

Resource Nationalism in Energy Transition: What It Means for Bangladesh

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Introduction

Resource nationalism refers to the strategic actions taken by governments to assert control over their natural resources, often prioritizing national interests over global cooperation. This phenomenon encompasses measures such as restricting exports, nationalizing resource industries, and imposing higher taxes or royalties on foreign investors. In the context of the global energy transition, resource nationalism is becoming increasingly significant due to the growing demand for critical minerals—such as lithium, cobalt, nickel, and rare earth elements—that are essential for renewable energy technologies like solar panels, wind turbines, and electric vehicle batteries. The emergence of resource nationalism is fueled by geopolitical competition, economic incentives, and national security concerns. For instance: countries like China dominate the refining and processing of critical minerals, leveraging their position for geopolitical influence²; resource-rich nations such as Indonesia have implemented policies like export bans on unprocessed nickel to ensure domestic value addition³.

While resource nationalism can bolster domestic industries and revenue generation, it poses challenges to global supply chains and collaborative climate action. As the energy transition

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² “Geopolitics of the Energy Transition: Critical Materials,” n.d., <https://www.irena.org/Digital-Report/Geopolitics-of-the-Energy-Transition-Critical-Materials>.

³ “Securing Critical Minerals for Energy Transition Requires Collective Action,” World Economic Forum, September 10, 2024, <https://www.weforum.org/stories/2024/02/securing-critical-minerals-energy-transition-collective-action/>.

accelerates, competition for these resources could exacerbate supply-demand imbalances, delay decarbonization efforts, and heighten geopolitical tensions⁴.



Image Source: Engineering News

Bangladesh's Energy Landscape

Bangladesh's energy sector is characterized by a heavy reliance on fossil fuels and imported energy resources. Over 80% of its power generation comes from natural gas, oil, coal, and diesel. However, dwindling domestic gas reserves have compelled the country to increasingly depend on imported liquefied natural gas (LNG), coal, and electricity from neighboring India⁵. This dependence has created vulnerabilities, such as, the country spends \$5.7 billion annually on fuel

⁴ Żuk, Piotr, Daniele Conversi, and Paweł Żuk. "Conceptualising Energy Nationalism in the Context of Climate Change: Framework and Review." *Frontiers in Energy Research* 12 (June 7, 2024). <https://doi.org/10.3389/fenrg.2024.1349581>.

⁵ Khan, Sharier. "Excessive Import Dependence, Deep Financial Mismanagement Behind Load Shedding." *The Business Standard*, September 14, 2024. <https://www.tbsnews.net/bangladesh/excessive-fuel-import-deep-financial-mismanagement-behind-load-shedding-940861>.

imports for power generation⁶. Financial constraints have led to power shortages despite having a theoretical generation capacity of 24,000 MW⁷

In terms of renewable energy, Bangladesh has set ambitious goals but has struggled to meet them:

- The government aims to generate 10% of electricity from renewables by 2025 and 15% by 2030⁸.
- Current renewable energy contribution stands at only about 3%, primarily from solar power installations⁹

To address these challenges, Bangladesh is focusing on diversifying its energy mix through investments in solar and wind energy projects. For example, over 6 million solar home systems have been installed in off-grid areas. Wind power projects with a capacity of 149 MW are under development¹⁰.

Objective of the Commentary

This commentary aims to explore how global competition for critical minerals—driven by resource nationalism—could impact Bangladesh’s energy security and transition to renewable energy. Specifically, it will assess the risks posed by supply chain disruptions in critical minerals essential for renewable technologies. It will highlight the need for Bangladesh to diversify its energy sources and reduce dependency on imports. Finally, it will provide policy recommendations for strengthening domestic capabilities and fostering international partnerships.

2.The Global Context of Resource Nationalism

2.1 What Is Resource Nationalism?

Resource nationalism is the tendency of governments to assert greater control over natural resources within their territories, often prioritizing national interests over global trade and

⁶ ibid

⁷ ibid

⁸ Bangladesh. “Bangladesh’s Energy Transition Journey so Far,” n.d. <https://bangladesh.un.org/en/260959-bangladesh%E2%80%99s-energy-transition-journey-so-far>.

