

FROM MARKET DOMINANCE TO MARKET CATALYSIS

Rethinking IDCOL's Role in Bangladesh's Renewable Energy Finance

Noor Yana Jannat



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Published in September 2026 by

Centre for Policy Dialogue (CPD)

House 40/C, Road No 11 (new)

Dhanmondi, Dhaka-1209, Bangladesh

Phone: (+88 02) 41021780-2

E-mail: info@cpd.org.bd

Website: www.cpd.org.bd

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Copyediting

H M Al Imran Khan

Page lay-out and typesetting

Md Shaiful Hassan

Citation: Jannat, N. Y. (2026). *From Market Dominance to Market Catalysis: Rethinking IDCOL's Role in Bangladesh's Renewable Energy Finance*. Centre for Policy Dialogue (CPD).

Authors' Bio

Noor Yana Jannat is currently working as a Programme Associate at the Centre for Policy Dialogue (CPD). She is pursuing an MSc in Applied Economics at BRAC University and holds a BBA in Finance and Banking from Bangladesh University of Professionals (BUP). She combines her background in finance and applied economics with a strong interest in development finance, contributing to policy research on energy finance and supporting evidence-based solutions for Bangladesh's sustainable energy transition.

Email: noor@cpd.org.bd

Abstract

Bangladesh's green energy transition faces a stark institutional scale mismatch: while Infrastructure Development Company Limited (IDCOL), the country's leading development finance intermediary, dominates the domestic renewable energy financing niche, its financing capacity remains modest relative to the scale of investment required to meet the country's renewable energy ambitions. Against this backdrop, this study examines the evolving role of IDCOL within Bangladesh's renewable energy finance ecosystem, asking whether its dominant market position continues to reflect development-finance additionality or risks constraining broader private-sector participation. Employing an exploratory qualitative case-study approach, the study compares IDCOL with commercial banks across four dimensions: financier, capital mobiliser, policy coordinator, and market intermediary.

Drawing on primary Key Informant Interviews (KIIs) and institutional financial data, the study employs a modified Herfindahl-Hirschman Index (HHI) to assess market concentration. The analysis reveals a highly concentrated financing landscape where IDCOL (HHI of 4,448) accounts for nearly 60 per cent of domestic renewable energy financing. By examining the gap between IDCOL's market dominance and Bangladesh's growing renewable energy financing needs through HHI-based market concentration analysis and evidence from successful commercial bank co-financing, the study finds that while IDCOL's dominance is additionality-justified in grant-dependent, high-risk segments like off-grid solar and irrigation, its increasing migration into commercially viable markets risks crowding out private capital. This study further explores banks' willingness to enter the sector, the barriers limiting their participation, and the financing mechanisms needed to bring more commercial capital into renewable energy.

The study, therefore, argues for a gradual shift from market dominance to market catalysis, positioning IDCOL not simply as a financier, but as an enabler. By shifting from direct lending towards catalytic finance, Bangladesh can move beyond dependence on a single institution's balance sheet and build a renewable energy financing market supported by a deeper and more diversified renewable energy finance ecosystem. This will allow public and private capital to work in greater complementarity and ultimately mobilise the scale of finance required for Bangladesh's next phase of renewable energy growth.

Acknowledgement

This study was conducted by the Centre for Policy Dialogue (CPD), and the authors would like to express their sincere gratitude to KII participants *Md. Wahidur Rahman*, Executive Vice President & Unit Head (Technical), Renewable Energy, IDCOL; *Tashmeem Muntazir Chowdhury*, SVP & Head of ESG and Sustainable Finance, BRAC Bank; and *Molla Karimul Islam Tuhin*, SVP & Head of ESG and Sustainable Finance, City Bank, for their valuable data, perspectives, and insights.

The authors would also like to extend their appreciation to *Mr Avra Bhattacharjee*, Additional Director, Dialogue and Outreach, CPD, and *Mr HM Al Imran Khan*, Senior Publication Associate, CPD, for their valuable support in bringing the report to completion.

Contents

<i>Authors' Bio</i>	<i>v</i>
<i>Executive Summary</i>	<i>vii</i>
<i>Acknowledgement</i>	<i>viii</i>
<i>Acronyms</i>	<i>xi</i>
1. Introduction and Background	1
2. Literature Review	2
2.1. National Development Banks and Renewable Energy Financing	
2.2. Cross-country Comparative Institutional Evidence	
2.3. GCF Disbursement and Climate Finance Intermediation	
2.4. Crowding-In versus Crowding-Out in Renewable Energy Finance	
2.5. Governance, Institutional Capacity and Operational Readiness	
2.6. Contextualising IDCOL and Literature Gap	
3. Integrated Analytical Framework	7
4. Methodology	8
4.1. Research Design	
4.2. Data Collection and Analysis	
5. Role as Financier	11
6. Role as Capital Mobiliser	14
6.1. Loan Portfolio Analysis	
6.2. Project-Level Case Studies	
7. Role as Policy Coordinator	16
7.1. Institutional Fragmentation and De Facto Mandates	
7.2. The Green Climate Fund Disbursement Paradox	
7.3. Implication for IDCOL's Future Role in Policy Landscape	
8. Role as Market Intermediary	18
8.1. Market Concentration	
8.2. Loan Pricing Benchmark	
8.3. Competitive Positioning	

9. Integrated Institutional Assessment	23
9.1. SWOT Analysis	
9.2. Market Broadening in Bangladesh's Renewable Energy Finance: Potential Entrants and the Evolved Role of IDCOL	
10. Synthesis and Recommendations	26
References	29
List of Tables, Figures and Boxes	
Table 1: Cross-country Institutional Practices	3
Table 2: Data Collection	9
Table 3: RE Product Mix and Financing Instruments	11
Table 4: Comparative RE Loan Disbursement Trends (2023-2025)	14
Table 5: Utility-Scale Grid-tied Solar Project Case Studies,	15
Table 6: Institutional HHI Calculation for Renewable Energy Financing (FY2025)	19
Table 7: Comparative Financing Terms Across Rooftop Solar Lending	20
Table 8: Competitive Positioning of IDCOL vs Commercial Banks in Renewable Energy Financing	21
Table 9: Role of Potential Market Entrants	25
Figure 1: Integrated Analytical Framework	7
Figure 2: Institutional Mapping and Flow of Funds	17
Figure 3: RE loan Disbursement Market Share Comparison (FY2025)	18
Figure 4: Renewable Energy Disbursement Trend: IDCOL vs Commercial Banks vs Other NBFIs (2021-2025)	24
Box 1: SWOT Analysis	23
Box 2: Key Findings and Recommendations from the KII with BRAC Bank	27

Acronyms

ADB	Asian Development Bank
A/B loan	Co-financing structure combining a multilateral development bank ('A') tranche with a syndicated commercial ('B') tranche
ADB	Asian Development Bank
AEPC	Alternative Energy Promotion Centre
AFD	Agence Française de Développement
AIIBzz	Asian Infrastructure Investment Bank
BADC	Bangladesh Agricultural Development Corporation
BB	Bangladesh Bank
BCCRF	Bangladesh Climate Change Resilience Fund
BCRECL	Bangladesh-China Renewable Energy Company Limited
BERC	Bangladesh Energy Regulatory Commission
BDT	Bangladeshi Taka
BG	Bank Guarantee
BIFFL	Bangladesh Infrastructure Finance Fund Limited
BII	British International Investment
BPDB	Bangladesh Power Development Board
BTS	Base Transceiver Station (telecom tower)
CAPEX	Capital Expenditure
CAR	Capital Adequacy Ratio
CMC	China National Machinery Import & Export Corporation
COD	Commercial Operation Date
CREF	Central Renewable Energy Fund
DAE	Direct Access Entity
DEG	Deutsche Investitions- und Entwicklungsgesellschaft
DFI	Development Finance Institution
DFID	Department for International Development
EE	Energy Efficiency
EIB	European Investment Bank

ERD	Economic Relations Division
ESCO	Energy Service Company
ESG	Environmental, Social and Governance
FAA	Funded Activity Agreement
FCB	Foreign Commercial Bank
FMO	Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoB	Government of Bangladesh
GPOBA	Global Partnership on Output-Based Aid
HHI	Herfindahl-Hirschman Index
ICS	Improved Cook Stove(s)
IDA	International Development Association
IDCOL	Infrastructure Development Company Limited
IFC	International Finance Corporation
IPP	Independent Power Producer
IREDA	Indian Renewable Energy Development Agency
IRR	Internal Rate of Return
ISB	Islamic Bank
JICA	Japan International Cooperation Agency
JV	Joint Venture
KfW	Kreditanstalt für Wiederaufbau
KII	Key Informant Interview
kWh	Kilowatt-hour
LC	Letter of Credit
LDC	Least Developed Country
MDB	Multilateral Development Bank
MFI	Mobile Financial Institutions
MW	Megawatt
MWp	Megawatt-peak
NBFI	Non-Bank Financial Institution
NDB	National Development Bank
NEM	Net Energy Metering
NPL	Non-Performing Loan
NPV	Net Present Value
NWPGCL	North-West Power Generation Company Limited
OECD	Organisation for Economic Co-operation and Development
OPEX	Operating Expenditure

PCB	Private Commercial Bank
PKSF	Palli Karma-Sahayak Foundation
PO	Partner Organisation
PP	Payback Period
PPA	Power Purchase Agreement
PPP	Public-Private Partnership
RE	Renewable Energy
RESCO	Renewable Energy Service Company
RMG	Readymade Garment
SCB	Specialised Commercial Bank
SF	Sustainable Finance
SHS	Solar Home System
SIP	Solar Irrigation Pump
SME	Small and Medium Enterprise
SMG	Solar Mini-Grid
PT SMI	Perseroan Terbatas Sarana Multi Infrastruktur
SOCB	State-Owned Commercial Bank
SREDA	Sustainable and Renewable Energy Development Authority
SREP	Scaling-Up Renewable Energy Program
SVP	Senior Vice President
SWOT	Strengths, Weaknesses, Opportunities, Threats
TA	Technical Assistance
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USD	United States Dollar
WACC	Weighted Average Cost of Capital

Introduction and Background

The structural paradox of Bangladesh's green energy transition lies in a stark institutional scale mismatch where the nation's leading development finance intermediary Infrastructure Development Company Limited (IDCOL) completely dominates its domestic market niche yet remains marginal against the huge magnitude of national investment needs (Ahmed et al., 2020; Hellqvist & Heubaum, 2023). To achieve its long-term development targets, Bangladesh requires an estimated annual renewable energy investment of USD 2.35 billion to USD 2.84 billion between 2025 and 2040. This annualised demand projection, derived from Moazzem et al. (2025), reflects the massive capital mobilisation required to shift the national grid away from a heavy reliance on imported fossil fuels. In sharp contrast to this macro-level demand, IDCOL disbursed approximately USD 72.0 million (IDCOL annual report, 2025) for renewable energy projects in its latest annual reporting cycle. Consequently, although IDCOL stands as the largest single domestic financier of green energy capturing nearly more than half of the market share, its actual financial delivery addresses a mere 2.5 per cent to 3.1 per cent of the country's annualised renewable energy investment requirements. This monumental shortfall underpins an essential academic and policy question regarding institutional additionality, market concentration, and the strategic evolution of national development banks in climate finance intermediation (Zhang, 2022).

