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Research Article



Energy as a Tool of Regional Integration: India's Cross-Border Power Diplomacy in South Asia

Dr. Arvind Kumar ^{1*}, Dr. Chidanand Tiwari ²

¹⁻² Assistant Professor Department of Defence and Strategic Studies, Acharya Narendra Dev Kisan PG College, Babhnan, Gonda, Affiliated to Maa Pateswari University, Balrampur. Uttar Pradesh, India

Corresponding Author: *Dr. Arvind Kumar

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Abstract

Energy has emerged as a critical instrument for fostering regional integration in South Asia, a region marked by acute energy deficits, uneven resource distribution, and persistent geopolitical tensions. This paper examines India's cross-border power diplomacy as a strategic tool to promote economic interdependence, regional connectivity, and political trust among its neighbours. By analysing key bilateral and multilateral energy initiatives—particularly with Bhutan, Nepal, and Bangladesh—the study highlights how electricity trade, hydropower cooperation, and grid interconnections have contributed to mutual economic gains and stability. The paper also situates India's approach within broader theoretical frameworks of liberal institutionalism and complex interdependence, demonstrating how energy cooperation can transcend traditional security dilemmas. However, challenges such as political instability, China's growing regional footprint, and infrastructural constraints continue to limit the full potential of energy-led integration. The study concludes that a more institutionalised, inclusive, and sustainable energy framework can significantly enhance regional cohesion and position India as a pivotal energy hub in South Asia.

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1. INTRODUCTION

Energy has emerged as one of the most decisive strategic resources in the contemporary international system, shaping not only economic growth but also geopolitical alignments and regional stability. In the 21st century, the nexus between energy security and foreign policy has become increasingly pronounced, particularly in regions characterised by developmental asymmetries and resource constraints. South Asia, home to nearly a quarter of the world's population, exemplifies this reality. The region faces persistent energy deficits, uneven distribution of resources, inadequate infrastructure, and growing demand driven by rapid urbanisation and industrialisation. In such a context, energy is no longer merely a commodity but a critical instrument of diplomacy and regional integration.

The strategic importance of energy lies in its ability to influence state behaviour, foster cooperation, and mitigate conflict. Reliable access to energy resources underpins national security, economic resilience, and political stability. For developing economies, especially in South Asia, energy shortages can impede growth, exacerbate poverty, and trigger socio-political unrest. Countries such as Nepal and Bhutan possess abundant hydropower potential but lack sufficient domestic demand and infrastructure, while nations like Bangladesh and Sri Lanka face acute energy shortages due to limited indigenous resources. This asymmetry creates both challenges and opportunities for regional cooperation.

India, as the largest economy and a rising regional power, occupies a central position in South Asia's energy landscape. With its expanding economic footprint and growing energy demand, India has increasingly recognised the importance of cross-border energy cooperation as a tool of regional diplomacy. Over the past two decades, India has actively engaged in building energy connectivity with its neighbours through electricity trade, grid interconnections, and joint infrastructure projects. Initiatives such as power trade agreements with Bhutan, Nepal, and Bangladesh, along with investments in regional transmission networks, reflect India's strategic vision of fostering interdependence through energy collaboration.

India's cross-border power diplomacy is driven by both pragmatic and strategic considerations. On the one hand, it seeks to secure stable and diversified energy supplies to sustain its economic growth. On the other hand, it aims to strengthen regional ties, enhance political goodwill, and counterbalance external influences in South Asia. By promoting energy integration, India aspires to position itself as a regional hub, facilitating the flow of electricity across borders and contributing to collective energy security. This approach aligns with broader foreign policy objectives such as the "Neighbourhood First" policy and the vision of a connected and cooperative South Asia.

The primary objective of this research is to examine how energy, particularly cross-border electricity trade, functions as a tool of regional integration in South Asia, with a specific focus on India's role. The study seeks to analyse the extent to which India's energy diplomacy contributes to economic

interdependence, political cooperation, and regional stability. It also aims to evaluate the challenges and limitations associated with such initiatives, including infrastructural constraints, regulatory barriers, and geopolitical tensions.

The key research questions guiding this study are:

1. How does energy cooperation facilitate regional integration in South Asia?
2. What are the strategic motivations behind India's cross-border power diplomacy?
3. To what extent have India's initiatives been successful in promoting interdependence and mutual benefits among neighbouring countries?
4. And what are the challenges that hinder the realisation of a fully integrated regional energy market?