⁹ ibid

¹⁰ ibid

corporate access. This approach is particularly evident in the energy sector, where countries seek to maximize economic benefits, ensure resource security, and leverage geopolitical influence. Resource nationalism manifests through measures such as export restrictions, state ownership of resource industries, and increased taxes or royalties on foreign investors¹¹.

In the context of the energy transition, resource nationalism has gained prominence due to the critical role of minerals like lithium, cobalt, nickel, and rare earth elements (REEs) in renewable energy technologies. Examples include:

- **Indonesia’s Nickel Export Ban:** Indonesia banned exports of unprocessed nickel in 2020 to boost domestic refining and manufacturing industries, essential for electric vehicle (EV) batteries¹².
- **China’s Export Controls:** China, which dominates the processing of REEs and other critical minerals, imposed export restrictions on gallium and germanium in 2023, citing national security concerns. These materials are vital for semiconductors and renewable technologies¹³.
- **Chile’s Lithium Strategy:** In 2023, Chile announced plans to nationalize its lithium industry to retain greater control over this strategic resource critical for EV batteries¹⁴.

Countries are also securing critical minerals through aggressive strategies: China controls over 60% of global REE production and 90% of REE processing. It has invested heavily in overseas mining projects in countries like Australia, Chile, and the Democratic Republic of Congo (DRC)¹⁵. In response to China’s dominance, the US passed the Inflation Reduction Act (2022), investing in

¹¹ “Explaining Resource Nationalism | Global Policy Journal,” n.d.

<https://www.globalpolicyjournal.com/articles/global-commons-and-environment/explaining-resource-nationalism-0>.

¹² rkremzner@newlinesinstitute.org. “The Security, Sustainability, Responsibility, and Geopolitics of Critical Mineral Supply Chains for Clean Energy Technology - New Lines Institute.” New Lines Institute, May 20, 2024. <https://newlinesinstitute.org/environmental-challenges/the-security-sustainability-responsibility-and-geopolitics-of-critical-mineral-supply-chains-for-clean-energy-technology/>.

¹³ “Chinas Export Controls on Critical Minerals | FTI,” n.d. <https://www.fticonsulting.com/insights/articles/chinas-export-controls-critical-minerals-gallium-germanium-graphite>.

¹⁴ Vicknesan, S. “The Scramble for Rare Minerals Is Set to Rock the World’s Geopolitical Scenario.” *The Secretariat*, August 9, 2024. <https://thesecretariat.in/article/the-scramble-for-rare-minerals-is-set-to-rock-the-world-s-geopolitical-scenario>.

¹⁵ IEA. “Executive Summary – the Role of Critical Minerals in Clean Energy Transitions – Analysis - IEA,” n.d. <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary>.

domestic mining and refining projects. Similarly, the EU launched its Critical Raw Materials Act (2023) to diversify supply chains and reduce reliance on China¹⁶.

2.2 Impact on Global Energy Transition

The global competition for critical minerals is reshaping geopolitics and creating new vulnerabilities in energy supply chains. These minerals are indispensable for decarbonization technologies but are geographically concentrated in a few countries:

- **Lithium:** Over 80% of global lithium reserves are located in Australia, Chile, Argentina (the "Lithium Triangle"), and China.
- **Cobalt:** The DRC supplies 70% of global cobalt production, with Chinese companies controlling 80% of its refining.
- **Rare Earth Elements:** China produces 60% of REEs but processes nearly 90%, giving it significant leverage over global supply chains¹⁷.

