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This report outlines regulatory frameworks for Transjakarta large-scale e-bus deployment to support Government of Jakarta's programs in GHG emission reduction

Building a Regulatory and Financial Basis for Transjakarta First Phase E-bus Deployment

Output 2: Regulatory Framework for Transjakarta's E-bus Deployment

December 31, 2022

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ADB	Asian Development Bank
Antam	PT Aneka Tambang Tbk
APBD	Anggaran Pendapatan dan Belanja Daerah (the Regional Revenue and Expenditure Budget)
APM	Agen Pemegang Merk (Authorised Local Distributors)
APPI	Asosiasi Perusahaan Pembiayaan Indonesia (Indonesian Financial Services Association)
BaaS	Bus-as-a-Service
Bappenas	Badan Perencanaan Pembangunan Nasional (National Development Planning)
BAU	Business-As-Usual
BBNKB	Motorized Vehicle Title Transfer Fee
BC	Boron Carbide
BEV	Battery Electric Vehicle
BI	Bank Indonesia
BMZ	Federal Ministry of Economic Cooperation and Development Germany
BNI	Bank Nasional Indonesia
BP BUMD	Badan Pembinaan Badan Usaha Milik Daerah (Development Agency of Regional-Owned Enterprises)
BPAD	Badan Pengelolaan Aset Daerah (Regional Asset Management Agency)
BPKB	Buku Pemilik Kendaraan Bermotor (Motor-Vehicle Owners' Books)
BPKD	Badan Pengelolaan Keuangan dan Aset Daerah (Jakarta Financial Management Agency)
BPPBJ	Badan Pelayanan Pengadaan Barang dan Jasa (Procurement of Goods and Services Agency)
BPPT	Badan Pengkajian dan Penerapan Teknologi (Assessment and Application of Technology)
BRI	Bank Rakyat Indonesia
BRIN	Badan Riset dan Inovasi Nasional (National Research and Innovation Agency)
BRT	Bus Rapid Transit
BSI	Bank Syariah Indonesia
BSN	Badan Standardisasi Nasional (National Standardization Agency)
BTN	Bank Tabungan Negara
BUMN	Badan Usaha Milik Negara (State-Owned Enterprises)
BUPI	Badan Usaha Penjaminan Infrastruktur (Infrastructure Guarantee Business Entity)
BYD	Build Your Dreams Co. Ltd.
C	Celcius
C40-CFF	C40 Cities Finance Facility
CCTV	Closed-Circuit Television
CEF	Credit Enhancement Facility
CFA	Chartered Financial Analyst

CMEA	Coordinating Ministry for Economic Affairs
CMMIA	Coordinating Ministry for Maritime and Investment Affairs
CNG	Compressed Natural Gas
CO	Carbon Monoxide
Co.	Company
CO_2	Carbon dioxide
CO_2eq	Carbon dioxide equivalent
CTCN	Climate Technology Centre and Network
DAMRI	Djawatan Angkoetan Motor Repoeblik Indonesia
DCKTRP	Dinas Cipta Karya, Tata Ruang, dan Pertanahan (Jakarta Human Settlement, Spatial Planning and Land Affairs)
DFIs	Development Finance Institutions
DKI	Daerah Khusus Ibukota (Special Capital Region of Jakarta)
DPRD	Dewan Perwakilan Rakyat Daerah (Regional People's Representative Council)
DRPLN-JM	Daftar Rencana Pinjaman Luar Negeri Jangka Menengah (List of Medium Term Planned External Loans)
e.g.	for example
EBUS	Efek bersifat utang dan/atau sukuk (Debt Securities and/or Sukuk)
ECA	Exporting Credit Agencies
EoI	Expression of Interest
ERP	Electronic Road Pricing
ESDM	Energi dan Sumber Daya Mineral (Energy and Mineral Resources)
et al.	and others
EV	Electric Vehicle
EVSEs	Electric vehicle supply equipment
FPL	Forum Pengadaan Layanan (Service Provider Forum)
FTV	Financing to Value
GAUN	Gerakan Aksesibilitas Umum Nasional (The National Public Accessibility Movement)
GEDSI	Gender equality, disability, and social inclusion
Gerkatin	Gerakan untuk Kesejahteraan Tunarungu Indonesia (Indonesian Association for the Welfare of the Deaf)
GESI	Gender equality and social inclusion
GGL	Government Guarantee Letter
GHG	Green-house Gases
GIA	Gender Impact Assessment
GoJ	Government of Jakarta
GR	Government Regulation
Himbara	Himpunan Bank Milik Negara (State-Owned Bank Association)
HWDI	Himpunan Wanita Disabilitas Indonesia (Indonesian Association of Women with Disabilities)
i.e.	that is
IBC	Indonesia Battery Corporation

ICE	Internal combustion engine
ICER	Indonesia Certified Emission Reduction (Sertifikat Penurunan Emisi)
ICTT	International Certificate Testing Technology
IDR	Indonesian Rupiah
IIGF	Indonesia Infrastructure Guarantee Fund (PT Penjaminan Infrastruktur Indonesia)
IKD	Incompletely Knocked Down
IKNB	Industri Keuangan Non-Bank (Non-Bank Financial Industry)
Inalum	PT Indonesia Asahan Aluminium
INKA	PT Industri Kereta Api
IPA	Izin Penyelenggaraan Angkutan (City Transport Operation License)
IPPU	Industrial Processes and Product Use
ITDP	Institute for Transportation and Development Policy
IUA	Izin Usaha Angkutan (Transport Business License)
IUPTL	Izin Usaha Penyediaan Tenaga Listrik (Electricity supply business license)
JBB	Jumlah Berat yang Diperbolehkan (Total Allowable Weight)
JBKB	Jumlah Berat Kombinasi yang Diperbolehkan (Total Allowable Combination Weight)
JEA	Jakarta Environmental Agency
JMTEA	Jakarta Manpower, Transmigration, and Energy Agency
JPA	Jakarta Planning Agency
JTA	Jakarta Transport Agency
KBL	Kendaraan Bermotor Listrik (Electric Motorized Vehicles)
KBLBB	Kendaraan Bermotor Listrik Berbasis Baterai (Battery-based electric motorized vehicles)
KBLI 64931	Perusahaan Modal Ventura Konvensional (Conventional Venture Capital Companies)
Kepgub	Keputusan Gubernur (Governor's Decree)
Kg	Kilogram
KIK	Kontrak Investasi Kolektif (Collective Investment Contract)
KKP	Kementerian Kelautan dan Perikanan (Ministry of Maritime Affairs and Fisheries)
Km	Kilometre
Komilet Jaya	Koperasi Mikrolet Jakarta Raya
KPBU	Kerjasama Pemerintah dengan Badan Usaha (Public-Private Partnership)
KPI	Koalisi Perempuan Indonesia (Indonesian Women's Coalition)
KPI	Key Performance Indicators
KRPA	Koalisi Ruang Publik Aman (Safe Public Space Coalition)
KUR	Kredit Usaha Rakyat (People's Business Credit)
KWK	Koperasi Wahana Kalpika
LBH APIK	Lembaga Bantuan Hukum Asosiasi Perempuan Indonesia untuk Keadilan (Legal Aid Institute Indonesian Women's Association for Justice)
LCDI	Low Carbon Development Initiative
LNOB	Leave No One Behind
LRT	Light Rail Transit

LTV	Loan to Value
MAASP	Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency
MAB	PT Mobil Anak Bangsa
MCC	Millennium Challenge Compact
MCSME	Ministry of Cooperative Small and Medium Enterprises
MEMR	Ministry of Energy and Mineral Resources
Mm	Millimetre
MoAASP	Ministry of Agrarian Affairs and Spatial Planning
MoEF	Ministry of Environment and Forestry
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
MoI	Ministry of Industry
MoL	Ministry of Labour
MoT	Ministry of Transportation
MoWECP	Ministry of Women Empowerment and Child Protection
MPWH	Ministry of Public Works and Housing
MRT	Mass Rapid Transit
MSMEs	Micro, Small and Medium Enterprises
MSOE	Ministry of State-Owned Enterprise
MSS	Service Level Agreements
MT	Ministry of Trade
MTCE	Ministry of Tourism and Creative Economy
Mton	Metric ton
NDC	Nationally Determined Contributions
NEDO	New Energy and Industrial Technology Development Organization
NEK	Nilai Ekonomi Karbon (Carbon Pricing)
NMVOC	Non-methane volatile organic compounds
NOx	Nitrogen oxides
O&M	Operation and Maintenance
OEMs	Original Equipment Manufacturers
OJK	Otoritas Jasa Keuangan (Financial Services Authority)
PADG	Peraturan Anggota Dewan Gubernur (Regulation Of Member Of Board Of Governors)
PAYS	Pay as You Save
PBI	Peraturan Bank Indonesia (Bank Indonesia Regulations)
PDF	Project Development Facility
Pemprov	Pemerintah Provinsi (Provincial government)
Perda	Peraturan Daerah (Regional Regulation)
Pergub	Peraturan Gubernur (Governor Regulation)
Permenhub	Peraturan Menteri Perhubungan (Regulation of the Ministery of Transportation)
Perpres	Peraturan Presiden (Presidential Decree)
Perseroda	Perusahaan Perseroan Daerah (the Regional Limited Liability Company)

Pertuni	Persatuan Tunanetra Indonesia (Indonesian Foundation for the Blind)
Pinda	Pinjaman daerah (Regional loans)
PIS	Passenger Information System
PJPK	Penanggung Jawab Proyek Kerjasama (Person-in-Charge of Public-Private
PJS	Perhimpunan Jiwa Sehat Indonesia
PKB	Pajak Kendaraan Bermotor (Motorized Vehicle Tax)
PLN	State Electricity Company
PM10	Particulate Matter 10
PM2.5	Particulate Matter 2.5
POJK	Peraturan Otoritas Jasa Keuangan (Financial Services Authority Regulations)
POLRI	Polisi Republik Indonesia (Indonesian National Police)
PPI	PT. Penjaminan Infrastruktur Indonesia (Indonesia Infrastructure Guarantee Fund)
PPOO	Provide, Privately Owned and Operated
PPP	Public-Private Partnership
PR	Presidential Regulation
Prolegda	Program Legislatif Daerah (Regional Legislation Program)
PSHK	Pusat Studi Hukum dan Kebijakan (Center for Indonesian Law and Policy Studies)
PT TJ	PT Transjakarta
PT	Perseroan Terbatas (Limited Liability Company)
PUG	Pengarusutamaan gender (Gender Mainstreaming)
PUSKAPA	Pusat Kajian dan Advokasi Perlindungan dan Kualitas Hidup Anak (Center on Child Protection and Wellbeing)
PwDs	People with Disabilities
R&D	Research and Development
RBP	Result Based Payment
RDPT	Reksa Dana Pendapatan Terbatas (Limited Participation Mutual Fund)
RoE	Regional-Owned enterprise
Rp	Rupiah
RPJMD	Rencana Pembangunan Jangka Menengah Daerah (Regional Medium-Term Development Plan)
RPJPD	Rencana Pembangunan Jangka Panjang Daerah (The Regional Long-Term Development Plan)
RPJPN	Rencana Pembangunan Jangka Panjang Nasional (The National Long-Term Development Plan)
RPRKD	Rencana Pembangunan Rendah Karbon Daerah (The Regional Low Carbon Development Plan)
RTRW	Rencana Tata Ruang Wilayah (Regional Spatial Plan)
RTRWN	Rencana Tata Ruang Wilayah Nasional (National Spatial Plan)
RUEN	Rencana Umum Energi Nasional (National General Energy Plan)
SDGs	Sustainable Development Goals
SIO-GFF	Sustainable Development Goals Indonesia One-Green Finance Facility
SK	Surat Keputusan (Decree)

SKPD	Satuan Kerja Perangkat Daerah (The Local Government Unit)
SMI	PT. Sarana Multi Infrastruktur
SNI	Standard Nasional Indonesia (Indonesian National Standard)
SO_2	Sulfur dioxide
SOEs	State-owned Enterprises
SPBB	Stasiun Pengisian Bahan Bakar (Bus Filling Stations)
SPBG	Stasiun Pengisian Bahan Bakar Gas (Gas Filling Stations)
SPBKLU	Stasiun Penukaran Baterai Kendaraan Listrik Umum (Public Electric Vehicle Battery Exchange Station)
SPBU	Stasiun Pengisian Bahan Bakar Umum (Public Gas Station)
SPE	Sertifikat Penurunan Emisi (The Indonesia Certified Emission Reduction)
SPKL	Stasiun Pengisian Kendaraan Listrik (Electric Vehicle Charging Stations)
SPKLU	Stasiun Pengisian Kendaraan Listrik Umum (Public Electric Vehicle Charging Stations)
SPPU	Strategi Pengendalian Pencemaran Udara (Air Quality Control Strategy)
SPV	Special Purpose Vehicle
SPV-AP	Special Purpose Vehicle – Anak Perusahaan (Subsidiary)- SPV-AP
SRN PPI	Sistem Registri Nasional Pengendalian Perubahan Iklim (The National Registry System for Climate Change Control)
SRUT	Sertifikasi Uji Tipe Kendaraan Bermotor (Vehicle Test Certificate)
STNK	Surat Tanda Nomor Kendaraan Bermotor (Motor-Vehicle Registration Certificates)
SUT	Sertifikat Uji Tipe (Type test certificate) (Vehicle Type Certificate)
T	Trillion
tCO2eq	Tons of carbon dioxide equivalent
TEB	PT Tri Energi Berkarya
TGUPP	Tim Gubernur untuk Percepatan Pembangunan (Governor's Team for the Development Acceleration)
TKDN	Tingkat Komponen Dalam Negeri (Domestic Component Level)
TNKB	Tanda Nomor Kendaraan Bermotor (Motor Vehicle Number Sign)
TUMI	Transformative Urban Mobility Initiative
TWh	Terra Watt hour
UK PACT	UK Partnering for Accelerated Climate Transitions
UK	United Kingdom
UKEF	UK Export Finance
UKPD	Unit Kerja Perangkat Daerah (Regional Working Units)
ULN	Utang Luar Negeri (Foreign Loans)
UN	United Nations
UNEP	United Nations Environment Programme
UPTAJ	Unit Pengelola Terminal Angkutan Jalan (Road Transport Terminal Management Unit)
USD	United States dollar

UU TPKS	Undang-undang (UU) tentang Tindak Pidana Kekerasan Seksual (Law on Sexual Violence Crimes)
VAT	Value-Added Tax
VGF	Viability Gap Fund
VKTR	PT VKTR Teknologi Mobilitas (EV Technology company)

Executive Summary

As included in their Long-Term Corporate Plan Document, Transjakarta has an ambitious target to electrify 100% of its fleets, equivalent to 10,047 units, by 2030. Through a contract agreement with Mayasari Bakti, one of the private operators under the Transjakarta service, Transjakarta runs 30 low floor electric bus fleets from BYD. Under Business-as-Usual scheme, the operator has to procure all assets required, including the e-bus fleets, charging infrastructures, and connections to the grid. Existing e-bus operators have limited financial capacity to operate the e-bus under the status quo business model hence it is a barrier to achieve the electrification target in 2030.

Several financing institutions showed interest in providing funding for the electrification program. UKEF has formally sent an Expression of Interest (EoI) to support Transjakarta Electrification.

Considering the financial capacity of the operators, the current business model is not suitable for ramping-up the electrification program, thus Transjakarta aims to separate the assets ownership in the context of electrification. Subsequently, 5 (five) fund channelling alternatives were developed to allow financing institutions to participate in the electrification program.

An e-bus implementation phase has also been developed from year 2022 until 2030. However, several issues on technical aspects have been highlighted related to the e-bus implementation phase, e.g., Gross Vehicle Weight (GVW), charging facilities provisions, and e-bus retrofitting.

This report will then assess the regulatory framework to support the electrification target in terms of financing and technical aspects, the gaps, and the most effective proposed solutions to establish a robust regulatory framework to accelerate the electrification program. Legal framework and legal analysis for each fund channelling scheme are demonstrated in this report. Moreover, this report also integrates Gender Impact Assessment into the regulatory framework to mainstream GESI perspectives on the respective regulation. Stakeholder mapping is developed to identify the role and interest of policy makers at national level and subnational level as well as non-policy makers, e.g., e-bus industry players, financing institutions, and public transport passengers as the user of e-buses.

Methodology

In order to assess the regulatory framework of Transjakarta electrification, consultations with relevant stakeholders were conducted to gain input and relevant information as well as reaffirm the most suitable interventions needed from the regulatory perspectives. A further assessment was also done on each type of regulations that could serve as an initial, practical, and feasible legal intervention for the Transjakarta Electrification.

Through discussions with Government of Jakarta and Transjakarta, it is found that the electrification program requires a strong regulatory framework to ensure its effective implementation. Through desktop research and stakeholder consultations with Government Agencies and e-bus industry players, current regulations and bills that are in the pipeline related to Transjakarta Electrification have been identified. Those regulations are also analysed to ensure their alignment with the target of 10,047 e-bus in year 2030 that has been committed by Transjakarta.

Similarly, a regulatory framework assessment on financial and technical aspects is also developed largely from desktop research. To ensure that no one is left behind on the electrification program, a participatory workshop with vulnerable groups was conducted to gather their input on the regulatory framework assessment.

Regulatory Framework for Transjakarta Electrification

From the analysis on the regulations at the national and regional level, **Governor Decree (Keputusan Gubernur) could be put as the initial legal basis to support the electrification of 10,047 fleets in 2030.**

The Government of Jakarta has issued Governor Decree 1053/ 2022 where ITDP participated in the provision of legal and technical inputs during the formulation of the decree. However, Government Decree 1053/2022 requires a stronger regulatory framework to support the electrification program.

Through the desktop research and discussions with stakeholders, it was identified that there are several regulations related to Transjakarta electrification. There are three existing regulations at the regional level, two existing regulations at the national level on carbon-pricing, four regional bills in the pipeline or Drafts of Regional Regulations (*Raperda*), and one Governor Regulation bill in the pipeline on Air Quality Control Strategy.

From the assessment, the Transjakarta electrification target stipulated in The Governor Regulation Bill needs to be adjusted since the regulation bill only target 40 electric bus fleets (non-microbus) to be deployed each year from 2022 - 2030, which translates into only 360 electric buses in 2030 operating under the Transjakarta services. This deployment target is not in line with the electrification target of 10,047 e-bus fleets in 2030, where 4,000 of them are non-electric microbus.

Moreover, to ensure Transjakarta Electrification Program's sustainability, and to secure its financing from foreign loans, large-scale electrification requires regulation on the national level that should be incorporated into the National Planning Agency's Blue Book and—further—Green Book.

Regulatory Framework Assessment of Transjakarta's Electrification from Financial and Business Aspects

The legal analysis of five fund channelling alternatives have been conducted. **The analysis result is that all fund channelling schemes are legally doable.** Moreover, there are several things to be highlighted from result of legal analysis:

- To execute the Scheme A-1 (Regional Loan), Transjakarta could not become the lender hence they need to request The Government of Jakarta to issue the loan proposal. Moreover, the proposal needs to be approved by Regional People's Representative Council (DPRD) first.

