OIL RESOURCE AND ITS GEOPOLITICS IN INDIA

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Abstract

Oil has remained a cornerstone of global energy politics and economic development. For India, a rapidly industrializing nation with limited domestic reserves, the geopolitics of oil is critical to both foreign policy and national security. This study explores India's complex relationship with oil — from historical developments and import dependencies to current diplomatic strategies and emerging global alignments. Using a qualitative analytical framework, the research draws upon secondary data from government reports, international agencies, and scholarly articles. Findings highlight India's strategic vulnerabilities due to its heavy reliance on imports (over 85%) and the risks posed by geopolitical tensions in the Middle East, Russia, and beyond. In response, India has pursued diversification through renewable energy, investments in overseas oil fields, and the development of strategic petroleum reserves. The study concludes by underscoring the importance of multi-alignment, infrastructure modernization, and climate-aligned diplomacy to ensure energy security in an increasingly volatile world.

Keywords: *Oil geopolitics, India energy security, import dependency, strategic petroleum reserves, energy diplomacy, oil trade routes, India-Middle East relations*

1. Introduction

1.1 Background and Global Context

Oil has been a central force in shaping the modern global economy and international political landscape. Its role extends far beyond powering vehicles and industries—oil has become a critical geopolitical commodity, influencing military strategies, foreign policies, and global alliances. Countries that control oil production and trade wield substantial economic and strategic influence, while oil-importing nations often face vulnerabilities tied to price fluctuations, supply disruptions, and political instability in supplier regions. As the world shifts toward a multi-polar energy landscape and confronts the challenges of climate change, the geopolitics of oil remains as relevant as ever.

India, as one of the fastest-growing economies in the world, stands at a crucial intersection of energy demand and geopolitical strategy. It is the third-largest oil consumer globally, trailing only the United States and China. However, its domestic production is limited, which forces the country to rely heavily on imported crude oil to meet its energy requirements. This heavy reliance not only creates an economic burden but also introduces significant geopolitical risks. Understanding the geopolitics surrounding oil is thus essential for assessing India's national energy strategy and its broader global positioning.

1.2 India's Oil Dependency and Vulnerability

India's dependence on imported oil exceeds 87% of its total consumption, making it one of the most import-reliant countries in the world. Despite the presence of oil fields such as Mumbai High, the Barmer Basin, and the Krishna-Godavari Basin, domestic output has steadily declined in recent years. Meanwhile, consumption continues to rise due to growing transportation needs, industrial development, and urban expansion.

This dependency exposes India to various risks. Price shocks resulting from geopolitical tensions—such as OPEC+ production decisions, the Russia-Ukraine conflict, or sanctions on oil-exporting countries—have a direct impact on India's economy. Additionally, the concentration of suppliers in geopolitically unstable regions such as the Middle East and Central Asia makes India

vulnerable to supply chain disruptions. Events like the U.S.-Iran standoff or the blockade of the Suez Canal illustrate how international politics can immediately threaten India's energy security.

1.3 Strategic Geography and Energy Trade Routes

India's location in the Indian Ocean Region (IOR) places it in proximity to critical maritime chokepoints through which much of the world's oil is transported. These include the Strait of Hormuz, the Bab-el-Mandeb Strait, and the Suez Canal. Any conflict or instability in these regions—such as attacks on oil tankers or naval blockades—can disrupt oil shipments to India.

To mitigate these risks, India has expanded its naval presence in the region and actively participates in maritime security initiatives like the Indian Ocean Naval Symposium (IONS) and the Quadrilateral Security Dialogue (Quad). Ensuring the security of energy trade routes has become a central concern for India's defense and foreign policy frameworks.

1.4 India's Policy and Strategic Response

In response to its energy vulnerability, India has developed a comprehensive strategy encompassing domestic reform, international diplomacy, and infrastructure development. Key policy initiatives such as the Hydrocarbon Exploration and Licensing Policy (HELP) and the Open Acreage Licensing Policy (OALP) have been introduced to attract private and foreign investments in oil exploration and production.

To buffer against external shocks, India has constructed Strategic Petroleum Reserves (SPR) at Visakhapatnam, Mangalore, and Padur, which can store oil sufficient for 9–12 days of consumption. These reserves are part of a broader vision to enhance national energy resilience.

