CCAC Waste Initiative’s Approach to Addressing Financing Barriers

Network of Southeast European, Middle Eastern, and Central Asian Cities – 2nd Workshop
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on behalf of the U.S. EPA
Overview

• Context
  o Environmental and financial Impacts of solid waste management (SWM)
  o Options for financing projects in the municipal solid waste (MSW) sector
  o Financing barriers for MSW

• Climate and Clean Air Coalition (CCAC) Waste Initiative
  o General approach to addressing barriers
  o Assessing financing readiness
  o Other resources available to address financing barriers
  o Examples of CCAC Waste Initiative support
Environmental & Financial Impacts of MSW
Short-lived Climate Pollutants (SLCPs)

• Subset of greenhouse gases and aerosols that
  o Contribute to global warming
  o Remain in the atmosphere for shorter periods compared to long-lived GHGs
  o Have detrimental impacts on human health, agriculture, ecosystems

• UNEP study: Near-term reductions in SLCPs could result in
  o 0.6°C in avoided warming in 2050
  o 2.4 million avoided premature deaths from reduced pollution in 2030
  o 52 million metric tons of avoided annual staple crop losses in 2030

SLCPs from the MSW Sector: Black Carbon

• A component of particulate matter
• Formed by incomplete combustion of fossil fuels, biofuels, and biomass
• Atmospheric lifetime: Days/weeks
• Significant climate forcer
  ○ GWP$_{100}$: Variable (global avg ~910*)
• Contributes to same health impacts as fine particulate matter

* Bond et al. 2013. Bounding the Role of Black Carbon in the Climate System: A Scientific Assessment
SLCPs from the MSW Sector: Methane

• Produced by anaerobic decomposition of organic material
• Key drivers:
  o Amount of organic waste deposited
  o Extent of anaerobic decomposition
  o Waste cover properties
  o Methane oxidation rates
• Atmospheric lifetime: 12 years
• Significant climate forcer
  o GWP$_{100}$: 28-36*
• Contributes to the formation of tropospheric ozone, an air pollutant

* IPCC AR5
Significance of SLCPs from the MSW Sector

- Black carbon
  - Unclear how much MSW sector contributes to total emissions
  - US EPA estimates MSW sector accounts for 0.5% of global emissions
    - Excludes waste collection and transport

- Methane
  - Contribution of MSW sector is better understood
  - US EPA estimates MSW sector accounts for 12% of global methane emissions (primarily landfills)
Financial Impacts of Solid Waste Management

• Globally, solid waste management costs will increase from $205 billion USD (2016) to $375 billion USD (2025)

• Cost increases will be most severe in low-income countries (5x) and lower-middle income countries (4x)

• Waste management is expensive (20-50% of municipal budgets)
  o Often the largest budget item for cities

• Improving solid waste management practices can help reduce these costs (while also reducing SLCP emissions)

Options for Financing Projects in the Solid Waste Sector
Financing Opportunities

• Improving SWM practices and facilities requires sustainable and often considerable funding
  o Capital expenditures
  o Operations and maintenance
  o Planning

• Cities have multiple options
  o Using or generating public (internal) funds
  o Accessing external financing
Public Funding Opportunities

• Dedicated local revenue sources
  o Taxes
  o User charges levied on various urban services
  o Tipping fees
• General municipal budgets
• Grants from higher levels of government (central, state governments)
External Financing Opportunities

• Public-private partnerships
  o Cooperative agreement between the public and private sector
  o Shifts some of the financial constraints from the public to the private sector
• Results-based financing
  o Payments are tied to results
• Traditional loans
• Grants
• Climate finance
  o E.g., Green Climate Fund
• Development policy financing
  o Technical assistance and loans through various mechanisms
Barriers to Accessing External Financing
Financing Barriers: Limited Capacity

- **Planning aspects**: Lack of local policy and planning framework
- **Technical aspects**: Project development, conducting feasibility assessments and developing specifications for tenders
- **Financial aspects**: Drafting tenders, setting up contracts, procuring services, forecasting flows of capital, and managing finances
- **Other aspects**: optimizing GHG mitigation and social benefits (e.g., to meet climate financing requirements)
Financing Barriers: Policy/Political

