



Bangladesh: Legal framework and current solar PV market development

Renewable Energy and Energy Efficiency Programme

GIZ Bangladesh | 7 April 2021

Part I – Legal Framework

Major Policies / Regulations/ Instruments related to Solar PV

Renewable Energy Policy of Bangladesh

- Target 10% RE development by 2021

Guidelines for the Implementation of 500 MW Solar Power Development Programme 2013

- Envision commercial and social Solar PV projects to promote environment friendly power generation

Power System Master Plan update 2010 and 2016

- Target set for power generation capacity by 2020 and 2030 including from RE

Net Metering Guidelines 2018

Promotion of rooftop solar PV across the country for 3 phase electricity consumers

- Enables consumers to sell their additional solar electricity to the national electricity grid
- Project implementation option through CAPEX and OPEX Model

Guidelines for the Grid Integration of Solar Irrigation Pumps 2020

Major Policies / Regulations/ Instruments related to Solar PV

8th Five Year Plan (2021-2025)

- More focus on promotion of efficient RE
- Promoting private sector in RE supply to commercial establishments and households

Private Sector Power Generation Policy update 2004

- Facilitates IPPs to invest in Solar PV sector

Green Refinance Scheme

- Includes RE schemes like local solar module manufacturing, solar irrigation etc.

Upcoming Policies/ Regulations/ Instruments in Pipeline

Integrated Power and Energy System Master Plan 2021-2025

Comprehensive power system master plan, updated every 5 years, this time it is combined with primary energy (fuel)

- Review of electricity demand and energy security strategy
- Review of coal power development plan and explore switch to alternate energy options
- More emphasis on RE, EE&C and regional power cooperation from neighbouring countries, especially from RE

National Solar Energy Roadmap up to 2041

Solar energy development strategy for the upcoming 20 years

- 3 Scenarios – BAU / medium / high with 8 / 25 / 40 GW of total solar energy capacity by the year 2041

Revision of Renewable Energy Policy post 2021

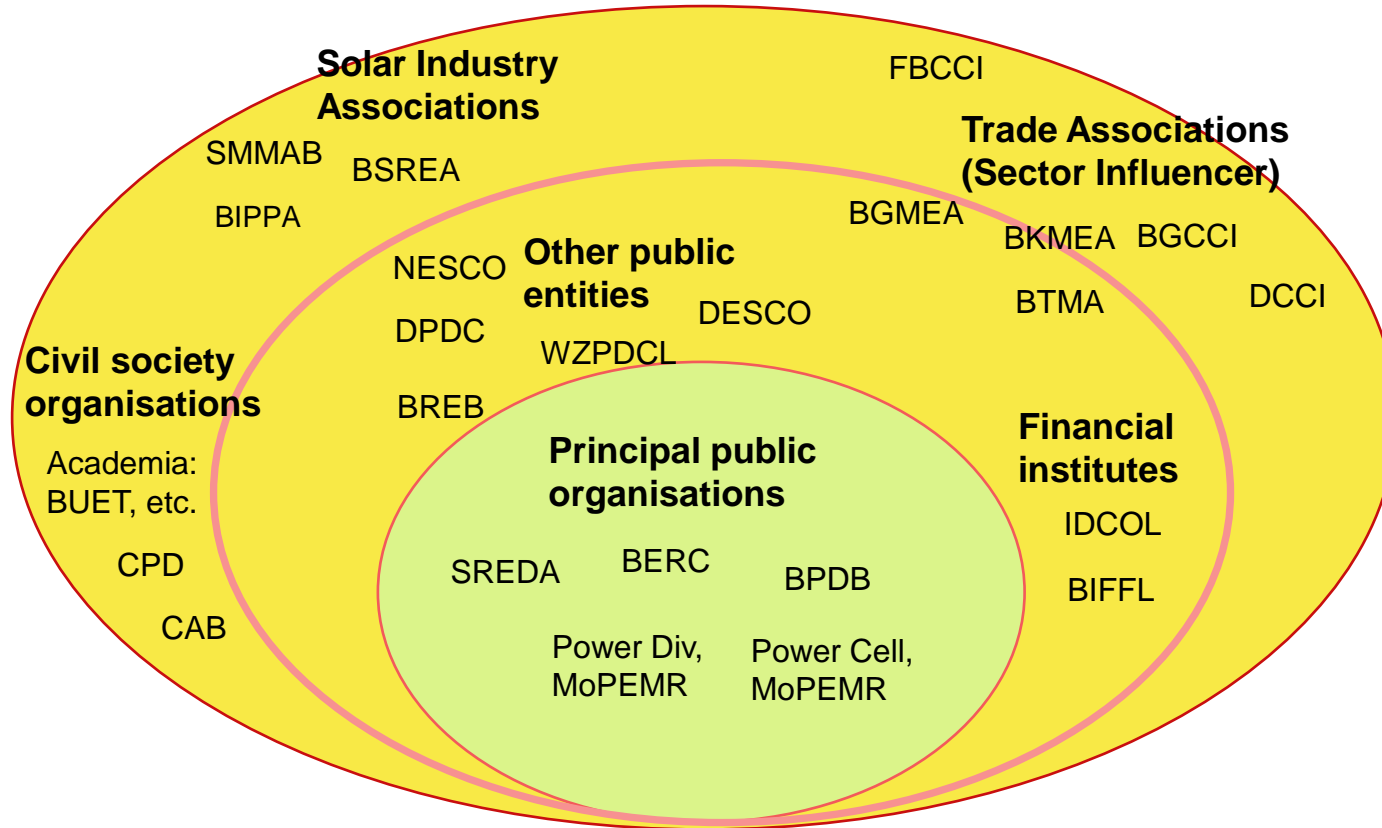
Set up clear target for RE development in line with Country's Energy Security Strategy

