

Joint Press Briefing • DREP & ERF

Distributed Renewable Energy: The Future Solar Solution for Bangladesh

Organized by the Economic Reporters' Forum (ERF) in collaboration
with the Distributed Renewable Energy Platform (DREP)

Sunday, 02 August 2026 | 11:30 AM – 2:00 PM | ERF Auditorium, Paltan Tower, Dhaka

DREP Partners

act:onaid



solshare

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Website: <https://renewablesbd.com/>

DREP Partners: ActionAid Bangladesh • Bangladesh Sustainable and Renewable Energy Association (BSREA)

• Centre for Policy Dialogue (CPD) • Coastal Livelihood and Environmental Action Network (CLEAN) • SOLshare



Section 1

Introduction and Context

Why Distributed Renewable Energy Matters for Bangladesh

- **Grid alone isn't enough** - even as national electrification has expanded, distributed renewable energy (DRE) fills reliability gaps, cuts reliance on costly imported fuel, and brings power closer to where it's needed.
- **A proven track record** - Solar Home Systems have already electrified over 20 million people off-grid, and that momentum is now scaling into rooftop solar, solar irrigation, and battery storage.
- **Central to the energy transition** - DRE offers an affordable, secure, and climate-resilient pathway to power for households, industries, and farmers alike.
- **A shared undertaking** - unlocking this potential requires coordinated action on policy, financing, storage, and industry capacity, the focus of today's briefing.

About the Distributed Renewable Energy Platform (DREP)

- **What is DREP** - the Distributed Renewable Energy Platform, hosted under The Sunrise Project, fosters active collaboration among stakeholders to strengthen the policies, plans, acts, institutions, and operational mechanisms for distributed renewable energy in Bangladesh.
- **Platform partners** - Centre for Policy Dialogue (CPD), ActionAid Bangladesh, SOLshare, the Bangladesh Sustainable and Renewable Energy Association (BSREA), and the Coastal Livelihood and Environmental Action Network (CLEAN).
- **A concluding initiative** - today's Joint Press Briefing, organized with the Economic Reporters' Forum (ERF), marks a concluding initiative of the Platform, bringing partners together to share evidence and recommendations with the media.

Objectives of Today's Press Briefing

- **Share the evidence** - present thematic findings on the current status, financing, storage, and industry dimensions of distributed renewable energy in Bangladesh.
- **Launch a new public resource** - unveil the Renewables in Bangladesh website.
- **Engage the Chief Guest** - hear remarks from Prof. Rashed Al Mahmud Titumir, Honorable Adviser for Finance and Planning to the Prime Minister.
- **Open a dialogue with the media** - gather questions and perspectives from journalists and stakeholders to help shape the way forward.

Section 2-Presentation by CPD

Current Status of Distributed Renewable Energy in Bangladesh



The Peak and the Collapse

Figure 1: Annual Installation Trend of SHS

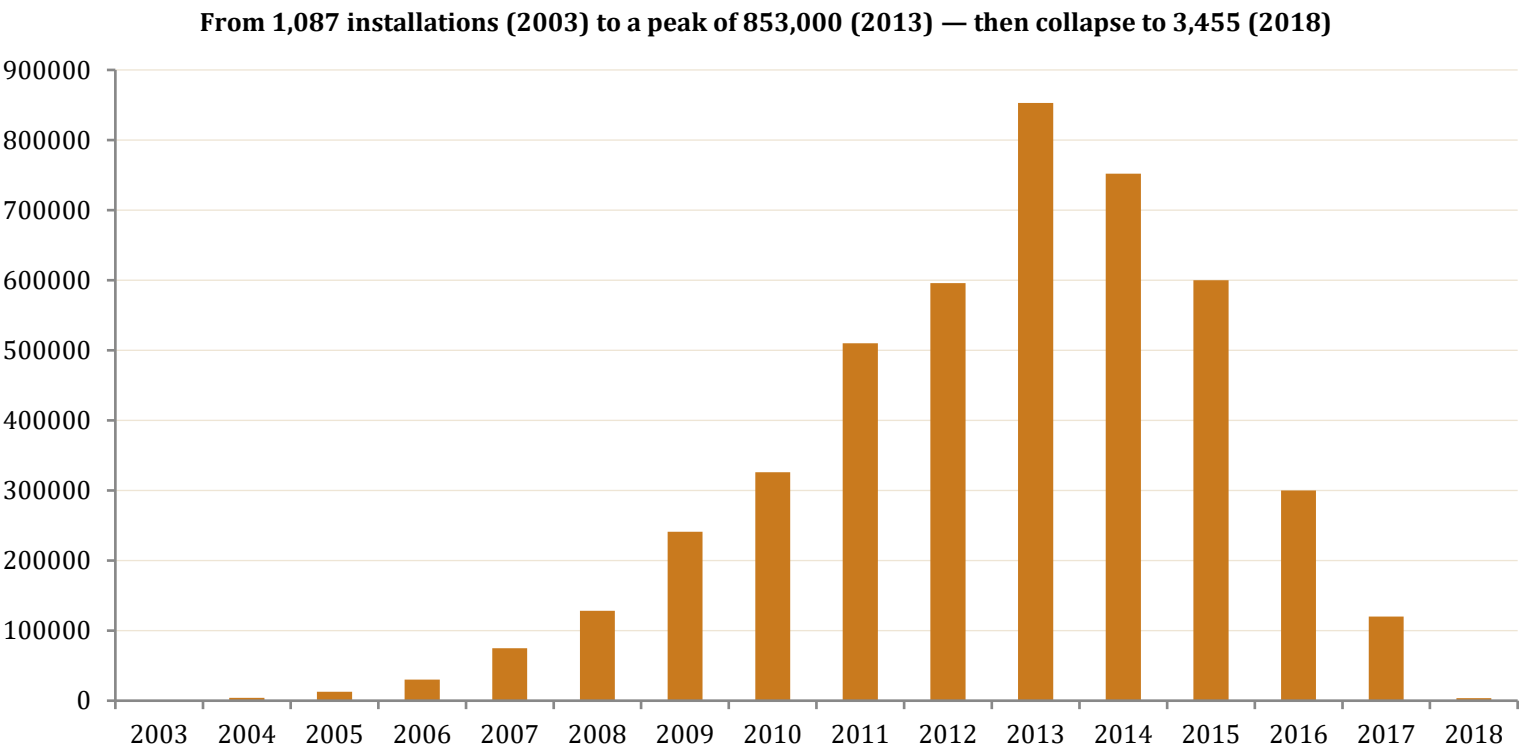


Table 1: Institutional Concentration

Agency	Share
IDCOL	74.4%
MoDMR	25.1%
BREB, NESCO, GIZ, RDCD	0.5%

From 853K
to 3,455

a 99.6% drop in annual
installations within just 5 years
(2013–2018)

This collapse did not mean demand for electricity disappeared — it meant the off-grid model was overtaken by a more attractive alternative: the national grid.

Why Off-Grid Gave Way to On-Grid



Grid Expansion Outpaced Planning

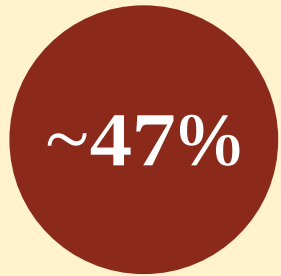
The unplanned expansion of national grid electricity over the past decade reached rural areas faster than any transition plan for existing SHS households was designed.



SHS Couldn't Meet Growing Demand

SHS provided small-capacity power enough for lighting and charging, but as households' energy needs grew, the systems could not keep up, pushing users toward grid power.

The Retention Crisis: What Happened to the 6 Million Systems Already Installed?



According to the **CPD SHS Survey 2025**, nearly half of all installed solar home systems are now **non-functional**. No structured transition pathway was ever designed to help households retrofit, upgrade, or hybridise their systems as grid electricity arrived, leaving millions of stranded solar assets across the country.

The On-Grid Solar Portfolio at a Glance

Total Rooftop Solar Installations

4,551

Net metering installations

60.4%

in Dhaka division

Total Rooftop Solar Capacity

213.3 MW

Net metering capacity

45.4%

on CAPEX ownership model

Solar Irrigation Grid Integration

309

SIPs connected to grid

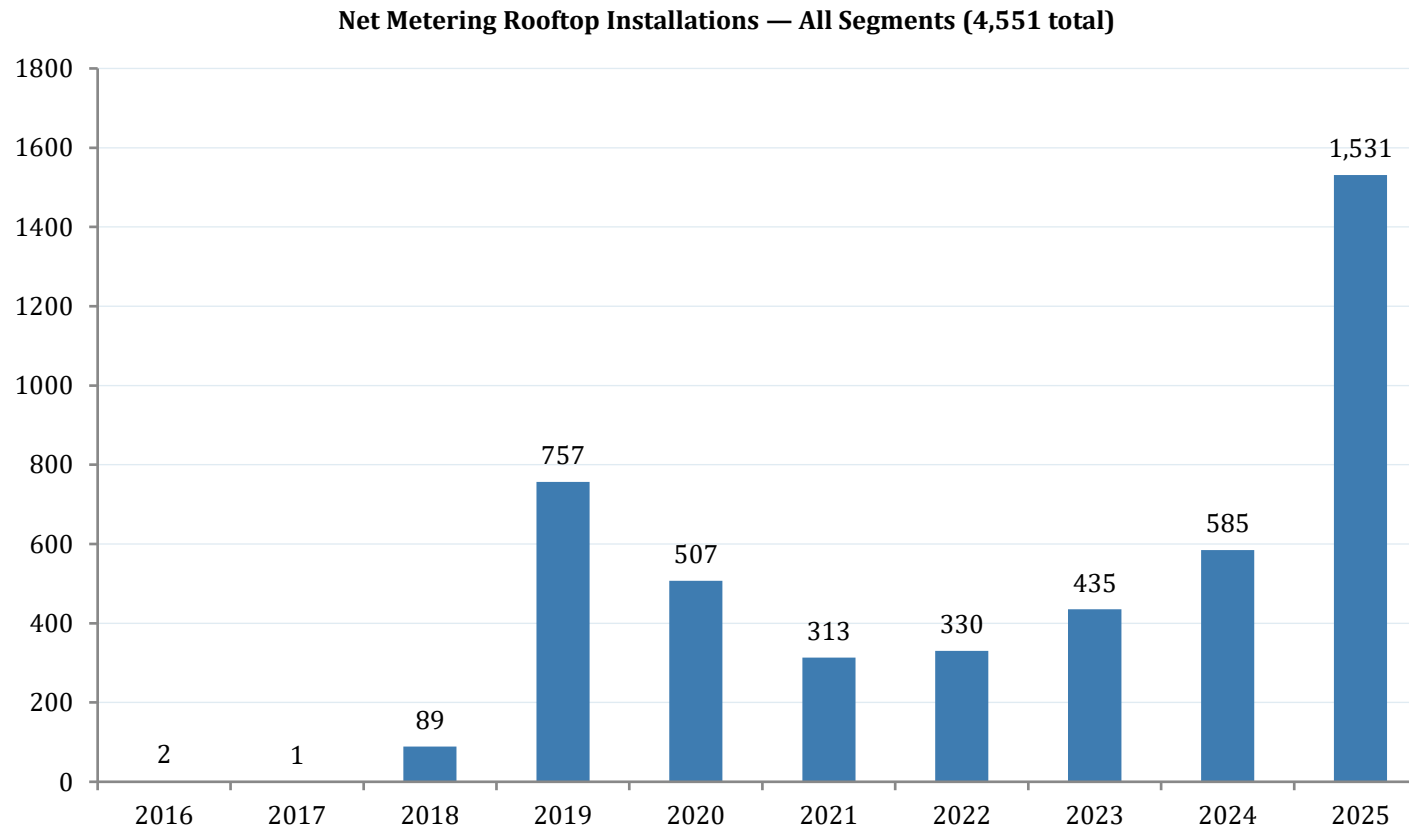
8.77%

of all SIPs (3,523 total)

Together, these three pillars represent Bangladesh's most promising — and most underexploited — pathway to scaling distributed renewable energy without repeating the retention failures of the off-grid era.