By addressing these questions, the paper intends to provide a comprehensive understanding of the role of energy as an instrument of regional integration and its implications for South Asia's future.

2. Theoretical Framework & Literature Review:

The analysis of energy as a tool of regional integration in South Asia is grounded in key theoretical perspectives within international relations, particularly Liberal Institutionalism and the theory of Complex Interdependence. These frameworks provide valuable insights into how cooperation in critical sectors such as energy can transcend traditional power politics and foster stable regional relationships.

Liberal Institutionalism emphasises the role of institutions, cooperation, and mutual benefits in mitigating conflict and promoting collective progress. According to this perspective, states are not solely driven by competition but are also capable of collaborating through formal and informal mechanisms to achieve shared goals. In the context of energy diplomacy, regional institutions and agreements play a crucial role in facilitating cross-border cooperation, reducing transaction costs, and ensuring transparency. In South Asia, despite the relative weakness of regional institutions, bilateral and sub-regional arrangements such as power trade agreements and joint energy projects reflect the principles of liberal institutionalism. India's efforts to establish regulatory frameworks for electricity trade and grid connectivity illustrate how institutional mechanisms can support regional integration.

The concept of Complex Interdependence, developed by Robert Keohane and Joseph Nye, further enriches the analysis by highlighting the multidimensional nature of relationships among states. Unlike traditional realist perspectives that prioritise military power, complex interdependence underscores the importance of economic ties, multiple channels of interaction, and the reduced salience of force in certain contexts. In an interconnected energy network, states become mutually dependent on each other for resources, infrastructure, and markets. This interdependence can create incentives for cooperation, as disruptions in one country can have cascading effects across the region.

Applying this framework to South Asia, cross-border electricity trade exemplifies complex interdependence. For instance, Bhutan relies heavily on India as a market for its hydropower exports, while India benefits from clean and cost-effective energy imports. Similarly, Bangladesh's import of electricity from India helps address its energy deficits while strengthening bilateral relations. These interdependencies create a web of mutual interests that can contribute to regional stability, even in a politically fragmented region like South Asia.

The existing body of literature on energy cooperation in South Asia highlights both the potential and the challenges of regional integration. Scholars have emphasised that energy trade can catalyse economic development, infrastructure connectivity, and political trust-building. Studies on India-Bhutan hydropower cooperation, for example, often cite it as a successful model of mutually beneficial partnership. Similarly, research on India-Bangladesh energy relations points to the role of electricity trade in enhancing bilateral ties and addressing energy shortages.

However, the literature also underscores significant obstacles to regional energy integration. These include inadequate infrastructure, regulatory inconsistencies, financial constraints, and political mistrust among South Asian countries. Some scholars argue that geopolitical rivalries and domestic political considerations often hinder the realisation of regional projects. Others highlight the influence of external actors, such as China, which has increasingly invested in South Asia's energy sector, thereby adding a strategic dimension to regional energy dynamics.

Despite the growing interest in this field, there remains a notable research gap. Much of the existing literature tends to focus on bilateral case studies or technical aspects of energy projects, with limited attention to the broader strategic implications of energy diplomacy as a tool of regional integration. Additionally, there is a lack of comprehensive analysis that integrates theoretical perspectives with empirical evidence to assess the effectiveness of India's cross-border power initiatives. The interplay between energy cooperation and geopolitical competition in South Asia also requires deeper exploration.

This study seeks to bridge these gaps by providing a holistic analysis of India's cross-border power diplomacy within a robust theoretical framework. By combining insights from Liberal Institutionalism and Complex Interdependence, the research aims to offer a nuanced understanding of how energy cooperation can reshape regional dynamics. It also endeavours to critically evaluate the extent to which such initiatives

contribute to sustainable integration, while acknowledging the structural and political constraints that continue to shape South Asia's energy landscape.

3. South Asia's Energy Landscape:

South Asia's energy landscape is characterised by a complex interplay of rapidly rising demand, structural supply constraints, and uneven resource distribution, making it one of the most energy-stressed regions globally. With nearly one-fourth of the world's population, the region faces a persistent demand–supply gap, which continues to challenge economic growth and energy security.

Demand–Supply Gap:

Energy demand in South Asia has been growing at an accelerated pace due to population expansion, urbanisation, and industrialisation. Studies indicate that regional energy demand is projected to increase significantly—from around 900 MTOE in 2018 to nearly 1500 MTOE by 2030.

This surge is driven primarily by India, which accounts for nearly 80% of the region's total energy demand, followed by Bangladesh and Pakistan.

