RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

Project Uncertainties: A Critical Analysis of the Pakistan-Iran Gas Project and its Implications for Pakistan's Energy Security

Syed Rizwan Haider Bukhari
PhD Scholar Political Science, Islamia College Peshawar
bukharipalmist@gmail.com

Miss. Sehrish Iqbal
MPhil Scholar Peace and Conflict Studies, National Defence University Islamabad
sehrishiqbal099@gmail.com

Rashid Siddique Kokab
Mphil Scholar, International Relations, Muslim Youth University, Islamabad
rashidsiddique239@gmail.com

Ehsanullah khan
Mphil Scholar, International Relations, Muslim Youth University, Islamabad
khan19ff@gmail.com

Inam Ul Haq
PhD Scholar Political Science, Islamia College Peshawar
inamhinjal@gmail.com

Mr. Zahoor Alam
BS Scholar, International Relations, Government College University Lahore
alamzahoor480@gmail.com

Abstract

Introduction: *Atomic power Pakistan faces a chronic energy crisis characterized by power shortages and dependency on expensive imported fuels from Gulf, which suppresses economic development and industrial growth in the country. The Pakistan-Iran gas pipeline deliver a*

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

reliable and cost-effective energy source for whole country, but it has been delayed by geopolitical complexities. This study critically analyzes the project's potential to enhance Pakistan's energy security for development.

Methodology: *Present study used qualitative systematic literature review to examine the uncertainties and implications of the Pakistan-Iran gas project. It systematically identifies, evaluates, and synthesizes relevant literature review, focusing on geopolitical situation, economic, technical, environmental, and policy aspects, using thematic analysis to interpret findings.*

Results/Findings: *The analysis trickle-downs to the fact that though the pipeline, as against other sources of energy in Pakistan, is potentially able to offer a more reliable and inexpensive source, drastically cutting down the country's dependence on imported fuel, various major challenges still remain to be overcome. Of course these relate to geopolitical tensions with Iran, financing constraints posed by Pakistan, security concerns in Pakistan along the pipeline route, and shifting regional dynamics. In addition, the possibility of the project grows complex due to the regional powers involved and global sanctions.*

Future Direction: *Uncertainties for the pipeline; regional cooperation and adoption of a multi-faceted energy strategy that encompasses a renewable energy system with healthy regulatory frameworks and environmental protection for Pakistan, are the necessities. The project requires diplomatic engagement and economic inducements.*

Keywords: *Energy Crisis of Pakistan, Iran-Pakistan Gas Pipeline, Energy, Geopolitics, Renewable Energy.*

Introduction

Pakistan is fighting a protracted energy crisis, reflected by incessant power outages and growing reliance on expensive imported fuels. The toll this takes is immense: economic growth is severely hampered, and industrial development retarded, leading to a lower standard of living for common people. Against this backdrop, the Pakistan-Iran gas pipeline project assumes center stage as a panacea to provide it with a viable, cost-effective source of energy (Turkamani, 2023). Yet, its history is marked by delays and uncertainties, hostage to complex geopolitics that cut across borders of both countries, Pakistan and Iran (Saira, & Javed, 2022). It is with this backdrop in mind that the following research paper is conducted toward a critical analysis of the potential of the Pakistan-Iran gas pipeline project in attempts at bolstering the energy security of Pakistan. We start with the historic context: teasing out precisely what economic reasoning is behind the pipeline, and why, precisely, political red tape has held this project up in the past decade (Aized, st al., 2018).

More specifically, it looks into the intricate geopolitical scenario of this project

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

specifically the cast with respect to the effect of US sanctions against Iran and the developing relationship between Pakistan, Iran, and other regional players. We then review the possible economic and security dividends that this pipeline could bring to Pakistan: reduced reliance on expensive imported fuels, diversified energy sources, and prospects of economic growth in the sectors linked with a stable energy supply system (Bukhari, et al., 2014). The major contests involved are equally recognized in this research, from the ever-present financing constraints, the concerns of insecurity along the proposed pipeline route, to an ever-shifting geopolitical environment.

Present paper will try to take an all-round view of the issues associated with the Pakistan-Iran gas pipeline project by adopting a multi-dimensional approach that includes historical analysis, economics-oriented focus, and nuanced regional dynamics. Basically, the research tries to find out if this long-delayed project could have matured into a reality and what role it can play in securing a more rooted and sustainable energy future for Pakistan.

Research Objectives

- To assess the geopolitical implications of the Pakistan-Iran gas pipeline on regional stability and global alliances.
- To evaluate the economic viability and sustainability of the Pakistan-Iran gas pipeline project amid international sanctions and fluctuating energy markets.

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

Literature Review

Beautiful Taftan city located in the Balochistan province of Pakistan, grips importance because of its close nearness to the Iran-Pakistan border. Present study examines the political and economic aspects of Taftan city, focusing on its commercial links with Islamic Republic of Iran, infrastructural development system, regional economic cooperation, and the geopolitical interests of key nations here. The present study examines the patterns of trade between the cities of Taftan and Mirjaveh, the influence of the Quetta-Zahedan railway track on trade and relation, the significance of the Taftan border in Economic Cooperation Organisation (ECO) trade analysis, and the involvement of external factors in upsetting the relationship between Pakistan and Iran through Baloch nationalist movements in the Balochistan province of Pakistan and the Sistan-o-Baluchistan province of Iran side. Taftan's administrative economy is heavily stuck by its commercial ties with Mirjaveh, which plays a crucial role as a vital gateway for trade between Iran and Pakistan development. Nevertheless, the smooth drive of trade via this pathway has been delayed by administrative obstacles, unlawful trade activities, and anxieties over border defense. If worked out properly, then no doubt the Quetta-Zahedan important railway track can bring tremendous change in the economic geography of Taftan city in the globe and its surrounding, promoting regional connectivity and integration between nations. The Taftan border crossing helps to enable trade and economic collaboration with other member states, for instance, Iran, within the framework of the Economic Cooperation Organisation. However, government red tape, lack of adequate infrastructure, and security concerns come in the way of reaching the full potential of ECO trade handled by Taftan. For this reason, Pakistan and Iran should support each other in improving customs processes, upgrading border infrastructure, and boosting security. The present paper has tried to explore the complex relationship between the political economy of Taftan city, the infrastructure development, trade relations with Iran, regional economic cooperation, and geopolitical dynamics. First and foremost, improving the facilities in terms of trade facilitation, building infrastructures, and settling issues of security are among the most significant objectives that must be met to unleash Taftan potentials toward serving sustainable development in the Balochistan Province of Pakistan and beyond.

According to Zulfqar (2018), KSA, a major Middle Eastern power, has been reportedly maintaining communication with Israel without formal recognition or diplomatic relations. The relationship between the two countries is influenced by the changing Middle East and the vision of the Kingdom of Saudi Arabia (MbS). Israel is interested in enhancing its relationship with Saudi Arabia to resolve conflicts and establish normalized relations with the Arab and Muslim worlds (Bukhari, et al., 2014). This is due to Saudi Arabia's unique position and influence in the Muslim world, particularly the Middle East. Israel have hopes this change encourage other Muslim countries also to reconsider their policies towards Israel

and end the global Boycott also, Divestment on nations, Sanctions (BDS) campaign for Iran. Both nation states have benefit from a stable and tranquil Middle East trades, and a nuclear Iran is not in the best interest of either country in Gulf, as it would negotiation strategic equilibrium in the region and erode their positions and interests. Israel's potential teamwork with the Kingdom of Saudi Arabia (KSA) is limited to areas of straight interest and not for its own advantage. Saudi Arabia's primary interest in security cooperation with Israel is its intelligence resource base and network, with Israel maintaining the most comprehensive intellect on Iran's operations and activities. KSA can benefit from Israel's extensive cyber warfare and safety and security expertise and counter-terrorism understanding. Economic collaboration is a substantial area of potential for KSA and Israel. KSA has the potential to benefit from cooperating with Israel in the agricultural sector, as the country is incrustation severe water scarcity. Israel, a global leader in water desalination, drip irrigation, and water evaporation, can assist KSA in assimilating innovation, entrepreneurship, and disapproval into its education and labor market systems in. Israel is particularly interested in establishing economic relations with KSA due to the potential for significant economic benefits and a shift in the region's perception of the country. The KSA government could establish a precedent for more extensive economic partnerships by granting Arab citizens work permits and visas. Israel's desire for positive relations with KSA is based on the possibility of normalizing relations with Israel, which would provide Israel with legitimacy within the Muslim world and change its image (Mehmood et al., 2024).