Rooftop Solar: Current State

Figure 2 : Annual Installation Trend of Net Metered Rooftop Solar



98.1%

of all net metering systems
completed & running

63.6%

financed through own/self
investment

10%

sanctioned-load rule drives
residential compliance installs

Rooftop Solar: Current State

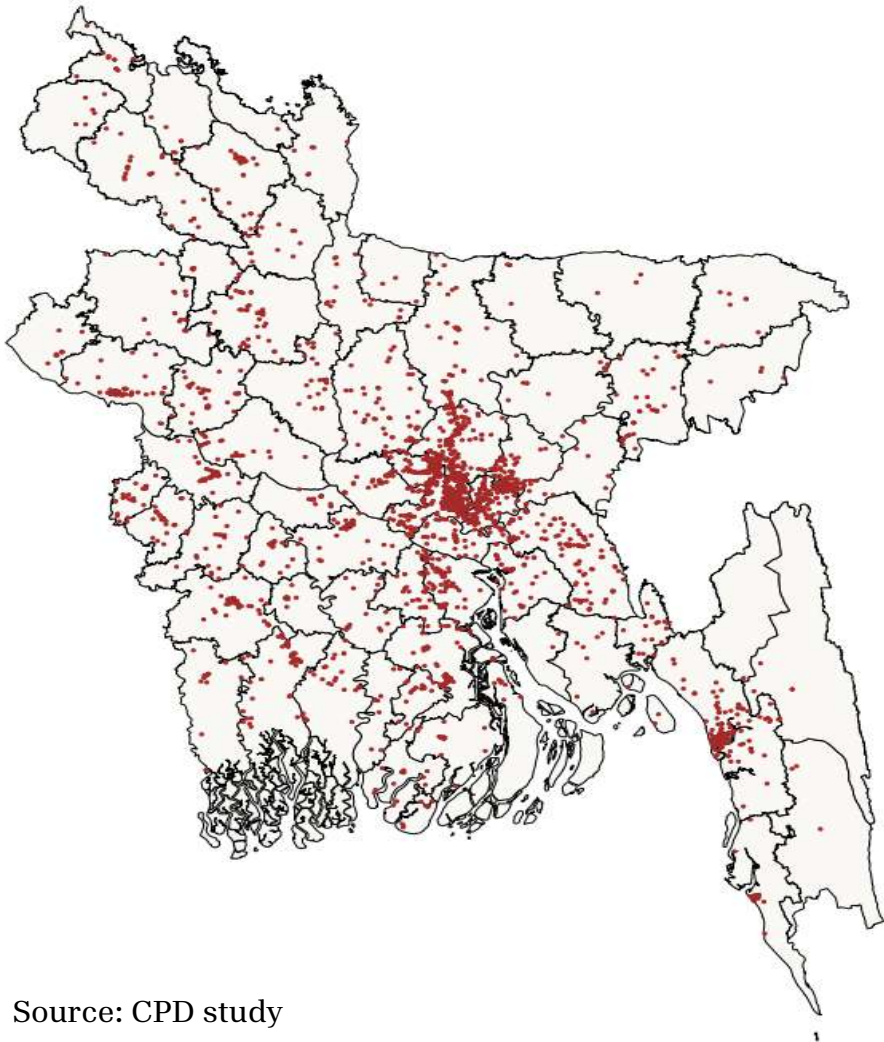
Table 2: Geographic Concentration

Division	Share
Dhaka	60.4%
Chattogram	16.1%
Khulna	8.8%
All others	14.7%

Table 3: Leading Implementing Utilities

Utility	Share
BREB	40.2%
DESCO	23.9%
BPDB	12.0%
WZPDCL / DPDC / NESCO	23.9%

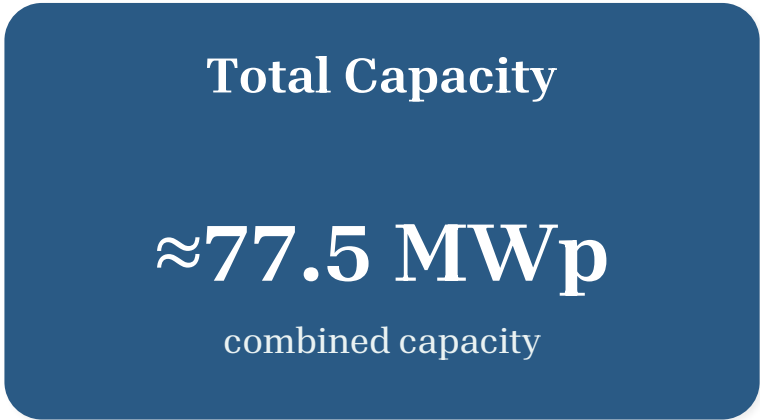
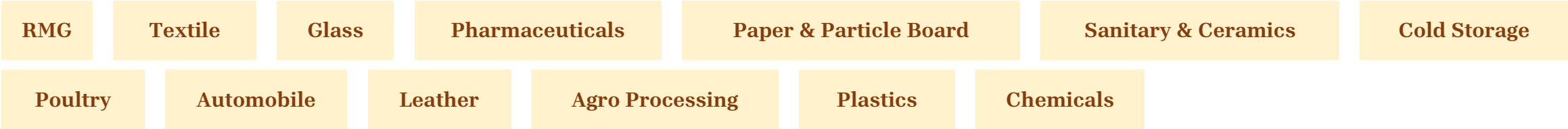
Figure 3: Geographical Distribution of Net Metered Rooftop Solar



Source: CPD study

Rooftop Solar in Industry: Current State

Industrial Rooftop Across Sectors



Recommendations

Residential

- **Reform Net Metering:** Simplify residential eligibility, fast-track approvals and launch a unified digital application platform across utilities.
- **Dedicated Financing Windows:** Green facilities with partial credit guarantees, on-bill and pay-as-you-save financing for households.
- **Rationalise Duties & Taxation:** Move essential PV components to a concessional or zero-duty category to reduce upfront costs.
- **Strengthen Institutional Coordination:** Clarify mandates across SREDA, utilities and BERC to reduce approval delays.
- **Lifecycle Management & SHS Integration:** Mandate maintenance standards and repower legacy Solar Home Systems into hybrid, grid-tied installations.

Industrial

- **Build a RESCO Collateral Framework:** Recognise PPAs and project assets as bankable security to unlock OPEX-model lending.
- **Streamline Green Refinancing:** Simplify documentation and move to single-tier disbursement for Bangladesh Bank schemes.
- **Bank Capacity Building:** Standardised DRE credit-appraisal tools and training so commercial lenders can price solar risk accurately.

Recommendations

Solar Irrigation

- **Shared Ownership Models:** Shift Solar Irrigation Pumps toward farmer cost-sharing to strengthen usage and maintenance incentives.
- **Expand Net Metering for SIPs:** Allow nationwide surplus-power sale from irrigation pumps to improve financial viability.
- **Reform Diesel Subsidies:** Phase out diesel-irrigation subsidies and align SIP licensing procedures with diesel-pump processes.
- **Integrate Water-Saving Technology:** Bundle SIPs with drip and sprinkler irrigation to raise efficiency and returns.
- **Bundle With Agricultural Finance :** Package SIP loans with equipment finance such as power tillers and harvesters.
- **Align Awareness Campaigns With Solar Hours:** Re-orient irrigation-timing campaigns toward daytime, solar-generation hours.

Adoption and Retention

- **National DRE Coordination Body:** A SREDA-led committee to harmonise programme design and track retention not just installations across all DRE.
- **Institutionalise Feedback Loops:** Regular user surveys, grievance mechanisms and field audits that actively feed into programme redesign.
- **Shift to Retention-Centric Design:** Redesign incentives so meso-level institutions are rewarded for continued use, not just disbursement.

Recommendations

Adoption and Retention

- **Build Local Maintenance Capacity:** Train local technicians and establish performance-based service contracts to reduce stranded assets.
- **Expand Centralised DRE Data Systems:** Real-time monitoring of installed capacity, functionality and retention across all technologies.

Section 3-Presentation by BSREA

Challenges Faced by EPCs and Industry Actors



Bangladesh's DRE Industry Ecosystem

Eight interdependent stakeholder groups that make the decentralized renewable energy market work



Manufacturers and Technology Providers

Develop and produce solar, wind, battery, inverter, and other renewable energy technologies.



Importers, Distributors and Suppliers

Ensure timely availability of quality equipment and components across the country.



EPCs, Installers and System Integrators

Design, procure, install, commission, and integrate renewable energy systems.



RESCO/OPEX/CAPEX Investors and Developers

Finance, own, develop, and operate projects under different business and investment models.



Financial Institutions and Insurers

Provide loans, leasing, investment, risk management, and insurance solutions for projects.



Utilities, Regulators and Government Agencies

Establish policies, standards, incentives, licensing, and grid integration frameworks.



O&M, Audit and Training Service Providers

Ensure system performance through maintenance, inspections, certification, and workforce development.



Residential, Agricultural, SME, Commercial & Industrial Users

Drive market demand by adopting decentralized renewable energy solutions across sectors.



Key message: DRE growth depends on the performance of the entire value chain.

Regulatory and Administrative Bottlenecks

Where policy design and on-the-ground implementation diverge



Project-specific Work Order or Contract Requirements — Many fiscal incentives and regulatory benefits are only available after a project has received a confirmed work order or signed contract, delaying implementation and raising investment costs.



Inconsistent Interpretation of SRO, VAT, AIT and Eligibility — Different implementing agencies interpret tax and duty incentive provisions differently, creating conflicting guidance, uncertainty, and higher compliance costs.



Multiple Approvals with Different Procedures and Timelines — Developers must obtain approvals from several agencies, each with its own documentation and timelines, resulting in repetitive paperwork and delays.



Delays in Inspection, Metering and Grid Interconnection — Post-installation delays in inspections, metering, and grid connection approvals prevent projects from becoming operational on time.



Limited Clarity for BESS, Hybrid, Irrigation and Other DRE Applications — Emerging technologies still lack comprehensive regulatory guidelines on technical standards, licensing, and incentives.

Tax and Customs Barriers

Fiscal incentives that do not yet reach the whole supply chain



Fiscal Benefits Remain Limited to Selected Project-Based Business Models — Incentives primarily benefit large-scale CAPEX/OPEX installations, creating an uneven playing field that limits the sector's overall growth potential.



Importers, Distributors and Inventory-Based Businesses Remain Disadvantaged — Companies that stock equipment without a specific project cannot access incentives, facing higher import costs and financial risk.



Higher Equipment Costs and Difficulty Maintaining Local Stock — High import duties and taxes raise equipment costs and discourage inventory-holding, leading to longer project timelines.



Small EPCs, Households and SMEs Face Greater Market Barriers — Higher equipment costs hit small firms and households hardest, given limited access to financing and price sensitivity.



Lack of Clear Customs Implementation Guidance Reduces Investor Confidence — Inconsistent customs procedures and unclear guidelines create delays and unpredictable duties, undermining long-term investment confidence.

Business and Market Challenges

Financing, cost, and confidence barriers across the market



High Upfront Investment and Limited Affordable Finance — Businesses, households, and SMEs struggle to access affordable, long-term financing for DRE systems.



Foreign-Exchange and LC-Related Uncertainty — Dependence on imports makes the sector vulnerable to exchange-rate fluctuations and delays in opening Letters of Credit.



Working-Capital Pressure on EPC Companies — Upfront procurement costs plus delayed client payments create cash-flow constraints, especially for smaller firms.



High Transaction Costs for Small Projects — Small-scale projects face nearly the same administrative and financing procedures as large ones, hurting their viability.



Weak Consumer Confidence Due to Underperforming Systems — Poor-quality installations and unrealistic performance expectations have eroded consumer trust in parts of the market.