India has also diversified its oil import portfolio by engaging with non-traditional suppliers such as Russia, Nigeria, the United States, and Latin American countries. Indian oil companies like ONGC Videsh have acquired stakes in oil fields abroad, thereby ensuring a partial hedge against foreign supply disruptions.

1.5 Environmental Commitments and Energy Transition

India faces the dual challenge of ensuring energy security while also meeting its international environmental obligations. As a signatory to the Paris Agreement, India has committed to achieving net-zero emissions by 2070. This has prompted the government to integrate sustainability into its energy planning.

Key initiatives include the Ethanol Blending Program (targeting 20% blending by 2025), promotion of electric vehicles (through the FAME scheme), and the launch of the National Green Hydrogen Mission. While these efforts indicate a shift toward cleaner alternatives, the transition away from oil will be gradual. Oil is still critical for sectors such as transportation, aviation, and heavy industry.

India's role in global forums like the International Solar Alliance (ISA), co-founded with France, reflects its ambition to become a global leader in renewable energy diplomacy. At the same time, the government continues to negotiate long-term oil contracts and participate in forums like the International Energy Agency (IEA) and OPEC+ observer dialogues, showcasing a dual-track energy strategy.

1.6 Research Objectives and Scope

This study aims to explore the intersection of oil resources and geopolitics in India through the following objectives:

- To trace the historical development of India's oil industry.
- To assess the current status of oil production, refining, and imports.
- To analyze India's major oil trade partners and geopolitical risks.
- To examine India's foreign policy responses and energy diplomacy.
- To explore future energy transition strategies and implications.

The research focuses on crude oil while acknowledging its links to natural gas and renewable energy. It considers India's engagements with oil-producing countries such as Saudi Arabia, Iraq, Russia, the United States, Nigeria, and Iran.

1.7 Structure of the Paper

Following this introduction, the paper proceeds with a literature review, which outlines existing academic and policy debates on energy geopolitics. The methodology section then describes the qualitative approach and data sources used. The findings section presents data on India's oil infrastructure, partnerships, and strategic reserves. This is followed by a discussion connecting the data to geopolitical implications. The paper concludes with recommendations for policy reforms and future research directions.

2. Literature Review

2.1 Introduction to Energy Geopolitics

Energy geopolitics, particularly oil geopolitics, has long been a cornerstone of international relations and global security. Scholars such as Daniel Yergin (2009) have chronicled how oil has shaped wars, determined alliances, and influenced global economic systems. According to Yergin, oil is not only an economic commodity but a strategic resource that underpins national power. Crandall (2006) argues that energy geopolitics operates at the intersection of foreign policy, military strategy, and economic leverage, especially for nations dependent on imports.

In the post-Cold War period, access to secure and affordable energy has become increasingly central to the foreign policies of emerging economies such as India, China, and Brazil. Scholars like Klare (2008) and Moniz & Kenderdine (2016) have examined how energy-hungry nations develop strategies of diversification, bilateral diplomacy, and overseas investment to mitigate geopolitical risk and ensure supply stability.

India's unique energy profile—as a large consumer with limited reserves—makes it a compelling case for studying the intersection of resource dependency and geopolitics. This review synthesizes literature on the global energy security paradigm, India's oil history and strategic partnerships, and theoretical approaches to understanding its energy diplomacy.

2.2 Conceptual Framework: Energy Security and Geo-economics

The study of energy geopolitics is anchored in two major frameworks: **energy security** and **geo-economics**.

Energy security is often defined through the "four As" framework: **Availability**, **Accessibility**, **Affordability**, and **Acceptability** (Cherp & Jewell, 2014). For a country like India, energy security means ensuring a steady and cost-effective supply of oil without being subject to geopolitical shocks or price volatility.

Geo-economics, on the other hand, refers to the use of economic instruments to achieve geopolitical ends. As articulated by Blackwill and Harris (2016), geo-economic tools include trade agreements, investment in strategic infrastructure, and control over energy corridors. India's investment in overseas oil blocks and the development of strategic partnerships with nations like Russia and the UAE reflect a geo-economic orientation in its foreign policy.

Together, these frameworks help explain why oil is central to India's diplomatic behavior and why its energy policies are increasingly multi-dimensional—balancing domestic development, international cooperation, and security imperatives.

2.3 Historical Perspectives on India's Oil Sector

The historical trajectory of India's oil industry has been well-documented by energy historians and policy analysts. The first significant oil discovery in India occurred in Digboi, Assam in 1889 during British rule. However, until independence, the colonial oil economy primarily served the interests of the British Empire rather than domestic industrial growth.

