Green Finance Alternatives

Executive Summary

April 2025

ITDP

UK PACT

The Institute for Transportation and Development Policy (ITDP) is a global non-profit organization founded in 1985, headquartered in New York, United States, and focused on promoting sustainable transportation innovation and urban development. For nearly two decades, ITDP Indonesia has provided technical assistance to local governments in Indonesia, such as Jakarta, Semarang, Surabaya, Pekanbaru, and Medan in supporting sustainable transportation development through public transport integration and reform, active mobility enhancement, transit-oriented development (TOD), vehicle electrification, GEDSI, and traffic demand management.

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INTRODUCTION

To reduce greenhouse gas (GHG) emissions, the Government of Indonesia has targeted a GHG reduction of 31.89%, as stated in the Enhanced Nationally Determined Contribution (ENDC). Considering that the energy sector is the largest emitter, with the transportation subsector contributing 25% of total emissions in the energy sector, the initiative to reduce emissions in the energy sector is a strategic step to be taken. One of the strategies to reduce emissions in the energy sector is the efficient use of energy in the transportation sector, which can be implemented through low-carbon transportation.

However, low-carbon transportation delivery faces major financing challenges. According to Indonesia's Country Programme for the Green Climate Fund (GCF) in 2023, Indonesia needs US$294.97 billion in funding to achieve its national emission reduction target by 2030, with 85% allocated to the energy sector, including the transportation subsector. This financing need cannot be met solely from the government's limited fiscal capacity. The government needs alternative and innovative financing schemes that include various parties, especially the private sector.

This document will detail the various funding schemes that can be used to deliver low-carbon transportation infrastructure development. The discussion begins with an overview of low-carbon transportation financing and funding mechanisms that have been implemented in Indonesia, a breakdown of available financing and funding options, and a discussion of implementation gaps and policy recommendations for low-carbon transportation financing and funding schemes in Indonesia, particularly in the Greater Jakarta area.

FINANCING AND FUNDING LOW-CARBON TRANSPORTATION IN INDONESIA

In general, financing is the act of obtaining the initial capital to run an infrastructure project, while funding is the cost that is required periodically, usually during the infrastructure's service life, to operate or recover the initial capital costs. Table 1 further explains the differences between financing and funding.

Table 1. Differences between Financing and Funding

Aspects	Financing	Funding
Purpose	To meet the initial capital cost of project implementation	To meet service costs during operation and maintenance
Return Obligation	Obligation to repay, which can be principal installments, interest, dividends, profit sharing, etc.	It does not always require a direct financial return. Returns can be social/economic, e.g., improved public services or regional economic growth.
Period	Short-term, usually in the construction or asset acquisition phase	Long-term, in accordance with the service life of the infrastructure
Source	· Government bonds · Commercial banks · International financing institutions/agencies · Export credit agencies · Investor	· Subsidies · Grant · Service rates · Tax · Advertising costs · Rental fee

Funding can be differentiated based on the level of administration: from the central government and local government. The central government established funding for projects and operations of public transportation services in the state budget (*anggaran pendapatan dan belanja negara*/APBN). From the APBN, funding can be divided into expenditure (central government expenditure and transfers to regions and village funds—*transfer ke daerah dan dana desa*/TKDD) and financing (foreign loans and grants).

Funding from the local government is essentially similar to the process set up at the central government level. The regional revenue and expenditure budget (*anggaran pendapatan dan belanja daerah*/APBD) sets out funding for transportation services, with APBD revenue sources coming from local taxes, local levies, transfer revenues, and other legal revenues in accordance with laws and regulations.

ALTERNATIVE FINANCING AND FUNDING OF URBAN LOW-CARBON TRANSPORTATION

One factor that plays an important role in the successful implementation of a low-carbon transportation system is a funding scheme that can cover the high initial costs and ensure the sustainability of funding in the long term. Based on a review of various literature studies and consultations with several stakeholders, eight financing and funding options have been developed at the local government level, especially in Jakarta.

1. Full Funding from APBN/APBD

This funding refers to the funding of government projects or programs that are fully covered by the state or regional budget, including the financing of foreign loans or grants that have been agreed to be included in the APBN/APBD, without counting private investment or public-private funding.