Limited Reliable Market and Performance Data — The sector lacks comprehensive, regularly updated data to inform investment, policy, and planning decisions.

Technical Capacity and Quality Challenges

Building the skills and standards the sector needs to scale



Shortage of Trained and Certified Professionals — The growing DRE sector needs more skilled engineers, technicians, and installers through expanded certification and training.



Inconsistent Design, Installation and Commissioning Practices — Uneven adoption of standardized technical practices reduces system performance and reliability.



Weak QA/QC and Preventive Maintenance — Inadequate quality assurance and maintenance lead to system failures and shorter equipment life.



Limited Application of EPC, O&M and Safety Standards — Inconsistent adherence to engineering and safety standards affects system quality and workplace safety.



Insufficient Monitoring and Performance Reporting — Many systems lack proper monitoring, limiting reliable data for maintenance, planning, and investment.



Lack of Independent Inspection and Certification Mechanisms — Limited third-party verification of quality and compliance weakens industry credibility and consumer confidence.

BSREA Recommendations

Immediate Priorities

1

Extend Fiscal Incentives Across the DRE Value Chain

Tax and customs incentives should benefit all stakeholders — manufacturers, importers, suppliers, EPCs, and developers — to reduce costs and accelerate adoption.

2

Issue a Joint SRO Implementation Clarification

Relevant agencies should issue a unified interpretation of SRO provisions to reduce uncertainty and simplify compliance.

3

Standardize Net Metering Approval and Interconnection Procedures

A single, transparent nationwide process for approvals, inspections, and grid connection will reduce delays and improve investor confidence.

4

Create a Fast-Track Process for Small Systems

Simplified approvals for smaller rooftop, SME, irrigation and residential DRE projects will encourage wider adoption.

5

Adopt an Inclusive Fiscal Framework

Cover Solar, BESS, Hybrid, Irrigation, Wind and related components instead of focusing on selected applications, to encourage diversification.

6

Launch a National Rehabilitation Programme

Identify, assess, and restore underperforming rooftop solar systems to improve generation and rebuild consumer confidence.

BSREA Recommendations

Medium-term Reforms



EPC and installer certification



National EPC, O&M and safety standards



Concessional finance and credit guarantees



Standard CAPEX, OPEX and RESCO contracts



National DRE database and performance monitoring



Clear accountability and service timelines



Closing Message

Bangladesh needs an inclusive, predictable and quality-driven framework to convert policy ambition into operational DRE capacity.



Section 4-Presentation by CLEAN

Role of Awareness in Adoption and Retention of DRE Technologies



SUNED

Campaign for

Solar Upliftment towards Nationwide Employment and Decarbonisation

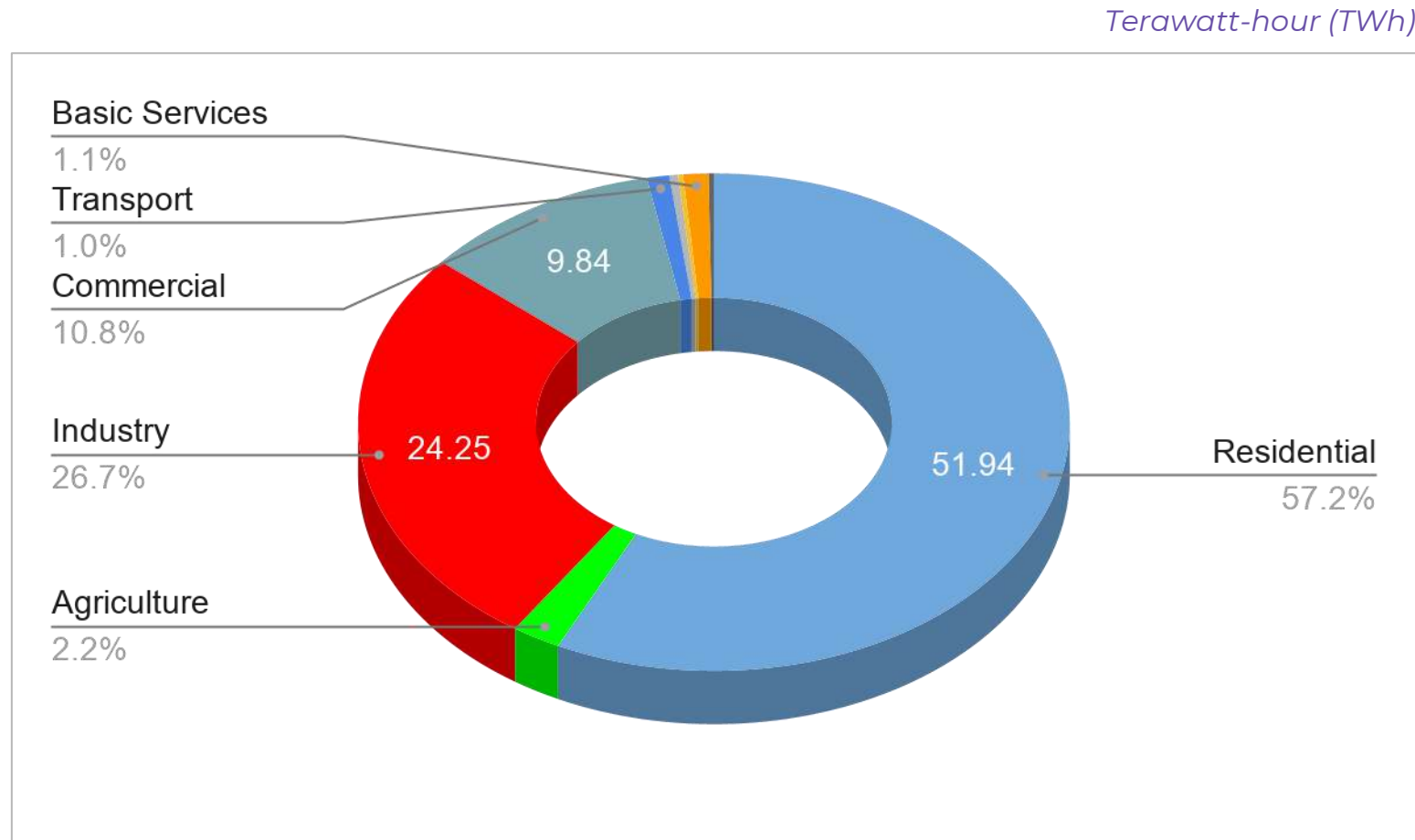
Hasan Mehedi

Coastal Livelihood and Environmental Action Network



Why Residential Solar?

The Residential Sector could be a game-changer in the energy transition, as the largest electricity consumer.



The residential sector consumes 57.2% of electricity, while the Industrial sector consumes 26.7%, and the commercial sector consumes 11%.

In 2024-25, the residential sector consumed 51.94 TWh.

Therefore, **the residential sector can be the largest demand-side contributor to the** decarbonisation of the power sector.

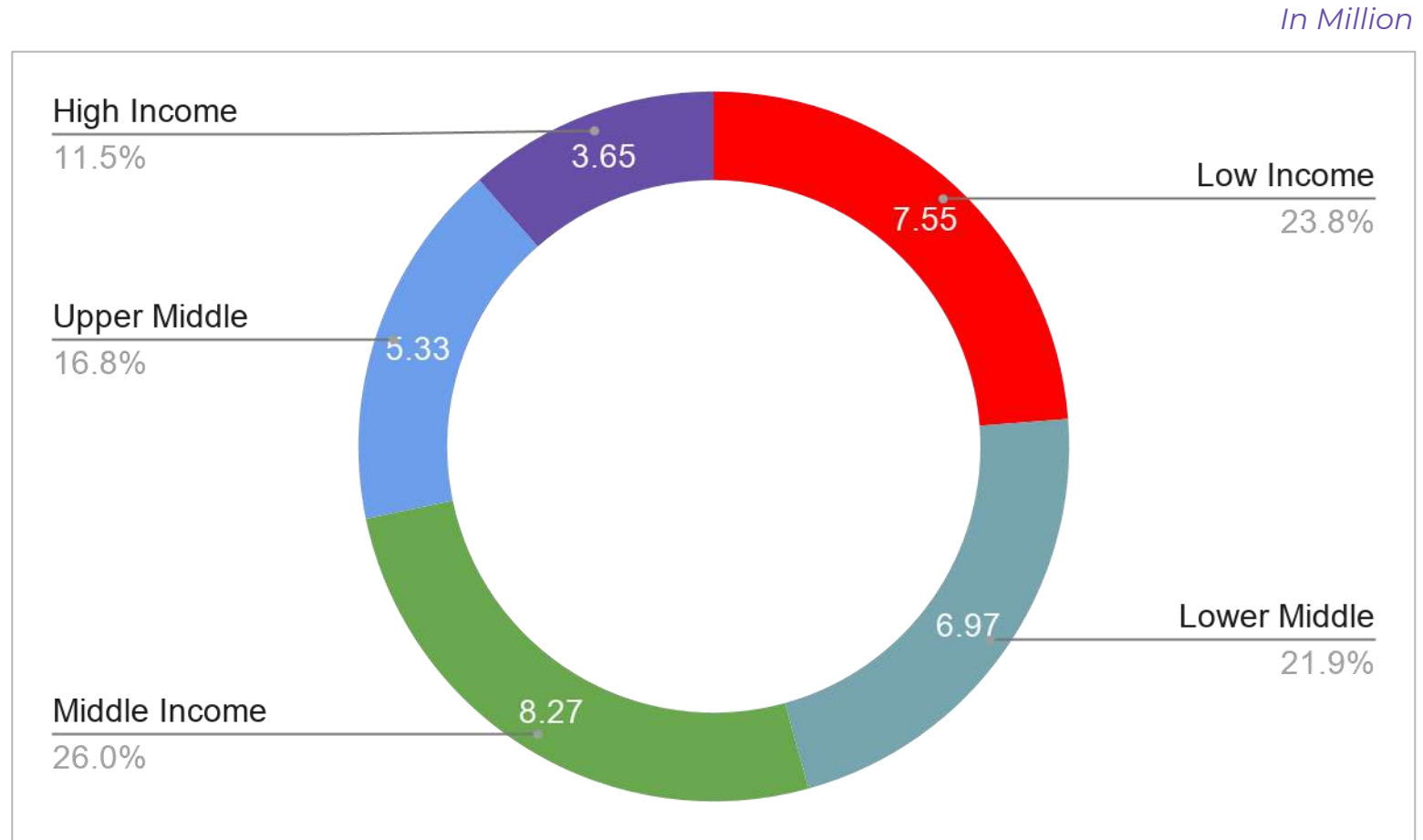
Households & Installation Capacity

Country's 40.3 million households can install at least 8,600 MW of Solar Power on their Rooftops.

There are 40.3 million households in the country, of which 35.6 million (88.5%) live in their own houses.

There are 7.6m low-income, 6.9m lower-middle-income, 8.4m middle-income, 5.3m upper-middle-income, and 3.7m high-income households in the country.