The Middle East is a region of intense competition among international actors, with countries like Saudi Arabia, Egypt, Iran, Iraq, Israel, Syria, and Turkey leveraging their hydrocarbon reserves to establish influence. The United States has historically maintained close relations with Saudi Arabia, but Iran has been estranged from the US since the revolution. The Saudi-Iran Nexus has transformed the Middle East's power dynamics, with China successfully facilitating an agreement to reestablish diplomatic relations between Saudi Arabia and Iran. However, this has also led to a complex relationship between the two nations, with tensions escalating due to the collapse of the agreement. The US and Saudi Arabia have also faced contentious relationships regarding crude production, with tensions escalating after President Biden's senior advisers were under the impression that he was arranging a voyage to Saudi Arabia. Crown Prince Mohammed bin Salman of Saudi Arabia threatened to sever ties with the US in June 2023. Pakistan, a geostrategic partner of China, faces foreign policy challenges due to the growing relationship between Saudi Arabia and Iran. The US is concerned that this relationship could lead to the formation of a new nexus that could jeopardize the stability of the Middle East and that Iran may exploit its alliance with Saudi Arabia to access critical infrastructure and initiate attacks against US interests. The "New Saudi-Iran Nexus" offerings Pakistan with three primary hurdles: sustaining a balance

between Saudi Arabia and Iran relation, clashes between certain religious groups, and economic implications. Pakistan must wisely balance its relations with both countries to capitalize on potential benefits and avoid intensifying violence (Hussain, Bogheiry, & Ali, 2024; Ahmad, et al., 2024). The historical hostility and tension between Iran and Saudi Arabia are mainly rooted in the religious conflict between Sunni and Shia Muslims also. The emergence of new possible corridors for sectarian terrorism, Pakistan must be cautious in handling sectarian pressures. Pakistan must address previous economic inferences of competition and opposition between Iran and Saudi Arabia. For example, in 2012, Pakistan was obliged to reduce its oil imports from Iran due to Saudi Arabia's oil restraint targeting Iran. To circumvent future coercion, Pakistan must establish economic treaties with both nations (Hafeez, Iqbal, & Imran, 2021).

Saudi Arabia's foreign relation strategy has shifted from geopolitics to geo-economics around the globe, driven by the Vision 2030 initiative to achieve. Shift purposes to diversify the nation's economy from oil and gas to other segments like technology integration, entertainment setups, and tourism for all. The new Saudi-Iran connection is driven by economic and security factors hurdles and benefits, with Saudi Arabia growing its economy beyond oil now and Iran seeking new markets for non-oil exports also for development. Pakistan has been importantly affected by the Saudi-Iran competitiveness, which has harmfully wedged its interior security and inside security. Pakistan has participated in the resolution of the bilateral dispute between Saudi Arabia and Iran, and the country is committed to preventing further tensions. In March 2023, Iran and Saudi Arabia resolved their diplomatic relations, ending a long-standing dispute that had increased regional tensions (Fatima, 2023). Pakistan, as the principal ally of China, the partner of Saudi Arabia, and the neighbor of Iran, can capitalize on its strategic location and robust economic ties to both nations. It has managed to maintain cordial relationships with both Iran and Saudi Arabia, enabling it to maintain a constructive presence in regional affairs and avoid envelopment in the conflict between the two nations. Despite maintaining a closer relationship with Saudi Arabia than Iran, Pakistan's military and economic ties to Saudi Arabia ensure it would likely choose Saudi Arabia over Iran. The new Saudi-Iran nexus has positive consequences for Pakistan in terms of stability and economy, and the China-Pakistan Economic Corridor (CPEC) could improve connectivity (Hussain et al., 2024).

Middle Eastern oil production profiles are influenced by oil prices and market conditions. Short-term oil production revenues increase when the market encourages more money, but this rise is worse when market flooding results from increasing long-term oil prices. Countries like India typically receive oil exports from Middle Eastern nations, which prioritize communal welfare over local families. Middle Eastern oil companies prioritize communal welfare over local families, resulting in a potential market flooding scenario

(Bukhari, et al., 2014). Strict requirements for oil production, such as requiring a significant financial burden on current production, seem to be the most effective in terms of societal welfare. Planning oil reserves can help safeguard global economic stability by averting surges in oil prices. However, strict regulations can exacerbate long-term financial pressures (Czulda, 2023). The economic spectrum of oil reserves has a positive value when regulations are strict enough, meaning that the societal costs of establishing reserves are more than the GDP benefits over the current planning horizon. The results show little correlation between the length of peak oil and the temporal profile of oil prices. The study identifies seven categories for conventional and non-conventional oil resources in each national context. Each classification is classified according to the quantity of essential oil sources and the oil generation price. The study also considers the processing procedure for oil shale, which is now seen as an oil alternative due to the high cost of manufacture. Geological limitations affect every oil production category, limiting the pace at which possible oil production capacity can be expanded. The study suggests that the most significant increase in oil production capacity for classification at time t is due to the combined analysis of the general economy and discovery procedures. Non-conventional oil producers are considered "disastrous producers" since they lack a strategic presence in the oil markets. The study proposes a sympathetic evaluation to identify the relationships between various expectancies and financial indicators on regional oil resources to ascertain the average causes of big oil arcades. It evaluates different scenarios where the income is contingent upon the consistency between two excesses: a more significant bound of 3.5 trillion (1012) barrels (representing 2.3 trillion barrels of residual conservative income and 1-1.2 trillion barrels of non-conventional income), and a lesser bound of 2.4 trillion barrels (Rodriguez et al., 2019). The study finds a negative elasticity, indicating that factors with a negative relationship with the price and consumption of oil need to be classified as such. As the amount of oil production rises, so do the welfare losses brought on by more unemployment, lower subsidies, and the elimination of infrastructure projects in the region (Raza et al., 2024).

India and Pakistan have a complex relationship characterized by both peaceful and conflicting times. Despite collaboration on various fronts, the two nations have not been able to establish broad cooperative ties, despite their collaboration on international gas pipelines and water sharing. This article examines the relationship between India and Pakistan during the 1998 nuclear standoff through the lens of realism, demonstrating how liberalism falls short in explaining the two countries' warming ties (Imran, Zaidi, & Khanzada, 2023; Bukhari, et al., 2014). Practicality is a hard-headed and free-of-wishful rational theory that seeks to provide a genuine understanding of the connections between states nations and trade. It is separated into traditional realism, which views political affairs as a power struggle game, and neorealism, which emphases on survival and power in region. Both theories are further

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

sectioned into defensive and offensive realism in region. India's nuclear weapons development is established on strategic and geopolitical considerations purpose, with the majority of recognition for the development of its nuclear store going to strategic and geopolitical contemplations (Ahmed, Ahmed & Buriro, 2023). India established its nuclear weapons system due to growing danger from Pakistan and China in region, as well as growing Pakistani intimidations. India's nuclear policy is based on a no-first-use policy and credible minimum prevention, aiming to preserve the full position quo and found relative supremacy in relation to its adversary opposition.

