

Iran–Israel–United States Conflict and Bangladesh’s Energy Crisis: A Geopolitical Vulnerability Approach to Resilience and Transition

Farhad Hossain^{1,*} and Rabiul Karim²

¹Lecturer, Department of Economics, Asian University of Bangladesh, Dhaka, Bangladesh and ²Assistant Professor, Department of Economics, Asian University of Bangladesh, Dhaka, Bangladesh

Email of corresponding author: farhadru2187@aub.ac.bd

Abstract: Bangladesh imports over 90% of its primary energy, with the majority passing through the Strait of Hormuz (U.S. Energy Information Administration, 2025). The 2026 Iran-Israel war represents the most severe geopolitical energy shock in Bangladesh’s history, exceeding the 2022 Russia-Ukraine crisis in both intensity and direct transmission speed (Inquirer Plus, 2026; The Business Standard, 2026). This paper tests the hypothesis that geopolitical tensions involving Iran, Israel, and the United States transmit into Bangladesh’s domestic energy crisis through three channels: LNG spot price spikes, long-term supply contract cancellations via force majeure, and foreign exchange reserve draw downs. Using an event study methodology covering six conflict episodes between 2019 and 2026, combined with monthly time-series data (January 2020–May 2026), we find that Hormuz-related tensions explain 67.31% of the variance in Bangladesh’s quarterly LNG import bill ($R^2 = 0.67$). The 2026 war triggered a 125% spike in spot LNG prices \$20.41–\$22.51 per MMBtu within four weeks, while long term suppliers from Qatar and Oman declared force majeure, forcing emergency spot purchases at double pre war prices (The Financial Express, 2026; The Business Standard, 2026). Total additional import costs reached 830 million monthly, with projected reserve depletion of \$6 billion by end-2026 (New Age BD, 2026). The paper develops a three-tier pathway to resilience: strategic reserves (short-term), domestic gas governance reform (medium-term), and accelerated renewable transition (long-term) (Lion City Advisory Research, 2026). We conclude that for import-dependent developing economies, renewable transition is not an environmental co-benefit but a geopolitical necessity—and the 2026 war has made this imperative undeniable.

Keywords: Energy Security; Geopolitical Risk; Strait of Hormuz; LNG; Renewable Transition; Bangladesh; Iran-Israel War 2026.

1. INTRODUCTION

1.1 THE PUZZLE

On February 28, 2026, the United States and Israel launched coordinated airstrikes against Iran. Within days, Iran responded by blocking the Strait of Hormuz, the strategic chokepoint through which nearly one-fifth of global oil and natural gas trade transits (U.S. Energy Information Administration, 2025). For Bangladesh, located almost 9,000 kilometers from the Persian Gulf, the consequences were immediate, disruptive, and severe (Inquirer Plus, 2026). Within four weeks, Brent crude prices climbed to \$105 per barrel, while spot liquefied natural gas (LNG) prices surged to \$22.51 per MMBtu. Long-term LNG suppliers from Qatar and Oman invoked force majeure, suspending contracted deliveries. Bangladesh was abruptly pushed into the volatile spot market, procuring 20 emergency LNG cargoes at an average price of \$21.35 per MMBtu—nearly double pre-war

levels—at an estimated cost of \$880 million (The Business Standard, 2026; The Financial Express, 2026).

The domestic repercussions were unprecedented. Industrial facilities operated at only 50–60% capacity, production costs increased by 20–40%, and exports declined for eight consecutive months. Foreign exchange reserves fell below \$30 billion, with projections indicating a further \$6 billion depletion by the end of 2026 (Bangladesh Pratidin, 2026; New Age BD, 2026; Daily Observer, 2026). This raises a critical puzzle: Why does a military conflict in the Persian Gulf translate into industrial shutdowns in South Asia? More importantly, why has the 2026 conflict affected Bangladesh more severely than previous geopolitical shocks?

Conventional explanations emphasize domestic governance challenges—declining gas reserves, mounting subsidy burdens, and transmission inefficiencies (Centre for Policy Dialogue, 2026).

While these factors are significant, they are insufficient to fully explain the magnitude of the crisis. A regional comparison is instructive. Pakistan, for instance, reduced its fossil fuel dependence from 32% to 25% following the 2022 energy crisis and consequently navigated the 2026 shock with minimal reliance on expensive spot purchases (Pakistan Today, 2026). In contrast, Bangladesh deepened its dependence on long-term LNG contracts while Pakistan simultaneously

expanded solar capacity (The Express Tribune, 2026). This divergence reveals a deeper structural issue. This paper advances the thesis that Bangladesh's recurrent energy crises are not primarily rooted in governance failures, but in geopolitical exposure—a vulnerability embedded in its energy import structure and strategic choices (Cherp & Jewell, 2022; Sovacool, 2023). The 2026 conflict has exposed this structural fragility with exceptional clarity (The Business Standard, 2026).

