

The UN Secretary-General's Advisory Board on Zero Waste

The Utilization of Plastic Bottle Waste as Payment for Public Buses



Zero waste good practice

CityNet

Surabaya, Indonesia

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Table of Contents

Synopsis	01
Stakeholders and Partners	01
Zero Waste	02
Sustainable Development Goals	02
Background, Challenges, Objectives	03
Actions and Implementations	04
Outcomes and Impact	05
Replicability and Scaleability	06
Inclusion and Innovation	06
Accountability and Sustainability	07
Financial Data	07

About

Synopsis

Suroboyo Bus, launched by Surabaya City's local government in 2018, is a public transportation mode that allows passengers to pay using plastic bottle waste instead of electronic payment. This initiative aims to encourage individuals to utilize public transit by providing adequate transportation networks, as well as to raise public awareness of the 3R (reduce, reuse, recycle) actions.



Implementation
period

2018 - now

Country

Indonesia

Location

Surabaya

Stakeholders and Partners: Department of Transportation Surabaya, Department of Sanitation and Landscape Surabaya, Directorate General of State Assets Management Surabaya

Connection to Zero Waste

Plastic waste becomes a resource that can be spent on public transportation, preventing it from being improperly disposed. The policy successfully converts something formerly discarded into something of value and promotes a circular economy.

Contribution to Sustainable Development Goals

Goal 9 – Industry, Innovation, and Infrastructure

The Suroboyo bus project is consistent with SDG 9, particularly in terms of providing inclusive and sustainable infrastructure, also fostering innovation. The use of plastic bottle waste for public payment is an example of public transportation innovation to support the creation of resilient public transportation networks and facilities. This government strategy will also promote urban mobility and improve accessibility.

Goal 11 – Sustainable City and Communities

Suroboyo Bus also follows SDG 11's goal of creating sustainable cities and communities. The availability of adequate and inclusive public transportation and its supporting facilities will encourage individuals to use public transit rather than private vehicles. Reduced usage of private vehicles will result in less traffic congestion and pollution. Furthermore, the provided incentives for utilizing plastic bottle trash will also encourage the public to sort their garbage and raise environmental awareness.

Goal 14 – Life below water It is envisaged that improving public awareness of the environment through collecting plastic bottle trash would minimize community activity in dumping garbage into rivers, which will lead to a waste buildup in the seas and damage aquatic ecosystems. In other words, this project is also relevant to SDG 14 in terms of conserving marine resources. Referring to the explanation above, this project has effectively addressed multiple SDGs, and will significantly contribute to the national scale if this project continues to be maintained, improved, and replicated in other cities in Indonesia.

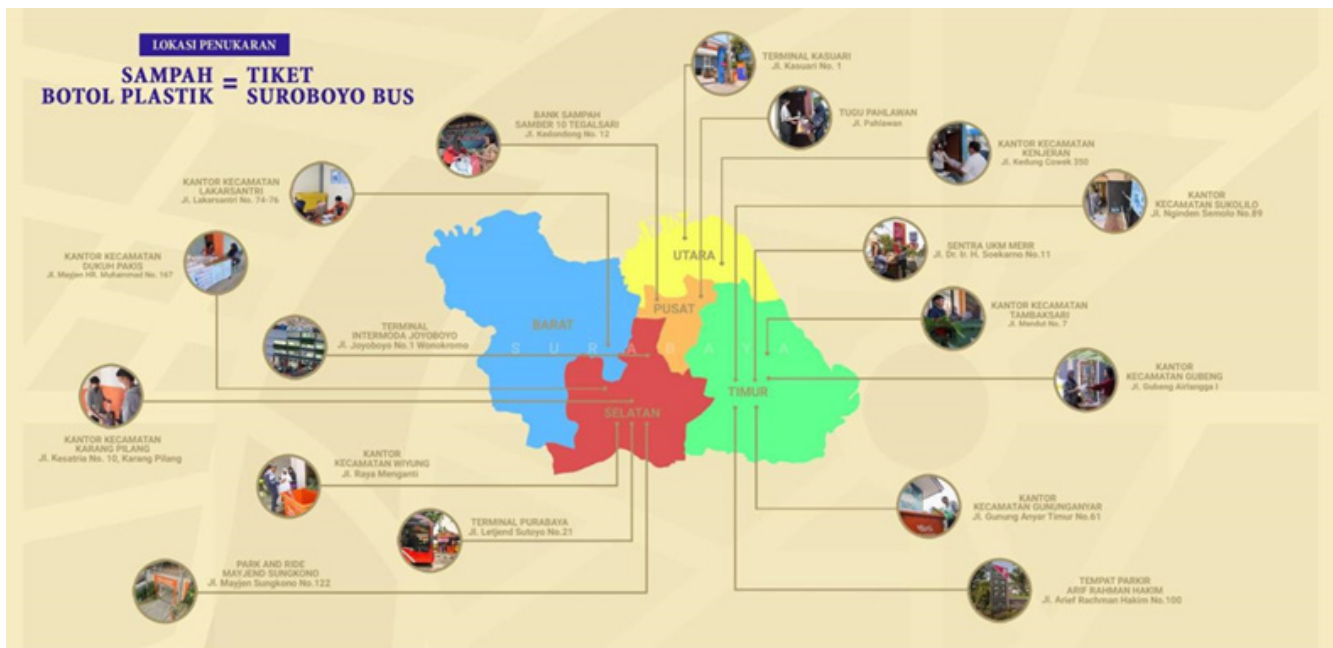
Background, Challenges and Objectives

As the capital city of East Java Province and the second largest metropolitan city in Indonesia with 2.88 million citizens, Surabaya faces several urban issues. In 2017, the city produced 2,166 tons of rubbish per day and 19.4% of which is plastic waste (Nadhifah, N.V, Juliardi, N.R, 2022). The government has difficulty controlling urban waste on the downstream side where environmental awareness is poor and individuals are unwilling to sort their rubbish and discard trash into the river which leads to a decline in environmental quality.

