



# Waste Management & Circular Economy



**Extensive Geographic Footprint: Pan-India and international presence**



**Decades of Sector Leadership: 25+ years in waste management and circular economy sectors**



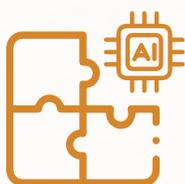
**End-to-end Advisory and solutions across all major waste streams**



IPE Global Ltd. is an international development consulting group committed to advancing sustainable growth through innovation, policy reform, and on-ground implementation. Headquartered in New Delhi, with offices across Asia, Africa, and the UK, we partner with governments, multilateral agencies, and the private sector to deliver transformative urban and environmental solutions.

**India's waste management landscape** is transforming rapidly, driven by urbanisation, national missions, and global commitments to climate action. Circularity is emerging as a core solution — rethinking how cities, businesses, and communities manage organic waste, plastic waste, construction and demolition debris, e-waste, and wastewater.

Within this context, **IPE Global's Waste Management and Circular Economy Vertical** leads efforts to design integrated strategies and scalable solutions that help cities transition toward cleaner, greener, and more circular pathways. We work closely with governments, international partners, and private actors across the entire waste value chain — from strategy and design to financing, capacity building, and on-ground implementation.



## Our Approach

Combines technical solutions with policy reform, livelihood opportunities, and climate action, while mobilizing blended finance through our Innovative Finance Facility to scale new ideas and incentives.



## Our Edge

Deep technical expertise across waste sub-sectors, cross-country experience, and strong implementation capacity at scale.

# Key Expertise

We are working across waste management value chain & venturing into new areas around Circular Economy



## Municipal Solid Waste

- » Advisory on waste reduction, segregation, collection & transportation
- » Processing & scientific sanitary landfilling
- » Decentralised & cluster-based waste management models
- » Zero-waste city strategies
- » GHG emission accounting & climate impact assessments
- » Formalisation and integration of the informal waste sector
- » SWM policy and regulatory advisory
- » PPP structuring and transaction advisory
- » Behaviour change communication (BCC/IEC)
- » National/state circular economy roadmaps

## Plastic Waste Management

- » EPR ecosystem development & compliance
- » Strengthening formal & informal recycling ecosystems
- » Advisory on Single-Use Plastic management & reduction
- » Innovations in reuse & recycling technologies
- » Digital Plastic waste traceability and monitoring
- » Plastic credit mechanisms
- » Policy and frameworks for the Deposit refund systems/scheme (DRS)
- » Ocean-bound plastic mitigation

## E-waste & Textile Waste

- » Post-consumer textile waste management
- » Textile circularity and closed-loop recycling
- » EPR for the apparel sector & electronics
- » Circular electronics and green IT strategies
- » Reverse logistics and high-value material recovery
- » Digital product passport advisory

## Construction & Demolition Waste

- » C&D Waste quantification, audit & inventory systems
- » Circular Construction Practices
- » Lifecycle assessment of construction materials
- » Market development for recycled C&D products
- » Digital tools for C&D waste tracking



Capacity Building



Private Sector Participation and Leverage



Resource Efficiency



Marine Litter



Waste Mapping



Circular Economy



Technology & Sustainable Models



Innovative Finance & Partnership Models



Climate Integration GHG Estimation



Dumpsite Rehabilitation & Remediation



Extended Producer Responsibility

# Key Projects



## USAID | Innovations for Reducing Plastics for a Cleaner Environment in India (inREPLACE) | India | 2023–2025

The USAID-funded inREPLACE program was designed to address the critical challenge of plastic pollution—particularly in the marine environment—by strengthening Solid Waste Management (SWM) ecosystems and accelerating the transition to a circular plastics economy across six Indian states. IPE Global implemented a comprehensive strategy that integrated policy support, technical innovation, and market-based solutions to reduce plastic leakage. A primary focus of the assignment was the development of 5-year City-level Plastic Waste Reduction Action Plans (P-RAPs), which enabled Urban Local Bodies (ULBs) to identify waste sources and align their management strategies with the Swachh Bharat Mission (SBM 2.0). To drive catalytic change, the firm advocated for a City Challenge Fund (CCF) that provided technical assistance and seed funding for pilot innovations, while simultaneously establishing a ‘Circularity Hub’—a blended finance platform designed to support startups and MSMEs in commercialising plastic alternatives and reduction technologies.