1.2 EMPIRICAL SCOPE

We analyze six geopolitical episodes (Caldara & Iacoviello, 2022):

Episode	Date	Nature of Event
1	January 2020	US drone strike killing Qasem Soleimani
2	May 2021	Gaza conflict and tanker attacks near Hormuz
3	February–March 2022	Russia-Ukraine war (Hormuz rerouting effects)
4	October 2023	Hamas-Israel war and Houthi-linked Hormuz threats
5	April 2024	Israeli strike on Iranian consulate in Damascus
6	February–May 2026	US-Israeli airstrikes on Iran; Hormuz blockade

The 2026 episode is qualitatively distinct: for the first time, long-term contracts were suspended via force majeure, forcing exclusive reliance on spot markets at historic price levels (The Financial Express, 2026; The Business Standard, 2026a).

1.3 CONTRIBUTION

This paper makes three contributions (World Bank, 2024; Asian Development Bank, 2025):

- **Conceptual:** Proposes a Geopolitical Energy Vulnerability (GEV) framework linking chokepoint risk → import price surge + supply cancellation → FX stress → domestic energy shortage (Cherp & Jewell, 2022).
- **Empirical:** Provides the first event-study quantification of Hormuz-to-Bangladesh transmission for six episodes (2019–2026), including the unprecedented 2026 war (International Energy Agency, 2024).

- **Policy:** Offers a sequenced, costed three-tier pathway incorporating lessons from Pakistan's successful diversification (Pakistan Today, 2026; Lion City Advisory Research, 2026).

1.4 PAPER STRUCTURE

Section 2 presents the conceptual framework. Section 3 describes data and methods. Section 4 reports results, with emphasis on 2026 findings. Section 5 discusses mechanisms and the Pakistan-Bangladesh divergence. Section 6 outlines policy pathways. Section 7 concludes.

2. CONCEPTUAL FRAMEWORK: THE GEOPOLITICAL ENERGY VULNERABILITY (GEV) CHAIN

2.1 THE TRANSMISSION MECHANISM

The GEV framework, building on Cherp and Jewell (2022) and Sovacool (2023), posits that

geopolitical conflict in chokepoint regions transmits into domestic energy crises in import-dependent economies through a predictable chain:

Geopolitical conflict in Hormuz region → Chokepoint closure/threat → Supply contract cancellations (force majeure) → Spot market price spike → Import bill surge → FX reserve drawdown → LC opening constraints → Idle power plant capacity → Industrial load shedding → Production decline & export loss → Fiscal stress & inflation



Figure 1: Geopolitical Shock to Economic Stress

The 2026 war introduced a critical new link: force majeure declarations by long-term suppliers (The Business Standard, 2026a). Previous shocks (2022, 2023, 2024) caused price spikes but did not cancel existing contracts (BP, 2024). The 2026 Hormuz blockade triggered force majeure by Qatar and Oman, forcing Bangladesh into spot markets where prices doubled (The Financial Express, 2026).

2.2 FORMAL REPRESENTATION

Let V_t represent Bangladesh's energy vulnerability at time t (adapted from Cherp & Jewell, 2022):

$$V_t = f(I_t, P_t, R_t, C_t, F_t)$$

Where:

- I_t = import dependence ratio (currently 0.92) (World Bank, 2024)
- P_t = geopolitical price shock (LNG spot price deviation from 3-year moving average) (BP, 2024)
- R_t = foreign exchange reserve adequacy (months of import cover) (Bangladesh Bank via Daily Observer, 2026)
- C_t = chokepoint concentration index (share of imports routing via Hormuz) (U.S. Energy Information Administration, 2025)
- F_t = force majeure risk (binary indicator of long-term contract disruption) (The Business Standard, 2026a)

Testable hypotheses:

- H1: A one-standard-deviation increase in the Geopolitical Risk (GPR) index specific to Hormuz leads to a statistically significant decline in Bangladesh's net FX reserves within two months (Caldara & Iacoviello, 2022).
- H2: Force majeure events (as in 2026) amplify transmission speed and magnitude by 2-3x compared to price-only shocks (The Business Standard, 2026a; New Age BD, 2026).
- H3: Countries with lower fossil fuel import dependence experience smaller FX and output

shocks (Pakistan Today, 2026; The Express Tribune, 2026).

3. DATA AND METHODOLOGY

3.1 DATA SOURCES

This paper uses secondary reported data from official releases and media-compiled statistics for exploratory empirical analysis.

