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Financial Readiness Framework for Organic Waste Management Projects

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*On behalf of the United States
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Overview of Presentation

Financial Readiness Framework for Organic Waste Management

- Introduction
- Overview of Steps
- Step Example
- Case Study

Global Methane Initiative (GMI)

- International public-private partnership focused on advancing:
 - Cost-effective, near-term methane abatement
 - Recovery and use of methane as a valuable energy source
- Provides in-kind technical support to deploy methane mitigation and methane-to-energy projects around the world
- Supports methane mitigation in three key sectors:
 - **Biogas (municipal solid waste, agriculture, wastewater)**
 - Coal mines
 - Oil & gas



Global Methane Initiative

- 49 Partner Countries
- 100s of Project Network members
- Alliances with international organizations focused on methane recovery and use

GMI Partner Countries represent approximately 75% of methane emissions from human activities.



GMI helps overcome barriers and challenges to biogas implementation



Identifying and acting on opportunities for emissions reductions by identifying what is needed



Fostering best practices and effective policies with the project network and beyond



Developing and sharing technical resources and strategies



Increasing capacity and skills to address methane



Collaborating with key partners to amplify shared messages



GMI Financial Readiness Framework for Organic Waste Management

- **What:** The *Framework* provides high-level practical guidance to help stakeholders
 - understand the process for financing organic waste management projects that reduce methane emissions,
 - mitigate potential investment risks, and
 - improve the bankability of projects.
- **Why:** One of the main obstacles for implementing organic waste management projects is securing financing for capital and operation costs.



GMI Financial Readiness Framework for Organic Waste Management



■ How:

- Based on extensive research of existing resources and consultations with finance experts and implementers.
- Organizes those resources and information into a helpful system to orient key stakeholders.
- Summarizes key steps for financing organic waste management infrastructure. Each step includes:
 - Best practice activities that users can consider,
 - General and sector-specific resource links that can provide additional guidance and support, and
 - Case study examples of policies and programs from around the world to help countries learn from others' experiences.

- ## ■ Audience:
- National and subnational governments, investors, solid waste professionals, project developers

Downstream options to mitigate methane from organic waste

- Landfill gas capture and use
- Diverting organic waste from waste disposal facilities to treatment facilities, such as:
 - Anaerobic digestion
 - Composting
 - Emerging technologies, such as **black soldier fly** to produce animal feed, **biochar**, or using organic waste to produce **biopolymer-based products**.



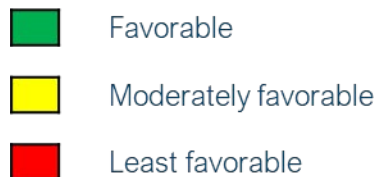
Summary of Financial Readiness Framework

Framework Steps	Goal	Resources Examples
1 Develop Project Plan	Define project scope, expected outcomes, and incorporate bankable project concepts.	Solid Waste Management Toolkit
2 Assess Feasibility	Evaluate financial readiness of involved organizations. Determine project technical and financial feasibility.	Risk Analysis Checklist for Biogas Projects
3 Identify and Select Financing	Identify potential financing sources and instruments and select.	Handbook on Urban Infrastructure Finance
4 Mitigate Risks	Consider regulations, and financial and technical best practices to mitigate risks.	Financing Readiness Questionnaire for Municipal Solid Waste Sector
5 Secure Permits and Approvals	Identify necessary permits and approvals. Plan and submit documentation.	Landfill Gas Project Development Handbook
6 Seek Project Funding/ Finance	Determine project eligibility and develop a high-quality proposal.	Anaerobic Digester/Biogas System Operator Guidebook
7 Structure and Close Financing	Select financial instruments, close financing, and develop a plan for measurement, reporting, and verification (MRV) of results.	GMI's MRV Resource Center

Step Example

Step 3: Identify and Select Finance Source/ Instrument

- Step 3 in the *Framework* helps users evaluate the right financial instrument(s) for a project.
- Criteria for selecting financing instrument include:
 - **Availability of the instrument**
 - **Interest rates**
 - **Ease of access**
 - **Suitability**



Financing Attribute Heatmap

	Availability	Interest rates	Ease of Access	Suitability
Owner Equity Funds	Moderately favorable	Favorable	Favorable	Moderately favorable
Private Equity	Moderately favorable	Moderately favorable	Moderately favorable	Favorable
Private Debt	Favorable	Moderately favorable	Moderately favorable	Favorable
Private Grants	Least favorable	Favorable	Moderately favorable	Moderately favorable
Public Grants	Least favorable	Favorable	Least favorable	Moderately favorable
Public Loans	Moderately favorable	Favorable	Moderately favorable	Favorable
Specialized Dev. Bank Loans or Grants	Least favorable	Favorable	Moderately favorable	Moderately favorable
Public-Private Partnerships	Moderately favorable	Moderately favorable	Moderately favorable	Favorable
Green Bonds	Moderately favorable	Moderately favorable	Least favorable	Favorable
Blended Finance	Least favorable	Moderately favorable	Moderately favorable	Favorable

Case Study: Mixed Financing to Fund Organic Waste Management in Ningbo, China

- **Initial Context (2009):** 1.19 million tons of waste, mostly landfilled or incinerated.
- **Commitment and Goals:** Ningbo aimed to be a model city with mandatory waste sorting.
- **Funding Sources**
 - Ningbo Municipality: \$172 million for waste management and regulatory support.
 - World Bank: \$80 million loan and technical assistance.
 - Public-Private Partnership: \$24.8 million from private investor for facility development and operations.
- **EPA/GMI collaborated** with the World Bank (2014-2020) to provide technical assistance and capacity building support for the construction and operation of World Bank Funded Kitchen Waste Treatment Plant
- **Project Results**
 - 905,000 households and institutions participated.
 - Achieved 17.5% organic waste separation rate.
 - Biogas production mitigated 50,000 tons of CO₂-equivalent annually.
- **Follow-Up:** Success led to additional World Bank collaboration for plastic waste reduction.



Using the Framework to support investment

- The **Financial Readiness Framework** can bring transparency and standardization to a complex process.
- U.S. EPA seeks to collaborate with stakeholders to implement best practices, including:
 - **Funding Entities & Investors** to encourage adoption and adaptation of the framework to enhance transparency and develop use cases
 - **Municipalities** to integrate best practices into waste management strategies.



Thank You!

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Protection Agency

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Thank You!



Study results and recommendations will be published on globalmethane.org soon!

Questions?

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