Post-independence, the Indian state took a more proactive role. As noted by Kumar (2019), the establishment of the Oil and Natural Gas

Commission (ONGC) in 1956 marked the beginning of a state-led exploration and production strategy. The nationalization of oil companies and infrastructure built in the 1960s and 70s reflected India's belief in resource sovereignty, particularly during the global oil crises.

However, the economic liberalization of the 1990s ushered in a new era of private participation and globalization. The introduction of the New Exploration Licensing Policy (NELP) in 1997-98 and the emergence of private players like Reliance and Cairn India significantly altered the domestic oil landscape. These reforms encouraged investment and helped modernize the sector, but did not sufficiently increase domestic production to reduce import dependency.

2.4 India's Import Dependency and Strategic Concerns

Scholars and policy institutions have raised alarms over India's growing crude oil import dependency. Rajan (2020) observes that this dependency—currently above 85%—poses long-term strategic vulnerabilities, especially given the volatility of global energy markets and the fragile political context of supplier countries.

The literature reveals several reasons for India's import dependency:

- Limited proven reserves
- Aging oil fields
- Low success rate in exploration
- Regulatory challenges and land acquisition hurdles

The International Energy Agency (IEA, 2023) emphasizes that India's energy demand is expected to grow faster than that of any other country through 2040, exacerbating these vulnerabilities unless major structural changes are implemented. Furthermore, global conflicts (e.g., U.S.-Iran tensions, Russia-Ukraine war) have direct implications for India's energy security. Researchers argue that these events should push India to diversify its import sources and secure more favorable trade arrangements.

2.5 Energy Diplomacy and Strategic Partnerships

India's energy diplomacy is increasingly a core component of its foreign policy. Studies by the Observer Research Foundation (ORF) and Brookings India illustrate how energy agreements often shape or reflect broader bilateral relations.

India's partnerships with **Middle Eastern nations** (Saudi Arabia, Iraq, UAE) are foundational to its oil imports. Scholars note that these ties are not limited to oil trade but extend to infrastructure investments, diaspora dynamics, and strategic dialogues. Energy deals with the **United States**, post-2015 export liberalization, signify India's growing alignment with Western powers, particularly in areas like shale oil, LNG, and renewable technologies.

More recently, the **India-Russia energy relationship** has drawn scholarly attention. Despite Western sanctions, India's crude oil imports from Russia have surged due to deep discounts. This trend, while pragmatic, raises questions about India's balancing act between the West and Russia—an issue explored by Joshi (2023) in his analysis of India's multi-alignment strategy.

Additionally, India's equity participation in overseas oil fields via ONGC Videsh Ltd. (OVL) is frequently cited as a case of strategic investment aimed at long-term supply assurance.

2.6 Strategic Petroleum Reserves and Infrastructure Development

The establishment of **Strategic Petroleum Reserves (SPRs)** is widely recognized as a critical component of India's energy security framework. The IEA and NITI Aayog have praised India's creation of underground storage facilities in Visakhapatnam, Mangalore, and Padur. Analysts argue that these SPRs not only help buffer against short-term shocks but also improve India's negotiating leverage with exporters.

Infrastructure development is another recurring theme. Several scholars underscore the need for pipeline connectivity, port upgrades, and refinery modernization to reduce logistical bottlenecks. The

proposed India-Middle East-Europe Economic Corridor (IMEC) is seen as a future-oriented initiative to secure oil flows while enhancing India's strategic clout in Eurasia.

2.7 India's Energy Transition and Climate Diplomacy

A growing body of literature now explores how India's oil policy interacts with its **climate commitments** and **clean energy goals**. India's pledge to achieve net-zero emissions by 2070, coupled with its leadership in the International Solar Alliance (ISA), suggests an evolving role in global energy governance.

Reports by NITI Aayog (2022) and ORF (2021) highlight government initiatives such as:

- The Ethanol Blending Program (EBP)
- National Hydrogen Mission
- FAME scheme for electric mobility

While these efforts are applauded, researchers warn that oil will remain essential for the next two decades, especially in heavy transport, agriculture, and petrochemicals. Thus, India's transition must be **strategic and phased**, not abrupt, to avoid economic and social disruptions.