2. Regional Loan

It is regional debt financing bound in a loan agreement and not in the form of securities, which results in the region receiving a sum of money or benefits worth money from other parties, which the region is then burdened with the obligation to repay.

3. Public Private Partnership (PPP)

PPP, also known as *kerja sama pemerintah dengan badan usaha* (KPBU) in Indonesian, is a possible cooperation scheme between the government and business entities to provide public infrastructure. The provision of this infrastructure partly or wholly uses business entities 'resources by considering both parties' risks.

4. Blended Financing

It is a financing scheme combining funding sources from various entities, including the government, private sector, donor agencies, and philanthropy, to fund projects with positive social, economic, and environmental impacts.

5. Land Value Capture (LVC)

LVC, also known as *pengelolaan perolehan peningkatan nilai kawasan* (P3NK) in Indonesian, is an instrument to capture the added value of the area owned by the landowner due to government intervention with the justification that the benefits of an investment made by the government must be distributed to the general public.

6. Carbon Trading

It is the buying and selling of carbon by exchanging carbon credits of buyers who produce carbon emissions in excess of the set standard with carbon sellers who are able to manage their carbon emissions.

7. Revenue Earmarking

It is a mechanism whereby revenue generated from a particular source is earmarked to fund a project or initiative. In low-carbon transportation development, revenue earmarking can be applied to revenues generated from toll road taxes, parking fees, or road pricing.

8. Limited Concession Scheme (LCS)

LCS, also known as *hak pengelolaan terbatas* (HPT) in Indonesian, is an infrastructure asset management scheme that improves the operational function of state property (*barang milik negara*/BMN) and/or state-owned enterprises (*badan usaha milik negara*/BUMN) assets to obtain financing through upfront payments for the provision of new infrastructure.

DETERMINATION OF RECOMMENDED LOW-CARBON TRANSPORTATION FINANCING MECHANISMS

To determine which financing and funding alternatives are more suitable to be applied in Indonesia, conducting a multi-criteria analysis is necessary. This analysis is carried out by comparing each financing and funding instrument against several criteria. The criteria set has a weighting that has been determined based on the results of consultations with several stakeholders and opinions from experts, including the Ministry of Home Affairs, the DKI Jakarta Provincial Government, the Committee for the Acceleration of Priority Infrastructure Provision (Komite Percepatan Penyediaan Infrastruktur Prioritas/KPPIP), and the Toll Road Regulatory Agency (Badan Pengatur Jalan Tol/BPJT).

The analysis considers five criteria: regulatory and institutional readiness, the complexity of obtaining financing/funding, private sector participation, and flexibility of the financing period. For each of these criteria, a score on a scale of 1—3 will be given. Higher scores will be given to the most ideal criteria for financing and funding low-carbon transportation in urban areas. Furthermore, it is carried out in the following stages:

- **Elimination stage**, this stage eliminates alternatives that do not involve the private sector in low-carbon transportation financing at all. At this stage, the "full financing from APBN/APBD" alternative is eliminated because it does not involve the private sector in the project financing process.

- **Classification stage**, at this stage, each alternative mechanism is grouped based on the potential investment size of each financing alternative. The classification is divided into three groups, as described in Table 2.

Table 2. Classification Stage of Financing Alternatives

Classification	Financing and Funding Alternatives
Large investment: >Rp1 trillion	Regional loan, PPP, blended financing, HPT
Medium investment: Rp500 billion—1 trillion	LVC, Carbon Trading
Small investments: <Rp500 billion	Revenue Earmarking

- **Assessment stage**, this stage assesses all financing alternatives based on predetermined criteria. The assessment results for each financing and funding alternative are shown in Table 3.