Role of SREDA as the Nodal Agency for RE and EE Development

- **Initiation:** Sustainable and Renewable Energy Development Authority (SREDA) Act, 2012 to facilitate, regulate and to promote all aspects of energy conservation, demand side energy efficiency and development of sustainable renewable energy in the country.
- **Inauguration:** 22nd May 2014
- **Scope:**
- Has mandate for creating an enabling environment for RE and EE&C
- Main functions of SREDA related to RE :
 - to assist the Government in making necessary laws, rules, regulations for sustainable energy development;
 - Prepare short/medium/ long-term development projects to extend the use of RE
 - Promulgate appropriate regulations on standardization and labelling, testing laboratories, energy professionals
 - Take necessary measures to create public awareness
 - Create commercial market for sustainable energy through involvement of private sector
 - Coordinate with range of actors for the implementation of RE initiatives



Stakeholder Landscape Solar PV Development : An Overview



Stakeholder Landscape – Government Organisations

Power Division (PD), Ministry of Power Energy And Mineral Resources (MoPEMR)

- Administrative Authority under MoPEMR
- Controls, regulates, monitors and ensures development in the power sector

Power Cell, under PD of MoPEMR

- Prepares policy, rules and acts on behalf of Power division.

Public Electricity Utility Companies (Zonal)

- DESCO (Dhaka Electric Supply Company Limited)
- DPDC (Dhaka Power Distribution Co. Limited)
- BREB (Bangladesh Rural Electrification Board)
- WZPDCL (West Zone Power Distribution Co. Ltd)
- NESCO (Northern Electricity Supply Company Ltd)

BERC (Bangladesh Energy Regulatory Commission)

- Frames all rules and regulations to ensure transparency in the management, operation and tariff determination in the electricity, gas and petroleum sector.

BPDB (Bangladesh Power Development Board)

- Single buyer of electricity within the country, apart from its own generation.
- Major share of all Utility companies
- Sells electricity to Distribution companies and ensures distribution of electricity to selected urban areas.

Stakeholder Landscape –Trade Associations

Bangladesh Textile Mills Association (BTMA)

- National trade organization representing Yarn, Fabric Manufacturers and Textile Product Processors mills of the country under private sector

Bangladesh Garment Manufacturers and Exporters Association (BGMEA)

- Largest trade associations in the country representing the readymade garment industry

Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA)

- Apex Trade Body to represent solely the Knitwear Sector of Bangladesh

Federation of Bangladesh Chambers of Commerce and Industry (FBCCI)

- Apex trade organization playing a pivotal role in representing the interest of the private sector

Bangladesh-German Chamber of Commerce and Industry (BGCCI)

- Bilateral business chamber in Bangladesh

Further Improvement of Policy and Regulatory Framework

- Linking NDC target with solar PV development
- Peak load shifting from evening to day with industrial development and storage options
- Institutional Capacity of SREDA is developing, but demand from SREDA by stakeholders is high
- With 100% electricity access, transition of off-grid based solar energy to grid connected system
- Land acquisition for large scale RE development
- Identification of clear Solar PV development potential



