

TAPI Pipeline Project and the Iran–US Conflict: A Strategic Pathway for Energy Security in South Asia

¹Dr. Vijay Kumar, ²Vikas Kumar Pal, ³Vibhanshu Pratap Singh

¹Assistant Professor, Defense and Strategic Studies, Deen Dayal Upadhyaya Gorakhpur University,
Gorakhpur

^{2,3}Research Scholar, Defense and Strategic Studies, Deen Dayal Upadhyaya Gorakhpur University,
Gorakhpur

Abstract:

Energy security remains a vital concern for South Asia, a region grappling with increasing energy demands amidst persistent supply challenges. The escalation of tensions between the United States and Iran since march 2026, marked by incidents such as attacks in the Strait of Hormuz and subsequent retaliatory measures, has brought to light significant vulnerabilities within critical maritime energy transportation routes through which one-fifth of oil trades passes. The Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline represents a strategic initiative aimed to supply 33 billion cubic meters of natural gas every year from Turkmenistan's Galkynysh gas field to Afghanistan, Pakistan and India which diversifying energy sources, fostering stronger economic ties, and enhancing regional connectivity.

This research provides the deep analysis of significance of TAPI pipeline project for South Asia in context of current energy crises due to Iran-US-Israel conflict. It also explores importance of this project and how this project benefits for Afghanistan, Pakistan and India. In this study we also explore the reason behind the delaying of this project, challenges and future prospects of TAPI pipeline.

Its successful implementation could significantly reduce dependence on maritime routes, thereby strengthening energy resilience and promoting regional cooperation among Central Asia and South Asia region. Ultimately, advancing TAPI could play a crucial role in bolstering energy security and economic resilience across South Asia, fostering a more stable and prosperous regional future.

Keywords: TAPI Pipeline, Energy Security, Iran–US Conflict, South Asia, Regional Cooperation, Natural Gas

Introduction

Energy is one of the center stages in the world politics not only for economic growth and political stability but also as a part of basic needs of human survival in today's world. Current situation of global politics arises a serious energy shortage for South Asia due to Conflict between US-Iran-Israel. By seeing this situation, regional cooperation in energy projects has become essential for South Asian countries. One

such major project is the **Turkmenistan–Afghanistan–Pakistan–India (TAPI) pipeline**, which aims to supply 33 billion cubic meters of natural gas from Central Asia to South Asia. The idea was first proposed in the 1990s, but it gained momentum after 2015 when construction officially began.

The TAPI pipeline, which is partially financed by the Asian Development Bank, extends over a distance of approximately 1,800 kilometers. It is projected to operate for a period of thirty years, aiming to enhance energy access and promote stability and peace throughout Central and South Asia. Proponents of the project emphasize the environmental advantages of replacing coal with natural gas, which can significantly reduce carbon emissions. Additionally, they point to the economic benefits derived from transit fees paid by countries along the pipeline route. Although the project faces numerous security threats and regional conflicts that pose challenges to its development, progress remains consistent.

Notably, the construction of the Turkmenistan segment is nearing completion, and efforts to procure land in Afghanistan are actively underway. While geopolitical tensions and regional disputes often dominate discussions surrounding the pipeline, there is an increasing focus on addressing governance issues, social impacts, and environmental concerns. Ensuring effective management of these factors is considered essential to the successful implementation and long-term operation of the pipeline. Stakeholders recognize that overcoming these challenges is crucial for realizing the pipeline's potential to foster economic growth, regional connectivity, and peace in the diverse regions it traverses.

To unlock the full potential of TAPI, sustained diplomatic engagement and regional security cooperation are essential. Pragmatic energy diplomacy, emphasizing mutual benefits and stability, can help navigate the complex geopolitical environment. While the pipeline offers a pathway to enhance energy security in South Asia, it must be viewed within the broader context of global energy trends and environmental considerations.