While IDCOL's macro-level contribution appears marginal relative to national demand, its micro-level market position within the domestic financial sector is profoundly dominant. Empirical data from the final quarter of 2025 shows that IDCOL captured a commanding 59.63 per cent share of all renewable energy financing in Bangladesh, significantly outperforming commercial banks (27.4 per cent) and other non-bank financial institutions (18 per cent), demonstrating dominance in renewable energy financing (BB, 2025). This polarisation generates critical structural tension. On one hand, IDCOL successfully implements the De-Risking Renewable Energy Investment logic (Waissbein et al., 2013) by crowding in international capital and serving as an indispensable delivery vehicle for highly blended concessional loans. On the other hand, its overwhelming market concentration raises pivotal questions about whether it is filling an unserved high-risk vacuum or unintentionally crowding out commercial banks from participating in viable green assets, a dilemma similarly observed in peer institutions (Nurdiyono, 2025; Vyas & Kaneria, 2025).

Research Objective and Scope

Against this backdrop, the primary objective of this qualitative comparative case study is to assess IDCOL's role in renewable energy financing relative to commercial banks, with particular emphasis on determining whether its market dominance reflects genuine development-finance additionality or potential crowding-out where commercial financing is viable. The study evaluates the two financing channels across four dimensions: role as financier, capital mobiliser, policy coordinator, and market competitor.

2. Literature Review

2.1. National Development Banks and Renewable Energy Financing

National Development Banks (NDBs) and specialised public financial intermediaries play a central role in renewable energy (RE) financing by addressing market failures that limit private investment. Zhang (2022) identifies three key NDB functions: direct financing, catalytic mobilisation of private capital, and policy coordination. The latter is particularly important in developing countries where institutions often support policy implementation alongside financing activities. Countries possessing both supportive renewable energy policies and active development finance institutions demonstrate higher renewable energy investment levels.

The financial rationale for these institutions is explained by the De-Risking Renewable Energy Investment framework (Waissbein et al., 2013), which argues that concessional loans, guarantees, grants and other public instruments reduce project risk, lower the weighted average cost of capital (WACC), and improve project bankability. Smallridge et al. (2012) further argue that NDBs serve as intermediaries between international climate funds and domestic markets by aggregating projects, reducing transaction costs and mobilising private investment. More recent evidence suggests that the effectiveness of climate finance depends less on the volume of available capital and more on the institutional capacity and coordination mechanisms through which it is deployed (Bartzokas, 2026).

Other scholarship argues that state investment banks perform broader market-creating functions by establishing new investment opportunities, signalling project viability, and expanding investor confidence (Mazzucato & Penna, 2016). Nevertheless, crowding-out risks remain relevant under specific institutional conditions. Torres and Zeidan (2016) argue that development banks may begin displacing commercial lenders when they maintain below-market lending rates in mature financial markets. Evidence from Indonesia indicates that PT SMI's growing dominance has generated concerns regarding excessive market concentration and state-to-state financing dependence (Anguelov, 2024). Apriyadi and Ghazali (2025) show that centralised decision-making, weak interdepartmental communication, and poor knowledge transfer significantly constrained PT SMI's policy and product development processes.

2.2. Cross-country Comparative Institutional Evidence

Table 1 synthesises cross-country evidence on renewable energy and climate finance institutions to assess alternative institutional models, financing approaches, and their applicability to IDCOL.

Table 1: Cross-country Institutional Practices

Institution	Country	Institutional Type	Primary RE/Climate Finance Functions	Key Findings from Literature	Relevance for IDCOL
Infrastructure Development Company Limited	Bangladesh	Government-owned NBFIs and climate finance intermediary	Concessional lending, refinancing, grant administration, partner-organisation model, GCF Direct Access Entity	Financed over half of Bangladesh's renewable energy capacity; SHS programme successfully expanded energy access but later suffered from policy misalignment and market sustainability issues (Ahmed et al., 2020; Hellqvist & Heubaum, 2023).	Baseline institution under study
Indian Renewable Energy Development Agency	India	National Development Bank specialising in RE	Project finance, refinancing, green bonds, policy implementation support	Demonstrates three functions: direct financier, catalytic mobiliser, and policy coordinator. Strong growth in renewable energy portfolio and green bond issuance. Coordination with government policy accelerated RE deployment (Zhang, 2022; Vyas & Kaneria, 2025).	Closest institutional comparator to IDCOL due to sector-specific mandate and government-backed financing role.
PT Sarana Multi Infrastruktur	Indonesia	State-owned infrastructure financing institution	Blended finance, guarantees, concessional lending, PPP support	Investment grants improved project bankability, increasing NPV by 293–473%. Finance intermediation and guarantees effectively leveraged private capital. Studies raise concerns regarding state-to-state lending concentration and the risk of replacing rather than supplementing private-sector finance (Nurdiyono, 2025; Sitorus et al., 2018).	Strong comparator for analysing blended finance and GCF-style concessional financing structures.
Alternative Energy Promotion Centre	Nepal	Government renewable energy promotion agency	Subsidy administration, climate finance delivery, coordination with MFIs and banks	Transition from grants to blended finance increased outreach but introduced access barriers. Monitoring and partner-capacity constraints emerged as key operational challenges (Steinbach et al., 2015).	Valuable comparison for rural renewable energy financing and partner-based delivery models.

(Table 1 Contd.)

(Table 1 Contd.)

Institution	Country	Institutional Type	Primary RE/Climate Finance Functions	Key Findings from Literature	Relevance for IDCOL
KfW Development Bank	Germany	National Development Bank	Policy implementation, concessional finance, green transformation financing	Illustrates how development banks coordinate policy and finance simultaneously. Countries with strong policy-bank coordination achieved higher RE investment rates (Zhang, 2022).	Useful benchmark for understanding advanced policy coordination functions absent in many developing-country institutions.
China Development Bank	China	National Development Bank	Large-scale infrastructure finance, industrial financing, renewable energy lending	Demonstrates how state-backed finance can overcome systemic barriers to renewable energy deployment through coordinated industrial and financial policy (Zhang, 2022).	Illustrates scale advantages unavailable to IDCOL but useful for understanding state-led energy transitions.
Indonesia Climate Change Trust Fund	Indonesia	National Climate Fund	Climate fund management, donor coordination, grant financing	Strong alignment with national priorities but limited by governance and legal ambiguities affecting fund mobilization (Sheriffdeen et al, 2023).	Relevant comparator for assessing institutional readiness and climate finance governance.
Clean Energy Finance Corporation	Australia	Green Bank	Commercial co-financing, catalytic investment, market creation	Considered a leading climate finance vehicle characterized by strong governance, capitalization, and monitoring systems (Schur & Reynolds, 2024).	Provides an aspirational benchmark for climate finance institutional design.

Source: Author's compilation.

Three common findings emerge here. First, institutions with explicit policy coordination roles (e.g., IREDA and PT SMI) generally outperform institutions limited to credit provision. Second, blended finance combining grants and concessional lending consistently improves project bankability. Third, governance quality, monitoring systems, and organisational capacity are often as important as capitalisation in determining programme success.

2.3. Green Climate Fund Disbursement and Climate Finance Intermediation

Although climate finance commitments have increased substantially, disbursement remains a major challenge. Key barriers include complex approval procedures, weak institutional capacity, inadequate project preparation, and difficulties integrating Green Climate Fund (GCF) resources into domestic financing systems.

Kalinowski (2024) similarly finds that accreditation complexity and lengthy approval processes continue to slow climate finance deployment. However, Direct Access Entities (DAEs) generally perform better than international accredited entities in reaching domestic private-sector actors. Successful climate finance vehicles typically possess strong governance systems, fiduciary standards, safeguards compliance, monitoring frameworks, and clear institutional mandates (Rai et al., 2016; Schur & Reynolds, 2024).

Cross-country evidence further suggests that delays are not unique to individual institutions. PT SMI experienced donor approval periods of four to six months, exceeding its internal financing timelines (Nurdiyono, 2025). Indonesia's broader climate finance experience similarly demonstrates that financing gaps often arise from institutional coordination failures rather than shortages of capital (Suroso et al., 2022). These findings indicate that climate finance effectiveness depends heavily on the institutional architecture through which funds are deployed.

2.4. Crowding-In versus Crowding-Out in Renewable Energy Finance

Deleidi et al. (2020) provide the most direct empirical support, finding that each dollar of direct public investment in renewable energy is associated with significant additional private co-investment across 13 economies. Mazzucato and Penna (2016) reinforce this theoretically: mission-oriented institutions targeting transformative, high-uncertainty outcomes are structurally less prone to crowding out precisely because they operate in segments commercial banks are institutionally ill-equipped to enter.

Despite these positive findings, concerns regarding crowding out remain prominent within the development finance literature. Waidelich and Steffen (2024), analysing nearly 5,000 renewable energy financing transactions across OECD countries, find that crowding-out risks emerge when state investment banks provide financing at rates that directly compete with commercial lenders in mature markets. Torres and Zeidan (2016) similarly argue that development finance institutions should evolve as domestic financial systems deepen, warning that excessive institutional dominance may suppress private credit market development. Evidence from Indonesia suggests that PT SMI's increasing concentration of infrastructure financing responsibilities has generated concerns regarding state-to-state lending and excessive reliance on public finance channels (Anguelov, 2024). These findings suggest that the distinction between market creation and market displacement depends heavily on institutional mandate design, additionality requirements, and market maturity.

Nepal's AEPC provides the inverse lesson. The (Kandel, 2025) describes how AEPC's grant-only model made private firms too comfortable protecting the status quo, crowding out innovation rather than financing. The 2014 CREF reform reversed this by deliberately inviting commercial banks as co-financiers demonstrating that the path from crowding out to crowding in is achievable through instrument redesign but requires institutional willingness to accept reduced market share in exchange for broader financial system development.