To bridge gaps in the waste value chain, the project planned an inREPLACE E-Marketplace to facilitate transparent trading and traceability of waste materials, thereby supporting the implementation of Extended Producer Responsibility (EPR). The interventions also placed a strong emphasis on social inclusion and institutional capacity; this involved professionalising informal waste workers through the ‘GARIMA’ initiative to ensure dignity and recognition for ‘Swachhta Sahelis,’ as well as strengthening municipal governance through Mission Karmayogi training modules and ‘Lighthouse City’ peer-learning networks. Furthermore, the project fostered long-term behavioural change by introducing ‘green nudges’ for youth and implementing a Zero Plastic Waste Rating System (ZPWRS) to incentivise Bulk Waste Generators to adopt sustainable, plastic-free operational models.

## The World Bank & Asian Infrastructure Investment Bank (AIIB) | Technical Support Consultancy (TSC) Services for Kerala Solid Waste Management Project (KSWMP) – 2 Packages | Kerala | 2022–2027

This project aims to strengthen solid waste management services across more than 48 Urban Local Bodies (ULBs) in Kerala. The work includes developing detailed five-year SWM plans, identifying infrastructure and capacity gaps, and supporting the implementation of city-level interventions. The assignment covers the procurement of equipment, supervision of construction and rehabilitation of waste processing and recycling facilities (MCFs/RRFs), and guidance on scientific dumpsite closure. It also involves developing new integrated Material Recovery Facilities (MRFs) and ensuring environmental and social safeguards, gender inclusion, and community participation throughout implementation.



## Asian Infrastructure Improvement Bank (AIIB) / Government of Bangladesh | Preparation and Design Consultancy Services – Integrated Solid Waste Management Improvement Project (ISWMP) | Bangladesh | 2022–2023

Supported by the Asian Infrastructure Investment Bank (AIIB) and the Local Government Engineering Division (LGED), this project aimed to transform Bangladesh’s solid waste management landscape by improving public health standards and establishing sustainable urban infrastructure. As the joint venture partner, we provided comprehensive design and preparation consultancy services, acting as technical support for the prioritisation and investment-readiness of sub-projects. The assignment commenced with a rigorous Sector Review, resulting in the formulation of Policy Briefs that addressed regulatory barriers, inter-governmental fiscal transfers, and tariff structures to enhance municipal revenue generation. A key output was the development of a ‘Best Practicable Options’ (BPO) framework, a guidance tool allowing Urban Local Bodies (ULBs) to select appropriate technologies based on waste typology, lifecycle costs, and environmental impact.

Detailed feasibility studies were conducted, including 20-year waste volume projections and GIS-based optimisation modelling to determine the most cost-optimal service delivery models. The scope encompassed Detailed Engineering Designs (DEDs) for a robust infrastructure portfolio—including sanitary landfills equipped with liner systems, leachate treatment, and methane recovery; Material Recovery Facilities (MRFs); and Transfer Stations. Additionally, technical assessments of Waste-to-Energy (WtE) options were conducted to evaluate moisture content and calorific value and ensure viability. To ensure long-term sustainability, the project focused heavily on institutional strengthening, including assessing the potential for Special Purpose Vehicles (SPVs), preparing Financial Management Manuals, and conducting capacity assessments of Project Implementation Units (PIUs). Furthermore, the consultancy ensured strict adherence to international safeguards by preparing Environmental and Social Impact Assessments (ESIAs), Resettlement Planning Frameworks (RPF), and comprehensive tender documentation compliant with AIIB procurement policies.



## GIZ | Organic Waste Strategy and Enabling Framework for Maximised Recycling | Delhi | 2022 - 2023

This project aimed to improve organic waste management in Delhi to mitigate climate change and promote a circular economy. The work included mapping organic waste generation, analyzing the value chain from collection to processing, and conducting quantification and characterization studies. It also involved assessing recycling technologies, facilitating stakeholder consultations, and reviewing existing PPP contracts to identify operational improvements. A key output was a comprehensive roadmap with policy and implementation recommendations to strengthen the enabling framework for organic waste management.



