



Ministry of Environment
of Denmark
Environmental
Protection Agency



Danish Energy
Agency



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Waste-to-Energy in Lombok, Indonesia

Public instruments to address barriers

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Summary

Most of Lombok's solid waste infrastructure is aging and insufficient to meet the demand for waste services. Basic infrastructure is lacking, and landfills are soon reaching maximum capacity triggering social, economic and environmental problems. Lombok therefore wants to attract private investments into improved solid waste management (SWM) and waste-to-energy (WtE). Meanwhile, a series of barriers has hindered investment activity and these barriers need to be addressed in order to accelerate project development and financing in Lombok.

This presentation zooms in on relevant public instruments, which reduces the barriers of WtE investments in Lombok. The target group of the presentation is public stakeholders involved in the WtE sector locally (NTB provincial level and regional/city level in Lombok) as well as nationally.

The presentation is one of several deliverables under the Sustainable Island Initiative (SSI), which is a government partnership between Denmark and Indonesia focused on advancing sustainable waste management in Lombok and Batam. The barriers and recommendations are based on findings from a thorough data collection process completed in the fall of 2022. It is recommended to also read the main report "Barriers of Waste-to-Energy and how to address them – Lombok, Indonesia" to understand the barriers and recommendations in more detail.

The following pages introduce underlying barriers of WtE in Lombok and present instruments, which have been used in other regions to accelerate investment activity in WtE. The barriers are categorized into four investment criteria: "Social Acceptability", "Financial Viability", "Supporting Structural Conditions" and "Regulatory Framework".



Four supporting conditions provide the foundation for improved SWM and WtE in Lombok

Social
Acceptability



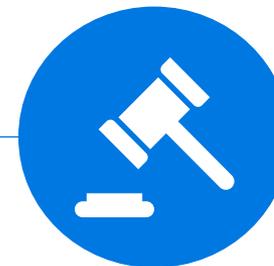
Financial Viability



Supporting structural
conditions



Regulatory
Framework



Social Acceptability

includes making sure that society as a whole sees the value in improved SWM and WtE solutions. Social Acceptability reduces the risk of delays in the project development phase and is likely to increase willingness-to-pay for waste services.

Financial Viability

concerns aspects affecting the financial attractiveness of WtE business cases for investors. This includes guarantees on the main revenue drivers of a project (power price and gate service compensations for waste).

Supporting structural conditions

concerns the availability and functioning of infrastructure and other resources (waste, roads, waste trucks, collection points). Availability of reliable and transparent data on waste and waste services is also a structural supporting condition.

Regulatory Framework

refers to the existence of policies and regulations supporting advanced SWM and WtE as well as certainty on future policies and regulations. It also includes effective legal enforcement mechanisms.



Educational information campaigns will enhance social acceptability of improved SWM and WtE



Barriers

WtE is perceived as polluting and harmful for the environment



Tipping fees are viewed as a form of unwarranted tipping of private enterprises



Fear that the large informal sector (scavengers) will lose their main source of income



The political climate. Other public sectors get higher priority in the political debate and budget allocations.



Instruments

Educational campaigns about the consequences of overfilled landfills and open dumps and the environmental benefits of improved SWM and WtE

Formalize the informal waste sector through internships and education and long-term strategy

Reframing tipping fees to gate fees or waste service obligation fees to change the negative perception of the concept.

Initiate studies and information campaigns on the socio-economic benefits of WtE (job creation, economic development, social welfare, etc.)

Scoring of barriers and their impact on WtE and SWM:



= Awareness



= Critical impact



= Show stoppers



Earmarking of the waste sector in local budgeting is key to addressing the financial gap related to SWM and WtE



Barriers

Insufficient retribution fee level



The pecking order of local budgeting negatively impacts the operation of the waste sector



The gate fee (tipping fee) level is too low for advanced SWM and WtE



Limited autonomy to DLH when it comes to waste sector spending



Instruments

Increase the gate fee for waste handling

National earmarking of budget for the waste sector

Price unit caps should be revisited in order to reflect the operational needs of the waste sector

Introduce a premium gate fee that is specific to landfills (landfill levy)

Increase locally sourced revenue (PAD) through higher retribution rates

Scoring of barriers and their impact on WtE and SWM:



= Awareness



= Critical impact



= Show stoppers



Put and pay guarantee on waste supply and increased support for waste collection will reduce investor risk



Barriers

Lack of basic infrastructure for collection and transfer of waste



Ineffective system for collection of retributions from waste



Low transparency and accountability of waste data



Communities bear a large responsibility for waste collection from households but lack resources and incentives for fulfillment



Instruments

Increased support for waste collection and transport from households to final disposal sites

Provision of put and pay guarantee on waste delivery from the local governments

Alignment of waste data management and reporting.

Reform of the waste retribution system, which enhances incentives and lower administrative costs

Scoring of barriers and their impact on WtE and SWM:



= Awareness



= Critical impact



= Show stoppers



Landfill taxes and landfill bans will create a higher incentive for enhanced SWM and WtE

Barriers



PLN¹ has little incentive and few financial resources to support PLTSA² development



Uncertainty on future regulation concerning subsidies for PLTSA in Lombok



Ineffective government policies concerning waste handling and renewable energy development



Instruments

Removal of price ceiling on PPAs for PLTSA² and introduce national regulation aimed at acceleration of WtE

Emission quota system and carbon taxes could improve the prospects for renewable energy production, including WtE

Landfill ban on recoverable and recyclable waste when alternative technologies are available

Introduce national regulation for acceleration of WtE

Scoring of barriers and their impact on WtE and SWM:



= Awareness



= Critical impact



= Show stoppers

¹ Government-owned corporation which has a monopoly on electric power distribution in Indonesia and generates the majority of the country's electrical power
² Power plants based on municipal solid waste



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