2.5. Governance, Institutional Capacity and Operational Readiness

A consistent theme across literature is that governance quality significantly influences institutional effectiveness. Studies of PT SMI identify centralised decision-making, weak knowledge management, and

poor coordination as major constraints to implementation performance (Apriyadi & Ghazali, 2025). Similarly, AEPC's biogas programme experienced repayment and monitoring challenges due to uneven partner capacity.

Evidence from Bangladesh suggests similar concerns. Hellqvist and Heubaum (2023) further argue that the decline of Bangladesh's Solar Home System programme resulted partly from policy misalignment, inadequate market development, and weak institutional coordination. These findings reinforce the broader conclusion that access to concessional capital alone is insufficient. Effective climate finance institutions require strong monitoring systems, governance arrangements, risk management frameworks, and organisational capacity to sustain programme performance over time.

2.6. Contextualising IDCOL and Literature Gap

The literature generally portrays IDCOL as Bangladesh's most important renewable energy finance intermediary. Through Solar Home Systems, Solar Irrigation Pumps, Mini-Grids, and other programmes, IDCOL has successfully mobilised donor funding, blended concessional finance with private participation, and expanded renewable energy access nationwide. Impact evaluations show significant improvements in income, agricultural productivity, energy access, and welfare outcomes among programme beneficiaries (Khandker et al., 2014). IDCOL's accreditation as a GCF Direct Access Entity further demonstrates its institutional credibility and capacity to channel international climate finance.

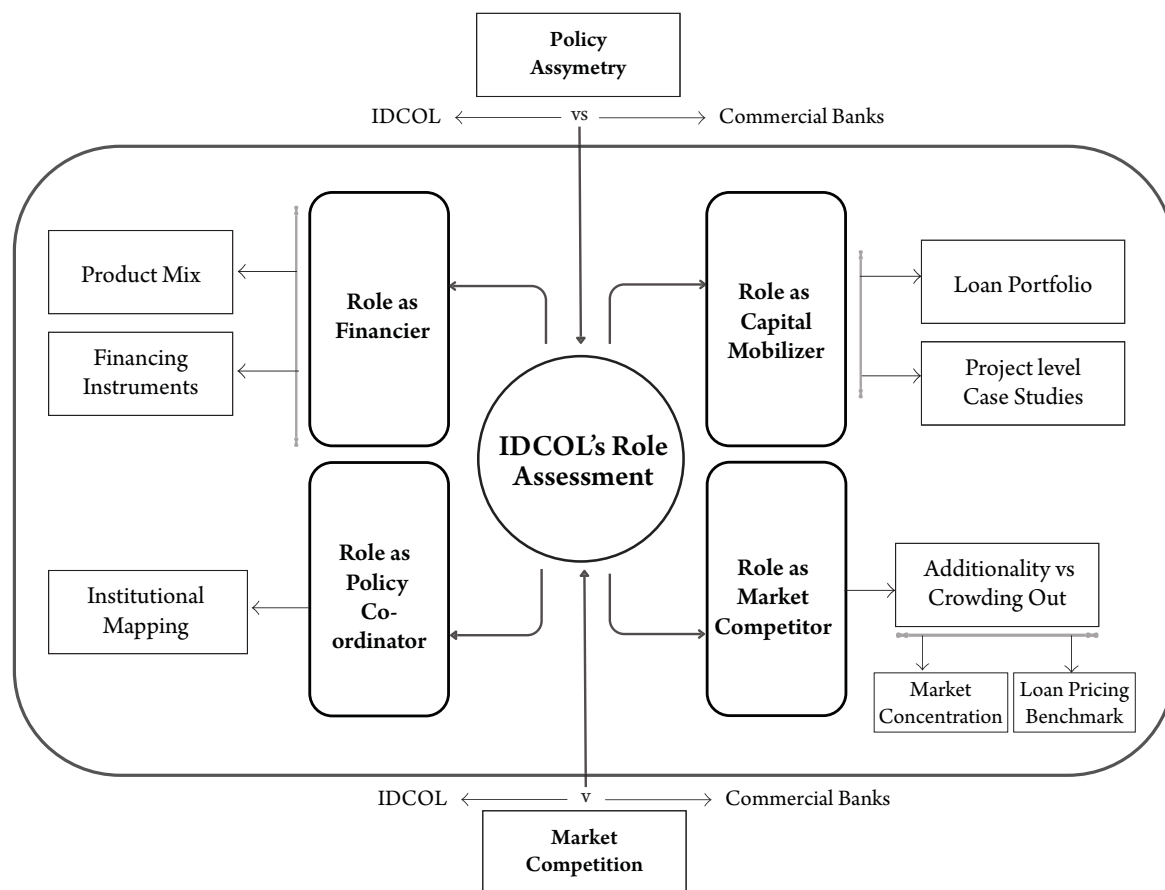
Nevertheless, important challenges remain. Evidence from the SHS programme highlights the risks of policy misalignment, while studies of organisational performance point to weaknesses in monitoring, procurement, and institutional coordination (Hellqvist & Heubaum, 2023). More importantly, most existing research focuses on programme outcomes rather than institutional readiness.

Consequently, three important gaps remain within the existing literature. First, while extensive research evaluates the socioeconomic impacts of IDCOL-financed projects, relatively little attention has been devoted to the institution's readiness as a climate finance intermediary. Second, existing studies rarely examine IDCOL through the broader development-finance framework encompassing financing, capital mobilisation, policy coordination, and market creation roles identified by Zhang (2022). Third and most importantly, despite IDCOL's dominant position in Bangladesh's renewable energy finance market, limited research has assessed whether its activities generate additional private investment or risk crowding out commercial financial institutions. Addressing these gaps is essential for understanding IDCOL's future role in scaling renewable energy investment, mobilising climate finance, and supporting Bangladesh's energy transition.

Integrated Analytical Framework

An integrated framework is presented in figure 1 to analyse the key institutional and financing dimensions identified in the literature.

Figure 1: Integrated Analytical Framework



Source: Author's illustration adapted from Zhang, 2022.

Methodology

4.1. Research Design

This study employs an exploratory, qualitative single-case study research design to evaluate the institutional readiness and multi-dimensional roles of the IDCOL in scaling renewable energy (RE) financing and climate finance intermediation in Bangladesh. The structure is derived from the literature identifying three principal functions of development finance institutions in renewable energy markets: direct financing, catalytic capital mobilisation, and policy coordination (Zhang, 2022). An additional market intermediation dimension is incorporated to assess IDCOL's market position and market characteristics within Bangladesh's renewable energy financing landscape. Qualitative orientation is appropriate because the research questions are concerned less with measuring isolated outcomes than with explaining how IDCOL performs, and why its readiness to operate as a large-scale climate finance intermediary remains uneven.

4.2. Data Collection and Analysis

Table 2 presents the data collection method linking each analytical pillar to its components, assessment metrics, data sources, and analytical purpose for comparing IDCOL with commercial banks.

This study draws on key informant interviews with senior ESG/sustainable-finance officials at IDCOL, BRAC Bank and City Bank. BRAC Bank and City Bank were selected as the two active private commercial lenders in Bangladesh's RE market with comparable ESG/sustainable-finance functions; BRAC Bank was further distinguished as IDCOL's co-financing partner on the Sirajganj and Pabna grid-tied solar plants. Interviews followed a semi-structured protocol covering pricing, GCF/DFI access, and competitive positioning (Table 2). A limitation to be noted is: findings from key informant interviews reflect the perspectives of a small number of respondents and should not be read as representative of the commercial banking sector as a whole; some primary data regarding pricing and portfolio figures were disclosed in interviews. Additionally, to enhance analytical rigor, findings from the four dimensions are synthesised using an integrated institutional readiness assessment. This assessment draws on climate finance readiness literature (Schur & Reynolds, 2024) and evaluates IDCOL's strengths, weaknesses, opportunities, and threats (SWOT).

Table 2: Data Collection

Analytical Pillar	Components	Assessment Metrics	Data Collection Method		Analytical Purpose
			Primary	Secondary	
Financier	Product	Government-owned NBFIs and climate finance intermediary	Concessional lending, refinancing, grant administration, partner-organisation model, GCF Direct Access Entity	Financed over half of Bangladesh's renewable energy capacity; SHS programme successfully expanded energy access but later suffered from policy misalignment and market sustainability issues (Ahmed et al., 2020; Hellqvist & Heubaum, 2023).	To assess the overall financial capacity and offerings (Rai et al., 2015; Vyas & Kaneria, 2025; Schur & Reynolds, 2024; Smallridge et al., 2012)
	Financing Mechanisms	Detailed Instrument types and Structures, Fund Source	IDCOL officials, Bank Officials		
Capital Mobiliser	Loan Portfolio	Disbursement volume	Bank Officials	Annual Reports	To assess the institution's ability to adequately channel and deploy capital (Vyas & Kaneria, 2025; Nurdiono, 2025; Schur & Reynolds, 2024).
	Project Level Case Studies	Financing Terms, Project Finance metrics (NPV, IRR, PP), Loan Structures	KII with Lending Organisation	Project Completion Reports	
Policy Coordinator	Institutional Relationships	Coordination between Stakeholders	–	Secondary Literature	To assess structural barriers in private-sector participation (Hellqvist & Heubaum, 2023)
Market Intermediary	Market Concentration	Quantitative market capture comparison within the domestic green financing ecosystem using HHI index $HHI = \sum_{i=1}^n (MS_i)^2,$	–	BB Reports, Annual Reports, Secondary Literature	Assessed to determine whether the advantage is additionality-justified (serving risk segments banks avoid) or competition-distorting (undercutting banks on price in bankable segments they would otherwise finance (Waidelich & Steffen, 2024; Anguelov, 2024; Geddes et al., 2018; Torres & Zeidan, 2016)
	Loan Pricing	Eligibility Criteria, Comparative interest rates, tenor, collateral requirements, grace periods	IDCOL officials, Bank Officials	–	

(Table 2 Contd.)

(Table 2 Contd.)

Analytical Pillar	Components	Assessment Metrics	Data Collection Method		Analytical Purpose
			Primary	Secondary	
	Competitive Positioning	1. Classification as monopoly/ monopolistic competition/ oligopoly; 2. cost-of-funds asymmetry (access to concessional/ GoB capital vs banks' market-rate deposit funding) 3. Subsidised Technical Assistance (TA) and Sovereign De-risking	KII with Officials		

Source: Authors' compilation.