**The World Bank / Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) | Preparation of Feasibility Report and Transaction Advisory for SWM Initiatives for Greater Chennai Corporation on PPP | Chennai, India | 2016 – 2019**

This project aimed to strengthen the solid waste management system in Chennai through PPP-based interventions. The work included preparing feasibility studies for primary collection, secondary transfer, and processing facilities, along with financial modelling and transaction advisory services. It also assessed private-sector participation options, evaluated technology choices, and developed a structured PPP framework for implementation. A key output was a comprehensive transaction plan supporting sustainable waste management under the Greater Chennai Corporation.

**Foreign, Commonwealth and Development Office (FCDO), UK | Technical Assistance to better Recover, Recycle, Re-use, Construction & Demolition (C&D) Waste | India | 2020 – 2021**

This project aimed to strengthen the C&D waste management ecosystem in India by improving recycling and reuse practices. The work included preparing policy briefs, developing business models for recycling facilities, and identifying circular construction opportunities. It also supported the design of interventions for urban local bodies to integrate C&D waste processing in their waste management systems. A key output was a national framework for scaling up C&D waste recycling across Indian cities.

**GIZ | Support to the project “EU-India Resource Efficiency and Circular Economy Initiative” (EU-I RECEI) for Advisory Services - Assessment of Selected Business Models for Circular Economy, including MSME Ecosystem, Toolkit Development and Dissemination | Pan India | Jan 2025 - Jun 2026**

Funded by GIZ, this strategic initiative aims to accelerate the adoption of Resource Efficiency and Circular Economy (RECE) policies across India’s industrial landscape. While covering the plastics sector, the project places a distinct emphasis on transforming the Textile and E-waste (including batteries) value chains to align with global standards. IPE Global is supporting a rigorous impact assessment of emerging EU legislation to determine its implications for Indian supply chains. The core scope involves the identification and validation of scalable, gender-transformative Circular Business Models and circular financing mechanisms tailored for the MSME ecosystem. To bridge the technical capacity gap, the firm is developing a suite of specialized deliverables, including – (i) Regulatory Compliance Toolkits for public and private stakeholders to navigate EU regulations affecting Indian supply chains; (ii) Green Skills & Jobs Toolkits for Gender-inclusive training modules specifically designed for the textile and e-waste sectors to promote workforce readiness; MSME Resource Efficiency Toolkits as Technical guidance on cleaner production and green business case development.



# Our Experience under Swachh Bharat Mission (SBM)

**Haryana Slum Clearance Board, Govt. of Haryana | Setting up of 01 Programme Management Unit (PMU) & 21 PIUs under Swachh Bharat Mission (Urban) in Urban Local Bodies Department | Haryana, India | 2017–2023**

IPE Global was engaged to set up **PMUs & PIUs under the Swachh Bharat Mission (Urban)**, providing support to 21 ULBs in Haryana. We provided technical support and professional handholding to undertake and deliver all the tasks outlined in the SBM (Urban) guideline issued for the state. We were involved in preparing guidelines for ULBs to implement different components for preparing City Sanitation Plans (CSPs) and to consolidate all CSPs into a State-Level Sanitation Plan, specifying time frames, finances, operational components, and component guidelines to enable the state to earmark resources. As PIU, we supported the ULBs in Project management, coordination, and technical support for the implementation of SBM components, ensuring optimal technical quality in project implementation and service delivery.



Under our technical support provided, **Haryana demonstrated remarkable performance in Swachh Survekshan 2021, securing the 2nd position nationally** among states with fewer than 100 Urban Local Bodies (ULBs). A total of 87 ULBs from the state participated, with **5 major cities (Gurugram, Rohtak, Karnal, Ambala, and Panchkula) ranking in the Top 100 ULBs nationally** in the category of cities with a population above 1 lakh. Additionally, **23 ULBs were recognised in the Top 100 of the North Zone** for cities with populations under 1 lakh. IPE Global’s support also contributed to **Municipal Corporations of Gurugram and Rohtak achieving Three Star Garbage Free City certification, while Gurugram secured 4th place in the prestigious Safaimitra Suraksha Challenge.**

Further, **13 ULBs were certified ODF++ and 49 ULBs as ODF+**, reflecting sustained efforts in sanitation service delivery and capacity building under IPE Global’s guidance.

