

4th Bangladesh-China Renewable Energy Forum

Transforming Crisis into Opportunities Renewable Energy Development under the New Government

Study Team

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Outline of the Presentation

1. The Bangladesh-China RE Forum: Context and the 4th Forum
2. '3F-3R': 'Fallen Fossil Fuel' - 'Rising Resilient Renewables
3. Major Challenges in Renewable Energy Investment
4. Recent Developments: After the Last Forum
5. Why a 4th Forum: Challenges That Persist and Study on Revisiting PPAs:
Case of Chinese Investment
6. Recommendations: From the CPD PPA Study
7. The Way Forward

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Background

1. Background

- New government's **first test to proof** is to **address the energy crisis** and thereby ease the pressure at all levels
 - **Micro** (on people, their livelihood, income and employment), **meso** (agriculture, industries, businesses and service-related activities) and **macro** (fiscal, financial and debt) levels
- The war against Iran indicates that the **middle-east crisis deepened** and **it will prolong over decades** even if the ongoing war stopped with or without any agreement
 - The disruption of energy-supply chain as well as volatility of global energy prices is likely to continue in the coming years
 - One of the conclusion of this crisis is over-reliance on fossil-fuels caused a serious threat to Bangladesh economy. Hence, Bangladesh needs to shift from fossil-fuel based economic activities towards alternate renewable energy based economic activities
 - In short, this situation can be labelled as: **'3F-3R': *'Fallen Fossil Fuel' - 'Rising Resilient Renewables'***
- In this backdrop, the Centre for Policy Dialogue (CPD) established the **Bangladesh-China Renewable Energy Forum** in 2023
 - A **platform for promoting renewable energy** in Bangladesh through public and private investment including overseas investment especially Chinese investment
 - The forum promotes **structured dialogue between Chinese investors**, Bangladeshi policymakers, and sector stakeholders on improving the investment environment in Bangladesh's renewable energy sector.

1. Background

- **The forum series has progressively built a body of evidence**, identifying barriers, presenting research findings, and tracking government responses, with each edition deepening the engagement.
 - **1st Forum:** Focused on the overall landscape of Chinese investment in Bangladesh's renewable energy sector, opportunities, entry barriers, and the state of bilateral energy cooperation.
 - **2nd Forum:** Examined fiscal and financial barriers, tax incentives, financing access, currency risk, and the challenges of project-level bankability for foreign investors.
 - **3rd Forum:** Analysed institutional challenges in the investment cycle, procurement irregularities, cancellation of Letters of Intent, approval delays, and gaps in the investment facilitation ecosystem.
- **The 4th Forum** deepens the contractual dimension of investment.
 - It focuses on **Power Purchase Agreements (PPAs)** as the central instrument through which investment risk, revenue security, and government commitment are translated into operational reality, or fail to be.
- **Chinese investors constitute a significant share of Bangladesh's RE pipeline**
 - China's FDI in Bangladesh's renewable energy sector represents over 50% of total renewable energy-sector FDI.
 - Their experience with PPA implementation offers **both a diagnostic and a reform roadmap** for the sector as a whole.
- Today's forum **will discuss how to come out** from the crisis through renewable energy-based power generation and what are the immediate changes are needed to promote energy transition.

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‘3F-3R’: ‘Fallen Fossil Fuel’ - ‘Rising Resilient Renewables’

2. '3F-3R': 'Fallen Fossil Fuel' - 'Rising Resilient Renewables'

- Bangladesh's energy **crisis will not over** even the war ends and the Strait of Hormuz **opens today**, Bangladesh has to continue the burden of this unnecessary war over years
 - Given the **limited fiscal space** available, government needs to cut its estimate budget for FY2027
 - Both **debt burden** and **crowding out effect** in financial sector are likely to be further got acute due to energy crisis
- **CPD** carried out an econometric exercise and identified that **macroeconomic vulnerability** due to geopolitical oil shocks would be primarily transmitted through **three channels** in medium to long-term depending on level of oil price rise
 - Limited losses of GDP (0.21%-0.53%), persistent inflationary pressure (0.6%-13.6%), depreciation of Taka (0.56%-4.5%)
- Bangladesh needs to come out from the dependency of imported fossil fuel and move to increase use of renewable energy and to use domestic natural gas as 'transition fuel'
- BNP government has recently announced **10,000 MW** of renewable energy-based power generation by 2030
 - The government has formed a committee to prepare necessary planning to achieve that target
 - Overseas investment especially Chinese overseas investment would play a major role

2. '3F-3R': 'Fallen Fossil Fuel' - 'Rising Resilient Renewables'

- Under the Renewable Energy Policy 2025, Bangladesh has set a target of achieving **20% electricity from renewable energy by 2030 and 30% by 2041.**
- **Key policy milestones** include:
 - **Private Sector Power Generation Policy (1996):** introduced the IPP model and long-term PPAs as the foundational framework.
 - **Renewable Energy Policy (2008):** set renewable targets and encouraged private participation in grid-connected renewable energy.
 - **Policy for Enhancement of Private Participation in RE-based Power Generation (2025):** opens merchant power, corporate PPAs, and wheeling arrangements.
- **The EU Carbon Border Adjustment Mechanism (CBAM),** effective from 2027, adds urgency: Bangladesh's export-oriented industries, especially RMG and textiles, must demonstrate green energy sourcing to avoid carbon levies and retain market access.
- **Despite these drivers, the pace of renewable energy deployment remains constrained.**
 - Weak PPA structures, institutional fragmentation, and policy discontinuity during political transitions continue to deter long-term foreign investment.

3

Major Challenges *in Renewable Energy Investment*

3.1 Major Challenges in Renewable Energy Investment: Findings from Three Forums

A. Market Entry and Institutional Barriers *(1st Forum, October 2023)*

- **Land acquisition is among the most binding constraints on project development.** Prolonged negotiations with landowners, site classification disputes, and unclear government responsibility for land provision impose substantial time and capital costs before a project reaches financial close.
- **Administrative hurdles in the pre-establishment phase,** including multiple sequential approvals for Environmental Impact Assessments, business registration, and licensing, create significant delays, particularly for foreign investors without a local presence.
- **Absence of a dedicated investment promotion mechanism** for the renewable energy sector: Bangladesh Investment Development Authority (BIDA) has not historically had a dedicated RE investment desk, leaving Chinese and other overseas investors without a single point of facilitation.
- **Limited technology transfer and knowledge-sharing frameworks:** while overseas investment is sought for capital, the mechanisms for structured knowledge transfer from experienced markets like China remain underdeveloped.

3.1 Major Challenges in Renewable Energy Investment: Findings from Three Forums

B. Financial and Fiscal Barriers (*2nd Forum, October 2024*)

- **Currency risk:** payments are made in local currency with USD equivalence, but the **PPA framework** does not adequately compensate for **exchange rate depreciation between invoice and payment dates**, a growing concern as the Taka has weakened over project timelines.
- **High cost of local finance:** local bank **lending rates of 12–13%** make domestic financing uncompetitive compared to international sources; yet **foreign loans** come with extensive **due diligence requirements** that raise transaction costs.
- **Inadequate green finance instruments:** despite the existence of Bangladesh Bank's Green Transformation Fund (GTF) and Technology Development Fund (TDF), these are limited in scope, complex to access, and not tailored to the needs of **Chinese overseas investors** who typically rely on China Development Bank, Exim Bank of China, or AIIB financing.
- **Tax incentive implementation gaps:** tax holidays **exist on paper** but are time-bound, progressively decreasing, and carry reinvestment conditions (30% reinvestment in industry; 10% annual purchase of listed company shares) that add complexity and deter foreign applicants. **In practice**, some investors have not received declared tax holidays because rules changed mid-project.