Role as Financier

The comparison below sets IDCOL's renewable energy loan portfolio and financing structure against that of the two active private commercial banks in the segment. Product terms are drawn from KIIs at IDCOL, BRAC Bank and City Bank; volumes, portfolio shares and funding lines are taken from the institutions' audited 2025 annual reports.

Table 3: RE Product Mix and Financing Instruments

Institution	RE/ EE product	Financing Structure	Concessional or commercial	Development Partners and Credit Lines
IDCOL	Solar Home Systems (SHS): 4.14 mn units, 231 MWp, BDT 4,545 cr	• Rate: 6–9% to PO • Debt: Equity: Grant: 70 refinance: 15 PO equity: 15 household down-payment, with grant support • Tenure (grace): 6–9 yrs (2-yr principal grace) • Repayment: Quarterly	Concessional plus grant	Grant windows (cumulative BDT 17,568 mn): IDA, GEF, GPOBA, KfW, GIZ, DFID, SREP, USAID, BCCRE, JICA, ADB, UNDP, AFD, GCF.
	Improved Cook Stoves (ICS): 4.15 mn stoves, 61 districts, BDT 367 cr	• Rate: Not applicable • Debt: Equity: Grant: Predominantly grant, with institutional development support to POs • Tenure (grace): Not applicable • Repayment: Not applicable	Grant	
	Domestic biogas: 73,990 plants, BDT 81 cr	• Rate: 6% • Debt: Equity: Grant: Loan window 80: 20; grant window 40: 60 • Tenure (grace): 7 yrs (1-yr grace) • Repayment: Quarterly	Blended concessional	
	Commercial biogas and bio-electricity: 11 plants, 10–400 kW, BDT 41 cr	• Rate: Minimum 7% • Debt: Equity: Grant: Up to 80: 20 (biogas); up to 60: 40 (biomass) • Tenure (grace): Up to 12 yrs (up to 2-yr grace) • Repayment: Quarterly or monthly	Concessional	
	Solar Irrigation Pumps (SIP): 1,527 pumps, 42.37 MWp, 68% of national SIP capacity, BDT 211 cr	• Rate: 7% p.a. • Debt: Equity: Grant: 30: 20: 50 • Tenure (grace): 10 yrs (1-yr grace) • Repayment: Quarterly	Concessional	

(Table 3 Contd.)

(Table 3 Contd.)

Institution	RE/ EE product	Financing Structure	Concessional or commercial	Development Partners and Credit Lines
	Solar mini-grid (SMG): 26 sites, about 5 MWp, 16,000+ connections, BDT 65 cr	• Rate: 6% p.a. • Debt: Equity: Grant: 30: 20: 50 • Tenure (grace): 10 yrs (2-yr principal grace) • Repayment: Quarterly	Concessional	
	Industrial rooftop solar, CAPEX and RESCO: 58 operational of 70+ approved, 202 MWp financed against 308 MWp approved, BDT 824 cr	• Rate: 5–6% p.a. • Debt: Equity: Grant: 80: 20 (CAPEX); 70–80% debt (RESCO or OPEX). No grant • Tenure (grace): 8–10 yrs (1-yr grace) • Repayment: Monthly	Concessional	
	Utility-scale grid-tied solar: 6 financed of 7 approved, 273 MWp, 22% of the national solar park portfolio, BDT 2,482 cr	• Rate: Negotiated per project • Debt: Equity: Grant: Senior debt with sponsor equity. No grant • Tenure (grace): 15–20 yrs • Repayment: Quarterly	Concessional leaning, negotiated	
	Solar telecom BTS: 138 off-grid BTS, BDT 23 cr	• Rate: Concessional corporate rate • Debt: Equity: Grant: Corporate debt with sponsor equity • Tenure (grace): Medium term • Repayment: Quarterly	Concessional	
BRAC Bank PLC	Rooftop solar, C&I and residential with net metering. Routed through Bangladesh Bank green refinance	• Rate: 5–6% under refinance; 9–14% where priced from own sources • Debt: Equity: Grant: About 70: 30 debt to equity. No grant • Tenure (grace): 5–7 yrs (6–9 month grace) residential; C&I tenor negotiated • Repayment: Monthly	Concessional, via central bank refinance	Citi-JICA green facility USD 100 mn (2023), EIB up to EUR 60 mn agreed in 2025 for private-sector green and circular economy projects. Further partnerships with BII, IFC, ADB and KfW DEG
	Utility-scale solar co-financing and sponsor-equity bridging: two plants totalling 135 MW	• Rate: n/a • Debt: Equity: Grant: Senior debt alongside IDCOL and DFIs; the bank bridges USD 10–20 mn of the sponsor's equity gap on a USD 100 mn project • Tenure (grace): n/a • Repayment: Quarterly	Fully commercial. Bangladesh Bank does not refinance grid-tied assets	
City Bank PLC	Rooftop solar and energy-efficient machinery under Bangladesh Bank refinance and the GCF textile facility	• Rate: 5–6% under refinance; 12–14% where priced commercially • Debt: Equity: Grant: Debt with sponsor equity. No grant • Tenure (grace): Negotiated, up to about 10 yrs • Repayment: Monthly	Concessional 20% Commercial 80%	AIIB and NDB USD 75 mn term loan through Offshore Banking. Standing partnerships with IFC, Norfund, FMO, DEG and the Global Climate Partnership Fund. Engagements initiated in 2025 with Proparco, JICA, FMO and Norfund.

Source: Author's compilation from KII- IDCOL; KII-BRAC Bank; KII-City Bank and Annual Reports.

The structural asymmetry between IDCOL and private commercial banks is rooted in product architecture rather than financial scale. IDCOL operates across the full concessionality spectrum, deploying capital grants of 40 per cent to 60 per cent for decentralised segments such as Solar Home Systems (SHS), Improved Cook Stoves (ICS), domestic biogas, and solar irrigation. Because deposit-funded commercial balance sheets cannot organically price against inaccessible subsidies, true commercial counterfactuals for these segments do not exist, making additionality absolute where grant windows dictate the market.

Pricing parity within these contested segments is dictated by access to refinance windows rather than institutional identity. In rooftop solar, where commercial banks can access Bangladesh Bank's refinancing, commercial pricing converges with IDCOL's 5 per cent to 6 per cent rates. However, for grid-tied solar where central bank refinancing is absent, the sovereign pricing advantage reappears in full, as IDCOL leverages Subsidiary Loan Agreements to convert multilateral capital into 15- to 20-year tenors at concessional base rates. Despite this structural disadvantage, commercial entities are fiercely contesting the funding channel through direct, un-guaranteed bilateral negotiations and thematic capital market instruments. Extending refinance eligibility to grid-tied assets would neutralise the pricing gap, leaving state-backed entities to focus their capital on mandate-driven, grant-dependent segments that deposit-funded institutions cannot sustainably serve.

Role as Capital Mobiliser

6.1. Loan Portfolio Analysis

Table 4 presents a three-year comparative profile (2023–2025) of renewable energy financing disbursement and its relative share of total lending and green financing across IDCOL and two representative private commercial banks, BRAC Bank and City Bank.

Table 4: Comparative RE Loan Disbursement Trends (2023-2025)

Institution	Year	RE Disbursement (BDT crore)	RE Share of Total Loan Portfolio	RE Share of Total Green Financing
IDCOL	2023	440	18.86%	45.24%
	2024	1,639.60	21.00%	56.76%
	2025	876.4	25.00%	59.52%
BRAC Bank	2023	10.8	0.03%	0.16%
	2024	191.65	0.51%	2.14%
	2025	193.33	0.28%	3.12%
City Bank	2023	2.2	0.01%	0.20%
	2024	213.3	0.48%	6.39%
	2025	220.6	0.44%	4.06%

Source: Author's Compilation from IDCOL Annual Report 2023- 2025, BRAC Bank ESG Report 2023-2025, City Bank PLC Sustainability Report 2023-2025

Note: RE Share of Total Loan Portfolio is calculated as annual disbursement in RE loans (flow) as a share of each institution's year-end outstanding loan portfolio (stock) yielding flow-to-stock ratios

The 2023–2025 window reveals a consistent pattern of acceleration across all three institutions. IDCOL remains the dominant channel by scale and portfolio concentration, with renewable energy climbing from 18.86 per cent to 25.00 per cent of its total loan portfolio and from 45.24 per cent to 59.52 per cent of its green financing base; confirming RE as an increasingly central part of its mandate. More striking, however, is the trajectory at the commercial banks. As shown in Table 4, BRAC Bank's RE disbursement rose nearly eighteenfold between 2023 and 2024 (BDT 10.8 crore to BDT 191.65 crore) and has since held at that elevated level; City Bank's grew nearly a hundredfold over the same period (BDT 2.2 crore to BDT 213.3 crore) and continued rising into 2025. Both banks' RE share of green financing followed the same arc: BRAC's from 0.16 per cent to 3.12 per cent, City Bank's from 0.20 per cent to a 2024 peak of 6.39 per cent, indicating renewable energy is now claiming a materially larger slice of an already-growing green portfolio, not merely riding overall credit expansion. While commercial banks' absolute involvement still trails IDCOL by order of magnitude, the direction and pace of change suggest PCBs are moving from token participation towards deliberate scaling of RE financing capacity.

6.2. Project-Level Case Studies

Table 5 shows the financing overview of three utility scale solar power plants, two of which are co funded by BRAC Bank and IDCOL and one of which is the sole investment of IDCOL.

Table 5: Utility-Scale Grid-tied Solar Project Case Studies,

Project Name	Funding Institution	Loan Terms	Project Finance Metrics/ Completion Status
Sirajganj 68 MW Solar Park Sponsor: BCRECL, 50:50 NWPGL-CMC JV	IDCOL + BRAC Bank IDCOL: US\$55M BRAC: US\$15M	Rate/tenor: Undisclosed Project cost: US\$89.99M Debt: equity: ~78:22	Operational COD reported: July 2024 Tariff: US\$0.102/kWh
Pabna 64 MW Solar Park Sponsor: BCRECL, 50:50 NWPGL-CMC JV	IDCOL + BRAC Bank IDCOL: US\$45M BRAC: US\$22M	Rate/tenor: Undisclosed Debt: US\$67M Debt: equity: ~80:20	Operational COD reported: November 2025 Tariff: US\$0.106/kWh
Sympa Solar 8 MW, Tetulia	IDCOL only Term loan: Tk69 crore	Project cost: Tk95 crore 7% fixed 15 years, 2-year grace Debt: equity: ~73:27	Operational COD: 24 July 2019 Tariff: US\$0.16/ kWh

Source: Author's compilation from IDCOL Annual Report 2025, BRAC Bank ESG Report 2025.