Overview of the TAPI Pipeline Project

The TAPI pipeline is a major regional energy project connecting four countries: Turkmenistan, Afghanistan, Pakistan, and India. The concept of the Turkmenistan-Pakistan pipeline passing through Afghanistan was initially proposed in the mid-1990s by Unocal and Brides Company. However, concerns over security and widespread international criticism of the Taliban regime led to the withdrawal of both companies from the project. Following the collapse of the Taliban's rule, efforts to revive the pipeline gained momentum, culminating in a renewed agreement signed in 2002 by Afghanistan, Pakistan, and Turkmenistan. This agreement marked a significant step toward realizing the pipeline, which was seen as a vital energy corridor for the region.

In 2005, the Asian Development Bank conducted a comprehensive feasibility study that yielded favorable results, supporting the development of a 1,814-kilometer-long gas pipeline connecting the three nations. The study highlighted the economic viability and strategic importance of such a project, emphasizing its potential to enhance regional energy security and economic development. Building on this momentum, India expressed interest in the pipeline project in 2008, leading to its expansion into the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline. This broader initiative aimed to supply natural gas to a larger segment of South Asia, promoting regional cooperation.

On December 11, 2010, a significant milestone was achieved when leaders from Turkmenistan, Afghanistan, Pakistan, and India's energy ministers signed a framework agreement for the construction of the pipeline. The proposed route spans approximately 1,814 kilometers and is designed to deliver around 90 million cubic meters of natural gas daily. The pipeline's trajectory begins at Turkmenistan's gas fields, traversing Afghanistan and Pakistan before reaching Fazilka in India. Its projected capacity is about 33 billion cubic meters annually, providing a substantial source of clean energy to the region. On December 13th 2015, the leaders of these four countries started the construction of the TAPI natural gas pipeline project with an official ceremony

Trans-Afghanistan pipeline

Route of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline

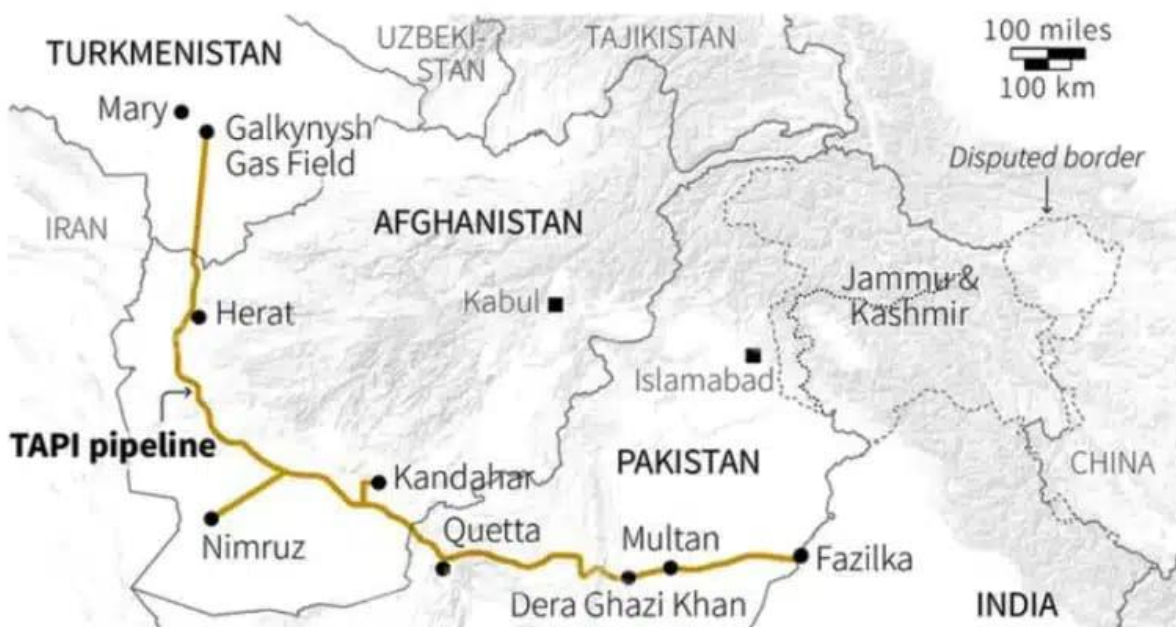


figure 1. Map of TAPI (Voice of America, 2016) The newly planned route of the TAPI pipeline, which shows significant change from 1990s route.

