Automation upgrade for export zones

Bangladesh

United Group, one of Bangladesh's largest industrial conglomerates, and the first multi-utility service provider in the country, operates across power generation, shipping, education, real estate, and healthcare. Its power division, United Power Generation & Distribution Co. Ltd. (UPGDCL), manages over 2,137 MW of installed capacity nationwide, of which 1,066 MW is powered by Wärtsilä engines.

Reliable and uninterrupted power supply is critical for industrial zones like the Dhaka (DEPZ) and Chittagong (CEPZ) Export Processing Zones located in southeastern Bangladesh, where manufacturing operations run around the clock and any disruption can lead to significant production losses. DEPZ and CEPZ are among the highest-demand areas for power supply. These export processing zones have power plants running on Wärtsilä engines to meet this demand. The 86 MW UPGD DEPZ power plant operates with four and the 72 MW UPGD CEPZ plant with five Wärtsilä 20V34SG engines, both ensuring stable and uninterrupted power to their respective zones.

UNIC 2.0

The Wärtsilä Unified Controls (UNIC) system is a comprehensive engine control and monitoring solution that ensures reliable, efficient operation and global support for both marine and energy installations. It takes care of all engine control and monitoring functions for both new built engines and as a retrofit for older Wärtsilä engines.

Wärtsilä Bangladesh (WBD) successfully completed the UNIC 2.0 control system upgrade at both DEPZ and CEPZ power plants, enhancing engine automation and improving reliability of power supply. These upgrades were carefully aligned with customer schedules to ensure minimal operational disruption. Notably, the entire project was executed solely by WBD without any warranty claim, showcasing the technical expertise and commitment to proactive customer support.

At DEPZ, the UNIC 2.0 upgrade was executed in phases for selected engines to maintain uninterrupted operations during the transition. The first engine was successfully upgraded in July 2022, followed by upgrades of other engines in June 2023 and July 2024. These improved automation and reliability of the power plants, supporting future digital enhancements and operational efficiency.

At CEPZ, the upgrade is similarly executed in phases. One engine underwent the upgrade in December 2024, and another in June 2025. Three more engines will be upgraded between 2025 and 2027.

Challenge	Solution	Benefit
• Aging engine automation systems at DEPZ and CEPZ required modernization to maintain reliability and support future digital enhancements. • Upgrades needed to be executed without disrupting power supply to critical industrial zones. • Coordination with customer schedules was essential to avoid operational downtime.	• Wärtsilä executed the UNIC 2.0 upgrade project in phases across both sites. • Upgraded automation systems were installed on selected engines between 2022 and 2025.	• Improved engine reliability and automation performance. • Enhanced readiness for digital monitoring and operational efficiency. • Modern engine control system improved cyber security to prevent cyber incidents from affecting the engine. • Uninterrupted power supply to two of the country's most vital export processing zones.

Customer
United Power Generation & Distribution Co. Ltd. (UPGDCL)

Solution
Upgraded automation systems on 86 MW and 72 MW power plants

Gensets
9 x Wärtsilä 20V34SG

Location
Dhaka & Chittagong, Bangladesh

Fuel
Natural gas

Wärtsilä scope
Engineering, procurement, and construction (EPC), delivery and execution of UNIC 2.0 automation upgrades

Year of commercial operations
Initial commissioning in 2008; DEPZ upgrades completed between 2022–2025, CEPZ upgrades will be completed between 2024-2027

The enhanced automation system boosts engine reliability and supports future advancements in digital performance and operational efficiency. This successful execution of the project highlights WBD's commitment to delivering reliable and customer focused solutions. With the help of this project WBD has reinforced its role as a trusted partner in Bangladesh's energy sector.

> "The excellent co-operation between us and the Wärtsilä service team resulted in successful upgrade of the power plants. The upgrade package, including the software & hardware installed on the engines, gave us better stability with higher performance which in turn improved our productivity. Lastly, I appreciate Wärtsilä service team for their positive work attitude."
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> **Mr. Syed Mohammad Ali**
> Managing Director
> United Engineering & Power Services (UEPSL)

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