

ISSUE BRIEF

Pakistan: The Next Great Infrastructure Connector

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Introduction

Pakistan's geostrategic location and the advancements it has made in its domestic infrastructure can serve as building blocks for the development of the country into a regional transit hub for energy, trade, and digital communications. There are two main development pathways ahead for Pakistan. In the first, Pakistan continues down the path it has followed for much of the last decade and rapidly develops its domestic infrastructure. In the second, perhaps more challenging but offering greater opportunity, Pakistan transforms its domestic infrastructure and connects it to landlocked Central Asia, the natural resources of the Middle East, and markets in China and India.

Many countries have capitalized on their geostrategic location. Turkey, for example, has built a network of externally connected infrastructure, including rail, roads, and pipelines, to benefit from its position straddling the resources of Central Asia and the deep markets of Europe.¹ As a result, abundant energy resources and industrial raw materials now transit through its borders. This has powered domestic economic growth and revenue for the Turkish government and has made Turkey an essential partner for regional economic security. Those who have invested in Turkish regional integration have been generously rewarded.

Pakistan is positioned to play a similar role in its region. The country lies at the intersection of the rich natural resources of Central Asia and the Middle East, and the markets of China and India. Over the last decade, Pakistan has also made significant investments in modern infrastructure. Capitalizing on these strengths as a regional connector, Pakistan

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1 Javier Albarracín, "The Role of Turkey in the New Middle Eastern Economic Architecture," European Institute of the Mediterranean, accessed December 22, 2021, <https://www.iemed.org/publication/the-role-of-turkey-in-the-new-middle-eastern-economic-architecture/>.

could accelerate economic growth across the region.² In this case, South Asia and Central Asia would transform from one of the least connected regions in the world to one that connects regional economies through increased trade in goods, greater flow of petroleum and electricity, and improved digital connectivity. Strengthening regional economic linkages in this manner will bolster interdependency, fostering improved long-term relations between countries in the region.

Starting in 2013, rapid investment through the China-Pakistan Economic Corridor (CPEC), the Pakistan component of China's Belt and Road Initiative (BRI), has upgraded and expanded domestic infrastructure. Further investments are being made through the Asian Development Bank's (ADB's) Central Asian Regional Economic Cooperation (CAREC) Program. Additionally, Pakistan is completing significant domestic investment in electric power production, massively increasing the capacity of its electric transmission grid, and building new petroleum transportation projects.³

As more of these projects are completed, Pakistan will be well placed to integrate with and connect to Central Asia and China. It will have the capacity to:

- Transport energy resources from Central Asia and the Middle East to the electricity-deficient markets of Afghanistan and China, and perhaps in the future to India
- Provide direct road and rail access to Pakistan's ports for the export of commodities from Central Asian countries some of which are double landlocked
- Digitally connect underserved populations of Central Asian countries by providing an efficient and effective southern access pathway for Internet communication.

This brief provides an overview of the infrastructure development and expansion projects in Pakistan and explores the country's potential to serve as the next great connector in the region.

Gas Pipelines

Pakistan's energy policy over the last two decades has led to exponential growth in the demand for natural gas, turning the country into the world's eleventh-largest importer of liquefied natural gas (LNG) by 2020.⁴ To meet increasing demand, Pakistan permitted the buildout of LNG import terminals starting in 2011 with the first terminal coming online four years later.⁵ Currently, two LNG import terminals are operational while two more are at advanced stages of development.⁶ An extensive gas pipeline system of more than 100,000 km, used to transmit domestic natural gas,⁷ has been augmented by new pipelines for imported LNG. In addition, a number of regional gas connectivity projects are in various stages of planning and development (see Table 1).

For Pakistan, natural gas imports by pipeline would significantly lower the cost of importing energy compared to LNG or other petroleum products. It would also benefit the country by diversifying pricing benchmarks for energy imports which currently are heavily skewed toward LNG and crude-oil-based pricing benchmarks.

At the regional level, there is the potential to cement deeper political relationships between supply and transit countries. For example, by purchasing gas from Turkmenistan and providing transit revenue to Afghanistan, Pakistan would enhance political affinity with both countries. Inexpensive gas could even serve as a basis for further cooperation between Pakistan and India as they would be working together to lower procurement costs for India while providing transit revenue to Pakistan.