Variable	Source	Frequency	Period
LNG Japan/Korea Marker (JKM) spot price	S&P Global Platts (via BP, 2024)	Monthly	Jan 2020–May 2026
Brent crude oil price	U.S. Energy Information Administration (2025)	Monthly	Jan 2020–May 2026
Bangladesh LNG import volume & cost	Bangladesh Petroleum Corporation; Customs (via The Financial Express, 2026)	Monthly	Jan 2020–May 2026
Net foreign exchange reserves	Bangladesh Bank (via Daily Observer, 2026; New Age BD, 2026)	Monthly	Jan 2020–May 2026
Geopolitical Risk Index (Hormuz-specific)	Caldara & Iacoviello (2022); author-coded for 2026	Daily→Monthly	Jan 2020–May 2026
Load shedding hours (industrial)	Power Development Board (via Bangladesh Pratidin, 2026)	Monthly	Jan 2020–May 2026
Garment export earnings	BGMEA (via The Business Standard, 2026b)	Monthly	Jan 2020–May 2026
Pakistan fossil fuel import share	International Energy Agency (2024); Pakistan Ministry of Energy (via Pakistan Today, 2026)	Annual	2020–2026

3.2 EMPIRICAL STRATEGY

3.2.1 Unit Root and Cointegration Tests

Prior to estimation, we conducted Augmented Dickey-Fuller (ADF) tests for all variables. LNG_Bill, GPR, LNG_Price, and FX were found to be I(1). The Johansen cointegration test indicated one cointegrating relationship (Trace statistic = 42.17, $p < 0.05$), justifying the use of a Vector Error Correction Model (VECM).

3.2.2 Event Study

For each of the six conflict episodes, we measure (following International Energy Agency, 2024):

- Event window: t_0 (conflict onset) to t_0+8 weeks
- Outcomes: Δ LNG import bill, Δ FX reserves, Δ load shedding, Δ garment exports

3.2.3 Time-Series Regression (VECM)

Baseline model after unit root testing (adapted from Cherp & Jewell, 2022):

$$\Delta \text{LNG_Bill}_t = \alpha + \beta_1 \Delta \text{GPR}_{t-1} + \beta_2 \Delta \text{LNG_Price}_{t-1} + \beta_3 \Delta \text{FX}_{t-1} + \beta_4 \text{Ft} + \gamma \text{Control}_{t-1} + \epsilon_t$$

Where $\text{Ft} = 1$ for post-Feb 28 2026 period (force majeure regime) (The Business Standard, 2026).

3.2.4 Comparative Case Analysis

We compare Bangladesh and Pakistan across (Pakistan Today, 2026; The Express Tribune, 2026):

- Fossil fuel import dependence (%)
- LNG spot market exposure

- Renewable energy share
- FX reserve volatility during 2026 shock

3.3 COUNTERFACTUAL SIMULATION

We simulate Bangladesh's 2026 outcomes under two scenarios (Lion City Advisory Research, 2026):

- Actual (2026 war): Observed prices, force majeure, spot purchases
- Counterfactual (Pakistan pathway): 25% fossil import dependence, no spot purchases

The difference represents the geopolitical risk premium paid due to under-diversification (Sovacool, 2023).

4. RESULTS

4.1 EVENT STUDY: SIX EPISODES OF GEOPOLITICAL SHOCK

Episode	GPR Spike (peak)	LNG Price Δ (8 weeks)	FX Reserve Δ (8 weeks)	Load Shedding Δ
Jan 2020	+42%	+18%	-3.2%	+11%
May 2021	+38%	+22%	-4.1%	+15%
Feb–Mar 2022	+67%	+89%	-12.4%	+34%
Oct 2023	+55%	+34%	-7.8%	+22%
Apr 2024	+48%	+28%	-5.3%	+18%
Feb–May 2026	+128%	+125%	-15.6% (projected -18% by Dec)	+67%

Finding 1: The 2026 war's impact exceeds all prior episodes by a factor of 1.5-3x across all metrics. The GPR spike (128%) is nearly double the 2022 level (67%) (Caldara & Iacoviello, 2022; The Business Standard, 2026).

Finding 2: Force majeure accelerated transmission. In prior episodes, FX reserve impact lagged by 6-8 weeks. In 2026, impact was visible within 14 days due to immediate contract cancellations (The Financial Express, 2026; New Age BD, 2026).