The overall Project's key features across all:

- A 56-inch diameter steel pipeline;
- Eight CSs (two in Turkmenistan, four in Afghanistan, and two in Pakistan);
- A pipeline length of 1,814 km from the Galkynysh gas field to the Pakistan-India border;
- Three off-take points in Afghanistan, located at Herat, Nimruz, and Kandahar;
- Three off-take points in Pakistan, located at Quetta, Multan, and Jahanian;
- A final off-take point / interface at the Pakistan-India border (for India); and
- A design life of 40 years.

Energy Needs of South Asia

South Asia is one of the fastest-growing regions in the world, but it suffers from a major energy crisis. This region home to nearly twenty-five percent of the world's population, is undergoing swift economic development that significantly elevates its energy requirements. Countries such as India, Pakistan, and Afghanistan depend predominantly on fossil fuels and imported energy supplies, creating vulnerabilities to global price fluctuations and supply disruptions. This reliance places considerable pressure on national finances and amplifies concerns related to energy security.

- **India: Rising demand and Shift to clean energy:**

India, ranking as the third-largest energy consumer globally, faces a complex challenge of balancing its burgeoning energy needs with sustainable and secure sources of supply. The country's rapid economic expansion has led to a substantial increase in energy demand, necessitating strategic measures to ensure reliable access while managing environmental impacts. Currently, India remains heavily dependent on energy imports, particularly crude oil and liquefied petroleum gas (LPG), which exposes it to geopolitical risks and fluctuations in international markets. To mitigate these vulnerabilities, India has set ambitious targets to diversify its energy portfolio, including a goal to achieve 100,000 megawatts of nuclear power capacity by 2050. Additionally, the nation is actively expanding its renewable energy initiatives, exemplified by programs such as the Pradhan Mantri Surya Ghar rooftop solar scheme, aiming to promote decentralized and sustainable power generation.

- **Pakistan: Addressing energy shortage:**

Meanwhile, Pakistan continues to confront significant energy shortages that hamper its economic development. The country's rising demand for electricity is compounded by declining domestic natural gas production, which has led to increased reliance on imported oil and liquefied natural gas (LNG). These dependencies have driven up costs and created supply uncertainties, adversely affecting industrial productivity and overall economic stability. To address these issues, Pakistan is investing in alternative renewable sources, notably hydropower and solar energy projects, while also exploring regional energy cooperation.

- **Afghanistan: Energy deficit and untapped potential**

In Afghanistan, the energy sector remains critically underdeveloped, with a heavy reliance on imports from neighboring countries due to limited domestic generation capabilities. Although the country possesses an estimated 23,000 megawatts of untapped hydropower potential, political instability and inadequate infrastructure have impeded large-scale development. As a result, there is a growing interest in deploying off-grid solar solutions, particularly to improve electricity access in rural and remote areas, offering a pathway toward enhancing energy security and fostering socio-economic development despite existing challenges.

The demand for energy in the region is expected to grow rapidly in the coming decades. It is estimated that South Asia's energy capacity needs to more than double by 2040. India, Pakistan, and Afghanistan represent diverse natural gas consumption profiles, with India demanding over 65 billion cubic meters (bcm) annually, Pakistan hovering around 34 bcm, and Afghanistan consuming less than 0.1 bcm annually. In this situation, TAPI offers a stable and long-term solution by providing a continuous supply of natural gas. The TAPI pipeline exemplifies this collaborative effort by transporting approximately 33 billion cubic

meters of natural gas from Turkmenistan through Afghanistan and Pakistan to India, thereby providing a reliable energy source for these countries and promoting regional integration.