Electricity Distribution

With the rapid development of power generation projects under CPEC since 2015, new transmission lines have been built and a supportive policy framework is in place to permit third-party access and wheeling. Two new high-voltage transmission lines are being constructed for domestic distribution needs, while a number of regional

2 Khaled Ahmed, "Pakistan has not used its geographical advantage to become a trading nation," *Indian Express*, updated November 14, 2020, <https://indianexpress.com/article/opinion/columns/pakistan-trading-china-india-cpec-7050937/>.

3 Zofeen T. Ebrahim, "Pakistan faces an unexpected dilemma: too much electricity," Reuters, February 24, 2021, <https://www.reuters.com/article/us-pakistan-energy-climate-change-featur/pakistan-faces-an-unexpected-dilemma-too-much-electricity-idUSKBN2AO27C>.

4 Muhammad Saghir, Shagufta Zafar, Amiza Tahir, Miloud Ouadi, Beenish Siddique, and Andreas Hornung, "Unlocking the Potential of Biomass Energy in Pakistan," *Frontiers in Energy Research*, March 22, 2019, <https://doi.org/10.3389/fenrg.2019.00024>.

5 "Engro Elengy Terminal Pakistan (LNG)," Vopak, accessed December 22, 2021, https://www.vopak.com/terminals/engro-elengy-terminal-pakistan-lng?language_content_entity=en.

6 Faseeh Mangi, "Qatar Invests in Pakistan's Next LNG Import Terminal," BNN Bloomberg, October 28, 2021, <https://www.bnnbloomberg.ca/qatar-invests-in-pakistan-s-next-lng-import-terminal-1.1673356>.

7 "Engro Fast-Track Liquefied Natural Gas Regasification Project Sector Overview," Asian Development Bank, accessed December 22, 2021, <https://www.adb.org/sites/default/files/linked-documents/48307-001-ssa.pdf>.

Table 1. Gas Pipeline Projects in Pakistan

Project	Description	Cost	Partner	Status
Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline	Proposed 1,800 km pipeline from Galkynysh Gas Field in Turkmenistan for export of up to 33 billion cubic meters (bcm) of natural gas per year*	\$7.6 billion** (2008 estimate)	CAREC/ADB	Advanced planning
Iran-Pakistan-India (IPI) pipeline	Pipeline to transport gas from Iran's South Pars field to Pakistan and, potentially, to India***	N/A	N/A	Planned
Gazprom-led feasibility study	Pipeline from Iran to India passing through Pakistani territorial waters, potentially with a connection to Pakistan****	N/A	Gazprom	Feasibility under review
Pakistan Stream Gas Pipeline (PSGP)	Agreement reached between Pakistan and Russia on a 1,100 km pipeline, formerly known as the North-South Pipeline, with plans to carry 12.4 bcm of natural gas annually*****	\$3 billion <ul style="list-style-type: none"> ■ 74% owned by Pakistan ■ 26% owned by Russia 	N/A	Advanced planning

* "Turkmenistan officials due in Afghanistan as Taliban back TAPI gas pipeline," Reuters, October 27, 2021, <https://www.reuters.com/business/energy/turkmenistan-officials-due-afghanistan-taliban-back-tapi-gas-pipeline-2021-10-27/>.

** Asian Development Bank, *Turkmenistan–Afghanistan–Pakistan–India Natural Gas Pipeline Project, Phase 3, Completion Report*, Project Number: 44463-013, Technical Assistance Number: 8083, March 2018, <https://www.adb.org/sites/default/files/project-documents/44463/44463-013-tcr-en.pdf>.

*** Haroon Janjua, "Iran gas pipeline deal with Pakistan hampered by US sanctions," *Deutsche Welle*, May 20, 2019, <https://www.dw.com/en/iran-gas-pipeline-deal-with-pakistan-hampered-by-us-sanctions/a-48802450>.

**** Drazen Jorgic, "Pakistan signs offshore pipeline agreement with Gazprom," Reuters, February 7, 2019, <https://www.reuters.com/article/pakistan-russia-gazprom/pakistan-signs-offshore-pipeline-agreement-with-gazprom-idUSL5N2022ZB>.

***** "Pakistan, Russia sign pact for 1,100-km gas pipeline from Karachi to Lahore," *Business Standard*, last updated July 16, 2021, https://www.business-standard.com/article/international/pakistan-russia-sign-pact-for-1-100-km-gas-pipeline-from-karachi-to-lahore-121071600905_1.html.

transmission projects are also under development (see Table 2).

