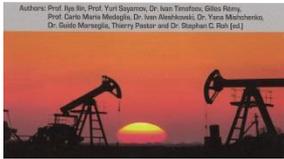




**GLOBAL ENERGY
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**Accelerations and New Realities
Shifting the Geopolitical and Economic Focus
A Political, Economic and Scientific Analysis for a
Comprehensive Global Energy Perspective**

by
ILS ENERGY



**TAPI gas pipeline: a strategic project contributing to peace and stability
in Central and South Asia**

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February 23, 2018, at the Afghan border, at the southernmost point of the former USSR, near Serhetabat, was held a historic and grandiose ceremony to launch construction work on the Afghan section of Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline. The ceremony was presided over by the President of Turkmenistan Gurbanguly Berdimukhamedov, in the presence of Ashraf Ghani President of Afghanistan, Shahid Khaqan Abbasi, Prime Minister of Pakistan and M. J. Akbar, Indian Minister for Foreign Affairs.

This project remained off the Western radar screen or regarded with skepticism will become reality. The Afghan Taliban have given a green conditional line and warned to Americans to stay away. Irony of fate for a project originally designed by the USA to divert Turkmenistan gas from Russia.

Table 1: TAPI at a glance

Gas Supplier	Turkmenistan
Supply period	30 years
Gas Buyers	Afghanistan (500 MMcfd), Pakistan (1,325 MMcfd) and India 1,325 MMcfd)
Total cost	US \$ 10 billion
Shares	Turkmenistan 85% Afghanistan 5% Pakistan 5% India 5%
Transaction advisor	ADB
Executor	TAPI Pipeline Company Limited (Turkmengaz State Concern, Afghan Gas Corporation, Pakistan's "Inter State Gas Systems (Private) Limited" and Indian "GAIL (India) Limited")
Consortium leader	State Concern Turkmengaz
First Gas Flow	2019
Full capacity	33 billion cubic meters annually
Length of the pipeline	- 1814 km
Turkmenistan :	- 214 km
Afghanistan :	- 774 km
Pakistan :	- 826 km
Starting point	Galkynysh and adjacent gas fields (Turkmenistan)
End point	Fazilka (India)
Proposed Route	Supply Source: Heart – Kandahar – Chamman – Zhob – DG Khan – Multan - Fazilika (Pak-India Border) with total Length of 1,680 KM
Pipeline Diameter	56-Inch

A long-term project offering more than natural gas

The TAPI project is well underway, thanks to the Turkmenistan eagerness to diversify its exports routes. Turkmenistan holds the fourth largest reserves in the world and is opening up to new countries in a quest for more gas exports. Since Russia and Iran first reduced and later halted altogether its gas imports from Turkmenistan, China has become the main destination for Turkmen exports.

The project is planning to carry natural gas from the Turkmenistan's Galkynysh field to India. The pipeline route is mapped to go through Herat, Kandahar regions of Afghanistan and Quetta, Multan provinces of Pakistan before reaching the border with India. Turkmenistan began work on the 214 km division of the pipeline on its territory. Further, the pipeline will travel 773 km in Afghanistan and 827 km in Pakistan before ending at Fazilka, Punjab region in India.

Fig. 1: The proposed Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline



Source: Asian Development Bank

Fully completed, the TAPI pipeline is slated to transport 33 billion cubic meters (bcm) per year of natural gas from the massive Galkynysh field to the neighboring energy-starved countries, offering some energy stability to Afghanistan and Pakistan as well helping to meet Indian economy's own ever increasing energy demand. TAPI will provide Afghanistan with 14 million standard cubic meters of natural gas a day (mmscmd), while India and Pakistan will each receive 38 mmscmd. In total TAPI will provide 90 mmscmd.

The TAPI gas pipeline is starting from Turkmenistan, after it goes through unstable Afghanistan and then reaches Pakistan and India, two rival countries. Thus, the project is facing numerous obstacles while linking Central and South Asia. Nevertheless, the project is now in progress.

Turkmenistan's quest for diversification: a new Eurasian hub

In February 2016, the leaders of the four participating States in Istanbul signed the investment agreement of the TAPI pipeline project. TurkmenGas is the leader of the consortium and takes 85 percent equity of TAPI Pipeline Company Limited, based in Dubai and responsible for construction and operation of the TAPI. GAIL India, ISGS of Pakistan and Afghan Gas Enterprise (AGE) will also take 5 percent stake each. The investment agreement connects to the 5% shareholding of each of the three member countries, also an initial investment of \$200 million. The Asian Development Bank (ADB) is acting as TAPI's transaction advisor. In December 2016, Turkmenistan borrowed \$700 million from the Islamic Development Bank (IDB) to finance the project. And Saudi Arabia announced recently its commitment, at least for the moment with the provision of tubes. The first calls for tenders were launched, drafts of several contracts are negotiated between Turkmen authorities and companies. The estimated cost of the project is at least \$10 billion.

According to the Turkmen government, the pipeline will be operational by December 2019. Despite having the world's fourth largest gas reserves, Turkmenistan has access only to Iranian, Russian and Chinese markets. For a landlocked country as Turkmenistan, TAPI will bring many advantages among which reducing its dependence on gas sales to its major gas importers, particularly to China. Turkmenistan will sell its reserves on the Asian market and will strengthen its role as Eurasian hub.