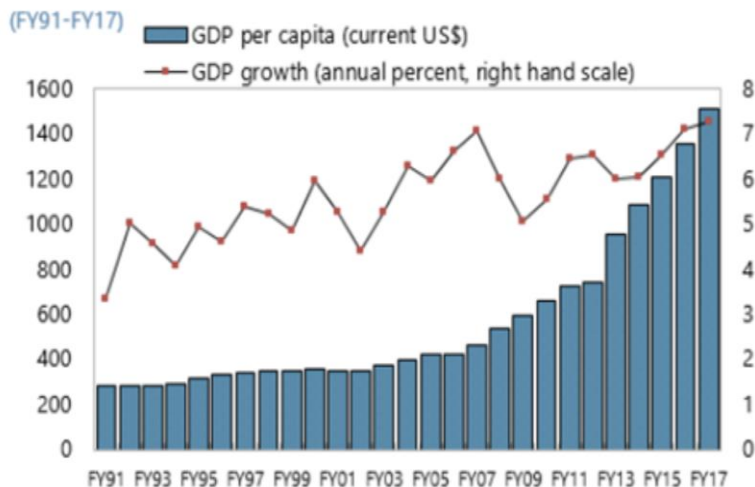
Part II – Solar PV Market Bangladesh

Economic development in Bangladesh

Robust growth

Bangladesh's economic growth has averaged more than 6 percent over the last decade, significantly lifting per capita incomes.

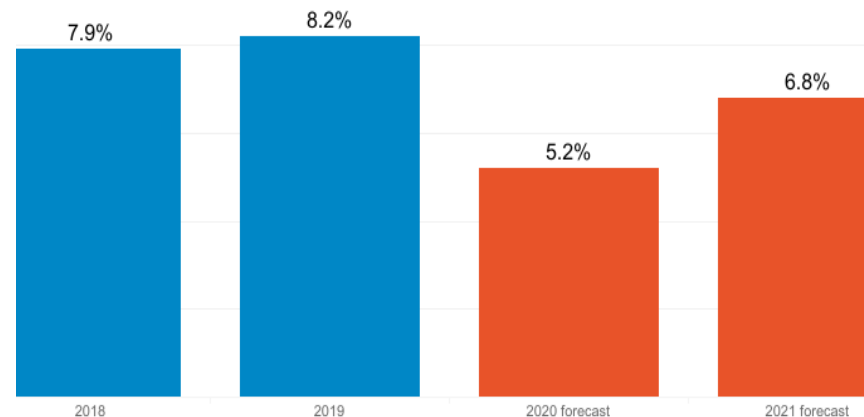
(trend of real GDP growth and GDP per capita)



Source: IMF



GDP Growth Rate: Bangladesh
(% per year)



Source: Asian Development Bank. Asian Development Outlook (ADO) 2020 Update (September 2020)

Current Development Status of RE and Solar PV quantitatively

Power generation capacity Bangladesh:

- Power sector dominated by natural gas (> 50%) and liquid fuels (>30%)
- Total generation capacity incl. captive generation: > 22 GW

Fuel/Resource	Installed Capacity	Share
Coal	524 MW	2.35 %
Gas	10678 MW	47.91 %
HFO	5208 MW	23.37 %
HSD	1795 MW	8.05 %
Imported	1160 MW	5.2 %
Renewable	722.68 MW	3.24 %
Captive	2200 MW	9.87 %
Total	22288 MW	

Status of Renewable energy:

- Two-thirds (68%) of installed capacity is Solar PV
- One-third (32%) is hydroelectric power
- RE installed capacity makes 3,24% of total power generation capacity
- Besides, 10 mio. (off-grid) solar home systems by 2021
- Between 2006 and 2021, over 56,500 small-scale biogas plants for cooking purposes were installed

Technology	Off-grid (MW)	On-grid (MW)	Total (MW)
Solar	346.58	142.1	488.67
Wind	2	0.9	2.9
Hydro	0	230	230
Biogas to Electricity	0.63	0	0.63
Biomass to Electricity	0.4	0	0.4
Total	349.61	373	722.6

Status 03/2021; Source: <http://www.renewableenergy.gov.bd/>

Installed Capacity of different Solar PV Technologies

Solar Technology	Quantity [No.]	Off-grid [MW]	On-grid [MW]	Total [MW]
Solar Park	5	0	88.4	88.4
Rooftop Solar Except NEM	112	14.2	25.1	39.3
Net Metering Rooftop Solar	1,262	0	22.9	22.9
Solar Irrigation	2,102	44.5	0.03	44.5
Solar Home System	6,023,631	262.8	0	262.8
Solar Minigrid (0,1 – 5 MWp)	27	5.7	0	5.7
Solar Microgrid (10 – 100 kWp)	0	0	0	0
Solar Nanogrid (3 – 10 kWp)	2	0.001	0	0.001
Solar Charging Station	14	0.3	0.02	0.3
Solar Street Light	2,96,061	16.7	0	16.7
Solar Powered Telecom BTS	1,933	8.1	0	8.1
Solar Drinking Water System	82	0.1	0	0.1

Source: SREDA homepage

Contribution of German TC in promotion of solar PV technologies

Energizing Development (EnDev) Bangladesh 2006-ongoing

- Small solar home systems and solar lanterns (pico PV)
- Mini & nano PV grids
- Solar rickshaw charging station