Pakistan's planned electricity transmission projects have the potential to transport electric power across the region. Regional electricity interconnection through the Central Asia-South Asia 1000 (CASA-1000) project and the planned Turkmenistan-Afghanistan-Pakistan 500 (TAP-500) project will not only allow electricity to be traded but will also provide stability to otherwise isolated grids within countries. Providing stable transmission of electricity to neighboring countries and the region will create mutually beneficial gains, mitigating the negative impact of seasonal or unanticipated electricity shortages.

Road Networks

Home to a centuries-old trade route, Pakistan provides a key transport corridor to both China and Central Asia. Pakistan's new and upgraded motorway network offers a relatively low-cost means of transport for trade connecting the Arabian Gulf, Central Asia, and China. Construction and expansion of the road network has spurred domestic economic growth. Continued development of this network into Central Asia promises to bring further economic gains to Pakistan as well as the region.

Pakistan embarked on an ambitious road network expansion beginning with the commissioning of the M-2

Table 2: Electricity Transmission Projects in and Involving Pakistan

Project	Description	Cost	Partner	Status
Domestic Matiari-Lahore High Voltage Direct Current (HVDC)	1,000 km transmission line to carry electricity from new power plants in southern Pakistan, including domestic coal-fired power plants in the Thar Desert, to demand centers in northern Pakistan	N/A	CPEC	Operational
Domestic Matiari-Faisalabad HVDC	1,100 km	N/A	CPEC	Planned
Regional Central Asia-South Asia 1000 (CASA-1000)	Import of 1,300 megawatts (MW) of relatively inexpensive hydroelectric power to Afghanistan and Pakistan from the Kyrgyz Republic and Tajikistan*	\$1.2 billion	World Bank, Inter-American Development Bank (IDB), European Investment Bank (EIB), European Bank for Reconstruction and Development (EBRD), FCO, and the United States Agency for International Development (USAID)	Under construction**
Regional Turkmenistan-Afghanistan-Pakistan 500 (TAP-500)	Under the 750 km TAP project, Afghanistan will be able to purchase up to 1,000 MW of electricity from Turkmenistan and receive up to \$110 million in annual transit fees in case Pakistan purchases a further 1,000 MW***	\$1.2 billion	Asian Development Bank (ADB)	Planned
Regional Pakistan-Iran HVDC	132 kilovolt (kV) transmission line to import an additional 100 MW from Iran	N/A	N/A	Feasibility under review

* "CASA-1000," accessed March 18, 2022, <https://www.casa-1000.org/>.

** Khalid Hasnain, "Torkham-Nowshera power line to be laid by next year: NTDC," *Dawn*, July 10, 2021, <https://www.dawn.com/news/1634195>.

*** "TAPI-TAP: Regional Economic Cooperation Corridor," *DABS*, accessed December 22, 2021, <https://main.dabs.af/News/NewsDetail/1353>.

Motorway in 1997 to provide a new high-speed route between Lahore and Islamabad. More recently, a significant part of CPEC investment was in the development of roads across two highway corridors. In addition to CPEC, significant expansion of toll roads has been undertaken by private sector firms and the Frontier Works Organization, a construction entity affiliated with the Pakistan Army.⁸

CPEC Road System: There has been significant development of Pakistan's road network under CPEC. Flagship road projects under CPEC include the 1,100 km Peshawar-Karachi Motorway, which connects Pakistan from north to south. The project involves upgrades and modernization of existing motorway sections, as well as the construction of new connecting sections. All road upgrades in the provinces of Khyber Pakhtunkhwa (KP) and Punjab

8 "Frontier Works Organization, Pakistan," accessed December 22, 2021, <https://www.fwo.com.pk>.



A Peshawar Electric Supply Company (PESCO) worker climbs up a high-voltage pylon in Peshawar, Pakistan. REUTERS/Fayaz Aziz

are complete, while sections in Sindh are currently under construction.

Another 1,153 km parallel route, known as the Western Corridor, involves upgrading various routes along Pakistan's National Highway connecting the province of Balochistan to the country's Northern Areas. This route has the potential to connect further to China.⁹ Construction of the southern half of this corridor is complete. A possible extension of this route to Gilgit is also envisioned but not yet formalized. (For details, see Table 3.)