BRAC Bank's entire utility-scale renewable energy book consists of two exposures, and both are to the same borrower. BCRECL is a 50:50 joint venture between a wholly state-owned NWPGL and China's CMC, selling to BPDB under a 20-year PPA. The bank's credit therefore sits behind quasi-sovereign standing on the sponsor side and a state offtaker on the revenue side, which is the structural condition that made entry possible. The pattern in ticket size is equally telling. BRAC took USD 15 mil of roughly USD 70 mil at Sirajganj and USD 22 mil of USD 67 mil at Pabna, in both cases the minority tranche behind IDCOL's USD 55 mil and USD 45 mil anchor positions. Confidence grew, with the ticket rising 47 per cent between the two deals, but always inside a structure IDCOL arranged, syndicated and agented. Nothing comparable has happened for a privately sponsored plant. Intraco, the closest private analogue by capacity, is carried on IDCOL's balance sheet alone at USD 26.78 mn with no commercial co-lender disclosed.

Three constraints explain the asymmetry: deposit-funded banks cannot hold 15-to-20-year fixed exposure without asset-liability strain, single-borrower limits cap any one bank's slice of a USD 70 to 90 million project, and BPDB payment risk is only tolerable when the sponsor is itself a government company. Where a private sponsor did attract a commercial bank, at Teknaf, it required a GuarantCo liquidity-extension guarantee to reach a 15-year tenor (PIDG, 2025). The second finding is that concessionality is upstream rather than at the project. Project-level pricing is not disclosed, but it necessarily rests on IDCOL's on-lending margin and DFI credit lines, which means BRAC Bank is lending alongside subsidised money rather than in place of it. The binding constraint on commercial bank entry is not IDCOL's pricing but the absence of a credit enhancement instrument for private sponsors. A partial-credit or liquidity guarantee, or extension of Bangladesh Bank refinance to grid-tied assets, would let banks price private IPPs directly and speed up commercial mobilisation.

Role as Policy Coordinator

7.1. Institutional Fragmentation and De Facto Mandates

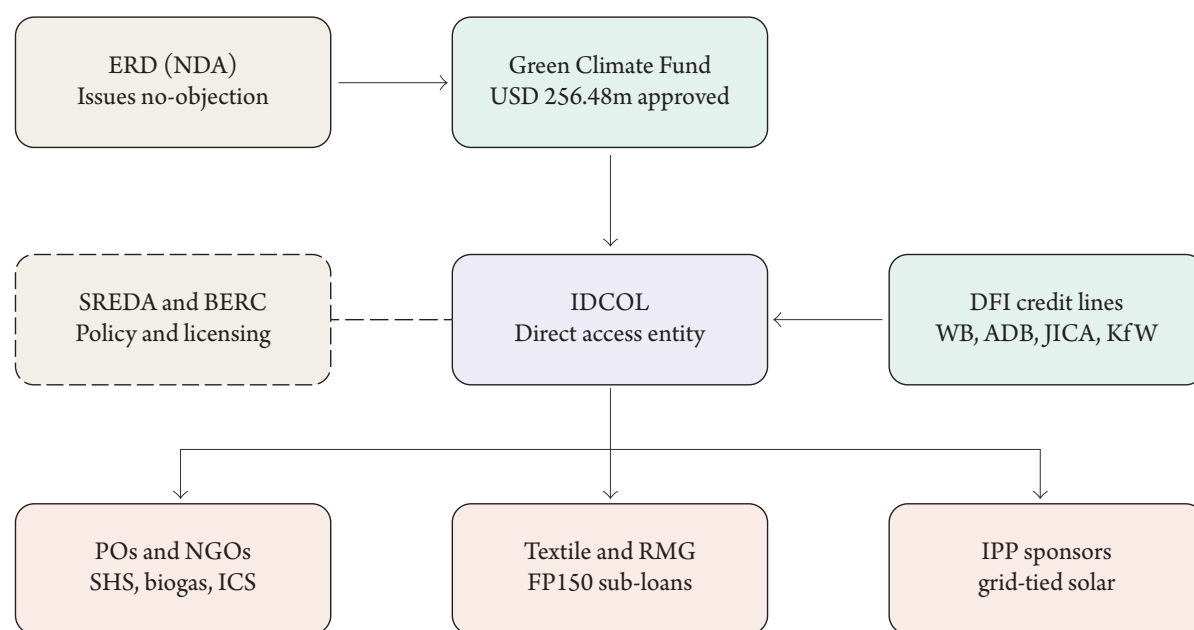
Applying Zhang's (2022) functional framework, a national development bank's efficacy rests heavily on its capacity as a policy coordinator. In Bangladesh's fragmented RE governance map, IDCOL operates as a powerful financier but a weak, non-statutory policy coordinator. Established in 1997 under the Companies Act and owned by the government via the Economic Relations Division (ERD), IDCOL lacks a formal legal mandate to dictate energy policy. In contrast, Sustainable Renewable Energy Development Authority (SREDA) was specifically established under the SREDA Act 2012 to support renewable-energy development, policy implementation and coordination across government and private-sector stakeholders. IDCOL should therefore be characterised as a de facto policy coordinator rather than a formal policy authority. Its influence arises from technical expertise, programme design, standard-setting and its relationships with government and development partners rather than statutory enforcement.

This 'coordination without control' paradigm is starkly illustrated by the collapse of the Solar Home System (SHS) programme. While IDCOL initially governed the off-grid market by certifying products and accrediting over 50 Partner Organisations (POs), its authority was readily overridden by competing state agendas. Uncoordinated government grid expansion and the distribution of free, quality-unchecked solar systems undercut IDCOL's commercial subsidy model. As a result, SHS installations plummeted by 99.6 per cent by 2018, driving the programme to the brink of collapse and leaving IDCOL with substantial unrecovered funds (Hellqvist & Heubaum, 2023). Similar fragmentation plagues the solar irrigation sector. IDCOL's fee-for-service model, backed by a 50 per cent grant, competes awkwardly against 100 per cent capital expenditure subsidies offered by entities like the Bangladesh Agricultural Development Corporation (BADC), dividing the market and diluting impact.

7.2. The Green Climate Fund Disbursement Paradox

The limits of IDCOL's coordination capacity are further exposed in its role as a Green Climate Fund (GCF) Direct Access Entity (DAE). IDCOL is one of only two national DAEs in Bangladesh, alongside Palli Karma-Sahayak Foundation (PKSF). Notably, no domestic commercial banks hold GCF accreditation; this exclusivity cements IDCOL's market dominance but creates severe bottlenecks in capital deployment. IDCOL's flagship GCF programme is FP150, structured to provide USD 256.48 million in concessional loans and grants to promote energy-saving technologies in the textile and RMG sectors. However, the facility suffers from a profound disbursement paradox. Despite the Funded Activity Agreement (FAA) becoming effective in October 2022, the GCF facility remained 0 per cent utilised two and a half years after the FAA signature. By early 2026, cumulative disbursements had crawled to merely 6 per cent (approximately USD 15.5 million). The institutional pathway mapping is shown in figure 2.

Figure 2: Institutional Mapping and Flow of Funds



Source: Author's illustration.

This stagnation is not entirely unique to IDCOL, mirroring chronic climate finance delivery failures; globally, GCF disbursements to Least Developed Countries (LDCs) languish below 9 per cent after five years of operation (Climate Analytics, 2021). Furthermore, Bangladesh's broader GCF country-level disbursement stands at an anemic 13.3 per cent across all approved projects (Transparency International Bangladesh, 2024). Nevertheless, the inability to rapidly disburse approved international capital underscores a structural intermediation failure. FP150's low utilisation, however, should not be interpreted solely as an IDCOL-specific failure. Instead, it demonstrates the difficulty of converting international climate-finance commitments into executable domestic investment.

7.3. Implication for IDCOL's Future Role in Policy Landscape

The evidence suggests that Bangladesh does not need IDCOL to become another regulator. Rather, its comparative advantage lies in becoming the financial and technical bridge within a coordinated policy architecture. India's IREDA provides a useful benchmark: it is institutionally embedded under the Ministry of New and Renewable Energy and operates through formal performance agreements linking its financing activities directly to national renewable-energy objectives. For Bangladesh, the policy priority should therefore be to strengthen coordination between SREDA, ERD, Bangladesh Bank, IDCOL, utilities and commercial lenders around a common renewable-energy project pipeline. IDCOL can lead project preparation, technical appraisal, financial structuring and development-partner mobilisation, while SREDA retains statutory policy coordination and Bangladesh Bank expands incentives that allow commercial lenders to participate.

The central finding is that IDCOL's constraint is not lack of institutional capability, but lack of coordinating authority. Its experience demonstrates that concessional finance and technical expertise can create markets but cannot by themselves ensure policy coherence or capital deployment. A more effective architecture would use IDCOL to crowd in private finance and solve genuine market failures, rather than further concentrate financing activity within the institution. Until then, the domestic climate finance policy ecosystem will continue to operate as a dominant-firm oligopoly that finances isolated pilot projects rather than orchestrating a unified, rapid market transition that crowds in private capital.