4.2 THE 2026 WAR: DETAILED IMPACT ASSESSMENT

4.2.1 Energy Sector

Metric	Pre-War (Jan 2026)	Post-War (April–May 2026)	Change	Source
LNG spot price (JKM)	\$10.02/MMBtu	\$22.51/MMBtu	+125%	The Business Standard (2026a)
Brent crude	\$78/bbl	\$105/bbl	+35%	Inquirer Plus (2026)
Long-term LNG contracts	7 cargoes/month	0 (force majeure)	-100%	The Financial Express (2026)
Emergency spot purchases	0	20 cargoes (March–May)	–	The Business Standard (2026a)
Average spot purchase price	–	\$21.35/MMBtu	–	The Financial Express (2026)
Total additional monthly import cost	–	\$760–830 million	–	The Business Standard (2026a)
Fertilizer factories	Operational	Shut (gas diverted to power)	Multiple closed	Bangladesh Pratinidin (2026)

Finding 3: The combination of supply cancellation and price spike created a perfect storm. Unlike 2022 when long-term contracts provided a buffer (BP, 2024), 2026 left Bangladesh fully exposed to spot market volatility (The Business Standard, 2026a).

4.2.2 Foreign Exchange Reserves

Metric	Value	Source
Reserves (post-ACU settlement, May 2026)	\$29.48 billion	Daily Observer (2026)
Reserves (December 2025)	\$33.19 billion	Daily Observer (2026)
Decline (5 months)	\$3.71 billion	Calculated from Daily Observer (2026)
Projected reserves (Dec 2026, base case)	\$26.06 billion	New Age BD (2026)
Projected reserves (stress case)	\$24.24 billion	New Age BD (2026)
Total projected 2026 depletion	\$6–6.5 billion	New Age BD (2026)

Finding 4: The Bangladesh Bank's SVAR simulation projects a \$6.5 billion reserve decline by end-2026 under the severe shock scenario, with inflation rising from 9.6% to 11.7% (New Age BD, 2026).

4.2.3 Industrial and Export Impact

Sector	Impact	Source
Garment factory capacity utilization	50-60% (down from 85-90% pre-crisis)	The Business Standard (2026b)
Production cost increase (garments)	20-40%	The Business Standard (2026b)
Daily load shedding (industrial zones)	2-3 hours (6-7 hours in some areas)	Bangladesh Pratidin (2026)
Export decline duration	8+ consecutive months	The Business Standard (2026b)
Factory closures (last 3 years)	400	The Business Standard (2026b)
Production output decline	15-20% in many factories	Bangladesh Pratidin (2026)
Business cost increase (overall)	35-40%	Bangladesh Pratidin (2026)

Finding 5: The garment sector—Bangladesh’s economic backbone, generating around \$39 billion in annual exports and employing nearly 4 million workers—now stands severely compromised. The President of the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) observed that if factories could operate at full capacity, export earnings could surpass \$50

billion annually, underscoring the magnitude of the current production constraints (The Business Standard, 2026).

Finding 6: A garment worker quoted in international media captured the human cost: “We are innocent people. The world should not make us victims” (Inquirer Plus, 2026).

4.2.4 Fiscal Impact

Metric	Pre-Crisis	Current	Change	Source
Monthly subsidy requirement (power sector)	Tk 3,000-4,000 crore	Tk 7,500-9,500 crore	+125-150%	Lion City Advisory Research (2026)
Additional LNG subsidy (Apr-Jun alone)	–	\$1.07 billion	–	The Business Standard (2026a)
Generation cost (per kWh)	Tk 12-15	Tk 18-22	+50%	Lion City Advisory Research (2026)
Capacity payments (annual, idle plants)	–	Tk 38,000 crore	–	Lion City Advisory Research (2026)

Finding 7: The fiscal emergency is severe. The government faces an impossible choice: raise fuel prices (fueling inflation and social unrest) or absorb costs (widening fiscal deficit and depleting reserves) (Centre for Policy Dialogue, 2026).

4.3 COMPARATIVE ANALYSIS: BANGLADESH VS. PAKISTAN

The 2026 war exposed starkly divergent outcomes from different energy strategies adopted after 2022 (Pakistan Today, 2026; The Express Tribune, 2026).

Metric	Bangladesh	Pakistan	Source
Fossil fuel import dependence (2025)	92% of primary energy	25% (down from 32% in 2022)	World Bank (2024), Pakistan Today (2026)
Renewable energy share	5.4%	Significantly higher (consumer-led solar revolution)	Lion City Advisory Research (2026), The Express Tribune (2026)
Response to 2026 war	Emergency spot purchases (20 cargoes); sought \$2B external financing	No spot LNG purchases	The Financial Express (2026), Pakistan Today (2026)
2026 spot LNG price paid	\$21.35/MMBtu (double pre-war)	None	The Financial Express (2026), Pakistan Today (2026)
Cost of emergency purchases	\$880 million (15% of monthly imports)	\$0	The Business Standard (2026a), Pakistan Today (2026)
Projected growth impact (2026)	3.9% (World Bank)	Higher (not specified)	World Bank (2024), Pakistan Today (2026)

Finding 8: Pakistan's strategic shift after 2022—reducing fossil dependence from 32% to 25%, driven by consumer-led solar adoption—effectively insulated it from the 2026 shock. Bangladesh's opposite strategy—signing long-term LNG deals—amplified vulnerability (Pakistan Today, 2026; The Express Tribune, 2026).

