

Way forward for Green and Sustainable environment

Kolkata, famously known as the City of Joy, is the nation's aesthetic, cultural, and intellectual hub. Kolkata, the capital of West Bengal, is one of India's largest cities and one of its major ports, situated on the eastern bank of the Hooghly River. The port city grew as a hub for the transshipment of goods from the water to the land and from the river to the sea (Bay of Bengal). The key metropolitan hub of eastern India is a centre of trade, transportation, and manufacturing.

In recent years, the effects of climate change have been evident in Kolkata and surrounding regions. Climate Change 2022: Impacts, Adaptation and Vulnerability, the sixth assessment report by the Intergovernmental Panel for Climate Change (IPCC), says that beyond the year 2040, climate change would expose coastal cities like Kolkata to a variety of risks and multiple climatic disasters. Significant warming of the Bay of Bengal region contributes to an increase of high-intensity storms along the Bengal coast, which are likely to strike Kolkata. The urban heat island effect has worsened due to rapid urbanisation and exacerbating heat stress.

To address these challenges, and as technological way forward for Green and sustainable environment, Kolkata city has taken the following steps.

Instalment of Air quality monitoring stations

The Kolkata Municipal Corporation (KMC) has installed seven automatic and 17 manual Air Quality Monitoring Stations in KMC area to assess air quality. With the installation of the new sensor-based continuous ambient air quality monitoring stations (CAAQMS), the city can now obtain a comprehensive picture of its ambient air quality. The adjacent photograph is of the AQI station in West Bengal Pollution Control Board (WBPCB) headquarters in Salt Lake, Kolkata.

The sensors are calibrated on a regular basis against the reference-grade monitors and are utilised for city air quality control. The data depicts broad patterns in local air pollution and is available on the website to disseminate information to public.



Image Source: [Times of India \(indiatimes.com\)](https://www.indiatimes.com)

Photograph 1: AQI station, WBPCB

Improvements in Solid waste management (SWM) system

The municipality is striving continuously to improve solid waste management with respect to collection, segregation, safe transportation & scientific disposal. The effort for segregation of waste is being implemented in KMC area. Waste is being segregated at source in dry and wet waste and is being transported to Dhapa and Gardenrich, the waste disposal sites of the city.

A 500 Tons per day (TPD) centralized compost plant is operational at Dhapa and five Organic Waste Composter are running at different locations. A two-TPD plastic processing plant is in operation in eastern area of the city with the plan to augment the capacity up to 20 TPD.

Capping of old dump site: Post closure care of legacy waste dump site, of 12.14 hector, is done including commissioning of 300 KLD leachate treatment plant. For converting waste to energy, a five-TPD Bio Compressed Natural Gas (CNG) plant is in operation in Dhapa.

Additionally, a fine of Rs 5000 and Rs 25,000 are being imposed against defaulter of simple and bulk burning of solid waste respectively under SWM Bye-Law.

Bio-mining

40 lakh metric tonnes (MT) & 1.5 lakh MT legacy wastes being mined at Dhapa & Gardenrich respectively. On completion, total 80-acre land will be reclaimed where addition waste processing plants like MBT (Mix waste), MRF (Dry Waste), etc will be installed. The Kolkata Municipal Corporation (KMC) has begun bio-mining and garbage treatment on 45 hectares of land at the Dhapa dumpyard. KMC has already effectively sealed a 12-acre piece of the Dhapa dumpsite. It has turned the area into a green space, with all rubbish disposal prohibited.



Photograph 2: Bio-mining at Dhapa

Green energy and buildings

Installation of solar panels: The Department of Power is installing roof top solar panels at Gariahat Market, New Market, Lake Market and Gardenrich Water Works, as a renewable energy source that reduces carbon emissions.

Use of LED light: All conventional lights are being replaced with energy efficient LED light resulting reduction of energy consumption by 20-30 % including reduction of carbon foot print.

Green Building: With a view to promote Green Building, the KMC framed a policy for extra 10 per cent FAR as incentive if the building is certified as 'Green' by the Indian Green Building Council (IGBC).

E-mobility

11 KV or 33 KV High Tension (HT) lines being laid at 12 Bus Terminus of West Bengal Transport Corporation (WBTC) to facilitate EV charging. At present, 100 EV-Buses are now plying in Kolkata. The policy has been framed to discard 15 year or more old vehicles and to regulate yellow taxi fleet. There is a road map to convert all Diesel Buses to EV / CNG by 2030.

Conclusion

All the efforts to reduce carbon emissions impacts by a city are crucial for combating climate change. By promoting renewable energy sources, implementing energy-efficient practices, encouraging sustainable transportation, and engaging the community, cities can make significant strides towards a low-carbon future. These actions not only mitigate climate change but also improve air quality, enhance public health, and create green job opportunities. Through collective efforts, cities have the power to lead the transition to a green and sustainable environment.