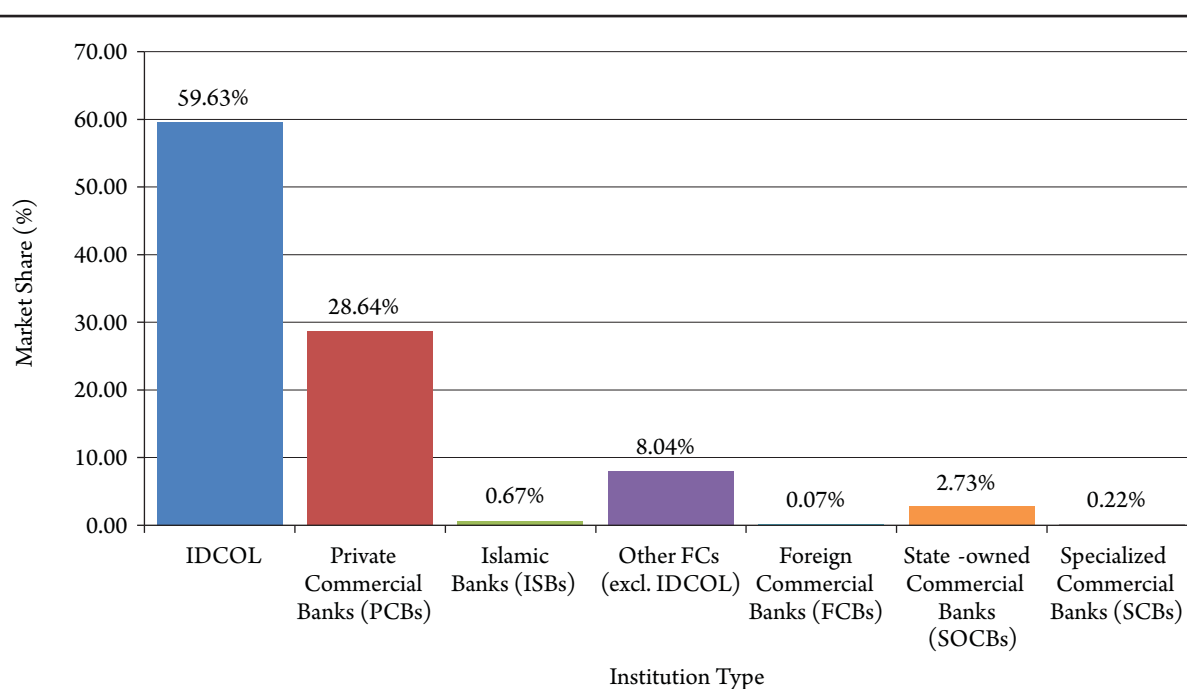
Role as Market Intermediary

8.1. Market Concentration

Figure 3 illustrates the pronounced asymmetry characterising Bangladesh's RE financing market in FY2025, with IDCOL commanding a dominant 59.63 per cent share, more than double that of the next largest cluster, Private Commercial Banks (28.64 per cent), while the remaining five institutional categories collectively account for barely 12 per cent. This demonstrates a highly polarised marketplace defined by a massive capacity deficit between the specialised state-backed intermediary and traditional commercial lenders.

The market-share figures in Figure 3 and Table 6 are drawn from Bangladesh Bank's Quarterly Review Report on Sustainable Finance, which records renewable energy disbursement reported by scheduled banks and non-bank finance companies operating in Bangladesh. This dataset does not capture sponsor equity, direct or bilateral DFI credit lines booked outside the domestic banking system, corporate or green bonds, or informal/microfinance channels. The 'market' analysed in this section should therefore be read as the domestic bank- and finance-company-intermediated segment of renewable energy financing, not the full universe of renewable

Figure 3: RE loan Disbursement Market Share Comparison (FY2025)



Source: BB SF Quarterly (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec 2025); IDCOL Annual Report, 2025

energy financing in Bangladesh.

To quantitatively evaluate the competitive architecture of Bangladesh's domestic RE financing ecosystem, this study employs a modified application of the Herfindahl-Hirschman Index (HHI). Traditionally, the HHI is a standard neoclassical economic metric utilised to measure market concentration, determine market competitiveness, and identify underlying structural typologies ranging from perfect competition to monopolistic structures (Rhoades, 1993).

However, as central bank data aggregates commercial banking performance by institutional category in place of granular, firm-level data, this study applies an institutional clustering framework to the index. The index therefore is derived by squaring the market share of each competing institutional category operating within the renewable energy financing market and aggregating the resulting values. Rather than calculating individual firm shares for all 61 scheduled banks and 34 finance companies operating in Bangladesh, we aggregate the market shares of institutional clusters (e.g., Private Commercial Banks, Foreign Commercial Banks, and specialised non-bank finance companies) competing against the singular dominant firm, IDCOL. The structural equation is maintained as follows:

$$HHI_{institutional} = \sum_{j=1}^m (CS_j)^2$$

Where CS_j denotes the aggregate market share percentage of the j th institutional cluster or individual specialised entity.

In accordance with standard antitrust and industrial organisation frameworks, market structures are classified across the following HHI thresholds:

- $HHI < 1,500$: An unconcentrated, highly competitive market (indicative of perfect or monopolistic competition).
- $1,500 \leq HHI \leq 2,500$: A moderately concentrated market.
- $HHI > 2,500$: A highly concentrated market (indicative of an oligopoly or monopoly).

Table 6: Institutional HHI Calculation for Renewable Energy Financing (FY2025)

Institution Type	RE Disbursement (crore BDT)	Market Share (%)	Squared Share (HHI Component)
IDCOL	876.40	59.63%	3,555.20
Private Commercial Banks (PCBs)	421.03	28.64%	820.51
Islamic Banks (ISBs)	9.80	0.67%	0.44
Other FCs (excl. IDCOL)	118.19	8.04%	64.66
Foreign Commercial Banks (FCBs)	1.10	0.07%	0.01
State-owned Commercial Banks (SOCBs)	40.14	2.73%	7.46
Specialized Commercial Banks (SCBs)	3.18	0.22%	0.05
Total (HHI)	1,469.84	100.00%	4,448.33

Source: BB SF Quarterly (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec 2025); IDCOL Annual Report, 2025.

The resulting calculation in Table 6 yields an HHI of 4,448.3, substantially exceeding the 2,500-point threshold that delineates highly concentrated markets. With IDCOL alone accounting for roughly 80 per cent of the index and Private Commercial Banks a distant second, this structural configuration represents a highly concentrated, dominant-firm oligopoly that exhibits prominent monopolistic characteristics. This pronounced asymmetry underscores the theoretical tension investigated in this study: whether such monopolistic dominance is a necessary condition for crowding-in transitional climate capital, or if it inadvertently crowds out commercial market maturation.

Two features of the FY2025 distribution deserve particular emphasis. First, IDCOL's dominance is achieved despite the finance company cluster comprising 34 licensed institutions: IDCOL alone accounts for 88.12 per cent of the entire cluster's renewable energy disbursement, leaving the remaining 33 finance companies to share BDT 118.19 crore between them. Second, IDCOL's share is understated relative to its economic footprint. Its FY2025 renewable energy disbursement of BDT 876.4 crore was concentrated in utility-scale grid-tied solar (BDT 510.1 crore) and industrial rooftop solar (BDT 363.1 crore), the two segments requiring the longest tenors and the greatest tolerance for construction and off-taker risk. The commercial banking share, by contrast, is materially inflated by shorter-tenor, lower-risk exposures. Structural dominance in the bankable-but-difficult segment of the market is therefore considerably greater than the aggregate index implies.

Note on methodological caveats: Except for IDCOL, participants enter the index as institutional clusters. Consequently, the resulting index does not capture strict firm-level concentration, but rather sectoral or institutional polarisation. However, had this index been calculated at a strict firm-by-firm level, the commercial banking and finance company clusters would disaggregate into highly fragmented, low-percentage market players, further lowering the banking sector's contribution to the HHI while IDCOL's individual firm share would remain entirely unaffected at 59.63 per cent. The reported index is therefore a conservative lower bound on true market concentration.

8.2. Loan Pricing Benchmark

Table 7 summarises Loan Pricing of Rooftop Solar Lending for IDCOL and Commercial Banks.

Table 7: Comparative Financing Terms across Rooftop Solar Lending

Term	Segment	IDCOL	PCB
Interest Rate	Rooftop Solar	5.00–5.50% p.a. (AR-disclosed); ~5–6% (KII)	5–6% via BB refinance; 9–14% at market rate
	SHS	6–9%	Market/SME rates via BB refinance
	Grid-tied	Project-negotiated; implied portfolio yield 4.21%	~12–14% commercial
Grace period		1 yr (rooftop); 2 yrs (SHS)	6–9 months (rooftop with NEM); limited to none off-grid
Debt-equity structure		80:20 (rooftop); 70:15:15 (SHS incl. HH downpayment)	Conventional; equity-heavy for residential
Collateral		Programme-based eligibility (NGO/Ltd. company, post-due-diligence)	Conventional security; identified as a barrier in KII

Source: Author's compilation from KII- IDCOL; KII-BRAC Bank; KII-City Bank.

The pricing gap is systematic rather than incidental. Across every segment where both institution types operate, IDCOL prices 300–800 basis points below commercial rates and offers roughly double the tenor with materially longer grace periods. The mechanism is fully traceable to blended cost of funds, and the sovereign-guaranteed DFI lines specifically - against a deposit-funded bank's substantially higher marginal cost.

The one segment where the gap narrows is rooftop solar with BB refinance, where banks lend at 5–6 per cent against IDCOL's 5.00–5.50 per cent. This is not a coincidence: it is the only RE segment with a functioning refinance window. Where the state provides banks with concessional wholesale funding, the pricing gap closes to near-parity; where it does not, the gap is 600–900 basis points.

8.3. Competitive Positioning

Table 8: Competitive Positioning of IDCOL vs Commercial Banks in Renewable Energy Financing

Structural Advantage	IDCOL	Commercial Banks	Gaps Identified
Access to GCF Funds	Accredited Direct Access Entity (DAE); can directly access GCF concessional loans and grants.	BRAC Bank and City Bank are GCF accredited executing entities only for ring-fenced programmes (primarily RMG energy efficiency) rather than broad renewable energy financing—creating a risk of greenwashing.	IDCOL has a broader climate finance mandate. KII respondents noted that commercial bank GCF access remains limited to specific programmes, reducing its strategic impact.
Speed of Approval	More rigorous and stringent processes of appraisal due to development partner safeguards and compliance requirements.	Faster internal credit approval and loan processing.	Respondents indicated clients frequently choose commercial banks despite higher pricing because approvals are significantly quicker.
MDB Credit Lines	Long-standing partnerships with World Bank, ADB, JICA, AIIB, KfW, EIB, IsDB and other DFIs.	Can negotiate bilateral green credit lines (e.g., BRAC Bank: JICA US\$90m; EIB US\$60m), but funding remains institution-specific and less predictable.	Sourcing Agility Gap: Banks must proactively hunt and blend direct DFI funds or rely on an 80% commercial / 20% concessional split to remain viable
Sovereign Backing	Government-owned DFI backed by sovereign guarantees, lowering perceived lender risk.	No sovereign guarantee; international borrowing reflects individual bank credit risk.	KII respondents identified sovereign guarantees as the single largest competitive advantage explaining IDCOL's lower funding costs and longer loan tenors.
Cost of Capital	Accesses concessional finance at approximately 0–1% with loan tenors reaching 15 years.	Green credit lines typically carry higher interest rates with shorter maturities (around 7 years).	Lower funding cost enables IDCOL to offer cheaper RE financing despite longer approval processes.
Technical Assistance Funding	Receives grant-funded technical assistance for project preparation, engineering, safeguards and capacity building.	Technical appraisal generally financed internally; limited access to grant-funded advisory support.	IDCOL can absorb project preparation costs that commercial banks often cannot justify commercially.
Renewable Energy Expertise	Over two decades of specialised RE project appraisal, engineering review and programme implementation.	Strong financial due diligence but limited in-house engineering expertise; often requires external technical consultants.	Both KIIs highlighted technical assessment as a major capability gap for commercial banks.
Product Offering	Primarily provides long-term project finance.	Offers integrated banking solutions including working capital, bank guarantees, LC facilities, trade finance and project finance.	Commercial banks remain attractive because renewable energy developers require multiple banking products beyond project loans.
Ability to Catalyse Large Projects	Primary Financier: Provides anchor concessional financing for utility-scale renewable energy projects.	Equity Catalyst: Frequently co-finances projects by covering sponsor equity gaps (e.g., BRAC Bank financed US\$10–20 million equity portions in large solar projects).	Capital Synergy: KIIs suggest a complementary rather than purely competitive relationship between IDCOL and commercial banks.
Bangladesh Bank Refinance Access	Limited relevance because IDCOL primarily utilises donor and concessional funding.	Rooftop solar and SHS rely heavily on BB refinance; grid-scale solar receives virtually no BB refinancing.	Creates uneven product availability across renewable technologies.