The relationship between India and Pakistan always in complex and influenced by realism and neorealism thoughts. Both Pak-India have made growth in their nuclear weapons development with the time, their stalemates remain strained and complex in region. Pakistan's nuclear-powered weapons growth started in 1996, following India's statement of its nuclear weapons development. Pakistan's nuclear policy differs from India's, implementation a minimum credible deterrent strategy and implementing full-spectrum deterrence in 2013. This aligns with Mearsheimer's theory of offensive realism. India-Pakistan relations and liberalism are influenced by neoliberalism, which emphasizes cooperative behavior and the importance of protecting individual rights. India and Pakistan have signed several confidence-building measures and treaties, such as the Indus Water Treaty, Iran-Pakistan-India, and Turkmenistan-Afghanistan-Pakistan-India gas pipelines (Imran & Akhtar, 2023). However, ongoing animosity between the two countries has hindered these initiatives. The South Asian Association for Regional Cooperation (SAARC) was unable to achieve its objectives due to divisions between India and Pakistan. The most favorable nation status in trade between India and Pakistan has also strained their collaboration (Bukhari, et al., 2014). The 1999 Lahore Agreement aimed to promote friendly relations and reduce nuclear war likelihood, but hostilities erupted in Kashmir's Kargil area. Pakistan's full spectrum deterrence and first-use strategy in its nuclear doctrine further exacerbate their hostility (Bukhari, et al., 2014). The nuclear accords between Pakistan and India, including the Nuclear Non-Proliferation Treaty (NPT) and the Comprehensive Test Ban Treaty (CTBT), are also a source of contention. Both countries have maintained and announced a moratorium on nuclear testing since 1998, but Pakistan has prevented the implementation of the CTBT. The liberal theory fails to account for the dynamics between India and Pakistan (Mashwani, et al,. 2024).

During the Cold War, China had mutual enmity with Middle Eastern powers, with Beijing equated anti-communism and Western interventionism with Gulf states. However, between 1984 and 1990, Beijing established diplomatic ties with Doha, Abu-Dhabi, Manama, and Riyadh. The Persian Gulf was an oddity in Beijing's calculations, but by 1990, it became a major partner of the Middle Eastern countries. Beijing has adopted a cautious stance and disengagement language, adhering to the principle of non-intervention in the

domestic affairs of other nations. It has promoted peace negotiations as a condition for the prosperity and peace of the Middle East and attempted to unite Tehran and Riyadh. By upholding this paradigm, Beijing's ties to the Middle Eastern governments have been strengthened, and Middle Eastern states have shown respect and gratitude to Beijing. Beijing has been progressively expanding its influence in the Middle East states, emerging as the region's principal trading partner due to significant investments made possible by the Belt and Road Initiative. However, it has refrained from getting entangled in the region's complex politics and religious rivalries. Beijing views the Middle East as the crucial geographic conduit for connecting with Europe and Africa in China's avowed goal to establish a "New Silk Road" extending from its northwest via Central Asia.

There is a distinct religious component to China's relationships with the Middle East on an economic, political, and cultural level.In conclusion, China's relationship with the Middle East has evolved over time, with trade and economic ties being key aspects of its strategy. The relationship between Beijing and the Middle East is influenced by the historical web of cultural and commercial ties along the ancient Silk Road (Imran, Sultana, & Ahmed, 2023). China's ambition to establish a "New Silk Road" from its northwest in Central Asia to Beijing connects with Europe and Africa, and the region serves as a contemporary political prism through which they view each other's advancements (Imran, et al., 2023). As Washington shifts its focus to the Indo-Pacific area and retreats from the Middle East, Beijing is strengthening its ties with the states in that region (Mohammad, et al., 2024). Between 1990 and 2020, Beijing and Riyadh's mutual trade increased thrice, from $418 million to $65.2 billion. Beijing now views the Middle East as an extension of its borders, making it increasingly important to Beijing. The region is seen as a theatre of major power struggle, a source of energy, and a strategic addition to its own boundary (Sahir & Qureshi, 2007). In 2019, Beijing imported $204B in crude petrol, becoming the first and largest importer of oil in the world. The Belt and Road Initiative (BRI) was proclaimed in 2013 by President Xi Jinping, and Middle Eastern states, particularly the Gulf states, considered it an opportunity for mutual cooperation (Bukhari, et al., 2014). The BRI brings economic growth, wealth increase, better living conditions, and high levels of work (Oad, Zaidi, & Phulpoto, 2023). However, economic development in an unstable region requires political firmness and desist from armed clashes, as well as support for aggression and extremism. China has agreed to dedicated relationships in the Middle East region, ranging from friendly cooperative partnerships to comprehensive strategic partnerships. As the end of the Cold War, Middle Eastern states began to worry about the US-influenced geopolitical view and Washington's pressure on Persian Gulf states to adopt political democratic behavior and respect human rights values (Khan, Hussain & Ahmad, 2023; Mashwani et al., 2024).

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

The Pakistan-Iran gas project, formally known as the Iran-Pakistan (IP) pipeline, has been a subject of considerable debate due to its potential impact on Pakistan's energy security and the myriad uncertainties associated with its implementation. This literature review synthesizes research from various sources, including geopolitical analyses, economic evaluations, and technical assessments, to provide a comprehensive understanding of the project's implications (Adnan, Mukhtar, & Asif, 2023).

International Concerns Surrounding the Pakistan-Iran Gas Pipeline

The Pakistan-Iran Gas Pipeline Project, also called the Peace Pipeline, is a project that has lain at the center of international concern and consternation ever since it was initiated. Proposed to lighten Pakistan's chronic energy shortage in the country and strengthen two-sided ties between Pakistan and Iran for development, it met scrutiny and opposition from different global stakeholders. The complicated international issues around the pipeline, from geopolitical pressures to economic authorizations and environmental implications from other nations (Bukhari, et al., 2014).

- **Geopolitical Concerns:** One of the major primary international concerns near the Pakistan-Iran gas pipeline is its geopolitical allegations. The pipeline passes through a region characterized by multifaceted geopolitical dynamics, inclusive of captain global powers and local contentions. The United States has particularly voiced very strong opposition against the project due to the fears of atomic drives by Iran and its overall sponsorship for the confrontational groups in that region. From a regional perspective, countries such as Saudi Arabia and Gulf conditions consider the pipeline as a way of seductive Iran influence in the section, likely to disturb the current balance of power control (Jones, 2020). This has put diplomatic pressure on Pakistan to review its involvement in the project. It has largely placed Pakistan at crossroads between sanitizing ties with traditional allies and following the path for its national energy security interest (Raza, et al., 2024).
- **Economic Sanctions and International Law:** Another critical matter contiguous the Pakistan-Iran gas pipeline is the impact of international sanctions on Iran economy. The United States and the European Union have enforced severe economic sanctions on Iran, primarily targeting its energy sector, as part of efforts to control Iran's nuclear program (UN Security Council, 2015). These sanctions have meaningfully difficult the financing and employment of the pipeline, as international financial institutions and energy companies risk legal repercussions for engaging in contacts with Iran (Bukhari, et al., 2014). The legitimacy of the pipeline under international law has been questioned, particularly concerning Iran's compliance with international standards and regulations governing vigor trade and sanctions (International Court of Justice, 2018). Pakistan's

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

devoutness to these sanctions regimes and its obligation to international law have been under study, with implications for its broader foreign policy and economic partnerships.

