

Project Note

Low Emission Development Strategies for Panaji City

Background: Panaji city is among the eight Indian Cities who were part of European Commission funded project titled *“Promoting Low Emission Urban Development Strategies in Emerging Economy Countries”* which is being implemented by ICLEI and UN-Habitat in India, Indonesia, Brazil and South Africa.

ICLEI-Local Governments for Sustainability is a membership based association of Local Governments, with a global network of more than 1,500 cities, towns and regions committed to promoting local action for sustainability and climate change. ICLEI – Local Governments for Sustainability South Asia Secretariat (ICLEI SA) is a not for profit organization to support more than 60 Indian cities on sustainable development, climate mitigation and adaptation and urban transport and design initiatives.

CCP had signed a MOU with ICLEI for the voluntary project called Urban low emission development strategies, with no financial implications to CCP and funded by the European Commission.

Panaji’s Low Emission Development Strategies prepared by ICLEI has been approved by the City Council in its meeting held on July 30, 2016. The cumulative potential GHG emission reduction from the actions proposed under Panaji Low Emission Development Strategies stands at 27,183 tonnes of CO₂e by the year 2019, aggregating to about 19% of Panaji City’s baseline annual GHG emissions in the year 2013-14.

The specific actions proposed under the Low Emission Development Strategies for Panaji City build upon the City’s priorities and consolidate the sustainable initiatives already identified across sectors under various plans. Planning documents such as the Holistic Master Plan (2013), Solar City Master Plan (2010), City Sanitation Plan (2015), and revised City Development Plan (2015) have been referred to assess status and gaps, and identify projects and plans across sectors. Relevant information has been used from project specific documentation such as detailed project reports, feasibility assessments along with inputs sought from municipal officials.

Panaji City Existing Energy Consumption and GHG Emission: The total Greenhouse Gas (GHG) Emission¹ for Panaji City was 144,599 tonnes of carbon dioxide equivalent (CO₂e) in the year 2013-14.

¹

Sector-wise contribution to Energy use and GHG emission in Panaji (2013-14)

Sector	City-wide Energy use (%)	City-wide GHG emission(%)
Transport	65%	38.3%
Commercial & Institutional	17.6%	30.6%
Residential	17.4%	25.1%
Waste	-	5.5%

Panaji City - Low Emission Development Strategies- Actions/Measures Proposed:

Measures have been identified at the across Residential, Commercial/Institutional, Transportation and Solid Waste sectors and across Municipal services and facilities such as Water supply, Wastewater, Street Lighting and Municipal buildings. Along with technology based solutions, the strategy report also outlines supporting policy, regulatory and institutional actions that CCP should undertake.

For example, provision can be made in municipal bye laws to have solar water heaters in residential and commercial buildings. LED lights are available at a highly discounted rate under the National Governments Domestic Efficient lighting programme scheme and citizens can pay back in monthly installments. CCP can develop a programme to help citizens avail this benefit and offer further subsidy.

The implementation timeline for the proposed actions under the LEDS action plan is five years, from 2015-16 until 2019-20.

Proposed Priority Actions	Annual Energy Saving	Annual GHG Emission Reduction (Tonnes of CO ₂ e)
Renewable Energy Measures:		
<ul style="list-style-type: none"> Solar water heaters and Solar PV in residential households, commercial and institutional buildings 	132 lakh units of electricity;	14,101
<ul style="list-style-type: none"> Solar PV power packs to replace DG sets in residential buildings 	167 kiloliters of diesel	
<ul style="list-style-type: none"> Solar home lighting in low income households 		

Energy Efficiency Measures:

- Low energy LED and T5 lights in buildings
- BEE star rated ceiling fans and ACs in buildings
- LED fixtures and smart feeder panels in Street Lighting
- Energy efficient lighting and design at Panaji Municipal Market

99 lakh units of electricity 8,496**Measures in Transportation Sector:**

- Public Bicycle Share (PBS) System and pedestrian network improvement
- Intelligent Parking Management System

137 kiloliters of diesel and petrol 323**Decentralized Wastewater Treatment System for unserved communities****3,285 kg of LPG 10****Waste to Energy:**

- bio-methanation plant of 50 tonnes per day

15 lakh units of electricity 1,267**Water Supply and wastewater treatment service improvements:**

- 100% coverage with 135 lpcd , reducing leakages, smart metering

38 lakh units of electricity 3,134