Policy Brief

March 2024

The Quest for energy transition pathways through rooftop solar PV systems in the industrial sector of Bangladesh

Written by Nayma Akther Jahan, Lecturer cum Research Associate and Dr. Shahana Afrose Chowdhury, Adjunct Associate Professor, Center for Sustainable Development (CSD), University of Liberal Arts Bangladesh

Photo Courtesy: The Business Standard

Background:

Bangladesh has achieved substantial economic growth over the last decade, establishing itself as a country with significant development potential. The country understands the necessity for major industrialization to fulfill its aim of transitioning from a least developed nation to a high-income country by 2041 (Mujib Climate Prosperity Plan, Decade 2030, 2021). Bangladesh pledges to reduce GHG to 6.73% by 2030 in its nationally determined contribution (MoFECC, 2021).

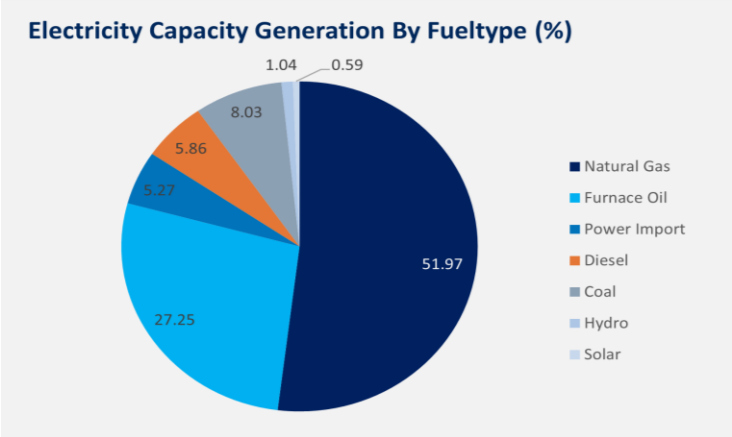

Figure: Electricity Capacity generation by Fuel type (BPDB, 2021)

However, this expansion of renewable energy must be sustainable and conscious of the impact on tax/duty levies and worldwide market competitiveness. The current strong reliance on a single RMG industry, imported fuel, reduction in native energy resources, along with rising energy demands, necessitates a diversification of industry, exploration and investment in alternative energy sources

Key Messages:

1. **Regulatory barriers are hindering renewable energy adoption. Clear regulation is required to communicate with the consumers or end users.**
2. **Financial incentives and support for renewable energy projects are needed and well communicated.**
3. **Tax incentives, duty waiver can encourage actors to embrace rooftop solar PV technology**
4. **Collaboration between public and private sectors for effective policy implementation.**
5. **International cooperation and investment in the energy sector has to be well thought out to handpick appropriate and feasible choices for financial instruments.**
6. **Ensuring information and knowledge to be disseminated through proper channels.**
7. **Evaluation of business models and quality assurance for technical equipment needs to be clearly mentioned.**
8. **Engagement with citizen dialogue will benefit policy making for uptake of solar PV technologies.**

Objective and methodology:

The objective of this roundtable was to bring together industry actors and key stakeholders from different industrial sectors, government bodies, academia, development sector, and technology experts to explore and strategize ways to promote sustainable industrial growth in Bangladesh through increased renewable energy integration as an innovative way to shift from traditional fossil fuel use.

This policy brief is the outcome of the roundtable discussion on **Energy, Innovation and Industry: A Shift Towards Renewable from Conventional Energy".**

The roundtable was centered around finding out the way forward to tackle the barrier for the dissemination/uptake of rooftop solar PV systems in Bangladesh's industrial sector by engaging experts from academia, research organizations, development practitioners, business entities, consumers (industry), Solar EPC (Engineering, Procurement, and Construction), energy consultants etc. to contribute in finding the roadmap for

- Reducing the knowledge gap among the industry actors and stakeholders,
- Identifying potential financial collaboration and incentives for end users
- Policy adjustments by identifying the role of different entities in creating an enabling environment for transitioning to renewable energy.

Information gap and interpretation of discrepancies:

The roundtable identified discrepancies in interpreting renewable energy statistics and targets. There was a difference in calculating the payback period for various entities depending on what parameters they were taking, creating a miscommunication among the various industries/stakeholders. Some experts emphasized the payback period to be at least 10 years while few others argued it to be 5 to 7 years. Addressing the misinterpretation by clarifying the data and specific parameters used in the calculation can minimize the among actors for better uptake of this technology.

In line with the national target of going for 40% renewable energy by 2041 will require development of solar PV technologies in small and large scale SPV development, in both industrial, residential and commercial spaces along with solar parks.