3.1 Major Challenges in Renewable Energy Investment: Findings from Three Forums

C. Institutional and Governance Challenges (*3rd Forum, June 2025*)

- **Cancellation of 31 solar project LoIs (totalling ~5.68 GW, ~USD 6 billion)** under the interim government: investors had already committed approximately USD 300 million through banking channels, **with 15 companies having purchased land**. No compensation mechanism was announced, and the review committee's authority remained unclear.
- **Cancellation of LoIs without grievance redress:** the absence of a fast, fair dispute resolution mechanism following LoI cancellations left investors, some of whom had bought land and transferred funds, **without legal recourse or restitution**.
- **Fragmented multi-agency approval processes:** coordination failures across BPDB, PGCB, REB, SREDA, and local authorities generate sequential delays that no contractual provision addresses, because most approving agencies are not parties to the PPA.
- **Paper-based and partially digital processes:** the investment and licensing ecosystem remains largely paper-dependent, requiring physical document submission; no centralized online portal exists for tracking application status, creating particular difficulties for foreign investors.
- **Power purchase tariff renegotiations:** Chinese investors at the 3rd Forum specifically flagged **renegotiation of agreed tariffs as a major deterrent**.
- **Delayed payments:** investors consistently reported **payment delays** well beyond contractual timelines, with some cases extending to 7–8 months or longer, compounding currency risk and eroding project returns.

3.2 Major Challenges in Renewable Energy Investment: Key Recommendations

Key Recommendations

CPD employs a **multi-method approach** combining enterprise-level surveys, Key Informant Interviews (KIIs) with investors and government officials, Focus Group Discussions (FGDs), and benchmarking against international frameworks to identify barriers systematically and validate them across stakeholders.

Forum	Core Focus	Key Problems Identified	Key CPD Recommendations
1st Forum [Year: 2023]	Landscape of Chinese Investment in Bangladesh's RE Sector	Entry barriers; limited bilateral investment facilitation; lack of investor-ready project pipeline; unclear regulatory pathways for foreign entities	<ul style="list-style-type: none">• Bilateral investment facilitation framework;• dedicated RE investment promotion;• streamlined entry procedures for foreign investors
2nd Forum [Year: 2024]	Fiscal and Financial Barriers to RE Investment	High local financing costs (12–13%); limited green finance access; currency risk; absence of DFI-backed guarantees; tax incentive implementation gaps	<ul style="list-style-type: none">• Expand IDCOL/BB Green Transformation Fund;• introduce partial risk guarantees; simplify tax holiday implementation;• create hedging instruments for FX risk
3rd Forum (Year: 2025)	Institutional Challenges in the Investment Cycle	LoI cancellations (31 projects, 3,287 MW, \$6bn); fragmented approvals; paper-based processes; absence of coordination mechanism; land acquisition barriers	<ul style="list-style-type: none">• Inter-agency task force;• time-bound approvals;• fast-track dispute resolution; compensation for LoI-cancelled investors;• RE procurement guideline

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Recent Developments: *After the Last Forum*

4.1. Developments Under the Interim Government: Mixed Signals

Positive Developments

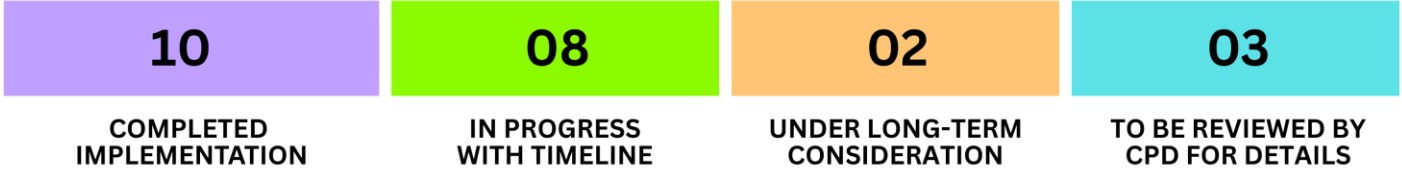
- **Policy for Enhancement of Private Participation in RE-based Power Generation (2025):** Opened merchant power plant model, corporate PPAs, wheeling arrangements, and rooftop solar for industrial and export sectors, a significant step toward market liberalisation.
- **New competitive bidding framework:** BPDB's open tender method with a standardised PPA template (General Conditions of Contract) introduced to improve transparency in public procurement.
- **Increased international attention:** Bangladesh's renewable energy sector received higher bilateral and multilateral engagement, including interest from ADB, JICA, and development partners in financing utility-scale solar.
- The **BIDA** is establishing its **first overseas office in China**, expected to be operational within six months (by roughly Sep 2026), to directly facilitate Chinese investment.

Concerning Developments

- **Cancellation of 31 solar projects (5.68 GW):** The interim government cancelled Letters of Intent on grounds of procurement irregularities under the Special Provisions Act. These projects represented **~\$6 billion in potential investment**, with \$300 million already committed through banking channels and 15 companies having purchased land.
- **Phasing out of Implementation Agreements:** IAs were discontinued without a credible substitute payment security mechanism, reducing investor confidence precisely when private RE investment was most needed..
- **Refusal to honour sovereign guarantees:** At least three projects with approved ADB/JICA financing (totalling ~\$210 million) stalled after the interim government declined to maintain guarantees extended under the previous administration, citing tariff concerns.

Impact of Investment Facilitation Action Guide: FOLLOW-UP FROM BIDA

23 SPECIFIC RECOMMENDATIONS ON FIVE AREAS



INVESTOR SUPPORT

- ✓ Dedicated renewable energy **focal point** appointed
- ✓ Requested to share updates with investors & stakeholders to **boost confidence**

FORWARD-LOOKING OUTCOME

- ✓ Recommendations are **acted upon** and acknowledged
- ✓ Government **proactively** collaborating to make progress visible

HC questions legality of cancelling primary approvals for 10 renewable energy projects

The court has directed the power and energy secretary, the chairman and secretary of the Bangladesh Power Development Board (BPDB), and the secretary of Power Grid Company of Bangladesh to respond to the rule within eight weeks



File photo of the High Court division building of the Supreme Court in Dhaka. Photo: Collected

What the Guideline Does Well

- **Addresses the land barrier directly:** By designating government land as a structured resource rather than requiring developers to acquire land independently.
- **The GFA is a meaningful step toward restoring sovereign commitment:** The Power Division's role as GFA signatory. It functions as a partial institutional substitute for the Implementation Agreement.
- **Institutional coordination is built in:** The Joint Working Group and PPP oversight structure address, at least in design, the inter-agency fragmentation.

What Remains to Be Clarified

- **The GFA does not specify payment security instruments.** Revolving LC? escrow account? or other payment security mechanism?
- **The MoU is explicitly non-binding.** The MoU between BPDB and the Land Owner, creates no financial obligation, guarantee, or commercial commitment.
- **Minimum 50 MW threshold limits smaller and distributed RE entry.**

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Why the 4th Forum?

