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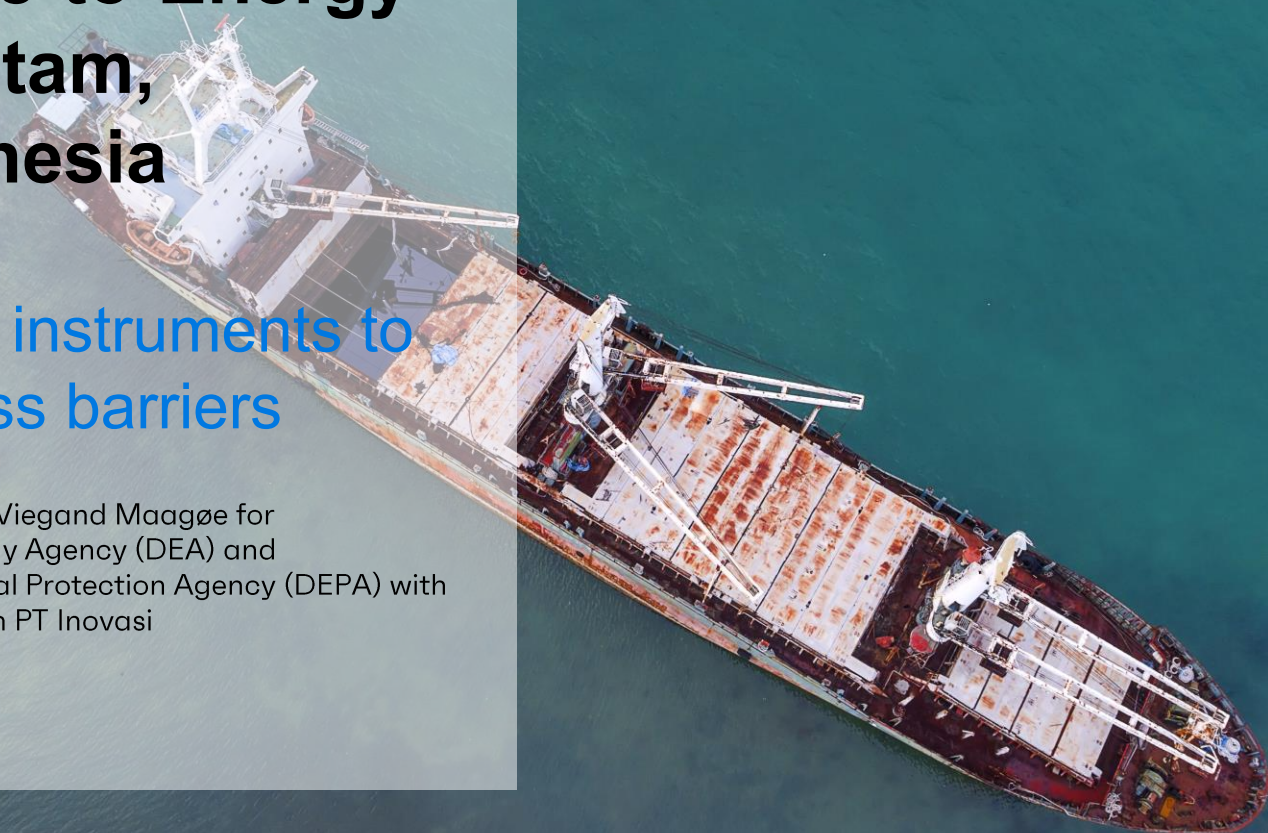
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# Waste-to-Energy in Batam, Indonesia

## Public instruments to address barriers

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## Summary

Batam's system for solid waste management is dominated by landfilling. Meanwhile, TPA Telaga Punggur, which is Batam's only landfill is soon reaching capacity and investments are required to extend the life of the landfill. At the same time, population growth and high economic activity is increasing waste generation in Batam and driving demand for improved solid waste management (SWM) and waste-to-energy (WtE). Batam has worked to attract private investments into improved SWM and WtE since 2012. 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 Batam.

This presentation zooms in on relevant public instruments, which lowers the barriers of WtE investments in Batam. The target group of the presentation is public stakeholders involved in the WtE sector locally (Riau Island Province and Batam City level) 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 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 – Batam – Indonesia" to understand the barriers and recommendations in more detail.