- To execute the Scheme A-2, in addition to getting approval from DPRD and the involvement of The Government of Jakarta, PT. SMI needs to issue bonds or other financing instruments to the capital market.
- To execute the Scheme A-3, Transjakarta (through the Government of Jakarta) needs to get a Government Guarantee Letter (GGL), from the Ministry of Finance/Indonesia Infrastructure Guarantee Fund (IIGF). To obtain the GGL, the Government of Jakarta needs to have a regress agreement with MoF or IIGF.
- To execute the Scheme B-1, private sectors need to have a loan agreement with foreign commercial banks and need to take into account Indonesian Central Bank Regulations No. 16 of 2014 ("**PBI 16/ 2014**") regarding non-bank corporations that have foreign loans (*Utang Luar Negeri/ "***ULN**"), in which there needs to be an assessment on the liquidity ratio. On Scheme B-1A, the operators will obtain loans from local commercial banks hence they need to pay attention to their bankability.
- To execute the Scheme B-2, private sectors will issue financing instruments, in this case Limited Participation Mutual Fund (*Reksa Dana Pendapatan Terbatas*, "**RDPT**"). Transjakarta must have a contract agreement with an investment manager and an e-bus project management agreement with the SPV Holding Co. Private sectors will be issuing the financial products to the capital market. Moreover, three alternatives of structured financing have been developed. Each alternative requires different contractual frameworks or agreements.
    - On the first structured financing alternative, SPV Holding Company will enter into purchase agreement with manufacturers, so that the legal requirement is only a contractual document between The SPV and manufacturers.
    - On the second structured financing alternatives, SPV acts as a financial intermediary and has an agreement with leasing companies. Leasing companies will enter into purchase agreements with manufacturers and provide the assets needed to bus operators through financial lease agreements.
    - On the third structured financing alternatives, instead of having agreement with leasing companies, SPV will leverage lease the assets to leasing companies.

Furthermore, there are three regulatory barriers to Transjakarta electrification from business and financing aspects, such as:

- **Leasing scheme and the separation of asset ownership and operations**. The current regulation requires operators to have at least five fleets.
- **Bankability of Transjakarta Electrification project**. If The Government of Jakarta issues Regional Loan, double bookkeeping will potentially occur because The Government of Jakarta provides an annual subsidy to Transjakarta as well as using the Regional Budget for the repayment of the loan.

- **E-Bus operators open competition to enhance the Value of Money**. Based on the current regulations, the quota allocation to private bus operators is exclusive which does not reflect the fair competition to get the best operators. With this predetermined allocation, competition to get the best operators will be limited.

Regulatory Framework Assessment of Transjakarta's Electrification from Technical Aspects

The technical aspects that need to be supported by a strong regulatory framework is assessed based on the implementation phase and market research. Some key points on the technical requirements are highlighted, such as:

- There needs to be a clear regulatory framework on **e-bus retrofitting**, as Transjakarta aims to retrofit its existing diesel fleets from 2025 onwards. The existing regulations regarding the conversion of diesel to electric fleets have not clearly defined the maximum vehicle life span after being retrofitted and the licence, brand, and guarantee of a retrofitted vehicle.
- There is also a gap in the regulation regarding the **Gross Vehicle Weight (GVW)** maximum requirement. Compared to the similar ICE model, the current regulation will reduce the number of passengers that can be carried in the e-bus, limit the battery capacity, hence increasing the replacement ratio.
- The technical standardisation on **pantograph charging** as recommended on the implementation phase has not been regulated yet.

Gender Impact Assessment on The Regulatory Framework

Understanding the importance of no one left behind principles, the analysis of Gender Impact Assessment ("**GIA**") is conducted on seven existing regulations and five pipeline bills regarding electrification.

From the analysis, the **vulnerable groups' safety must be guaranteed** in all aspects while implementing bus electrification through universal design specifications, inclusive SLA, and reducing risk of batteries. To minimise possible threats and issues throughout the electrification process, the GESI approach should be examined by **ensuring that existing operators and their current staffs can join the future e-buses system**. GESI impact in larger society can be anticipated by **adding more articles and/or verses to the regional regulations crossing the issues of e-bus routes and land uses**.

1. Introduction

1.1. Background

Transjakarta, the most extended BRT system in the world that its corridor spans around 230 km across the road of Jakarta and its surrounding cities, consists of several types of services: BRT, non-BRT (including direct services and low entry bus routes), Border Routes, Affordable Housing Route, Mikrotrans, and Public Assignment Routes.

Until 2020 (pre-COVID), Transjakarta has operated 4,079 units of ICE buses with the support of third-party operators (either private or state-owned). In operation, not all of the fleets are owned by Transjakarta. Some of them are operated by bus operators, either private or state-owned, either a company or a cooperative. Almost all of the Transjakarta fleets still use ICE engines and get energy from diesel, gasoline, or CNG. 2018 data shows that buses in Jakarta contributed to 45.72% and 21.43% of CO_2 emissions and air pollutants by transport mode, respectively. To tackle the negative effect of the transportation sector on the environment, The Government of Jakarta has already exhibited its commitment by electrifying its fleets.

Transjakarta runs 30 electric rolling stock from BYD under their system—less than 1% of the total fleets. Transjakarta aims to procure another 44 electric bus fleets this year, on its way to having 100 fleets pilot e-bus target as stated on the Government of Jakarta's action plan on the Fossil-Fuel-Free-Streets Initiative Declaration under the C40 Cities. Other than that, four other electric bus manufacturers have already participated in the pre-trial phase of Transjakarta electrification commencing in early June 2022: Skywell, Zhongtong, Golden Dragon, and Mobil Anak Bangsa, following the pre-trial phase for BYD and Higer E-Bus that has been taken respectively in 2020 and 2021. Transjakarta estimated that USD 2,451M must be secured to electrify more than 10,000 electric buses in 2030.

However, the ambitious electrification target is still hampered by the lack of numerous supportive regulations at the national and provincial levels. This report will assess the regulatory framework in place to support the electrification target in financing and technical aspects, the gap analysis, and the most effective proposed solutions to establish a robust regulatory framework to expedite the electrification program. Moreover, this report will also integrate Gender Impact Assessment into the regulatory framework to mainstream GESI perspectives on the concerned regulations. Stakeholder mapping will be performed to identify stakeholders involved in the formulation of regulation and to spot strategic stakeholders to be consulted to gather the mid-input of the regulatory framework assessment and to present the final recommendation of the regulatory framework.

Before conducting a very comprehensive regulatory framework assessment, the information and initial analysis regarding the business, financial, and contractual aspects of Transjakarta electrification and the technical aspects need to be provided. Thus, disposition of this report needs to also rely on inputs from the technical and finance team.

1.2. Objectives and Scopes of The Report

As a continuation of a comprehensive policy recommendation developed in the previous phase of the project, ITDP developed this report is developed to assess regulatory frameworks necessary to implement Transjakarta's large-scale electrification by 2030 ("**Transjakarta Electrification**"). Compared to the previous project, which is more holistic in overseeing all policy supports needed at the national and sub-national levels, this report will focus on more specific regulations to support Transjakarta Electrification.

This report will address the primary interventions needed in the form of regulatory framework for Transjakarta Electrification focusing on three aspects:

i. **Regulatory framework for large-scale electrification;**
ii. **financing aspects; and**
iii. **technical aspects**.

In addition, the regulatory framework assessment will be equipped with Gender Impact Assessment on the Regulatory Framework and updated stakeholder mapping to identify the roles of actors involved in Transjakarta's electrification.

1.3. Outline of The Report

This report will be divided into eight parts. The first and second parts discuss the background of the regulatory framework assessment and the methodology used. Section three will examine the regulatory framework assessment for mainstreaming large-scale electrification into a robust legal basis. The next chapter discusses the regulatory framework assessment of Transjakarta's electrification from finance and business aspects. The regulatory framework assessment of Transjakarta's electrification from technical aspects is analysed in the next chapter.

Chapters 6 and 7 examine the Gender Impact Assessment (GIA) on the regulatory framework and Stakeholder Mapping of Transjakarta's electrification.

The conclusion and action taken from the regulatory aspects to support the electrification implementation is summarised in the last chapter.

2. Methodology

The regulatory framework assessment aims to evaluate the most suitable intervention on existing regulations, planned regulations in the pipeline, or new proposed regulations which serve as enablers to the Transjakarta Electrification. The assessment is taken on three areas: general legal basis, financing, and technical aspects. Evaluation on the regulatory supports with less requirements and already in alignment with other relevant regulations which will enable to move faster the acceleration of Transjakarta Electrification implementation has been developed. Gender Impact Assessment on the regulatory framework will also be analysed to ensure no one is left behind on the electrification from the regulatory perspective.

Several methods have been taken to evaluate the most suitable regulatory interventions, such as consultations with stakeholders—including Transjakarta, desktop research, participatory workshops, and audience meetings.

2.1. Consultations with Stakeholders

Discussions with several stakeholders, including Transjakarta, were conducted to get input and relevant information and reaffirm the most suitable interventions needed from the regulatory perspectives, as Transjakarta will become the electrification project implementer.

Consultation with Transjakarta to get the information on their current electrification target, their progress on getting financing from external sources, their financing mechanisms, and the technology selected for the e-bus has been conducted.

From the consultation with Transjakarta, it is discovered that:

i. Transjakarta has adjusted its electrification target to the more realistic timeline. Previously, they aimed for 50% electrification in 2025, but now, they postponed it two years to 2027.

ii. Transjakarta aims to achieve the 100% of electrification target (equivalent to 10,047 fleets) in 2030[1]. **This figure had been incorporated in Transjakarta Long Term Company Plan (***Rencana Jangka Panjang Perusahaan*, **"RJPP") 2020 - 2030, but needs to be stated in a legally binding regulation(s)** to strengthen the commitment to achieve the 100% electrification target.

iii. Transjakarta has conducted several discussions with financing institutions interested in providing funding for the electrification programmes, such as with Asian Development Bank (ADB), PT. SMI (PT. Sarana Multi Infrastruktur), UKEF (UK Export Finance), Macquarie, and Indonesia Infrastructure Guarantee Fund (IIGF, or PT. Penjaminan Infrastruktur Indonesia, "PT. PPI"). UKEF has sent an Expression of Interest (EoI) to support the funding of Transjakarta electrification.

[1] Transjakarta Long Term Company Plan 2020 – 2030.

iv. Transjakarta aims to issue green bonds on London Stock Exchange as equity supports Transjakarta's electrification. However, more analysis needs to be conducted to access the eligibility of Transjakarta to issue the bonds.

v. Given a high capital cost as an issue possessed by bus operators, Transjakarta aims to separate the assets ownership and the e-bus. It will result in bus operators do not have to procure such assets. However, it leads to consequences on providing the bus operators the assets needed through leasing (e.g., Bus-as-a-Service scheme) or other possible schemes.

In addition, a series of stakeholder consultations with financing institutions, original equipment manufacturers for e-bus and chargers, bus operators, and retrofitting companies has been conducted. **The results and points taken from the stakeholder consultations are summarised in Output 3.1. Report on Market Analysis**.

2.2. Desktop Research

The desktop research is taken to oversee the following:

1. Policy recommendations have been made on other electrification projects, including the previous EUM 124 project—to avoid redundancy in the analysis or to elaborate regulations that have been taken into account in the project's first phase if needed.
2. Related regulations that will be assessed on the Regulatory Framework Assessment.
3. Regulation hierarchy on the national and regional level to assess and analyse regulatory framework, and possible interventions for expediting Transjakarta's electrification

The hierarchy of Indonesian regulation is as follows[2]:

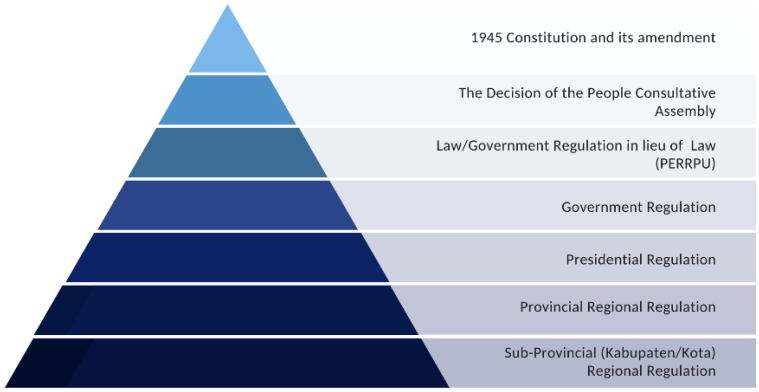

Figure 1. The Hierarchy of Indonesian Regulations

[2] Law No 12 Year 2011 as lastly amended by Law No 13 Year 2022

As Indonesia adopts the principle of regional autonomy where regional government is entitled to, has the authority and the obligation to regulate and cater for its own government affairs and its local citizen within the united system of the Republic Indonesia. Thus, the regional government can issue regional regulation, both in the Provincial and Sub-Provincial level, to further regulates its own government affairs and the interest of its local citizen by observing higher regulations. For the case of Government of Jakarta (GoJ), assessment on the regulatory framework for Transjakarta large scale e-bus deployment to support GoJ emission reduction shall cover all the above regulations, especially in transportation and finance sectors. In the regional level, the assessment will assess the local implementing regulation issued for the e-bus deployment in Transjakarta services as follows:

a. Regional Regulation (*Peraturan Daerah*, "Perda").

Regional Regulations are laws on the regional level and placed first in the hierarchy of regional regulation products and serve as a reference for the following regulations. The Regional People's Legislative Council (*Dewan Perwakilan Rakyat Daerah,* "DPRD") forms regional regulations with the joint approval of the regional head (Governor/ Regent/ Mayor).
Planning for the drafting and enacting of the Regional Regulation is carried out in the Regional Legislation Program (*Program Legislatif Daerah,* "Prolegda"). The initiating SKPD or UKPD is responsible for preparing the regional regulation draft stipulated in the Prolegda using the regional regulation concept contained in the Academic Paper's attachment. The DPRD or the regional head can prepare the regional regulations draft. Suppose the Regional Head and the DPRD both submit a regional regulation draft with the same material during the same session. In that case, the regional regulation draft from the DPRD is discussed, while the Regional Head's regional regulation draft is used for comparison.

The planned regional regulations need to be stipulated in the Regional Regulation Formation Program (*Program Pembentukan Peraturan Daerah*, "Propemperda"). Through Propemperda, The Jakarta People's Legislative Council has set to enact 35 Regional regulations in 2023[3]. Regional regulations' contents relate to implementing regional autonomy and co-administration tasks, accommodating special regional conditions, or elaborating on higher laws and regulations. Due to its laborious process, regional regulations usually require issuing longer durations and must comply strictly to the legislative drafting process as per Law 12/2011. In the event the executive government a regional level or the DPRD wish to submit a draft bill to the Propemperda after the Propemperda is issued, then such addition to the Propemperda must fulfil[4]:

i. To overcome extraordinary situation, conflict or natural disaster;

[3] https://dprd-dkijakartaprov.go.id/dprd-dki-tetapkan-35-propemperda-di-tahun-2023-ini-rinciannya/, accessed in 2022.
[4] Article 16 (5) of the Regulation of Ministry of Home Affairs (MoHA) No. 120 year 2018 concerning the Regional Legislative Drafting

ii. To follow up a certain cooperation with other party;
iii. To overcome a certain other situation which requires the urgency of the bill to be issued as agreed by the unit in DPRD specially managing the Legislative drafting and other unit managing legal division in the regional government; and
iv. To fulfil the mandate of higher regulation.

2. Governor Regulation (*Peraturan Gubernur,* "Pergub").

Materials of The Governor Regulation's content includes materials mandated by higher laws and regulations and materials necessary to carry out the authority to administer the regional government. Governor regulations will be recognized and have binding legal force if they are ordered by higher laws or regulations or are formed on authority.

The Governor has the authority to create Governor Regulations based on higher laws and regulations (in this case, including Provincial Regulations) or based on the Governor's authority. After being reviewed, the Governor's Regulation must be submitted to the Directorate General of Regional Autonomy of the Ministry of Home Affairs[5]. The Government of Jakarta formulated a list of government regulations to be issued each year through the Jakarta Regional Secretary Decree a year before the plan is implemented. For example, the list of Governor Regulation Plans that will be ratified in 2022 is set on Regional Secretary of GoJ Decree No. 150/ 2021 concerning the Jakarta Governor Regulation Formation Program 2022 ("Sekda Decree 150/2021")[6].

3. Governor Decree (*Keputusan Gubernur*, "Kepgub").

A Governor's Decree is a concrete, individual, and final stipulation to carry out orders of laws and regulations or to carry out regional government authority. The Head of SKPD or initiating UKPD can make a plan for drafting a Governor's Decree based on a Governor's order or delegation from the provisions of laws and regulations.

4. Governor Instruction (*Instruksi Gubernur,* "Ingub").

The Governor's Instruction is an internal government organization instruction that is not binding on the general public. The Governor uses Governor Instruction to direct the actions of the institutions under his control.

5. Head of Agency's Decree (*Surat Keputusan Kepala Dinas atau Kepala Biro,* "SK Kepala Dinas" or "SK Kepala Biro").

A decree from the head of the provincial agency is a personal, final, and concrete decision, which can be issued within the Head of Agency authority in accordance with prevailing regulations.

[5] https://sippn.menpan.go.id/pelayanan-publik/jawa-barat/biro-hukum-dan-ham/penyusunan-dan-perancangan-peraturan-gubernur, accessed in 2022
[6] https://ppid.jakarta.go.id/show/asset/Rancangan-Peraturan-Perundang-undangan-Pemerintah-Provinsi-DKI-Jakarta-2022, accessed in 2022

2.3. Participatory Workshops

The participatory workshops will invite vulnerable groups, including women, children's representatives, and People with Disabilities (PwDs). It aims to ensure their voices are captured when developing the regulatory framework assessment process, especially on the impact of the regulatory aspects that so far will benefit from them or potential unfavourable effects if their voices are not captured when planning the respective regulations related to e-bus.

2.4. Audience Meetings

The audience meeting was held to gather mid-output and final recommendations on the regulatory framework for the decision-makers. ITDP has presented the proposed regulatory interventions to the Government of Jakarta, including The Undersecretary for Economic Affairs and Finance in the office of the Governor of Jakarta, the Jakarta Transport Agency, and other relevant agencies under the Government of Jakarta has been presented.

3. Regulatory Framework for Transjakarta Electrification

Transjakarta has set out its commitment to large-scale electrification on their Long-Term Company Plan (*Rencana Jangka Panjang Perusahaan*, "**RJPP**") 2020 – 2030. However, since RJPP is not a legally binding document to society. Considering that the electrification Transjakarta is a Regionally Owned Enterprise (ROE) under the Government of Jakarta which is given mandates to operate road-based public transportation in Jakarta, coupled with electrification is a shared commitment to reduce greenhouse gases to tackle the dangerous global warming, the electrification needs to be specifically supported by regulations on regional and national levels, which will be discussed in this section.

3.1. Electrification of 10,047 Transjakarta Fleets by 2030

Transjakarta aims to electrify 100% of its fleet by 2030, which equals to 10,047 electric bus fleets. To be able to realize the target, Transjakarta needs a firm policy commitment from the government to ensure that the government commit the budget to implement Transjakarta Electrification. Based on several stakeholder sessions, the concrete plan for electrification of 10,047 Transjakarta fleets by 2030 had not been properly documented, and thus ITDP has assessed that. Therefore, this study analysed a **Governor Decree (*Keputusan Gubernur*) serves as an initial, practical, and feasible intervention for the Transjakarta Electrification.** A Governor Decree (*Keputusan Gubernur or Kepgub*) is a written determination of a state administrative body or individual setting out a certain state administrative act pursuant to prevailing regulation, which shall be concrete, individual, and final in nature, thus giving rise to legal effect to a certain individual or entity[7]. By considering the nature of a state administration decree, ITDP participated in the provision of legal and technical inputs in the formulation of a Governor Decree for Transjakarta Electrification, which was successfully issued on 14 October 2022 as Governor Decree Number 1053 Year 2022 concerning the Guidance for the Acceleration of the Use of Battery Electric Vehicles ("**e-bus**") in Transjakarta Public Transport Services ("**Governor Decree 1053/2022**") is conducted.

Governor Decree 1053/2022 establishes the following directions for The Government of Jakarta's commitment in Transjakarta Electrification by:

1. Guidelines for Accelerating the program of using battery electric vehicles under the Transjakarta services, one of which is implemented through:
   a. Accelerating the use of 10,047 (ten thousand forty-seven) battery electric buses in Transjakarta transportation services until 2030.
   b. Procurement and/ or financing of activities to accelerate the program of using battery electric vehicle for public transport services in Jakarta Province.