*Challenges That Persist and Study on Revisiting PPAs:
Case of Chinese Investment*

4.2 Study on Revisiting PPAs: Context and Motivation

Why This Study, Why Now

Following the 3rd Bangladesh–China Renewable Energy Forum (30 June 2025), **CPD analysed investor concerns in the RE sector with particular attention to Chinese investors.** A scoping survey identified the evolving PPA arrangements and the transition toward a distributed system under the National Rooftop Solar Programme 2025 as the two most critical priority areas, both holding **significant potential for overseas investment**, particularly from China.

The Problem

- **Bangladesh has ambitious RE targets, but many projects stall at the contract stage.** PPAs are weak, non-standardised, and the single buyer, BPDB, faces persistent financial stress
- **Payment delays and disputes increase investor risk** and raise the cost of capital, slowing project commissioning across the pipeline
- **New modalities are expanding**, rooftop solar, merchant power plants, and decentralised RE solutions, yet the contractual frameworks to support them **remain underdeveloped or absent**
- **Recent cross-border PPA disputes** have illustrated the **consequences of unclear contract terms** and inadequate payment security mechanisms

The Gap

Bangladesh's power sector is at a juncture where **old instruments are being phased out but new frameworks are yet to be designed.** The Implementation Agreement, which provided sovereign backing, has been discontinued. No credible substitute has been introduced. Countries such as India and Vietnam have improved bankability through layered payment security systems and alternative offtake models. Bangladesh has yet to draw on these lessons in a systematic way.

4.3 Overview of Power Purchase Agreements and Their Role in Bangladesh

What is a PPA?

A Power Purchase Agreement (PPA) is a long-term contract between an electricity producer and an offtaker specifying terms for generation, delivery, and payment, covering pricing, risk allocation, capacity commitments, duration, and breach remedies. PPAs are the primary instrument through which private capital enters power generation.

Different Perspectives of Stakeholders involved in PPA Arrangements

Off-taker

Interested in ensuring **reliable power supply at predictable cost**. Government off-takers focus on energy security, while private corporates emphasize cost efficiency and sustainability targets

Power Producer

Interested in ensuring reliable power supply at predictable cost. Government off-takers focus on energy security, while private corporates emphasize cost efficiency and sustainability targets. Seeks long-term **revenue certainty, fair risk allocation, and assurance of timely payments**. Producers prefer sovereign guarantees or strong credit enhancement

Lenders

Banks look at **PPA bankability, payment security, risk-sharing mechanisms, termination clauses, and government backing**. Without credible guarantees, financing becomes costly or unavailable

Investors

Concerned with **return on investment, policy stability, and enforceability of contracts**. Investors prefer projects with robust PPAs backed by sovereign or highly rated private counterparties

The PPA is the instrument through which private capital either enters or avoids the power sector.

Evolution of RE-based PPAs in Bangladesh, Three Phases:

- **Early phase (1996–2010):** Private Sector Power Generation Policy 1996 introduced the IPP model; Renewable Energy Policy 2008 set a 10% generation target. However, RE PPAs largely replicated conventional IPP structures, leaving gaps on curtailment, dispatch, and intermittency
- **Expansion phase (2010–2023):** Grid-connected solar and wind IPPs introduced; standardised PPA templates developed with negotiated tariffs, sovereign guarantees, and payment security mechanisms. Structural weaknesses exposed: limited curtailment compensation, excessive public-sector discretion, approval delays
- **Competitive procurement phase (2024–present):** Shift toward competitive bidding for transparency and price efficiency; more structured provisions on tariffs, testing, performance guarantees, and liquidated damages. Persistent challenges remain in payment discipline, regulatory coordination, and grid risk allocation

A key inflection point: Bangladesh's first RE PPA (drafted by Allen & Overy) included **strong sovereign guarantees, well-structured arbitration, and balanced risk coverage**. However, successive revisions have progressively shifted the balance away from investors toward the public sector.

4.4 Current PPA Arrangement

The dominant model: BPDB as single buyer

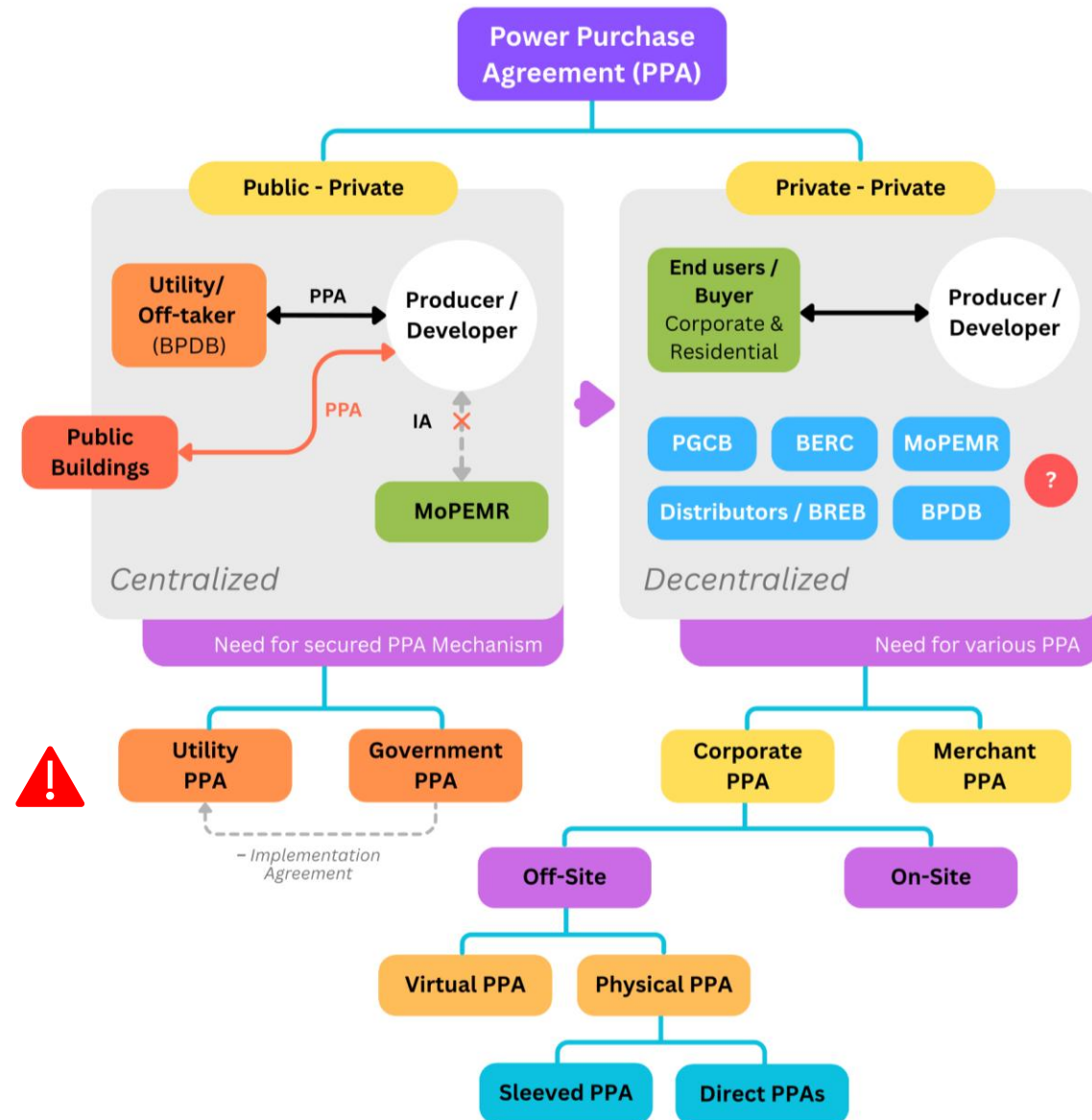
Historically, Bangladesh's PPA structure comprised two instruments: a **Utility PPA** (the commercial offtake agreement) and an **Implementation Agreement (IA)** (a sovereign-backed guarantee covering permits, land, and political risk). Together they provided a layered protection framework for investors.