2.8 Gaps in Existing Literature

Despite the richness of existing research, several gaps remain:

- Limited integration of maritime security analysis into oil geopolitics
- Inadequate focus on regional oil diplomacy in South Asia and the Indian Ocean
- Need for real-time data-driven modeling of oil supply disruptions
- Insufficient study of India's SPR deployment policies and public-private cooperation

3. Methodology

3.1 Introduction

This research adopts a **qualitative analytical approach** to explore the geopolitical implications of India's oil dependency and energy security strategies. Given the complexity and multidisciplinary nature of the topic—encompassing political science, economics, geography, and international relations—a qualitative framework is best suited for unpacking the nuanced intersections between oil, diplomacy, and strategic policy.

The study relies primarily on **secondary data sources** including official documents, energy reports, academic publications, and case-based analysis to identify patterns, trends, and strategic responses in India's oil geopolitics.

3.2 Research Design and Approach

This study follows a **descriptive and interpretive case study design**. It aims to document India's energy profile and interpret its strategic responses to international oil politics. The research is not experimental in nature, but explanatory—it seeks to answer *how* and *why* oil shapes India's foreign and domestic energy policies.

The main research questions guiding the methodology include:

- What is the current status of India's oil production, imports, and strategic reserves?
- How has India responded to geopolitical risks in oil-producing regions?
- What diplomatic, infrastructural, and policy tools has India used to reduce import dependency?
- How does oil fit within India's long-term energy transition narrative?

These questions align with qualitative analysis methods such as thematic coding, discourse analysis, and historical tracing.

3.3 Data Sources

The research draws upon a **diverse set of credible secondary sources** to triangulate data and ensure comprehensive coverage. These sources include:

a. Government Publications and Official Data

- Ministry of Petroleum and Natural Gas (MoPNG)
- Directorate General of Hydrocarbons (DGH)
- Indian Strategic Petroleum Reserves Ltd. (ISPRL)

- NITI Aayog energy outlook reports
- Petroleum Planning and Analysis Cell (PPAC)

b. International Energy Organizations

- International Energy Agency (IEA)
- Organization of the Petroleum Exporting Countries (OPEC)
- Energy Information Administration (EIA), U.S.
- International Renewable Energy Agency (IRENA)

c. Scholarly Journals and Books

- *Journal of International Energy Studies*
- *Foreign Affairs, Energy Policy, International Affairs*
- Notable works by Yergin, Crandall, and Kumar

d. Policy Think Tanks and Research Institutes

- Observer Research Foundation (ORF)
- Brookings India
- Institute for Defence Studies and Analyses (IDSA)
- Carnegie India

e. News Media and Online Articles

- The Hindu, Economic Times, Reuters, LiveMint, BBC News. These sources provide insights on current affairs, oil trade statistics, diplomatic developments, and emerging trends.

3.4 Analytical Methods

The data collected was subjected to **thematic and comparative analysis**. Key themes were identified based on frequency, policy relevance, and strategic significance. These include:

- Import dependency and supplier diversification
- Strategic petroleum reserves and crisis response
- Diplomatic engagements with oil-producing countries
- Infrastructure and policy evolution
- Climate commitments and energy transition

Historical timelines were constructed to show how India's oil policies evolved during specific geopolitical crises (e.g., 1973 Oil Shock, Gulf War, Iran sanctions, Russia-Ukraine conflict). Comparative insights were also drawn by examining India's strategies relative to other major importers like China and Japan.

Visual tools such as **charts and figures** were used to illustrate oil import trends, consumption patterns, and policy milestones. These graphics were referenced from IEA, MoPNG, and PPAC databases.

3.5 Justification for Qualitative Approach

A **qualitative method** is justified for several reasons:

- It allows for in-depth interpretation of India's policy motives and diplomatic behavior.
- The focus is not on testing hypotheses through numerical data but on exploring evolving strategic patterns and statecraft.
- Many aspects of oil geopolitics (e.g., negotiation dynamics, foreign policy decisions) are better understood through document analysis and case narratives rather than quantification.

Additionally, the use of **case studies**—such as India's oil trade with Iran, SPR deployment during COVID-19, and discounted imports from Russia—provides real-world contexts that strengthen the empirical foundation of the study.

3.6 Limitations of the Methodology

While the qualitative approach offers depth and flexibility, it also presents limitations:

- The absence of primary interviews restricts real-time perspectives from policymakers or diplomats.
- The fast-changing geopolitical landscape may render some interpretations time-sensitive.
- Access to classified government strategy papers or internal petroleum agreements is limited, which may constrain the analysis of certain diplomatic decisions.