Table 3. Assessment Results of Low-Carbon Transportation Financing and Funding Alternatives

Investing Scale	Scheme	Regulatory and Institutional Readiness	Financing Complexity	Private Participation	Flexibility of Financing Period	Cost of Fund	Total
		30%	20%	30%	10%	10%	100%
Large	**PPP**	**3**	**1**	**3**	**3**	**1**	**2.4**
	LCS	2	2	3	2	1	2.2
	Blended Financing	3	1	2	2	2	2.1
	Loans Regional	3	1	2	1	2	2.0
Medium	**LVC**	**2**	**1**	**2**	**3**	**3**	**2.0**
	Carbon Trading	1	1	3	3	2	1.9
Small	**Revenue Earmarking**	**2**	**2**	**2**	**2**	**3**	**2.1**

The three main mechanisms selected for each investment scale are PPP, LVC, and revenue earmarking, which are considered most effective in supporting the development of low-carbon transportation infrastructure in Indonesia.

PUBLIC PRIVATE PARTNERSHIP (PPP)

PPP is a possible cooperation scheme between the government and business entities in the provision of public infrastructure. PPP aims to meet the need for sustainable funding to provide qualified, effective, and efficient infrastructure by mobilizing private funds. It is expected that an investment climate can be created, which is reflected in the participation of business entities in the provision of infrastructure because these entities will get certainty of return on investment. This certainty can be in the form of periodic payments by the government to the business entity (availability payment) or from tariff fees by service users (user charge).

In its implementation, PPP activities generally consist of four processes covering the planning, preparation, transaction, and management processes, as seen in Figure 1. In the planning stage, in accordance with Regulation of the Minister of National Development Planning/National Development Planning Agency (Peraturan Menteri Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional [Permen PPN/Bappenas]) No. 7 of 2023, it needs to be completed with a preliminary study that includes a strategic study that results in confirmation of the strategic context and a study of infrastructure provision initiatives that results in a PPP form plan, a plan for PPP financing schemes and sources of funds, a PPP bidding plan consisting of a schedule, process, and method of evaluating PPP projects. As for the preparation stage, according to Permen PPN/Bappenas No. 7 of 2023, a pre-feasibility study document that includes a strategic study, economic study, commercial study, financial study, and management study needs to be completed.