- **Energy Security and Economic Implications:** On the inland front, the Pakistan-Iran gas pipeline is mounted as a crucial module of Pakistan's energy security policy. Pakistan faces different chronic energy shortages in the, which have vulnerable its economic growth and growth (World Bank, 2020). The pipeline possibilities to provide a reliable source of natural gas, expanding Pakistan's energy mix and reducing its dependence on imported oil and liquefied natural gas (LNG) (Asian Development Bank, 2019). However, the economic viability of the project has been a theme of debate, with critics arguing that the project's costs offset its benefits, particularly in light of changing global energy prices and technological advancements in renewable energy fonts (International Energy Agency, 2021). Moreover, worries over the transparency and domination of energy development projects in Pakistan have raised enquiries about the economic and operational probability of the pipeline (IMF, 2018).
- **Environmental Considerations:** Environmental apprehensions contiguous the Pakistan-Iran gas pipeline emphasis on its possible impact on local environments and global climate alteration. The building and operation of the pipeline might be disturbing delicate environments, particularly in remote and organically sensitive areas along its route in both countries (United Nations Environment Programme, 2017). The combustion of natural gas extracted from the pipeline adds to greenhouse gas secretions, albeit to a lesser extent than coal or oil (Intergovernmental Panel on Climate Change, 2019). Efforts to alleviate these environmental effects have involved the implementation of environmental impact assessments and the espousal of best follows in pipeline manufacture and operation (World Wildlife Fund, 2022). However, the long-term conservational sustainability of the project remnants a subject of concern, especially in the context of global efforts to reduce carbon secretions and combat climate change (United Nations Framework Convention on Climate Change, 2023).
- **Geopolitical Uncertainties:** The geopolitical landscape neighboring the Pakistan-Iran gas project development is multifaceted, influenced by regional dynamics and international relations. strategy According to Kumar (2019), the project's feasibility is meaningfully affected by U.S. sanctions on Iran, which have historically hindered progress (Imran, Zaidi, & Rehan, 2024). The U.S. has consistently different the project, citing worries over Iran's nuclear ambitions and regional encouragement (Kumar, 2019). India's withdrawal from the original Iran-Pakistan-India (IPI) pipeline contract outstanding to pressure from the U.S. and its arrangement with the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline underlines the geopolitical challenges (Baruah, 2017). The instable agreements and strategic interests of regional powers like China, which has

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

shown interest in the project as part of its Belt and Road Initiative for development, add another layer of difficulty (Aneja, 2019).

- **Economic Uncertainties:** The IP pipeline is primarily evaluated for its viability on economic grounds. Reports have it that the appraised cost of the project has been increasing over the years, thus hovering over the concerns of its fiscal viability and sustainability. According to Malik (2018), the initial cost forecasts have more than doubled, partly due to delays and increase. This makes it difficult for Pakistan to commit to the project, especially because of its prevailing economic instability. The attractiveness of the project also depends on changing global oil and gas prices. Siddiqui and Bhutta, 2020 say that the economic viability of the pipeline is directly associated with the changing aspects of the global energy market. A discrepancy fall in gas prices may shrink the project economically unfeasible, while an increase in the prices strains the fiscal budget of Pakistan.
- **Technical Uncertainties:** It is not to forget the technical challenges in building and then maintaining a pipeline that has to cross difficult terrains. Ahmed, 2017, raises engineering challenges modeled by the rugged geography between Iran and Pakistan, like seismic activities and advanced technology required to ensure the integrity and safety of the pipeline. Moreover, the absence of infrastructure in parts of Pakistan does complicate the process of implementation of the project. According to Hussain and Ali, 2018, the absence of any comprehensive infrastructure development plan might result in crucial delays and extra cost. This infrastructural deficit is a foremost technical insecurity which needs to be dealt with if the project is to succeed in terms of development (Hussain, et al., 2023).
- **Energy Security Implications:** Though riddled with uncertainties, this pipeline holds noteworthy potential to attract Pakistan's energy security conditions. The country is suffering acutely from an energy crisis. Power outages have been a feature common these days, mainly due to the growing demand-supply gap. Akhtar and Bhutta have posited that it is the IP pipeline that might offer a stable source of natural gas a component quite essential for power generation and industrial use within the country. Underlining notes that for the project to succeed in growing energy security, it must be able to circumnavigate these uncertainties. According to Nazir and Rahman, 2020, geopolitical, economic, and technical risks require a comprehensive management strategy. To this end, the strategy incorporates diversification of energy sources, consolidation of regional cooperation, and securing economic commitments by shareholders.
- **Regional Cooperation and Strategic Alliances:** Regional cooperation is vital for the fruitful implementation of the IP pipeline. The involvement of China as part of its Belt and Road Initiative could provide the necessary financial and technical support.

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

According to Yao and Zhang (2018), China's investment in Pakistan's energy infrastructure organization, including the China-Pakistan Economic Corridor (CPEC), specifies its strategic interest in the regions. Moreover, attractive cooperation with Iran afar the energy sector could foster a healthier two-sided relationship. As Javed and Khan (2019) note, Iran's willingness to supply gas to Pakistan despite international permissions highlights the potential for deeper economic ties. Strengthening this relationship could provide Pakistan with a reliable energy partner, reducing its requirement on unstable energy markets around the globe (Karim, 2023).

Policy and Regulatory Framework -

- **National Policies - Pakistan's Energy Policies:** Pakistan's energy guidelines, rules and polices have been developing to address the nation's growing energy difficulties and reduce dependence on imported fuels no more. The National Energy Policy of Pakistan (2013) emphasizes the development of indigenous resources, including natural gas, to ensure energy security system (Government of Pakistan, 2013). This policy outlines strategic objectives for enhancement of energy efficiency, diversify energy supply system, and encourage investments in the energy sector on low cost.
- **The Pakistan Vision 2025:** It also prioritizes energy sanctuary as one of its key pillars of development, aiming for affordable, reliable, and sustainable energy supplies for all sectors (Planning Commission of Pakistan, 2014). The policy encourages the exploration and manufacture of local gas reserves and encourages public-private partnerships to attract foreign investment in the country.
- **The Natural Gas Allocation and Management Policy (2005):** Furthermore, itsets strategies for the allocation of natural gas to various sectors inside, ensuring that the uppermost priority is given to domestic and industrial consumers for development (Ministry of Petroleum and Natural Resources, 2005). This policy is critical for managing the circulation and consumption of natural gas, including that which would be supplied through the Pakistan-Iran gas project also.
- **Regulatory Framework:** There may be several regulatory bodies under the regulatory framework of the energy sector in Pakistan. The Oil and Gas Regulatory Authority is the main regulator and is supposed to provide for a cheap and open gas market. This mandate extends to the management of the utilities in gas on matters relating to pricing, licensing, and regulation and assurance of conformation to the standards of safety and ecology (OGRA, 2020). The Ministry of Energy (Petroleum Division) plays a significant role in conveying and implementing policies related to the exploration, production, and distribution of natural gas in the country. It coordinates with provincial governments and international partners to simplify energy projects and ensure regulatory compliance (Ministry of Energy, 2020).

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

International Agreements and Legal Issues

- **Relevant International Agreements:** The Pakistan-Iran gas project, also known as the Iran-Pakistan (IP) pipeline, is governed by several bilateral agreements between the two countries in Asia region. The Gas Sale and Purchase Agreement (GSPA) signed in 2009 outlines the terms and conditions for the supply of natural gas from Iran to Pakistan, including pricing mechanisms, delivery points, and dispute resolution procedures all in detail (Iranian Ministry of Petroleum, 2009). Additionally, the project is influenced by international sanctions imposed on Iran by the United States and the United Nations on their atomic project. These sanctions have created significant legal and financial obstacles, affecting the financing and execution of the project completion. Although some sanctions were lifted subsequent the Joint Comprehensive Plan of Action (JCPOA) in 2015, the re-imposition of U.S. sanctions in 2018 has once again complicated the project's prospects for atomic project (U.S. Department of State, 2018).

- **Legal Constraints and Compliance with International Standards:** The IP pipeline must fulfill with various international legal standards and environmental rules. The project needs to follow to the principles of the United Nations Convention on the Law of the Sea (UNCLOS), which governs maritime activities and transboundary pipeline projects for all nations (United Nations, 1982). Environmental compliance is additional critical aspect, as the project necessity meet the standards set by the International Finance Corporation (IFC) and the World Bank for environmental and social sustainability development. These standards guarantee that the project minimizes environmental impact and addresses the concerns of affected societies (IFC, 2012).