Iran–US Conflict and Its Impact on Energy Projects

The ongoing tensions between the United States and Iran have significantly contributed to volatility within the global energy markets, leading to fluctuations in the supply and stability of oil and liquefied natural gas (LNG). This instability is particularly evident in the disruption of exports passing through the strategic Strait of Hormuz, a vital route for energy shipments. Meanwhile, efforts to enhance regional energy cooperation, such as the Iran–Pakistan–India pipeline, commonly known as the “Peace Pipeline,” continue to face delays and obstacles primarily due to U.S. sanctions and opposition from certain stakeholders. These challenges not only hinder potential collaborative projects but also have broader implications for the economic stability of the involved nations and the global energy landscape as a whole.

Because of these tensions:

- India withdrew from the IPI pipeline project.
- Pakistan faced delays due to fear of sanctions.
- Investment in Iran-based energy infrastructure declined.
- Renewable energy acceleration
- Supply chain disruption
- It complicates the strategic transit projects like the INSTC (International North-South Transport Corridor and Chabahar Port).

As a result, countries started looking for alternative routes that do not involve Iran. This is where the TAPI pipeline becomes very important.

Why TAPI is Preferred Over Iran-Based Pipelines

The Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline is often favored over pipelines based in Iran because it presents fewer geopolitical and economic risks. There are several reasons why TAPI is considered more viable than the Iran pipeline:

1. **No Sanctions Risk:** Unlike Iran-based projects, TAPI does not face the same level of international sanctions, making it a more viable option for long-term investment and cooperation.
2. **International Support:** The United States has supported TAPI as part of its strategy to connect Central Asia with South Asia and transit fees would provide an important source of income for Afghanistan and Pakistan if the TAPI pipeline ran through these regions. However, the U.S unofficially objected to construction of the IPI pipeline and trying to isolate Iran.
3. **Financial Backing:** Institutions like the Asian Development Bank are involved, increasing investor confidence.
4. **Diversification of Energy Sources:** TAPI allows countries to diversify their energy imports instead of depending on politically sensitive regions.
5. **Regional Cooperation & Confidence Building Measure (CBM):** The TAPI pipeline aims to foster economic growth and regional integration by providing a vital energy corridor connecting Turkmenistan, Afghanistan, Pakistan, and India. Its development could potentially enhance cooperation among these nations, helping to ease border tensions and strengthen diplomatic ties in South Asia.

Importance of TAPI for Afghanistan

Afghanistan plays a central role in the TAPI project as a transit country.

- **Economic Benefits:** The TAPI pipeline is set to significantly enhance Afghanistan's economy by bringing in approximately US\$1 billion each year through transit fees. This project will also create thousands of jobs across construction, industry, and related sectors, providing much-needed employment opportunities. Its development aims to stimulate industrial expansion, attract foreign investment, and upgrade vital infrastructure like roads, railways, and power grids. By doing so, the pipeline will help transform southwestern Afghanistan into a crucial regional economic center, fostering connectivity and economic growth. The project's success is expected to generate long-term benefits, including increased trade, improved living standards, and stronger regional cooperation, positioning Afghanistan as an important player in regional development.
- **Energy Access:** The TAPI pipeline is designed to strengthen Afghanistan's energy security by delivering natural gas from Turkmenistan directly to the country. This project will help improve electricity supply, support industrial development, and meet household energy needs. It works alongside other regional initiatives like CASA-1000, aiming to diversify energy sources and reduce dependency on a single supply. By providing a reliable energy corridor, TAPI is expected to foster economic growth, create jobs, and boost industrial productivity. Ultimately, it will contribute to regional stability and integration through improved energy connectivity.
- **Peace and Stability:** The TAPI pipeline has the potential to enhance regional stability by strengthening economic connections among the involved nations. However, ongoing border tensions and political disagreements continue to pose significant challenges that could hinder progress. Despite these obstacles, the pipeline project presents an opportunity to encourage dialogue and foster cooperation between the countries, which may ultimately contribute to improved relationships and mutual development in the region.