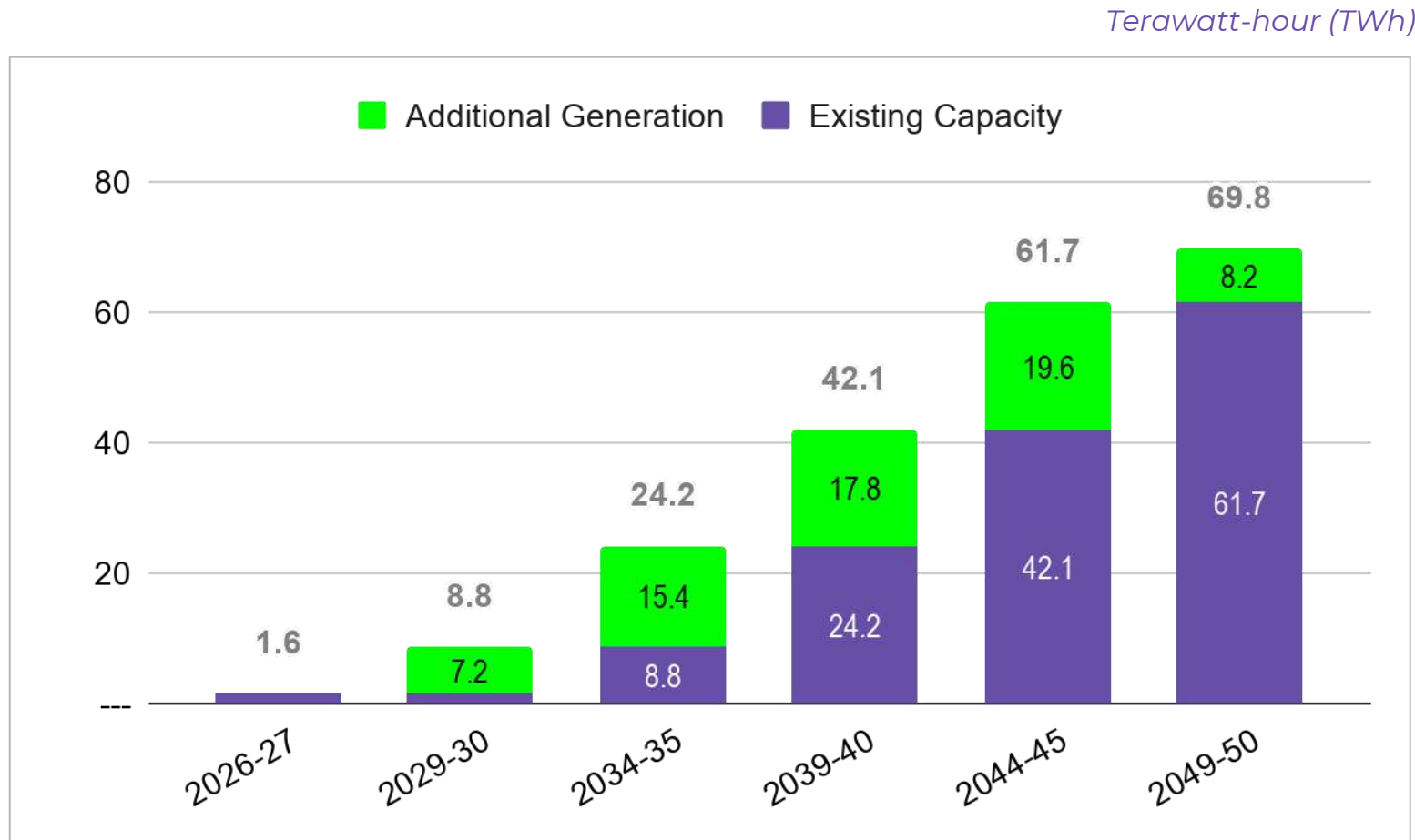
In a constrained scenario (10% of the households) with 1-5 kWp of solar systems, a staggering **8,600 MWp rooftop solar power** can be installed by 2030.



Bangladesh Bureau of Statistics (2023)

Electricity Generation Capacity

By installing only 8,600 MWp under the constraint scenario, around 15% of national demand could be met.



Analysis of the Study Team

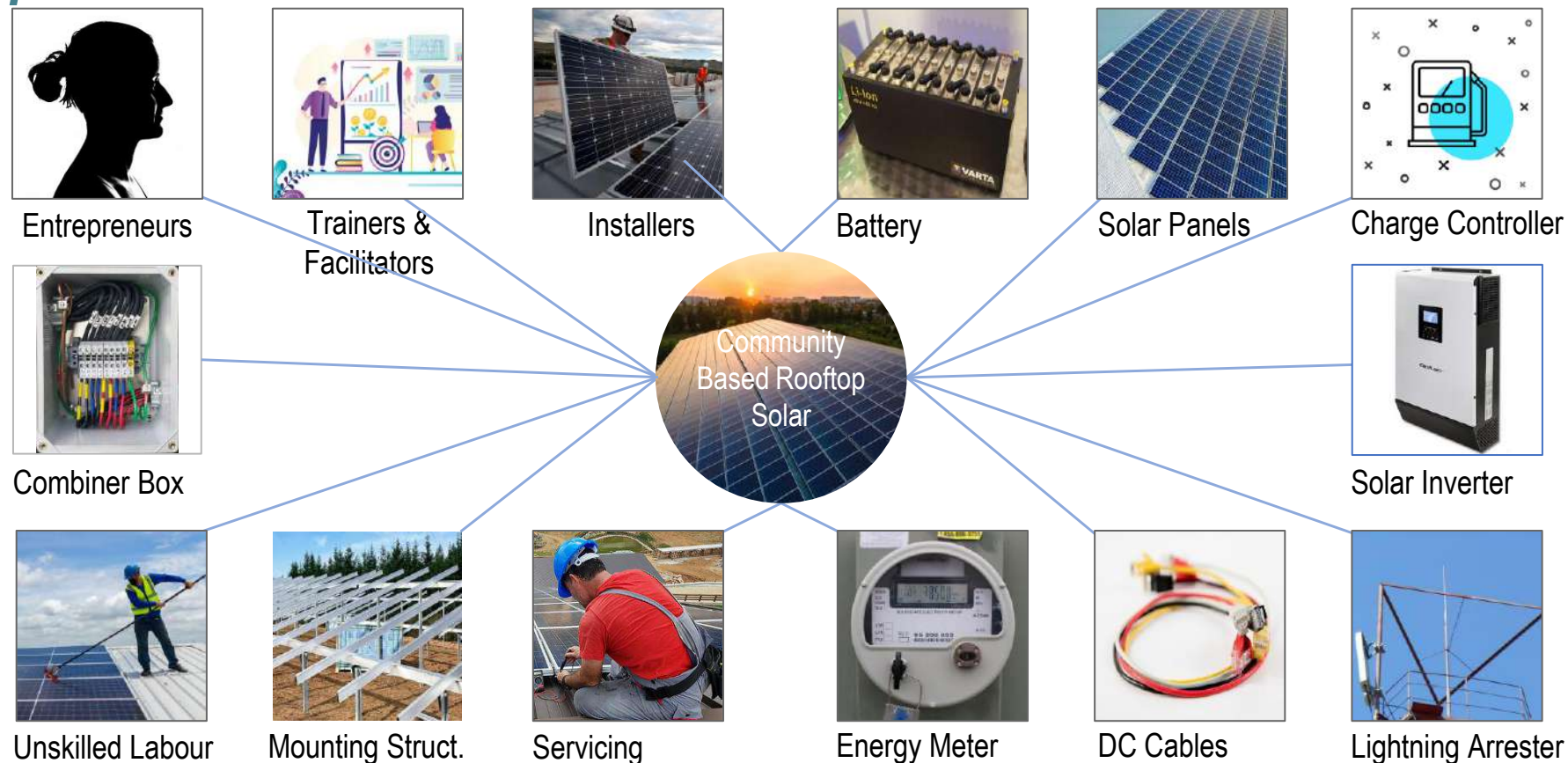
The rooftop solar systems, with an installed capacity of 8,600 MWp, can generate 13,937 GWh of electricity, which is around 15% of the annual national demand.

By installing 21,300 MW under a moderate scenario, 34,518 GWh of electricity could be generated, which is 35% of current national demand.

An ambitious rooftop solar program can finally meet the demand of the residential sector.

Supply Chain of Rooftop Solar

Market of 10 different accessories and five professions are directly related to solar power.



1. AC Cables
2. Battery Storage
3. Charge Controller
4. Combiner Box
5. Connector
6. DC Cables
7. Energy Meter
8. Inverter
9. Lightning Arrester
10. Mounting Structure
11. Solar Panel

Job Opportunity of Rooftop Solar



According to the World Bank, **1.37 million green jobs** were created by December 2021 through the installation of 543 MW of solar systems in Bangladesh.

On average, 1 KW of off-grid Solar power created 2.52 green jobs. Even at 50% job intensity, 1.5 million new jobs could be created.

SL #	Materials	Price (USD Million)
1.	Solar Panels	628
2.	Solar Inverters	335
3.	Charge Controllers	188
4.	Electricity meters	52
5.	Battery Storage (Li-Ion)	251
6.	Lightning arresters	84
7.	DC Cables	100
8.	Switches and Connectors	84
9.	Mounting structures	251
Total		1,973

Goals & Objectives

Engaging **local government, communities** and households effectively in a **nationwide solarisation** venture.

1

Local Government Institutions, especially Union Parishads and Municipalities, are engaged with the Campaign and have demonstrated their commitment to supporting communities in realising the goal.

2

Misconceptions and myths surrounding Solar Electricity are largely cleared and demystified, paving the way for new perspectives and significant potential to advance the green agenda.

3

Policymakers are sensitised and have made an explicit commitment to support the grassroots solarisation initiative through the necessary policies, programs, and financing.

4

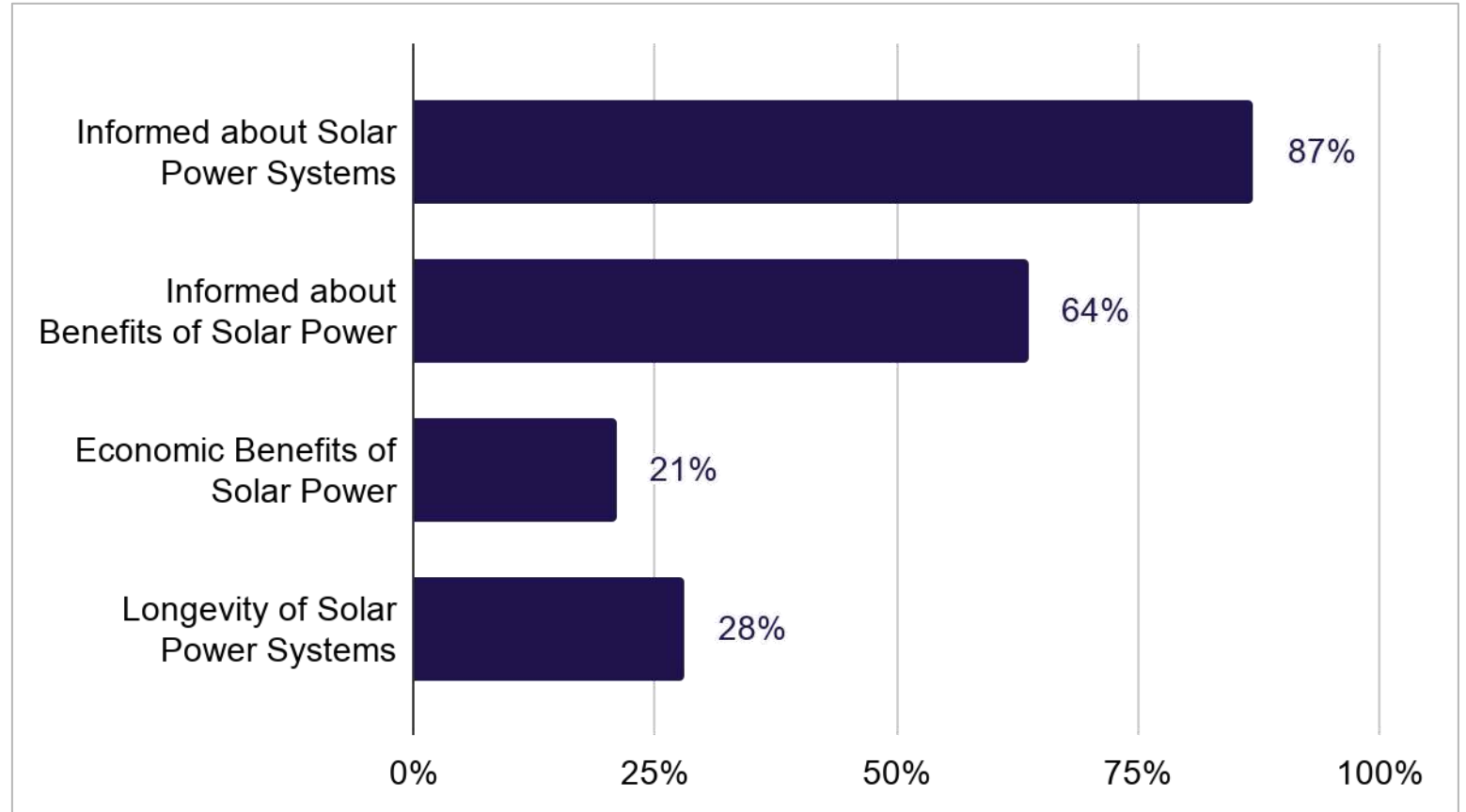
The respective companies, domestic financial institutions, Development partners, and Multilateral Development Banks are effectively engaged to secure their financing for the initiative.