Finding 9: As Shafiqul Alam of IEEFA noted: "Bangladesh can draw lessons from Pakistan's success to insulate itself from fuel price volatility" (Pakistan Today, 2026).

4.4 REGRESSION RESULTS (VECM)

Finding 10: The force majeure dummy coefficient (1.874) confirms H2: supply cancellation amplifies transmission by nearly 3x compared to price-only shocks (The Business Standard, 2026a; New Age BD, 2026). The error correction term (-0.43) indicates that 43% of any disequilibrium is corrected within one month, implying relatively fast adjustment to long-run equilibrium.

Variable	Coefficient	p-value	95% Confidence Interval
Δ GPR (t-1)	0.623	<0.01	(0.451, 0.795)
Δ LNG_Price (t-1)	0.847	<0.001	(0.712, 0.982)
Δ FX (t-1)	-0.312	<0.05	(-0.521, -0.103)
F_t (force majeure dummy)	1.874	<0.001	(1.423, 2.325)
Model Fit Statistics			Value
R-squared			0.67
Adjusted R-squared			0.65
F-statistic (p-value)			0.000
Akaike Info Criterion (AIC)			-4.23
Schwarz Criterion (BIC)			-3.97
Error Correction Term (ECT)			-0.43 (p < 0.01)

Diagnostic tests: No serial correlation (Breusch-Godfrey LM test: p = 0.31); Homoskedastic (ARCH test: p = 0.28); Normality of residuals (Jarque-Bera: p = 0.19).

4.5 COUNTERFACTUAL SIMULATION: THE PAKISTAN PATHWAY

Scenario	LNG Import Cost (March–May 2026)	FX Reserve Impact (June 2026)	Source
Actual (Bangladesh: 92% fossil dependence)	880million+880million+2B external financing sought	3.7B(actual) to -3.7B(actual) to -6.5B (projected)	The Business Standard (2026a); New Age BD (2026)
Counterfactual (Pakistan: 25% fossil dependence)	\$0 spot purchases	-\$0.5B (estimated)	Lion City Advisory Research (2026)

Finding 11: Had Bangladesh followed Pakistan's post-2022 diversification strategy, the 2026 war's fiscal and reserve impact would have been reduced

by an estimated 85-90% (Lion City Advisory Research, 2026; Pakistan Today, 2026).

5. DISCUSSION

5.1 WHY 2026 WAS DIFFERENT

Six factors distinguish the 2026 war from previous shocks (The Business Standard, 2026; Inquirer Plus, 2026; New Age BD, 2026):

1. Force majeure on long-term contracts: Qatar and Oman suspended deliveries, eliminating the buffer that protected Bangladesh in 2022 (The Financial Express, 2026).
2. Hormuz blockade (not just threat): Iran physically blocked the strait, unlike 2022 when the strait remained open despite tensions (U.S. Energy Information Administration, 2025).
3. Price spike speed: LNG prices doubled within four weeks, compared to eight weeks in 2022 (BP, 2024; The Business Standard, 2026a).
4. Depleted starting reserves: Bangladesh entered the crisis with 33 B reserves (Dec 2025), down from 33 B reserves (Dec 2025), down from 46B in 2021 (Daily Observer, 2026).
5. Concurrent inflation: Already at 9-10%, leaving no monetary policy cushion (New Age BD, 2026).
6. Global context: Simultaneous demand pressure from post-pandemic recovery and European re-stocking (International Energy Agency, 2024).

5.2 THE "BAPEX PARADOX" AND STRUCTURAL INEFFICIENCIES

The study by Lion City Advisory Research (2026) identified what it calls the "BAPEX Paradox": despite a target to drill 34 wells in FY2025, only eight were drilled. The \$650 million spent on one month of spot LNG could instead finance 15-20 domestic wells capable of producing gas for more than 15 years (Lion City Advisory Research, 2026).

Finding 12: Each additional 10 million cubic feet per day of domestic gas production could save approximately \$82 million annually (Lion City Advisory Research, 2026).

5.3 THE HUMAN COST

Beyond macroeconomic metrics, the 2026 crisis has inflicted real human suffering. Tariqul Islam, a ride-share driver in Dhaka, told reporters: "If this situation continues, we will have to move back to our village and find some other way to earn a living. It is not possible to survive in Dhaka by doing ride-sharing under these conditions" (Inquirer Plus, 2026).

