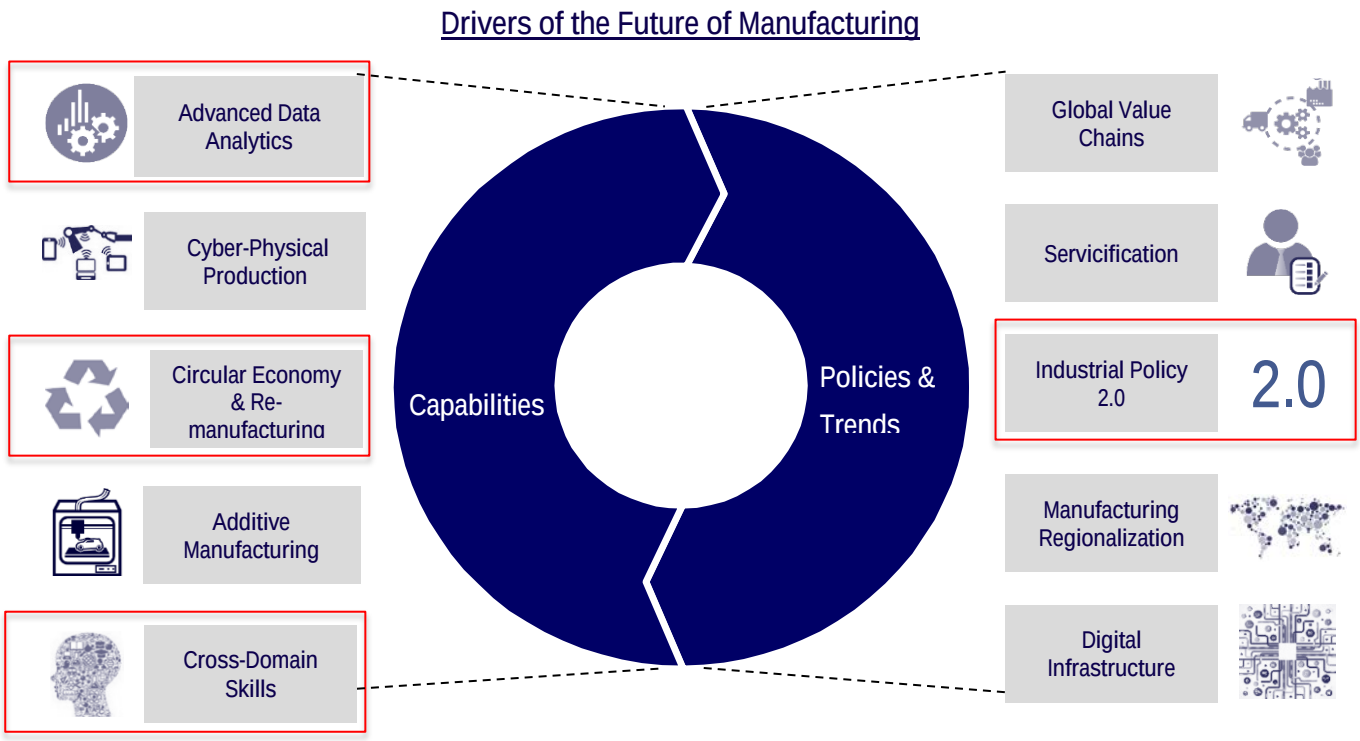
Case 2

Bangladesh Low-Carbon Zones



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Executive Summary

Bangladesh Low-Carbon Zones

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Key facts:

- The ready-made garment sector in Bangladesh is an indispensable sector of the economy.
- Improvements in social and environmental performance in this industry are necessary to ensure sustainability of manufacturing in the future.
- Low-Carbon Zones allow for technical diagnostics based on enterprise-level energy surveys, and institutional recommendations on how to reduce energy consumption.
- As a result of the programme, firms could lower their cost of operations, improve the Bangladeshi RMG sector's brand image, upgrade skills and increase labour productivity.

1. Challenge Confronted

The **ready-made garment** (RMG) sector in Bangladesh is the **second largest in the world** in terms of exports, and accounts for more than 80% of the country's total exports. Despite promising economic growth over the last decade, the RMG industry's unchecked growth has created the need to **improve social and environmental performance of textile operations** and **upgrade production**. In addition, Bangladesh has been experiencing an **unsustainable increase in energy consumption** to support its rising population, rapid urbanization and industrial growth. The gradual removal of energy subsidies is leading to increases in production costs in the RMG sector, reducing its low-cost competitiveness and jeopardizing the **sustainability of manufacturing in the future**.

The challenges in the RMG sector can be summarized as follows:

- **The absence of strict compliance policies**, regulations and enforcement in the textile and apparel sector has led to **poor environmental and social performance**.
- Intermittent capping of gas consumption, unreliable gas supplies driven by dwindling gas reserves, and multiple hikes in electricity tariffs (the result of inefficient power systems and a gradual reduction in energy subsidies) have **reduced the cost competitiveness of manufacturing operations**.
- Growing **demand from international buyers to produce greener products** has required substantial changes to integrate sustainability into Bangladesh's production and supply chains.