Knowledge and Practices of Renewables

While 87% of the respondents were informed about Solar Power and rooftop solar systems, only 64% respondents were informed about the benefits of Solar Power.

When it came to the economic benefits, only 21% informed that they think rooftop solar is economically beneficial.

Interestingly, 28% respondents believed that solar power systems, especially solar panels do not work in the long run.



Stakeholder Communication

We worked with the the Forum on Ecology and Development (FED) which has been working in 15 districts in Bangladesh.

There are 437 members of the FED allover Bangladesh.

FED organised different events to circulate and sensitize the communities and local government.

The Annual FED Conference discusses about the potential of rooftop solar and design the annual campaign plan for the next year.



Community Engagement



Our members and partners mobilised 11,231 community members in 10 districts of Bangladesh through the community consultations and community mobilisation events to popularise rooftop solar power in Bangladesh.

Sensitising the Local Government

W organised 10 orientations and 10 dialogue meetings with the Local Government Institutions (Municipality and Upazila Parishad).

A total of 217 Local Government representatives participated in the orientations while 276 representatives participated in the dialogues.

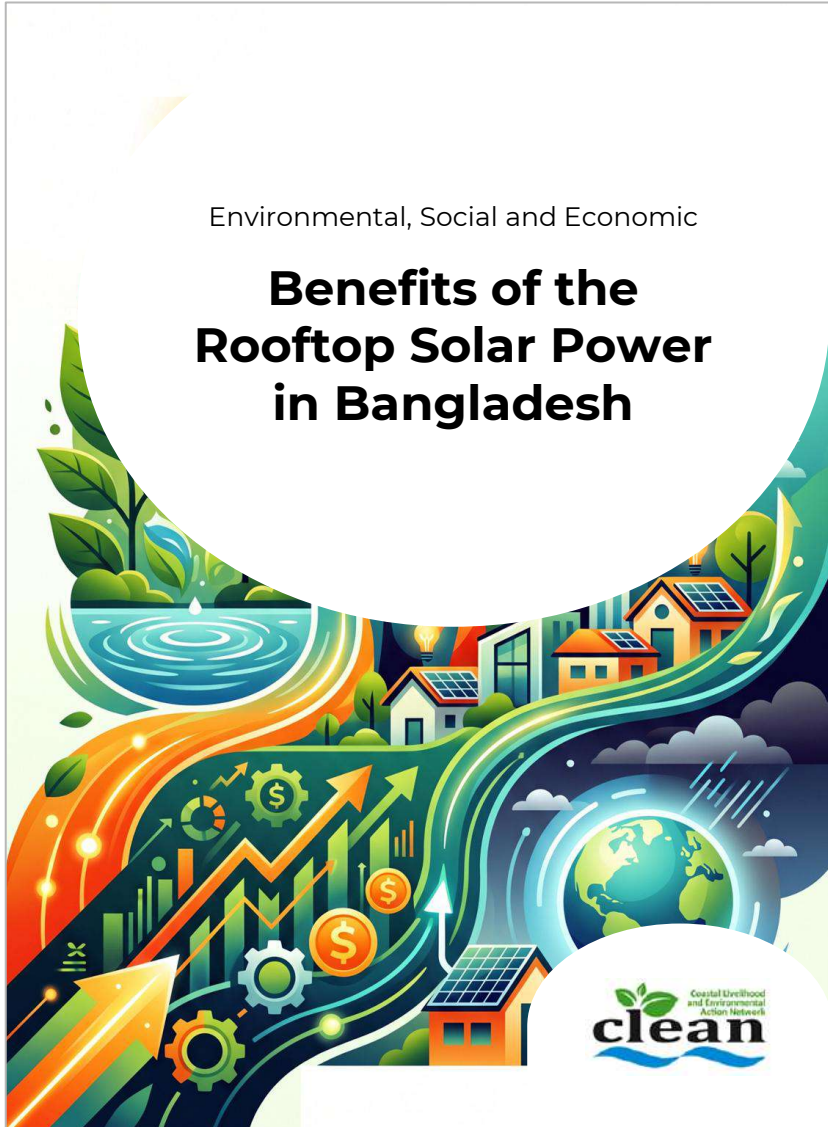
- Khulna City Corporation
- Barishal City Corporatoin,
- Khagrachari Pourasava and
- Sunamganj Zila Parishad

Have already taken significant steps to install rooftop solar on their institutions.



Environmental, Social and Economic

Benefits of the Rooftop Solar Power in Bangladesh

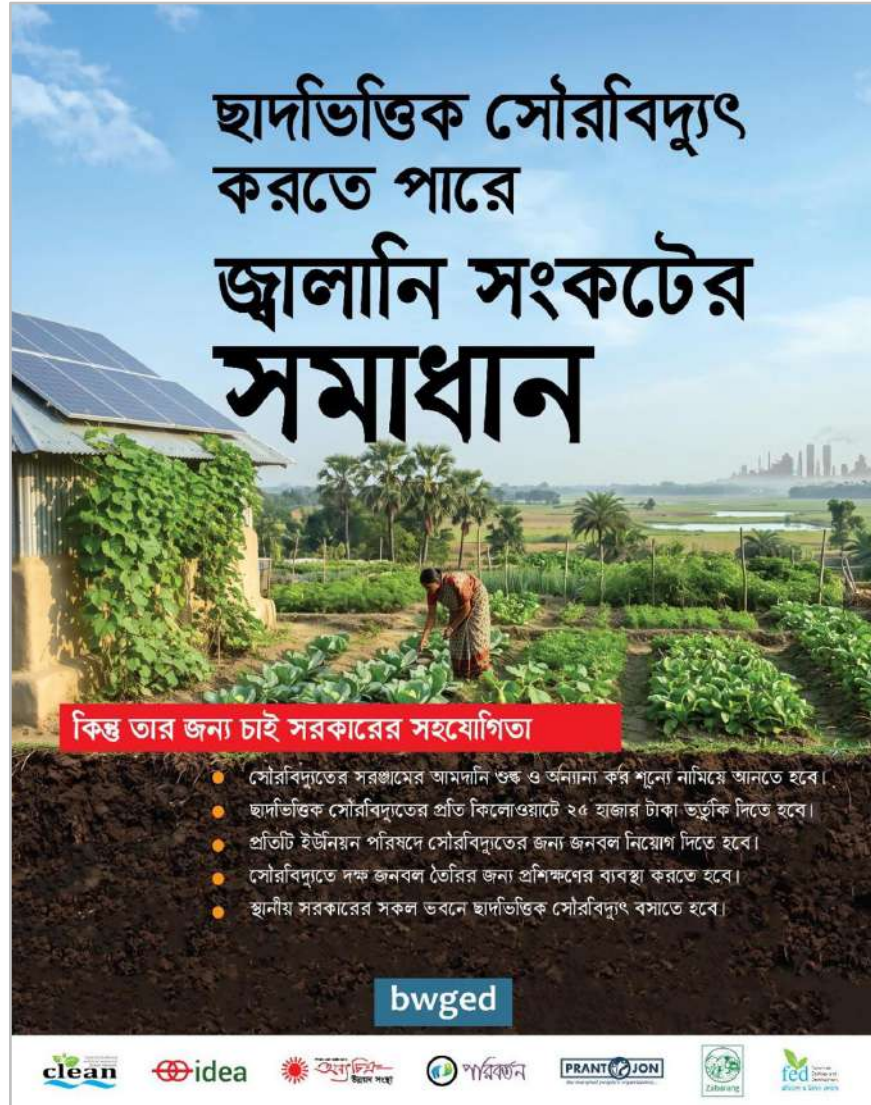


In December 2025, we published a policy brief in Bangla and English to sensitize the policymakers on the environmental, social, economic and climatic benefits of rooftop solar power in Bangladesh.

We found that every MW of rooftop solar can save BDT 3.1 crore per year by reducing import of expensive furnace oil and reduce 8,100 tons of carbon dioxide.

We distributed the policy brief to the key ministries, political leaders and policymakers.

Poster on Rooftop Solar



We circulated 10,500 posters across 11 district towns in Bangladesh to raise community awareness on rooftop solar and to popularise their demands for rapid renewable energy expansion.

Extended Target of Rooftop Solar

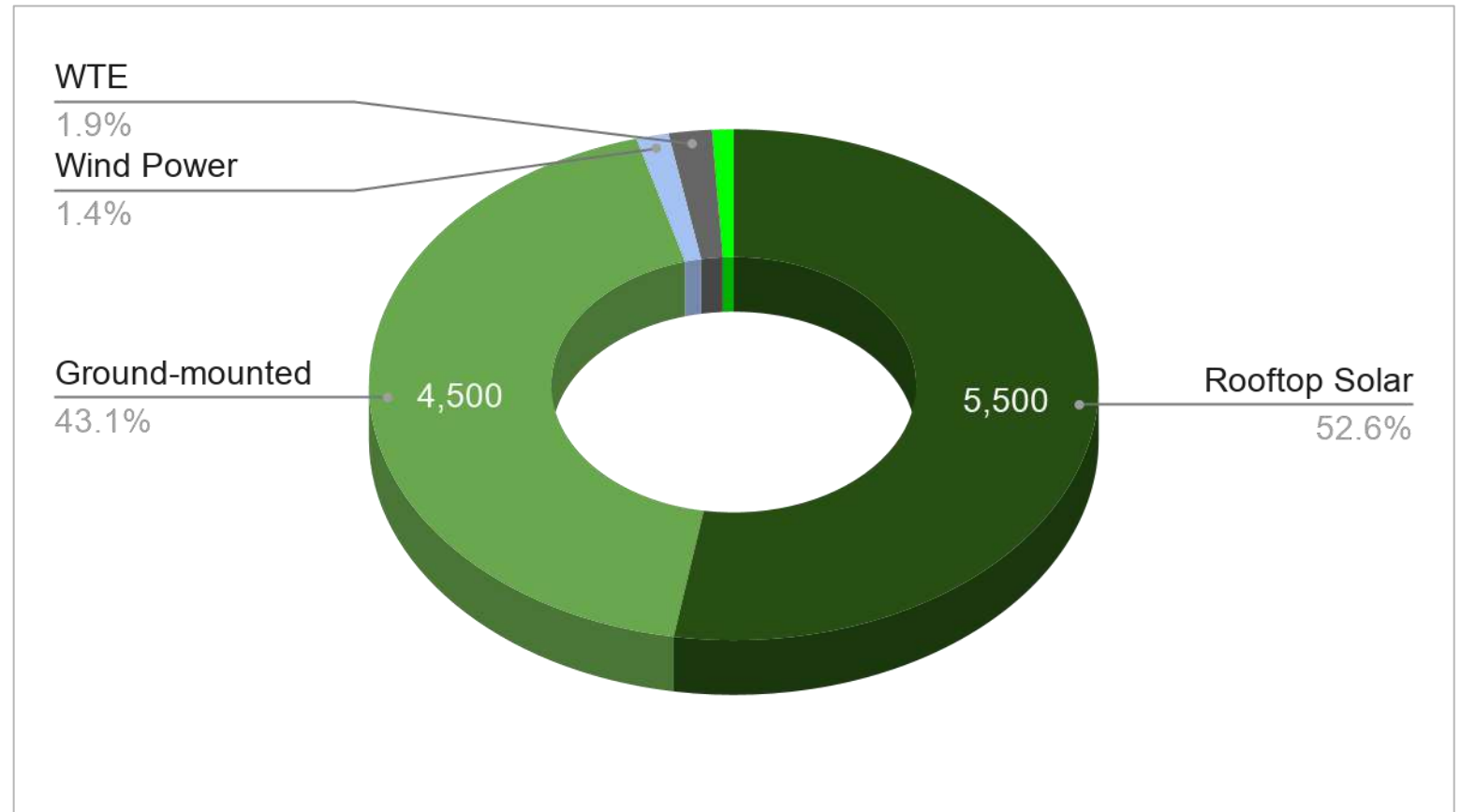
The target of rooftop solar extended to 5,000 MW from 3,000 MW of the earlier plan.