**Odisha Water Supply and Sewerage Board, Govt. of Odisha | Establishment of Programme Management Unit (PMU) under Swachh Bharat Mission (SBM) | Odisha, India | 2015–2020**

IPE Global was the PMU under the Swachh Bharat Mission for the H&UD Department, Government of Odisha, Similarly, **where the major objectives were to ensure hygiene, waste management, and sanitation through the elimination of open defecation and the eradication of manual scavenging**, and to effect behavioural change regarding healthy sanitation practices. We have worked to raise awareness about sanitation and its link to public health, Augment Capacity for ULBs, and create an enabling environment for private-sector participation in Cap-ex and Op-ex. Our efforts have successfully achieved mission components in the state, including conversion of insanitary latrines into pour-flush latrines, Household, community, and public toilets, Solid waste management, IEC & Public Awareness, capacity building, and Administrative & Office Expenses. This was a State-Level Mission, and all ULBs were covered under this.



### **Government of Odisha | Project Monitoring Unit for SWM Projects in Bhubaneswar Municipal Corporation | Bhubaneswar, India | 2018 - 2026**

Since 2018, we have been serving as the Solid Waste Management Project Monitoring Unit (SWM-PMU) for the Bhubaneswar Municipal Corporation (BMC), playing a pivotal role in developing strategic frameworks, monitoring decentralized waste processing projects (including composting units and Material Recovery Facilities), and providing end-to-end technical and policy advisory support.

We conducted a baseline assessment of plastic waste and supported the design, procurement, and operation of 10 decentralized MRFs, strengthening dry waste segregation and circular economy linkages through EPR integration. We also led the technical and financial feasibility study for a city-level pyrolysis plant to convert plastic waste into fuel, advancing energy recovery and zero-waste goals. These efforts contributed to BMC receiving the Skoch Award of Merit for solid waste management, community toilets, and faecal sludge management, highlighting IPE Global's role in sustainable urban sanitation.

### **European Union / AETS | Study on Optimising EU Investments for Waste Management | India | 2019-2020**

This study aimed to assess the effectiveness and strategic direction of EU investments in India's waste management sector. The work included reviewing ongoing EU-funded projects, mapping financing flows, and identifying priority areas for future cooperation. It also examined opportunities for leveraging private investment and strengthening institutional capacity at national and state levels. The project resulted in policy recommendations and an investment roadmap for enhanced EU-India collaboration in waste management.

### **Japan International Cooperation Agency (JICA) | O&M Plans for the Kolkata Solid Waste Management Improvement Project | Kolkata, India | 2014 - 2015**

This project aimed to develop sustainable operation and maintenance (O&M) systems for improved solid waste management services in Kolkata. The work included assessing existing systems, designing O&M plans for newly established infrastructure, and preparing guidelines for effective performance monitoring. It also involved training municipal staff and strengthening institutional mechanisms for long-term sustainability. The project contributed to building a replicable model for managing large-scale urban waste systems in Indian cities.



### **Asian Development Bank (ADB) | Capacity Building for Waste Management | Nepal | 2011 - 2012**

This project aimed to assist the Government of Nepal in establishing an effective framework for solid waste management (SWM) and strengthening the capacity of the Solid Waste Management Council (SWMC) and the Solid Waste Management Technical Support Centre (SWMTSC) under the national SWM Act. The work included supporting policy and regulatory reforms, drafting a national SWM policy and strategy, and developing guidelines, standards, and tariff frameworks. It also focused on building institutional linkages between national and local bodies and introducing pilot initiatives to demonstrate innovative SWM practices.