Importance of TAPI for Pakistan

Pakistan is one of the biggest beneficiaries of the TAPI pipeline.

- **Reducing Energy Shortage:** Pakistan's ongoing energy crisis, largely fueled by rapid population growth, expanding industrial demands, and finite domestic resources, necessitates strategic solutions to secure a sustainable energy future.
- **Industrial Growth:** By providing a more reliable and affordable energy source, the TAPI pipeline is expected to bolster Pakistan's energy security and stabilize its energy supply chain. The assured availability of natural gas will also promote industrial development by lowering operational costs, thereby making Pakistani industries more competitive. Additionally, this development is likely to attract foreign investment and generate employment opportunities, contributing to sustained economic growth over the long term.
- **Transit Advantages:** As a transit nation, Pakistan will also benefit economically through transit fees collected from the gas passing through its territory. Moreover, the pipeline will enhance regional connectivity, fostering closer economic and diplomatic ties between Central and South Asian countries.
- **Strategic Importance:** Strategically, the TAPI project enhances regional cooperation with Turkmenistan, Afghanistan, and India. It serves to diversify Pakistan's energy sources and

improves its geopolitical standing on the regional stage. However, the project's success depends heavily on regional stability and effective diplomatic engagement, which are essential for the pipeline's full realization and long-term benefits.

Importance of TAPI for India

By seeing the energy needs of India and instability in Gulf Region TAPI pipelines project play an important role to fulfill the energy needs, boost regional connectivity and promote peace among the nations.

- **Energy Security:** India's anticipated energy consumption is projected to increase by 9% by 2035, accompanied by a significant surge of 131% in natural gas demand. However, domestic production is unlikely to meet this growing need, resulting in a substantial reliance on imports, which are expected to quadruple by 2040. This widening energy gap underscores India's strategic focus on diversifying its energy sources and highlights its keen interest in initiatives such as the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project, aimed at enhancing energy security and provides a long-term and stable source of natural gas.
- **Promoting Regional Connectivity:** The TAPI pipeline presents a significant opportunity to enhance India's energy security, foster stronger diplomatic and economic ties with Central Asian nations, and improve regional connectivity. However, the realization of these benefits hinges on India's proactive leadership and sustained engagement in the project's development. Effective participation by India is essential to maximize the pipeline's strategic and economic advantages for all parties involved.
- **Diversification:** India is actively seeking to diversify its energy sources by supporting the development of the TAPI pipeline, which aims to import natural gas from Turkmenistan. This initiative not only enhances India's energy security but also serves as a means to strengthen regional cooperation among Central and South Asian nations. However, the success of this project hinges on effectively addressing complex geopolitical challenges, particularly in Afghanistan and Pakistan, where stability and diplomatic relations are crucial. Additionally, Russia's increasing interest in the TAPI pipeline underscores its strategic and economic ambitions to expand influence within the region. This growing involvement has the potential to promote greater energy integration across Central and South Asia, fostering a more interconnected and resilient regional energy landscape.
- **Geopolitical Balance & Net- Zero Emission target :** By avoiding Iran, India can maintain good relations with the United States while still meeting its energy needs. Natural gas received through the pipeline could prove critical in diversifying India's energy mix and achieving its goal of net-zero emissions by 2070.

Challenges Facing the TAPI Pipeline

Despite its importance, the TAPI project faces several challenges include severe security risks along the Afghan & Balochistan route, complex international financing, and persistent geopolitical tensions between India-Pakistan & Pakistan-Afghanistan.

1. **Security Issues:** Despite the Taliban's control over Afghanistan, security challenges persist, and threats have not been fully eradicated, though they have been somewhat reduced. The Balochistan

pipeline zone continues to experience insurgent attacks, underscoring the persistent security challenges in the region. Ensuring the safety and stability of the TAPI pipeline requires substantial investment in security measures, emphasizing the importance of strategic planning and robust protection efforts to safeguard this critical infrastructure.