In August 2025, the Government of Bangladesh (GOB) targeted to install 3,000 MW of rooftop solar.

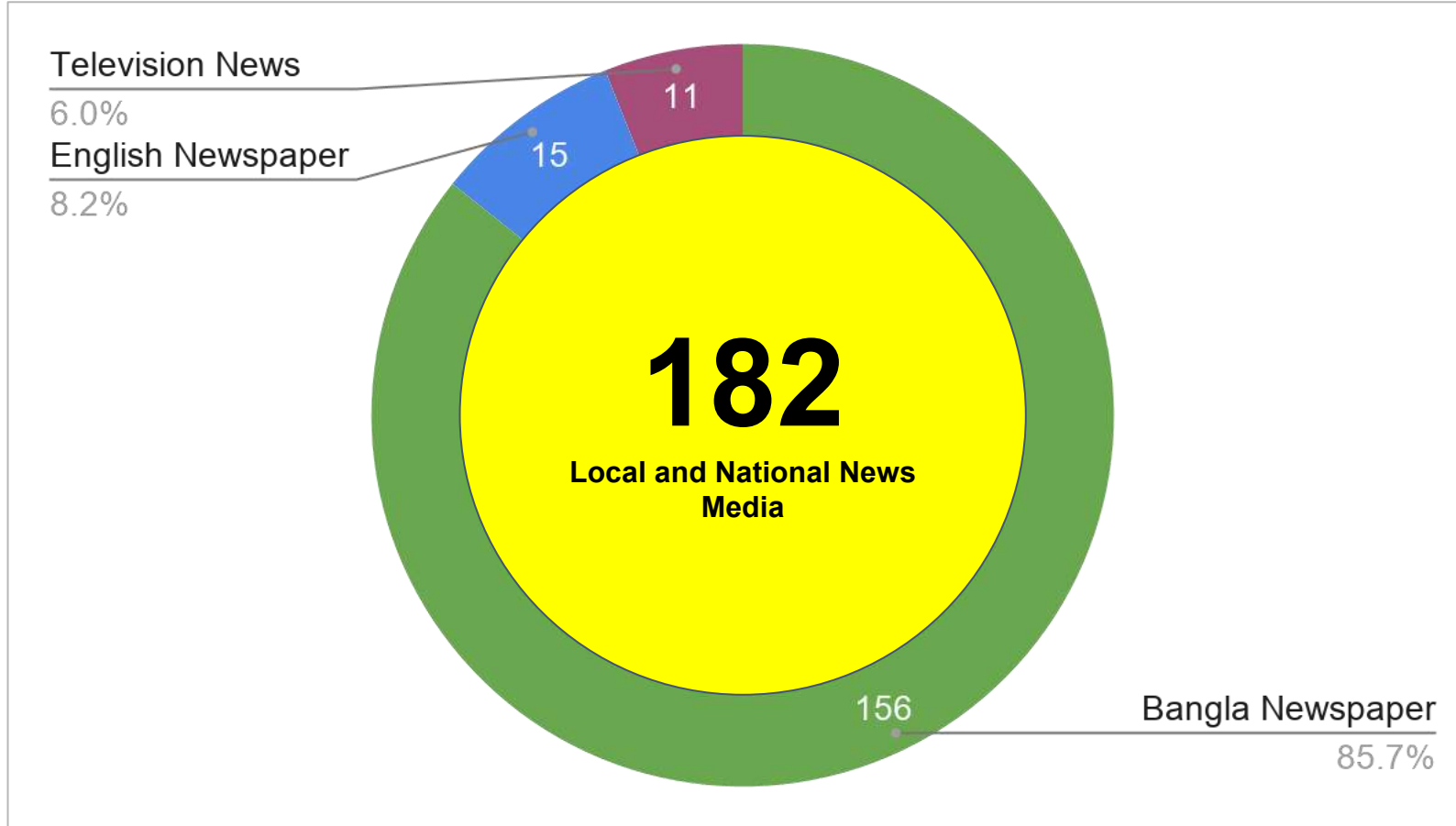
In response to the CSO campaigns, the new GOB formulated the National Renewable Energy Strategy Paper (RESP) in July 2026.

In the RESP, the government increased the target for rooftop solar installations from 3,000 MW to 5,500 MW by 2030.

According to the plan, rooftop solar is the driving force of RE in Bangladesh.



Media Coverage



In the last one year, our programs got coverage on 182 local and national news media. Among those 156 were Bangla Newspaper, 15 English and 11 Television news coverage.

- On 19 May 2026, the **Daily Samakal** published an Editorial on the Demands of FED-Khulna to reactivate the Khulna Solar Energy Park.
- On 21 May 2026, **the New Nation** published another Editorial on the KSEP, featuring an estimate by FED, Khulna.

Information Sources

BBS (2023). [Population & Housing Census 2022: National Report \(Vol. 1\)](#). Bangladesh Bureau of Statistics (BBS): November 2023

BBS (2026). [Economic Census 2024: National Report \(Volume II\)](#). Bangladesh Bureau of Statistics (BBS): June 2026

New Nation (2026). [Remove obstacles in regenerating electricity from the Khulna Solar power plant](#). The New Nation: 21 May 2026

Power Division (2026). National Renewable Energy Strategy Paper (RESP). Power Division, Ministry of Power, Energy and Mineral Resources (MOPEMR): July 2026

Rahman, M. (2025). [Utilising rooftops for solar power generation](#). The Financial Express (FE): 29 October 2025

Roy, D. (2026). [Khulna solar plant lies idle for 14 years](#). The Daily Star: 20 June 2026

Samakal (2026). [অচলাবস্থার এক যুগ : খুলনার সৌরবিদ্যুৎ কেন্দ্রে রৌদ্র প্রয়োজন](#). The Daily Samakal: 20 May 2026

Sultana, R., Nakata, S., Rahman, M.M., Alam, A.K., & and Huq, A. (2022). [Skills and Education for a Greener Bangladesh](#). World Bank Group (WBG): June 2022

Textile Today (2026). [Bangladesh aims to generate 20% of its total electricity from renewable sources by 2030](#). The Textile Today: 4 July 2026

Thank You

100% RENEWABLES POSSIBLE

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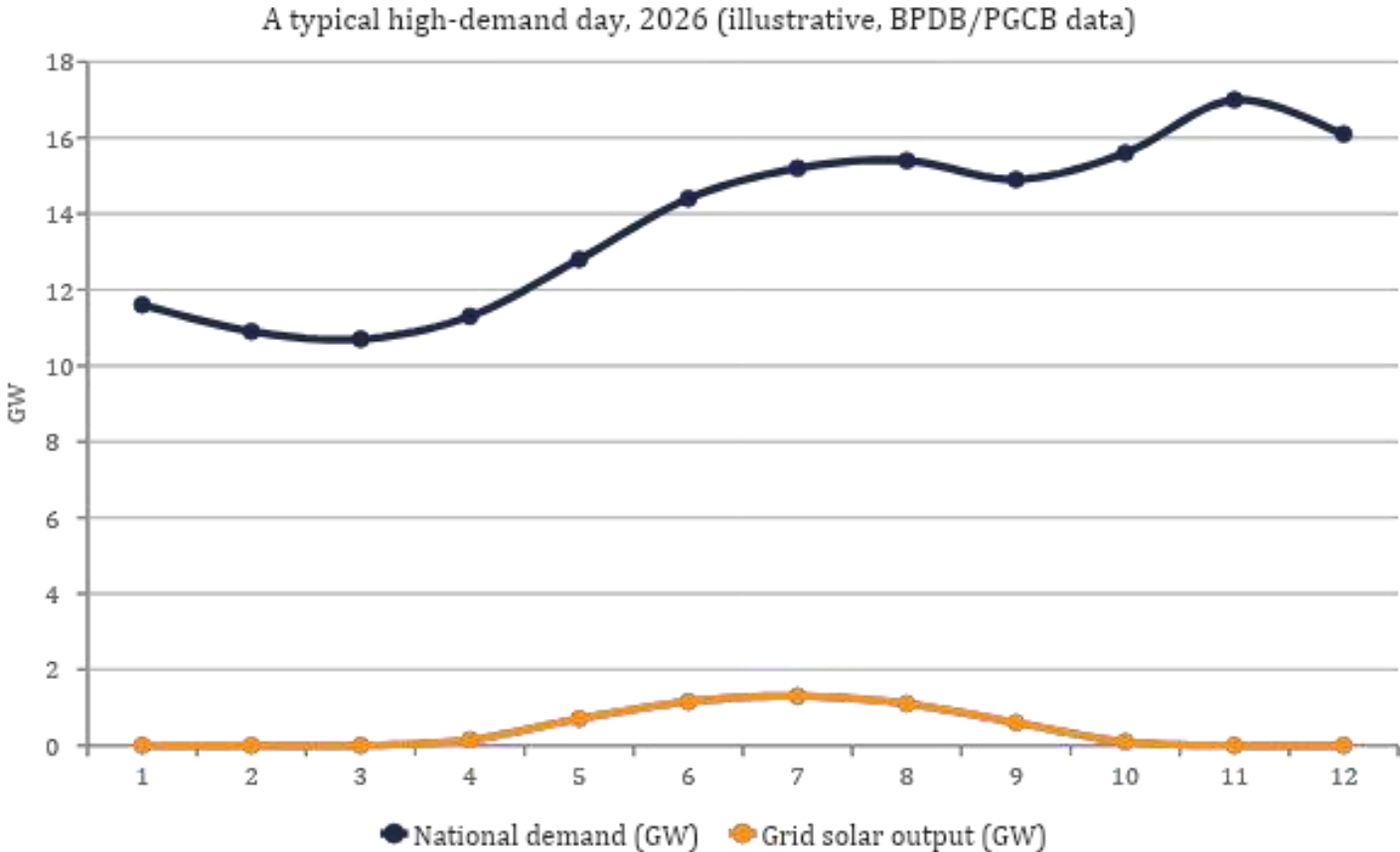
Section 5-Presentation by SOLshare

Role of Energy Storage in the Future of DRE

*Why Bangladesh must build storage into its renewable energy plan from Day 0 -
and how 6 million electric three-wheeler batteries become the country's largest storage asset.*