However, supply has struggled to keep pace. A substantial portion of the region still faces energy deficits and unreliable electricity access, particularly in rural and underdeveloped areas. Historically, hundreds of millions in South Asia lacked access to electricity, reflecting systemic infrastructure limitations and investment gaps.

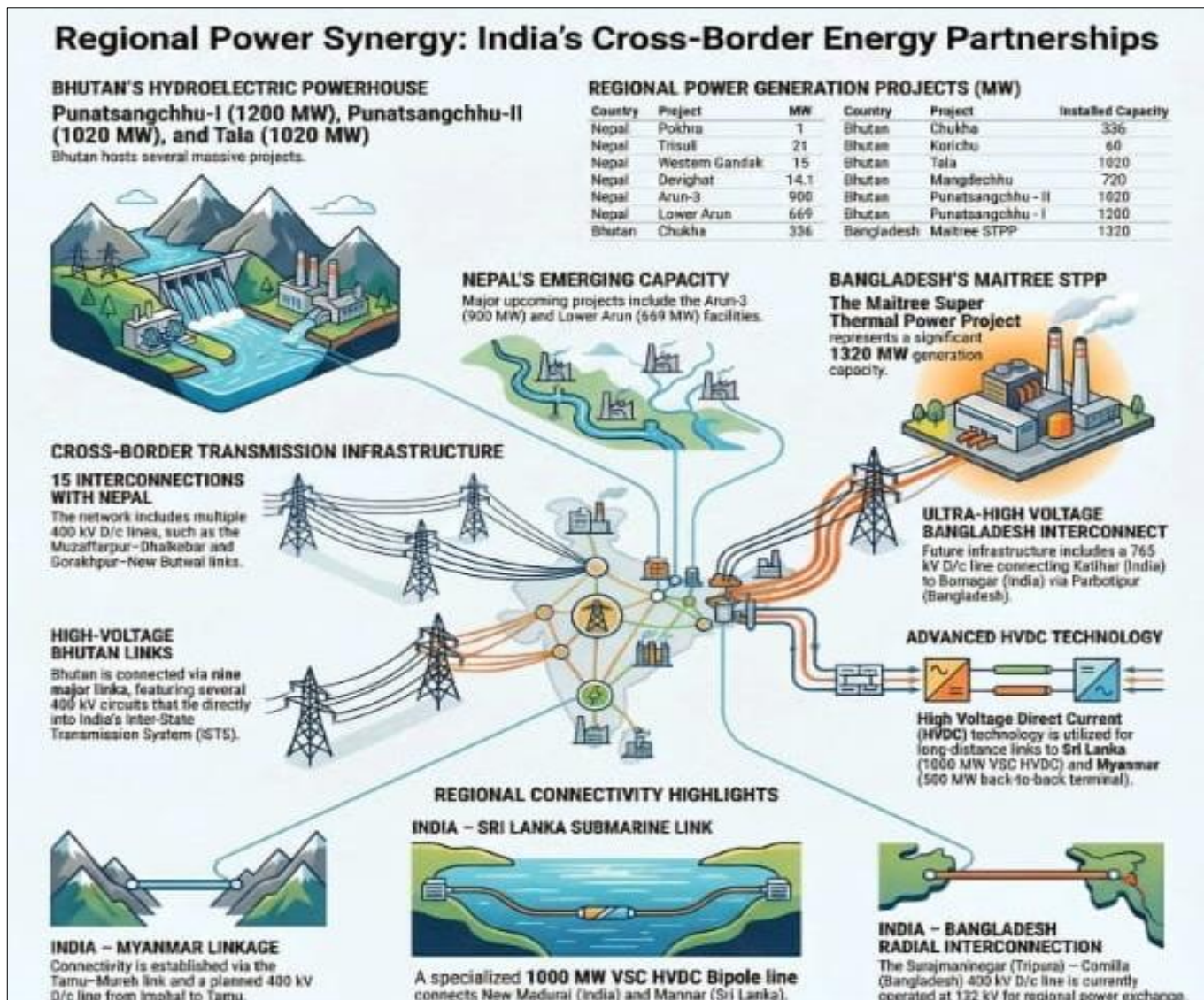
The imbalance between demand and supply has also increased dependence on energy imports. Approximately two-thirds of energy consumption in South Asia relies on imports, exposing countries to global price volatility and geopolitical risks.

Resource Distribution (Hydro, Fossil, Renewable):

The region possesses diverse energy resources, but their distribution is highly uneven. South Asia remains heavily dependent on fossil fuels, which account for nearly 80% of the total energy mix, with coal dominating electricity generation, particularly in India and Pakistan.