Very recently a mandate was released by the Power Division that any building having 1,000 Sq ft roof area applying for a new electricity connection will have to install rooftop solar PV systems with net metering. Moreover, buildings with a load of 10 KW must install solar PV systems of 1KW for residential consumers. The mandate only was given in the SREDA website notice which is not always followed by the consumers and doesn't reach the mass community. This shows the information gap that exists regarding any regulation regarding solar PV technologies. This technical information is also not understandable by the homeowners.

Financial Collaboration and Incentives:

The roundtable discussed challenges related to capital, financing schemes, and the need for global collaboration in the renewable energy sector.

The emphasis on advocating for international financing and blended financing models for rooftop solar projects underscores the critical need for addressing challenges related to capital and financing schemes within the renewable energy sector. The discussion highlights the necessity for global collaboration to overcome these challenges effectively. Capital constraints often hinder the scalability of rooftop solar initiatives, and the exploration of international financing options becomes imperative to bridge the funding gap. Blended financing, combining international support with local resources, can provide a sustainable financial model for rooftop solar projects, facilitating their implementation and contributing to the broader goal of achieving a clean energy transition. However, it is crucial to address concerns related to the quality of solar panels and establish robust market monitoring mechanisms to ensure the effectiveness of these projects.

In evaluating the long-term viability of rooftop solar projects, economic risks and factors influencing payback periods come to the forefront. The discussion delves into the challenges associated with opening Limited Liability Companies (LLCs) and their subsequent impact on project financing and sustainability. Explore the differences in business models when calculating the Levelized Cost of Energy (LCOE) for solar projects, with a focus on Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) is imperative for sustaining the technology. Economic risks, including market fluctuations and regulatory uncertainties, can significantly affect the financial feasibility of rooftop solar ventures. Understanding these risks is vital for developing strategies that enhance the resilience of projects over the long term. Additionally, challenges related to opening LLCs undermines the importance of streamlining administrative processes to facilitate project development. Clear and efficient regulatory frameworks, coupled with international collaboration and financial support, are essential components in ensuring the enduring success of rooftop solar initiatives in addressing energy needs sustainably.

Exploring the challenges associated with access to finance for renewable energy projects and propose solutions for closing the information gap between financial institutions and project developers becomes inevitable for the successful implementation of solar projects. The role of Bangladesh Bank (BB) in providing low-cost financing and addressing the need for better communication on available funding opportunities can help businesses find reliable information on financing.

Policy adjustment:

The discussants talked about policy adjustment for large scale uptake of solar PV systems. The discussion was not only pointing towards the reformation of policy that is required but the method of policy making needs to be readjusted. One example of not including the users before policy making is the residential buildings in Dhaka with non-functional solar PV systems which resulted from a regulation to install SPV for new electricity connection a decade back but the consumers due to lack of information and inclusion did not take it seriously and used the panels only to get connection.

It is important to evaluate the effectiveness of existing policies, such as those initiated by Bangladesh Bank, and analyze their alignment with the broader goals of the renewable energy sector. To accentuate the need for collaboration and coordination among stakeholders, including government bodies, financial institutions, and industry players collaboration is required.

Policy Recommendations- The way forward for creating an enabling environment for solar rooftop uptake:

From the roundtable discussion the following pathways were found for policy reformation/adjustment to enable environment for more industrial solar PV systems uptake/adoption with roles of various actors/stakeholders in the sector.