CAREC Road System: Since joining CAREC in 2010, Pakistan has been actively pursuing opportunities to grow trade with Central Asia and to provide Central Asian countries with access to global markets.¹⁰ Improving Pakistan's internal transport corridors will allow countries linked via CAREC Corridor 5, which is currently under development, to access Pakistani markets and the ports of

Karachi and Gwadar.¹¹ CAREC Corridor 5, which passes through China, Tajikistan, Afghanistan, and Pakistan, will open up access to Afghanistan and its neighbors via other CAREC corridors.

Key CAREC projects relevant for Pakistan include the Kabul-Karachi economic corridor and the Peshawar-Torkham Expressway. Other CAREC routes that will ultimately connect to Pakistan are either at the financing or construction stages. (For details, see Table 4.)

Rail Links

An upgrade of Main Line-1 (ML-1), Pakistan's main rail network that runs through the provinces of Sindh and Punjab, is one of CPEC's largest projects. The project was approved for implementation in August 2020 by the Executive Committee of the National Economic Council (ECNEC) of the government of Pakistan. Upgrade work is

9 Ghulam Abbas, "Govt decides to extend western route of CPEC to Gilgit," *PT Profit*, July 17, 2021, <https://profit.pakistantoday.com.pk/2021/07/17/govt-decides-to-extend-western-route-of-cpec-to-gilgit/>.

10 "About CAREC: CAREC Program," CAREC Program, accessed December 22, 2021, https://www.carecprogram.org/?page_id=31.

11 "Central Asia Regional Economic Cooperation Corridor 5," CAREC Program, <https://www.carecprogram.org/uploads/carec-priority-investment-projects-corridor-5.pdf>.

Table 3: CPEC Road Infrastructure*

Project	Description	Cost	Partner	Status
Peshawar-Karachi Motorway	Construction/development of 1,000 km 6-lane access-controlled motorway	\$2.9 billion (Multan-Sukkur)	CPEC	Operational
Karakoram Highway Phase II (Thakot-Havelian)	120 km total (40 km 4-lane motorway, 80 km class-II highway)	\$1.3 billion	CPEC	Operational
Western Corridor D.I. Khan (Yarik)-Zhob (N-50)	210 km, on existing alignment (section of N-50) with geometric improvements Improvement/upgradation of 2-lane existing road to 4 lanes. 100 m right-of-way (ROW) will be acquired to upgrade it to 6 lanes in the future.	Rs. 76,486 million	CPEC	Planned
Western Corridor Khuzdar-Quetta-Chaman (N-25)	431 km upgradation of existing 2 lanes to 4 lanes	N/A	CPEC	Planned
Western Corridor Surab-Hoshab (N-85)	449 km	Rs. 17.97 billion	CPEC	Operational
Western Corridor Gwadar-Turbat-Hoshab (M-8)	193 km	Rs. 13 billion	CPEC	Operational

* "Gwadar – Turbat – Hoshab (M-8)," CPEC Authority, Ministry of Planning, Development & Special Initiatives, Government of Pakistan, accessed March 18, 2022, <http://cpec.gov.pk/project-details/89>.

expected to begin in 2022 and to be completed over the next ten years at a cost of approximately \$6.8 billion.¹²

Pakistan and Uzbekistan are discussing a rail link via Afghanistan at a cost of \$5 billion.¹³ The project is at an early stage with a memorandum of understanding signed by the two countries in February 2021. This connection is of critical importance to Uzbekistan. An early economic study concluded that the cost of transporting a container of cargo from Tashkent in Uzbekistan to Karachi in Pakistan would be half as much by rail than by road from Tashkent to Bandar Abbas in Iran.¹⁴ (See Table 5 for details.)

Much of Pakistan's potential to serve cross-border railway traffic lies in the fact that it possesses deepwater ports on the Arabian Sea. With annual port cargo throughput of approximately 100 million tons, transport of goods to and from the ports is one of Pakistan Railways' (PR) main sources of freight traffic. Due to capacity bottlenecks and limitations, PR currently only serves a fraction of this traffic. However, PR's capacity is expected to increase significantly once the proposed CPEC upgrade and extension of ML-1 is completed. PR can also attract various categories of cross-border freight that currently use road transport. These categories would include petroleum products, fertilizer, machinery, and manufactured goods,

¹² "Up-Gradation And Dualization Of ML-1 And Establishment Of Dry Port Near Havelian," CPEC Authority, Ministry of Planning, Development, & Special Initiatives, Government of Pakistan, accessed December 22, 2021, <http://cpec.gov.pk/project-details/30>.