This concentration creates risks such as:

1. **Supply Chain Disruptions:** Export restrictions can destabilize markets. For example:
 - In 2010, China temporarily halted REE exports to Japan during a territorial dispute.
 - In 2023, China restricted graphite exports critical for EV batteries¹⁸.
2. **Price Volatility:** Limited suppliers lead to price fluctuations. For instance, lithium prices surged by over 400% between 2021 and 2022 due to soaring demand for EVs¹⁹.
3. **Geopolitical Tensions:** Nations with resource dominance gain strategic advantages. For example:

¹⁶ Goldman Sachs. "Resource Realism: The Geopolitics of Critical Mineral Supply Chains," September 13, 2023. <https://www.goldmansachs.com/insights/articles/resource-realism-the-geopolitics-of-critical-mineral-supply-chains>.

¹⁷ Hache, Emmanuel. "Predicted Scarcity of Metals and Rare Elements Are Causing Geopolitical Tensions." Polytechnique Insights, May 13, 2021. <https://www.polytechnique-insights.com/en/braincamps/geopolitics/oil-to-lithium-the-energy-transition-is-shuffling-the-cards-for-global-politics/predicted-scarcity-of-metals-and-rare-elements-are-causing-geopolitical-tensions/>.

¹⁸ Lawal, Shola. "Tech Wars: Why Has China Banned Exports of Rare Minerals to US?" *Al Jazeera*, December 4, 2024. <https://www.aljazeera.com/news/2024/12/4/tech-wars-why-has-china-banned-exports-of-rare-minerals-to-us>.

¹⁹ *ibid*

- China’s control over REEs has prompted Western nations to diversify supply chains.
- The US-EU partnership seeks to counterbalance China's influence through investments in alternative sources like Australia and Africa²⁰.

These dynamics could delay energy transitions by creating bottlenecks in deploying clean technologies.

Examples of Export Restrictions

Several countries have used export controls as tools of resource nationalism. For instance, Indonesia’s nickel export ban aims to develop domestic EV battery production but has disrupted global supply chains²¹. Beyond gallium and germanium restrictions, China has also limited graphite exports crucial for EV batteries²². Political instability in the DRC threatens cobalt supplies essential for battery production²³.

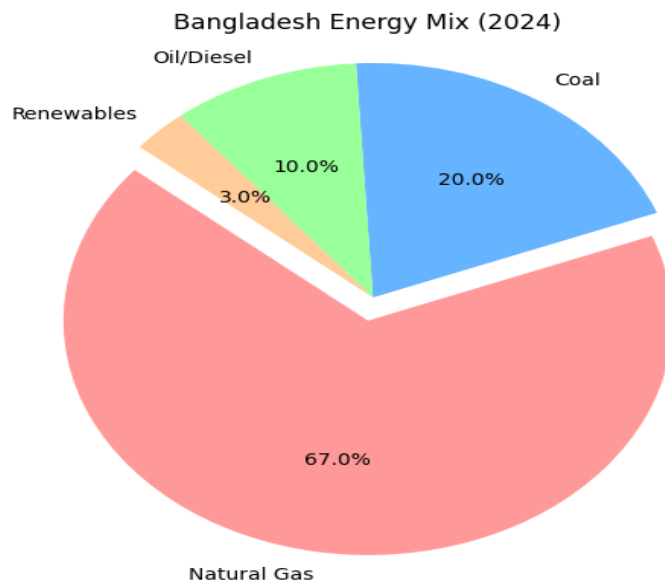


Figure: Bangladesh's current energy mix.

²⁰ ibid

²¹ ibid

²² ibid

²³ ibid

3. Bangladesh's Energy Security Challenges

3.1 Current Energy Dependency

Bangladesh's energy sector is heavily reliant on fossil fuels, with natural gas, coal, and oil/diesel accounting for over 97% of the country's electricity generation. This dependency has helped achieve near-universal electrification but has created significant vulnerabilities due to import reliance and global price volatility.