### **The World Bank | Consulting Services for Waste Management in Selected Indian Cities | Rajasthan & West Bengal, India | 2024-2025**

This project aimed to enhance waste management services in selected Indian cities- Jaipur, Jodhpur, Kota and Kolkata Port Area through strategic technical assistance. The work included assessing existing systems, preparing city-specific SWM improvement plans, and identifying opportunities for circularity and private-sector participation. It also involved developing financial models and policy frameworks to improve sustainability and efficiency. The assignment contributes to strengthening institutional capacity and advancing circular economy approaches in urban waste management.



### **GIZ | Plastic & Non-Biodegradable Waste Monitoring under Cities Combating Plastic Entering the Marine Environment (CCPME) Project | India | 2020-2022**

This project aimed to strengthen plastic and non-biodegradable waste monitoring systems in India by developing a national digital dashboard and reporting framework. The work included reviewing existing solid waste management (SWM) portals at national, state, and city levels, mapping key stakeholders, and identifying major bulk recyclers in Kochi, Kanpur, and Port Blair, as well as in Kerala, Uttar Pradesh, and Andaman & Nicobar Islands. The assignment supported GIZ and MoHUA in designing data input formats, monitoring templates, and mechanisms for tracking recycling and reuse rates across cities and states. A key output was a digital platform that enables regular reporting, data integration, and improved linkage between urban local bodies, recyclers, and policymakers.



**Government of Odisha / The World Bank | Techno-Economic Feasibility and Transaction Advisory for Integrated SWM at Paradeep Municipality | Odisha, India | 2012-2013**

This assignment, undertaken under the Integrated Coastal Zone Management Project (ICZMP), aimed to strengthen the solid waste management system in Paradeep Municipality through an integrated and financially viable approach. The work included baseline assessment of existing systems, waste quantification and characterisation, zoning and route optimisation, and evaluation of treatment and disposal options, including an engineered sanitary landfill.

IPE Global prepared the techno-economic feasibility report and developed an Integrated Solid Waste Management (ISWM) action plan. The firm also provided transaction advisory support, including PPP structuring, preparation of bid documents, and assistance in procurement and selection of a private operator, enabling the municipality to move toward a structured and sustainable SWM system.



**DFID, UK | Technical Assistance for Implementation of Support Programme for Urban Reforms (SPUR) | Bihar, India | 2008-2017**

This project aimed to strengthen urban governance and service delivery across multiple towns in Bihar under the Support Programme for Urban Reforms (SPUR). The work included preparing city development plans, improving solid waste management systems, and supporting municipal capacity building. It also provided technical assistance for financial management, planning, and infrastructure improvement. The project contributed to institutional reforms and better service delivery outcomes for urban residents.

**Department of Urban Development & Housing, Government of Arunachal Pradesh | Preparation of State Sanitation Strategy and Action Plans for 28 Urban Centres | Arunachal Pradesh, India | 2018-2020**

This project aimed to support the Government of Arunachal Pradesh in preparing a comprehensive sanitation strategy and city-level action plans for 28 urban centres. The work included assessing baseline sanitation conditions, identifying infrastructure gaps, and formulating city-specific investment plans. It also focused on capacity building and aligning state objectives with national sanitation missions. The project resulted in a state-wide roadmap for achieving sustainable sanitation coverage.



# Glimpse of Our Work



**USAID, inREPLACE**



**ADB: Capacity Building for Waste Management, Nepal**



**FCDO: Technical Assistance to better Recover, Recycle, Re-use C&D Waste**



**WB: Feasibility Report and Transaction Advisory Services for SWM initiatives for GCC on PPP**



**WB & AIIB: Technical Support Consultants for Package B & D of Kerala Solid Waste Management Project**



**GIZ: Baseline of the Plastic & Non-Biodegradable Waste Monitoring at National and City Level**



**JICA: SWM Study on Development of O&M Plans for the Kolkata SW Improvement Management**



**AIIB: TA on Integrated SWM Improvement Project: Preparation & Design Consultancy Services, BAN**



**GIZ: Preparation of Organic Waste Strategy & Enabling Framework to Maximize Recycling for Climate Mitigation**

The Sustainable Cities & Infrastructure practice continues to provide solutions for urban development & management and climate-resilient infrastructure for ensuring improved liveability and livelihood opportunities.