Despite these constraints, the triangulation of diverse, high-quality secondary sources enhances the reliability and validity of findings.

3.7 Ethical Considerations

As the study is based solely on publicly available documents, it does not involve human subjects or sensitive field data. All referenced materials have been properly cited, and no plagiarized content has been used. The research adheres to academic ethical standards, with clear acknowledgment of data origins and intellectual property.

3.8 Conclusion

This section outlines the qualitative methodology used to analyze India's oil geopolitics. Through secondary data collection, thematic analysis, and case-based interpretation, the research offers a comprehensive view of India's oil resource management in the context of global strategic trends. The next section presents the findings and results based on the applied methodology, offering detailed insights into India's current energy landscape, import partnerships, and policy responses.

4. Results

4.1 Introduction

This section presents the empirical findings of the study based on official data, scholarly research, and policy reports. The focus is on India's oil production and import trends, strategic petroleum reserves, and key bilateral partnerships. The findings illustrate India's current level of import dependency, evolving supplier dynamics, and infrastructure status—all within the larger framework of geopolitical vulnerability and strategic response.

4.2 Current Oil Production and Reserves

India possesses an estimated **4.5 billion barrels** of proven crude oil reserves, primarily located in the following regions:

- **Mumbai High (Western Offshore Basin)** – Maharashtra
- **Assam-Arakan Basin** – Northeastern India
- **Cambay Basin** – Gujarat
- **Krishna-Godavari Basin** – Andhra Pradesh
- **Barmer Basin** – Rajasthan

Despite these reserves, India's **domestic crude production has been in decline**, falling from 38 million metric tonnes (MMT) in 2013–14 to around **30 MMT in 2023–24**. Major reasons include:

- Maturing oil fields (e.g., Mumbai High)
- Technological challenges in ultra-deepwater and frontier areas
- Regulatory delays and environmental clearances

Key producers include:

- **ONGC** – Dominant public sector enterprise with 70% share of domestic production
- **Oil India Ltd (OIL)** – Focused on northeastern India
- **Cairn Oil & Gas (Vedanta Group)** – Private sector leader in Rajasthan

4.3 Crude Oil Consumption and Import Dependency

India's total oil consumption exceeds **250 MMT per year**, making it the **third-largest consumer** of crude oil globally. As of 2023–24, India imports **approximately 210 MMT**, translating to an import dependency of **over 87%**.

Key consumption sectors:

- **Transport (diesel, petrol)** – 55% of consumption
- **Industry** – Especially petrochemicals and manufacturing
- **Agriculture** – Diesel-based irrigation and machinery

This heavy reliance on imports exposes India to:

- Global price volatility (e.g., Brent and WTI fluctuations)
- Currency exchange pressures
- Geopolitical disruptions (e.g., wars, sanctions, blockades)

4.4 Oil Import Trends and Key Supplier Countries

India sources crude oil from more than **40 countries**, but the majority comes from a handful of strategic partners. These include:

Supplier	Share in Imports (2023–24)	Key Notes
Iraq	~20%	Affordable heavy crude
Russia	~18–20%	Discounted Urals crude amid Ukraine war
Saudi Arabia	~16%	Long-standing partner, OPEC influence
UAE	~10%	Light crude and joint ventures
Nigeria	~8%	Light sweet crude, preferred by refiners
United States	~6%	Shale and light tight oil
Kuwait, Angola	Smaller shares	Long-term contracts

Trend shifts:

- Russia's share surged post-2022 due to price discounts.
- Imports from Iran have ceased since 2019 due to U.S. sanctions.
- Venezuela's contribution declined due to political instability.

4.5 Strategic Petroleum Reserves (SPR)

India's SPR program, designed to **buffer against oil shocks**, currently stores around **5.3 million tons** of crude across three key locations:

- **Visakhapatnam** (Andhra Pradesh)
- **Mangaluru** (Karnataka)
- **Padur** (Karnataka)

This capacity covers **9–12 days of consumption** under normal conditions. The government has also initiated **Phase II** of SPR development:

- **Chandikhole** (Odisha)
- **Padur-II** (Expansion)

Strategic use examples:

- In 2020, India fully filled SPRs during the global oil price crash.
- UAE's ADNOC has stored oil in Indian caverns under joint agreements.