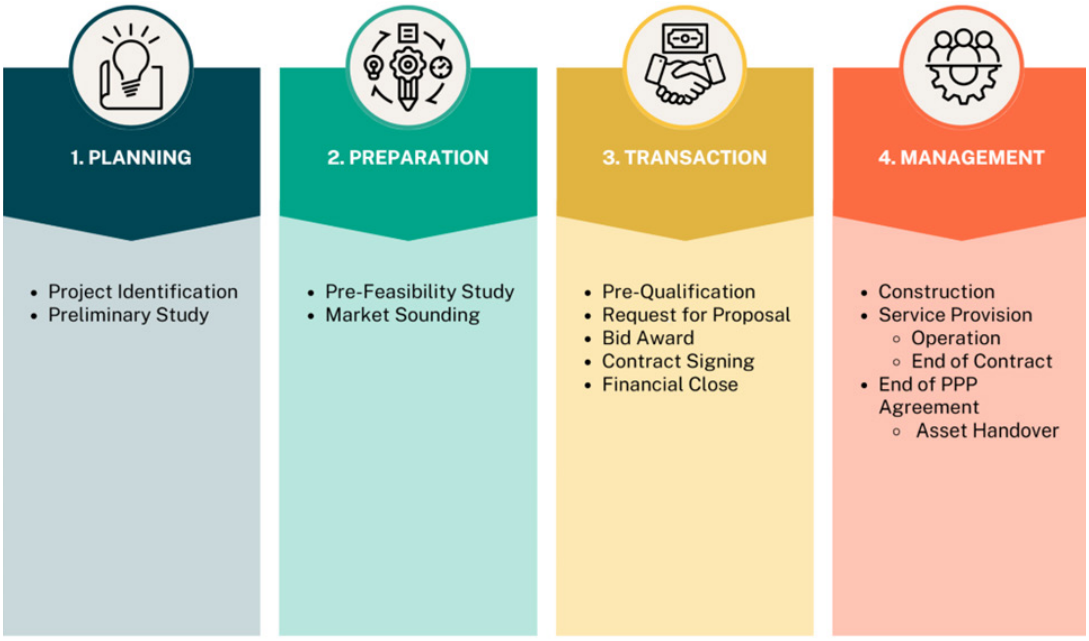

Figure 1. Simplification of PPP Project Stages,

Source: Analysis Result, 2024

Currently, six infrastructure projects are planned to be implemented with the PPP scheme in Jakarta, two of them related to low-carbon transportation infrastructure: Light Rail Transit (LRT) Pulogebang—Joglo, worth Rp24 trillion, and Mass Rapid Transit (MRT) Phase IV (Fatmawati—TMII), worth Rp20.998 trillion. Table 4 summarizes the results of the gap analysis and recommendations for the regulatory framework regarding PPP.

Table 4. Summary of PPP Analysis Results

Implementation Gap	Recommended Regulatory Framework
· Unstructured appointment of assigned stakeholders	· Appointment of mandated stakeholders who handle PPP structurally at the regional level, which is stipulated through a governor regulation (*peraturan gubernur*/pergub)
· PPP projects in Jakarta tend to be technically and financially immature	· Assignment of technical training for officials at the regional level, which is determined through a governor decree
· Long licensing process, as well as uncertainty in the completion of project tenders	· Guidelines for PPP tender procedures, including time fulfillment targets, which are stipulated through a *permen* (Revision of Permen PPN/Bappenas No. 7 of 2023 concerning the implementation of PPP)
	· A detailed mechanism for monitoring and evaluating PPP projects is stipulated through a *pergub* (Revision of Pergub No. 22 of 2018 concerning the implementation of PPP)

LAND VALUE CAPTURE (LVC)

LVC is an instrument to capture the added value of the area owned by the landowner due to government intervention with the justification that the benefits of an investment made by the government must be distributed to the general public. LVC aims to capture the increased value of the area based on government intervention with three main stages known as the virtuous value cycle: value creation, value capture, and value funding.

The implementation of LVC is based on the 'value benefit cycle' framework, which consists of value creation, value capture, and value funding, as per Presidential Regulation (Peraturan Presiden/Perpres) No. 79 of 2024 concerning the LVC

A. Value Creation

Value creation can be done through two initiatives: implementing specific government policies and/or infrastructure provisions. The implementation of specific policies can be done through changes in spatial planning in relation to low-carbon transportation; spatial planning oriented towards transit-oriented development (TOD) can increase the value of the area. Meanwhile, improvement through infrastructure provision can be achieved by developing basic, economic, social, or urban infrastructure.

The condition of value creation in TOD programs undertaken by various public transport operators can be categorized into two main approaches: property-based development and area-based development. Property development prioritizes the construction of flats or apartments on land that is already owned. Meanwhile, area development aims to improve accessibility and overall land use in the TOD area.

B. Value Capture

The value capture process can be carried out on government interventions through changes in land use plans or infrastructure carried out in economic development areas. This provision is stipulated in Perpres No. 79 of 2024, which states that the increase in the value of the area occurs in an area referred to as the capture area. Parties that benefit from the increase in value are referred to as beneficiaries and will be subject to various value-capture instruments.

The implementation of the value capture stage will depend heavily on three main parties: the LVC manager, the area manager, and the DKI Jakarta Provincial Government. LVC managers have a central role in managing the results of funds and LVC development. The managing party can be the regional government working unit (satuan kerja perangkat daerah/SKPD), implementing units with regional financial support functions or regional-owned enterprises (badan usaha milik negara/BUMD).

C. Value Funding

The refinancing phase of the LVC mechanism is an important aspect that ensures the sustainability of project development. Value enhancement results from the development of the area in general through the process of collecting and allocating funds arranged in the regional treasury. The funds obtained can be channeled to the area manager based on the consideration of the LVC manager for the provision of area infrastructure. In Jakarta, BUMD public transportation operators can already get transfer funds from the value creation results of various LVC instruments from LVC managers appointed by the governor.