[7] Article 1 (9) of Law Number 51 Year 2009 on the Second Amendment of Law Number 5 Year 1986 on the State Administrative Court

2. The acceleration of the program for the use of battery electric vehicles in Transjakarta services contains the following main activities:
   a. Transitioning from conventional vehicles (diesel, petrol, and compressed natural gas fleets) to battery electric vehicles into Transjakarta Services gradually, starting in 2022;
   b. Achievement of the realisation target of the transition, with provisions;
      i. by 50% (fifty percent) in 2027 relative to the number of Transjakarta fleets in operation that year; and
      ii. by 100% (one hundred percent) by 2030.

3. Charging infrastructure for battery electric buses will be provided for the overnight charging, opportunity charging, or other types of charging technology at depots, terminals, or other locations in accordance with statutory provisions. Potential charging locations will be inventoried on Regional Owned Enterprises' assets or on other location.

4. Procurement and/ or financing of the acceleration of the Transjakarta battery electric vehicles deployment program contains the main activities:
   a. Procurement and/ or financing of Transjakarta operator is carried out with the Rupiah per kilometre scheme.
   b. Procurement and/ or financing of battery electric vehicle can be carried out by Transjakarta operators or with other financing schemes in accordance with the provisions of laws and regulations by ensuring the efficiency and effectiveness of the use of the revenue and expenditure budget of the Government of Jakarta.
   c. Procurement and/ or financing for charging infrastructure of battery electric buses is carried out in accordance with the provisions of laws and regulations.

5. Assign agencies or units under the Jakarta Provincial Government to prioritise, review, and succeed the accelerating the Transjakarta electrification program.

Governor Decree 1053/2022 refers to several policies and legal basis considerations as set out in the following higher regulations:

Table 1. Legal Basis Considerations for Governor Decree 1053/ 2022

Regulations	Aspect of the regulations
Presidential Regulation No. 55/ 2019	The Acceleration Program of Battery Electric Vehicle for Road Transportation
Governor Regulation No. 96/ 2018 amended by Governor Regulation No. 74/ 2021	The Integration of Feeder into the Bus Rapid Transit System
Governor Regulation No. 90/ 2021	Low Carbon Development Plan for a Climate Resilient Region
Governor Regulation No. 25/ 2022	Jakarta Regional Development Plan 2023 - 2026

However, since the above-mentioned regulations provide mainly policies and guidance, **Government Decree 1053/2022 requires strong regulatory framework to ensure its effective implementation**.

3.2. Regulatory Framework for Transjakarta Electrification

Regulatory framework for Transjakarta Electrification means a framework consisting of all regulations in effect which provide the related legal basis for the implementation of the electrification. The regulatory framework is composed of the following:

a. Transjakarta regulations, which are relevant regulations regarding Transjakarta, as Regional-owned enterprise (RoE), BRT System Manager and The Government of Jakarta's public transport operator that is responsible for the provisions of Transjakarta Transportation Services ("**Transjakarta Regulations**").
b. Regulations regarding mandates of electrification, as well as climate mitigation and Green House Gases Reduction ("**Climate & Electrification Regulations**").
c. Finance regulations, which mean regulations relating to the financing of Transjakarta Electrification ("**Financing Regulations**"), which will be further elaborated in Section 4 of this report.
d. Technical regulations, which mean regulations relating to the technical aspect of battery electric vehicle in general and E-bus specification for Transjakarta Electrification ("**Technical Regulations**"). Technical Regulation will be further elaborated in Section 5 of this report.
e. GESI regulations, which mean regulations related to Gender Equality and Social Inclusion for Transjakarta Electrification ("**GESI Regulations**"). Those regulations will be further identified in Section 6 of this report.

The regulatory framework for Transjakarta Electrification can be described as follow:

Table 2. Transjakarta Electrification Regulatory Framework

Category	Regulation	Aspect of the regulation
Transjakarta Regulations	Regional Regulation No. 4/ 2014	The Establishment of Regional-owned Enterprise (BUMD) of PT. Transportasi Jakarta
	Regional Regulation No. 5/ 2014	Regulation related to Transportation
	Regional Regulation No. 10/ 2014	The Regulation related to Management of Bus Rapid Transit (BRT) System
	DKI Jakarta Governor Regulation No. 96/ 2018	The Integration of Feeder Mode into Bus Rapid Transit (BRT) System
	DKI Jakarta Governor Regulation No. 46/ 2022	The Subsidies for Transjakarta Public Transport Services, Integrated Highways Mode, and Integrated Crossroads

Climate & Electrification Regulations	Law No.16/ 2016	The Ratification of Paris Agreement to the United Nations Framework Convention on Climate Change
	President Regulation No. 55/ 2019	The Acceleration of Battery Electric Vehicle Program
	President Regulation No. 98/ 2021	The Implementation of Carbon Pricing to Achieve the Nationally Determined Contribution Target and Control Over Greenhouse Gas Emission in the National Development
	MoEF Regulation No. 33/ 2016	The Guidance for Climate Change Adaptation Plan Preparation
	MoEF Regulation No. 21/ 2022	The Procedure for Carbon Pricing Implementation
	Governor Regulation No. 90/ 2021	The Low Carbon Development Plan for Climate Resilient Areas
	Governor Regulation No. 25/ 2022	Jakarta Regional Development Plan 2023-2026
Financial Regulations	Bank Indonesia Regulation No. 7/ 2005	Foreign Bank Loans
	Bank Indonesia Regulation No.16/ 2014 amended by Bank Indonesia Regulation No.22/ 2020	Reporting on Foreign Exchange Flows and Reporting the Implementation of Prudential Principles in the Management of Foreign Debt of Non-Bank Corporations
	Board of Governors Regulation No.21/ 2019	Short-Term Liquidity Loans for Conventional Commercial Banks
	Government Regulation No.56 of 2018	Regional Loans
	Law No. 1/ 2022	Financial relationship between the Central Government and Regional Governments
	Law No. 23/ 2014	Local Government
	Law No. 40/ 2007 as amended by Government Regulation in Lieu of Law No. 02/ 2022	Limited Liability Companies
	MoF Regulation No. 174/ 2016	Planning Module of the Need for State Property for the Preparation Plans for the Need for State Property (Changed on the MoF No.450 of 2014)
	MoF regulation No. 180/ 2015	Procedures for Issuance and Accountability of Municipal Bonds
	MoF Regulation No. 223/ 2012 amended by MoF Regulation No.170/ 2018	Provision of Feasibility Support for Part of Construction Costs in Government Cooperation Projects with Business Entities in Infrastructure Provision
	MoF Regulation No. 260/ 2010 amended by MoF Regulation No. 8/ 2016	Guidelines for Implementing Instructure Guarantees in Government Cooperation Projects with Business Entities

	MoF Regulation No. 95/ 2017	Scope and Procedure for Providing Government Guarantee in the Infrastructure Sector Through Infrastructure Guarantee Business Entities
	MoF Regulations No. 180/ 2020	Facilities for the Preparation and Implementation of Government Cooperation Project Transactions with Business Entities in the Provision of Infrastructure
	National Government Regulation No.54/ 2017	Regional owned enterprises
	OJK Regulation No. 24/ 2014	Guidelines for Implementation of Investment Manager Functions
	OJK Regulation No. 34/ 2019	Mutual Funds in the form of Limited Participation Collective Investment Contracts
	OJK Regulation No. 41/ 2020	Implementation of Electronic Public Offering of Equity Securities, Debt Securities, and/or Sukuk
	Presidential Regulations No. 78/ 2010	Infrastructure Guaranty in Government Cooperation Projects with Business Entities Conducted Through Infrastructure Guarantee Business Entities
Technical Regulations	Law No. 22/ 2009	Traffic and Road Transportation
	National Government Regulation No. 55/ 2012	Regulation related to Vehicle
	Regulation of National Police of Indonesia No. 07/ 2021	The Registration and Identification of Motorised Vehicle
	MoT Regulation No. 15/ 2019	Managing Public Transportation with Public Motorised Vehicles on Route
	MoT Regulation No. 15/ 2022	Conversion of Motor Vehicles Other Than Motorcycles with Combustion Engines to Battery-Powered Electric Motor Vehicles
	Governor Decree No. 1053/ 2022	Acceleration Program of Battery Electric Vehicle Deployment under The Transjakarta Services
GESI Regulations	Governor Regulation No. 13/ 2019	Service Level Agreement for Transjakarta Public Transport Services
	Regional Regulation No. 37/ 2012	Gender Mainstreaming (PUG)
	Law No. 12/ 2022	Sexual Violence Crime

Moreover, to align and harmonize the electrification of 10,047 Transjakarta fleets which initially mandated on Governor Decree 1053/ 2022, further regulatory framework assessment consists of existing regulations and proposed draft regulations, as follows:

1) Transjakarta Electrification Regulations, means the regulations already in place and potentially accelerate and enhance Transjakarta Electrification ("**Transjakarta Electrification Regulations**"); and
2) Draft regulations (bills) in the pipeline as stated in the Jakarta Regional Regulation Formation Program (*Program Pembentukan Peraturan Daerah (Propemperda) 2023*)[8] and in Regional Secretary Decree No. 150/ 2021 concerning the Formation Program of Governor Regulation for The Year of 2022 ("**Pipeline Bills**").

Such regulatory framework can be described as follows:

Table 3. Transjakarta Electrification Regulations

Electrification Regulations	Aspect of the Regulation
Regional Regulation No. 5/ 2014	Transportation
Governor Regulation No. 96/ 2018 amended by Governor Regulation No.74/ 2021	The Integration of Feeder Transportation into Bus Rapid System
Governor Instruction No. 66/ 2019	Air Quality Control
Presidential Regulation No. 98/ 2021	Carbon Pricing
Ministry of Environment and Forestry Regulation No. 21/ 2022	Carbon Pricing Mechanism

Table 4. Pipeline Bills Related to Transjakarta Electrification

Pipeline Bills
The Regional Regulation Bill for Electronic Traffic Control
The Regional Regulation Bill for Jakarta Transportation Master Plan
The Regional Regulation Bill for the Change of Transjakarta legal status into Regional Company (*Perseroan Daerah*, "Perseroda")
The Regional Regulation Bill for Jakarta Spatial Plan (*Rencana Tata Ruang Wilayah, "*RTRW") 2022 – 2024
The Governor Regulation Bill on Air Quality Control Strategy

3.3. Existing Regulation Relevant to Transjakarta to strengthen Transjakarta Electrification

(1) Regional Regulation (Perda) No. 5/ 2014 on Transportation

Regional regulation 5/2014 establishes the foundation of maximum usage life of motorised vehicles for public transport. Article 51 states that large buses, medium buses, and microbuses can be utilised for ten years. The usage life limit aims to ensure the vehicles

[8] https://dprd-dkijakartaprov.go.id/program-legislasi-daerah/propemperda-tahun-2023/ as accessed on 28 December 2022;

meet road worthiness and environmental aspects. Limiting the usage life is valid if the vehicles regulated are internal combustion engine (ICE) fleets because as the engines age, the more pollution the engine will combust. Moreover, over time, the engine's emissions (Euro) standard is updated. The regulation does not differentiate the types of vehicles to comply with the maximum usage life, thus ICE and electric vehicles will also be covered by Regional Regulation 5/2014.

The tailpipe emission from the e-bus is zero emission. The Regional regulation No. 5/ 2014 will affect the cost-effectiveness of the electric bus. The regulation affects the maximum electric bus contract duration between bus operators and Transjakarta, which only be limited to 10 years where in the previous regulation is only seven years. However, best practices from other countries indicate that the electric bus usage life span can be extended into 15 years or more.

In addition, the following article on The Regional regulation states that further provisions regarding the service life span of motorised vehicles for public transport, as referred to Article 51, will be regulated by a Governor's Regulation. However, as of now, no derivative governor regulations have been issued to regulate the maximum service life span of motorised vehicles for public transport.

Given the current best practices, it is recommended to **amend Article 51 to differentiate the maximum usage life between non-electric or ICE and electric vehicle fleets for public transportation**. This revision will ensure the maximum benefit of e-bus operation as well as to give flexibility in the financial feasibility of e-bus investment.

(2) Governor Regulation No. 96/2018 on the Integration of Feeder Transportation into Bus Rapid Transit System amended by Governor Regulation No. 74/ 2021

Government Regulation 96/2018 which was amended with Government Regulation 74/2021 governs the bus operator appointments and bus operator contract duration. Government Regulation 74/2021 differentiates the maximum contract duration for e-bus operator contract from that of ICE Bus, where the maximum e-bus contract duration between Transjakarta and operators is set to be maximum of 10 years. However, as stated above, the duration of the contract should reflect the investment and economic/ commercial value of the bus. Therefore, in line with the recommendation to have more flexibility in determining the maximum service life span of e-bus, the contract duration should also consider the performance of e-bus, which may exceed more than 10 years. Government Regulation 74/ 2021 amendment relating to e-bus maximum contract duration can provide flexibility for the implementation of Transjakarta Electrification, especially the financing feasibility. Based on the benchmarking from other countries, if the bus performance exceeds 10 years, the economic value of the e-bus fleets will be higher.

(3) Governor Instruction 66/ 2019 on Air Quality Control ("**Ingub 66/2019**")

The Governor of Jakarta mandates several government body units to take measures to control air quality through Governor Instruction 66/2019. A multi-sectoral approach was used to control the air quality by tightening the control on pollution sources, changing the society's lifestyle, and optimising urban greening. One of the measures is shifting from private vehicles to public transportation. Therefore, there must be an improvement in the current public transportation services—including its fleets—to build integrated mass public transportation and improve accessibility. This will reduce the usage of private vehicles, which result in the decline of air pollution.

The regulation's objective on the public transportation sector is to limit the bus life span to maximum 10 years and all of the buses should pass the emission test standard. The Governor mandated the Jakarta Transport Agency to accelerate the renewal of 10,047 fleets under the Jak Lingko system. However, the regulation has not specifically mentioned electrification as the definition of "bus renewal" has not been described clearly. The target on the regulation can be achieved by procuring new ICE buses that qualify for the current Euro Standard so that electrification is not directly mandated in this instruction. However, to have stronger legally binding power and given the fact that higher regulations on Air Quality Control are already in place, Governor Instruction 66/2019 should also have governor regulation for its implementing framework.

3.4. Electrification Regulations in relation to NDC in GHG Emission Reduction

The policy to accelerate Transjakarta Electrification as mentioned in the Governor Decree 1053/2022 is initially a commitment of Government of Jakarta to participate in the Government of Indonesia's nationally determined contributions (NDC) for GHG reduction emission as reflected in the Paris Agreement.

Indonesia's Nationally Determined Contributions (NDC) states the country's transition to a low-carbon and climate-resilient future. These actions were in line with the Paris Agreement's primary objective to prevent temperature increases of more than 2^0C (or even 1.5^0C). Indonesia has committed to reducing 29% of its Greenhouse Gas (GHG) emissions by the end of 2030 without supports from developed countries or 41% with supports from other countries. With those targets, the maximum GHG emitted in 2030 is set to be 2,035 MTon CO_2eq. The Ministry of Environment and Forestry estimated cumulative climate change mitigation cost between 2020 – 2030 to achieve the NDC target is IDR 3,779 T, equivalent to IDR 343.6 T per year[9].

The sectors considered to be monitored and mitigated are energy (and transportation), waste, Industrial Processes and Product Use (IPPU), agriculture, and forestry. The Energy and Transportation Sector accounts for more than 92% of the total mitigation cost needed. Carbon pricing (*Nilai Ekonomi Karbon*, "NEK"), defined as the valuation of Greenhouse Gases (GHG) or carbon emissions, becomes one of the financing instruments related to climate

[9] Ministry of Finance. 2021. "Webinar Penyelenggaraan Nilai Ekonomi Karbon di Sektor Ketenagalistrikan". Accessed in 2022.

financing to answer the needs of enormous financing amount to achieve the NDC target. Carbon pricing is an internalisation of costs from GHG emissions' negative externalities and the practice of the "polluters-pay-principle"[10].

Further to implement Paris Agreement[11] , President Joko Widodo issued Presidential Regulation Number 98/2021 concerning the Carbon Pricing (*Nilai Ekonomi Karbon*). Carbon pricing instruments consist of: (1) carbon trading; (2) result-based payment; (3) carbon levies/ tax); and (4) other instruments.

With tradable instruments, carbon emissions are being "traded." For example, with crediting mechanism, entities that carry out emission reduction activities sell their carbon credits to entities that require carbon credits. However, with pricing or untradable instruments, there is no transfer of carbon rights. One example of pricing or untradable instruments is the carbon tax. The tax charges are imposed on carbon content or carbon-emitting activity. Another untradable carbon pricing instrument is Result Based Payment (RBP) given for emission reduction results by an entity[12]. As for carbon levies/ tax, the Government of Indonesia has already set a legal basis for the carbon tax, stipulated in Article 13 Law No. 7/ 2021 regarding Tax Regulation Harmonisation. The lowest carbon tax price is set to be IDR 30,000/ tCO_2eq.

Furthermore, Presidential Regulation No. 98/ 2021 is followed up by the implementing regulation of Ministry of Environment and Forestry No. 21/ 2022 which provides the mechanism for carbon pricing mechanism. The regulations mandates companies/ entities to register their carbon initiatives in the National Registry System for Climate Change Control (*Sistem Registri Nasional Pengendalian Perubahan Iklim*, "SRN PPI").

Transjakarta needs to register the electrification program in SRN PPI to be able to participate in carbon pricing mechanism and obtain the Indonesia Certified Emission Reduction ("ICER," or *Sertifikat Penurunan Emisi*, "SPE") to obtain their carbon credit from their activities related to emitting GHG. Aside from aiming to mainstream the large-scale electrification into a climate-related solid commitment, the ICER can be used for carbon trading with other entities. By registering their activity and their projected GHG emission, Transjakarta will put in place a mechanism to reduce their carbon tax from the emission cap set t by the national government.

3.5. Electrification Bills to strengthen Transjakarta Electrification Programme

1. Governor Regulation Bill on Air Quality Control Strategy

[10] Ministry of Finance. Nilai Ekonomi Karbon (*Carbon Pricing*). https://fiskal.kemenkeu.go.id/fiskalpedia/2021/10/06/18-nilai-ekonomi-karbon-carbon-pricing. Accessed in 2022.
[11] Ratified in Law 16/2016
[12] Ministry of Finance, op. cit.

In 2022, The Government of Jakarta planned and created a Governor regulation related to air quality control strategy known as *Rapergub Strategi Pengendalian Pencemaran Udara* (SPPU). This regulation serves as a guideline for governments and other related parties to design, monitor, and evaluate the existing strategies, programs, and movements to control the air quality in Jakarta. Several points, such as future strategies, programs, movement, air pollution control targets, and key performance indicators, were covered by this regulation.

The objectives mentioned were expected to be reached by 2030. With that, three main strategies, 17 programs, and 75 action plans will be conducted throughout the years. One of the methods to fulfil the targets is to reduce the emission produced by moving objects, such as transportation modes, and unmoving objects, like buildings and public spaces. The detail of cumulative targets for air pollution reduction are as follow:

- 56% reduction for PM10
- 41% reduction for PM2.5
- 41% reduction for BC
- 34% reduction for NO_x
- 16% reduction for SO_2
- 40% reduction for CO
- 31% reduction for NMVOC

The Governor Regulation Bill on Air Quality Control Strategy has embedded Transjakarta's electrification plan to the target to reduce air pollution emissions from mobile sources. Moreover, as Governor Decree 1053/ 2022 has been initially issued, **the Transjakarta electrification target stipulated in Governor Regulation Bill on Air Quality Control Strategy needs to be adjusted** because:

- In the scenario used on the regulation, 70% of Transjakarta non-microbus fleets have been electrified in 2022. By the end of the year, the electrification deployment rate is still less than 1%. Moreover, the 100% electrification of non-microbus fleets is stipulated to be achieved in 2025. It contradicts Governor Decree 1053/ 2022, which states that the **50% and 100% electrification targets will be achieved in 2027 and 2030, respectively**.
- Moreover, in the scenario developed for the regulation, 40 electric bus fleets (non-microbus) will be deployed by the end of each year from 2022 – 2030, so that in 2030, there will be 360 electric bus fleets operating under the Transjakarta services. This target is also contradictory with Transjakarta's electrification target to **electrify 100% of its fleets, equivalent to 10,047 fleets, in 2030** (among those 10,047 electric bus fleets, around 4,000 are non-electric microbus).