- Inability to recover costs through internal mechanisms (e.g., taxes and fees)
- Administration turnover
- Changing priorities
Financing Barriers: Working with Financial Institutions

• Identifying and evaluating appropriate financing mechanisms and funding sources
• Making the business case for proposed projects
• Navigating disconnects between the language of project managers/implementers and financiers
• Establishing municipal creditworthiness, financial responsibility, and integrity
• Unfamiliarity of municipalities/local developers with international financing criteria
  o Economic feasibility: costs and benefits to society
  o Environmental and social standards
  o Procurement: non-discrimination and transparency
• Cities/sub-national entities are not part of international financing institutions networks
The bankability mystery (of urban projects)

Project:
- Concession models
- CBA
- Revenue models
- Feasibility
- Land acquisition
- Social and Environmental Impacts
- Lifecycle cost models
- Pre-Feasibility
- Public participation
- Technology assessment

Identification
- Identification
- Preparation & Structuring
- Linking to finance

City:
- Credit-worthiness
- Cross-sectoral coordination & planning
- Project preparation, implementation & management capacities

National Level:
- Credit rating
- National Enabling Environment
- Decentralisation

Financier:
- Appetite
- Understanding of risk factors
- Local market understanding
- Finance instruments

Upshot:
Project financing can be very complex and a deterrent for cities

Source: C40 Cities Finance Facility
Deadlock in Urban Finance

• Cities face many barriers to securing financing

• Even if they have capacity to address most barriers, cities may be unwilling to invest in project preparation if they are unsure of end finance

• Financiers are unable to commit to a project without sound project documents

• Result: Deadlock
Waste Initiative Approach to Addressing Financing Barriers
Waste Initiative Overview

• Objective
  o Reduce emissions of SLCPs across the municipal solid waste sector
  o Help cities facilitate the design and implementation of locally appropriate actions

• Types of support
  o Technical assistance
  o Capacity building
  o Tools and resources
  o Information sharing and networking
  o No direct financing for projects

• Added value of the initiative:
  o Working directly with cities
  o Support from partners
  o Mobilizing experts
Waste Initiative Approach

Stage 0
Letter of Intent
The city is ready to mitigate SLCPs from the waste sector
City joins CCAC Waste Initiative

Stage 1
City Assessment
City collects waste-related data and develops baseline of emissions SLCPs.

Stage 2
Action Plan
City develops course of action for mitigating SLCPs from the waste sector.

Stage 3
Work Plan Design
City identifies activities and projects that will lead to SLCP reductions.
City assesses its financing readiness.

Stage 4
Project Planning
City prioritizes and plans a MSW project that will lead to SLCP reductions.
City takes action to improve financing readiness.

Project Development
City secures financial and technical support to implement priority project.

Financing Barriers Identified
Financing Barriers Elaborated
Financing Needs Identified
Financing Barriers Addressed
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Waste Initiative Approach

- Financing Barriers Identified
- Financing Barriers Elaborated
- Financing Needs Identified
- Financing Barriers Addressed
Why Assess Financing Readiness?

• Raises awareness of financing challenges and potential pitfalls
• Identifies financial weaknesses or potential risks that need to be addressed
• Places cities in a position to obtain the most appropriate combination of financing
• Improves the transparency of a city’s financial state, which reduces risk for investors
• Reduces risk for cities (e.g., lowers risk of defaulting on payments)
Financing Readiness Questionnaire

• Provides a set of questions to help cities assess their readiness for financing
• Questions address:
  o Political Environment
  o Legal Frameworks
  o Regulatory Environment
  o Revenue Streams
  o Financial Modeling and Technical Expertise
  o Bidding Process

Accessible on the MSW Knowledge Platform: www.waste.ccacoalition.org/document/financing-readiness-questionnaire
## Financing Readiness Questionnaire