Overview of Dependency

- **Natural Gas:** Natural gas constitutes 67% of Bangladesh's energy mix, but domestic production is declining. Approximately 26% of the country's natural gas is now imported as Liquefied Natural Gas (LNG), increasing exposure to international market fluctuations²⁴.
- **Coal:** Coal accounts for 20% of the energy mix, with most of it being imported. The country has invested in coal-fired power plants despite global shifts away from coal due to environmental concerns²⁵.
- **Oil/Diesel:** Oil and diesel contribute 10%, primarily for transport and peaking power plants. These are entirely imported, making them highly susceptible to price surges in the global market²⁶.
- **Renewables:** Renewable energy sources, such as solar and wind, make up only 3% of the total energy mix. While over six million solar home systems have been deployed, large-scale renewable projects remain underdeveloped due to policy and financial barriers.

²⁴ Koons, Eric. "Bangladesh's Energy Scenario in 2024." Energy Tracker Asia, June 11, 2024.

<https://energytracker.asia/bangladesh-energy-scenario/>.

²⁵ ibid

²⁶ Issue-I, St Anniversary. "Energy Price Fluctuations and Implications for Bangladesh." The Financial Express, July 5, 2024. <https://thefinancialexpress.com.bd/views/energy-price-fluctuations-and-implications-for-bangladesh>.

Vulnerabilities

1. **Price Volatility:** The Russia-Ukraine war and post-COVID recovery have driven up global energy prices. For instance:
 - LNG prices surged to \$40/MMBtu in 2022, forcing Bangladesh to suspend spot market purchases²⁷.
 - Rising oil prices have worsened the balance of payments, contributing to inflation exceeding 9% since mid-2022²⁸.
2. **Supply Chain Disruptions:** Global supply chain issues have further strained Bangladesh's energy imports. For example:
 - Delays in coal shipments have caused frequent power outages.
 - Dependence on imported components for renewable energy installations (e.g., solar panels) adds another layer of vulnerability.
3. **Economic Strain:** High import bills for fossil fuels deplete foreign reserves, which stood at \$19.98 billion in April 2024—down from \$46 billion in 2021. This limits the government's ability to invest in renewable energy infrastructure²⁹.

3.2 Implications of Global Resource Competition

The global competition for critical minerals such as lithium, cobalt, and rare earth elements (REEs)—essential for renewable technologies—poses additional challenges for Bangladesh's energy transition.

²⁷ *ibid*

²⁸ *ibid*

²⁹ “Bangladesh’s IEPMP Raises More Questions Than It Answers | IEEFA,” n.d.
<https://ieefa.org/resources/bangladeshs-iepmp-raises-more-questions-it-answers>.

Impact on Renewable Technology Access

1. **Dependence on Imports:** Bangladesh lacks domestic reserves of critical minerals required for solar panels, wind turbines, and EV batteries. This dependence makes the country vulnerable to:
 - Export restrictions by resource-rich nations (e.g., China's graphite export ban in 2023).
 - Price surges due to growing global demand; for instance, lithium prices increased by over 400% between 2021 and 2022.
2. **Geopolitical Risks:** Countries like China dominate the processing of REEs (90% globally), creating a bottleneck in supply chains that could disadvantage smaller economies like Bangladesh.

Risks of Being Sidelined

- **Limited Bargaining Power:** As a developing nation with modest economic leverage, Bangladesh risks being sidelined in securing critical minerals amidst fierce competition from larger economies like the US, EU, and India.
- **Technological Dependency:** The country relies on imports not only for raw materials but also for renewable technology components (e.g., solar panels). High import duties (up to 58%) further hinder affordability and adoption.

Broader Implications

The lack of access to critical minerals could delay Bangladesh's renewable energy goals; by 2040, the government aims to generate 40% of electricity from renewables. However, achieving this would require significant imports of critical materials and technology—both at risk due to resource nationalism.

4. The Role of Diversification in Energy Security

4.1 Diversifying Energy Sources

Bangladesh's heavy reliance on imported fossil fuels and renewable energy components has created significant vulnerabilities in its energy sector. Diversifying energy sources is critical for reducing dependency on imports, ensuring energy security, and achieving sustainable growth.