“Surabaya tackles urban challenges with innovation: Suroboyo Bus promotes public transport use and environmental awareness.”

The lack of public desire for using public transportation is also another prominent urban issue in the city. The forecasted mode share of commuter trips, estimated in 2018, explains that only 10.88 people use public transport in Surabaya while the rest prefer using private vehicles. This tendency will result in additional issues like traffic congestion and automobile pollution if the government does not treat it seriously (Herijanto W, 2018).

Therefore, the Surabaya government has been eager to deal with these two problems by initiating a project called Suroboyo Bus in 2018. The initiative has 2 main objectives, which are encouraging people to use public transportation by providing adequate transportation networks and facilities as well as campaigning for the action of 3R (reduce, reuse, recycle) to increase public awareness of the environment through the provision of payment options using plastic bottle waste.



Actions and Implementation

In the actions and implementation chapter, the steps taken to achieve sustainable waste management are outlined.

Operated since 2018, the Surobuvo bus project has carried out many project developments and improvements to increase the service quality, in terms of payment methods, mechanisms, and service routes. A more detailed explanation is as follows:

Payment methods

The payment innovation using plastic bottle waste which is the highlight of the project is carried out with the provisions: to get 1 travel ticket, passengers must exchange it for 3 large bottles (1500ml) or 5 medium bottles (600ml), or 10 small bottles (300ml) or 10 small cups (240ml) of plastic bottle waste.

When it began operations in 2018, the only payment method available was plastic bottle waste exchange, which could be completed on the bus before departure. Recently, additional payment options are available for passengers, such as using electronic cards, QRIS, or accumulating member points in the GOBIS application (Rp.5000/ trip or USD 0.33/ trip)

Plastic Bottle Exchange Mechanisms

At the first implementation of the projects, passengers exchange the bottle waste inside the bus before the departure and they will get the tickets by the assistant. However, As the number of bus users has increased and to avoid the accumulation of waste on the buses, since May 2022 the Surabaya government has decided to abolish waste exchange transactions on buses. Instead, the government has prepared waste exchange posts scattered along the Suroboyo bus route, as shown in the image below. Passengers are required to exchange their waste at the exchange post, then they will get a travel ticket voucher, or they can collect digital member points in the GOBIS application.

Service Routes

Currently, there are 3 bus service routes that accept payments with plastic bottles: Kenpark-Gunung Anyar, Rajawali-Purabaya Terminal, and UNESA-ITS.

Waste Management

The collected waste will be auctioned off and managed by a waste management company and will be considered a source of regional income.

Outcomes and Impact

Data released by the Surabaya government in November 2020 showed a trend of increasing the number of Suroboyo bus passengers in 2018-2019 before the number plunged due to the Covid-19 pandemic.

The head of the Department of Transportation Surabaya, Tundjung Iswandaru, stated that 60 percent of passengers prefer using plastic bottles while the remaining 40 percent of users pay using electronic money (Jawapos, 2022).

In addition, the head of the Department of Sanitation and Landscape Surabaya also revealed that in the period of April 2018 until January 2019, 39 tons of waste bottles worth 150 million rupiahs have been collected. (Kompas, 2019).

Upward trend

Suroboyo bus passengers showed an upward trend from 2018 to 2019, then declined due to the COVID-19 pandemic (Surabaya government data, November 2020).

60%

of Suroboyo bus passengers prefer paying with plastic bottles, while 40% use electronic money (Tundjung Iswandaru, Department of Transportation Surabaya, Jawapos, 2022).

39 tons plastic bottles

From April 2018 to January 2019, 39 tons of waste bottles, valued at 150 million rupiahs, were collected (Department of Sanitation and Landscape Surabaya, Kompas, 2019).

Replicability and Scaleability

The Surabaya Bus project is one of the best practices in Indonesia which can address two urban issues at once, issues related to public transportation and waste management, specifically in Surabaya Indonesia which can potentially be applied and implemented in other places with some considerations, as follows:

Because the project is not profit-oriented, the project requires an amount of investment and maintenance costs. Therefore, the government must be able to bear the financial burden of the project.

To modify people's habits, proper infrastructure must be complemented by education and community engagement.



Inclusion and Innovation

Focusing on public transportation (buses) impacts all levels of the community. Paying for bus fare with plastic waste is a more inclusive payment method for common people. It helps to encourage more ridership on public transportation.

Accountability and Sustainability

The practice is overseen by the local transport authorities. The practices has contributed to increased ridership on public buses, which suggests it can be sustainable in the long term.

Financial Data

The budget of the project is from the local revenues and expenditures budget of the Surabaya Government.

In the year of 2023, the Department of Transportation would receive IDR 78 billion (USD 5,2 million) for the Surabaya Bus Project under the 2023 General Policy on Budget and Priority of the Temporary Budget Ceiling (KUA PPAS). An increase of IDR 8 billion over last year (2022) (Jawapos, 2022).

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