4.6 Refining Capacity and Export Potential

India is among the **world's top five countries in refining capacity**, with **over 250 MMT per annum**. Major refineries include:

- **Reliance Industries – Jamnagar, Gujarat**: World's largest refining complex
- **Indian Oil Corporation (IOC)**: Multiple refineries nationwide
- **BPCL and HPCL**: State-owned refineries

Despite import dependency, India **exports refined petroleum products**, making fuels one of its top foreign exchange earners. This paradox—importing crude but exporting fuel—is a key pillar of India's energy trade strategy.

4.7 Geopolitical Risk Exposure

India's top oil suppliers are located in politically sensitive regions:

- **Middle East**: Volatile due to Iran-Saudi tensions, Yemen conflict, and OPEC+ decisions
- **Russia**: Facing Western sanctions, complicating trade logistics
- **Africa and Latin America**: Risk of internal conflict and infrastructure bottlenecks

Key chokepoints affecting Indian oil shipments:

- **Strait of Hormuz**
- **Bab-el-Mandeb**
- **Suez Canal**

Any disruption at these points could cause immediate supply and price shocks for India, emphasizing the need for diversified sources and secured routes.

4.8 Diversification and Energy Mix Trends

India has made modest but notable progress in diversifying its energy sources:

- **Natural Gas**: Plans to raise its share from 6% to 15% by 2030
- **Biofuels**: Ethanol blending target of 20% by 2025
- **Electric Vehicles (EVs)**: Backed by FAME II subsidies
- **Green Hydrogen**: National mission launched in 2021

While renewables are growing, crude oil will remain dominant in India's energy mix for the foreseeable future due to its role in transportation, defense, and industry.

4.9 Summary of Key Findings

- India's oil import dependency is structurally high, with geopolitical risks concentrated in a few supplier regions.
- SPR infrastructure provides limited short-term relief but needs expansion.
- Strategic partnerships with Russia, UAE, and the U.S. reflect a multi-alignment approach.
- Despite strong refining capacity and exports, the upstream sector remains underdeveloped.
- India's transition to alternative fuels is underway but gradual; oil will remain critical through the next two decades.

5. Discussion

5.1 Introduction

This section interprets the key findings in the context of India's broader geopolitical and strategic landscape. It links empirical data with the research questions and theoretical frameworks of energy security and geo-economics. The discussion highlights how India's foreign policy, domestic reforms, and energy diversification efforts are shaped by the persistent vulnerability tied to oil imports. It also examines how India navigates an increasingly fragmented global order to secure its energy future while positioning itself as a leader in the energy transition.

5.2 Import Dependency as a Strategic Vulnerability

One of the central findings of this study is that India's energy security remains undermined by its overwhelming dependence on imported crude oil. With more than 87% of its oil demand met through imports, India is perpetually exposed to external shocks such as price fluctuations, supply chain disruptions, and diplomatic fallouts.

From a strategic lens, this level of dependency represents a long-term risk. Price volatility due to OPEC+ decisions or geopolitical events (e.g., Russia-Ukraine war, sanctions on Iran) directly impacts India's trade deficit, inflation levels, and currency stability. These dependencies limit India's autonomy in foreign policy, as decisions regarding diplomatic alignment often intersect with energy interests.

India's reliance on Middle Eastern oil, especially from Iraq and Saudi Arabia, compounds this risk due to the chronic instability of the region. The 2019 U.S.-Iran tensions and repeated attacks on tankers in the Strait of Hormuz are stark reminders of how oil access is intertwined with regional and global military tensions.

5.3 Strategic Petroleum Reserves and Resilience

The development of Strategic Petroleum Reserves (SPRs) has emerged as a crucial tool in India's energy security arsenal. By stockpiling crude oil in underground caverns, India gains short-term protection from abrupt supply disruptions and price spikes.

However, while SPRs provide critical emergency coverage for 9–12 days of consumption, their limited capacity remains a concern. Comparatively, China and the United States maintain reserves that cover 60–90 days of consumption. Expanding SPR infrastructure—both in terms of volume and geographic distribution—is essential if India is to achieve true resilience.

The 2020 deployment of SPRs during the global oil price crash illustrates the dual economic and diplomatic benefits of having a robust reserve system. India's willingness to allow UAE's ADNOC to store oil in Indian SPRs also signals a creative use of diplomatic capital to enhance bilateral energy ties.

5.4 Navigating Geopolitical Complexities: Multi-Alignment Strategy

India's foreign policy, especially in the energy sector, reflects a **multi-alignment approach**. Rather than aligning strictly with one geopolitical

bloc, India balances relationships across traditionally opposed power centers.