In addition to that, the Government of Jakarta should also **set the target of establishing charging facilities for electric buses under the Transjakarta services** in the Governor Regulation Plan on Air Quality Control Strategy. The mandates for financing have already been in-line with the Governor Regulation Plan regarding the Air Quality Control Strategy and the Governor Decree regarding the Guidelines for Accelerating the Use of Battery Electric Bus under the Transjakarta Services.

The government targeted to increase the amount of public transport ridership to 60% by the end of 2030 due to the electrification of Transjakarta combined with the development of 3 major public transportation systems (Transit-Oriented Development, Mass Rapid Transit, and LRT Jakarta). The increasing number of ridership will contribute to the decreasing air pollution level—compared to Business as Usual—as follow:

- 10% reduction for PM10
- 17% reduction for PM2.5
- 17% reduction for BC
- 20% reduction for NO_x
- 22% reduction for SO_2
- 19% reduction for CO
- 17% reduction for NMVOC

The contribution of electrifying only 360 Transjakarta large-bus fleets by 2030 to the air pollution control target set out in the regulation plan needs to be considered again. The detailed environmental impact of the electrification can be seen in **Task 4.4. Report on Cost-Benefit Analysis**.

2. Draft of Jakarta Regional Regulation on Jakarta Transportation Master Plan

Based on the academic paper of the regulation plan, Jakarta Transportation Master Plan is developed to meet the needs of the people of Jakarta for safe, effective, and efficient transportation and in the framework of increasing the smooth movement of people and goods, then further increasing economic growth both nationally and in particular the Jakarta area.

The regulation plans set the framework and target for developing transportation services and facilities in Jakarta, including non-motorised transport facilities and networks, public transportation network plan, intermodal integration hub plan, Transit Oriented Development plan, and traffic restriction. As the highest regulation on the regional level related to transportation master plan, the regulation does not need to be detailed, instead setting out all aspects or targets related to transportation master plan that can be detailed in some derivative regulations. Detailed regulation will be derived under Governor Regulations.

Moreover, the draft regulation plan needs to clearly state the deployment of electric vehicles for public transportation fleets. To accelerate the Transjakarta electrification, ITDP suggested the following: To accelerate the Transjakarta electrification, several points related to Jakarta Transportation Master plan are recommended the following:

a. To **add the use of electric fleets as one of the main performance targets** of the transportation master plan;

b. To **add the deployment of low-emission or electrified large buses, medium buses, and microbuses for road-based public transport plans**;

c. To provide an additional explanation regarding the provision and maintenance of infrastructures & supporting facilities for road-based public transportation and electricity-powered or low-emissions public transportation fleets, which also **includes the provision and maintenance of charging facilities for public transport fleets**.

3. Draft of Jakarta Regional Regulation on Jakarta Regional Spatial Plan (*Rencana Tata Ruang Wilayah*, "RTRW") for 2022-2042

Jakarta Regional Spatial Plan (RTRW) is the result of spatial planning on a regional scale with reference to the national spatial layout plan. RTRW aims to ensure the realisation of the development is in line with what is planned in the future. RTRW contains goals, policies, and strategies, the stipulation of regional spatial structure plans, the stipulation of regional spatial pattern plans, the stipulation of strategic areas, the direction of spatial use, and control of regional spatial use.

Related to the transportation sector, RTRW usually regulates the transportation network and infrastructure development plan—including the terminal development plan and the traffic restriction zone. The last RTRW that Jakarta had, RTRW 2030, was issued in 2012 also mandated the construction of gas refuelling stations (SPBG) for public transportation fleets. Therefore, it is crucial to consider several aspects of the subsequent RTRW regulations for electrification, such as:

- Integrating terminal charging development plan or additional charging facilities for public transportation into the passenger terminal development plan; and
- Integrating the deployment of battery electric buses for public transportation fleets.

4. Draft of Jakarta Regional Regulation on Regional Energy General Plan

At the national level, the President of Republic Indonesia issued a National General Energy Plan (*Rencana Umum Energi Nasional*, "RUEN") in 2017. RUEN builds the foundation of strategies and policies for national energy management, sets a target for renewable energy mix, and estimates the future energy needs at the national level and greenhouse gas reduction, including in the transportation sector.

RUEN also states targets and programs related to vehicle electrification. It is set that electricity usage for public transportation fleets and private vehicles needs to be ramped up to 2.3 TWh by 2025. The Ministry of Industry needs to build the electric vehicle industry from upstream to downstream. Moreover, electric or hybrid vehicle deployment is also stated on RUEN: 2,200 units for four-wheelers and 2.1 million units for two-wheelers by 2025.

Pursuant to RUEN, the Draft of Jakarta Regional Regulation on Regional Energy General Plan needs to stipulate **at least** the:

- Electricity consumption projection due to large-scale electrification of Transjakarta.
- Greenhouse gas reduction due to large-scale electrification of Transjakarta.
- Electric vehicles—especially public transportation fleets—deployment target, in line with the target that the Jakarta Transport Agency or Transjakarta has set.

6. Amendments on Regional regulation No. 4/ 2014 about PT. Transportasi Jakarta

PT. Transportasi Jakarta, also known as Transjakarta, is a regional-owned enterprise under the Government of Jakarta. The establishment of Transjakarta was regulated by the Government Regulation No. 4 of 2014. The regulation elaborates on the forming process of PT. Transjakarta, including capital and shares, the stakeholders, and the financial aspects of the company.

Since the revision of the regulation is in the pipeline, it is prominent to consider **expanding Transjakarta's scope of activities**, which is not only limited to:

a. Operation and maintenance of the BRT System Facilities;

b. Operation and maintenance of bus stops and refuelling stations (*Stasiun Pengisian Bahan Bakar,* "**SPBB**");

c. Development, operation, and maintenance of the Support Management System;

d. Business development and management of BRT system assets operated and maintained by the company, such as BRT Stations; and

e. Property and business development and management of the company's assets;

but also **financing, leasing, or establishing a subsidiary** since one of the recommendations for the financing aspects is the establishment of a Special Purpose Vehicle (SPV) that can be a subsidiary or joint venture between Transjakarta or other financing or leasing companies. Extending Transjakarta's scope will enable the large-scale electrification of Transjakarta fleets by unlocking Transjakarta's scope on financing that is currently limited or not mandated.

Aside from incorporating new scopes for Transjakarta under the amendment on the regional regulation No. 4/ 2014, issuing **new Governor Regulation** for assigning Transjakarta for heavily involved in e-bus assets leasing or financing become another alternative.

3.6. Mainstreaming Public Transport Electrification in The Ministry of National Development Planning's Blue Book and Green Book

To ensure Transjakarta Electrification Program's sustainability, large-scale electrification to regulation on the national level is incorporated into the National Planning Agency's Blue Book and—further—Green Book.

Ministry of National Development Planning has issued a medium-term list of projects funded by Foreign/ External Loans (List of Medium Term Planned External Loans 2020-2024/ *Daftar Rencana Pinjaman Luar Negeri Jangka Menengah*/ "DRPLN-JM" 2020-2024). A more detailed list of projects approved to get the external loan is listed in the Ministry of National Development Planning's green book, issued annually. The project is proposed on the Blue Book and Green Book by ministries, agencies, local governments, or SOEs.

Incorporating Transjakarta electrification into the Blue Book and Green Book will secure financing from external loans for electrification. For example, The Green Book should include Transjakarta Electrification as one of the recipients of Millennium Challenge Corporation, a foreign aid program from The United States, which shows interest in joining the electrification program.

4. Regulatory Framework Assessment of Transjakarta's Electrification from Financial and Business Aspects

4.1. Overview of Current Transjakarta's Business Models and Financing Mechanism

Transjakarta current total fleet is around 4,500. It comprises of medium, small and microbuses owned and operated by 18 operators under a gross cost or "buy the service" contract. The contract typically last for 7 years, even though the contract for articulated bus can be extended if the produced kilometres has not been achieved by the year 7.

The operators acquire their fleet with a mix of debt and equity. Typically, the equity contribution is 20% of the total fleet cost. The loan tenure is 5 years. The microbuses, although contracted by companies/cooperatives, are owned by individual drivers or cooperatives' members.

The electric buses are substantially more expensive than their ICE. The total capital cost including the grid connection and chargers exceeds 2 times the cost of the diesel buses. According to a rough estimation from Transjakarta, the total investment in electrification of the targeted fleet of 10,047 buses by 2030 is more than USD 2.45 billion. Clearly, traditional mechanism of financing will not be capable to meet this requirement. As of now, Transjakarta heavily relies on annual subsidy from The Government of Jakarta to meet the cost operating gap. 2019, 2020, and 2021 figures show 78.3%, 88.7%, and 90.2% revenue stream of Transjakarta comes from subsidy for public transport services.

To address with this issue, ITDP had previously analysed the international best practices in financing the electric bus and charging infrastructure in different countries including Pay as You Save (PAYS), project financing, wet lease, dual concession etc. and recommended business models that involve separation of ownership and operation of the assets (i.e., fleet, charging infrastructure) in order to meet the stiff investment requirements.

However, the current regulatory framework restricts third-party ownership of the operating assets especially for operators who does not own the assets. The procurement regulation under the Jak Lingko programme only applied to the bus operators performing gross cost contract.

The present quota system from the Jakarta Transport Agency of allocating bus contracts means only the initial operators or operators possessing necessary quota can be appointed as the Transjakarta's operators. It is therefore, restricting the options for the financing entity. As e-bus infrastructure must be utilised to recover the invested cost, the e-bus must be used in the intended route/ depot and the possibility to reallocate them for operating elsewhere is not the option.

Several international financing institutions or programs show their interest on joining the Transjakarta electrification programme, such as Macquarie Group Limited, UK Export Finance (UKEF), Asian Development Bank (ADB), and Millennium Challenge Compact (MCC). Funds from those international financing institutions or programmes need to be channelled to suitable institutions to leverage the benefit of the funds for the electrification programme.

The use of financial resources to facilitate the implementation of electric bus systems is known as "e-bus implementation fund channelling." This covers the acquisition of electric buses, the construction of charging infrastructure, staff training, and other associated tasks. The fund can be originated from public or private sources, and it can be used to finance all of the implementation costs or only a part of them. This kind of support is crucial to ensuring the successful and economical implementation of electric bus systems.

The financing cost of e-bus is depending on the sort of financing source chosen, implementation may differ. For instance, the expenses connected with government funding, private finance, and public-private partnerships might vary.

The schemes developed to channel the funds described in detail on **Task 4.6 Report**. ITDP evaluated the possibilities of channelling the funds from potential institutions or programmes will be analysed, both local and benchmarking from other countries. **However, these schemes are developed to provide options to Transjakarta and The Government of Jakarta that can be executed as fund channelling mechanisms for the implementation of Transjakarta's e-bus.**

There are five main schemes of fund channelling developed on this study for funding and financing the e-bus. Scheme "A" schemes that used public sector loan, and Scheme "B" schemes from private sectors initiatives, which are broken down as follows:

1. **Scheme A-1**: Regional Loan (*Pinjaman Daerah,* "Pinda") from PT. SMI to The Government of Jakarta.

2. **Scheme A-2**: Regional Loan from PT. SMI to The Government of Jakarta, combined by other financing instruments. PT. SMI will issue bonds as this scheme includes the involvement of capital market investors.

3. **Scheme A-3**: Development Financial Institutions (DFIs) or Exporting Credit Agencies (ECAs) Loan to The Government (two-step loan). This scheme requires a Government Guarantee Letter (GGL) from the Ministry of Finance or Indonesia Infrastructure Guarantee Fund (IIGF) to DFIs or ECAs.

4. **Scheme B-1**: Loan from Commercial Foreign Banks to Private Sectors. The private sectors (can be importers or capital providers) will own, manage, and maintenance the assets needed, e.g., electric bus fleets and charging infrastructures. This scheme is possibly implemented either without the involvement of local commercial banks

that will provide loan (investment credit) to the operators or with the loan from commercial local banks—which later is classified into **Scheme B-1 A**.

5. **Scheme B-2**: Private Sectors Issue Financing Products to Finance the Project. This alternative requires issuance of financing products, such as obligations or Limited Participation Mutual Fund (*Reksa Dana Pendapatan Terbatas,* "RDPT"). ITDP developed three structured of financing alternatives for issuing RDPT under the Scheme B-2:

    a. On the first structured financing alternative (**Scheme B-2, Alternative 1**), an SPV Holding Co. will own the assets and developed operating lease with bus operators.

    b. On the second structured financing alternative (**Scheme B-2, Alternative 2**), an SPV acts as a financial intermediary and channel the fund to operators via leasing companies.

    c. The third structured financing alternative (**Scheme B-2, Alternative 3**), an SPV acts as a financial intermediary and finance lease to operators via leasing companies.

    Blended financing alternatives are also explored under Scheme B-2 fund channelling alternatives. However, the blended financing alternatives will not be assessed on this report.

Further, Transjakarta is also exploring the implementation of **Bus-as-a-Service (BaaS) scheme** as an end-to-end solution to tackle the high upfront cost of procuring the electric bus and its supporting facilities faced by existing operators. With this scheme, the bus operators do not have to procure the asset (electric bus fleets). The assets will be provided by other parties—it can be Transjakarta, OEMs, the government, etc. The transit providers are only required to provide the operational cost and cover the cost/km for leasing the services and utilise assets from the other parties. This Bus-as-a-Service scenario is reflected on the fund channelling schemes that already being developed on the **Report Task 4.6**.

This section will assess the regulatory framework and legal analysis of enabling each fund channelling and business model alternatives **developed in Task 4.6 Report,** including the asset ownership and operation separation—where the fund channelling schemes developed on Task 4.6. Report has incorporated that arrangement. However, before going deeper into assessing the legal aspects of each fund channelling scheme, this section will discuss about the legal framework of public transportation funding and financing.

4.2. Legal Framework of Public Transportation Funding & Financing Instruments

This subsection will discuss the legal framework for funding & financing road-based public transportation sectors, such as credit facility/ bank loan, regional loan, financial instrument, case: limited participation mutual fund, and Government Support and Guarantee in Public-Private Partnership Project, that potentially be implemented for Transjakarta electrification.

4.2.1. Credit Facility/ Bank Loan

Bank loans are a common practice in project financing. This practice is also implemented in the current business models of Transjakarta, where the operators provide the fleets needed supported by debt from commercial bank. Thus, this scheme needs to have Private sectors initiatives to get into Loan agreement between lenders and private sectors or importers. After the Loan Agreement is concluded, then the parties can continue the process to sale agreement. On bus financing, the sale agreement is conducted between importer and bus manufacturers. This step is carried out simultaneously with the O&M agreement between Importer and Operators. In the execution of bus operation, The Government of Jakarta provides operation subsidies to support the operation of the bus.

In this scheme, two loans will be made, namely, (i) a loan from the importer to a foreign bank, and (ii) a loan from the operator to a local bank.

a. Foreign Loan by Importer

   Importer Loans to Foreign Banks are conducted with the aim of providing guarantees for foreign asset exporters to provide assets to importers in the form of buses. This bus will then be given to the operator to carry out operational activities. In conducting foreign loans, the borrower, in this case the importer, must pay attention to the provisions of the Precautionary Principle and the obligation to report foreign debt to Bank Indonesia.

b. Local Loan by Bus Operator

   After obtaining assets in the form of buses from importers, the operator also needs to make loans to local banks to be able to pay for the buses provided by importers. Related to local loans made by operators, it is necessary to pay attention to the maximum credit limit. Furthermore, in terms of making loans, the operator needs to pay attention to the level of bankability of the operator itself, giving trust to the bank to provide loans.

4.2.2. Regional Loans

Government Regulation No. 56 of 2018 **on Regional Loans** ("**GR 58/2018**"), explained that Regional Loans are all transactions that result in the region receiving an amount of money or receive benefits that are worth money from other parties so that the region is burdened with the obligation to repay the money. **Regional Loans can only be made based on the initiative of the Regional Government**. Regional Government can transfer Regional Loans to regionally owned business entities in the form of loan forwarding or equity participation. Loan Forwarding or equity participation is intended for the provision of public service infrastructure assigned by the Regional Government.

Regional loan must meet the following requirements:

1. The amount of the remaining Regional Loan plus the amount of the loan to be drawn does not exceed 75% (seventy-five percent) and the amount of general revenue of the Regional Budget of the previous year;
2. The ratio value of the regional financial ability to repay Regional Loans as determined by the Minister of Finance;
3. Has no outstanding on loan repayment originating from the Central Government;
4. Activities financed from Regional Loans must be in accordance with regional planning documents; and
5. Other requirements set by the lender in accordance with laws and regulations.

Furthermore, there are several restrictions in issuing regional loans, which are:

1. Regions are prohibited from making direct loans to foreign parties;

2. Regions cannot provide guarantees for other parties' loans;

3. Revenue and/ or regional property cannot be used as collateral for regional loans; and

4. Activities financed by the issuance of regional bonds, as well as regional property attached to such activities, may be used as collateral for the issuance of regional bonds.

4.2.3. Government Support and Guarantee in PPP Project

Even though there is limited case of road-based public transportation sector used PPP for financing its project, Transjakarta Electrification, legally, is potentially financed using the project scheme of Public-Private Partnership (**"PPP"**). In this scheme, the Ministry of Finance (**"MoF"**) innovates infrastructure financing by providing various facilities and government supports, namely:

i. **Project Development Facility ("PDF")** ***(Fasilitas Penyiapan dan Pelaksanaan Transaksi Proyek KPBU)***

PDF is provided to assist the Person-in-Charge of Public-Private Partnership Project (*Penanggung Jawab Proyek Kerja sama,* **"PJPK"**) in compiling the final pre-feasibility study, bidding documents, and assisting the PJPK in PPP project transactions to obtain financing from a financial institution (or achieve financial close)[13].

Legal Basis

It is primarily regulated under MoF Regulation No. 180/PMK.08/2020 regarding Facilities for the Preparation and Implementation of Government Cooperation Project Transactions with Business Entities in the Provision of Infrastructure (**"MoF Regulation 180/2020"**).

The purposes of PDF are to:

a. Align, control, and integrate the process of providing fiscal facilities by the Minister for PPP Projects in the form of VGF, Infrastructure Guarantee, and implementation of return-on-investment schemes in the form of Service Availability Payments (*Pembayaran Ketersediaan Layanan)* in a series of effective and efficient processes; and

b. Develop business cases needed in the preparation and/or implementation of PPP project transactions, which are able to attract interest and participation of business entities in the PPP project and to support the progress of PPP implementation in the future.

c. Ensure the achievement of the PPP project objectives to provide services to the community in accordance with the specified standards[14].

The scope of PDF is:

a. Project Setup[15]:

- Preparation of the Preliminary Study and preparation of all studies and/ or supporting documents for the Preliminary Study for Oil Refinery PPP Projects and Other PPPs that meet the criteria as regulated in MoF Regulation 180/2020;
- Implementation of Market Interest Scoping;
- Preparation of Final Study and preparation of all studies and/or supporting documents for the Final report;

[13] Article 2 (1), MoF Regulation 180/2020

[14] Article 2 (4) a, MoF Regulation 180/2020.

[15] Article 4, MoF Regulation 180/2020.