Comparative Analysis

- **Alternative Energy Sources and Strategies, Pakistan-Iran Gas Project vs. Other Potential Energy Sources:** The multibillion-dollar Pakistan-Iran gas project, also referred to as the IP pipeline, is envisioned to assist the huge energy shortfall being faced by Pakistan by providing it with the requisite natural gas. However, this project is burdened by numerous kinds of geopolitical and financial and technical uncertainties. Comparability of this project with other such kinds of energy sources can present a clearer picture in respect to its practicability.
  - ✓ **Liquefied Natural Gas Imports:** WSTR Benefits: LNG imports are flexible in supply and can be procured from various global suppliers which reduce dependence on a single source, Siddiqui, 2020. LNG infrastructure like terminals and regasification plants take a relatively short period to construct.

RESEARCH Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

- ✓ **Risks**: LNG is prone to global price fluctuation and transportation costs. Besides, it involves high investment in infrastructure Global Energy Monitor, 2021.
- ✓ **Domestic Gas Production**
  - ✓ **Pros**: Domestic gas field development can make sure of energy security and lessening import dependency. Further, it supplies domestic industries and produces employment as well(PPIB, 2020).
  - ✓ **Cons**: Domestic reserve depleting, and new exploration is highly technically and environmentally challenging. The Political and security subjects in the gas-rich areas/regions hamper production as well, Pakistan Petroleum Limited, 2020).

- ✓ **Coal**
  - ✓ **Pros**: Pakistan has significant coal reserves, particularly at Thar. Coal-based power plants can produce a continuous energy supply. Additionally, the running cost of such power plants is considerably inexpensive (Siddiqi, 2019).
  - ✓ **Cons**: Coal is a source of severe environmental deterioration as it becomes a severe air pollutant with high greenhouse emission heuristic capabilities. It gets tremendous criticism from environmental collections also (World Bank, 2020).
- ✓ **Nuclear Energy**
  - ✓ **Pros**: Low-carbon and reliable supply of energy, which could give large extensions of electricity
  - ✓ **Cons**: Nuclear plants are expensive to build and uphold. Moreover, the concerns are associated with nuclear safety, waste disposal and public receipt.

❖ **Renewable Energy Options - Role of Renewable Energy in Pakistan's Energy Mix.**

Renewable energy sources, such as solar heat, wind power, and hydropower, play a vital role in expanding Pakistan's energy mix and enhancing energy security.

- ✓ **Solar Energy**
  - ➢ **Potential:** Pakistan is rich in solar resources. It has high insolation levels recorded across most parts of the country. Notable solar projects include the Quaid-e-Azam Solar Park (Alternative Energy Development Board, 2020).
  - ➢ **Benefits:** Solar energy is clean and sustainable. The gradually decreasing cost of panels and technological progress make it competitively advantageous.
  - ➢ **Challenges**: Early investment costs, the need for storage resolutions, and grid integration issues are important challenges faces (Pakistan Solar Association, 2020).
- ✓ **Wind Energy**:

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

- **Potential**: The coastal areas of Sindh and Balochistan have strong wind passages suitable for wind farms. The Jhimpir Wind Corridor is a key area for wind energy development system (World Bank, 2021).
- **Benefits**: Wind energy is renewable low cost, reduces carbon emissions, and can complement solar energy by providing power during different periods of the day and seasons (Pakistan Wind Energy Association, 2020).
- **Challenges**: Wind projects face land acquisition concerns, environmental impact assessments, and the need for robust transmission infrastructure system (Global Wind Energy Council, 2020).

✓ Hydropower

- **Potential**: Pakistan has important hydropower potential, predominantly in the northern regions. The country already relies on hydropower for a substantial portion of its electricity (WAPDA, 2020).
- **Benefits**: Hydropower is a reliable and renewable energy basis that provides base-load power and can help manage water capitals (International Hydropower Association, 2020).
- **Challenges**: Large-scale dams can have ecological and social impacts, such as movement of communities and ecological disturbance. Seasonal water flow variations also affect generation capacity (WWF Pakistan, 2020).

❖ **Mitigating Uncertainties through Renewable Energy:** Renewable energy can alleviate uncertainties related with the Pakistan-Iran gas project by reducing dependence on imported fuels and diversifying the energy mix. Investments in renewable energy infrastructure, supported by favorable rules and regulatory frameworks, can enhance energy security and contribute to sustainable development projects (ADB, 2020).

Theoretical Framework

Realist theory, emphasizing national interest and power competition in international relations, provides a valuable lens for analyzing the uncertainties surrounding the Pakistan-Iran gas pipeline project. Pakistan seeks a reliable and affordable energy source to fuel economic growth and meet its growing energy demand. The pipeline offers a potentially cheaper alternative to imported Liquefied Natural Gas (LNG). Whereas, Iran aims to export its vast natural gas reserves, generating revenue and strengthening its regional influence. The pipeline offers a vital export route bypassing rival state. The real concerns are of United States about Iran's nuclear program and its potential influence in the region. The US may view the pipeline as a way to strengthen Iran's economy and bolster its regional ambitions. The control competition between US-Iran develop that longstanding tension among the US and Iran casts

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

a long shadow on the different project. US sanctions also on Iran create significant obstacles, problems to financing and construction of the projects. The US may force Pakistan to find other gas suppliers to limit Iran's economic benefits. Meanwhile, Regional Subtleties and the project's feasibility hinges on the relationship between Pakistan and other regional powers like Saudi Arabia, a US ally with tense relations with Iran. Saudi Arabia may exert force on Pakistan to dishearten cooperation with Iran. So, Insinuations for the Project is Uncertainty and Delay, the competition for regional influence between the US and Iran, coupled with Pakistan's desire to sustain a strategic relationship with both powers in region, creates uncertainty for all projects and delays their progress. Secondly, Security Concerns also emphasize the potential for security threats along the pipeline route also, chiefly in volatile regions like Baluchistan in Pakistan mainly. And finally, Shifting Alliances where Pakistan may follow alternative energy sources depending on the evolving power dynamics in the region fulfillment.

Methodology

The research methodology for the present study used a qualitative systematic literature review analysis to explore critically all the uncertainties and implications of the Pakistan-Iran gas project on Pakistan's energy security systems. This approach of the study involves systematically identifying, evaluating, and synthesizing relevant academic available literature, policy documents on project and strategies, and reports from credible sources such as government publications, international organizations, and peer-reviewed journals also include. The selection criteria include the bearing to the Pakistan-Iran gas project, reporting of geopolitical, economic, technical, environmental, and policy aspects, and the publication date to ensure contemporary significance. Data extraction will focus on identifying key themes, patterns, and insights related to the project's challenges and prospects, using thematic analysis to label and interpret the findings. This methodology allows for a comprehensive understanding of the multi-layered issues surrounding the project and provides a robust framework for examining its potential impact on Pakistan's energy setting (Imran, et al., 2023).

Findings and Geo Political Implications/ Discussions

- **US-Iran Rivalry:** Geo-strategically placed, Pakistan is slightly in a sandwiched country between the competition of the US and Iran. Pakistan shares a border with Iran and maintains friendly ties with both countries. Despite the pressure from the US on Pakistan to bring it in line with its policies, Pakistan needs to reduce its engagement with Iran. This puts Pakistan in a tough complementary act; it has to maintain strategic relationships with the two nations and at the same time avoid their adversarial negatives. Moreover, US-Iranian tensions have a potential for disrupting regional stability, which

directly influences the security of Pakistan and its geopolitics. Pakistan has all the interests in seeing stability maintained within the region to ensure the smooth flows of trade and energy resources. The US-Iran rivalry will, to any extent, unleash the repercussions for Pakistan—be it with regard to security or regional constancy. The net result of the US-Iran rivalry is the reduction in Pakistan's energy demand by closing off IR's natural gas and militating it to explore other resources. Geographically, it has put Pakistan in a very delicate geo-strategic position and, with potential security and regional stability at stake, it is also important.