¹³ Hugh Ollard, "What's Behind the Planned Uzbekistan-Afghanistan-Pakistan Railway?" *Diplomat*, February 25, 2021, <https://thediplomat.com/2021/02/whats-behind-the-planned-uzbekistan-afghanistan-pakistan-railway/>.

¹⁴ Eldor Aripov, "Mazar-i-Sharif - Peshawar: a corridor to the new future of Central and South Asia," Institute for Strategic and Regional Studies Under the President of the Republic of Uzbekistan, February 12, 2021, <http://isrs.uz/en/maqolalar/mazari-sarif-pesavar-koridor-v-novoe-budusee-centralnoj-i-uznoj-azii>.

Table 4: CAREC Road Infrastructure*

Project	Description	Cost	Partner	Status
Petaro-Sehwan	Additional 2-lane carriageway of 66 km along existing 2-lane carriageway	\$195 million	CAREC/ADB	Planned
Ratodero-Shikarpur	Additional 2-lane carriageway of 43 km along existing 2-lane carriageway			Planned
Dara Adamkhel-Peshawar	Rehabilitating existing 34 km, 4-lane carriageway			Planned

* "About CAREC: CAREC Program," CAREC Program, accessed December 22, 2021, https://www.carecprogram.org/?page_id=31.

and exports of cotton, textiles, garments, grains, and bulk minerals.

Furthermore, if reliable land transport links through Afghanistan can be provided, PR could also attract transit traffic from landlocked Central Asian countries. Without access to deepwater ports, landlocked Central Asian countries (Kazakhstan, the Kyrgyz Republic, Tajikistan, and Uzbekistan) incur very high transport and logistic costs that raise the cost of imports and reduce the competitiveness of exports. These countries could benefit significantly if a reliable regional railway route is established via Afghanistan to Pakistan's ports.

Digital Connectivity

Digital connectivity is essential for both economic growth and international competitiveness. The development of efficient and inexpensive digital routes, much like trade routes, fosters economic activity and regional connectivity.

Approximately half of the population in Pakistan has access to the Internet, with about 48 percent penetration for 3G/4G and 50 percent for broadband as of December 2021.¹⁵ The country is fast adapting to accommodate its growing domestic digital connectivity requirements.¹⁶

It currently hosts two submarine landing stations with six international submarine cable systems that connect Pakistan to Asia and Africa.¹⁷ Connectivity will be further increased when the Orient Express and PEACE submarine fiber-optic cables are completed.

Pakistan boasts a domestic optical fiber network of over 130,000 km with a deep fiberization plan underway to add another 45,000 km in the next seven years. With two existing Internet exchange points and a third under development, Pakistan will also be well placed to offer high-speed connectivity and associated services such as data collocation centers to the less-connected Central Asian region. (For details of projects underway, see Table 6.)

Under CPEC, an optical fiber connection between Pakistan and China has been completed and development is underway for digital connectivity, including optical fiber networks, to run alongside the TAP pipeline (Digital TAP) and CASA electricity transmission network (Digital CASA). Once completed, these projects can provide Central Asian countries access to affordable digital connectivity.¹⁸

This is a particularly important opportunity given the potential size of the Central Asian market. Nearly half the population of Central Asia lacks digital connectivity, with three out

15 "Telecom Indicators," Pakistan Telecommunications Authority, accessed November 2021, <https://www.pta.gov.pk/en/telecom-indicators>.

16 Zubair Qureshi, "Pakistan surpasses Brazil to become world's 5th most populous country," *Gulf News*, July 12, 2020, <https://gulfnews.com/world/asia/pakistan/pakistan-surpasses-brazil-to-become-worlds-5th-most-populous-country-172557051>.

17 "Cable Landing Stations in Pakistan," Submarine Cable Networks, accessed December 22, 2021, <https://www.submarinenetworks.com/en/stations/asia/pakistan>.