- Business plan updates that describe the sustainability of the project from upstream to downstream, to ensure services can be accepted by society; and/ or
- Preparation of studies on potential financing needed from upstream to downstream and supporting documents/study[16].

b. Transaction Assistance[17]:

- Procurement of Implementing Business Entities;
- The signing of the PPP Agreement; and
- Obtaining financing for the PPP Project (financial close), as long as it is part of responsibilities allocated to PJPK based on the PPP Agreement[18].

Project Criteria:

Facilities can be provided for Priority PPP Projects, Oil Refinery PPP Projects, and/ or other PPP Projects by first meeting the following criteria:

- For Priority PPP Projects, the PJPK has prepared a Preliminary Study in accordance with the provisions of the legislation;
- For Oil Refinery PPP Projects and/ or other PPP Projects that meet the criteria, PJPK has prepared a Preliminary Study and subsequently conducted a Public Consultation, based on the Public Consultation as mentioned above, it is known that the PPP Project in question actually provides benefits to the community and shows adequate consideration of the negative impacts of the PPP Project on the public interest;
- PJPK has formed a PPP Team consisting of parties who have adequate authority and capacity in making decisions;
- PJPK already has a business plan if the PJPK is the Board of Directors of a State-Owned Enterprise/Director of a Regional-Owned Enterprise; and
- The PJPK has prepared land acquisition documents for the PPP Project requested by the facility.

ii. Viability Gap Fund ("VGF") *(Dukungan Kelayakan)*

[16] Article 5, MoF Regulation 180/2020.
[17] Article 4, MoF Regulation 180/2020.
[18] Article 5, MoF Regulation 180/2020.

This Government Support is in the form of a partial contribution to construction costs given in cash to PPP projects **that already have economic feasibility but do not yet have financial feasibility**. Viability Gap Fund can be provided after there are no other alternatives to make the Cooperation Project (*Proyek Kerja Sama)* financially viable. Local governments can contribute to this support after obtaining approval from the Regional Council (*Dewan Perwakilan Rakyat Daerah,* "DPRD") for infrastructure guarantees.

Legal Basis

a. MoF Regulation No. 223/PMK.011/2012 regarding Provision of Feasibility Support for Part of Construction Costs in Government Cooperation Projects with Business Entities in Infrastructure Provision (**"MoF Regulation 223/2012"**) as amended by MoF Regulation No. 170/PMK.08/2018 **("MoF Regulation 170/2018"**)

The purpose of VGF is:

a. Increasing the financial feasibility of Cooperation Projects so as to generate interest and participation of Business Entities in Cooperation Projects;

b. Increase certainty in the procurement of Cooperation Projects and procurement of Business Entities in Cooperation Projects in accordance with the quality and time planned; and

c. Realizing public services that are available through infrastructure at rates that are affordable to the community[19].

Scope of VGF:

VGF can be provided after there are no other alternatives to make Cooperation Projects financially feasible[20].

Criteria for VGF:

i. The Cooperation Project has met economic feasibility but has not met financial feasibility;

ii. The Cooperation Project applies the user pay principle;

iii. The total investment cost of the Cooperation Project is at least IDR 100 billion;

iv. The Business Entity is determined by PJPK through an open and competitive bidding process;

[19] Article 2 (2), MoF Regulation 170/2018.

[20] Article 4, MoF Regulation 170/2018.

v. There is a scheme for transferring assets and/or their management from the Business Entity to the PJPK at the end of the cooperation period;

vi. VGF is provided to Cooperation Projects when:

1. A comprehensive pre-feasibility study has been prepared;
2. Pre-feasibility study includes optimal risk sharing;
3. The pre-feasibility study concludes that the project is technically, legally, environmentally, and socially feasible; and
4. The pre-feasibility study shows that the Cooperation Project becomes financially feasible by providing Feasibility Support[21].

iii. Infrastructure Guarantee (Government & Business Entity)

Infrastructure Guarantees given to the PJPK financial obligations to pay compensation when infrastructure risks occur – in accordance with the allocation agreed in the PPP agreement[22]. Infrastructure guarantee is implemented by PT Penjaminan Infrastruktur Indonesia (**"PT PII"**) which is an Infrastructure Guarantee Business Entity (**"BUPI"**). If the scope of guarantee needed exceeds PT PII's capital capacity, then a joint guarantee will be carried out between the MoF and PT PII.

Legal Basis

MoF Regulation No. 260/PMK.011/2010 regarding Guidelines for Implementing Instructure Guarantees in Government Cooperation Projects with Business Entities (**"MoF Regulation 260/2010"**) as amended by MoF Regulation No. 8/PMK.08/2016 (**"MoF Regulation 8/2016"**).

Scope of Infrastructure Guarantee

Infrastructure Guarantee can be done based on **(i) Government Guarantee Agreement** (*Perjanjian Penjamin Pemerintah)* or **(ii)** BUPI Guarantee which will be provided based on **BUPI Guarantee Agreement** (*Perjanjian Penjamin BUPI)*[23]. BUPI Guarantee Agreement can cover the entire or partial infrastructure risk[24]. BUPI Guarantee Agreement and Government Guarantee Agreement can be granted to different Infrastructure Risk in a PPP project. The division of which shall be based on the division between BUPI and the MoF[25].

[21] Article 8, MoF Regulation 170/2018.
[22] Article 1 (1), MoF Regulation 260/2010.
[23] Article 2, MoF Regulation 260/2010.S
[24] Article 3 (a), MoF Regulation 260/2010
[25] Article 3 (b), MoF Regulation 260/2010

Criteria of Infrastructure Risk Eligible for Infrastructure Guarantee:

1. The occurrence was caused by the action or inaction of the PJPK or Government other than the PJPK in matters that according to law or PJPK or Government regulations other than PJPK have authority to perform the said action;
2. Caused by policies of the PJPK or Government other than the PJPK;
3. Caused by a unilateral decision of the PJPK or the Government aside from the PJPK;
4. Caused by the PJPK's inability to carry out obligations determined to him by the Business Entity based on Cooperation Agreement (breach of contract).[26]

Government Guarantee Mechanism

A. Guarantee Proposal (*Usulan Penjamin*)
   a. Infrastructure Guarantee is carried out based on Guarantee Proposal submitted by the PJPK towards the BUPI before the commencement of the procurement process[27].
   b. The Guarantee Proposal shall at the least contain[28]:
      - Complete description of the risk sharing plan based on the allocation between PJPK and a business entity which will be poured into a Cooperation Agreement (*Perjanjian Kerja Sama*).
      - Complete description of the government support which will be provided to the project, if any.
      - The proposed guaranteed coverage which includes:
        a. Type of infrastructure risk proposed to be guaranteed;
        b. Percentage of financial liability for the PKPJ proposed to be guaranteed; and
        c. Proposed guarantee period.
   c. The Guarantee Proposal shall at least be supplemented with[29]:
      - Risk matrix on the project
      - Draft of the cooperation agreement
      - Financial projections of the project.

[26] Article 10 (1), MoF Regulation 260/2010
[27] Article 6 (1), PR 78/2010
[28] Article 6 (2), PR 78/2010
[29] Article 6 (3), PR 78/2010

B. Evaluation of the Guarantee Proposal

1. In order to accept or reject the Guarantee Proposal, the BUPI is required to conduct an evaluation of the Guarantee Proposal[30]

2. During this process, BUPIs can extend a request to the PJPK to complete, amend any aspects of the Guarantee Proposal as deemed necessary.[31]

3. In order for the MoF to participate in implementing the guarantee, the BUPI has to forward the Guarantee Proposal, submit the evaluation results, and submit the risk sharing proposal[32]. Based on this evaluation, the MoF will decide whether it will accept or reject the Guarantee Proposal[33]. The decision of the BUPI towards the Guarantee Proposal shall follow the decision of the MoF[34].

C. Signing of the Guarantee Agreement

1. The Guarantee Agreement is signed by the BUPI as the Guarantor with the Business Entity Receiving Guarantee at the same time or after the signing of the Cooperation Agreement[35].

2. The Guarantee Agreement shall at the very least contain provisions regarding[36]:

- The scope of guarantee which is approved by the Guarantor and the Business Entity Receiving the Guarantee.
- Procedures for implementing the Guarantor's obligations,
- Procedures for resolving disputes that may arise.

4.2.4. Limited Participation Mutual Fund (RDPT) Scheme Procedure

Limited Participation Mutual Fund (*Reksa Dana Penyertaan Terbatas*, "**RDPT**") is a mutual fund created by an investment manager and a custodian bank to collect funds from professional investors and invest them in securities based on a real sector portfolio.

[30] Article 7 (1), PR 78/2010
[31] Article 7 (2), PR 78/2010
[32] Article 7 (6), PR 78/2010
[33] Article 7 (8), PR 78/2010
[34] Article 7 (9), PR 78/2010
[35] Article 10 (1), PR 78/2010
[36] Article 10 (2), PR 78/2010

In the event that the Participation Units of an RDPT unit is determined to be offered through a public offering, the Investment Manager managing the RDPT unit submits a registration statement for a public offering to the Financial Services Authority.

When the participation unit of the RDPT is determined not to be offered through a public offering, the Investment Manager managing the RDPT unit submits a listing application for the issuance of the Limited Participation Mutual Fund to the Financial Services Authority no later than 10 (ten) business days from the date of signing the Collective Investment Contract.

In the context of the registration statement for the public offering and the listing of the RDPT unit, the Investment Manager shall make, keep, and administer the following documents[37]:

1. Collective Investment Contract made by deed notarised by a notary public registered with the Financial Services Authority; and Financial Services Authority; and
2. Supporting documents for Mutual Fund investment Limited Participation

Documents supporting the application for listing of the RDPT unit that invests in equity securities consist of[38]:

- Agreements related to the RDPT unit;
- Agreements with investment committee members from third parties if there are agreements with investment committee members from third parties.
- Agreements with third parties who represent the Limited Investment Fund as experts and/or members of the board of directors and/or commissioners of the Target Company, if there are agreements with third parties who represent the Limited Investment Fund as experts and/or members of the board of directors and/or commissioners of the Target Company;
- Legal examination report and legal opinion made by a legal consultant registered with the Financial Services Authority in relation to the issuance:
    - Equity securities that are the underlying assets of the RDPT unit; and
    - The RDPT unit itself.
- Valuation report made by an appraiser registered with the Financial Services Authority related to equity securities or Real Sector Activities to be funded, if there is a valuation report made by an appraiser registered with the Financial Services Authority related to equity securities or Real Sector Activities to be funded;

[37] Article 33 of OJK Reg. No. 34/2019
[38] Article 36 of OJK Reg. No. 34/2019

- **The results of due diligence on target companies and real sector activities** signed by the Investment Manager's board of directors;
- **A brief financial overview of the target company** that issues equity securities **for the last 3 (three) years** or since its establishment;
- Target Company Info Memo;
- Disclosure Document of Limited Participation Mutual Fund;
- Documents related to the issuance of securities;
- Curriculum Vitae of Investment Manager employees who are directly involved in the management of the RDPT unit accompanied by:
    - Photocopy of Chartered Financial Analyst (CFA) certificate; or
    - Photocopy of individual licence as Investment Manager representative and certificate of experience in managing Mutual Fund Securities Portfolio for at least 5 (five) years from the company where the person concerned works;
- A statement signed by the prospective Participation Unit holder or unit holders which at least states that the prospective Participation Unit holder or Unit holder of the Limited Participation Mutual Fund has understood and comprehended the investment structure of the Limited Participation Mutual Fund and the risks that may occur; and
- A statement letter signed by the authorised party in accordance with the articles of association stating that **the investment in the RDPT unit is created by the authorised party on behalf of the corporation, in the event that the prospective Unit Holder of the RDPT unit is a corporation**.

The registration statement for the public offering and the application for listing of the RDPT unit shall be submitted by the Investment Manager to the Financial Services Authority through an electronic system accompanied by the following documents and/ or information:

- Collective Investment Contract made by a notary registered with the Financial Services Authority;
- Disclosure Document of Limited Participation Mutual Fund which is stamped and signed by the parties;
- The results of due diligence on Securities, Target Companies, and Real Sector Activities signed by the directors of the Investment Manager for Limited Participation Mutual Funds; and
- Info Memo of the Target Company or prospectus of Public Offering debt securities.

In processing the registration statement for Public Offering and listing application for Limited Participation Mutual Fund, the Financial Services Authority reviews the completeness of the application documents[39].

To support the review of the Collective Investment Contract of the RDPT, the Financial Services Authority is authorised to[40]:

1. Request the Investment Manager managed the Limited Participation Mutual Fund to make a presentation; and/ or
2. Conduct local inspections of Real Sector Activities, Target Companies, and/or other Parties included in the investment structure of the Limited Participation Mutual Funds.

4.3. Legal Analysis of Each Fund Channelling Scheme

This subsection will analyse in more detail regarding the legal and regulatory framework of each fund channelling scheme. Relevant regulations, documents that need to be prepared, legal complaints related to the preparation of each document and its analysis, along with parties involved to the preparation of each document or contract in accordance with the implementation process of each scheme is explained thoroughly.

This subsection also outlines stages and timeline for implementing each scheme. Scheme A is developed with the government support while Scheme B is developed to allow the participation of private sector. Scheme A will be divided into Scheme A-1, A-2, and A-3 which will be explained below:

[39] Article 39 paragraph (1) of OJK Reg. 34/2019
[40] Article 39 paragraph (2) of OJK Reg. 34/2019

4.3.1. Scheme A-1: Regional Loan (*Pinjaman Daerah,* "Pinda")

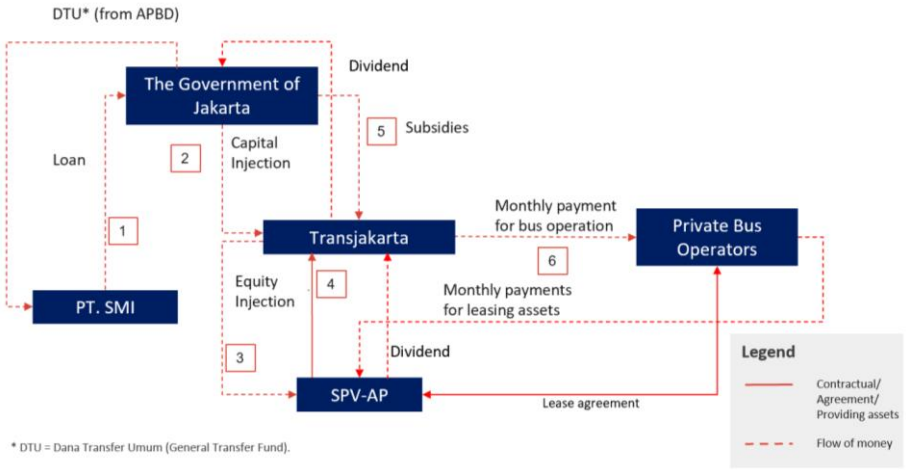

Figure 2. Scheme A-1: Regional Loan (Pinjaman Daerah, "Pinda")

Under this scheme, the Government of Jakarta will involve directly in the financing mechanism. The Government of Jakarta will be the lender. PT. SMI will provide regional loan to the Government of Jakarta for financing the e-bus. The Government of Jakarta will provide capital injection to Transjakarta. There will be SPV creation on this scheme. Transjakarta provides equity support to SPV so that the loan can be utilised by the SPV to procure the assets needed. The SPV will conduct asset leasing agreement with private bus operators.

Relevant Regulations

To support the implementation of the Scheme A-1, identification on the relevant regulations is conducted as can be seen on the Table 5.

Under this scheme, PT. SMI will provide regional loan to the Government of Jakarta for financing the e-bus. The Government of Jakarta will provide capital injection to Transjakarta and then Transjakarta will provide equity injection to SPV so that the loan can be utilised by the SPV to procure the assets. The SPV will conduct asset leasing agreement with private bus operators.

Table 5. Relevant Regulations on The Implementation of Scheme A-1

Regulations No.	Regulations Level	Topic of Regulations
Law No. 23/ 2014	National Level	Local Government
Law No. 40/ 2007	National Level	Limited Liability Company
Government Regulation No. 56/ 2018	National Level	Regional Loans
MoF Regulation No. 180/ 2015	National Level	Procedures for Issuance and Accountability of Municipal Bonds

Legal Requirements

Table 6 shows step-by-step implementation for executing Scheme A-1 for financing Transjakarta electrification program. Before having loan agreement between The Government of Jakarta and PT. SMI, Transjakarta needs to ensure that The Government of Jakarta is well informed and engaged regarding the mechanism. Transjakarta needs to propose the issuance of the loan agreement to the Government of Jakarta and support the following documents presented on the stage (1).

Table 6. Stages of Implementation, Legal Complaint, Parties Involved, and Analysis of Each Implementation Stage for Scheme A-1

Stage	Process	*Legal Compliance*	*Parties*	*Analysis*
1	Loan Agreement	Contractual	GoJ and PT. SMI	GoJ must submit the loan proposal and attaching the following documents: GoJ must prepare the following documents: 1. Approval from Regional House Council (DPRD); 2. Feasibility studies of the project; 3. Audited regional financial reports; 4. RPJMD documents from regional government; 5. APBD of the year concerned.
2	Regional Loan Agreement	GR 56/ 2018	GoJ and Transjakarta	To be injected as capital support to Transjakarta.
3	Capital Injection to Transjakarta	Law No. 23/ 2014	GoJ and Transjakarta	
4	Establishment of SPV	Law No. 40/ 2007 as lastly amended by	Transjakarta to establish SPV	

Stage	Process	*Legal Compliance*	*Parties*	*Analysis*
		Government Regulation in Lieu of Law No. 02/ 2022		
5	Asset Lease Agreement	Contractual	SPV and Bus Operators	
6	Bus Operation Contract or Agreement	Contractual	Transjakarta and Bus Operator	A Rp/km contract as stated on Governor Decree 1053/ 2022. Operating contract only since the assets already being provided by the SPV.

