



Eco-Cities India Program

Private sector solutions for sustainable urban development



In Partnership with
the European Union



Creating Markets, Creating Opportunities

Why Focus on Cities?

DEVELOPING COUNTRIES ARE RAPIDLY URBANIZING. CITIES ARE KEY FOR DEVELOPMENT AND JOB GROWTH

By 2045, the number of people living in urban areas will climb by 50 percent, to 6 billion— straining already overwhelmed infrastructure. Cities will need to provide affordable housing, clean energy and transportation, safe water, and millions of jobs for the growing number of urban dwellers.

But explosive growth comes at a price. Cities of the future will account for 90 percent of the world’s population growth, 80 percent of its carbon emissions, and 75 percent of its energy consumption.

The huge infrastructure gap in emerging economies cannot be addressed by governments alone without private sector intervention. India alone will need at least \$1 trillion of capital investment. It will also need to lock in efficiencies now to build green and sustainable cities.

The Program

INDIA IS ON THE MOVE. NEARLY 250 MILLION PEOPLE WILL MOVE TO ITS URBAN CENTERS BY 2030.

Eco-Cities India is a multi-year technical advisory program under the EU-India Cooperation on Clean Energy and Energy Efficiency. This climate-change focused program is structured around five cities - **Bengaluru, Bhubaneswar, Chennai, Mumbai Metropolitan Region, and Pune Metropolitan Region**. All these cities are also designated “Smart Cities” under the separate Government of India Program.

The program will help India meet its Nationally Determined Contributions (NDCs) and other efficiency targets. It aims to reduce greenhouse gas emissions and mobilize private sector finance through a combination of established and innovative interventions designed for the Indian market.

Eco-Cities Advisory Interventions Focused on Key Urban Sectors

URBAN TRANSPORT



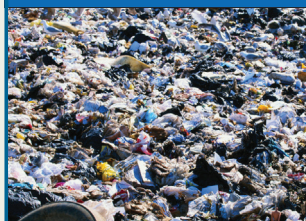
- Decarbonization and next-generation mobility
- Electric vehicles (EV)
- Policy incentives
- Business models
- EV charging infrastructure
- Last-mile connectivity to metro stations (e.g., two wheelers)

GREEN BUILDINGS



- Building resource efficiency
- EDGE certification scale-up
- Support government on green affordable housing
- Support IFC investments in green buildings in India
- Sustainable Housing Leadership Consortium
- District cooling for cities

WATER & SOLID WASTE MANAGEMENT



- Waste management and circular economy interventions
- Waste to energy
- Dumpsite remediation to create land value
- E-waste management
- Wastewater sludge to value
- Wastewater recycle & use
- Non-Revenue Water and EE support to water utilities

ENERGY EFFICIENCY & RENEWABLE ENERGY



- Grid decarbonization via scalable EE and RE solutions
- Citywide energy mapping
- Low-carbon roadmaps
- EE for public street lighting
- Rooftop solar PV replication
- Energy storage for RE integration in grid

Program Components

THE PROGRAM IS DEVELOPING AND FINANCING REPLICABLE AND SCALABLE PROJECTS UNDER THE FOLLOWING COMPONENTS



PROMOTE CLIMATE-SMART INFRASTRUCTURE

Promote clean technology and energy efficiency, water and waste management, urban mobility and transport solutions in selected cities through public private partnerships (PPPs) and by facilitating private sector infrastructure investments.



CATALYZE GREEN BUILDINGS MARKET

Address untapped mass market for green buildings by engaging private sector developers, financiers, and government. Promote voluntary certification of green buildings through EDGE or other certification systems. Facilitate investment in green affordable housing.



PROMOTE COMPETITIVE SMEs

Facilitate energy efficiency (EE) interventions and financing for small and medium enterprises in selected energy intensive industrial clusters in cities; address capacity building and knowledge sharing.

SELECTED PROJECTS



LOW-CARBON ACTION PLANNING FOR ECO-CITIES

IFC has completed citywide energy mapping and GHG inventories for Bengaluru and Chennai using the World Bank's CURB tool. This is the first application of this tool, which has been adopted by C40 Cities for climate-action planning, for Indian cities. The goal is to help government authorities develop infrastructure projects and a low-carbon roadmap for their cities in a systematic manner. The CURB study based on extensive on the ground data collection effort for various urban sectors indicates that about 50-60% of GHG emission are contributed by buildings; about 25% by transportation; and the rest by water and waste management. Both these cities emit a total of 9 million tons of GHGs annually.