Bangladesh's Demand Peaks After Sunset - Solar Alone Cannot Reach It



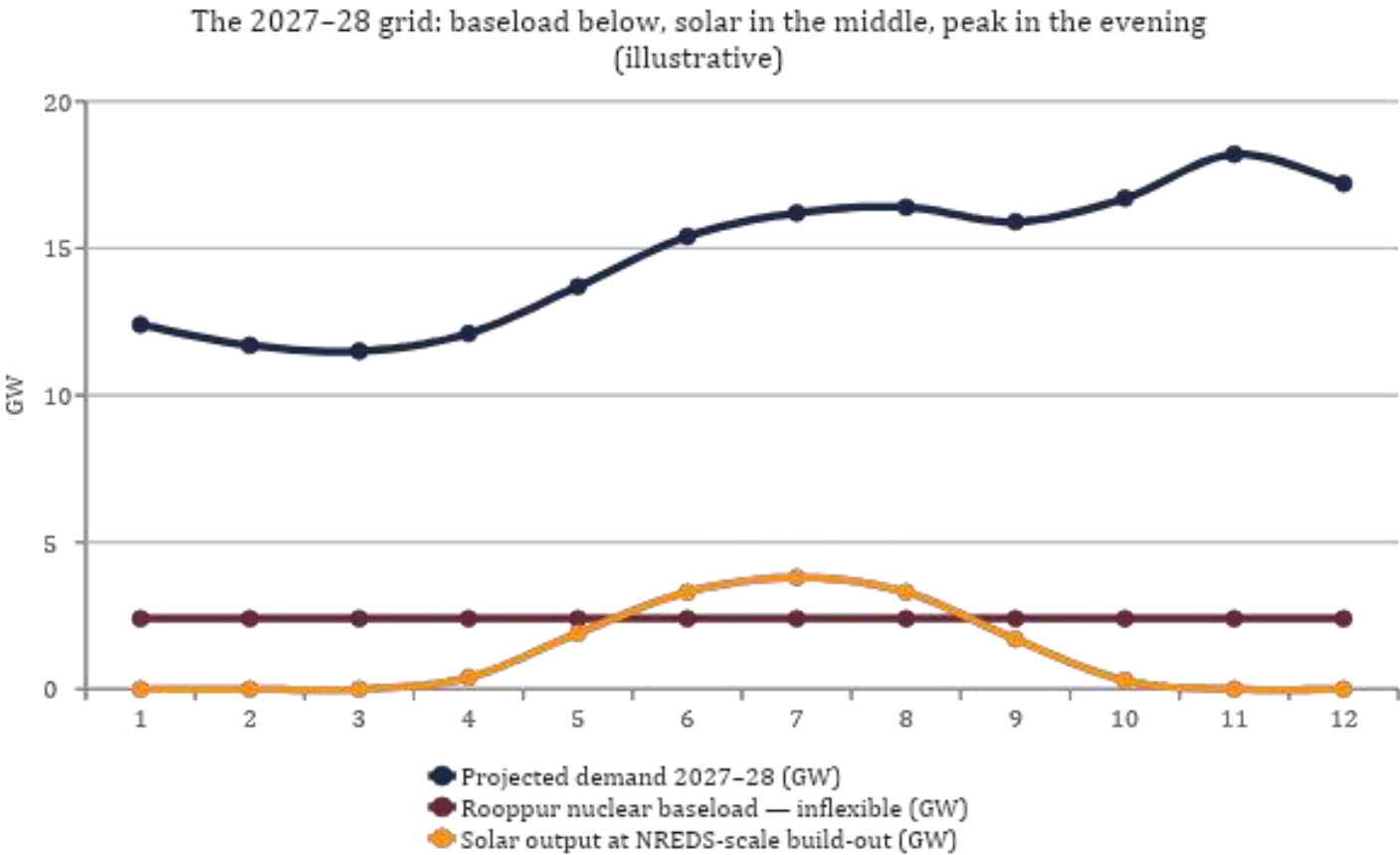
17.2 GW
record evening peak, served at 9 PM (May 2026) - the highest generation in BD history, yet ~400 MW still shed

1.5–2.0 GW
of that evening peak is unregulated E3W charging (8–10 PM) - 5–6% of daily energy

~2.5 GW
load shedding at the 7 PM peak during the April 2026 heatwave, driven by fuel constraints

The gap: solar generates at midday; the system peaks at 9 PM. Without storage, DRE can never serve the hours when Bangladesh needs power most.

What Changes When Rooppur Comes In: The Flexibility Squeeze



Rooppur = 2.4 GW that cannot ramp

Unit-1 synchronises in 2026 (full 1,200 MW by early 2027); Unit-2 follows in 2027. Nuclear runs flat, day and night - it does not follow the load.

Solar squeezes the midday market

As NREDS 2026-2030 solar targets materialise, midday net demand falls - creating a duck-curve: surplus at noon, a steeper ramp into the 9 PM peak.

Storage is the key

Only storage converts midday nuclear + solar surplus into evening peak capacity. Without it, BD keeps burning HFO and gas for the peak - or sheds load.

The Pakistan Parallel: A Solar Boom Without Storage

WHAT HAPPENED IN PAKISTAN

- ~55 GW of solar panels imported since 2021 - equivalent to the country's entire grid capacity; the world's 2nd-largest panel importer in 2025.
- By summer 2025, solar became Pakistan's single largest power source (~25% of generation) - mostly rooftop, behind the meter, invisible to planners.
- But storage was an afterthought: daytime grid demand collapsed (~7 GW), tariffs spiralled upward on remaining consumers - the classic utility death spiral.
- Feb 2026: regulator scraps net metering for 'net billing'. Battery imports jump ~8× in 2–3 years (1.25 GWh in 2024 alone) as the country now rushes to retrofit storage.

THE LESSON FOR BANGLADESH

- Deployment is the easy part. The system around it - storage, tariffs, market design - is the hard part, and it cannot be retrofitted cheaply.
- Pakistan ran ahead on panels and left storage trailing. It is now paying twice: stranded thermal capacity payments plus an emergency battery build-out.
- Bangladesh is earlier on the curve - Rooppur and NREDS-scale solar are arriving now. We still have the choice Pakistan no longer has.

Build storage into the plan from Day 0 — and Day 0 is today.

Sources: Renewables First (2026); IEEFA; NEPRA; WRI; World Economic Forum.

Two Storage Pathways — Bangladesh Needs Both

1

Grid-Scale BESS

Centralised battery energy storage systems

- Sited at strategic points of the grid - key substations and renewable hubs - for stabilisation, frequency control and peak shaving.
- The 'secret power' behind every high-renewables grid: firming solar, absorbing Rooppur inflexibility, providing ancillary services.
- But very CAPEX-heavy: utility-scale BESS runs into hundreds of millions of dollars per GWh - a major fiscal and forex commitment.
- Needed and non-negotiable - but slow to finance and build. It cannot be the only answer.

2

Distributed VPP on E3W Batteries

A Virtual Power Plant built on assets already on the road

- 6 million electric three-wheelers already carry batteries - storage the country has already paid for through the mobility sector.
- IoT-enabled smart lithium (LFP) batteries + cloud aggregation turn idle vehicles into a dispatchable, grid-integrated resource (V2G).
- Charge at off-peak and from rooftop solar; discharge residual energy into the 8–10 PM peak - demand-curve shifting at near-zero asset cost.
- Fast to deploy, financed by battery leasing - storage that scales with the fleet, not with the national budget.

CAPEX-heavy BESS stabilises the transmission grid; the distributed VPP buffers the demand side. Together they make DRE dispatchable.

6 Million Batteries: One of the World's Largest Untapped Energy Assets

6 M

E3W batteries on the road today

6 GW

VPP potential — from batteries already deployed

25–30%

residual charge when drivers return at evening peak

1.5–2 GW

of evening peak charging that can shift off-peak

HOW THE VPP WORKS

1 Evening return

Drivers park at garages at peak hours with 25–30% charge left in the battery.

2 Peak dispatch (V2G)

The VPP cloud aggregates garages and sells residual charge to the grid at peak - substituting HFO peaking plants.

3 Off-peak & solar recharge

Batteries refill overnight at the lowest grid prices and from rooftop solar on garage roofs.

PROOF ON THE GROUND - SOLSHARE × DESCO LIGHTHOUSE GARAGE (2026)

- Smart Garage Node at Hosne Ara Enterprise, Uttarkhan, Dhaka: 41 kW garage with 17.8 kWp rooftop solar (~40% daytime offset), LFP batteries with Digital Battery ID, net metering and V2G dispatch.
- Gives DESCO real-time load and generation visibility for the first time - plus up to 1.25 MW of dispatchable VPP peaking, substituting an HFO plant.
- One system, five national solutions: energy (DESCO), tax (NBR), vehicle registration (BRTA), traffic (Police), recycling (Environment).

Making Storage-Enabled DRE Happen — From Day 0

TECHNICAL & FINANCIAL CHALLENGES (4.3)

- High upfront CAPEX for grid-scale BESS; no dedicated financing window or fiscal headroom.
- Import duties and forex exposure on lithium batteries raise both BESS and VPP costs.
- No tariff structure or market for storage: flat tariffs give no signal to shift load or dispatch at peak.
- Regulatory gap: V2G, aggregation and behind-the-meter dispatch are not yet recognised in grid codes.

FUTURE OPPORTUNITIES (4.4)

- Storage converts NREDS-scale solar + Rooppur base load into firm evening capacity - displacing HFO speakers.
- The E3W VPP is the lowest-cost storage in the country: the asset is financed by the mobility business, not the power budget.
- IoT visibility formalises an informal sector: digital battery IDs, cashless payments, real-time DISCO dashboards.
- Carbon finance and green premiums can co-fund the storage build-out.

RECOMMENDATIONS (4.5)

- Embed explicit storage targets (BESS + distributed VPP) in NREDS 2026–2030 - from Day 0, not as a retrofit.
- Introduce time-of-use tariffs and an ancillary-services market so storage can earn.
- Deploy BESS at strategic grid nodes for frequency control; recognise aggregated VPPs as dispatchable resources.
- Rationalise duties on LFP batteries; scale DISCO pilots (DESCO Lighthouse Garage model) nationwide.

Financing Challenges for DRE Expansion

act:onaid

Current Financing Landscape for DRE

Overview

Bangladesh's DRE sector is financed through **public funding, donor support, concessional finance, commercial finance, and private investment**. IDCOL has been the main financier of SHS, solar irrigation pumps, and mini-grids, but long-term sustainability remains challenging due to high maintenance and battery replacement costs.

Current Financing Sources

Public & Development Finance	Commercial Finance	Private investment
IDCOL provides concessional loans and grants using funds from the World Bank, ADB, KfW, JICA, GCF , and other donors. SHS was mainly financed through grants and concessional credit.	Bangladesh Bank's Green Refinance Scheme and commercial banks finance DRE projects, but lending is limited by high collateral requirements, small project sizes, and repayment risks.	Private investment is supported by the Net Metering Policy and RESCO model , especially for rooftop solar, but small DRE projects face weak bankability and limited long-term capital.

Why More Financing is Needed

- Up to **US\$980 million per year** is required until 2030 to meet the **Renewable Energy Policy 2025** target.
- **Investment needs will increase to up to US\$1.46 billion per year** during 2031–2040. (*IEEFA*)
- Additional investment will be needed for **battery energy storage system** and **grid modernization**.
- As of **April 2025**, renewable energy contributes only **1,559 MW (5.07%)** of Bangladesh's installed power capacity, with **461 MW** under construction.

Current Financing Landscape for DRE

Technology	Quantity	Total (MWp)	Financing
Solar Home System	6,037,689	263.793	Total investment: ~US\$696 million (≈ US\$600 million donor credit + US\$96 million grants) through IDCOL with support from the World Bank, GEF, ADB, JICA, KfW, GIZ, USAID and others
Solar Street Light	297,691	17.104	Mostly financed by Government, LGED and donor-supported rural electrification projects
Solar Irrigation	3,381	57.359	IDCOL financing provides up to 50% of project cost as concessional loans at 6% interest (8-year tenure including 1-year grace period). Earlier projects also received grant support.
Net Metering Rooftop Solar	2,243	101.466	Financed mainly through private investment, supported by Bangladesh Bank Green Refinance and the Net Metering Policy.-
Solar Powered Telecom BTS	1,933	8.060	Privately financed by telecom operators.
Rooftop Solar Except NEM	234	77.474	Primarily financed through private developers and IDCOL rooftop solar financing.
Solar Drinking Water System	82	0.095	Government and donor-funded rural water supply projects.
Solar Mini Grid	28	5.805	Financed through IDCOL concessional loans and grants from development partners.
Solar Charging Station	15	0.291	Mainly pilot-scale private and donor-supported investments
Solar Park	10	461.000	Government–private partnership (PPP) and Independent Power Producer (IPP) investment.
Solar Nano Grid	2	0.001	Pilot projects funded by research and development programmes.