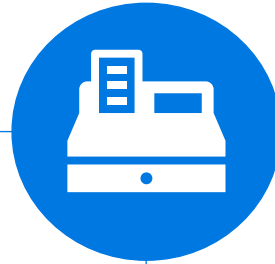
The following pages introduce underlying barriers of WtE in Batam and present instruments, which have been used in other regions to accelerate investment activity in this area. The barriers are categorized into four investment criteria: "Social Acceptability", "Financial Viability", "Supporting Structural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

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

Social  
Acceptability



Financial Viability



Supporting structural  
conditions



Regulatory  
Framework



## **Social Acceptability**

includes making sure that society sees 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 gate fee for waste handling.

National earmarking of budget for the waste sector, which supports more advanced SWM and WtE.

Increase locally sourced revenue (PAD) through higher retribution rates

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

Scoring of barriers and their impact on WtE and SWM:



= Awareness



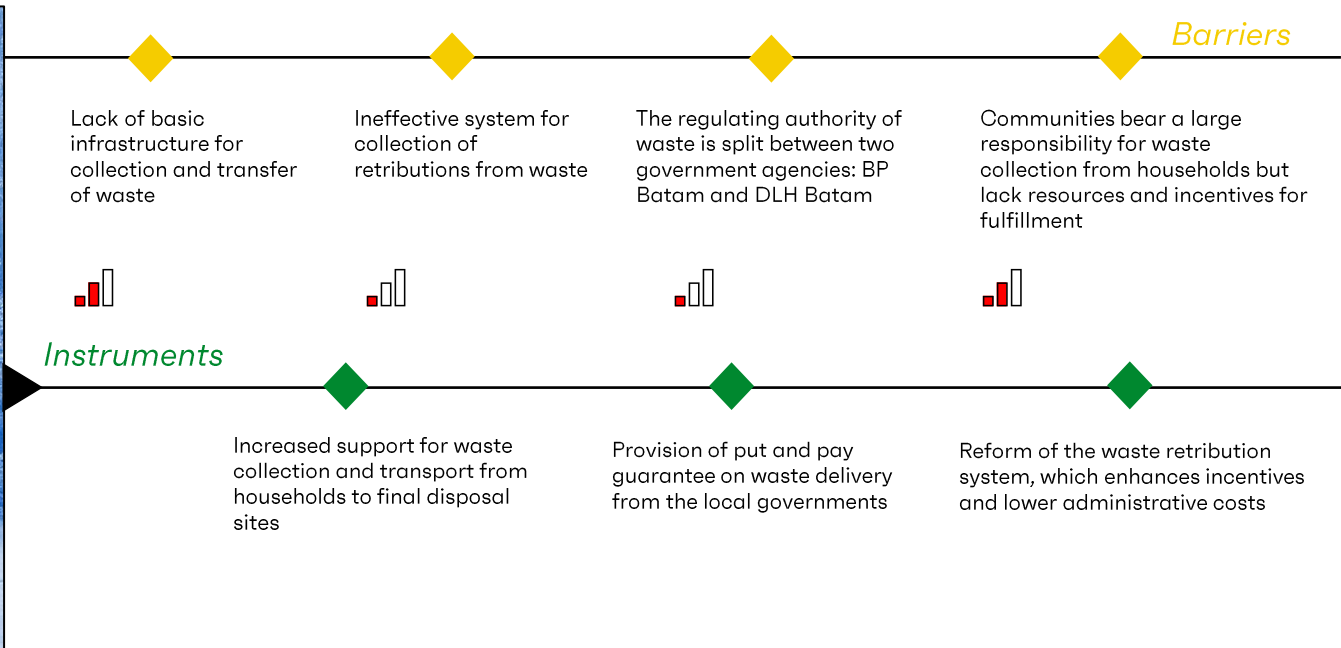
= Critical impact



= Show stoppers



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



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

PLN Batam<sup>1</sup> has no legal obligation nor incentive to support PLTSa<sup>2</sup>



Government subsidies are not available for PLTSa in Batam



Lack of policy support for renewable (incl. WtE) energy generation



## Instruments

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

Introduce a load subsidy for renewable thermal generation

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:



= Show stoppers



= Critical impact



= Awareness



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