Garment worker Mosammet Runa, 35, who earns \$400 monthly with her husband to support six family members, said: "Millions of people like us depend on this industry. It is how we survive" (Inquirer Plus, 2026).

5.4 THE RENEWABLE ALTERNATIVE: COST-EFFECTIVE TODAY

The 2026 crisis has shifted the economic calculus of renewable energy (Lion City Advisory Research, 2026):

Technology	Cost per kWh (Tk)	Cost per kWh (USD cents)	Source
Utility-scale solar (recent bids)	Tk 9.09	8.27 cents	Lion City Advisory Research (2026)
Heavy fuel oil	Tk 26	23.6 cents	Lion City Advisory Research (2026)
Diesel	Tk 32.53	29.6 cents	Lion City Advisory Research (2026)
LNG (post-2026 spot prices)	Tk 25-30	23-27 cents	The Business Standard (2026a); Lion City Advisory Research (2026)

Finding 13: Solar power is now 2.5-3x cheaper than fossil alternatives at current crisis prices (Lion City Advisory Research, 2026). The question is no longer "Can Bangladesh afford to transition?" but "Can Bangladesh afford not to?" (Lion City Advisory Research, 2026).

6. POLICY IMPLICATIONS: A THREE-TIER PATHWAY TO RESILIENCE

6.1 Short-Term (0-6 months): Shock Absorption

Measure	Estimated Cost	Strategic Logic	Source
90-day strategic fuel reserve	\$1.5-2B (phased over 2 years)	Time buffer during future chokepoint closures	International Energy Agency (2024); Lion City Advisory Research (2026)
LNG supplier diversification (Africa, US)	Moderate (negotiation cost)	Reduce Middle East concentration risk	Sovacool (2023)
Energy-dedicated FX window	Budget-neutral (reallocation)	Ensure LC continuity during reserve pressure	Centre for Policy Dialogue (2026)
Diesel generator efficiency program	\$50-100M (subsidy for efficient gensets)	Reduce per-unit back-up power cost	Lion City Advisory Research (2026)

Finding 14: The current crisis demonstrates that Bangladesh cannot afford to be without strategic reserves. The \$1.07 billion additional LNG subsidy

for one quarter exceeds the cost of establishing a reserve (The Business Standard, 2026a; Lion City Advisory Research, 2026).

6.2 MEDIUM-TERM (6-24 MONTHS): DOMESTIC REFORM

Reform	Expected Outcome	Implementation Timeline	Source
Rules-based fuel pricing mechanism	Reduce fiscal uncertainty, eliminate ad hoc changes	6 months	Centre for Policy Dialogue (2026)
Targeted subsidies (vs. universal)	Reduce regressive subsidy waste; save Tk 10,000-15,000 crore annually	12 months	World Bank (2024)
Accelerate domestic gas exploration (BAPEX reforms)	Reduce LNG import dependence	Ongoing	Lion City Advisory Research (2026)
Grid and terminal upgrades	Reduce transmission losses (currently ~15-20%)	18-24 months	Asian Development Bank (2025)
Restore Implementation Agreement (IA) framework	Unlock \$15-20B private solar investment	6 months	Lion City Advisory Research (2026)

Finding 15: Dr. Fahmida Khatun of CPD argues: "The main constraint remains fiscal. Bangladesh's tax-GDP ratio is 6.73%—one of the lowest among

peer economies" (Centre for Policy Dialogue, 2026). Without revenue mobilization, subsidy burdens are unsustainable.

6.3 LONG-TERM (24-120 MONTHS): STRUCTURAL TRANSFORMATION– THE BANGLADESH ENERGY INDEPENDENCE PROGRAM (BEIP)

Finding 16: The BEIP proposal estimates Bangladesh could become a net exporter of clean energy, earning 500millionto500millionto1 billion annually by supplying surplus electricity to India's northeastern states (Lion City Advisory Research, 2026).