2. Solution Used

The World Bank Group's Low-Carbon Zone initiative was designed to sustain the cost competitiveness of Bangladeshi industrial enterprises, primarily textile firms operating in Export Processing Zones (EPZs). The Chittagong zone (CEPZ), at the heart of Bangladesh's economic capital, was selected as the pilot site. The initiative was based on a systematic **promotion of green policy measures that emphasized profits at the firm level**, while ensuring a sustainable and low-carbon growth trajectory. The approach consisted broadly of two phases: (1) **technical diagnostics** based on enterprise-level energy surveys and financial analysis, and (2) **institutional recommendations** and incentives for implementing technical measures.

The programme's goal was to convert the existing and aged EPZ framework into a low-carbon or green zone (LCZ). An **LCZ is a sustainable industrial ecosystem that utilizes good practices** of optimizing resource efficiency in energy, materials and water to generate cost savings and reduce the impact of operations on the climate/environment.

3. Lessons Learned

1. Form a **multidisciplinary team** with technical as well as policy/institutional specialists

2. **Leverage local technical expertise** for strategic project navigation

3. Demonstrate a **business case with firm-level data**

4. Develop a **participatory approach** to problem-solving through extensive stakeholder dialogue

Description of the Work Performed

Phase 1

The team carried out a **greenhouse gas (GHG) emission calculation using bottom-up/top-down analysis** of level 1 and level 2 emissions from firms. This was done through energy surveys from top energy-consuming companies and energy data aggregated at the EPZ level. For the technical analysis, the International Finance Corporation's (IFC) engagement adopted a distinctly bottom-up approach. This entailed working closely with the enterprises in the CEPZ and providing them with detailed and tangible **technical recommendations on making their operations energy efficient**, employing low-carbon techniques and thereby reducing GHG emissions.

Technical diagnostics were developed based on enterprise-level energy audits and energy surveys. Firms were selected, representing 60% **of the energy consumption in the CEPZ**. This ensured a representative analysis of the zonal energy profile, considering different energy types (e.g. electricity, natural gas, diesel), industrial categories (e.g. RMG, textiles, terry towel) and process equipment (e.g. dyeing machines, washing machines, air compressors, lighting).

The diagnostics, supported by rigorous technical and commercial feasibility analyses, helped **uncover lucrative and implementable low-carbon measures**. Typically, these measures highlighted a wide range of actions across energy-efficiency retrofits, process/equipment-level modernizations and renovations, and investment-heavy energy supply-side projects.

Several **consulting sessions**, involving a wide gamut of public and private stakeholders, were organized to **drive uptake** of the noted technical recommendations and **mobilize change in the enabling institutional environment**. Since the LCZ concept was fairly new in Bangladesh, efforts were made to develop the government's internal capacity and improve relations between South Korea and the Bangladesh Export Processing Zones Authority (BEPZA).

Phase 2

The above consultations were suited for seamlessly evolving the programme into Phase 2, which focused on **reviewing the energy policy/regulatory environment** and GHG performance in Bangladesh's EPZs. The consultations also helped design institutional recommendations for encouraging and providing incentives for the uptake of the technical measures.

Key Outcomes

The Chittagong LCZ project helped to overcome some of the sustainability and operational challenges referred to, and to boost competitiveness in the Bangladeshi RMG sector, including:

- Reductions in the cost of operations through improved energy efficiency and lower outlay towards energy consumption
- Heightened awareness of the importance of environmental and social consciousness in improving the Bangladeshi RMG sector's brand image
- Skills upgrading in the labour force through energy-efficient technology transfer, related capacity building and training sessions
- Improved labour productivity through energy efficiency

Drivers & Enablers

Low-carbon zone

Promotion of green policy measures

- Cost reduction
- Improvement in brand image
- Energy efficiency

Barriers

- Lack of policy guidance on pursuing resource efficiency in EPZs. Until the IFC's LCZ intervention, and despite growing concerns about the country's energy situation, there was a complete lack of policy direction on promoting low-carbon and energy-efficient industrial practices in Bangladesh. Coupled with enterprises' incognizance of the subject matter, the lack of enabling policy incentives pushed down resource efficiency among business priorities for industrial operations in the EPZs.
- Lack of capacity along the low-carbon value chain. EPZ enterprises had low awareness of low-carbon business operations. In a nascent market for low-carbon technology products and services, EPZ enterprises even lack access to reliable amenities (consultancy support, technical audit, engineering, procurement and construction) that would help them to conduct energy/process audits, select the right equipment and implement environmentally sustainable projects. A veritable linkage was evidently missing that could promote not only increased low-carbon awareness among EPZ enterprises, but also connect them to relevant stakeholders of industrial low-carbon transformation.
- Lack of institutional capacity. BEPZA, in its former capacity, was primarily responsible for facilitating investment in the zone by providing enterprises with tailored infrastructure and business services. Promotion of sustainable practices in the EPZs was expected to become a central responsibility of BEPZA, which was the nodal government body with the authority to drive and guide the EPZ enterprises towards sustainable business. However, as the subject was new and evolving in the Bangladeshi context, the absence of sufficient institutional capacity and knowledge limited BEPZA's ability to promote and facilitate such development in EPZs.
- Lack of innovative institutional linkages with potential domestic collaborators. A lack of institutional engagement prevailed in low-carbon industrial development between BEPZA and reputed Bangladeshi educational and R&D organizations. In particular, Bangladesh University of Engineering and Technology (BUET) houses experts who are aware of the changing best practices of resource-efficient industrial performance globally. BEPZA could potentially collaborate with BUET and draw it in as knowledge partner for conducting much-needed technical capacity-building sessions in the EPZs.