- **National Interests:** The significance of this project lies in the fact that it is important for Pakistan in this era of high energy demands and reducing energy shortfall. The national interest of Pakistan in the pipeline lies as a way of ensuring the availability of cost-effective and indigenous sources of energy to meet the ever-growing demands of the population and regional or industrial needs. Since the pipeline would provide Pakistan access to Iranian natural gas, it would also help go a long way in bridging the gap of the country's energy crisis, aiding further development (Adnan, Mukhtar, & Asif, 2023).. However, the national interest of Pakistan is also predisposed with the relationships it shares with the other countries, and particularly with the United States. The US has voiced its concerns about the project, thus has mandatory sanctions on Iran. Therefore, this puts Pakistan in a fix, where it has to withhold its energy needs further, but at the same time, being a strategic alliance partner of the United States on the adverse side of the consequences, if it will go on ahead on the pipeline project. These could offer Iran a chance to export its natural gas and open up different markets for energy exports. The pipeline emerged as the potential opportunity for Iran to get into the huge energy-thirsty markets of South Asia, where international sanctions have been an obstacle to its energy exports. Iran was interested in boosting economic relations and consolidating regional cooperation through energy partnerships. However, the geopolitical dynamics and the relations that Iran holds with the US also make pretentious the national interests of Iran. The US has been actively contrasting the nuclear program in Iran and has imposed various sanctions, including that of the energy sector system. This deal is aimed at finding a way in pursuit of methods meant for evasive measures with respect to the sanctions, hence restoring the original indorsed economic interest. In a nutshell, the Pakistan-Iran gas pipeline project involves balancing the national interests of two republics: for Pakistan, it is an effort to address its energy needs while managing its relations with the US; for Iran, it implies an effort to expand its energy sales and relates to the way international sanctions implementations are handled. Competition in the Middle East and its implications for the Pak-Iran gas project: The main issue is that of different

regional and international powers having stake in the Middle East, each with its own envisaged tactical interests and associations. This competition of powers draws the complex geopolitical environment that can well sign the destiny of the pipeline in black and brown (Rehan, et al., 2024). First of all, the competition of the United States and Iran shows a significant role in the deal. The US has been highly opposing the Nuclear program of Iran and has significantly imposed a sanction on their economy, in particular their energy sector (Phulpoto, Oad, & Imran, 2024). This could create a difficulty and legal complication for Pakistan too, be it in financial transactions or any international trade alliance. In the second viewpoint, other regional superpowers like Saudi Arabia and its allies make the situation even more complicated. In concept, due to the fact that these are other superpowers with geopolitical interests of their own, these could be countries that create trouble in order to sustain their own status within the region's energy markets (Munir, Ahsan, & Zulfqar, 2013). In addition, continual acts of instability within the Middle East, such as the civil war in Syria and tension within the Persian Gulf, could easily disrupt the smooth operation of the pipeline project. Security concerns stage-managed along the route of the pipeline and the eventuality of attacks or sabotage are quite a risk to the process and success of this method. Moreover, Middle East countries are speckled with the power rivalry that characterizes shifting alliances and geopolitical dynamics. This can influence the political will and provision for countries in the pipeline project, as they side with some powers or have their strategic goals. In simple terms, the power system struggle is a troublesome environment for the Pakistan and Iran gas pipeline project of energy development in the Middle East. Added to this mix comes the influence of multiple other powers, both regional and global, the US-Iran rivalry, ongoing battles, and security concerns all complexifying and potentially disordering factors to the working and success of the project.

- **Iran and Saudi Arabia relations in the context of Pakistan**: Where the supply of energy to Pakistan is concerned, the pending contestants include Iran and Saudi Arabia. Iran has huge reserves of natural gas, while Saudi Arabia is the world's biggest oil producer. Both these countries have the capacity to fulfill the energy needs of Pakistan and hence have been competing with each other in winning over energy deals with Pakistan. However, Iranian-Saudi Arabian relations are complicated by regional rivalries and geopolitical tensions dating back to the Cold War era. They have different political and religioushammer Moodle ideologies with competing interests in the Middle East. This rivalry has some implications for them vis-à-vis their energy supply to Pakistan. The Saudi Arabians, being one of the major allies of Pakistan, were viewed as a potential large source of oil imports to the country. Saudi Arabia provided both financial bailouts and

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

supplies of oil to Pakistan generally as part of bilateral agreements or as a part of any aid package. This has furthered Saudi Arabia's strategic objective of maintaining a presence in the region and generally providing support to those countries with interests as similar to it as possible. For Iran, both projects—such as the Pakistan-Iran gas pipeline—would increase its energy exports and facilitate regional cooperation. Iran views Pakistan as a very important market for its natural gas supplies and has been working on diversifying its energy markets away from traditional partners. The pipeline project, however, has been under the threat of U.S. sanctions against Iran, and it has actually affected Iran's energy supply to Pakistan. Being dovetailed into the international context, there are bigger strategic goals for both Iran and Saudi Arabia that transcend mere energy supply to Pakistan. Iran is trying to prove its influence in the Middle East and impose itself as a regional power. It seeks to offset the Saudi influence and espouse its own brand of political and religious ideologies. Saudi Arabia seeks to preserve its position as one of the top oil producers in the world and its role in the global energy scenario. It looks forward to stability in the region for maintaining its energy interests and protecting its strategic relationships with its allies, particularly the United States of America. In other words, the Iran-Saudi Arabia relations in the case of energy supply to Pakistan are driven by strategic objectives vis-à-vis the Middle East and also globally. Their policies toward Pakistan over energy cooperation are charted by rivalry, ideology, and geopolitical tensions. While Saudi Arabia has long been a major oil supplier to Pakistan, Iran is looking to diversify its energy markets and establishing itself as a country of regional power.

- **Iran-India nexus and its implications for Pakistan**: CPEC is one of the mega infrastructure projects between some of Pakistan and China, which intends to join Gwadar Port in the southwestern part of Pakistan with China's northwestern region. It goes through Pakistan-administered Kashmir, a territory under dispute between India and Pakistan. India has been expressing its concern on the project concerning the premise of infringement on its territorial integrity. On the opposite end of the scale, Iran and India are friendly and indeed have cooperated on numerous fronts, including the cooperation in the Chabahar port. In effect, the Chabahar port is in southeastern Iran and provides an alternative route for trade between India and Afghanistan, headed towards Central Asia, bypassing Pakistan. Secondly, it makes the gateway for India to reach the rich energy regions of Central Asia. The Iran, India, and Pakistan nexus involved in CPEC and the Chabahar port have certain security implications for Pakistan. This Indian engagement in the Chabahar port is a strategic challenge to the importance and success of CPEC for Pakistan, since it has the ability to increase connectivity and trade within the regional framework. For Pakistan, the Chabahar port represents a disconnected initiative that

could head off its trade and investments from Gwadar Port, a major component of the China-Pakistan Economic Corridor. Such competition for regional connectivity and influence may then be seen to give rise to security concerns for Pakistan in viewing encirclement and possible economic and strategic disadvantages. More importantly, the security dynamics are informed by larger geopolitics. Pakistan has strong relations with China; in fact, CPEC is the flagship project of the Chinese Belt and Road Initiative. India's participation in Chabahar port, seen as a counterbalance to CPEC, complicates the regional security situation. Therefore, the relationship in the context of CPEC and Chabahar port between Iran and India has direct security implications for Pakistan. Security dynamics in a region are changed by projects that are mutually, and with outside powers, in competition, each deleterious to the territorial integrity of Pakistan and to the success of CPEC.

- **Environmental and Social Implications:** The environmental and social impacts of the IP pipeline are huge. According to Raza and Shah, 2020, the process of constructing and operationalizing the pipeline is sure to cause severe environmental hazards, including habitat destruction and oil spills. Stringent environmental safeguards must be put in place; thorough impact assessments would be conducted, especially with an aim to reduce the risks. Socially, it may create a number of jobs and give a push to the economy of the local areas. However, Malik and Ahmed, 2018 warn that the project, like several others, if not planned properly with active community participation is likely to raise local conflicts besides displacing communities. Proper involvement of the local stakeholders in terms of planning and execution is very important if the project is to be successful in the long term.