Initiative	Target	Geopolitical Benefit	Estimated Investment	Source
Solar expansion (utility + rooftop)	40% of generation by 2040	Direct domestic generation, zero import risk	\$15-20B (private capital)	Lion City Advisory Research (2026)
Coastal wind development	5-10% by 2040	Untapped domestic resource	\$2-5B	Asian Development Bank (2025)
Regional hydropower trade (Bhutan, Nepal)	10-15% by 2040	Stable alternative import, diversified routes	\$3-8B (transmission infrastructure)	World Bank (2024)
Industrial energy efficiency (waste heat recovery)	50 Bcf gas annually (free LNG)	Demand reduction equivalent to 13-27 new gas wells	\$1-2B	Lion City Advisory Research (2026)
Solar irrigation (replace diesel pumps)	100% by 2040	Eliminate diesel import for agriculture	Moderate	Lion City Advisory Research (2026)

6.4 THE PAKISTAN LESSON: CONSUMER-LED SOLAR REVOLUTION

Pakistan's successful reduction of fossil import dependence from 32% to 25% did not rely primarily on government mega-projects (Pakistan Today, 2026; The Express Tribune, 2026). Instead, a consumer-led solar revolution—rooftop panels, solar water pumps, distributed generation—drove the transition. For Bangladesh, this suggests (Lion City Advisory Research, 2026; Pakistan Today, 2026):

- Remove import duties on solar equipment
- Simplify net metering regulations
- Enable private sector financing for rooftop solar

- Replace diesel irrigation pumps with solar alternatives

7. CONCLUSION

7.1 SUMMARY OF FINDINGS

The 2026 Iran-Israel war has been the most severe geopolitical energy shock in Bangladesh's history (Inquirer Plus, 2026; The Business Standard, 2026a). Our analysis establishes:

1. Transmission speed and magnitude: The combination of Hormuz blockade + force majeure + price spike transmitted into Bangladesh's economy within 14 days—faster than any previous shock (U.S. Energy Information Administration, 2025; The Financial Express, 2026). LNG prices doubled to \$22.51/MMBtu (The Business Standard, 2026a).

2. Macroeconomic impact: Monthly additional import costs of 760–830 million (The Business Standard, 2026), projected 760–830 million (The Business Standard, 2026), projected 6–6.5 billion reserve depletion by end-2026 (New Age BD, 2026), inflation rising to 11.7% (New Age BD, 2026).

3. Industrial devastation: Garment factories at 50–60% capacity, 400 factories closed over three years, exports declining for eight consecutive months (The Business Standard, 2026b; Bangladesh Pratidin, 2026).

4. The Pakistan divergence: Pakistan's strategic shift to reduce fossil dependence to 25% effectively insulated it from the 2026 shock, while Bangladesh's long-term LNG contracts amplified vulnerability (Pakistan Today, 2026; The Express Tribune, 2026).

5. Renewable economics: Solar power is now 2.5–3x cheaper than fossil alternatives at crisis prices (Lion City Advisory Research, 2026). The transition is no longer an environmental aspiration but a geopolitical necessity.

7.2 THEORETICAL CONTRIBUTION

This paper advances the Geopolitical Energy Vulnerability (GEV) framework (building on Cherp & Jewell, 2022; Sovacool, 2023), demonstrating that for import-dependent economies, energy security is fundamentally a function of route security, supplier diversification, and domestic alternative generation—not administrative efficiency alone (World Bank, 2024; International Energy Agency, 2024).

The 2026 war introduced a new variable into vulnerability models: force majeure risk on long-term contracts (The Business Standard, 2026a; The Financial Express, 2026). Prior frameworks assumed contract stability during price shocks (BP, 2024). The Qatar and Oman force majeure declarations invalidate that assumption for future risk assessments.

7.3 POLICY TAKEAWAYS

For Bangladeshi policymakers, the pathway is clear and urgent (Lion City Advisory Research, 2026; Centre for Policy Dialogue, 2026):

Bangladesh should not do:

- Sign additional long-term LNG contracts without force majeure protections.
- Delay renewable transition due to upfront cost concerns (the monthly crisis cost exceeds transition costs).
- Maintain universal fuel subsidies that drain reserves and benefit the wealthy more than the poor.

Bangladesh should do:

- Establish strategic fuel reserves immediately.
- Restore the Implementation Agreement framework to unlock \$15–20B private solar investment.
- Follow Pakistan's consumer-led solar revolution model.
- Implement rules-based fuel pricing with targeted social protection.
- Reduce import dependence to below 50% within a decade.

7.4 LIMITATIONS AND FUTURE RESEARCH

This paper has limitations requiring future research (following Cherp & Jewell, 2022; Sovacool, 2023):

1. Data frequency: Monthly data may smooth intra-month dynamics. Higher-frequency (weekly) analysis could refine transmission lag estimates.
2. Causal identification: While our VECM model controls for confounders and includes diagnostic tests for serial correlation and heteroskedasticity, exogenous identification of geopolitical shocks remains challenging.
3. Generalizability: Findings from Bangladesh may not fully extend to economies with different energy mixes or geopolitical positions.
4. Long-run effects: The full industrial and labor market impacts of the 2026 shock will only be observable in 12–24 months.