At the same time, the region holds significant hydropower potential, especially in Himalayan countries such as Nepal and Bhutan. Hydropower constitutes a major share of renewable capacity, contributing over 66,000 MW within the regional renewable energy portfolio.

These countries generate surplus electricity during monsoon seasons, creating opportunities for cross-border power trade.



Renewable energy sources such as solar and wind are expanding rapidly, but remain underutilised relative to their potential. Structural constraints such as weak grid infrastructure, lack of storage capacity, and financing challenges limit their large-scale integration. Despite growing policy emphasis, renewables are yet to displace fossil fuels significantly, indicating a transitional phase in the region's energy trajectory.

Regional Imbalance and Structural Constraints:

A defining feature of South Asia's energy landscape is its regional imbalance in resource endowments and consumption patterns. While countries like Nepal and Bhutan are resource-rich in hydropower, they lack sufficient domestic demand and infrastructure for full utilisation. Conversely, India, Bangladesh, and Pakistan face high demand but insufficient domestic resources, leading to heavy reliance on imports.

This asymmetry creates both challenges and opportunities. On one hand, it exacerbates energy insecurity and uneven

development; on the other, it opens avenues for regional energy cooperation and grid integration. Seasonal complementarities further reinforce this potential. For instance, hydropower generation peaks in Nepal and Bhutan coincide with high electricity demand periods in India and Bangladesh.

Nevertheless, structural barriers such as weak transmission connectivity, regulatory differences, and political mistrust continue to hinder effective regional integration. As a result, South Asia's energy landscape remains fragmented despite clear economic and strategic incentives for cooperation.

4. India's Energy Diplomacy Strategy:

India's energy diplomacy has evolved as a central pillar of its foreign policy, particularly in South Asia, where energy interdependence is increasingly viewed as a tool for regional integration, strategic influence, and economic cooperation. Through a combination of policy initiatives, infrastructure investments, and cross-border energy trade, India seeks to position itself as the regional energy hub.

Neighbourhood First Policy and Energy Cooperation:

India's Neighbourhood First Policy provides the foundational framework for its regional energy diplomacy. Under this approach, India prioritises connectivity, economic integration, and development partnerships with its immediate neighbours. Energy cooperation has emerged as a key component of this policy, particularly through cross-border electricity trade agreements and grid interconnections.

India has established power trade links with Nepal, Bhutan, Bangladesh, and Myanmar, facilitating both imports and exports of electricity. Hydropower-rich countries like Bhutan have become major electricity exporters to India, while India supplies power to energy-deficient regions such as Bangladesh and Nepal during lean seasons. This mutually beneficial arrangement enhances energy security across the region while strengthening India's diplomatic leverage.

Power Export Strategy and Regional Grid Integration:

A core element of India's energy diplomacy is its power export strategy, aimed at transforming the country into a net exporter of electricity in South Asia. India has invested heavily in cross-border transmission infrastructure, enabling seamless electricity flows across national boundaries.

The strategy is driven by both economic and strategic considerations. Economically, power exports generate revenue and optimise surplus generation capacity. Strategically, they foster long-term interdependence, making neighbouring countries more integrated with India's energy systems.

India's vision extends beyond bilateral arrangements toward the creation of a regional power grid under frameworks such as the BBIN (Bangladesh-Bhutan-India-Nepal) initiative. Such integration can reduce generation costs, enhance grid stability, and enable efficient utilisation of diverse energy resources across the region.

Regional Leadership and Strategic Ambition

India's energy diplomacy is also closely linked to its broader ambition of emerging as a regional and global leader in energy transition and climate governance. By promoting renewable energy cooperation, India positions itself as a responsible power committed to sustainable development.

Initiatives such as cross-border renewable energy projects, solar partnerships, and grid modernisation efforts reflect this leadership role. At the same time, India's domestic energy transition, particularly its expansion of solar and wind capacity, strengthens its credibility as a regional energy leader.

Moreover, energy diplomacy serves as a counterbalance to external influences in South Asia, particularly from major powers like China. By offering reliable, affordable, and sustainable energy solutions, India enhances its strategic presence and reduces the scope for external dominance in the region.

Challenges and Strategic Limitations:

Despite notable progress, India's energy diplomacy faces several constraints. Regulatory inconsistencies, financial viability issues in neighbouring countries, and geopolitical

tensions often slow down project implementation. Additionally, infrastructure bottlenecks and limited grid connectivity continue to restrict the full potential of regional energy trade.