The IA is now gone. This removed the sovereign backing layer precisely at the moment when RE investment was beginning to scale, significantly damaging investor confidence.

An emerging model, still without adequate regulatory infrastructure

Recent policy directions signal a gradual shift toward private-private PPAs. These allow private generators to sell electricity directly to industrial or commercial consumers, driven by cost efficiency, decarbonisation commitments, and export-market pressure from global buyers.

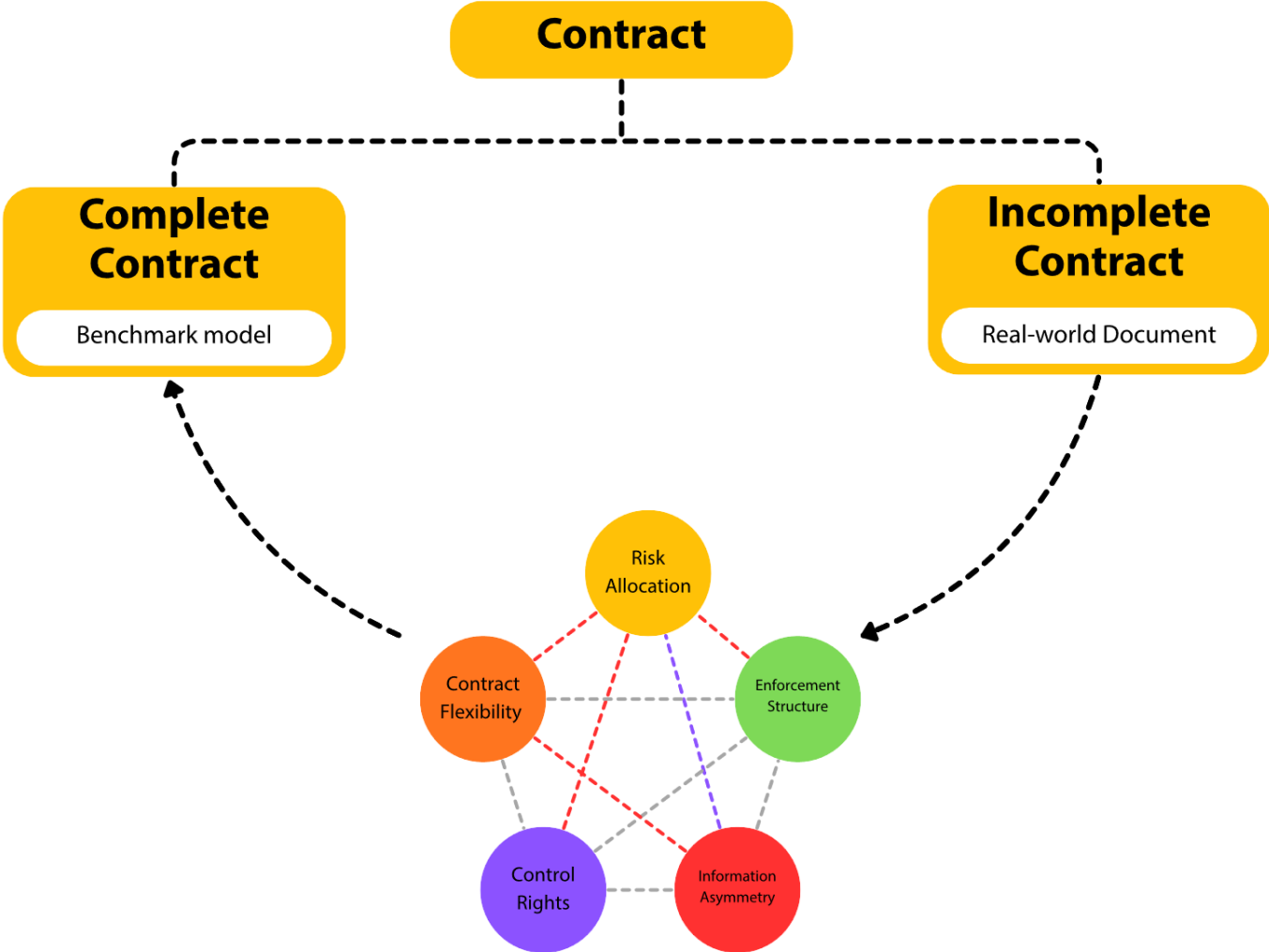
Figure 3: Current and Upcoming System Around PPAs in Bangladesh