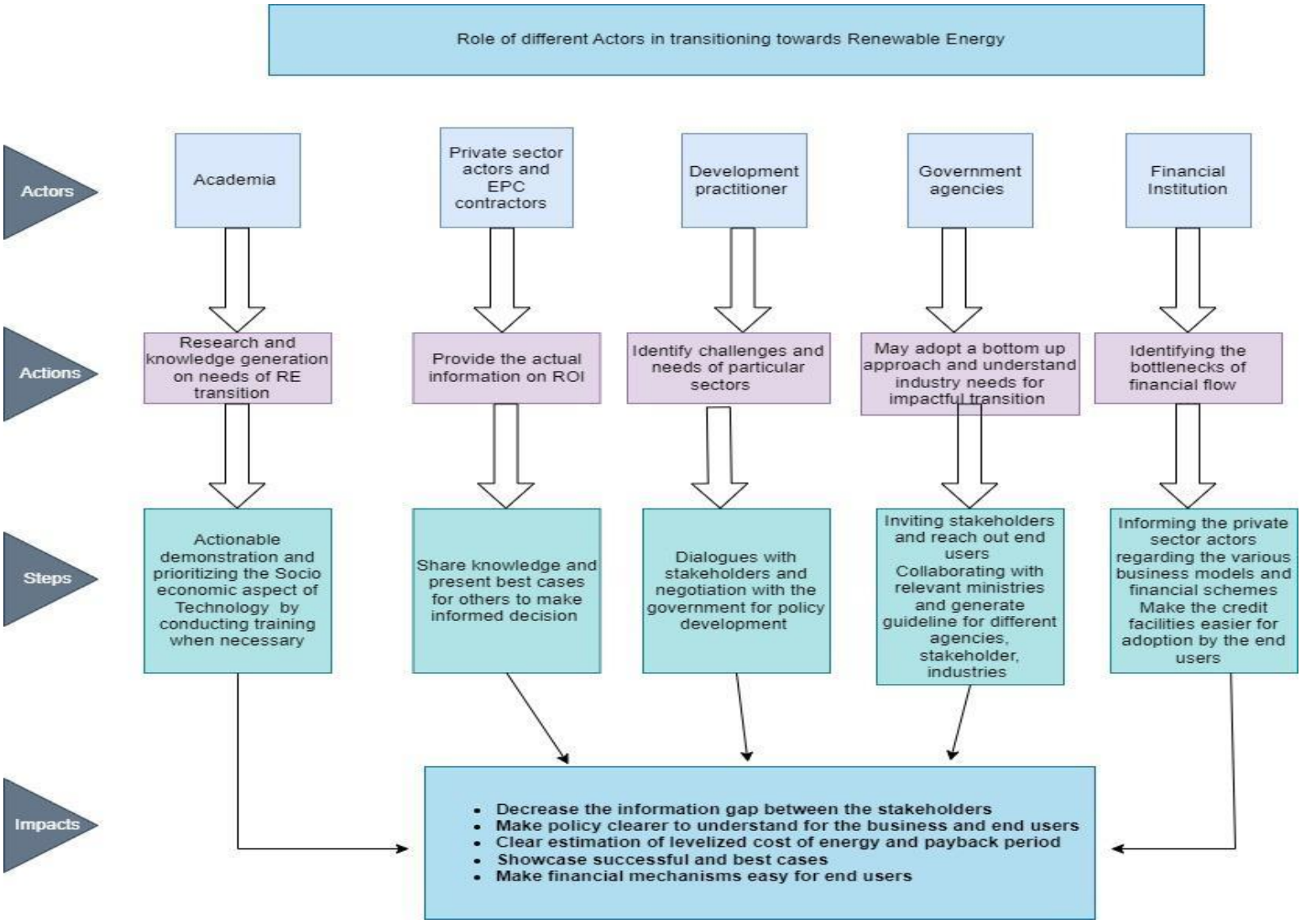

Figure: Framework for Transitioning from Traditional to renewable sources of energy

Conclusion:

This comprehensive policy brief has provided insights into the challenges and opportunities associated with energy transition in Bangladesh and offer recommendations for stakeholders involved in the renewable energy sector. Emphasize the urgency of addressing information gaps, enhancing collaboration, and ensuring global support to overcome challenges and accelerate the transition to sustainable and technologically advanced renewable energy systems. Based on the extensive dialogue provided, several thematic areas for a policy brief focusing on energy transition and the roles of organizations and other entities can be identified.

Discussants

1. Professor Ijaz Hossain- Former Dean Chemical Engineering Dept. BUET
2. Prof. Dr. Rezwan Khan- Professor Emeritus, Dept. EEE, UIU
3. Ishtiaq Chishti ICC- renewable energy consultant
4. Mr. Anwarul Islam , GM & Group Head of Sustainability- Pacific Jeans Ltd.
5. Dr. Sebastian Groh- CEO MESolSHare
6. Mr. Sibbir Ahmed- Director, Energy Policy and Utility Management,USAID Bangladesh Advancing Development and Growth through Energy (BADGE)
7. SM Zahid Hasan Deputy Director, Directorate of Purchase, Bangladesh Power Development Board
8. Khondker Morshed Millat-Faculty BIBM, Former director Sustainable Finance Dept. Bangladesh Bank
9. Mr. Shafiqul Alam, Lead Energy Analyst - Institute for Energy Economics and Financial Analysis (IEEFA)
10. Engr. Md. Nasir Uddin Biswas Head of Business Development, Rahimafrooz Renewable Energy Ltd.
11. Mr. Imran Chowdhury- Head of Business Development Bangladesh Renewable energy Business Unit- TotalEnergies