Source: Author's findings from KII-BRAC Bank; KII-City Bank.

To summarise table 8, IDCOL retains a structural financing advantage through sovereign backing, concessional funding, GCF/MDB access and specialised technical expertise, enabling longer-tenor and lower-cost renewable energy finance. Commercial banks, however, offer faster approvals and broader banking products, making them more responsive to developers' immediate financing needs despite higher funding costs. The evidence therefore points to a complementary rather than competitive financing ecosystem, with IDCOL providing concessional anchor finance while banks mobilise commercial and working-capital funding. A key policy gap is the limited availability of concessional/refinance support for grid-scale and emerging RE projects, alongside commercial banks' limited access to grant-funded technical assistance.

Integrated Institutional Assessment

9.1. SWOT Analysis

Box 1 presents an assessment of IDCOL's institutional capacity through a SWOT Analysis. IDCOL's competitive advantage derives fundamentally from sovereign-intermediated concessional financing rather than intrinsic institutional efficiency; however, its recent portfolio migration into commercially viable segments fundamentally defies the principle of financial additionality that justifies its subsidised capital structure. As the institution's operational efficacy is increasingly impeded by internal constraints, including escalating non-performing loan ratios, structurally inadequate portfolio yields, and protracted financial closures, strategic realignment necessitates a transition toward syndicated co-financing mechanisms with commercial banks, thereby redirecting concessional capital towards undercapitalised, frontier market segments.

Box 1: SWOT Analysis

STRENGTHS	WEAKNESSES
First and only Bangladeshi GCF Direct Access Entity accredited for both loans (USD 250m per project) and grants	GCF facility 0% utilised 2.5 years after FAA signature
BDT 108.2bn undrawn credit lines from seven DFIs	FY2024 disbursement 30% below internal budget (FY2023: 10% below)
Cost of funds 3.24%; 0–1% on sovereign-guaranteed lines at 15-year tenor	Gross NPL 11.99% - over double both PCB comparators
Nine distinct RE products spanning the full concessionality spectrum	SHS legacy book near-fully impaired (BDT 5.21bn of ~BDT 5.3bn classified)
Two decades of in-house technical appraisal capacity	Three-tier internal approval plus external credit-line sign-off; slow to financial close
54.45% domestic RE market share; HHI contribution ~2,965	RE portfolio yield 4.21%, limits internal capital generation
CAR 21.22%, comfortably above the 10% regulatory floor	Single-product offering; no working capital, LC, BG or trade finance
Grant-funded TA absorbs project preparation costs banks cannot justify	Conversion gaps: rooftop 71% and grid-tied 78% approval-to-installation
OPPORTUNITIES	THREATS
Structured co-financing and syndication with PCBs: the Sirajganj and Pabna grid-tied plants already prove the model	Delivers only 2.5%–3.1% of the annualised national RE requirement
A/B-loan structuring: IDCOL takes the long-tenor tranche banks cannot fund without sovereign backing	Migration into rooftop and grid-tied, the two contestable segments, erodes the additionality defence
Subordinated, first-loss and sponsor-equity-gap tranches that crowd in commercial capital rather than displace it	Subsidised 0–1% pricing draws bankable clients away from PCBs, displacing rather than mobilising commercial capital

(Box 1 Contd.)

(Box 1 Contd.)

OPPORTUNITIES	THREATS
▪ Warehousing and take-out refinancing of PCB-originated rooftop portfolios, freeing bank balance-sheet capacity	▪ Commercial banks compete successfully on speed and product bundling despite higher pricing
▪ Licence technical appraisal, standardised PPAs and equipment specifications to banks as shared market infrastructure	▪ Land scarcity and grid absorption constrain the utility-scale pipeline irrespective of finance
▪ Redeploy concessional capital into non-contestable segments: irrigation, mini-grid, storage, waste-to-energy, e-mobility	▪ Portfolio yield below risk-adjusted cost recovery if NPL levels persist
▪ Absent BB refinance window for grid-tied solar leaves the segment uncontested	▪ Concessional crowding-out weakens the case for future DFI and GCF replenishment
▪ Advisory export to Malawi, Ethiopia and other African markets	

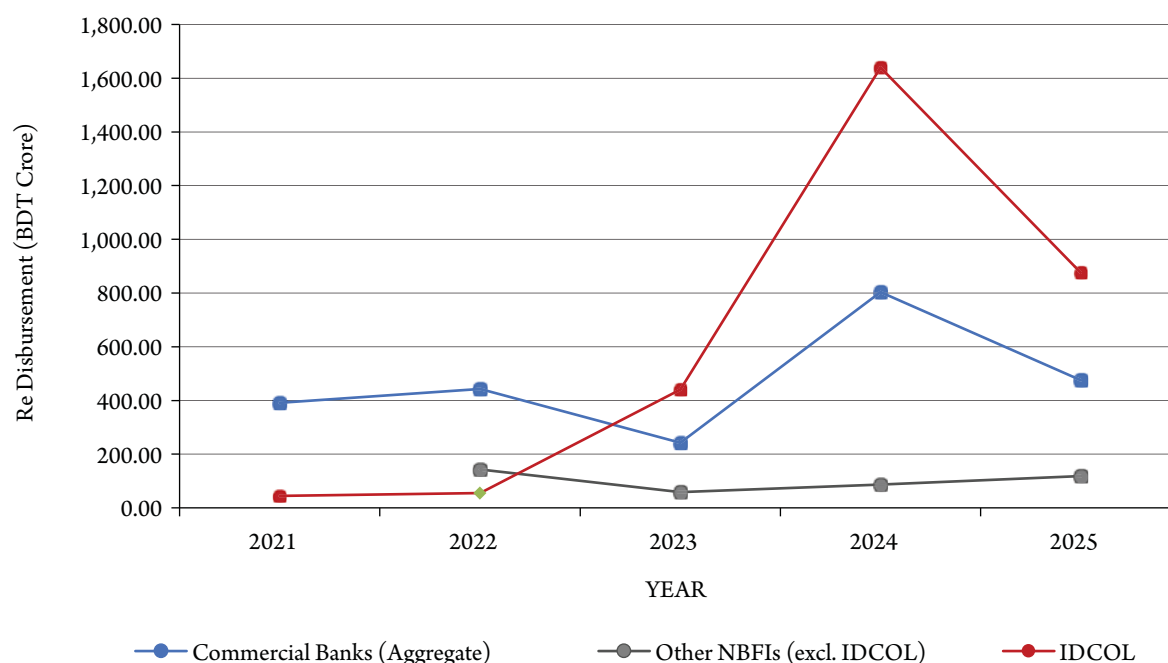
Source: Author's compilation.

9.2. Market Broadening in Bangladesh's Renewable Energy Finance: Potential Entrants and the Evolved Role of IDCOL

Bangladesh's renewable energy (RE) finance market remains concentrated around IDCOL. Rather, the financing ecosystem would benefit from institutional diversification, with different entities serving segments aligned with their existing capabilities. This would reduce dependence on a single intermediary while preserving IDCOL's development-finance additionality.

Figure 4 traces IDCOL's annual renewable-energy (RE) disbursement trends against the two primary financing channels – commercial banks and other NBFIs. IDCOL's disbursement rose sharply from BDT 45.30 crore (2021) to a peak of BDT 1,639.60 crore (2024), before contracting 46.55 per cent to BDT 876.40

Figure 4: Renewable Energy Disbursement Trend: IDCOL vs Commercial Banks vs Other NBFIs (2021-2025)



Source: Bangladesh Bank Sustainable Finance Quarterly Review, IDCOL Annual Report.

crore (2025) still 88.12 per cent of the entire 34-member NBFIs sector's RE disbursement that year (94.99 per cent in 2024). Commercial-bank disbursement followed a more volatile, non-monotonic path, peaking at BDT 803.17 crore in 2024, with Private Commercial Banks alone contributing 79.04 per cent of the sector's cumulative total over the period.

Commercial banks, particularly PCBs, which already supply the overwhelming majority of the banking sector's RE lending, hold balance-sheet depth far in excess of their erratic, comparatively modest disbursement pattern, and have historically shown the capacity to mobilise substantially more. There is clear room, and arguably a structural need, for them to scale up participation on a sustained basis, diversifying Bangladesh's RE financing base away from single-institution dependence. Table 9 enlists potential entrants and their recommended roles.

Table 9: Role of Potential Market Entrants

Potential Entrants	Current Offerings	Potential Offerings
BIFFL (utility-scale)	Government-owned infrastructure finance company with minimal RE exposure: BDT 141.47 crore approved and BDT 97.44 crore outstanding across 21.32 MW, including the 20 MW Teknaf Solartech IPP (BIFFL, 2026).	Grid-tied solar, wind and PPP-linked co-financing, drawing on AFD's, KfW's and JICA's lines. Capital headroom (CAR 88.77%) permits far greater leverage, though continued NPL resolution should precede rapid scaling (BIFFL, 2026).
PKSF (distributed RE)	Second national GCF Direct Access Entity and Adaptation Fund implementing entity, promotes resource-efficient production and renewable energy within enterprise financing (PKSF, 2025).	Solar irrigation, off-grid and rooftop solar, clean cooking and productive-use energy at the last mile. Its Credit Enhancement Scheme offers a ready guarantee vehicle for PO-level solar lending (PKSF, 2025).
Private commercial banks	BRAC Bank, City Bank, Eastern Bank and peers intermediate JICA, AIIB, NDB and EIB green credit lines and operate under Bangladesh Bank's mandatory green and sustainable lending targets	Industrial and commercial rooftop solar, SME green lending and syndication tranches in utility transactions contingent on refinance and guarantee windows that presently favour efficiency over generation.
Private NBFIs	IDLC Finance and IPDC hold Bangladesh Bank sustainability recognition and structured- and lease-finance expertise, but operate small balance sheets amid sector-wide asset-quality stress	Equipment leasing, ESCO-style structures, receivables financing and asset-backed rooftop solar products better suited to distributed than utility-scale assets.