Afghanistan: economic benefits and security risks

Afghanistan is in need of secure energy source to increase both its capacity and generate electricity. According to Da Afghanistan Breshna Shirkat (DABS), the national electricity service department, 280MW to 320MW of power is currently produced in Afghanistan and 1,000MW of electricity is imported from Iran, Turkmenistan, Uzbekistan and Tajikistan. Afghanistan needs 2,000MW of power in order to cope with the nation's energy needs.

Afghanistan will receive \$1 billion a year transfer fees (5% of GDP), bringing a huge benefit to the country and stabilizing the economic situation. TAPI project could also alleviate the political tensions within the country.

Given Afghanistan’s ongoing security environment, the Afghan President Ashraf Ghani had pledged a 7,000-strong force to guard the pipeline and its construction. This is showing Afghanistan’s high interest in the project and displaying the government’s efforts to push the pipeline construction forward.

One of the ways out of this situation might be to commit the population at community level through economic development projects from the transit fees and raising awareness on the benefits which the pipeline will bring in terms of infrastructures (electricity, internet).

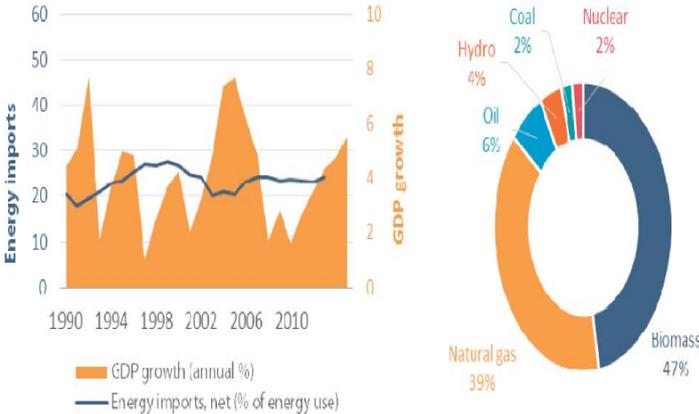
The local leaders and the Taliban are involved in the whole process and feel themselves part of this national interest project. It could even be a benefit sharing of the transit fees among the parties, the pipeline, becoming the “peace pipeline” will safely travel in the Afghan territory.

Pakistan: importing gas to address energy shortages

There is a high need for Pakistan and India to find long-term sustainable solutions for their growing energy demand. A shortage of supply is slowing these two countries economic growth. In South Asia, natural gas is gaining significance as the key fuel for power generation. Gas-based power generation plants need less expenditure to build than alternatives such as nuclear, hydropower and coal-fired plants.

Pakistan is having power shortage and needs extra power to meet its energy-demand. The power shortages in Pakistan are due to several factors, including diminution of domestic gas supply and lack of affordable alternative energy source.

Fig. 2: Pakistan’s GDP growth, energy imports and sources of energy production



Data source: World Bank and IEA

Source: World Bank and IEA

Pakistan will receive transfer fees paid by India. This project will contribute to the development of the unstable and populated Pakistani Baluchistan region not directly served by the current gas pipeline network.

Regasification plants projects planned in Pakistan and India result at first from the relinquishment of the IPI project (Iran - Pakistan - India gas pipeline) and do not contradict the TAPI project. At the end of 2017, Exxon disengaged from a LNG project terminal in Pakistan to choose another project in Port Qasim. Gas pipelines are another way for the country to address its energy shortages. By delivering approximately 14 bcm (equivalent to one-third of the domestic production) of Turkmen gas to Pakistan, the TAPI pipeline will be a major step towards meeting increased demand for gas. Jam

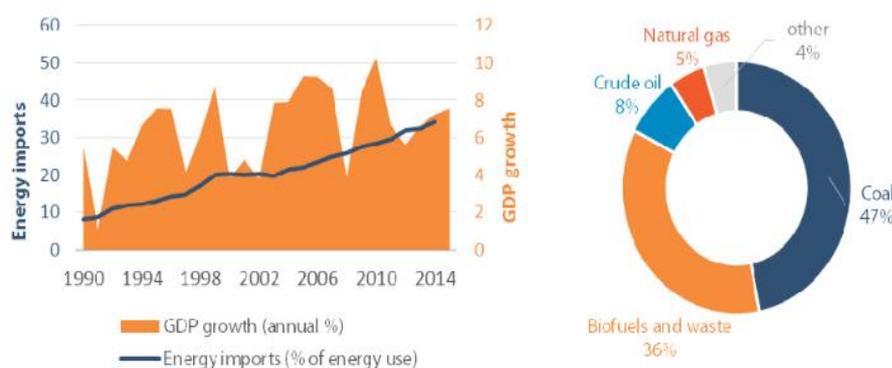
Kamal Khan, Minister of State for Petroleum of Pakistan, has acknowledged that TAPI will boost the country's energy security, bring economic benefits and lead to an upgrade in associated infrastructure. In October 2017, new Prime Minister ShahidKhaqan Abbasi reiterated Pakistan's strong commitment to the early operationalization of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline project as it holds a huge potential for meeting Pakistan's energy needs ¹.