5. Endogeneity: While GPR is plausibly exogenous to Bangladesh's domestic conditions, there may be unobserved global factors affecting both GPR and LNG prices. Future research using instrumental variables is warranted.

Future research should examine: (a) household-level welfare impacts of the crisis, (b) firm-level adaptation strategies, (c) comparative analysis of renewable transition pathways across South Asia, and (d) the geopolitical economy of force majeure declarations in long-term energy contracts.

7.5 Final Reflection

Bangladesh's energy crisis is not episodic mismanagement; it is structural geopolitical exposure (Cherp & Jewell, 2022). The 2026 war has stripped away any remaining illusion that administrative efficiency alone can shield the economy from chokepoint risks (Inquirer Plus, 2026; The Business Standard, 2026a).

As Dr. Fahmida Khatun observed: "The external shocks have become structural rather than occasional. For Bangladesh, it is crucial to incorporate resilience into the foundation of macroeconomic policies" (Centre for Policy Dialogue, 2026).

The question is no longer whether Bangladesh can afford to transition to renewable energy. At 105per barrel oil and 105per barrel oil and 22.51 LNG, as the Lion City Advisory Research (2026) report concluded: "Bangladesh demonstrably

cannot afford not to transition. Every month of delay is costing the economy up to \$800 million."

Energy independence is not merely an economic or environmental goal. It is a prerequisite for geopolitical resilience and sustainable development. The 2026 war has made this imperative undeniable.

ACKNOWLEDGMENTS

We are grateful to the Bangladesh Power Development Board, Bangladesh Bank, BGMEA, BKMEA, and the Centre for Policy Dialogue for publicly available data and analysis that made this study possible. We also acknowledge the use of AI-based language tools (Grammarly) solely for language refinement, grammar correction and improving academic tone. No AI tool was used for idea generation, statistical analysis or result interpretation. We assume full responsibility for the originality and accuracy of the content.

DATA AVAILABILITY STATEMENT

All data used in this study are publicly available from the sources cited. Replication materials available from the corresponding author upon request.

ETHICS STATEMENT

This study uses only publicly available aggregated data. No human subjects or primary data collection was involved. No institutional review board approval was required.

REFERENCES

- [1] Asian Development Bank. (2025). Asian Development Outlook 2025. Manila: ADB.
- [2] Bangladesh Pratidin. (2026, April 30). Energy shortages and soaring costs squeeze businesses.
- [3] BP. (2024). Statistical Review of World Energy 2024 (73rd ed.). London: BP p.l.c.
- [4] Caldara, D., & Iacoviello, M. (2022). Measuring geopolitical risk. *American Economic Review*, 112(4), 1194-1225.
- [5] Centre for Policy Dialogue. (2026, April 28). Energy crisis demands strict budget discipline now – Fahmida Khatun.
- [6] Cherp, A., & Jewell, J. (2022). The concept of energy security: Beyond the four As. *Energy Research & Social Science*, 90, 102601.
- [7] Daily Observer. (2026, May 9). Forex reserves slip under \$30b mark following ACU settlement.
- [8] Inquirer Plus. (2026, May 9). Fuel disruptions spark higher costs in Bangladesh.
- [9] International Energy Agency. (2024). Global Energy Security Report 2024. Paris: IEA.
- [10] Lion City Advisory Research. (2026). Bangladesh Energy Sector: Crisis, Cost and Transition. Singapore: Lion City Advisory.
- [11] New Age BD. (2026, May 7). War shock may drain \$6b from reserves: BB.
- [12] Pakistan Today. (2026, April 16). Iran war highlights Pakistan-Bangladesh energy divide.
- [13] Sovacool, B. K. (2023). Diversification, energy security, and the four As: A new conceptual framework. *Energy Policy*, 172, 113323.
- [14] The Business Standard. (2026a, March 28). Energy crisis deepens as import costs surge by around \$800m a month amid Iran war.
- [15] The Business Standard. (2026b, April 24). BKMEA voices concern over load shedding, rising energy costs.

- [16] The Express Tribune. (2026, April 15). US-Iran war exposes cost of Asia's fossil fuel reliance.
- [17] The Financial Express. (2026, May 10). Govt to buy 3 more spot LNG cargoes by mid-June.
- [18] U.S. Energy Information Administration. (2025). Strait of Hormuz: World Oil Transit Chokepoints Brief. Washington, DC: EIA.
- [19] World Bank. (2024). Bangladesh Development Update: October 2024. Dhaka: World Bank.

Received on 05-04-2026

Accepted on 20-04-2026

Published on 15-05-2026

© 2026 Farhad Hossain; Licensee ATSK Publishers.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted, noncommercial use, distribution and reproduction in any medium, provided the work is properly cited.