

This series showcases success stories of PaCT (Partnership for Cleaner Textile) partner factories in the Bangladeshi textile sector that have implemented cleaner production projects.

Energy and water are significant costs in the textile industry but are often measured inaccurately due to inadequate metering systems. Accurately determining any section-wise consumption or identifying the sections that are running inefficiently or have a high demand, becomes especially challenging without a proper metering system. As concerns of resource scarcity, increasing energy prices, and stringent environmental regulations rise, identifying and implementing measures for improving water and energy efficiency should be a priority for textile plants. Proper metering systems are an essential part of a textile plant being able to accurately quantify any water and energy use.

Factory status

Most wet textile processing industries convert natural gas to electricity and steam using generators and boilers respectively. Electricity is used for running machines, pumps, engines, ventilators, lighting, and generating compressed air. Steam is used for heating the process baths and dyeing operations. Fluctuating supplies of natural gas and grid electricity means many factories have diesel generators on standby for any power outages. The lack of water, electricity, gas, steam, and air flow meters have prevented resources being measured properly.



Image of steam flow meter

Steam flow meter

Steam is used in the wet processing section and garments section for heating. Steam flow meters allow the factory to measure steam consumption and consequently the efficiency of boiler and heating equipment.

Electricity meter



Image of an electricity meter

Electricity meters are used in the main distribution box and floor-wise distribution box to measure the electricity consumption. Most factories do not have section-wise metering systems.

Image of water flow meter



Image of a magnetic flow meter



Image of an electromagnetic flow meter



Image of an ultrasonic flow meter

Gas Flow Meter

In most textile factories, gas flow meters are available only to measure the total flow for power generation and heating purposes. Section-wise gas flow meters (which could be easily used to monitor the performance of an equipment such as a boiler) are seldom available.

Air Flow Meter



Image of Compressed air flow meter

Compressed air is a fourth utility, (the first three being electricity, water, and natural gas) and is expensive to produce. As a result, it is necessary to measure the flow and monitor the compressed air system.

Water flow meter

Mechanical flow meters are widely used in textile factories. However, they are not recommended for use in Effluent Treatment Plants (ETP) as they can often be clogged by fibers, grit and other pollutants. An electromagnetic flow meter is the best solution for measuring the ETP water flow. As for open drain ETP inlets, ultrasonic water flow meter can provide accurate results.

Environmental Benefits

- Water overflow leakage, unnecessary use, and wastage can be monitored and measured through a water meter and preventive measures can be taken accordingly.
- Compressed air leakage is common in the textile industry and the air flow meter can help measure the air flow, excess use of air and preventative measures can be taken.
- Floor-wise electricity meters will measure the electricity consumption in every department, allowing a factory personnel to measure the floor/section-wise efficiency.

- Department or section-wise gas flow meter helps factory personnel to measure actual gas consumption in stenters, dryers, and boilers.
- Steam flow shows the actual steam consumption, and as a result, steam leakage, boiler efficiency, steam dryer efficiency or dyeing bath efficiency can be measured indirectly.

Economic Benefits

This case study represents data from eight random factories that invested about \$47,000 in total to install water, gas, steam, and electricity meters in different factories, as recommended by PaCT.

Factory Name	Water Flow Meter	Gas Meter	Steam Flow Meter	Electricity Meter	Total Investment (\$)
A	01			05	2,911
B	01				176
C	04		02		7,890
D	03				335
E	04		01		14,117
F	01	01			1,824
G	07				13,835
H	02				5,831
Total	23	01	03	05	46,919

IFC led Advisory Partnership for Cleaner Textile (PaCT)

is a holistic program that support the entire textile value chain – spinning, weaving, wet processing and garment factories in adopting Cleaner Production (CP) practices and engages with brands, technology suppliers, industrial associations, financial institutions, government to bring about systemic and positive environmental change for the Bangladesh textile sector and contribute to the sector's long-term competitiveness and environmental sustainability.

WHAT PaCT DOES:

- Chemical Management Assessments
- Basic Cleaner Production Assessment
- In-Depth Cleaner Production Assessment
- Water & Energy Management
- Rooftop Solar PV Pre-feasibility Study
- Rooftop Solar Calculation
- Online Resource Monitoring

DEVELOPMENT PARTNERS



IMPLEMENTING PARTNER



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BRAND PARTNERS



IMPLEMENTER



Creating Markets, Creating Opportunities