Figure 2. Example of application of floor area ratio exceedance (*koefisien lantai bangunan*/KLB) instrument to finance walking support infrastructure

The application of LVC instruments for the development of TOD areas has been initiated and carried out, one of which is by PT Intergrasi Transit Jakarta (ITJ) as a subsidiary of PT MRT Jakarta. In 2022, PT ITJ received a development obligation from a private party, PT Melati Anugerah Semesta, who built the Fifty Seven Promenade Apartment, valued at Rp60 billion. This development obligation will be valid until 2028. The DKI Jakarta Provincial Government can direct the development needed with recommendations from PT ITJ as the manager of the TOD area. One of them is infrastructure development in 2022, built by PT Melati Anugerah Semesta in the form of pedestrianization and accessibility improvements around Dukuh Atas MRT Station, with a valuation of Rp14 billion.

Table 5 below summarizes the gap analysis results and recommendations for the regulatory framework regarding LVC.

Table 5. Summary of LVC Analysis Results

Implementation Gap	Regulatory Framework Recommendations
· Institutional governance of LVC manager · Funding of value creation returns to the capture area · Synchronize the provisions of value capture instruments · Limited property development in TOD areas	· The mechanism for implementing the value capture instrument, which is regulated through Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency (Peraturan Menteri Agraria dan Tata Ruang/ Badan Pertanahan Nasional [Permen ATR/BPN]) · Establishment of LVC management institutions (SKPD, Regional Public Service Agency [Badan Layanan Umum Daerah/BLUD], or BUMD), which are regulated through regulations at the regional regulation (*peraturan daerah/perda*) or governor regulation level · Adjustment of the regulatory components of the value capture instrument stipulated in Perpres No. 79 of 2024 (especially related to the form of value creation), which is regulated through a *pergub* (Revision of Pergub No. 31 of 2022 concerning detailed spatial plan [*rencana detail tata ruang*/RDTR]) · Adjustment of space utilization provisions in Jakarta to adjust the needs of area managers, which are regulated through a *pergub* (revision of Pergub No. 31 of 2022 concerning RDTR) · Mandate to refinance the results of funds collected from LVC instruments (an earmarking mechanism), which is regulated through regional regulations assignment of technical training for officials at the regional level stipulated through a governor decree

REVENUE EARMARKING

Revenue earmarking is a mechanism whereby revenue generated from sources is earmarked to fund specific projects or initiatives. In low-carbon transportation development, earmarking can be applied to revenues derived from toll road taxes, parking fees, or road pricing. These revenues are then designated to fund sustainable transportation infrastructure projects, such as developing low-carbon public transportation and pedestrian and cycling infrastructure.

Implementing revenue earmarking aims to ensure consistent and sustainable funding for green initiatives, reducing reliance on limited government budgets. In addition, earmarking can increase transparency and accountability, as the revenue generated is used for predetermined purposes, which often directly impact society.

One of the earmarking applications related to the transportation sector is in Pergub No. 35 of 2023. The regulation stipulates that the revenue from motor vehicle tax (pajak kendaraan bermotor/PKB) and motor vehicle tax revenue-sharing (opsen PKB) is allocated at least 10% for road construction, maintenance, and public transportation development. Despite this stipulation, funding allocation for transportation development in various regions remains minimal and tends to be limited if it only relies on PKB and Opsen PKB revenues.

Revenue earmarking will have a major impact if it is set to be a minimum/mandatory spending allocation from the regional treasury for specific sectors. This mechanism has only been applied to the education sector in accordance with Law No. 20 of 2003, which stipulates a minimum budget of 20% at both the national and provincial levels. Meanwhile, special allocation through the imposition of excise tax can only be applied to cigarette excise tax, which requires 40% of its revenue to be used for the health sector.

Table 6 below summarizes the gap analysis results and recommendations for a regulatory framework on revenue earmarking.

Table 6. Summary of Revenue Earmarking Analysis Results

Implementation Gap	Recommended Regulatory Framework
• Earmarking schemes are challenging to organize at the APBD level and are more likely to be carried out on sectoral policies.	• Regulation mandating the implementation of earmarking in BLUD (draft of traffic demand management [*manajemen kebutuhan lalu lintas*/MKLL] for electronic road pricing [ERP] and parking management), which is regulated through a *perda*.


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