

## **CESC's Microgrid initiative: Powering Sustainability and Resilience**

Microgrid is a local electrical grid that can operate independently or in conjunction with the utility network. With growing integration of renewable sources, Microgrids will play a critical role in enabling the energy transition and improving overall resiliency of the network by maintaining uninterrupted and quality power supply to critical services.

CESC in its constant endeavor towards mindful adoption of Sustainable Technologies has commissioned its first Microgrid with 100 kWp Floating Solar and 218 kWh Battery Bank with advanced VRLA Gel Battery at Chakmir Substation. This Microgrid supplies local load of the substation, sourcing green power from the floating solar. The Battery Bank ensures uninterrupted station power supply.

The advanced Gel Battery technology ensures efficiency, safety, and environmental sustainability, while the floating solar plant conserves water and protects aquatic flora and fauna. The intelligent microgrid controller allows operation both in on-grid and off-grid modes, with islanding capabilities to operate independently during grid disturbances.

Recent cyclonic storms like 'Amphan' and 'Yaas' in Kolkata and its surrounding areas have highlighted the vulnerability of traditional power infrastructure, emphasizing the need for resilient and reliable energy solutions. CESC Microgrid will help to boost the path of 3D's i.e., Decentralization, Decarbonization and Disaster Management.

The project has enabled CESC to explore various business models and improve resiliency and reliability through multiple energy sources. It also allows for energy arbitrage to facilitate cost-effective operations and eliminates solar intermittency. Furthermore, it enables the exploration of microgrids as substitutes for polluting DG sets.

However, there are challenges to the widespread adoption of microgrids, including regulatory barriers, financing, space constraints, and technical challenges. Addressing these challenges will be crucial for unlocking the full potential of this technology to transform energy landscape and drive sustainable development.