Importance of Reducing Reliance on Imports

1. **Economic Stability:** Importing fossil fuels like LNG, coal, and oil places a heavy burden on Bangladesh's foreign reserves. For instance, the country spends \$5.7 billion annually on fuel imports, which has strained its economy amid rising global energy prices.
2. **Energy Security:** Dependency on imports exposes Bangladesh to supply chain disruptions and geopolitical risks. For example, the Russia-Ukraine war caused LNG prices to spike to \$40/MMBtu in 2022, forcing Bangladesh to suspend spot market purchases and endure power shortages.
3. **Environmental Benefits:** Transitioning to domestic renewable energy sources can help Bangladesh achieve its climate goals, including reducing greenhouse gas emissions by 5% by 2030 under the Paris Agreement.

Expanding Domestic Renewable Energy Production

Bangladesh has significant untapped potential for renewable energy:

- **Solar Energy:** With an average solar insolation of 5 kWh/m²/day, Bangladesh could generate up to 50 GW of solar power, meeting 80% of its projected energy demand by 2041. Floating solar farms on ponds and shallow water areas could add another 40 GW.
- **Wind Energy:** Recent studies by the National Renewable Energy Laboratory (NREL) indicate that Bangladesh has a wind power potential of up to 150 GW, particularly along its 724-kilometer coastline. Projects like the 60 MW Cox's Bazar wind farm and upcoming plants in Sirajganj and Bagerhat highlight growing interest in this sector.
- **Biomass:** Biomass-based energy from agricultural residues and organic waste could provide a sustainable alternative for rural electrification while reducing dependency on imported fuels.

Potential for Offshore Wind

Offshore wind presents a promising opportunity:

- The Integrated Power and Energy Master Plan (IEPMP) envisions 6 GW of offshore wind capacity by 2041 and 15 GW by 2050.
- Feasibility studies are underway for offshore wind projects near Cox's Bazar and Matarbari.

4.2 Regional Cooperation and Partnerships

Regional cooperation is essential for securing critical minerals, renewable technologies, and cross-border energy trade to support Bangladesh's energy diversification efforts.

Opportunities for Collaboration

1. India-Bangladesh Cooperation:

- The Indo-Bangla Friendship Pipeline, inaugurated in March 2023, ensures a steady diesel supply to northern Bangladesh.
- Bangladesh imports over 2,600 MW of electricity from India through cross-border grid connections, including renewable power agreements such as the import of 1,000 MW of solar power from India in June 2024.

2. Nepal-Bhutan Hydropower:

- In November 2024, a trilateral agreement between Nepal, India, and Bangladesh enabled the export of 40 MW of hydropower from Nepal to Bangladesh via Indian territory.
- Bhutan's hydropower potential offers further opportunities for clean energy imports.

Role of International Organizations

1. IRENA (International Renewable Energy Agency):

- IRENA supports resource-sharing mechanisms and capacity-building initiatives for developing countries like Bangladesh.
- It facilitates access to funding for renewable projects through global platforms such as the Green Climate Fund.

2. **Global Biofuel Alliance (GBA):**

- Bangladesh joined the GBA during the G20 Summit in September 2023 to promote biofuel development as an alternative energy source.

3. **Asian Development Bank (ADB):**

- The ADB is funding feasibility studies for offshore wind projects in Bangladesh and supporting regional energy integration initiatives.

Benefits of Regional Cooperation

- Enhances supply chain resilience for critical minerals like lithium and cobalt required for renewable technologies.
- Reduces dependency on fossil fuel imports by leveraging regional clean energy resources.
- Strengthens geopolitical ties with neighboring countries like India, Nepal, and Bhutan while countering external influences.

5. Policy Recommendations for Bangladesh

5.1 Strengthening Domestic Capabilities

To ensure energy security and reduce dependency on imports, Bangladesh must focus on building domestic capabilities in renewable energy and critical mineral management.

Investing in Local Research and Development

- **Renewable Energy Technologies:** Bangladesh should allocate more funds to research and development (R&D) for solar, wind, and biomass technologies. For example, the fiscal year 2024-25 budget proposes a renewable energy fund to support pilot projects like battery energy storage systems and land acquisition for solar farms.