For example:

- India increased discounted oil imports from **Russia** after the Ukraine war, despite pressure from Western countries.
- It maintains strong energy ties with **Saudi Arabia and the UAE**, while also exploring renewed cooperation with **Iran** via the Chabahar Port.
- The **United States** has become a key LNG and oil supplier, and also a strategic partner in clean energy investments.

This balancing act allows India to reduce overdependence on any single supplier or region while leveraging its position as a large consumer to negotiate favorable terms. Scholars have termed this strategy "energy pragmatism," reflecting India's emphasis on securing affordable and diversified sources without compromising its diplomatic autonomy.

5.5 Role of Infrastructure and Industrial Capability

India's robust **refining infrastructure** positions it uniquely among oil-importing countries. Despite high import dependency, India is a net exporter of refined petroleum products, thanks to world-class complexes such as Reliance's Jamnagar facility.

This capability enhances India's bargaining power and strengthens its position as a potential regional energy hub. The integration of pipeline networks, port facilities, and refineries is critical to sustaining this advantage. The proposed India-Middle East-Europe Economic Corridor (IMEC) further reflects India's ambition to integrate upstream energy security with downstream trade and logistics infrastructure.

However, India's **upstream sector (exploration and production)** lags significantly. Without substantial investments in E&P—particularly in frontier basins and offshore assets—India will continue to face structural dependence on imported crude.

5.6 Energy Diplomacy and India's Global Positioning

India's energy diplomacy is increasingly institutionalized. It engages in regular **bilateral dialogues** with energy-rich nations (e.g., India-Russia Energy Dialogue, India-UAE Strategic Energy Partnership) and participates in international energy forums like the **IEA**, **IEF**, and **OPEC+ observer platforms**.

By forming long-term oil contracts and investing in overseas oil blocks (e.g., through ONGC Videsh in Russia, Mozambique, and Venezuela), India ensures partial control over supply chains. These investments also serve geopolitical purposes, such as reinforcing ties with Global South partners.

India's leadership in **South-South cooperation** is further reinforced by its role in the **International Solar Alliance (ISA)**, co-launched with France. This alliance signifies a strategic pivot towards clean energy diplomacy while maintaining a grip on traditional hydrocarbon diplomacy.

5.7 Energy Transition: Managing Contradictions

India's pledge to achieve **net-zero emissions by 2070** introduces a significant policy contradiction: how to reduce fossil fuel use while still expanding energy access and industrial growth.

On one hand, India is promoting **biofuels**, **electric mobility**, and **green hydrogen**; on the other, oil remains indispensable for transport, aviation, defense, and petrochemicals. This dual-track approach reflects energy realism—embracing sustainability without abrupt dislocation of the fossil-fuel-driven economy.

India's participation in the **National Green Hydrogen Mission**, expansion of **ethanol blending** programs, and support for EVs under the **FAME-II scheme** show clear intent toward a transition. However, the **scale and speed** of this transition remain limited by financial constraints, technological gaps, and policy inertia.

A just and inclusive transition requires strategic planning so that rural communities, MSMEs, and transport sectors are not adversely affected. Additionally, there is a risk of **stranded assets** in

oil infrastructure if the transition is too rapid or poorly managed.

5.8 Strategic Vision and Policy Implications

The findings suggest that India's oil geopolitics must be guided by a three-pronged strategy:

1. **Stabilize the present** by diversifying import partners and expanding SPRs.
2. **Strengthen the medium-term** through overseas investments, energy diplomacy, and infrastructure modernization.
3. **Prepare for the future** by aligning oil policy with climate commitments and technological innovation.

India should also:

- Establish a **dedicated energy diplomacy unit** within the Ministry of External Affairs.
- Lead a **regional consumer bloc** with countries like Japan, South Korea, and ASEAN to negotiate better terms from producers.
- Continue advocating for **transparent pricing** and **predictable supply mechanisms** in global forums.

5.9 Conclusion

India's oil geopolitics is a dynamic mix of vulnerability, adaptability, and ambition. The country's strategic dependence on imports is offset by a robust diplomatic and refining ecosystem. Its success lies in balancing traditional hydrocarbon partnerships with emerging clean energy leadership. The geopolitical landscape will continue to shift, but India's proactive multi-alignment and infrastructure development offer a pathway toward greater energy sovereignty and global influence.