ADOPTION OF ELECTRIC VEHICLES IN ECO-CITIES

Based on interest from four Eco-Cities, IFC is conducting a comprehensive study to understand the market for decarbonizing transport in cities including opportunities for private sector investment by mapping market players in India for EVs, batteries, and charging infrastructure. The study is focusing on different types of EVs especially those suitable for the Indian market (e.g., two and three-wheelers) and evaluating policy incentives, business models, and other structural aspects. For Thane, various business models have been evaluated for setting up charging infrastructure stations (including their locations) and the city has decided to go with the PPP model. For Bhubaneswar, fiscal and non-fiscal policy incentives to support switch to three-wheeler EVs are being evaluated, which will be applicable to other Indian cities.



BENGALURU PUBLIC STREETLIGHTING PPP PROJECT

This PPP transaction advisory under the shared-services model is one of the largest streetlighting projects in India, involving replacement of 465,000 fluorescent and metal vapor fixtures with energy-efficient lamps (LEDs) and other energy conservation measures. Given its large size, it is expected to attract international ESCOs to the Indian market and have a demonstration effect. This complex PPP project is expected to facilitate private sector investment of about \$70 million resulting in about \$20M in annual energy cost savings for the municipality. This project will provide better illumination levels and security for the city's residents while reducing GHG emissions.

E-WASTE MANAGEMENT IN BHUBANESWAR

IFC provided technical input for Bhubaneswar's Smart Cities proposal to the Government of India, which ranked first among 98 applicants. One Smart City intervention is to have an effective e-waste management system that could be replicated in other Indian cities. The team has completed a market assessment to understand market dynamics and cost structures and secured support of Producer Responsibility Organizations representing large IT corporates to channel e-waste from the city to responsible recyclers. An e-waste management implementation plan is being developed in consultation with public and private sector stakeholders while addressing the informal sector that dominates e-waste management in Indian cities.

ROOFTOP SOLAR PV PROLIFERATION IN ODISHA



IFC is advising the Odisha Renewable Energy Development Agency (OREDA) in scaling-up rooftop solar PV solutions for residential consumers under the net-metering scheme to help the state achieve its clean energy targets. This is challenging because the residential solar rooftop market is fragmented and consists of multiple consumers with only a few kilowatts capacity each. Under the first phase of this project, IFC has launched a web-based IT platform. This tool coupled with training and capacity building will reduce the time it takes for consumers in Bhubaneswar to install rooftop solar projects and access the available financial subsidy.

GREEN BUILDINGS - SUSTAINABLE HOUSING LEADERSHIP CONSORTIUM

IFC has convened a first-of-a-kind voluntary, private sector consortium led by CEOs of leading housing developers and financial institutions to avoid locking-in resource inefficiencies in a rapidly urbanizing India for decades to come. Most SHLC members are also IFC investment clients who have invested \$150M in green affordable housing and committed to making their own portfolio 100% green using EDGE or another certification system. This multi-stakeholder platform is using levers of policy, technology, skilling, and consumer awareness to drive change in the construction value chain with a focus on green affordable housing. Supporting activities include development of a database for environmental impacts of construction materials and post-occupancy studies.



INTEGRATED IFC ADVISORY AND INVESTMENT SUPPORT - THANE MUNICIPAL CORPORATION

The team is providing technical advisory to Thane, a major city in the Mumbai Metropolitan Region in several key areas including EV mobility, roof-top solar PV replication, green buildings policy advice, district energy, and waste to energy. For the District Energy intervention, IFC is collaborating with UNEP, EESL, and other partners to conduct a demonstration project for a mixed-use development in Thane to deliver India's first district cooling project. The city has recently reached out to IFC for potential municipal financing for various water and waste infrastructure projects not covered by other central government funding schemes.

About EU

The European Union is a unique economic and political union between 28 European countries that together cover much of the European continent. The EU has now evolved into an organization spanning policy areas from climate, environment and health to external relations and security, justice and migration. For over 50 years the EU and India have worked together to reduce poverty, prevent disasters, expand trade, and promote joint research in energy, health, agriculture and many other fields of mutual interest. For more information, visit: <http://eeas.europa.eu/delegations/india>

About IFC

IFC, a member of the World Bank Group, is the largest global development institution focused on the private sector in emerging markets. Working with more than 2,000 businesses worldwide, we use our capital, expertise, and influence to create markets and opportunities in the toughest areas of the world. In FY17, we delivered a record \$19.3 billion in long-term financing for developing countries, leveraging the power of the private sector to help end poverty and boost shared prosperity. For more information, visit www.ifc.org | www.ifc.org/southasia | www.ifc.org/cities | www.edgebuildings.com

For program queries, please contact
infoecocities@ifc.org



In Partnership with
the European Union



Creating Markets, Creating Opportunities