ROOFTOP SOLAR PV

IFC led Advisory Partnership for Cleaner Textile is a joint initiative for International Brands and Apparel Trade Association (BGMEA). PaCT is working towards the implementation of best practices in the textile sector, with a focus on reducing resource consumption (energy, water, chemicals) and wastewater pollution.

Why Rooftop Solar

To increase the reliability of energy supply and improve the environment, the textile industry is looking for alternative and renewable sources of energy. Solar rooftop has immense potential in the energy intensive operations of the textile industries in Bangladesh by utilizing existing vacant and shadow-free factory rooftop space. Solar PV should be installed after conducting a thorough technical and financial feasibility study.

BENEFITS

Utilization of free space  Modular design  Proven technology  Energy savings

Security against rising energy cost  Diversification of energy sources  Environment friendly  Low maintenance

What PaCT Offers

PaCT will organize technical and financial feasibility studies of rooftop solar PV in textile factories and support the factories in preparing bid documents, finalizing developers, and preparing an implementation plan.

- Technical and financial feasibility studies
- Standard bid documents for factories
- Facilitating developer selection
- Facilitating financing
PaCT worked with several partner factories with different energy usage profiles to determine the technical and financial feasibility for optimum level of PV capacity installation at these factories and provide a comprehensive analysis on various aspects of rooftop solar integration with the existing sources of energy. IFC personnel and the consulting firm, appointed by the PaCT program, undertook site visits to the factories and collected data related to the type of rooftop, shadow-free area, load details, electricity consumption pattern during operating hours, supply sources, and other relevant details to analyze the technical and financial feasibilities of a rooftop solar project.

**Factory A**
100% Diesel based & 24 hrs operation

![Graph of Factory A's Matching Hourly Load and PV Profile, kW](image)

- 500 kWp* Plant Capacity
- USD 0.70 Million Project Cost
- 8.4 ¢/kWh Levelised Cost of Energy (LCOE)**
- 19% Project IRR***
- 34% Equity IRR
- USD 3.6 Million Gross savings over 25 yrs

**Factory B**
60% NG based & 12 hrs operation

![Graph of Factory B's Matching Hourly Load and PV Profile, kW](image)

- 781 kWp Plant Capacity
- USD 1.1 Million Project Cost
- 8.6 ¢/kWh Levelised Cost of Energy (LCOE)
- 7.3% Project IRR
- 8% Equity IRR
- USD 1.7 Million Gross savings over 25 yrs

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*Kwp: Kilo Watt Peak
**Levelized Cost of Energy (LCOE): Total lifecycle cost of producing a kWh of power using rooftop solar PV
***IRR: Internal Rate of Return

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