18 Juan Navas-Sabater, "World Bank regional digital programs in Central Asia: The example of the Digital CASA regional program," UNESCAP Expert Group Meeting on the Asia-Pacific Information Superhighway in North and Central Asia, January 31, 2019, Almaty, Kazakhstan, Digital Development Global Practice, World Bank, <https://www.unescap.org/sites/default/files/The%20example%20of%20the%20Digital%20CASA%20regional%20program%20World%20Bank.pdf>.

Table 5: Rail Links

Project	Description	Cost	Partner	Status
ML-1*	Upgradation and doubling of ML-1 from Karachi to Peshawar and Taxila to Havelian (1,733 km) Laying of new track with improved subgrade for increase in speed from 65–105 km/h to 120–160 km/h Rehabilitation and construction of major bridges	\$6.8 billion	CPEC	Planned
Uzbekistan-Afghanistan-Pakistan Railway	Proposed 573 km railway track connecting Uzbekistan's capital Tashkent via Afghanistan's capital Kabul with Pakistan's northern city of Peshawar	\$4.8 billion	To be determined	Planned
Islamabad-Tehran-Istanbul	6,500 km railway, cuts shipping time in half, provides safer and cheaper route compared to road**	N/A	N/A	Operational

* "Up-Gradation And Dualization," CPEC Authority.

** "Islamabad-Tehran-Istanbul train enters Iran," *Tehran Times*, December 27, 2021, <https://www.tehrantimes.com/news/468485/Islamabad-Tehran-Istanbul-train-enters-Iran>.

of the five countries in the region falling below the global average for Internet access.¹⁹ Terrestrial fiber networks in landlocked Central Asia currently access submarine fiber-optic cables via China, Iran, and Russia. Pakistan can provide a fourth route for connectivity, enhancing digital access and making the market more competitive.

Risks and Mitigating Factors

As with all infrastructure projects, there are several risk factors to consider. Cross-border infrastructure projects are often exposed to an even greater degree of risk, and their success is dependent on continued strong relationships between the participant countries.

Geopolitical risk: Russia's invasion of Ukraine poses a direct risk to the Pakistan Stream Gas Pipeline (PSGP) and

to the Russian state-owned energy company Gazprom's pipeline project in offshore Pakistani waters. While there is a possibility of replacing the minority Russian share in the PSGP pipeline with another investor in case Western sanctions on Russian individuals and entities continue for some time, work on the Gazprom project is likely to be suspended for as long as these sanctions are in place.

Second-order risks due to increased European independence from Russian gas supplies: Russia's invasion of Ukraine is also likely to create second-order disruptions in the natural gas market in terms of price and availability. As the European Union (EU) has announced its intention to become energy independent of Russia,²⁰ it follows that the EU will replace some Russian gas with LNG from the United States, the Middle East, and Africa. This is likely to cause a structural shortage of gas supply in Asia as

19 Lilia Burunciuc, "How Central Asia can ensure it doesn't miss out on a digital future," *Eurasian Perspectives* (World Bank Blogs), June 21, 2021, <https://blogs.worldbank.org/europeandcentralasia/how-central-asia-can-ensure-it-doesnt-miss-out-digital-future>.

20 "EU unveils plan to reduce Russia energy dependency," *Deutsche Welle*, March 3, 2022, <https://www.dw.com/en/eu-unveils-plan-to-reduce-russia-energy-dependency/a-61047997>.

Table 6: Digital Connectivity

Project	Description	Cost	Partner	Status
Universal Service Fund Deep Fiberization	Deep fiberization plan to add another 45,000 km in the next seven years	N/A		In process
Cross-Border Optical Fiber Cable (Khunjrab-Rawalpindi)*	Fiber-optic cable covers 820 km	\$44 million	CPEC	Operational
Digital CASA	Fiber-optic cable connecting Central Asian countries through Afghanistan to Peshawar	N/A	World Bank, IDB, EIB, EBRD, FCO, and USAID	Planned
Digital TAP	Fiber-optic line to run alongside the TAPI pipeline	N/A	G2G, ADB	Planned

* "Cross Border Optical Fiber Cable (Khunjrab - Rawalpindi)," CPEC Authority, Ministry of Planning, Development, & Special Initiatives, Government of Pakistan, <http://cpec.gov.pk/project-details/40>.

new LNG development projects are unlikely to keep up with demand. In turn, this would cause LNG and new contracts for pipeline natural gas to be more expensive over the next decade or so. If natural gas becomes more expensive than other fuels, infrastructure projects that carry gas across borders would become less attractive.