Barriers to Accessing Finance

High Perceived Investment Risk

- IDCOL's SHS programme financed over **4.1 million Solar Home Systems (SHSs)**, providing electricity to **~18 million rural people**.
- However, **rapid grid expansion** reduced demand for SHSs and affected loan repayment performance.
- **High battery replacement costs** reduced the long-term financial sustainability of SHSs.
- **Policy uncertainty, offtaker risk, and currency risk** increase investment risk.
- Bangladesh spent over **US\$17.6 billion** on LNG imports (2018–2025), with an average import cost of **US\$12/MMBtu**. Dependence on **volatile imported fuel** increases financial uncertainty, making investors hesitant to invest.

Limited Access to Affordable Credit

- IDCOL provides **concessional loans at 6–9% interest**. However, many rural households and SMEs still depend on **microfinance loans with higher borrowing costs**.
- **Collateral requirements** limit access to affordable finance.
- Commercial banks remain reluctant to finance many DRE projects due to perceived repayment risks.

Barriers to Accessing Finance

Regulatory and Institutional Challenges

- DRE financing is fragmented across multiple institutions (IDCOL, Bangladesh Bank, SREDA, and development partners), resulting in **weak coordination and policy uncertainty**.
- In addition, **land acquisition challenges, a downgraded sovereign credit rating, and the absence of competitive bidding** reduce investor confidence and limit capital flows into Bangladesh's renewable energy sector.

Small and Fragmented Project Scale

- IDCOL has financed about **1,500 Solar Irrigation Pumps**, while Bangladesh still operates around **1.24 million diesel-powered irrigation pumps**, highlighting the challenge of scaling DRE investments.
- Furthermore, **land is expensive, land ownership is highly fragmented, and project developers often bear high transmission connection costs**, increasing project costs and reducing bankability.

Limited Technical & Financial Capacity

Many CMSMEs lack adequate documentation, bankable business plans and collateral, contributing to an estimated **Tk 237 billion financing gap** for MSMEs in Bangladesh

Financing Challenges for Households, SMEs, and Marginalized Groups

	<i>Challenges</i>	<i>Impact</i>
<i>Households</i>	• High upfront cost of renewable energy technologies (A complete home solar system costs ~BDT 80,000–250,000+). • High Advance Income Tax (AIT) on imported components and cumbersome loan procedures increase financing costs. • Low and irregular household income. • Lack of awareness about available financing schemes.	• Energy-poor households continue depending on expensive and unreliable energy sources. • Women and vulnerable groups face greater energy access barriers.
<i>Small and Medium Enterprises (SMEs)</i>	• SMEs face a "double-edged crisis" of high investment costs and financing barriers. • Commercial banks view small DRE projects as high-risk, limiting access to loans and collateral-based financing. • Tax exemptions and duty concessions mainly benefit large utility-scale projects and RESCOs. • High upfront costs, AIT, and slow loan disbursement further increase project costs.	• Green enterprises cannot scale operations. • Productive-use energy solutions such as solar irrigation, solar-powered businesses, and clean energy services remain limited.
<i>Marginalized Groups</i>	• Limited ownership of financial assets • Lower participation in investment decision-making • Reduced access to formal financial services • Lack of targeted financing mechanisms	• Vulnerable communities remain excluded from clean energy opportunities. • Potential livelihood benefits from DRE are not fully realized.

Financing Priorities for Accelerating DRE Deployment

Develop Inclusive Financing Mechanisms

Prioritize:

Blended finance models combining:

- Public funding
- Development finance
- Private investment
- Concessional capital
- Local and international financing sources

Purpose:

- Reduce investment risks
- Improve affordability
- Mobilize private capital
- Support renewable energy expansion and grid modernization

Establish Risk-Sharing Instruments

Key mechanisms:

- Credit guarantee schemes
- First-loss capital
- Partial risk guarantees
- Results-based financing

Example:

Credit Guarantee Mechanisms can encourage banks to finance DRE enterprises by reducing lender exposure to potential losses.

Aggregate Small-Scale DRE Projects

Priorities:

- Combine individual small projects into larger investment portfolios.
- Reduce transaction costs.
- Create commercially attractive opportunities.
- Develop a pipeline of bankable projects for green bonds.

Strengthen Local Financial Institutions

Actions:

- Build capacity of banks and microfinance institutions.
- Develop renewable energy lending products.
- Improve understanding of DRE business models.
- Streamline policies and regulations to create an enabling environment for investment.
- Address policy barriers such as high import duties on rooftop solar.
- Least priority should be given to land leasing, while greater priority should be given to rooftop and floating solar projects.

Promote Gender-Responsive and Inclusive Financing

Ensure financing reaches:

- Women-led enterprises
- Youth entrepreneurs
- Climate-vulnerable communities
- Rural CMSMEs

Recommendations

Government & Regulators

- **Establish** a coordinated national framework for DRE financing with **clear, stable policies**
- **Develop** a roadmap to achieve the **2030 and 2040 renewable energy targets**, including the gradual **phase-out of costly oil-fired plants**.
- **Expand** rooftop solar through a **national programme** and provide **full duty waivers** on imported accessories for **small-scale DRE projects**.
- **Reduce** LNG dependence through **energy efficiency, lower UFG, increased local gas exploration and utilization, and adequate financing**.
- **Strengthen SREDA** by setting **annual energy-efficiency targets**, monitoring progress, and enforcing **appliance standards, labelling, and regulatory oversight**.

Financial Institutions

- **Expand** renewable energy lending through the **Green Refinance Scheme, concessional finance, and risk-sharing facilities**.
- **De-risk** lending with **first-loss credit guarantees** and **interest-rate subsidies** to boost commercial bank investment.

Development Partners & NGOs

- **Support** project preparation, blended finance, initial capital grants, and technical assistance for DRE projects.
- **Strengthen** the capacity of **SREDA, EPC companies, financial institutions, and other renewable energy stakeholders**.
- **Promote** transparent, gender-responsive, community-led financing and **raise public awareness** of renewable energy and energy efficiency.

Private Sector

- Scale investment through **RESCO models, Public–Private Partnerships (PPPs), and innovative business models** for rural DRE expansion.

References

- AB Power Engineering Ltd. (2025, May 12). Solar panel price in Bangladesh. <https://www.abpowerbd.com/media/blog/solar-panel-price>
- Ahmed, R., Ahmed, Md. R., Lakha, K. A., Khatun, Mst. F., Sarker, Md. R. I., Institute of Energy and Environmental Studies, Rajshahi University of Engineering and Technology, & Department of Mechanical Engineering, Rajshahi University of Engineering and Technology. (2024). *Solar Energy in Bangladesh: A Comprehensive Review of Current status & opportunities*
- Alam, S. (2025, February 24). Driving Bangladesh Bank's low-cost green refinance schemes. Institute for Energy Economics and Financial Analysis (IEEFA). <https://ieefa.org/resources/driving-bangladesh-banks-low-cost-green-refinance-schemes>
- Chowdhury, S. A., Aziz, S., & Centre for Energy Research, United International University. (2023). Barriers and opportunities for scaling up rooftop solar PV systems in Bangladesh (pp. 1–75) [Report]. <https://www.eeas.europa.eu/sites/default/files/documents/2024/Final%20Report-%20Barriers%20and%20Opportunities%20of%20Rooftop%20Solar-%202024.03.07.pdf>
- IDCOL. (2023). DESIGNING TOMORROW'S LANDSCAPES. In Annual Report. https://idcol.org/annual_report
- Infrastructure Development Company Limited (IDCOL). (n.d.). Solar. <https://idcol.org/home/solar>
- The World Bank Group. (2019). Financing solutions for micro, small and medium enterprises in Bangladesh. In FINANCE, COMPETITIVENESS & INNOVATION INSIGHT. <https://documents1.worldbank.org/curated/en/995331545025954781>



Section 7

Way Forward (Immediate Priority Actions, and Medium-Term Reform Agenda)

Overall Recommendations: Strengthening the Enabling Environment

Policy & Regulatory

- **Establish a Unified DRE Coordination Body:** A SREDA-led mechanism to harmonise net metering, licensing and data across residential, irrigation, rooftop and storage segments.
- **Simplify Approvals:** Launch a single-window digital application platform across BREB, DESCO, DPDC and other utilities to cut delays.
- **Rationalise Duties & Taxation:** Move essential PV, inverter and battery components to a concessional or zero-duty category to lower upfront costs.
- **Update Net Metering Rules:** Modernise regulations to allow fair surplus-power sale across residential, irrigation and industrial rooftop segments.
- **Enforce Quality Standards:** Adopt independent certification and inspection mechanisms so only quality-assured EPCs and components enter the market.
- **Shift to Retention-Centric Programme Design:** Track functioning systems and user retention, not just installation counts, across all DRE programmes.

Overall Recommendations: Strengthening the Enabling Environment

Financing & Investment

- **Expand Green Financing Windows:** Scale low-cost refinancing and de-risking guarantees for households, SMEs and RESCOs.
- **Build Lender Capacity:** Develop standardised DRE credit-appraisal tools so commercial banks can price solar risk accurately.
- **Recognise Bankable Collateral:** Treat PPAs and project assets as security to unlock OPEX-model and third-party-ownership lending.

Industry Capacity & Public Trust

- **Sustain Public Awareness:** Continue consumer-awareness campaigns — including through CLEAN's dedicated session and the new Renewables in Bangladesh platform — to drive informed adoption.
- **Build Industry Confidence:** Strengthen after-sales service networks and warranty enforcement to protect consumer trust in DRE technologies.
- **Institutionalise Multi-Stakeholder Coordination:** Sustain platforms like DREP that bring government, industry, financiers and civil society together beyond this briefing.

Overall Recommendations: Scaling for the Next Phase

Storage, Grid & Technology

- **Invest in Storage-Enabled DRE From Day 0:** Integrate battery storage and virtual power plant (VPP) models into new DRE programmes to manage the evening demand peak.
- **Modernise Grid Interconnection:** Streamline technical standards so distributed generation and storage can connect to the grid quickly and safely.
- **Support Agricultural DRE Integration:** Bundle solar irrigation with water-saving technology and grid-connection pathways to raise returns.
- **Diversify Ownership Models:** Encourage shared and community ownership of solar irrigation and rooftop assets to strengthen usage incentives.
- **Deepen Technical & Workforce Capacity:** Expand certified training for installers, technicians and O&M providers across the DRE value chain.
- **Strengthen Data & Monitoring:** Build a national, real-time registry of installed DRE capacity, functionality and retention.

Overall Recommendations: Scaling for the Next Phase

Integrate Distributed Renewable Energy (DRE) into ongoing government programmes across different sectors.

- Mainstream rooftop solar, solar irrigation, battery storage, and other DRE solutions into existing programmes of SREDA, BREB, LGED, BMDA, BSCIC, BEZA, and local government agencies. Embedding DRE in industrial, agricultural, and public infrastructure projects will accelerate deployment without creating separate implementation structures.
- Make DRE assessment mandatory for new public investments, including schools, hospitals, government buildings, economic zones, and irrigation projects, so renewable energy becomes a standard component of infrastructure planning rather than an optional addition.

Overall Recommendations: Scaling for the Next Phase

Strengthen ongoing programmes through coordinated implementation and long-term performance monitoring.

- Shift programme evaluation from counting installations to tracking system performance, functionality, and user retention through a national DRE monitoring platform led by SREDA. This will help prevent stranded assets and improve programme effectiveness.
- Align existing financing programmes, such as Bangladesh Bank's Green Refinance Scheme and IDCOL support, with integrated DRE solutions including rooftop solar, battery storage, and productive-use applications to improve reliability, attract private investment, and reduce dependence on imported fossil fuels.

Thank You..!!