cooperate to achieve regional and intra-regional security and stability. ■