Timeline

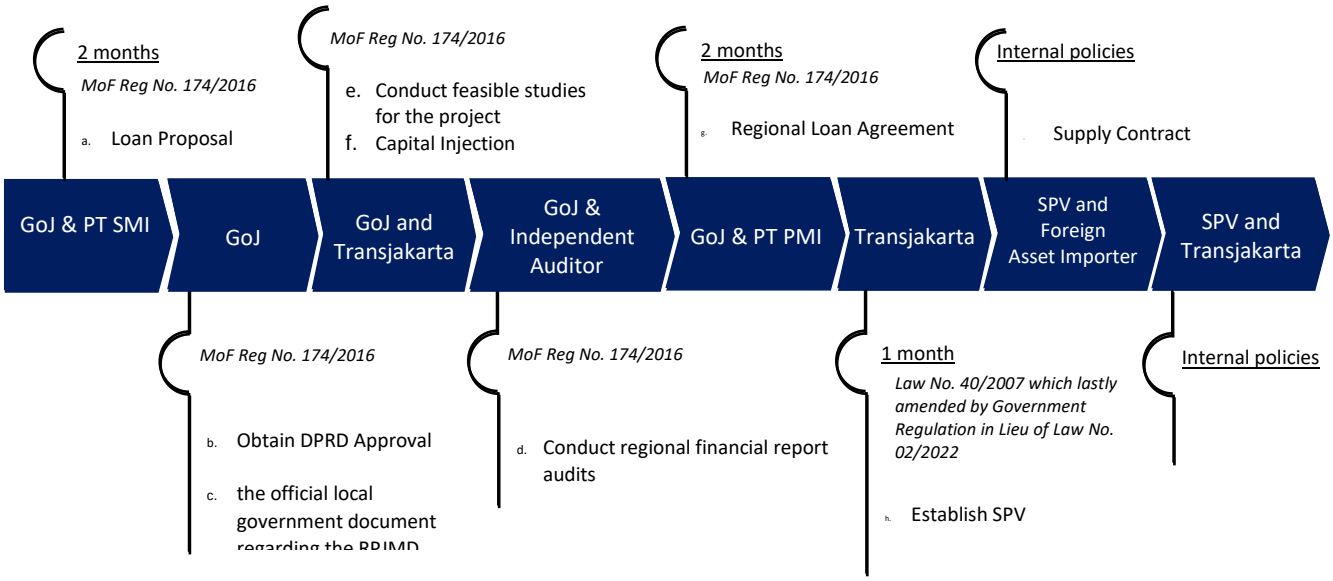

Figure 3. Timeline and Duration for Proposing Scheme A-1

4.3.2. Scheme A-2: Combination of Regional Loans and Financing Products Issued by PT. SMI

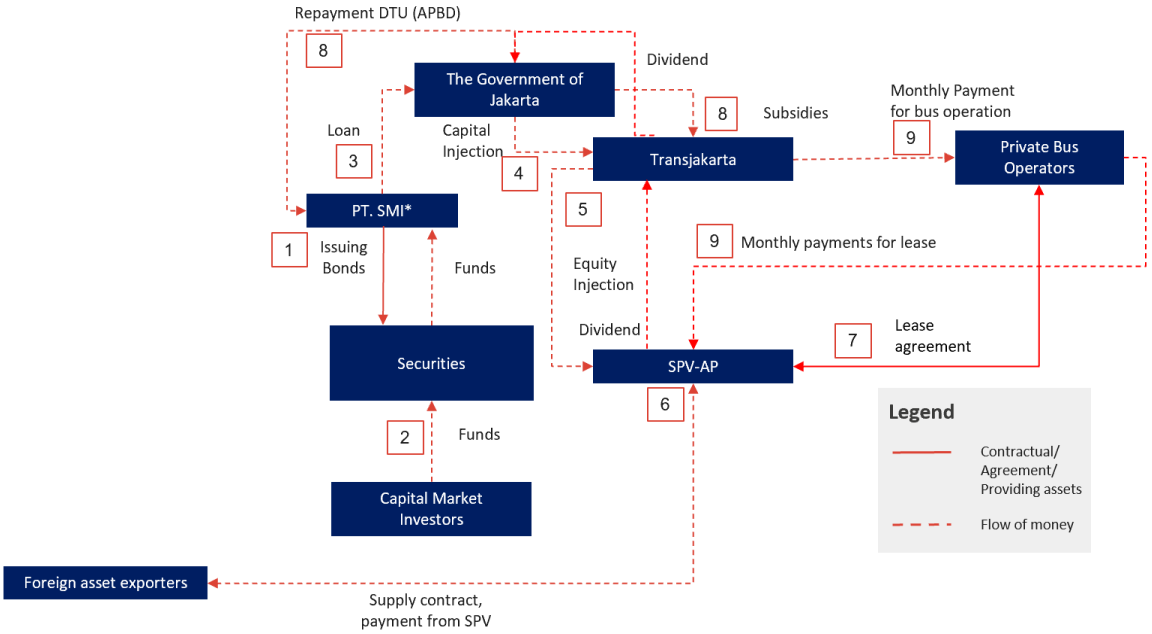

Figure 4. Scheme A-2: Combination of Regional Loans and Financing Products Issued by PT. SMI

This scheme is similar to the Scheme A-1, under the Scheme A-2, PT. SMI will provide a regional loan to the Government of Jakarta to fund the electrification. In addition to that, PT. SMI will also issue green funds, bonds, or other financing instruments possible to the stock market as an additional source of funds for providing the loan to The Government of Jakarta.

Table 7. Regulations Related to The Implementation of Scheme A-2.

Regulations No.	Regulations Level	Topic of Regulations
MoF Regulation No. 174 of 2016	National Level	Planning Module of the Need for State Property for the Preparation Plans for the Need for State Property (Amended by MoF Regulation No. 450/ 2014)
Government Regulation No. 56 of 2018	National Level	Regional Loan
MoF Regulation No. 180 of 2015	National Level	Procedures for Issuance and Accountability of Municipal Bonds

Legal Requirements

The legal requirements for Scheme A-2 are similar to Scheme A-1. However, since the source of funds also coming from financing instruments on the capital market, additional stages on bond issuance is also taken into account.

Table 8. Stages of Implementation, Legal Complaint, Parties Involved, and Analysis of Each Implementation Stage for Scheme A-2

Stage	Process	Legal compliance	Parties	Analysis
1	Loan Proposal	MoF Reg No. 174/2016	GoJ and PT. SMI	The GoJ must prepare the following documents: 1. Approval from DPRD; 2. Feasibility studies of the project; 3. Audited regional financial reports; 4. RPJMD documents from regional government; 5. APBD of the year concerned.
2	Bond issuance	POJK 41/ 2020	PT SMI and Stock Market/ Securities	
3	Loan Agreement	Contractual	GoJ and PT. SMI	
4	Regional Loan Agreement	GR 56/2018	GoJ and Transjakarta	To be injected as a capital support to Transjakarta.
5	Establishment of SPV	Law No. 40/ 2007 as lastly amended by Government Regulation in Lieu of Law No. 02/ 2022	Transjakarta to establish SPV	

Stage	Process	Legal compliance	Parties	Analysis
6	Supply contract and payment from SPV	Contractual	SPV and foreign asset importers	
7	Asset lease agreement	Contractual	SPV and Transjakarta	

Timeline/ Duration

There are three processes on executing the Scheme A-2. First is submitting the loan proposal; second is listing the bonds or other financing instruments to the capital market; and the third is processes after listing, with the goal of the bus being operated by private bus operators.

First Process: Loan Proposal

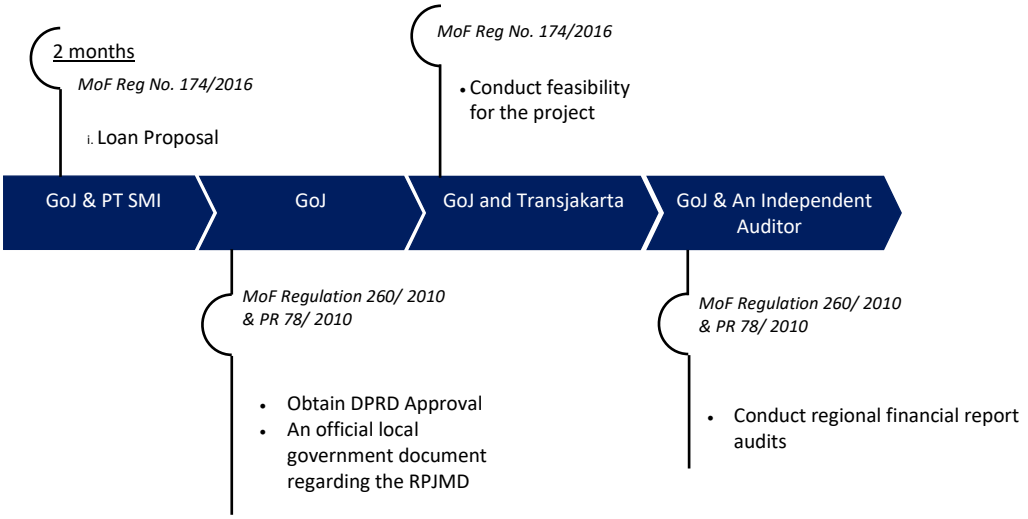

Figure 5. Timeline and Duration for Proposing Scheme A-2: Submitting the Loan Proposal

- Second process: bond listing

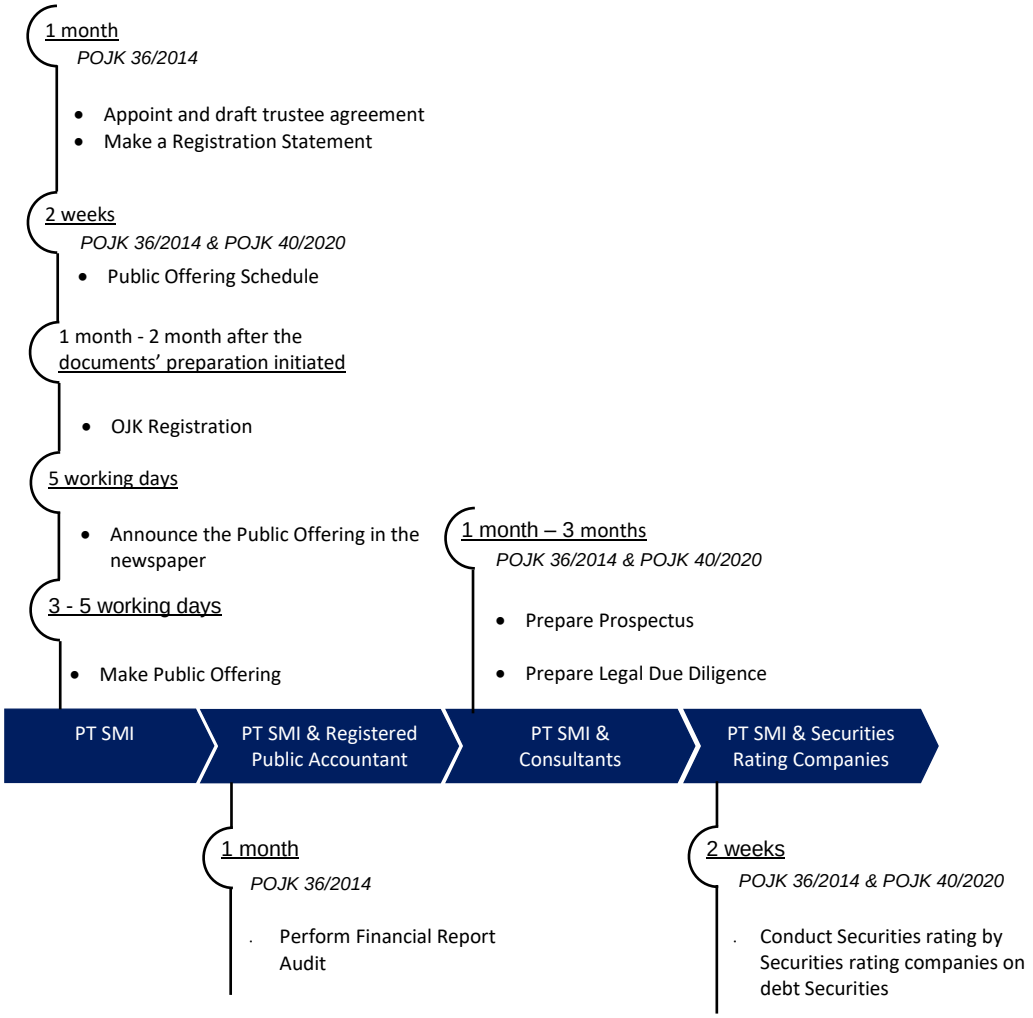

Figure 6. Timeline and Duration for Proposing Scheme A-2: Bond Listing

- Third process: after listing has been executed

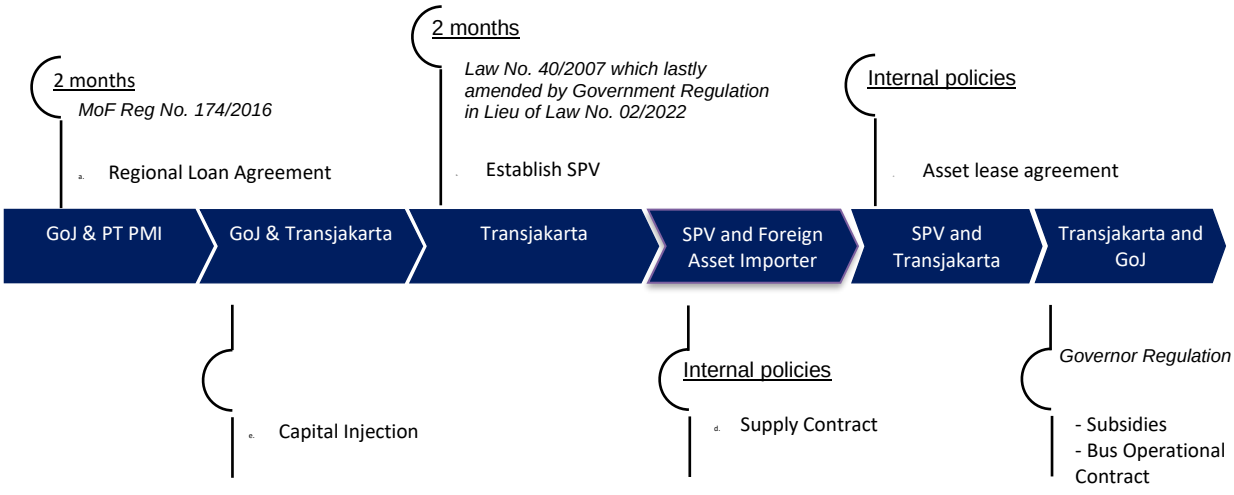

Figure 7. Timeline and Duration for Proposing Scheme A-2: After Listing

4.3.3. Scheme A-3: Development Financial Institutions (DFIs) or Exporting Credit Agencies (ECAs) Loan to Government (2-Step Loan)

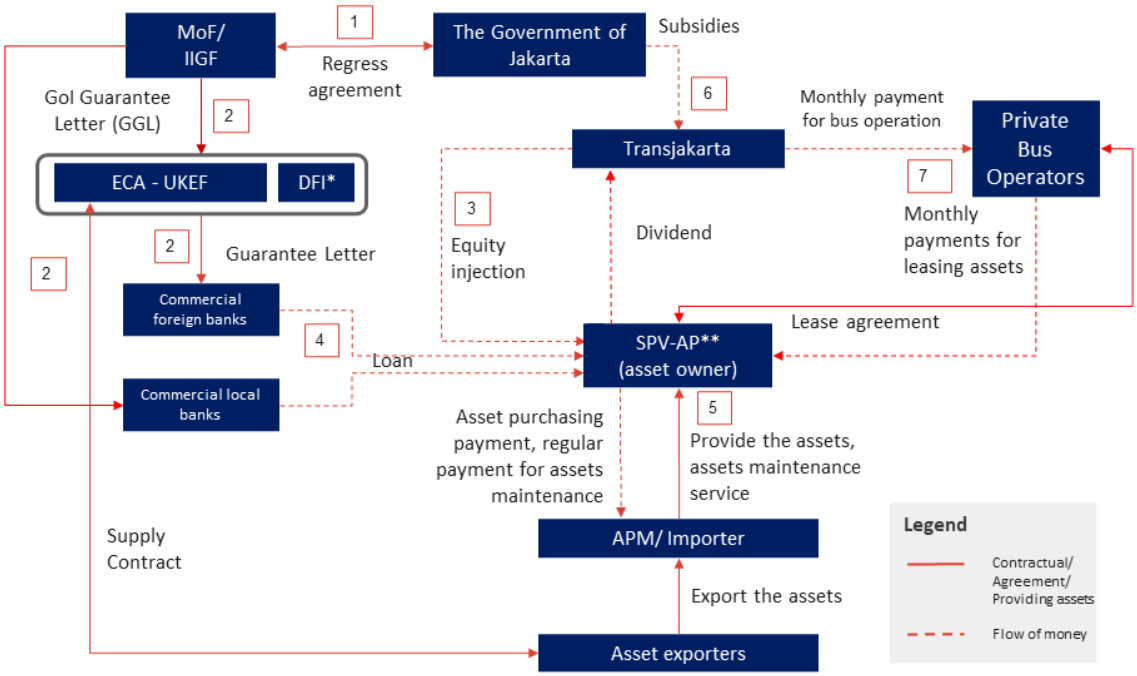

Figure 8. Scheme A-3: DFIs or ECAs Loan to Government (2-Step Loan)

In this scheme, the Government of Jakarta will be the lender and the loan is provided by the international institution. Therefore, the Government of Jakarta needs to get Government Guarantee Letter (GGL) from the National Government. The GGL can be issued either by the Ministry of Finance or Indonesia Infrastructure Guarantee Fund, to Development Financial Institutions (DFIs) or Exporting Credit Agency (ECAs). Since it needs National Government support, the electrification plan should be in line with the national government agenda.

Relevant Regulations

Relevant regulations related to the issuance of the Scheme A-3 are listed as follows:

Table 9. Regulations Related to The Implementation of Scheme A-3.

Regulations No.	Regulations Level	Topic of Regulations
MoF Regulation No. 260 of 2010	National Level	Instructions for Implementing Infrastructure Guarantee in Public Private Partnership Projects
PR No. 78 of 2010	National Level	Infrastructure Guaranty in Government Cooperation Projects with Business Entities Conducted Through Infrastructure Guarantee Business Entities (*Badan Usaha Penjamin Infrastruktur,* "BUPI").

MoF Regulation No. 8 of 2016	National Level	The Amendment of the MoF Regulation No. 260/ 2010

The Table 10 the documents that must be issued and its relevant parties with the legal compliance.

Table 10. Stages of Implementation, Legal Complaint, Parties Involved, and Analysis of Each Implementation Stage for Scheme A-3

Stage	Process	Legal Complaint	Parties	Analysis
1	Guarantee Proposal	• MoF Regulation No. 260 of 2010 • PR No. 78 of 2010	Government of Jakarta, and (IIGF)	The Guarantee Proposal shall at least be supplemented with: • Risk Matrix of the project • Draft of the Cooperation Agreement • Financial Projections of the project.
2	Government Guarantee Agreement		Government of Jakarta, MoF, and IIGF	Criteria of Infrastructure Risk Eligible for Infrastructure Guarantee: • The occurrence was caused by the action or inaction of the PJPK or Government other than the PJPK in matters that according to law or PJPK or Government regulations other than PJPK have authority to perform the said action; • Caused by policies of the PJPK or Government other than the PJPK; • Caused by a unilateral decision of the PJPK or the Government aside from the PJPK; • Caused by the PJPK's inability to carry out obligations determined to him by the Business Entity based on Cooperation Agreement (breach of contract).
3	Regress Agreement		Government of Jakarta, MoF, and PT PII	In accordance with the provisions as referred to in Article 5 paragraph (2) point (ii) of PR 78/2010, PJPK's commitment to fulfil the regress must be stated in the Regress agreement. Regress agreement must be differentiated between Government Regress agreement and BUPI/ PT PII Regress Agreement.

Stage	Process	Legal Complaint	Parties	Analysis
4	Loan Agreement	Contractual	Foreign & Local Commercial Bank and SPV-AP	Bankability Bank requirement
5	Supply contract	Contractual	Asset Exporters and ECA	Bank requirement Technical specification

Timeline

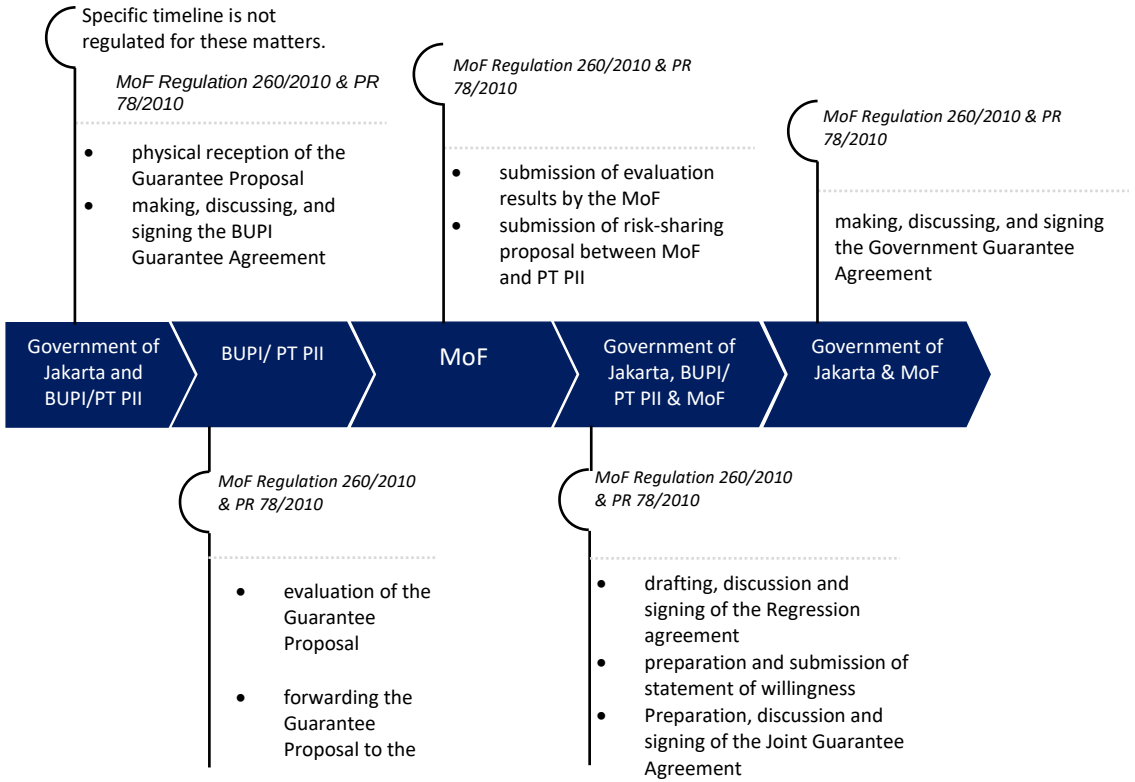

Figure 9. Timeline and Duration for Proposing Scheme A-3

Scheme B is divided into Scheme B-1, B-1A, B-2 alternative 1, B-2 alternative 2 and B-2 alternative 3 as described below:

4.3.4. Scheme B-1: Loan from Commercial Foreign Banks to Private Sectors (Asset Leasing)

Scheme B-1, potential commercial foreign banks provide loans to local importers, buyers, or capital providers (referred as "**private sectors**"). The private sectors will have a supply contract with foreign asset exporters for providing the assets. Bus operators and private sectors will conduct an operating lease agreement where the private operators will lease the assets to bus operators.