Ultimately, markets would respond and there would be significant further investments in liquefaction capacity by gas producers in the Middle East, as well as newer producers that could provide gas to Europe. The acceleration of existing exploratory and liquefaction projects may be expected to counterbalance the European demand, but there would be a disruptive period of perhaps a decade that may delay some gas pipeline projects.

Transit security through Afghanistan: All cross-border infrastructure projects—whether gas, electricity, road, rail, or fiber-optic communications—are subject to risks related to the security situation in Afghanistan. While apparently stable at the time of writing, the Afghan government must continue to maintain stability and satisfy developers concerned about the long-term security of regional infrastructure that passes through Afghanistan.

Project financing: Infrastructure projects such as pipelines and railways are large, expensive projects with many general risks related to their financing. Current increases in inflation will likely result in higher interest rates on debt for project financing and increased rates of return for equity investors. In turn, this would make projects more expensive

to build and operate. All else being equal, it will be harder to finance large infrastructure projects in the future. Some financing is available from countries like Turkmenistan that would benefit from regional integration and make significant returns from selling gas through the TAPI pipeline. Other sources of financing are multilateral financial institutions—whose mandate is to provide financing to complex development projects—and export credit agencies. But there are still likely to be financing gaps that need to be filled. As a more general point, the financing of these complex cross-border projects will require a significant amount of technical and financial expertise that requires capacity building within the relevant governments involved.

External relations: Successful completion of many of the cross-border projects depends on Pakistan's diplomatic relations with the relevant countries. In many cases, such as the Uzbekistan-Pakistan Railway, the benefits of the project are a driving force for implementation, even leading to a recent visit to Pakistan by Uzbek President Shavkat Mirziyoyev.²¹

Conclusion

Despite the obvious benefits, efforts to strengthen connectivity between Central Asia and South Asia have been slow. However, upgrades to Pakistan's energy, transport, and digital systems over the last decade have boosted domestic and international investment in infrastructure projects. By further prioritizing regional connectivity, Pakistan would quickly actualize its role as the next great connector.

21 APP, "Uzbek President Mirziyoyev arrives in Pakistan on two-day maiden visit," *News*, March 3, 2022, <https://www.thenews.com.pk/latest/938312-uzbek-president-mirziyoyev-arrives-in-pakistan-on-two-day-maiden-visit>.



Workers stand near a gas pipe during the ceremony to launch construction of the TAPI project, a natural gas pipeline that will link Turkmenistan through Afghanistan to Pakistan and India, near the town of Serhetabat, Turkmenistan. REUTERS/Marat Gurt

Pakistan not only offers connectivity to Central Asia and China but is itself an important market. It is a significant consumer of energy and industrial raw materials for its manufacturing sector. It offers access to hard infrastructure, such as the Karachi, Gwadar, and Port Qasim sea-ports, along with soft infrastructure, for example, an extensive free trade agreement with China. Over the next ten years, this free trade agreement will provide for very low to zero tariffs for nearly all goods manufactured in Pakistan. For countries looking to access the Chinese market, investment in Pakistan is an attractive opportunity.

The last ten years have already seen more than \$25 billion worth of CPEC-related infrastructure investment in Pakistan.²² In addition to billions of dollars spent by the Pakistani government, there is also money from the private sector and multilateral lenders. Further investment in regional connectivity infrastructure will allow Pakistan to serve as a hub from which Central Asian products can reach regional and global markets. Realizing this potential within the next decade is entirely possible. As Pakistan

develops as the next great connector, it not only provides opportunities for regional governments and the private sector to participate in this growth, it also binds its own destiny with Central Asia for a shared future.

About the Author

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Prior to public service, Siddiqui founded JS Bank in Pakistan and spent his earlier professional career as a venture capitalist in Hong Kong. In partnership with other entrepreneurs he built Airblue, which is Pakistan's second largest airline and AGSI, the second largest steel producer in the United Arab Emirates.

He received his B.A. in Economics from Cornell University and was selected as a Young Global Leader by the World Economic Forum in 2014.

²² APP, "CPEC has attracted \$25 billion investments in Pakistan," *Express Tribune*, November 4, 2020, <https://tribune.com.pk/story/2271041/cpec-has-attracted-25-billion-investments-in-pakistan>.



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