Pakistan is also considering a pipeline to import gas from Iran's South Pars gas field, but this has been stalled owing to US objections and its future is not clear. The Pakistan government considers the construction of the TAPI pipeline as the beginning of a new era of cooperation at the regional and international levels. Its practical common benefits could also help improving the relationship between Pakistan and India.

India: increased growth requires new energy sources

India, due to its high population and increasing economy, is facing the same challenges. Domestic energy production is based largely on fossil fuels, with coal representing 47 % of total output in 2014. Crude oil contributes around 8 %, whereas biofuels and waste account for about 35 %; the share of natural gas is just 5 %. Besides, fossil fuels are used to generate nearly 80 % of the country's electricity. Economic development caused the share of imported energy in total energy consumption to rise from 8.3 % in 1990 to 34.3 % in 2014; energy self-sufficiency decreased from 91.7 % to 65.7 %.

Fig. 3: India's GDP growth, energy imports and sources of domestic energy production



Data source: World Bank and IEA.

Source: World Bank and IEA

India's economic growth, as well as its energy hunger, are both projected to continue. According to BP's projection for 2035, India will be responsible for 9 % of world energy consumption while its share in global production will be 5 %. In 2015, India's natural gas production was about 30 bcm while consumption stood at 50 bcm. Imports in the form of liquefied natural gas (LNG) were around 21 bcm in 2015. Gas imports are projected to quadruple by 2040, reaching 100 bcm. This growing energy deficit explains the Indian government's interest in TAPI. In India, the internal network of gas pipelines is not interconnected because of the country federalization. Even if the regasification plants projects succeed, massive investments are needed to serve the Punjab region of India. This region will be directly served by the TAPI in Fazilka.

In addition, the increased use of natural gas as electricity generator will reduce the environmental damage as well. India, the world's fourth-largest carbon emitter ratified the Paris agreement on climate change. This agreement requires the member countries to make binding commitments to curb carbon dioxide (CO₂) emissions. As part of the initial commitments to the agreement, India plans to reduce its carbon emission intensity - emission per unit of GDP - by 33-35% from 2005 levels over 15 years.

¹ PM for early operationalization of TAPI, October 16, 2017 <https://www.brecorder.com/2017/10/16/375086/pm-for-early-operationalisatio-of-tapi/>

TAPI's implications for EU security

Russia has also expressed its willingness to participate in the TAPI project. During the Fifth International Gas Congress in the Caspian Avaza in May 2014, Deputy Prime Minister Arkady Dvorkovich, announced ² the interest of Russian energy companies to cooperate. According to Sergei Lavrov, ensuring sustainable socio-economic development in Afghanistan is a major factor of stabilization in that country: Russia is open for multilateral cooperation on the implementation of large-scale economic and infrastructure projects, such as the TAPI (Turkmenistan-Afghanistan-Pakistan, India).

However, Russia is not taking any part in the TAPI and might consider the project as a threat to its influence in the Central Asian energy market. Russia is now planning to lay a gas pipeline from Russia to India, through the Xinjiang province of China. However, from a Russian point of view, the TAPI project dedicated to Asian market is less perilous than Trans-Caspian Pipeline turned towards Europe.

Gas-rich but landlocked country, Turkmenistan is driven to construct pipeline in order to expand and diversify the exports of Turkmen gas. The country is now ready to fill in the pipelines. TAPI can bring peace to Afghanistan, improve the Indian-Pakistan relations, boost employment throughout the whole region, increase the budget of all participating countries and bring in more foreign investments. Each State can benefit from the industrial development and new infrastructures construction: roads, electric and optical lines, compressor stations. Finally, the project addresses energy needs of this economic and demographic growing zone.

The outcomes will not only benefit the participating countries but also open new prospects for partnership. Both the EU and Turkmenistan seem determined to collaborate on a proposed subsea Trans-Caspian Pipeline (TCP) connecting Turkmenistan and Azerbaijan, to export bigger volumes of gas through the Southern Gas Corridor (SGC), one of the EU's Projects of Common Interest. Although TAPI will not supply EU countries, it will boost Turkmenistan's production and export capacity, helping it to also export gas to the EU. Furthermore, like the other new pipelines that the country hopes to develop, it will boost regional cooperation and bring financing for socio-economic development, thus promoting regional stability and security in Central Asia, a region recognized as strategic by the EU.

This project will be eventually divided in several phases in terms of capacity but it will certainly become reality. Europe has to be aware of Turkmenistan's role in the stabilization of Afghanistan thanks to the determination of its President. Afghanistan will be the first recipient of the pipeline economic benefits. The TAPI project is more modest than the billions of dollars poured by the Western armies in Afghanistan but infinitely more profitable to the local populations. A lesson to ponder in the context of Western arrogance and its catastrophic consequences. ///

²"Arkady Dvorkovich takes part in the Fifth Turkmenistan International Gas Congress", May 21, 2014 <http://m.government.ru/en/news/12545/>