2. **India–Pakistan Relations:** The ongoing tensions between India and Pakistan further complicate the regional stability, casting doubt on the dependability of cross-border gas supplies. These tensions raise concerns about the potential for manipulation or disruption of energy flows, especially in the event of escalating conflicts.
3. **Financial and Technical Delays:** Large infrastructure projects often face delays due to funding and technical issues. Funding for TAPI pipelines is primarily depends on private investors because of regional risks, even though the Asian Development Bank provides support. Additionally, managing and implementing projects become more challenging due to administrative differences across multiple countries. These complexities hinder smooth coordination and effective execution of initiatives in the region.
4. **Afghanistan-Pakistan tension:** The relationship between Afghanistan and Pakistan has deteriorated significantly due to ongoing border clashes, disagreements over the Durand Line, and allegations related to the Tehreek-e-Taliban Pakistan (TTP). These issues have fostered mutual mistrust, making it difficult for the two countries to collaborate effectively. This strained cooperation poses a serious challenge to the successful implementation of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project.

Future Prospects of the TAPI Pipeline

Looking ahead, the future of TAPI depends on several factors:

- **Improved Regional Cooperation:** This project promise to be a win-win situation for all participated nation. If Afghanistan, Pakistan, and India cooperate effectively, the project can succeed and promoting regional cooperation and integration over the past 20 years. It will unlock economic opportunities, transform infrastructure, diversify the energy market and enhance energy security for the region.
- **Stability in Afghanistan:** Peace and stability in Afghanistan are essential for the pipeline's security. Since the Taliban regained control three years ago, they have placed a strong emphasis on advancing the TAPI (Turkmenistan-Afghanistan-Pakistan-India) pipeline project, considering it essential for Afghanistan's economic development. Abdul Jabbar Safi, a prominent member of the Afghanistan Industrialists' Association, emphasized the significant benefits the project could bring, including the creation of thousands of jobs and the transformation of the southwestern region into a major economic center. The TAPI project is anticipated to catalyze extensive infrastructure improvements, such as the development of gas and electricity networks, as well as the construction of railways and roads. The Taliban also hopes that the project will give it greater global legitimacy and help establish Afghanistan as a stable destination for investment.
- **Growing interest of Russia:** Russia shows interest in joining the Turkmenistan–Afghanistan–Pakistan–India (TAPI) Pipeline Project, despite not being an official participant. To strengthen regional influence and enhance energy security, Gazprom has proposed reversing the Central Asia–Centre pipeline to connect with TAPI. This move could facilitate increased energy flows into South

Asia, expanding Russia's reach in the region. The country's strategic interest in the pipeline aligns with broader efforts to diversify energy routes and bolster economic and geopolitical ties with South Asian nations. Despite obstacles, Russia's continued engagement underscores its commitment to expanding influence in Eurasian energy corridors.

- **Connectivity with Central Asia:** The project provides India with strategic access to Central Asia, facilitating future energy collaborations and pipeline infrastructure development. This initiative aims to establish a trade corridor extending to Kazakhstan, which could significantly enhance economic ties and regional connectivity. By opening new routes, India stands to gain substantial strategic and economic benefits, strengthening its presence and influence in Central Asia while supporting energy security and regional stability.

Conclusion

The TAPI pipeline project represents a critical opportunity for South Asia to achieve energy security and economic growth. In the context of ongoing Iran–US conflict, TAPI has become even more important as a politically safer and strategically viable alternative to Iran-based energy routes. The TAPI pipeline plays a crucial role in enhancing regional energy cooperation by connecting Turkmenistan, Afghanistan, Pakistan, and India. Its successful implementation is heavily dependent on the stability of Afghanistan & Balochistan province of Pakistan, India-Pakistan relation and resolving Pakistan-Afghanistan dispute which is vital for the project's progress. The pipeline aims to strengthen security and foster strong partnerships among these nations, ultimately promoting economic growth, ensuring energy security, and improving regional connectivity. By working together, these countries can achieve shared prosperity and stability through this significant energy infrastructure initiative.

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