Nevertheless, the long-term trajectory remains promising. As energy demand continues to rise and the transition toward renewables accelerates, India's role as a regional energy integrator and strategic leader is likely to become even more significant.

5. Cross-Border Power Trade: Key Case Studies (India–Bhutan, India–Nepal, India–Bangladesh)

South Asia's energy geopolitics is increasingly being shaped by cross-border electricity trade, with India emerging as the central hub in a gradually evolving regional power market. The case studies of India–Bhutan, India–Nepal, and India–Bangladesh illustrate how electricity cooperation has moved beyond bilateralism toward sub-regional grid integration, economic interdependence, and strategic alignment. These partnerships are not merely technical arrangements but represent a deeper fusion of energy security, diplomacy, and regional order-building.

5.1 India–Bhutan Power Cooperation**(A) Agreements and Institutional Framework**

India–Bhutan hydropower cooperation is one of the oldest and most successful examples of cross-border energy trade in the Global South. It is rooted in long-term intergovernmental agreements, beginning with the 1960s cooperation framework and strengthened through successive protocols on hydropower development.

Key agreements include:

2006 India–Bhutan Agreement on Hydropower Cooperation, targeting 10,000 MW development (later revised).

Intergovernmental and Joint Venture models for projects like Tala, Chukha, Mangdechhu, and Punatsangchhu.

Recent MoUs (2024–2025) involving Indian private participation (e.g., Tata Power, Adani Group) in Bhutanese hydro projects.

These agreements institutionalise a build-own-operate-transfer (BOOT) model, where India finances and constructs projects, and Bhutan exports surplus electricity to India.

(B) Economic and Energy Benefits

Bhutan's economy is deeply intertwined with hydropower exports:

Hydropower contributes nearly 20% of Bhutan's GDP and about 63% of export earnings.

Installed capacity reached over 2,300 MW by 2024, largely developed with Indian assistance.

For India:

Bhutan provides clean, reliable hydropower, especially valuable during peak demand seasons.

It supports India's transition toward low-carbon energy and grid stability.

Thus, the partnership represents a win-win economic interdependence model, where Bhutan gains revenue, and India secures sustainable energy.

(C) Strategic Importance

Bhutan acts as a trusted energy partner in India's neighbourhood policy.

Hydropower cooperation reduces space for external powers (especially China) in Bhutan's strategic sector.

It strengthens India's Himalayan security architecture, integrating infrastructure, energy, and diplomacy.

India-Bhutan cooperation is often described as the "gold standard" of regional energy diplomacy, combining trust, long-term vision, and mutual gains.

5.2 India-Nepal Power Trade

(A) Agreements and Emerging Framework

India-Nepal power cooperation has evolved from dependency to mutual interdependence.

Key milestones:

Power Trade Agreement (PTA), 2014 – enabled cross-border electricity trade.

2023 long-term agreement: Nepal to export up to 10,000 MW to India over 10 years (strategic commitment).

Expansion of transmission infrastructure, such as the Dhalkebar-Muzaffarpur line.

Recent development:

Nepal's entry into trilateral trade with Bangladesh via India (2024 agreement).

(B) Benefits and Economic Transformation

Nepal's hydropower potential is immense:

Installed capacity exceeds 3,000 MW, with over 95% hydro-based generation.

Benefits:

Nepal exports surplus electricity during the monsoon and imports during the winter, creating seasonal energy balancing.

Revenue generation from exports is boosting Nepal's economy.

India benefits from cheap surplus hydropower, particularly during peak agricultural demand.

Additionally:

Cross-border trade has enabled Nepal to access a potential 5,000 MW export market.

(C) Strategic Importance

Nepal is transitioning from an energy-deficient to an energy-exporting nation, reshaping its geopolitical relevance.

India's role as a market and transit country enhances its regional leadership.

Energy ties help stabilise India-Nepal relations, which are otherwise sensitive due to political and border issues.

Importantly, this relationship reflects complex interdependence, where both countries rely on each other for energy security.

5.3 India-Bangladesh Power Trade

(A) Agreements and Institutional Mechanisms

India-Bangladesh power cooperation is among the most dynamic in South Asia.

Key agreements:

2010 Framework Agreement on Cooperation for Development Multiple Power Purchase Agreements (PPAs)

Grid interconnections like:

Bheramara-Baharampur HVDC link

Tripura-Comilla interconnection

Recent breakthrough:

2024 Trilateral Agreement (India-Nepal-Bangladesh) enabling Nepal to export electricity to Bangladesh via India.

This marks a transition from bilateral to multilateral power trade architecture.