Renewable Energy and Energy Efficiency Programme (REEEP) 2013-2018

- Solar driven milk chiller, solar aquaculture, rooftop solar, solar drinking water systems, solar water heater, solar drinking water pump,

Renewable Energy and Energy Efficiency Programme (REEEP II) 2018-2021

- Dissemination programme for net-metering rooftop solar PV systems: 23.03 MW installed capacity (04/2021)
- Promotion of net-metering in solar irrigation
- Capacity development of Private sector



Contribution of German TC in promotion of solar PV technologies

Energy Efficiency and Grid Integration of RE (EEGIRE I and II) 2018-2024

- Improving grid integration framework for more inclusion of RE

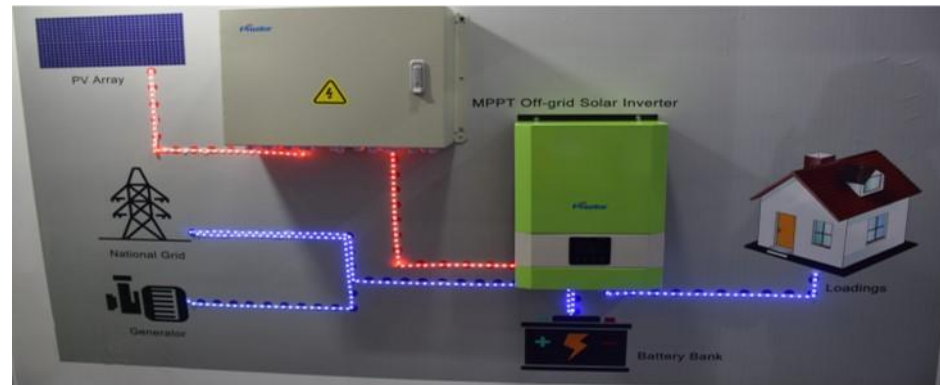
Policy Advisory for promotion of RE and EE (PAP) 8/2021-2024

- Promoting Green Energy Transition in Bangladesh
- Private Sector Promotion
- Promotion of innovative RE technologies



Support to the National Solar Association (BSREA)

- Improve the organization and management capacity of the association
- Develop the advocacy and communications skill
- Support to increase the knowledge of technical and quality standards of PV and storage
- Facilitate in market development including knowledge on business model as well as partnership with regional business associations
- Support to connect with German Solar PV private sector network



Incentives for RE Project Developers

- Exemption from payment of corporate income tax for 15 years from commencement of commercial operation.
- Foreigners employed in those companies are exempted from income tax for 3 years.
- Tax exemption on interest on foreign loans.
- Tax exemption on Royalties, Technical know-how & Technical Assistance Fees.
- Tax exemption on capital gains from transfer of shares.
- Private power companies are allowed to import plant & equipment imported on a permanent basis & erection materials, machinery and equipment on a temporary basis without payment of custom duties, VAT & supplementary duties.
- Spare parts up to 10% of the original value of total plant and equipment within 12 years of commercial operation without payment of customs duties, VAT, supplementary duties & any other surcharges.
- Exemption of import tax, VAT & supplementary duties (if any) on 16 items (mentioning HS Code) of solar panel.

Collected from: Mr. Mohammad Alauddin, Chairman, SREDA

Private Sector Landscape

- Generation capacity of private owned power plants is more than 40% (Conventional IPPs and Rental power plants)
- In case of RE, Private sector is mainly involved in Distributed RE and predominantly in IDCOL RE programme
- LOI is issued by GOB to various privates sector for more than 1.5 GW capacity large solar PV projects, mostly based on unsolicited offers. But almost all projects are delayed.
- ESCO market is evolving, but in slow pace
- In general there is still limited capacity in private sector
- Lack of enough RE specialists (EPC, O&M) in the sector
- Quality Assurance and Testing infrastructure is a challenge
- Lack of innovative project ideas
- Limited involvement of private sector in policy shaping process
- Limited funding windows and issues with access to available funds
- Grid integration for large scale solar PV projects

The Future of Solar PV Market in Bangladesh

An untapped emerging market for private sector.....

- Political commitment is getting stronger for RE, needs further embedding with integrated power sector planning
- A good experience of private sector driven electricity market exists for conventional energy, can be tailored to RE
- Need clear project development plan for short and medium term with project pipeline
- Creation of one stop information center and processes for project developers (National Solar Help Desk on the way...)
- Linking to R&D and adaptation of Technology to localized condition
- Quality Assurance and Digitization to build further confidence
- Coalition of national and international private sector actors / associations
- Innovative financing mechanism and review of incentive structure
- Role of SREDA for developing qualified RE experts/ technicians for the market





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