Source: Author's compilation.

The Evolved Role of IDCOL

Diversification implies IDCOL's gradual repositioning, not its displacement. International evidence indicates that development banks preserve additionality by progressively withdrawing from commercially financeable segments while retaining exposure to higher-risk or immature technologies (Torres Filho & Zeidan, 2016; Waidelich & Steffen, 2024). IDCOL should accordingly confine direct lending to first-of-a-kind projects, frontier technologies, remote off-grid assets and unusually long-tenor transactions, while shifting its principal weight toward second-tier functions: on-lending through banks and NBFIs, arranging A/B syndications, issuing partial credit guarantees, and warehousing or refinancing bank-originated RE portfolios. Such a transition preserves IDCOL's strongest assets: development-partner relationships, concessional capital, and appraisal and structuring expertise, while allowing government owned NBFIs such as BIFFL and PKSF to deepen utility scale and distributed RE financing, and commercial lenders to absorb bankable volumes. The objective is not to diminish IDCOL's importance but to reduce systemic dependence on a single intermediary and scale RE financing as a falling IDCOL market share alongside rising aggregate RE finance would signal successful crowding-in rather than institutional decline.

10. Synthesis and Recommendations

IDCOL's market dominance (HHI 4,448; 59.63 per cent share) is additionality-justified where grant windows and sovereign-guaranteed concessional pricing dictate segments that deposit-funded banks cannot practically enter (SHS, biogas, irrigation, mini-grid). However, its parallel migration into contestable, bankable segments such as rooftop and grid-tied solar increasingly risks crowding out commercial capital. Given the scale of Bangladesh's financing requirement, the optimal model is therefore not IDCOL displacement but role differentiation where IDCOL shifts towards de-risking, guarantees, project preparation and syndication, while commercial lenders progressively absorb commercially viable RE volumes.

10.1. Recommendations

Strategic Repositioning of Concessional Capital

IDCOL should progressively withdraw its highly subsidised direct lending from mature, contestable segments (such as industrial rooftop solar) and redirect its grant-backed funding towards unbankable or frontier technologies, including solar irrigation, storage, waste-to-energy, e-mobility, mini-grid expansion.

However, IDCOL's exit from any given segment should be triggered by a defined additionality test, applied segment by segment. Following conditions may be applied:

- Demonstrated commercial-lender interest: at least two private banks actively quoting competitive terms in that segment;
- A financing gap narrow enough that Bangladesh Bank refinance or comparable concessional wholesale funding closes most of the pricing differential, as already observed in refinance-eligible rooftop solar;
- A defined sunset period (e.g., a 3–5-year phase-down window) for concessional pricing in that segment, communicated to the market in advance;
- A refinancing plan that lets IDCOL recycle exited capital into frontier segments (storage, e-mobility, waste-to-energy, off-grid mini-grids) rather than simply shrinking its balance sheet;
- Measurable results tracked over the sunset period such as segment-level private disbursement growth, IDCOL's own market share decline in that segment, and financing-cost convergence, to confirm crowding-in rather than a contraction in total available financing.

Adopt Catalytic Co-Financing and Syndication Models

Rather than carrying sole balance-sheet exposure on large projects, IDCOL should heavily utilise A/B loan structures, subordinated debt, and first-loss tranches to cover long-tenor and sponsor-equity gaps, actively crowding in commercial co-lenders for utility-scale assets.

Expand Central Bank Refinance Windows

Bangladesh Bank can extend its concessional green refinance facilities and credit guarantees to encompass grid-tied projects, neutralising the structural pricing asymmetry that currently locks deposit-funded private lenders out of these segments.

Formalise Institutional Coordination

The fragmented governance landscape should be reorganised through statutory performance agreements, linking IDCOL's financing activity to SREDA's statutory mandate to prevent the fragmentation that caused the SHS collapse and the ongoing IDCOL–BADC overlap in solar irrigation.

Share Technical Appraisal Infrastructure

IDCOL should leverage its two decades of in-house engineering expertise by licensing standardised equipment specifications, technical due diligence frameworks, and PPA models to other financial institutions to bridge the sector-wide capacity gap.

Facilitate Commercial Bank Market Entrance and Scaling

Partial-credit or liquidity guarantees (following the GuarantCo precedent at Teknaf) would let banks price private IPPs directly rather than only co-financing state-sponsored projects, addressing the core finding that the binding constraint on bank participation is the absence of a sovereign guarantee instrument.

Box 2: Key Findings and Recommendations from the KII with BRAC Bank

KII, Brac Bank

Context

The historical context of renewable energy in Bangladesh comprises an initial boom phase followed by subsequent NPLs. About 15 years ago, Sonali Bank and IDCOL pioneered Solar Home Systems (SHS) in off-grid areas (e.g., Padma riverbanks, Khulna, Bagerhat). However, as Bangladesh reached 100% grid electrification, customers in these off-grid areas abandoned their solar systems and stopped paying their installments. This resulted in a staggering 55% Non-Performing Loan (NPL) rate for these projects. Vendor and project failures from this era left a lingering reluctance among commercial banks to invest in RE.

The resource base further narrows the option set. Wind flow is insufficient, with only one notable plant in Cox's Bazar. The terrain lacks the elevation required for hydropower. Solar is the most viable technology but is constrained by usable daylight of only 5.5 hours in the South and 4.5 hours in the North, low by global standards, and by acute land scarcity. Offshore solar and nuclear are technically viable but financially out of reach.

Rooftop solar therefore presents a more practical financing opportunity by avoiding the land-acquisition constraints associated with ground-mounted projects. 100% of these projects are routed through Bangladesh Bank (BB) refinancing schemes. Projects apart from these are usually ticketed as commercial loans by the banks. Conversely, BB currently provides 0% refinancing for grid-tied RE projects. For large ground-mounted plants, BRAC Bank utilizes its own sources to co-finance, acting as a critical catalyst.

Why choose Banks?

IDCOL retains a structural financing advantage because funds from development partners such as the World Bank, ADB and AIIB are supported by sovereign guarantees, enabling access to low-cost, long-tenor funds. Commercial banks do not receive equivalent sovereign backing and therefore face higher funding costs and shorter tenures. Nevertheless, clients continue to approach banks because of faster decision-making, more flexible processes and the ability to provide bank guarantees, working capital and capital investment financing alongside renewable energy loans.

(Box 2 Contd.)

(Box 2 Contd.)

Major Challenges in Scaling Commercial Bank Participation in RE Finance:

1. Lack of Sovereign Guarantees: Prevents private banks from accessing cheap, long-term international funds.
2. Interest Rate Discrepancies: IDCOL's processes are stringent, but their highly subsidised rates draw customers away from commercial banks.
3. Land Acquisition: Severe difficulty in acquiring contiguous, dispute-free land for ground-mounted solar.
4. Grid Infrastructure: Issues with distribution and transmission lines accommodating new RE inputs.
5. Technical and Project risk: Renewable energy projects require specialised technical assessment capacity, while previous project and vendor failures continue to affect banks' risk appetite.
6. Collateral requirements: Conventional collateral requirements remain a barrier, particularly for smaller renewable energy borrowers.
7. Risk of Greenwashing: BRAC bank and City Bank both are GCF accredited implementing agencies however GCF only supports RMG energy efficient machinery which is ringfenced hence there's a risk of greenwashing.

Strategic Approaches and Recommendations for Banks:

1. Direct DFI Negotiation: To stay competitive against subsidised entities like IDCOL, commercial banks must negotiate directly with international DFIs. Securing independent green finance lines (e.g., BRAC's \$90M from JICA and \$60M from EIB) allows banks to offer blended, lower-cost funds without relying on sovereign guarantees.
2. Capitalise on Commercial Efficiency: Despite IDCOL's cheaper rates, commercial banks can win clients by leveraging their superior operational efficiency, rapid decision-making, less stringent processing, and ability to simultaneously provide working capital and bank guarantees.
3. Elevate ESG as a Core Business Function: Commercial banks must stop treating sustainable finance as a marketing gimmick or greenwashing tool. Banks need to invest deeply in ESG, assigning senior management rather than junior officers to lead these departments, recognizing that green finance is a highly profitable and bankable segment.
4. Develop Alternative Product Offerings: Bangladesh Bank should extend refinancing to grid-tied projects, and commercial banks should design equivalent in-house retail products to serve as an alternative where refinancing is unavailable.
5. Invest in Technical Expertise: Because technical assessments of RE projects are highly complex, banks must build internal specialised capacity to accurately evaluate and underwrite these investments.

Source: Author's findings from KII.

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For more than two decades, the Infrastructure Development Company Limited (IDCOL) has built an almost unrivalled position in green energy finance, backed by sovereign support that few private lenders can match. This role has been additional in segments where commercial finance has historically struggled to reach, including solar home systems, solar irrigation, and remote mini-grids. Yet as the market matures, IDCOL is increasingly operating in areas that commercial banks and other non-banking financial institutions could potentially serve. Meanwhile, commercial banks are gradually beginning to demonstrate both the appetite and capacity to enter the sector but face structural barriers of their own including shorter funding horizons, limited technical expertise, and inadequate risk-sharing mechanisms. As the renewable energy market moves beyond the financing gaps of its early years, IDCOL's greatest value may lie not in financing an ever-larger share of projects, but in enabling others to finance them. The policy implication therefore is that concessional capital should shift from substituting for private finance to catalyzing it, so that ultimately IDCOL, commercial banks, and public institutions can play complementary roles within a larger and more resilient financing ecosystem.



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Centre for Policy Dialogue (CPD)

House 40/C, Road 11 (New), Dhanmondi, Dhaka 1209

Tel: +(88 02) 41021780-2 Fax: +(88 02) 41021783

E-mail: info@cpd.org.bd Website: www.cpd.org.bd