(B) Benefits and Energy Security

Bangladesh is energy-deficient and heavily reliant on imports:

Imports electricity from India to meet growing industrial and urban demand.

Gains access to clean hydropower (via Nepal and Bhutan) through Indian grids.

For India:

Strengthens its role as a regional electricity exporter and transit hub.

Generates revenue through electricity sales and transmission services.

For the region:

Optimises resource distribution—hydropower from the Himalayas, demand centres in Bangladesh.

(C) Strategic Importance

Enhances India's "Neighbourhood First Policy" in practice.

Positions India as the energy gateway of South Asia.

Counters China's growing influence in Bangladesh's infrastructure sector.

The trilateral electricity trade (Nepal-India-Bangladesh) is particularly significant:

It was operationalised in 2024-25 with 40 MW power transfer, the first such arrangement in South Asia.

Demonstrates the feasibility of a South Asian Power Pool.

Comparative Strategic Insights:

Dimensions	India-Bhutan	India-Nepal	India-Bangladesh
Nature	Long-term, Stable	Emerging, Dynamic	Demand-driven
Energy Flow	Bhutan to India	Two-way trade	India to Bangladesh

Key Resources	Hydro Power	Hydro Power	Energy-dependent partner
Strategic Role	Trusted partner	Rising Exporter	Energy-dependent partner
Regional Impact	Bilateral Success Mode	Expanding regional integration	Gateway to Multilateral Trade

6. Energy as a Tool of Regional Integration:

Energy cooperation has emerged as one of the most effective instruments for fostering regional integration in South Asia, a region historically constrained by political mistrust and economic fragmentation. By enabling sustained economic interdependence, facilitating trust-building mechanisms, and enhancing physical connectivity, cross-border energy trade, particularly electricity, has gradually begun to reshape regional dynamics in a constructive direction.

At the core of this transformation lies economic interdependence, a concept strongly rooted in the theoretical framework of Robert Keohane and Joseph Nye's theory of complex interdependence. India's power trade with Bhutan, Nepal, and Bangladesh exemplifies how energy flows can create mutual dependencies that reduce the likelihood of conflict while promoting shared economic gains. For instance, Bhutan's hydropower exports to India account for a significant portion of its GDP and government revenue, while India benefits from clean and cost-effective electricity. Similarly, Bangladesh's import of electricity from India has helped stabilise its industrial growth and reduce energy shortages. These interdependencies generate a structural incentive for maintaining stable bilateral relations, thereby embedding cooperation into the economic fabric of the region.

Beyond economic benefits, energy cooperation serves as a trust-building mechanism in a region often characterised by historical tensions. Unlike traditional security or territorial negotiations, energy agreements tend to be technocratic, incremental, and less politically contentious. Regular coordination through joint committees, grid management systems, and regulatory frameworks fosters transparency and institutional dialogue. Over time, such interactions contribute to confidence-building, even among states with otherwise strained relations. The operational success of cross-border transmission lines and power-sharing agreements demonstrates that cooperation is not only possible but also beneficial, thereby gradually eroding long-standing mistrust.

Equally significant is the role of energy in enhancing regional connectivity. Cross-border transmission infrastructure—such as high-voltage transmission lines between India and its neighbours—acts as both a physical and strategic connector. These networks enable the movement of electricity across borders in real time, effectively integrating national grids into a broader regional system. This aligns with the vision of a South Asian regional grid, where surplus power in one country can be transmitted to deficit regions in another, optimising resource utilisation. Improved connectivity also complements broader regional initiatives such as trade corridors and digital infrastructure, reinforcing the overall integration process.

Moreover, energy connectivity has spillover effects on other sectors, including transportation, trade, and industrial development. Reliable electricity supply enhances manufacturing competitiveness, supports digital economies, and

improves quality of life, thereby contributing to socio-economic stability. In this sense, energy acts not merely as a commodity but as a strategic enabler of regional development.

In conclusion, energy cooperation in South Asia demonstrates how functional collaboration in a critical sector can overcome political barriers and foster deeper regional integration. By promoting economic interdependence, building trust, and enhancing connectivity, cross-border energy trade positions India as a central facilitator of regional stability and growth.