- **Capacity Building:** Developing technical expertise through partnerships with universities and private firms can help localize the production of renewable energy components like solar panels and wind turbines.
- **Waste-to-Energy Projects:** Expanding waste-to-energy initiatives can reduce urban waste while generating clean energy. For instance, biogas plants could convert organic waste into renewable energy, as highlighted by recent waste management initiatives.

Exploring Domestic Mineral Reserves

Bangladesh has untapped mineral resources that could contribute to its energy transition:

- **Coal and Limestone:** The Geological Survey of Bangladesh estimates that the country has over \$2.26 trillion worth of mineral resources, including 2.5 billion tons of limestone and significant coal reserves in districts like Dinajpur³⁰.
- **Recycling Critical Materials:** Recycling initiatives for e-waste and used batteries could help recover critical materials like lithium, cobalt, and nickel. The government’s National 3R Strategy emphasizes recycling as a key pillar for sustainable resource management.

5.2 Strategic Partnerships

Bangladesh should actively pursue international collaborations to secure critical minerals and renewable technologies while participating in global forums addressing resource nationalism.

Building Alliances with Resource-Rich Countries

1. Bilateral Agreements:

- Collaborations with countries like Australia and Indonesia could secure access to critical minerals such as lithium and nickel. Australia’s \$20 billion clean energy investment plan offers opportunities for partnerships in low-emission technologies³¹.

³⁰ BSS. “Mineral Resource’s Proper Use Can Help Country Reap Huge Benefits | News,” n.d. <https://www.bssnews.net/news/226202>.

³¹ ibid

- The Quad’s mineral security initiatives provide a potential platform for Bangladesh to engage with resource-rich nations like the US, Japan, and India to diversify its supply chains.

2. Regional Energy Trade:

- Bangladesh’s growing energy cooperation with India, Nepal, and Bhutan highlights the benefits of regional partnerships. For example:
 - Nepal exports hydropower to Bangladesh via India under a trilateral agreement.
 - India supplies over 2,600 MW of electricity to Bangladesh through cross-border grids.

Participating in Global Forums

1. International Renewable Energy Agency (IRENA):

- IRENA can support Bangladesh by facilitating access to funding mechanisms like the Green Climate Fund and promoting knowledge-sharing on renewable technologies.

2. Global Biofuel Alliance (GBA):

- As a member of the GBA since 2023, Bangladesh can explore biofuel development as an alternative energy source.

3. Asian Development Bank (ADB):

- ADB’s initiatives on critical minerals supply chains offer technical assistance for developing inclusive and sustainable resource management strategies.

Benefits of Strategic Partnerships

- Ensures long-term access to critical minerals essential for renewable technologies.
- Mitigates risks associated with global supply chain disruptions caused by resource nationalism.

- Attracts foreign direct investment (FDI) in renewable energy infrastructure.

Conclusion

The transition to renewable energy is no longer a choice but an imperative for Bangladesh, as it seeks to balance energy security, economic growth, and climate commitments. However, the rise of **resource nationalism** poses significant challenges to this transition by disrupting global supply chains for critical minerals essential for renewable technologies. For a developing nation like Bangladesh—heavily reliant on imported fossil fuels and renewable energy components—such disruptions could exacerbate existing vulnerabilities and delay its shift to a sustainable energy future.

Bangladesh's energy future hinges on its ability to proactively address the challenges posed by resource nationalism while simultaneously diversifying its energy mix. By strengthening domestic capabilities, fostering international partnerships, and implementing forward-looking policies, Bangladesh can mitigate risks associated with global competition for critical minerals. These measures will not only enhance its energy security but also position the country as a leader in sustainable development within South Asia. In this era of geopolitical shifts and climate urgency, Bangladesh must prioritize resilience and innovation in its energy strategy—ensuring that its transition to renewables is not just an aspiration but a reality.