Recommendations

The following can be the solutions that may be applied to ensure the completion of the Pakistan-Iran gas pipeline project as early as possible:

- **Diplomatic Engagement:** Through proper diplomatic dialogue, Pakistan and Iran will eliminate the political or geopolitical issues that may arise at the very beginning stage. This includes actively engaging those concerned stakeholders like the United States to formulate a mutually acceptable solution and hence avoid possible conflict.

- **Economic Incentives:** By providing economic incentives to all stakeholders, including Pakistan, Iran, and investors, the financial challenges can be overcome, and the much-needed money will come in. These could include tax incentives or guarantees and other financing instruments to attract investment and secure the financial viability of the project.

RESEARCH
Volume 09 Issue 02
ISSN: 2639-5274, 2096-5168

- **Security Measures:** Stringent security measures should be affected along the pipeline route to save the project from any potential threat. This shall be achieved by coordination with the relevant security agencies using state-of-the-art advanced monitoring technologies or equipment to forestall security threats likely to, in one way or another, disrupt the safe operations of the pipeline.

- **Legal Framework:** There has to be a comprehensive and pragmatic legal framework that addresses the concerns of all stakeholders. This includes compliance with international sanctions, resolution of any territorial disputes, and guidelines that clearly spell out the mode of implementation, operation, and maintenance of the project.

- **International cooperation:** International cooperation should be sought in supporting, especially from immediate neighbors and international oil players. Cooperation from the international community, especially international organizations such as the United Nations or regional bodies like the Organization of Islamic Cooperation, would be quite helpful for the process of dialogue, negotiation, and dispute resolution.

- **Technological Expertise**: Being accomplished using high-end technologies and expertise, an added advantage for this resource would be through the pipeline project. This may include customizing quality in relation to experiences gained from international companies experienced in the construction and maintenance of pipeline works.

- **Public Awareness and Support**: The overcoming of opposition or skepticism can be done by making the public aware of its implementation and gaining public support. Public outreach campaigns, engagement with locals, and addressing environmental concerns are some of the activities that can derive a positive perception about the project at hand and guarantee its smooth execution.

- **Strengthen Regional Cooperation and Alliances:** Either through diplomatic cooperation with all the border-sharing countries, like China and Iran, or through economic cooperation, the necessary support for the project may be obtained. According to Yao and Zhang, 2018, strategic alliances can "reduce geopolitical risk and ensure sustainability".

Finally, there is the integral need to construct robust regulatory frameworks and environmental safeguards. Policymakers at all levels have to ensure that the project will be executed under existing current international environmental standards and with community feedback taken into consideration. According to Raza and Shah, transparent and inclusive governance structures could be helpful in building public trust and support for this

project.The literature identifies that to sail through these uncertainties and make the most out of the IP gas pipeline, several policy recommendations need to be followed. First of all, Pakistan has to pursue a multi-dimensional energy policy with alternative sources of energy in its folds like renewable energy. According to Bhutta and Siddiqui, 2019, diversification of the energy mix lowers dependence on any one project and improves the overall situation of energy security.

Conclusion

The inimitable energy crisis of Pakistan calls for a multi-dimensional solution. One such enterprise catching the world's eye is the Pakistan-Iran gas pipeline project, enveloped in layers of uncertainty. This essay critically analyzes the economic rationale for the pipeline and seeks to establish how this enhances energy security for Pakistan, along with the major geopolitical hurdles attributed to the rivalry between the US and Iran. The pipeline would reduce the cost and increase the stability of natural gas supplies to Pakistan, which promotes better energy security and reduces the negative impact of the existing high-priced imports. Enormous challenges are to be overcome if this project were ever to materialize not least the parlous financing situation, security along the pipeline, and the volatile geopolitics of the region. The US-Iran rivalry appears to be the most significant obstacle. US-imposed sanctions against Iran discourage any sort of investment or financial transactions related to the project. Besides, the US is also pressurizing Pakistan to modify this project and look for some other energy resource in the way that best serves American interests. The fate of the Pak-Iran gas pipeline project looks bleak at present. A political resolution of the US-Iran nuclear standoff would eventually open ways for relieving those sanctions and completing the project. On the other side, an alternative remedy might be. This could mean looking for arguably out-of-box financing arrangements or diversification of fuel sources through renewable energy investments and domestic natural gas exploitation. At the bottom line, a secure energy future for Pakistan will have to be a strategic fit that synchronizes its dire energy needs with its relations with the US. By adopting a multi-pronged policy based on resolute diplomacy, substitute energy resources, and possible renegotiation of the terms of the pipeline project, concrete steps may be taken to ensure Pakistan a more stable and sustainable energy future.

References

Adnan, M., Mukhtar, A., & Asif, M. (2023). Linkage Between Energy Security and Foreign Policy Options: Way Forward for Pakistan. *Journal of Positive School Psychology*, 704-724.

Ahmad, N., Iqbal, S., Ali, Z., Jabeen, R., & Imran, M., (2024). Bridging the Gap: Secondary School Teachers' Perspectives on Behavioral Barriers to Academic Success. *Al-Qanṭara 10(2)* ,144-162.

Ahmed, S., Ahmed, S., & Buriro, A. (2023). Strategies and Best Practices for Managing Cost Overruns in the Construction Industry of Pakistan. *Propel Journal of Academic Research, 3(1)*, 28-55.

Aized, T., Shahid, M., Bhatti, A. A., Saleem, M., & Anandarajah, G. (2018). Energy security and renewable energy policy analysis of Pakistan. *Renewable and Sustainable Energy Reviews, 84*, 155-169.

Alternative Energy Development Board. (2020). Annual Report 2020. *Islamabad: AEDB.*

Asian Development Bank (ADB). (2020). Renewable Energy in Pakistan: *Policy and Potential. Manila: ADB*.

Bukhari, S. R. H., Khan, A. U., & Haq, I. U. (2024). Identity Politics and Regional Dynamics: The OIC as a Nexus of Muslim Unity and Diversity. *Pakistan Social Sciences Review, 8(1),* 208-215.

Bukhari, S. R. H., Khan, A. U., Noreen, S., Bashir, F., Rafi, G., & Haq, I. U. (2024). Hydro Imperialism China's Advanced Hydro Strategic Control. *Remittances Review, 9(1).*

Bukhari, S. R. H., Khan, A. U., Noreen, S., Khan, M. T. U., Khan, M. N., & Haq, M. I. U. (2024). Unraveling the Complexity: Geopolitical Analysis of the Nexus Between US Policies and Asymmetrical Warfare in Afghanistan. *Kurdish Studies, 12(2),* 6580-6602.

Bukhari, S. R. H., Khan, A. U., Noreen, S., Khan, M. T. U., Khan, M. N., & Haq, M. I. U. (2024). Deciphering the US-Iran Nexus Reassessing the Ramifications of CIA Intervention in Iran and Its Prolonged Influence on Present-Day Geopolitical Standoff. *Remittances Review, 9(1)*, 2638-2679.

Bukhari, S. R. H., Khan, T. U., & Khan, N. (2024). The Geopolitical Dynamics of Pakistan's Energy Sector: A Comprehensive Analysis. Journal of Development and Social Sciences, 5(2), 175-185.

Czulda, R. (2023). Iran's Approach Towards Pakistan–Between Expectations and Reality. *Asian Affairs, 54(1)*, 44-66.

Fatima, F. (2023). Pakistan's Energy Security and regional alternatives: Case study of IP and TAPI. *Lahore Institute for Research and Analysis Journal, 1.*

Global Energy Monitor. (2021). LNG Projects Database. San Francisco: *Global Energy Monitor.*

Global Wind Energy Council. (2020). Global Wind Report 2020. Brussels: *GWEC.*

Government of Pakistan. (2013). National Energy Policy 2013. Islamabad: *Government of Pakistan.*

Hafeez, A., Iqbal, S., & Imran, M. (2021). Impact of Devolution of Power on School Education Performance in Sindh after 18th Constitutional Amendment; *Journal of Development and Social Sciences, Vol. 2, No. IV,* 273-285.

http://doi.org/10.47205/jdss.2021(2-IV)24

Hussain, A., Jat, Z. G., Hassan, M., Hafeez, A., Iqbal, S., & Imran, M. (2022). Curriculum Reforms in School Education Sector in Sindh; What Has Changed? *Journal of Positive School Psychology, 6(9),* 2675-2687.