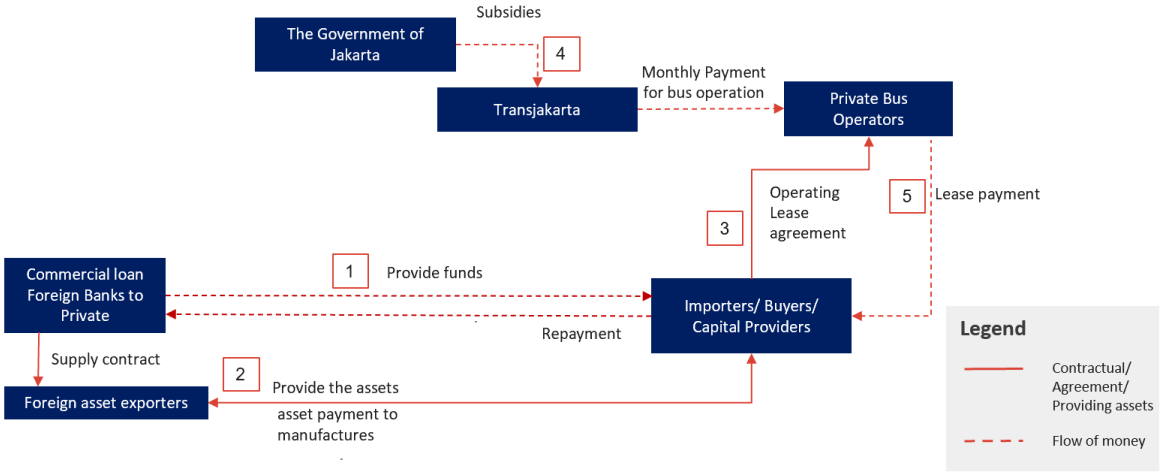

Figure 10. Scheme B-1: Loan from Commercial Foreign Banks to Private Sectors (Asset Leasing)

There are several principles within a legal framework for executing Scheme B-1, as described below:

Legal Framework

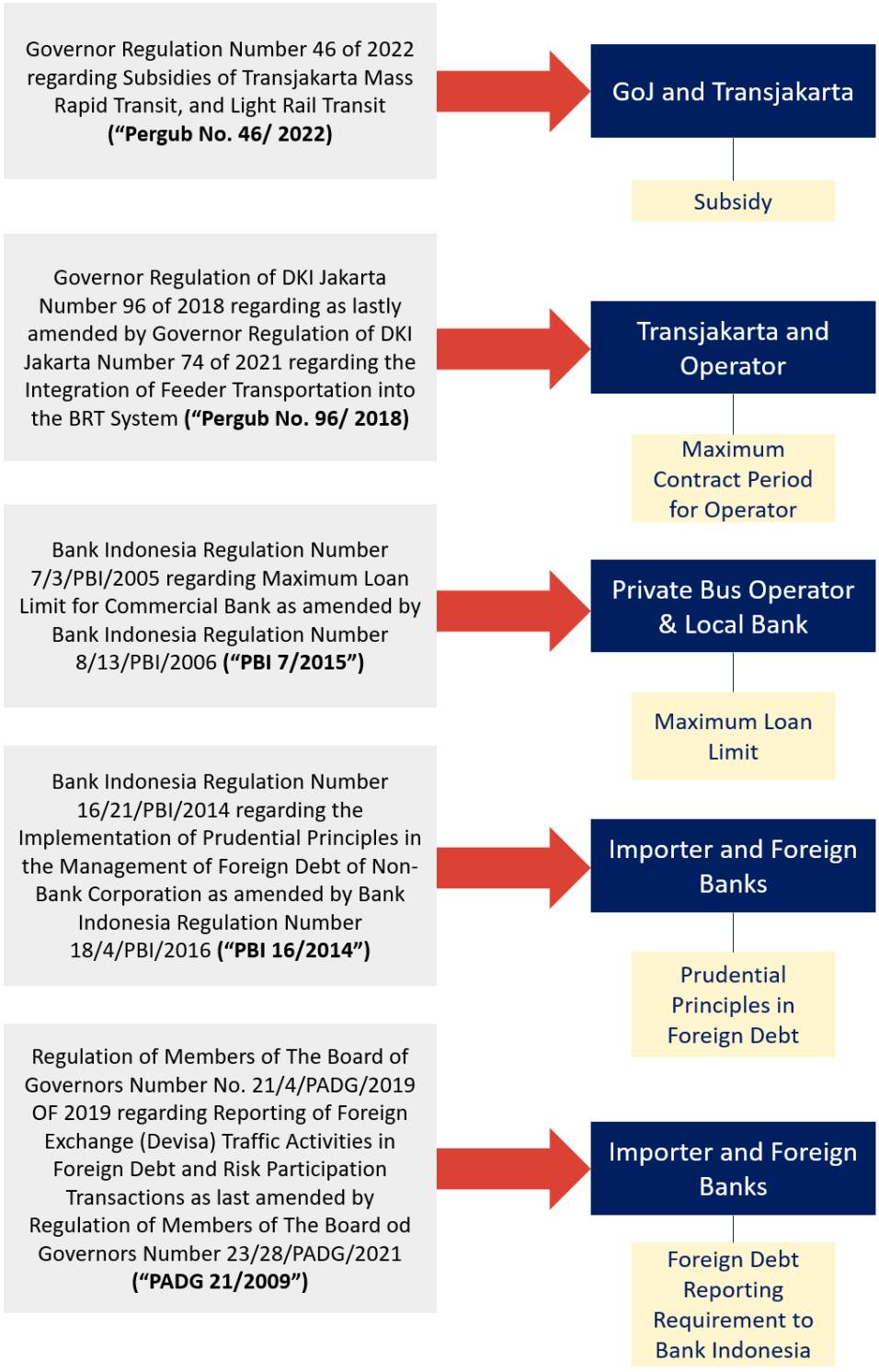

Figure 11. Legal Framework for Implementing Scheme B-1

Relevant Regulations

Table 11. Regulations Related to The Implementation of Scheme B-1.

Regulations No.	Regulations Level	Topic of Regulations
Governor Regulation No. 46/ 2022	National Level	Subsidies for Transjakarta Public Transport Services, MRT, and LRT
Bank Indonesia Regulation No. 16/ 2014	National Level	Reporting on Foreign Exchange Flows and Reporting the Implementation of Prudential Principles in the Management of Foreign Debt of Non-Bank Corporations
Board of Bank Indonesia Governors Regulation No. 21/ 2019 (**"PADG 21/2019")**	National Level	Short-Term Liquidity Loans for Conventional Commercial Banks
Bank Indonesia Regulation No. 22/ 2020	National Level	Changes on the *Bank Indonesia* Regulation No.16 of 2014

Table 12. Stages of Implementation, Legal Complaint, Parties Involved, and Analysis of Each Implementation Stage for Scheme B-1

Stage	Process	Legal Requirement	The Parties	Analysis
1	Loan Agreement	Contractual with regards to requirements on PBI 16/ 2014 and PADG 21/ 2019	Commercial Foreign Banks and private sectors: a. Commercial Foreign Banks provide capital needed for private sectors to purchase e-bus and charging facilities; b. Private sectors pay repayment of the funds to commercial foreign banks.	In accordance with PBI 16/2014, non-bank corporations that have foreign loans (Utang Luar Negeri/"ULN") in Foreign Currencies must implement prudential principles: a. the Hedging Ratio *(Rasio Lindung Nilai)*; b. the Liquidity Ratio *(Rasio Likuiditas)*; and c. the Credit Rating *(Peringkat Utang)*. A. The certain minimum Hedging Ratio shall be set at 25% (twenty-five percent) of: a. The negative difference between Foreign-Exchange Assets and Foreign-Exchange Liabilities, that will be due in up to the next 3 (three) months from the end of quarters; and b. The negative difference between Foreign-Exchange Assets and Foreign-Exchange Liabilities, that will be due in more than 3 (three) months up to the next 6 (six) months from the end of quarters. B. The certain minimum Liquidity Ratio shall be set at a minimum of 70% (seventy percent). C. Non-Bank Corporations that engage in ULN in Foreign Currencies must fulfil the minimum Credit Rating equivalent to "BB-" that is issued by Rating Agencies that are acknowledged by Bank Indonesia.

Stage	Process	Legal Requirement	The Parties	Analysis
				In accordance with PADG 21/2019, Non-Bank Corporations that have ULN must report on the ULN activities from the initial process until the payment to Bank Indonesia.
2	Sale & Purchase Agreement	Contractual	Foreign Asset Exporters and private sectors a. Foreign asset exporter provides e-bus and charging facilities to private sectors; b. Private sectors pay asset purchasing payment to foreign asset exporters.	<u>Registration and Identification of Motorized Vehicles:</u> ii. Type Test; iii. SUT; iv. SRUT; v. Vehicle Registration; vi. BPKB; vii. STNK; viii. TNKB; ix. Applying for Route Permit. <u>Separation of Asset Ownership:</u> i. E-bus owned by a leasing company; ii. BPKB serves as proof of ownership of a vehicle; iii. BPKB (*on behalf of* the *leasing company*); iv. BPKB as requirement to issue STNK; v. STNK serves as proof of the legitimacy of the operation of vehicle; vi. STNK (*on behalf of the leasing company*); vii. Apply for Route Permit; viii. Route Permit attached to vehicle; ix. Proof of vehicle ownership is BPKB (*on behalf of leasing company*) and legitimacy of the operation of vehicle is STNK (*on behalf of leasing company*); x. There will be an issue for operator to obtain Route Permit as BPKB and STNK (*on behalf of leasing company*).

Stage	Process	Legal Requirement	The Parties	Analysis
3	Lease Agreement	Contractual	Private sectors and operators: private sectors provide e-bus and/ or charging facilities to operators	
4	Subsidies	Governor Regulation No. 46/ 2022	GoJ and Transjakarta	Public Service Obligation for providing Transjakarta services.
5	Lease Payment	Contractual	Private sectors and operators a. Operators pays lease fee to private sectors.	

Timeline and Durations

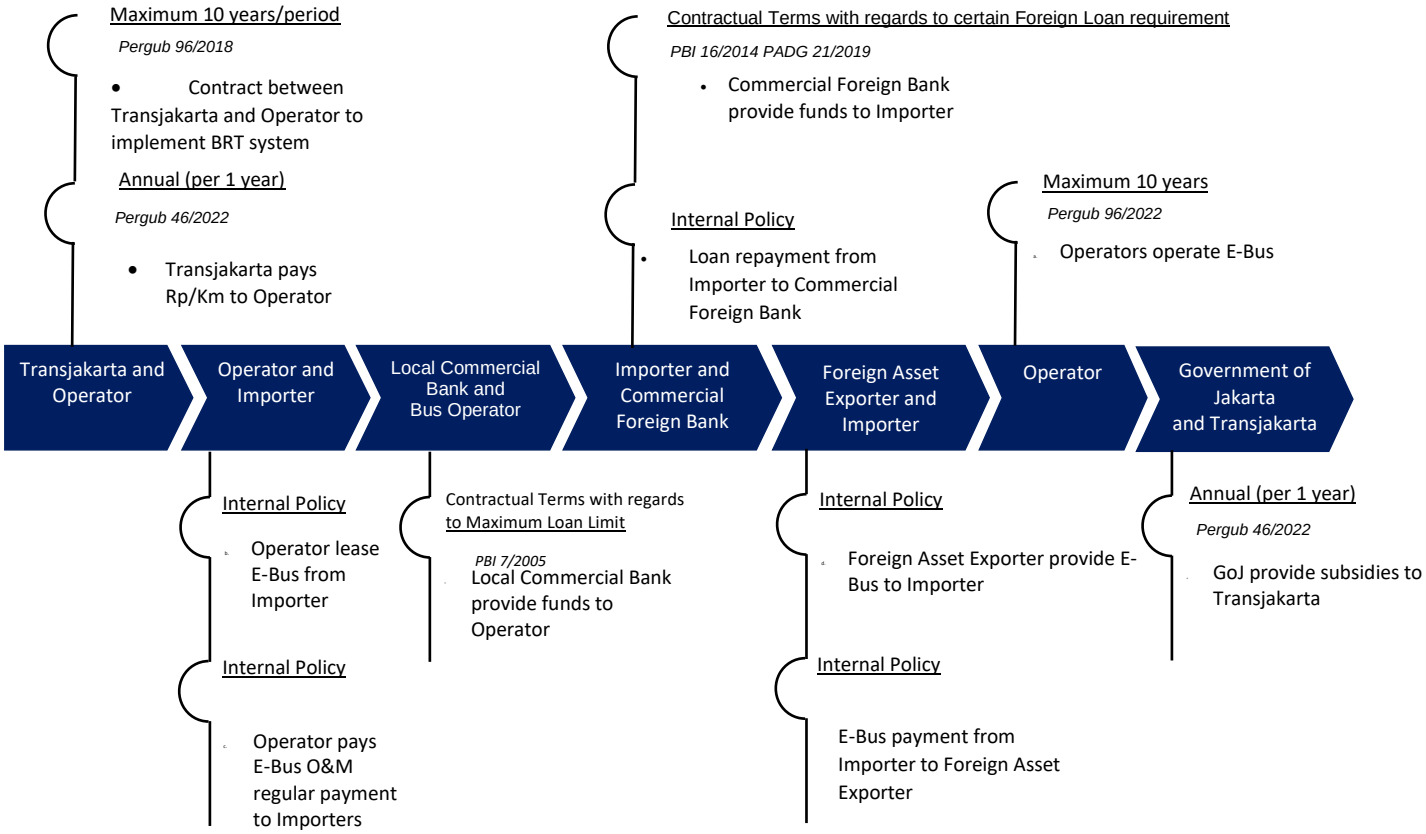

Figure 12. Timeline and Duration for Proposing Scheme B-1

4.3.5. Scheme B-1A: Loan from Commercial Foreign Banks to Private Sectors (Business-as-Usual)

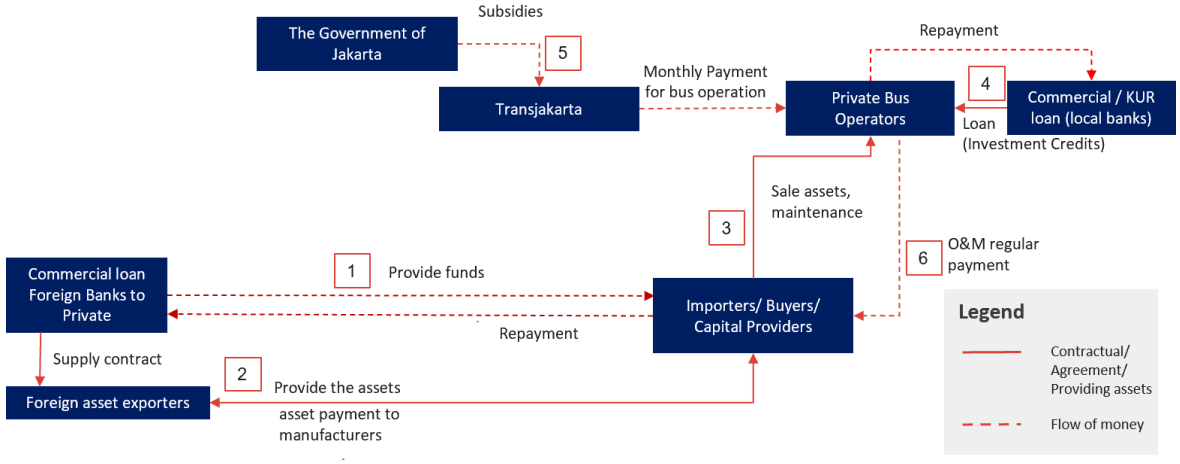

Figure 13. Scheme B-1A: Loan from Commercial Foreign Banks to Private Sectors (Business-as-Usual)

Scheme B-1A is similar to Scheme B-1. The difference between Scheme B-1A and Scheme B-1 is that the bus operators will own the assets instead of least the assets. The bus operator procures the assets from importers/ buyers/ capital providers. Consequently, the bus operators need to get financial support or loan (investment credits) from commercial local banks. The operators need to meet the bankability requirement from the banks. To meet the bankability requirement, the operators need to conduct:

a. Repayment capacity evaluation;
b. No debt and litigation issues;
c. Long contract covering the credit period;
d. Clear repayment process in the contract; and
e. Have an accompanying collateral (*Agunan Pendamping*).

In terms of bus financing, it is categorised as high risk for the banks because the depreciation of the bus is faster. Therefore, having accompanying collateral will lower the risk.

Relevant Regulations

Table 13. Regulations Related to The Implementation of Scheme B-1A.