<table>
<thead>
<tr>
<th>Category</th>
<th>Example Question</th>
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<tbody>
<tr>
<td>Revenue Streams</td>
<td>• Has the city captured internal revenue streams to help offset project costs? Will anticipated revenue streams go to the general fund, or can they be used for other waste projects?</td>
</tr>
<tr>
<td>Political Environment</td>
<td>• How long is the current government’s term? Does the project need to be completed within that timeframe?</td>
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<tr>
<td>Regulatory Environment</td>
<td>• How does this project align or conflict with existing regulations (e.g., public health regulations)?</td>
</tr>
<tr>
<td>Legal Framework</td>
<td>• Are there laws that determine how a project must be structured?</td>
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<tr>
<td>Financial and Technical Expertise</td>
<td>• Does the city have the in-house capacity it needs (e.g., for modeling project economics)?</td>
</tr>
<tr>
<td>Bidding</td>
<td>• What are the local procurement policies and procedure? How do they apply to this project?</td>
</tr>
</tbody>
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6 Other Resources to Help Cities Address Financing Needs
CCAC Waste Initiative Financing Primer

- Primer for Cities for Accessing Financing for Municipal Solid Waste Projects
  - Helps cities make decisions about financing and provides a “road map”
  - Overview of financial innovation opportunities

Other Waste Initiative Resources

• Municipal Solid Waste Financing Webinar
  o Provides an overview of the financial readiness questionnaire, with a focus on policy and regulation
  o Includes an overview of the different funding and financing mechanisms
    o [link to webinar](http://www.waste.ccacoalition.org/seminar/municipal-solid-waste-financing)

• Fact sheet with information:
Other Resources Targeted to Cities

- C40 Cities Finance Facility
  - Provides technical assistance to mobilize financing for city-level sustainability projects
  - Offers assistance with project preparation, capacity development, knowledge sharing, and partnerships between cities and investors
  - Knowledge Library provides a variety of resources
  - [www.c40cff.org/](http://www.c40cff.org/)
Examples of CCAC Waste Initiative Support to Cities
Case Study: Viña del Mar, Chile

• Key challenges: no local disposal site; high collection and disposal costs; minimal organic waste diversion

• Through assistance from the Waste Initiative:
  o Identified anaerobic digestion as the preferred option for treating organic waste
  o Conducted a financial analysis of the project
    • Most economical use of biogas is in a combined heat and power plant
    • Most significant impact on IRR is tipping fees, not product sale price
  o Determined a PPP would be the most appropriate financing option

• Viña del Mar is currently developing the tender documents for the proposed anaerobic digester
  o Tender to be released summer/fall 2018
Case Study: Naucalpan, Mexico

• Key challenges: High rate of organic waste generation; minimal organic waste diversion

• Priority project: AD facility to treat 300-400 tpd of organic waste
  o City has secured a grant for 50% of the project costs from national bank
  o Remainder must come through PPP

• CCAC assisted the city in:
  o Conducting technical assessments
  o Coordinating with national-level stakeholders
  o Evaluating the city’s financial readiness
  o CCAC support helped provide justification to the national bank
Case Study: Naucalpan, Mexico

• City is also seeking funding from the Green Climate Fund (GCF) to reduce size of projected PPP
• Funding proposals to the GCF must go through Accredited Entities (AEs)
• Waste Initiative assisted Naucalpan in:
  o Assessing all AEs to determine the best fit for the city’s proposed anaerobic digestion project
    • Targeting 3 high priority AEs
  o Conducting a benefits analysis of the proposed project, to include in the proposal to the GCF
  o Assisted in developing a concept note to submit to the GCF
  o Outcome: To be determined
Key Takeaway Messages from Case Studies

• Every municipality’s situation is unique – this adds a layer of complexity
• Capitalizing on internal cost recovery strategies before seeking external financing is key
• Robust technical assessments are the basis for strong financial analyses
  o Good data (or suitable data)
  o Use of well-established methodologies and tools
  o Adherence to best practices
• Cities must take initiative
  o CCAC Waste Initiative support focuses on helping to identify and address barriers
  o Cities build on that support to design and propose projects
Thank you! Questions?

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