7. Geopolitical Challenges:

Despite the promising role of energy cooperation in fostering regional integration, South Asia's energy diplomacy is deeply influenced by complex geopolitical challenges. These include the growing influence of China, domestic political instability within partner countries, and intensifying strategic competition in the region.

A major challenge is the expanding footprint of the Belt and Road Initiative, launched by Xi Jinping. Through large-scale investments in energy infrastructure—such as hydropower projects in Nepal and coal-based plants in Bangladesh—China has positioned itself as a key player in South Asia's energy landscape. While these investments address critical infrastructure gaps, they also introduce strategic concerns for India. The dual-use nature of infrastructure projects, potential debt dependencies, and the alignment of regional energy networks with Chinese strategic interests complicate India's efforts to maintain its leadership in regional energy cooperation. The BRI thus represents both an economic opportunity for smaller South Asian states and a geopolitical challenge for India.

Another significant constraint is political instability within the region. Countries like Nepal, Bangladesh, and Sri Lanka have experienced frequent political transitions, policy reversals, and governance challenges. Such instability can delay or disrupt energy projects, create regulatory uncertainties, and undermine investor confidence. For example, changes in government priorities may lead to renegotiation of agreements or delays in project implementation, affecting the reliability of cross-border energy trade. Moreover, domestic political narratives sometimes frame energy cooperation with India in nationalist terms, further complicating bilateral relations.

In addition, strategic competition among regional and extra-regional powers adds another layer of complexity. South Asia is increasingly becoming a theatre of geopolitical contestation involving not only India and China but also actors like the United States, Japan, and multilateral institutions. Competing infrastructure models, financing mechanisms, and strategic objectives can lead to fragmented development approaches. This competition may result in overlapping projects, inefficiencies, and even political polarisation within smaller states, which often seek to balance multiple external partners. Furthermore, energy security concerns—such as

overdependence on a single supplier or transit route—can create vulnerabilities. Countries may hesitate to fully integrate their energy systems due to fears of supply disruptions or political leverage. This limits the depth of regional integration and slows the progress toward a unified energy market.

In summary, while energy cooperation holds significant promise, it operates within a challenging geopolitical environment. Addressing these challenges requires careful balancing of strategic interests, strengthening of domestic institutions, and the development of transparent and resilient regional frameworks.

8. Opportunities and Policy Recommendations:

Amid the challenges, South Asia's energy landscape presents substantial opportunities for advancing regional integration. By leveraging renewable energy potential, developing a regional grid, and implementing institutional reforms, India and its neighbours can transform energy cooperation into a cornerstone of regional stability and prosperity.

One of the most promising avenues is renewable energy cooperation. South Asia is endowed with abundant renewable resources, including hydropower in Nepal and Bhutan, solar energy in India, and wind potential across coastal regions. Collaborative development of these resources can reduce dependence on fossil fuels, enhance energy security, and contribute to climate goals under frameworks like the Paris Agreement. India's leadership in initiatives such as the International Solar Alliance provides a platform for regional collaboration. By facilitating technology transfer, financing, and capacity building, India can help neighbouring countries harness their renewable potential while strengthening regional ties.

Another critical opportunity lies in the creation of a regional power grid. A fully integrated South Asian grid would enable efficient electricity trade across borders, balancing supply and demand in real time. For instance, surplus hydropower during monsoon seasons in Nepal and Bhutan could be transmitted to energy-deficient regions in Bangladesh or India. Such a system would optimise resource utilisation, reduce costs, and enhance grid stability. The concept aligns with India's "One Sun, One World, One Grid" vision, which seeks to expand energy connectivity beyond regional boundaries.

To realise these opportunities, institutional reforms are essential. Strengthening regional organisations such as the SAARC and promoting sub-regional frameworks like BBIN (Bangladesh, Bhutan, India, Nepal) can enhance policy coordination and project implementation. Establishing standardised regulatory frameworks, transparent pricing mechanisms, and dispute resolution systems would further facilitate cross-border energy trade. Additionally, creating dedicated financial instruments and encouraging private sector participation can accelerate infrastructure development.

Policy measures should also focus on enhancing energy diplomacy. India can adopt a more inclusive and consultative approach, addressing the concerns of smaller neighbours while ensuring mutual benefits. Capacity-building initiatives, technical assistance, and joint research programs can strengthen

trust and cooperation. Furthermore, integrating energy cooperation with broader economic initiatives such as trade agreements and connectivity corridors can create synergies that reinforce regional integration.