4.5 Analytical Framework: Incomplete Contract Theory Applied to PPAs

Figure 1: Type of Agreements and Dimensions for Assessment

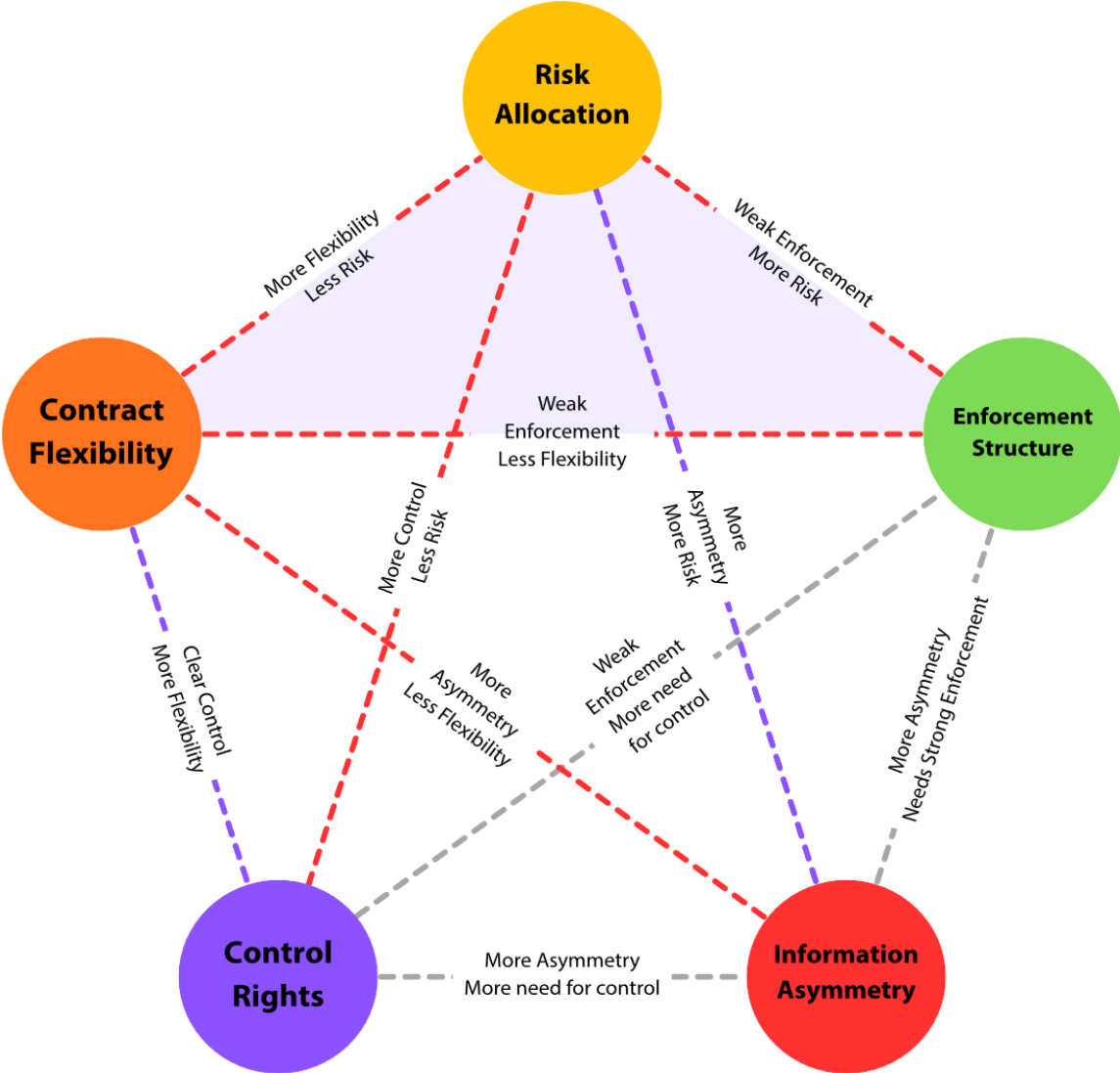
- This study adopts a contract-theoretic framework. Given the 20–25 year duration of PPAs and the complexity of Bangladesh's political and regulatory environment, full specification of all future contingencies is impossible.
- Bangladesh's PPAs therefore function as incomplete contracts, governed through risk allocation rules, control mechanisms, enforcement substitutes, and monitoring arrangements. The study assesses PPAs across five foundational dimensions:



Note: In legal practice, the terms *agreement* and *contract* are not identical. In this study, the terms *agreement* and *contract* are used interchangeably for ease of explanation.

Source: Authors' illustration

Figure 2 : Interactions Within the Dimensions of Incomplete Agreements



Source: Authors' analytical framework based on Hart & Holmstrom (2016) contract theory

Table 5: Clauses Protecting Developer & Lenders (Bankability & Revenue Security)

PPA Template	Payment Security	Implementation Agreement	Termination Compensation	Change-in-Law	Curtailment Compensation	FX Convertibility
BPDB Tender Document (General Conditions of Contract)	×	×	✓	✓	✓	✓
Kenya – SPP PPA	×	×	✓	✓	✓	×
Tanzania – SPP PPA	×	×	✓	✓	✓	×
India – CERC Draft PPA	×	×	✓	✓	~	×
Pakistan – PPIB PPA	✓	✓	✓	✓	✓	✓
Vietnam – EVN RE PPA	×	×	×	~	×	×
Philippines – DOE/ERC PPAs	✓	✓	✓	✓	✓	✓
Saudi Arabia – REPDO RE PPA	✓	✓	✓	✓	✓	✓

Table 6: Clauses Protecting the off-taker/BPDB

PPA Template	Performance Guarantees	Testing & Commissioning	Tariff Structure Transparency	Grid Interconnection Rules	Environmental Compliance
BPDB Tender Document (General Conditions of Contract)	✓	✓	✓	✓	✓
Kenya - SPP PPA	✓	✓	✓	✓	✓
Tanzania - SPP PPA	✓	✓	✓	✓	✓
India - CERC Draft PPA	✓	✓	✓	✓	✓
Pakistan - PPIB PPA	✓	✓	✓	✓	✓
Vietnam - EVN RE PPA	✓	✓	✗	✓	✓
Philippines - DOE/ERC PPAs	✓	✓	✓	✓	✓
Saudi Arabia - REPDO RE PPA	✓	✓	✓	✓	✓

4.6 Cross-Country Comparison: Key PPA Clause Coverage (Continued)

Table 7: Clauses Protecting Both Parties

PPA Template	Dispute Resolution (Intl Arbitration)	Metering & Billing Rules	Lender Step-in Rights	Reporting & Audit Rights	Insurance (Mutual)	Force Majeure (Mutual)	Assignment Rules (Mutual)
BPDB Tender Document (General Conditions of Contract)	✓	✓	✗	✓	✓	✓	✓
Kenya - SPP PPA	✓	✓	~	✓	✓	✓	~
Tanzania - SPP PPA	✓	✓	✗	✓	✓	✓	~
India - CERC Draft PPA	✓	✓	✓	✓	✓	✓	✓
Pakistan - PPIB PPA	✓	✓	✓	✓	✓	✓	✓
Vietnam - EVN RE PPA	✗	✓	✗	~	✓	✓	✗
Philippines - DOE/ERC PPAs	✓	✓	✓	✓	✓	✓	✓
Saudi Arabia - REPDO RE PPA	✓	✓	✓	✓	✓	✓	✓

4.7 Gap Analysis: Diagnostics of Current PPA Structure

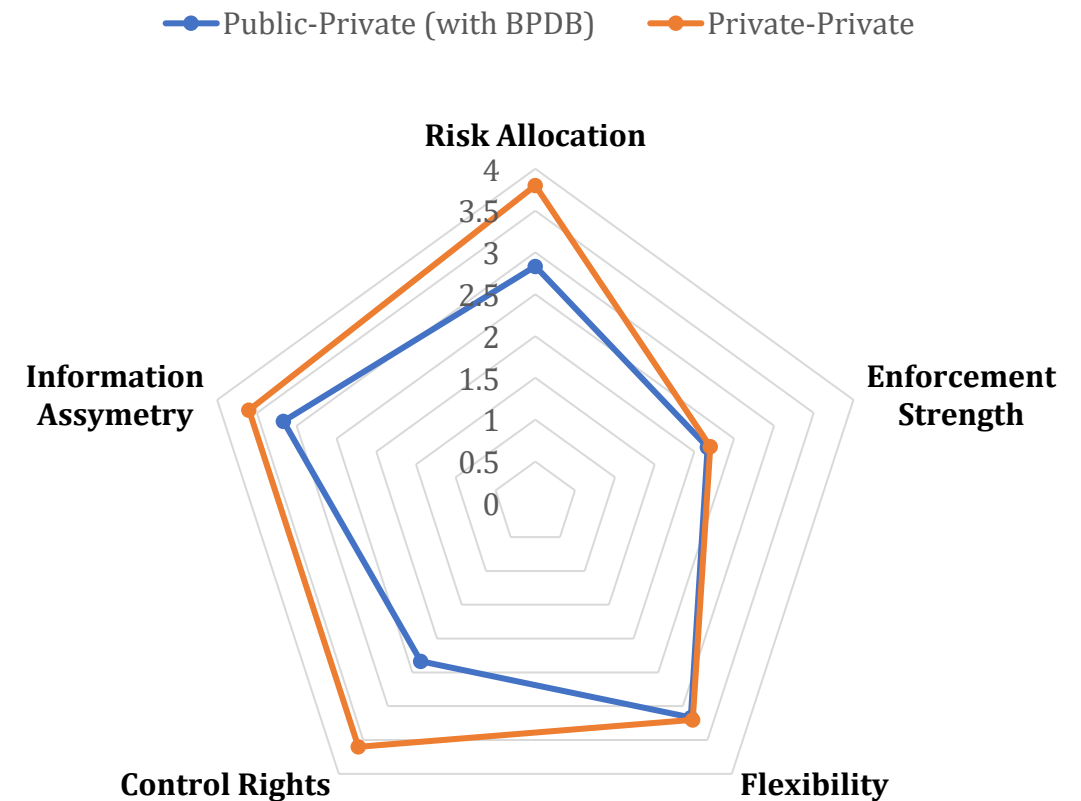
What the diagnostic tells us:

- **Enforcement is the systemic failure.** It scores the lowest in both contract types, meaning that even well-drafted PPA cannot be relied upon in practice
- **Risk allocation and control rights** show the clearest public-private asymmetry, the **BPDB model is structurally tilted against the investor**
- **The double gap in public PPAs:** weak risk protection AND weak enforcement simultaneously, this is why projects face compounding difficulties post-signature

Implication: Improving enforcement and rebalancing risk allocation are not optional reforms, they are preconditions for any other PPA improvement to have practical effect.

In a fair ecosystem, these two dimensions can not be weak simultaneously.

Figure 4: Analysis of the Dimensions of Analytical Framework for Bangladesh



Source: Authors' illustration from survey results

4.8 Challenges in Implementing PPA Terms: *Contractual Issues*

- **Inadequacy of Procurement Framework for RE Projects** The Public Procurement Act (2006) and PPR (2008) were **designed for goods and services**, not complex infrastructure. **Their coverage ends at contract award**, leaving land acquisition, grid connection, and environmental clearance in a governance vacuum with no accountability framework.
- **Gradual shift of PPA terms toward the government side** The first RE PPA (Allen & Overy) was relatively balanced. Successive revisions have progressively reduced investor protections
- **Persistent payment delays** Normal payment cycle of 2–3 months routinely extends to 5–8 months. Each delayed payment triggers subsequent delays.
- **Exchange rate fluctuation risk** Payments are nominally in local currency with USD equivalence, but the PPA provides no compensation for depreciation **between invoice and payment dates**. As delays compound, the financial loss from currency movement grows, directly eroding investor returns on equity-financed projects.
- **Rigid milestone structure between RCOD and COD** BPDB sometimes extends the COD deadline to accommodate delays while leaving the RCOD unchanged. This makes contractors liable for liquidated damages during a period that BPDB itself considered manageable, a structural inconsistency that imposes costs without benefiting project delivery.
- **Contract renegotiation after major investment commitment** Instances were documented where investors had signed both PPA and IA, completed construction, after which the government **attempted to revise the tariff**. The PPA contained no renegotiation procedure, leaving investors without a defined response pathway.

4.9 Challenges in Implementing PPA Terms: *Institutional Issues*

- **Institutional fragmentation across agencies** Approvals required from BPDB, PGCB, REB, Polli Bidyut, and local authorities. These operate sequentially rather than in parallel, with no coordinated timeline or accountability for delays.
- **Lack of litigation-free land** Projects that received official government land clearance still faced demands at the local level. Different ministries operate in silos and are often unaware of approvals issued by others. The government is structurally unable to guarantee litigation-free land despite commitments in project agreements.
- **RE-specific provisions absent from PPA (adapted from fossil-fuel contracts)** Renewable plants have different operational requirements. Solar plants require Radiation Resource Testing (RRT) before COD, calibration exercises sensitive to weather conditions. The original PPA framework provided no flexibility on COD deadlines when RRT could not be completed during cloudy seasons, imposing penalties for weather-driven delays outside the developer's control.
- **Projects proceeding without Implementation Agreement** Several IPPs signed contracts and proceeded with development without finalized IAs, relying on assurances that BPDB as a government entity would ensure payment. This practice shifts sovereign commitment risk entirely onto the investor, without contractual remedy if those assurances are not honoured.
- **Administrative complexity in accessing tax incentives** Tax rebate mechanisms exist but are not automatically applied.
- **Financial constraints and compliance costs for foreign investors** Foreign lenders require technical, financial, and legal due diligence, conducted by external consultants. Combined with government approval delays and payment uncertainty, these compliance costs make Bangladesh structurally more expensive than comparable markets.

4.10 Understanding the Tradeoffs: If One Dimension Cannot Be Fixed

Tradeoff 1

If risk cannot be reduced, flexibility must increase

Tradeoff 2

If enforcement cannot be strengthened, risk must be allocated more fairly

Tradeoff 3

If flexibility cannot be safely introduced, control rights must be shared

Tradeoff 4

If information asymmetry cannot be reduced, all other protections must be stronger

The most effective reform path:

Address enforcement and risk allocation first. Improvements in these two dimensions reduce the compensatory burden on all others and allow PPAs to function with less rigidity and fewer costly protective instruments.

Table 8: Compensatory Tradeoffs Across PPA Dimensions

If this dimension cannot be reformed	Then this dimension must be strengthened to compensate
Risk Allocation (payment security or sovereign guarantee cannot be introduced)	Flexibility
Enforcement Strength (commercial courts, dispute boards, or arbitration access remain weak)	Risk Allocation
Flexibility (adaptive clauses cannot be safely introduced without risk of exploitation)	Flexibility + Control Rights
Control Rights (residual decision-making remains concentrated with the government)	Enforcement Strength
Information Asymmetry (BPDB financial transparency and data systems remain weak)	Risk Allocation + Enforcement

Source: Authors' analysis based on incomplete contract theory framework

6

Recommendations: *From the CPD PPA Study*

5.1 Recommendations: Strengthening the PPA Template

A. Risk Allocation

- **Introduce a revolving Letter of Credit (LC)** covering 3–6 months of payments, backed by a sovereign guarantee or central bank support. This is the single most important bankability improvement available within the existing PPA structure
- **Expand Force Majeure provisions** to include contract tenure extension, tariff adjustment, and partial cost pass-through for prolonged events, including pre-operational delays caused by government-side factors
- **Include provisions to reduce FX risk due to invoice and payment gap.** This is more necessary now as there is payment delay.
- **Consider tariff escalation or alternative methods for making the capital recovery front loaded.** So that projects can reach to breakeven faster and to increase bankability. Currently the structure is levelized.