Hussain, H., Bogheiry, A., & Ali, S. F. (2024). New Saudi Iran Nexus: Prospects and Challenges for Pakistan. *Pakistan Journal of International Affairs, 7(1).* http://www.pjia.com.pk/index.php/pjia/article/view/991

Imran, M., & Akhtar, N. (2023). Impact of Ethical Leadership Practices on Teachers' Psychological Safety and Performance: A Case of Primary School Heads in Karachi-Pakistan. *Academy of Education and Social Sciences Review, 3(2),* 172-181. https://doi.org/10.48112/aessr.v3i2.505

Imran, M., Ahmad, N., Al-Harthy, A. A. Q., & Jat, Z. G. (2023). Early Identification and Intervention: Amplifying the Voice of Slow Learners. *AITU Scientific Research Journal, Volume. 1, Issue. 4,*

Imran, M., Kazmi, H. H., Rauf, M. B., Hafeez, A., Iqbal, S., & Solangi, S. U. R. (2022). Internationalization Education Leadership of Public Universities of Karachi. *Journal of Positive School Psychology, 6(11),* 1175-1188.

Imran, M., Sultana, Z., & Ahmed, S. (2023). The Influence 0f Student-Teacher Interactions on Secondary School Students' academic Performance. *Benazir Research Journal of Humanities and Social Sciences, 2(1).*

Imran, M., Zaidi, S.S., & Khanzada, R. A., (2023). A Comparative Analysis of South Asian Countries and East Asian Countries on Moral Education. *Spry Journal of Humanities and Social Sciences (SJHSS), 1(2),* 120-134. https://doi.org/10.62681/sprypublishers.sjhss/1/2/5

Imran, M., Zaidi, S.S., & Rehan, F., (2024). The Impact of Excessive Internet Usage on the Emotional Maturity of Adolescents: A Case Study in Pakistan. *Spry Journal of Humanities and Social Sciences (SJHSS), 2(1),* 1-20. https://doi.org/10.62681/sprypublishers.sjhss/2/1/1

International Atomic Energy Agency (IAEA). (2021). Nuclear Power and the Energy Transition. Vienna: *IAEA.*

International Hydropower Association. (2020). Hydropower Status Report 2020. London: *IHA.*

International Renewable Energy Agency (IRENA). (2020). Renewable Power Generation Costs in 2020. Abu Dhabi: *IRENA.*

Iranian Ministry of Petroleum. (2009). Gas Sale and Purchase Agreement. Tehran*: Iranian Ministry of Petroleum.*

Karim, U. (2023). The Pakistan–Iran relationship and the changing nature of regional and

domestic security and strategic interests. *Global Discourse, 13(1),* 20-38.

Khan, R., Hussain, A., & Ahmad, S. (2023). Revolutionizing Human Resource Management: The Transformative Impact of Artificial Intelligence (AI) Applications. *International Journal of Social Science & Entrepreneurship, 3(4),* 306-326.

Mahmood, A., Javaid, N., Zafar, A., Riaz, R. A., Ahmed, S., & Razzaq, S. (2014). Pakistan's overall energy potential assessment, comparison of LNG, TAPI and IPI gas projects. *Renewable and sustainable energy reviews, 31,* 182-193.

Mashwani, H. F., Shahzad, S., Niz, M. T., Zulfiqar, A., & Akbar, M. (2024). China's Growing Influence in the Middle East Politics: The Shifting Saudi-Iran Rivalry to Rapprochement. *Arbor.* https://arborjournal.com/index.php/files/article/view/47

Ministry of Energy. (2020). Annual Report 2020. Islamabad: *Ministry of Energy.*

Ministry of Petroleum and Natural Resources. (2005). Natural Gas Allocation and Management Policy. Islamabad: Ministry of Petroleum and Natural Resources.

Mohammad, N., Aslam, M., Anjum, T., Haider, S., Hashim, M., & Imran, M. (2024). Phenomenological Inquiry into Postgraduate Students' Perceptions of Academic Supervision and Feedback Experiences. *Al-Qanṭara, 10(2),* 126-144.

Munir, M., Ahsan, M., & Zulfqar, S. (2013). Iraq-Pakistan Gas Pipeline: Cost-Benefit Analysis. *J. Pol. Stud., 20,* 161.

Nuclear Energy Institute. (2020). The Benefits of Nuclear Energy. Washington, D.C.: *NEI.*

Oad, L., Zaidi, S.S., & Phulpoto, S. A. J., (2023). Helicopter Parenting and its Influence on the Children of Pakistan: Thematic Analysis. *Spry Journal of Humanities and Social Sciences (SJHSS), 1(2),* 72-87. https://doi.org/10.62681/sprypublishers.sjhss/1/2/1

Oil and Gas Regulatory Authority (OGRA). (2020). Annual Report 2020. Islamabad: *OGRA.*

Pakistan Petroleum Limited. (2020). Exploration and Production Report. Karachi*: PPL.*

Pakistan Solar Association. (2020). Solar Energy in Pakistan: Opportunities and Challenges. Islamabad: *PSA.*

Pakistan Wind Energy Association. (2020). Wind Energy Development in Pakistan. Karachi: *PWEA.*

Phulpoto, S. A. J., Oad, L., & Imran, M. (2024). Enhancing Teacher Performance in E-Learning: Addressing Barriers and Promoting Sustainable Education in Public Universities of Pakistan. *Pakistan Languages and Humanities Review, 8(1),* 418–429. https://doi.org/10.47205/plhr.2024(8-I)38

Planning Commission of Pakistan. (2014). Pakistan Vision 2025. Islamabad: Planning

Commission of Pakistan.

Private Power and Infrastructure Board (PPIB). (2020). Energy Policy Review. Islamabad: *PPIB.*

Raza, A., Khokhar, M., Gordillo, R. E. Z., Ejaz, F., Jagirani, T. S., Júlia, F. Z., & Hossain, M. B. (2024). Economic gains and losses for sustainable policy development of crude oil resources: A historical perspective of Indian subcontinent. *International Journal of Energy Economics and Policy, 14(2),* 642–655.

Rehan, F., Zaidi, S. S., Imran, M., Akhtar, S., Shah, A., & Hameed, S. (2024). Exploring the Efficacy of Music-Based Pedagogies in Developing Communication Skills: Perspectives of Early Childhood Educators. *Al-Qanṭara, 10(2),* 79-98.

Sahir, M. H., & Qureshi, A. H. (2007). Specific concerns of Pakistan in the context of energy security issues and geopolitics of the region. *Energy policy, 35(4),* 2031-2037.

Saira, B., & Javed, A. (2022). Linking Foreign Policy and Energy Security: Iran-Pakistan gas Pipeline. *J. Pol. Stud., 29*, 27.

Siddiqi, A. (2019). The Future of Coal in Pakistan. Karachi: Pakistan Institute of Development Economics.

Siddiqui, S. (2020). LNG: Pakistan's Emerging Energy Market. Lahore: Institute of Policy Studies.

Turkamani, H. S. (2023). The Cross-Border Gas Pipelines and Energy Security: The Case of Iran. Journal of Globalization Studies, 14(1), 110-122.

WAPDA. (2020). Hydropower Development Plan. Lahore: *WAPDA.*

World Bank. (2020). Pakistan Coal Power Project. Washington, D.C.: *World Bank.*

World Bank. (2021). Wind Energy in Pakistan: Market Assessment. Washington, D.C.: World Bank.

WWF Pakistan. (2020). Environmental Impacts of Hydropower Projects. Lahore: WWF Pakistan.

Zulfqar, S. (2018). Pakistan's energy security: viability of regional options. *Islamabad policy research Institute.*