In conclusion, while challenges persist, the opportunities for leveraging energy as a tool of regional integration in South Asia are immense. By prioritising renewable cooperation, advancing regional grid connectivity, and implementing robust institutional reforms, India can play a pivotal role in shaping a more integrated, resilient, and sustainable regional energy architecture.

9. CONCLUSION

This study demonstrates that energy is no longer merely an economic commodity in South Asia—it has evolved into a strategic instrument of regional integration, diplomacy, and geopolitical influence. The key finding of this research is that India's cross-border power engagements with its neighbours—particularly Bhutan, Nepal, and Bangladesh—have created a framework of functional interdependence that aligns closely with the principles of complex interdependence. Through electricity trade, grid connectivity, and hydropower investments, India has not only addressed its own energy security concerns but has also fostered trust, economic stability, and political goodwill across the region.

A second major finding is that cross-border energy cooperation has acted as a stabilising force in an otherwise politically volatile region. Energy trade agreements have proven more resilient than traditional political arrangements because they are rooted in mutual economic benefits. India's role as a net exporter of electricity has strengthened its image as a regional leader and a "first responder" in times of crisis, particularly in ensuring an uninterrupted power supply to its neighbours. This has reinforced India's Neighbourhood First Policy and expanded its strategic depth without resorting to coercive means.

However, the study also underscores that energy diplomacy operates within a complex geopolitical environment. The growing influence of China through the Belt and Road Initiative (BRI), political instability in neighbouring states, and infrastructural asymmetries continue to pose significant challenges. In this context, India's approach has been comparatively sustainable, emphasising transparency, capacity-building, and long-term partnerships rather than debt-driven projects.

The contemporary global context further amplifies the urgency of energy security. The ongoing conflict involving Iran, Israel, and the United States has had direct and indirect implications for global energy markets. For India, which imports nearly 80–85% of its crude oil requirements, such geopolitical tensions translate into price volatility, supply chain disruptions, and inflationary pressures. Although India has managed to mitigate immediate shocks through diversified sourcing and strategic reserves, the ripple effects—rising fuel prices, increased transportation costs, and pressure on the fiscal balance—have been felt by the general population. This highlights a critical vulnerability: India's dependence on external energy corridors.

In particular, the Strait of Hormuz—through which a significant portion of the world's oil supply passes—remains a strategic chokepoint. Any prolonged conflict or military escalation in this region can severely disrupt global oil flows. If tensions continue or escalate into sustained conflict, India could face acute energy shortages, increased import bills, and macroeconomic instability. The risk is not hypothetical; it is a structural reality of the current global energy architecture.

Therefore, the future outlook must prioritise resilience, diversification, and sustainability. India needs to accelerate the transition towards renewable energy sources such as solar, wind, and green hydrogen, while simultaneously strengthening regional energy grids. Expanding cross-border electricity trade can reduce dependence on volatile global oil markets and enhance collective energy security in South Asia. Additionally, investments in strategic petroleum reserves, alternative supply routes, and domestic energy production must be scaled up.

Equally important is the need to institutionalise regional energy cooperation through formal mechanisms, possibly under platforms like BIMSTEC or BBIN. A South Asian regional grid could transform the region into an integrated energy market, reducing costs and enhancing efficiency. India, given its economic and technological capabilities, is well-positioned to lead this transformation.

In conclusion, energy diplomacy offers India a powerful pathway to achieve both national security and regional integration. Yet, the evolving geopolitical landscape—especially tensions in West Asia—serves as a stark reminder that energy security cannot rely solely on external dependencies. India must proactively develop stable and indigenous energy alternatives to safeguard its future. Only through a balanced strategy of regional cooperation and domestic resilience can India ensure that it never faces a crippling energy crisis, regardless of global uncertainties.

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About the author

Dr. Arvind Kumar is an Assistant Professor in the Department of Defence and Strategic Studies at Acharya Narendra Dev Kisan PG College, Bahnan Gonda (U.P.). He is a distinguished scholar in the fields of National Security and International Relations, with over 50 research papers published in reputed national and international journals. Dr Kumar is also the author of two scholarly books and has actively contributed as a convener and member of various academic and institutional committees. He has participated in numerous national and international conferences, reflecting his continuous engagement with contemporary strategic and security discourses.



Dr. Chidanand Tiwari is serving as an Assistant Professor in the Department of Defence and Strategic Studies, Acharya Narendra Dev Kisan PG College, Bahnan Gonda (U.P.). He is recognised as a subject expert in the field of national security. He has published several research papers in reputed national and international journals and has actively participated in various national and international conferences, presenting his scholarly work.