B. Enforcement and Flexibility

- **Time-bound payment obligations:** Define specific periods for invoice approval and payment; introduce deemed approval if no response is provided within the specified timeframe
- **Introduce a Dispute Adjudication Board (DAB):** A standing or ad-hoc board enables faster, lower-cost resolution prior to formal arbitration, widely used in FIDIC-based contracts and directly applicable to BPDB's template
- **Modify Clause 71-type provisions** to allow conditional acceptance of late claims and evaluation on merit, reducing the procedural imbalance that currently favours the Employer

C. Flexibility

- **Change-in-law clause with automatic tariff adjustment:** Cover tax changes, regulatory shifts, and macroeconomic changes, without requiring the investor to initiate a renegotiation process
- **Periodic review mechanism:** Introduce a structured review every 5–7 years, limited to predefined parameters, to prevent both excessive rigidity and uncontrolled renegotiation
- **Define explicit renegotiation triggers:** Significant exchange rate movement (e.g., depreciation beyond a threshold), prolonged grid unavailability, policy-induced curtailment, or force majeure lasting beyond a defined period
- **Extend RCOD alongside COD extensions:** When BPDB extends the COD deadline, the RCOD must be extended in parallel, eliminating liquidated damages liability for delays attributable to government-side factors or circumstances beyond contractor control
- **Renewable-specific COD flexibility:** For solar plants, allow COD timeline adjustments when Radiation Resource Testing cannot be completed due to seasonal weather conditions, a gap that the current template, adapted from fossil-fuel contracts, does not address

D. Information Asymmetry:

- **Mandatory data-sharing protocol:** The Employer must provide system-level information, grid availability, dispatch instructions, curtailment records, on a regular and defined schedule. Currently only the Contractor bears information obligations
- **Independent metering and verification system:** Particularly for generation and performance measurement, to provide a neutral evidentiary basis for billing disputes
- **Clearly defined audit rights for both parties:** Covering technical performance, billing, payments, and operational data, symmetric, not one-directional

E. Control and Residual Rights:

- **Incorporate lender step-in rights:** Allow financing institutions to take over project operations before full asset transfer is triggered. This is standard in bankable RE PPAs internationally and is currently absent from the BPDB template
- **Fair asset valuation mechanism in termination scenarios:** Based on independent assessment or pre-agreed formulas, replacing unconditional transfer with compensated transition
- **Partial risk-sharing by the offtaker** in cases where termination or disruption is linked to system-level or external factors, not solely attributed to Contractor failure

5.2 Recommendations: Institutional Reforms Beyond the PPA Document

- 1. Develop a Renewable Energy Procurement Guideline as a Specialised Supplement to PPA/PPR** The Public Procurement Act and Rules effectively end at contract award. A dedicated RE Procurement Guideline must cover the post-award phase: land acquisition, grid connection, environmental clearance, generation licensing, and COD management. CPD's Enterprise Survey found ~37% of firms considered the existing PPA moderately inadequate for RE procurement; ~40% faced severe operational difficulties from the absence of a dedicated guideline.
- 2. Declare the Power and Energy Sector a National Priority Sector** Formal priority designation would encourage all relevant agencies to coordinate more effectively, and create an accountability expectation for government commitments made within PPA and IA-equivalent frameworks.
- 3. Establish an Inter-Agency Task Force (IATF) for Project Implementation** Mandatory composition: BPDB, PGCB, REB, SREDA, Power Division, Ministry of Finance, with BERC as observer. Chaired at minimum at Joint Secretary level within MoPEMR. Mandate covers: coordinating technical approvals; monitoring agency compliance with approval timelines; and serving as the first escalation point when projects are stalled by inter-agency delays. The IATF's findings must be directly linked to PPA contractual remedies, delays attributable to institutional failure should be treated as Government Events of Default, protecting developers from COD penalties.
- 4. Introduce a Standard Operating Procedure (SOP) for Coordinated Approvals** The SOP maps every approval from PPA signing to COD, assigns each to a lead agency with a defined review window, and establishes an escalation pathway when timelines are breached. A live project tracking log, accessible to developers, creates reputational accountability and provides documented evidence for COD claims.
- 5. Time-Bound Approval Procedures with Deemed Approval Clauses** For critical authorisations, government agencies must follow binding day-wise timelines. **If no decision is issued within the review window, a deemed approval mechanism prevents administrative silence from causing indefinite delay**, the most common source of pre-operational cost accumulation.

5.2 Recommendations: Institutional Reforms Beyond the PPA Document *(Continued)*

- 1. Ensure Litigation-Free Land Provision** Government agencies must verify land classification and litigation status before project award, not after. Improved inter-ministry information sharing would prevent situations where official clearance is granted but local MPs or courts impose subsequent challenges.
- 2. Strengthen Payment Discipline and Currency Risk Management** Introduce clearer payment timelines within the PPA; improve BPDB's budget planning to prevent systematic arrears; and introduce financial instruments (hedging products, subsidised currency swaps, partial FX guarantees) that protect IPPs from exchange rate movement between invoice and payment dates.
- 3. Restore Contractual Stability, Renegotiation Safeguards** Future PPAs must include explicit provisions governing renegotiation: the triggers that justify it, the procedure for initiating it, and the limits on what can be renegotiated. A competitively-determined, contractually-fixed tariff must not be subject to unilateral challenge after major investment commitments have been made.
- 4. Expand Company Courts with Commercial Law Expertise** Recent initiatives to increase company courts are a positive step, but effectiveness depends on judges with expertise in corporate and commercial law. Court expansion without matching expertise does not reduce the time or cost of contractual dispute resolution.
- 5. BPDB paid Training Workshops and Capacity Development for Local Teams** Short paid workshops for project representatives and EPC contractors on procedural requirements, compliance processes, and BPDB communication protocols would reduce administrative delays arising from information gaps. Greater inclusion of EPC contractors in BPDB project meetings would improve decision quality and transparency.

5.2 Recommendations: Institutional Reforms Beyond the PPA Document *(Continued)*

Table 9: Mapping Recommendations to Analytical Framework

Recommendation	Risk Allocation	Enforcement Strength	Flexibility	Control & Residual Rights	Information Asymmetry
Priority sector declaration	✓	✓			
Inter-agency task force		✓	✓	✓	✓
Time-bound approval procedures		✓			
Litigation-free land provision	✓	✓			
Renewable-specific PPA provisions			✓		
RCOD–COD milestone revision	✓		✓		
Payment discipline and currency risk protection	✓	✓			
Renegotiation safeguards	✓	✓	✓		
Capacity development for local teams					✓
BPDB training workshops					✓
Stakeholder engagement improvements				✓	✓
Company court strengthening		✓			
Contract enforcement strengthening	✓	✓		✓	

Source: Authors' compilation



The Way Forward

7.1 Recommendations: Overall

A. Target 10,000 MW

- MoPEMR should produce a road/**action plan to execute the 10,000 MW target** by deploying both utility based RE and DRE
 - The land of the cancelled fossil fuel-based power plants and the upcoming **stranded assets due to the phase out of the power plants should be used for renewable energy-based power plants**
 - Chinese **technologies, equipment** (panels, inverter, battery) and **investment** could significantly contribute to this additional power generation (example of Pakistan)
- A **substantial scope of investment** is created because of this renewed target for renewable energy deployment
 - About **USD10 billion worth** of investment is possible in utility-scale, rooftop and distributed solar, wind and bio-mass and bio-gas.
- **Reviewing the cancelled LoI** projects and bringing back the fair projects (e.g. through prioritising them in the open tender) can help to reach the target within due time.