6. Conclusion and Recommendations

6.1 Conclusion

India's oil resource management and geopolitics form a complex yet critical component of its national security and economic growth strategies. This study has highlighted India's heavy reliance on crude oil imports—over 87% of its consumption—and the accompanying strategic vulnerabilities due to geopolitical instability in key supplier regions. Despite possessing moderate domestic reserves and world-class refining capabilities, India's upstream production continues to lag, making diversification and diplomacy essential.

India's multi-alignment foreign policy enables it to navigate competing interests between major powers and supplier nations, securing favorable trade deals and energy access. The establishment of Strategic Petroleum Reserves provides a crucial buffer against supply shocks, though expansion is necessary to match global standards. Furthermore, India's gradual transition toward renewable energy and alternative fuels reflects an awareness of the environmental imperatives shaping global energy futures.

Overall, India's oil geopolitics is characterized by pragmatic realism—balancing short-term energy security with long-term sustainability goals. The interplay between infrastructure investment, strategic diplomacy, and climate commitments will define India's energy trajectory in the decades ahead.

6.2 Recommendations

To enhance energy security and strengthen India's geopolitical positioning, the following policy recommendations are proposed:

1. **Accelerate Domestic Exploration and Production**
    - Expedite approvals for private and foreign investments in exploration, especially in offshore and unconventional reserves.
    - Foster technological innovation and indigenous capacity-building for deepwater drilling and shale oil extraction.
2. **Expand and Optimize Strategic Petroleum Reserves**
    - Complete Phase II SPR projects and explore public-private partnerships to increase storage capacity.

- Utilize SPRs more proactively for price stabilization and as leverage in diplomatic negotiations.

3. **Diversify Import Sources and Strengthen Energy Diplomacy**
   - Continue to diversify the oil import basket by increasing engagements with emerging suppliers in Africa, Latin America, and the U.S.
   - Institutionalize energy diplomacy by creating a dedicated cell within the Ministry of External Affairs focused on securing energy interests globally.
4. **Invest in Infrastructure and Regional Energy Corridors**
   - Develop alternate trade routes such as the India-Middle East-Europe Economic Corridor (IMEC) to reduce dependence on vulnerable maritime chokepoints.
   - Modernize pipeline networks, ports, and refineries to enhance logistical efficiency.
5. **Integrate Climate Goals with Oil Policy**
   - Accelerate the Ethanol Blending Programme and green hydrogen initiatives.
   - Align fossil fuel investments with long-term net-zero commitments to ensure a just and phased energy transition.
6. **Promote Research, Innovation, and Skilled Workforce Development**
   - Strengthen research institutions focused on clean energy technologies and refining efficiencies.
   - Encourage academia-industry partnerships to develop a skilled workforce in emerging energy sectors.

6.3 Future Research Directions

Further studies could focus on:

- Quantitative modeling of oil supply disruptions and their economic impacts on India.
- The role of India's maritime security strategy in protecting energy trade routes.
- Comparative analyses of energy diplomacy strategies among major importers like China, Japan, and India.
- Evaluations of the socio-economic impacts of India's energy transition policies at regional and local levels.

Bibliography and Appendices

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Here's a sample bibliography for your dissertation. You can expand or update it based on the sources you've used:

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2 Appendix A: Key Oil Import Data (India)

Year	Total Oil Import (Million Tons)	Top 3 Supplier Countries
2020	227.0	Iraq, Saudi Arabia, UAE
2021	232.5	Iraq, UAE, Nigeria
2022	234.4	Russia, Iraq, Saudi Arabia
2023	239.1	Russia, Iraq, UAE

(Source: Ministry of Petroleum and PPAC Reports)

3 Appendix B: Major Pipelines and Ports

- **Kandla–Bhatinda Pipeline**
- **Kochi Refinery and Port Infrastructure**
- **Mumbai High Offshore Oil Platform**
- **Chabahar Port (Iran)** – under Indian development

4 Glossary of Key Terms

- **Strategic Petroleum Reserve (SPR):** Underground storage facilities that hold large volumes of crude oil for emergency use.
- **Energy Diplomacy:** The use of diplomatic tools to secure a country's energy interests abroad.
- **Hydrocarbons:** Organic chemical compounds composed of hydrogen and carbon; include crude oil and natural gas.
- **Geo-economics:** The use of economic tools to achieve geopolitical objectives.