B. National Rooftop Solar Programme 2025

- A tailored, **location-specific approach** (considering solar radiation potential, geographic distribution of government offices, schools, hospitals) is essential to ensure technical and financial feasibility across diverse regions of Bangladesh
- It is critical to **introduce third-party monitoring and verification (M&V) mechanisms** in order to ensure transparency in public procurement and infrastructure
- The third party will submit a quarterly report to the responsible DC office and the report to be publicly available at their websites
- **A 5–10 year O&M clause should be mandatory**, where the contractor is responsible for scheduled maintenance, system monitoring, and fault resolution for the OPEX model

Table: Estimated Investment Requirement for 10,000 MW of Renewable Energy-based Electricity

Renewable Energy Source	Allocation (MW)	Cost per MW (USD Million)	Estimated Investment (USD Million)
Solar (Utility-scale)	2,910	1	2,910.00
Solar (Rooftop & Distributed)	2,910	0.95	2,764.50
Wind	3,810	0.88	3,352.80
Biomass, Biogas & Others	370	0.89	329.3
Total	10,000	—	9,356.6 (~USD 9.36 Billion)

Source: CPD revisiting targets study (2025)

C. Fiscal Measures in the Upcoming Budget

- **Adequate allocation and funding** for renewable energy must be provided in the **national budget FY2027**
- Special **subsidy allocation for RE** will be helpful to **motivate the renewable energy businesses**
- **Tax and duty exemption on the RE power generation equipment's specially inverter and battery** must be introduced to incentivise the renewable energy businesses.

D. Electrification: Agro-based Irrigation, EV and Cooking

- Government needs to provide **cross subsidy to the solar irrigation system as a way to reduce** the diesel usage
 - According to a ADB study, solar-based irrigation in 45,000 pumps would save about 300,000 tons of diesel fuel use annually
- Under a 30% EV penetration scenario, annual diesel consumption in Bangladesh's transport sector is estimated to decline by approximately 0.83 million metric tons, assuming proportional electrification within diesel-dependent vehicle categories
 - A **stricter guideline for EV licensing** operation is required
 - Mandatory use of EVs in case of public procurement
- Solar mini-grids for agro-clusters can be introduced
 - Government can also **utilise solar irrigation sites as EV charging hubs** having the same solar array with lower cost per kWh
 - Traditional **filling stations** could be incentivized to have a **separate line for EVs**
 - **Duties and taxes on EVs could be significantly reduced** in order to promote EV use in the country

E. Industrial Rooftop Solar, Electric Boiler

- **Import Duty Waivers on Solar Accessories:** It is proposed to reduce or waive import duties on critical rooftop solar accessories, including fibre-reinforced polymer walkways, inverters, mounting structures, and DC cables.
- **Dedicated Finance Fund:** Establish a dedicated, low-cost financing fund for **rooftop solar, implemented by Bangladesh Bank with single-stage approval to minimize disbursement delays**. It is important to address the lack of clear technical guidance and the complexities of navigating green finance in these sectors
- **Import Duty Reduction:** Reducing high import duties on **efficient appliance components** to lower upfront switching costs for factories.
- **Inclusive Industrial Rooftop Solar Policy:** The Ministry of Commerce should form an inclusive industrial rooftop solar Policy to encourage energy transition in the industrial sector

F. Grid Development

- Strengthening institutional endowments by **modernising transmission with 400–765 kV lines, advanced SCADA/EMS, and storage systems**
- Aligning agent interests through better inter-agency coordination, a Transition Coordination Committee, and enhanced private participation
- Improving **regulatory and operational frameworks** by enforcing **Grid Code compliance**, real-time forecasting, and transparent HR and procurement practice
- **Reducing path dependence by granting financial autonomy** and gradually transitioning PGCB into an Independent System Operator (ISO) model.

7.1 Recommendations: Overall

G. Battery

- BESS system is still very costly in Bangladesh because most equipment are imported and tax is high, especially for batteries (around 61.8%). At present situation, using large BESS in solar plant is not economically feasible; small BESS can be used only for internal load or backup during outage.
- **Government can reduce tariff to around 5% for all RE equipment to make BESS more affordable and attractive.**
- If battery cost becomes lower, it can help reduce peak electricity price from about 21 BDT/kWh to around 15 BDT/kWh.
- Bangladesh can work with **Chinese companies to set up LiFePO₄ battery assembly plant locally**, which will reduce cost and import dependency.
- BESS also gives technical benefit like reducing load fluctuation and improving stability of renewable energy system.

H. Power Sector Institutions

- The sectoral institutions such as BPDB, Power Cell and REB requires restructuring with a dedicated renewable energy wing and performance incentives that explicitly align with transition goals
 - **SREDA and BREB should substantially invest in modernisation, workforce capacity, gender-inclusive participation, and policy alignment**
 - **SREDA must have greater autonomy in decision-making** and a clearer mandate to lead to renewable energy transition.
 - BEREC should focus on capacity building of the organisations along with approval of the extended organogram, targeted recruitment through the Public Service Commission, and the creation of a renewable energy wing would address immediate skill gaps
 - **BSTI should also focus on its capacity development to conduct quality testing and labelling** of the both domestically produced and imported **equipment for renewable energy** especially solar and wind
 - Overall, inter-agency coordination should be strengthened through the establishment of a digital platform and a task force mechanism to reduce duplication and delays.

7.2 The Way Forward: A Reform Agenda for Bangladesh's PPA Framework

Bangladesh's PPA framework requires urgent reform

- The diagnostic assessment, cross-country benchmarking, and case evidence presented in this study converge on one conclusion: the current PPA structure, lacking payment security, weak on enforcement, and rigid without protective flexibility, is not adequate for attracting the long-term foreign investment Bangladesh's RE transition requires.

Immediate Priorities (Short-term)

- **Introduce payment security** into the standard PPA template, a revolving LC or escrow account covering 3–6 months of payments is the single most impactful near-term reform.
- **Align RCOD and COD milestone extensions** when delays are attributable to government-side factors, and introduce defined compensation for pre-operational delays caused by institutional failure.

Medium-term Structural Reforms

- **Establish the Inter-Agency Task Force** with binding SOPs, time-stamped approval responsibilities, and a live project tracking log accessible to developers.
- **Develop a dedicated RE Procurement Guideline** as a formal supplement to the PPA/PPR framework, covering the post-award phase through to COD.
- **Incorporate lender step-in rights and a Dispute Adjudication Board** into the standard BPDB PPA template to improve both bankability and dispute resolution.
- **Restore a credible sovereign commitment mechanism**, equivalent in function to the Implementation Agreement, that survives political transitions and provides enforceable backing for PPA obligations.

Long-term: Moving Toward a Complete Contract Environment

- **Improving enforcement and reducing information asymmetry** are the two reforms with the largest multiplier effect, each improvement reduces the compensatory burden on all other dimensions and allows PPAs to function with less rigidity and fewer costly protective mechanisms.
- **Bangladesh stands at a juncture where incremental adjustment is no longer sufficient.** A calibrated, phased reform agenda, anchored in contract theory and grounded in the realities of Bangladesh's institutional environment, is essential to unlock the next generation of RE investment.

Thank You.