Regulations No.	Regulations Level	Topic of Regulations
Governor Regulation No. 46/ 2022	National Level	Subsidies for Transjakarta Public Transport Services, MRT, and LRT
Bank Indonesia Regulation No. 16/ 2014 ("**PBI 16/ 2014**")	National Level	Reporting on Foreign Exchange Flows and Reporting the Implementation of Prudential Principles in the Management of Foreign Debt of Non-Bank Corporations
Bank Indonesia Board of Governors Regulation No.21/ 2019 ("**PADG 21/ 2019**")		Short-Term Liquidity Loans for Conventional Commercial Banks
Bank Indonesia Regulation No. 7/ 2005 ("**PBI 7/ 2005**")		Foreign Bank Loans
Bank Indonesia Regulation No. 22/ 2020 ("**PBI 22/ 2020**")	National Level	Changes on the Bank Indonesia Regulation No. 16/ 2014

Legal Requirements

Table 14. Stages of Implementation, Legal Complaint, Parties Involved, and Analysis of Each Implementation Stage for Scheme B-1A

Stages	Process	Legal Requirement	The Parties	Analysis
1	Loan Agreement	Contractual with regards to requirements on PBI 16/2014 and PADG 21/2019	Commercial Foreign Banks and Private Sectors a. Commercial Foreign Banks provide capital needed for private sectors to purchase e-bus and charging facilities; b. Private sectors pay repayment of the funds to commercial foreign banks.	In Accordance with PBI 16/2014, Non-Bank Corporations that have Foreign Loans (Utang Luar Negeri/"ULN") in Foreign Currencies must implement prudential principles: a. the Hedging Ratio *(Rasio Lindung Nilai)*; b. the Liquidity Ratio *(Rasio Likuiditas)*; and c. the Credit Rating *(Peringkat Utang)*. A. The certain minimum Hedging Ratio shall be set at 25% (twenty-five percent) of a. the negative difference between Foreign-Exchange Assets and Foreign-Exchange Liabilities, that will be due in up to the next 3 (three) months from the end of quarters; and b. the negative difference between Foreign-Exchange Assets and Foreign-Exchange Liabilities, that will be due in more than 3 (three) months up to the next 6 (six) months from the end of quarters. B. The certain minimum Liquidity Ratio shall be set at a minimum of 70% (seventy percent). C. Non-Bank Corporations that engage in ULN in Foreign Currencies must fulfil the minimum Credit Rating equivalent to "BB-" that is

Stages	Process	Legal Requirement	The Parties	Analysis
				issued by Rating Agencies that are acknowledged by Bank Indonesia. In accordance with PADG 21/2019, Non-Bank Corporations that have ULN must report on the ULN activities from the initial process until the payment to Bank Indonesia.
2	Sale & Purchase Agreement	Contractual	Foreign Assets Exporters and Private Sectors a. Foreign asset exporters provide e-bus and/ or charging facilities to private sectors; b. Private sectors pay asset purchasing payment to foreign asset exporters.	Assets owned by private sectors (importers, capital providers, etc.)
3	Lease Agreement	Contractual	Private Sectors and Operators • Private Sectors provide e-bus and charging facilities to operators.	
4	Subsidies	Pergub 46/2022	GoJ and Transjakarta	Public Service Obligations for providing Transjakarta Services
5	Loan Agreement	Contractual with regards to requirement on PBI 7/2005	Between Bus Operators and Local Commercial Banks	- 1 (one) group of borrowers who are not related parties (to the bank) is set at a maximum lending limit of 25% (twenty-five percent) of the bank's capital. - Bus operators need to pay attention to the level of their bankability.

Stages	Process	Legal Requirement	The Parties	Analysis
6	Lease Payment	Contractual	Between private sectors and operators a. Private sectors provide e-bus and/ or charging facilities to operator; b. Operators pays lease fee to private sectors.	

Timeline/ Duration

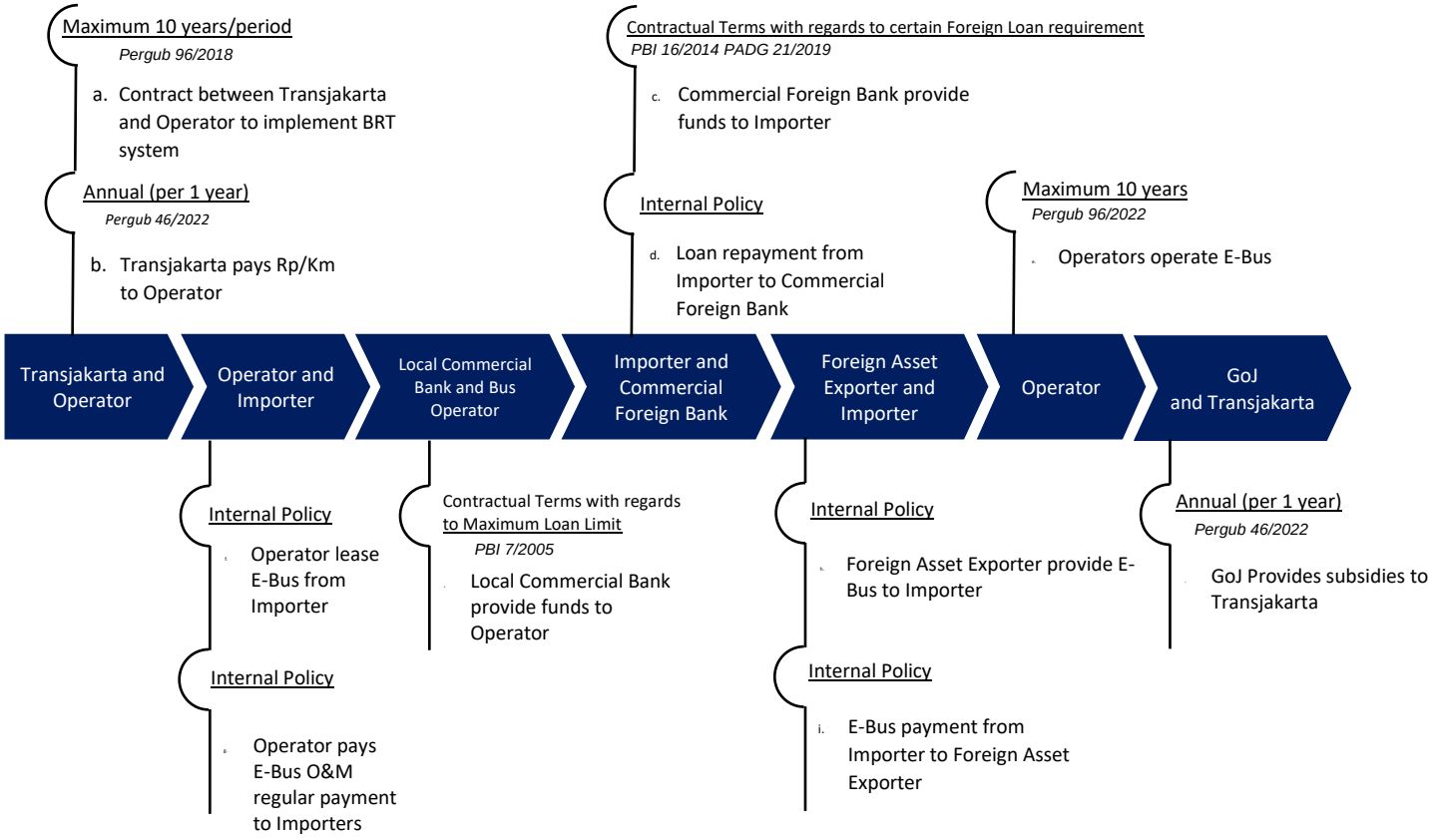

Figure 14. Timeline and Duration for Proposing Scheme B-1A

4.3.6. Scheme B-2: Private Sectors Issue Financing Products to Finance Transjakarta Electrification

As seen on Figure 15,On this scheme, the private sectors (importers/buyers/capital providers) will issue financing products to finance Transjakarta Electrification. Securities will raise funds from capital market providers. Private sectors will pay loan regarding the issuance of financing products.

The financing product analysed, which will be analysed further on Task 4.6. Report is Limited Participation Mutual Fund (RDPT) as RDPT is more attractive product for investors. RDPT also does not require company's rating.

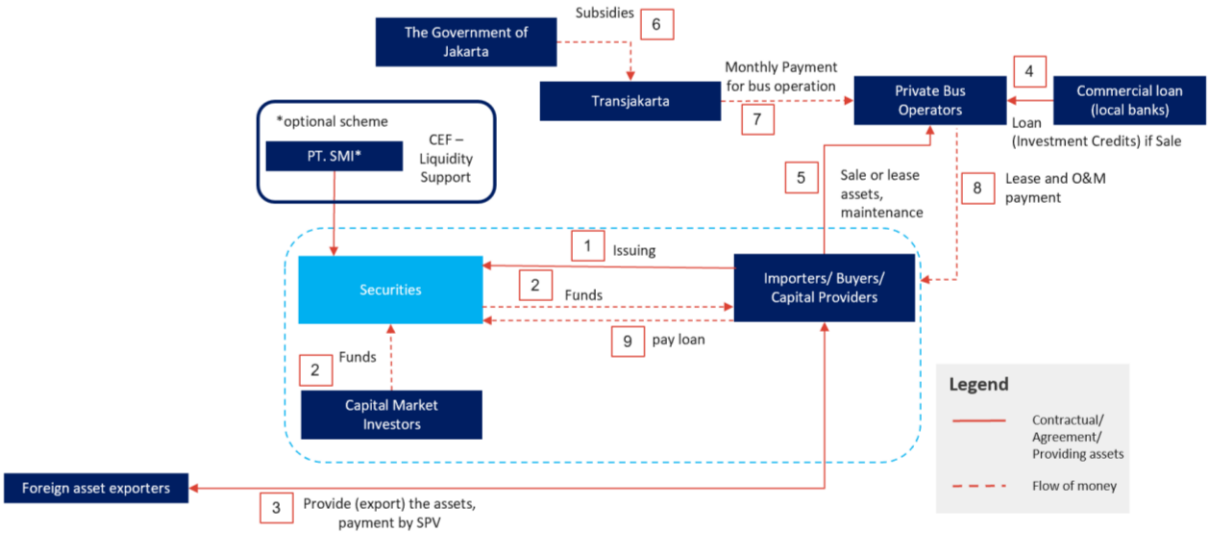

Figure 15. Scheme B-2: Private Sectors Issue Financing Products to Finance Transjakarta Electrification

Relevant Regulations

Table 15. Regulations Related to The Implementation of Scheme B-2.

Regulations No.	Regulations Level	Topic of Regulations
Governor Regulation No. 46/ 2022	National Level	Subsidies for Transjakarta Public Transport Services, MRT, and LRT
Bank Indonesia Regulation No. 16/ 2014	National Level	Reporting on Foreign Exchange Flows and Reporting the Implementation of Prudential Principles in the Management of Foreign Debt of Non-Bank Corporations
Bank Indonesia Regulation No. 7/ 2005		Foreign Bank Loans
Bank Indonesia Board of Governors Regulation No. 21/ 2019		Short-Term Liquidity Loans for Conventional Commercial Banks
POJK No. 41/ 2020		Implementation of Electronic Public Offering of Equity Securities, Debt Securities, and/or Sukuk
Bank Indonesia Regulation No. 22/ 2020	National Level	Changes on the *Bank Indonesia* Regulation No.16 of 2014

Legal Requirements

Table 16. Stages of Implementation, Legal Complaint, Parties Involved, Analysis, and Recommendations of Each Implementation Stage for Scheme B-2

Stages	Process	Legal Requirement	Parties, Status, and Analysis	Recommendations
Listing Stage				
1	Security Issuance	POJK No. 41/ 2020	Private sectors as issuers will offer the financial products to the capital market.	The issuer must be a public company
2	Capital Market Investment	POJK No. 41/ 2020	The offering will be made to the capital market and can be purchased by the public through subscriptions for the offered securities	
3	Provide Assets	Contractual	Between foreign assets exporters and private sectors. The fund collected from the share subscription will be used to exports the assets	
After Listing Stages				

1	Loan Agreement	Contractual with regards to requirements on PBI No. 16/ 2014 and PADG No. 21/ 2019	Between Commercial Foreign Banks and Private Sectors a. Commercial Foreign Banks provide funds for private sectors to purchase the bus and/ or charging facilities; b. Private sectors pay repayment of the funds to commercial foreign banks.	In Accordance with PBI No. 16/ 2014, non-bank corporations that have foreign loans (*Utang Luar Negeri*/ "ULN") in foreign currencies must implement prudential principles: • the Hedging Ratio *(Rasio Lindung Nilai)*; • the Liquidity Ratio *(Rasio Likuiditas)*; and • the Credit Rating *(Peringkat Utang)*. A. The certain minimum hedging ratio shall be set at 25% (twenty-five percent) of: a. The negative difference between foreign-exchange assets and foreign-exchange liabilities, that will be due in up to the next 3 (three) months from the end of quarters; and b. The negative difference between foreign-exchange assets and foreign-exchange liabilities, that will be due in more than 3 (three) months up to the next 6 (six) months from the end of quarters. B. The certain minimum liquidity ratio shall be set at a minimum of 70% (seventy percent). C. Non-bank corporations that engage in ULN in foreign currencies must fulfil the minimum credit rating equivalent to "BB-" that is issued by rating agencies that are acknowledged by Bank Indonesia.

				In accordance with PADG No. 21/ 2019, non-bank corporations that have ULN must report on the ULN activities from the initial process until the payment to Bank Indonesia.
2	Sale & Purchase Agreement	Contractual	Between Foreign Asset Exporters and Private Sectors a. Foreign asset exporters provide e-bus and/ or charging facilities to private sectors; b. Private sectors pay asset purchasing payment to foreign asset exporters.	E-Bus owned by Importer.
3	Lease Agreement	Contractual	Between private sectors and operators. Private sectors provide e-bus and/ or charging infrastructure to operators.	
4	Subsidies	Governor Regulation No. 4/ 2022	Subsidy from GoJ to Transjakarta.	Public Service Obligation for providing Transjakarta Services.

5	Loan Agreement (*optional*)	Contractual with regards to requirement on PBI No. 7/ 2005	Between bus operators and local commercial banks (Optional, applied if only bus operators buy the fleets and charging facilities from private sectors instead of lease it).	- 1 (one) group of borrowers who are not related parties (to the bank) is set at a maximum lending limit of 25% (twenty-five percent) of the bank's capital. - Bus Operators need to pay attention to the level of their bankability.
6	Lease Payment	Contractual	Between private sectors and bus operators: c. Private sectors provide e-bus and/ or charging facilities to bus operators; d. Operators pays lease fee to private sectors.	

Timeline/ Duration

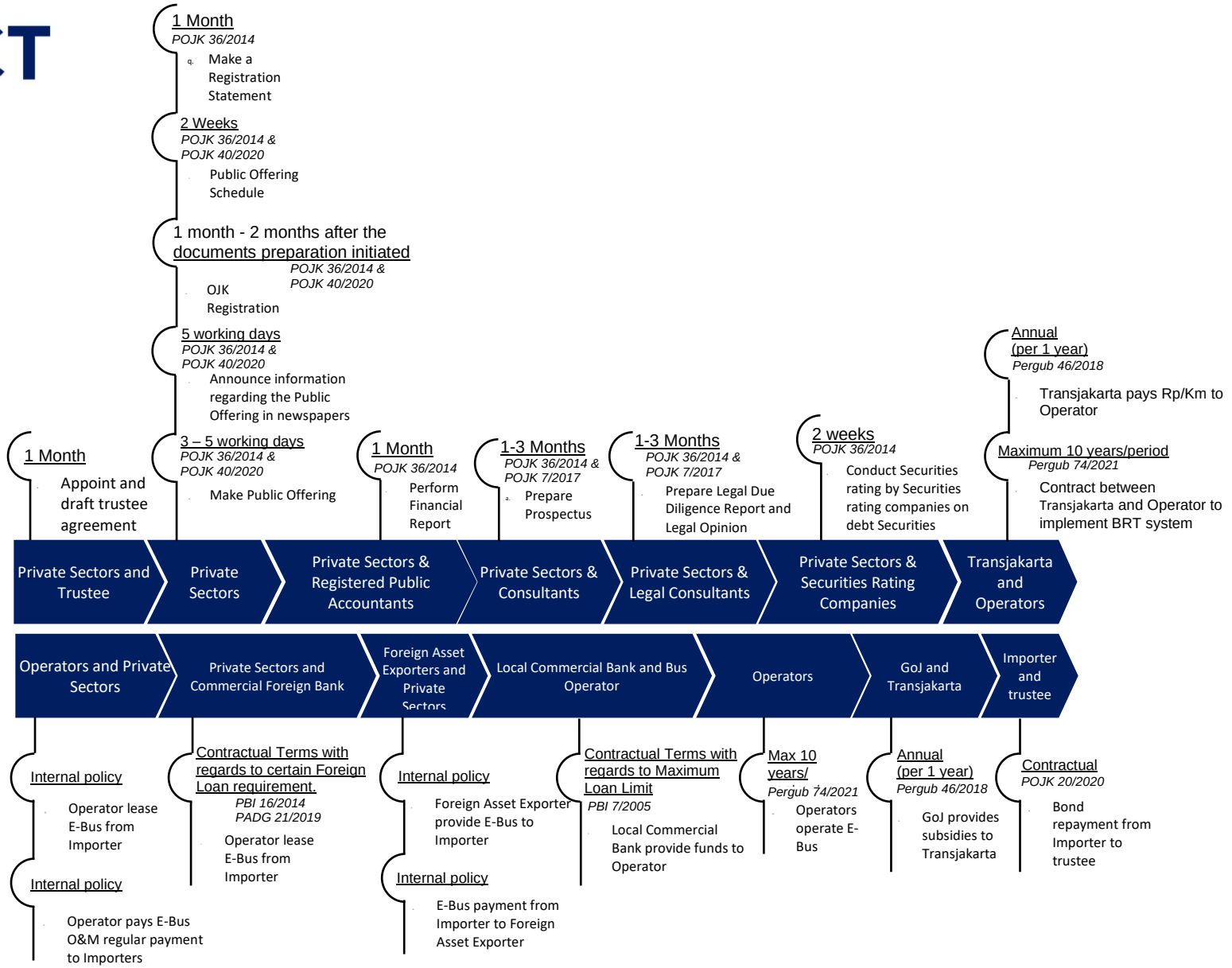

Figure 16. Timeline and Duration for Proposing Scheme B-2

The issuance of RDPT, in the case of Transjakarta's electrification, is divided into three structured financing scenarios, that is discussed below:

Scheme B-2, Alternative 1

In this scheme, an SPV Holding Co. will act as an asset aggregator who owns the assets associated to the Transjakarta Electrification Programme. SPV will purchase the assets needed from OEMs and charging infrastructure providers. Lease agreement and O&M contract will be conducted between SPV and bus operators.

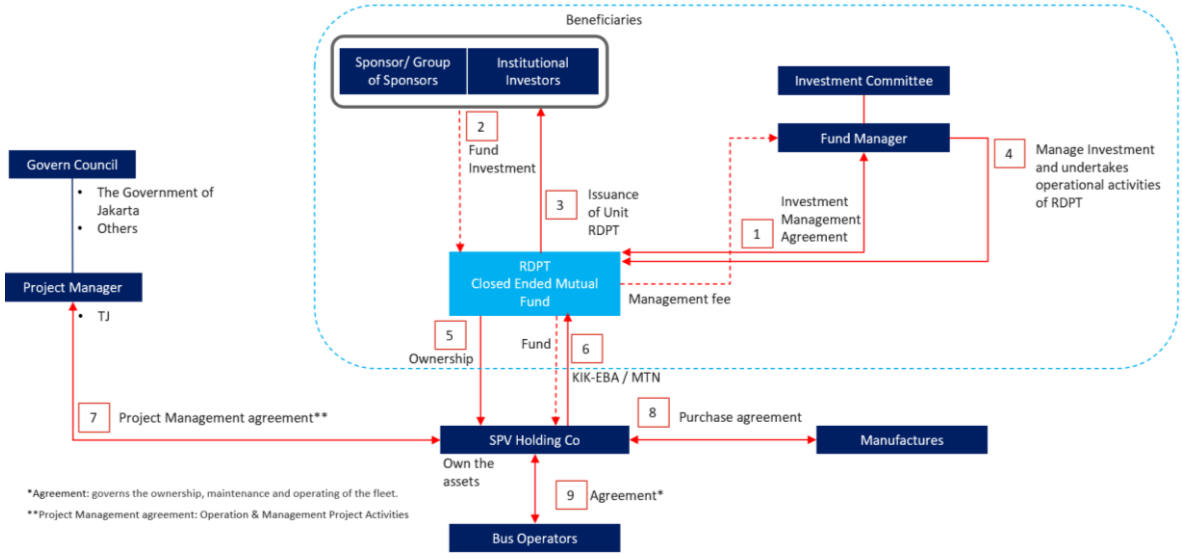

Figure 17. Scheme B-2, Alternative 1 Structured Financing

Legal Framework

Table 17. Legal Framework Regarding the Issuance of RDPT.

No	Regulations
1	Financial Services Authority Regulation Number 24/POJK.04/2014 regarding Investment Managers Guidelines (**"POJK 24/2014"**)
2	Financial Services Authority Regulation Number 34/POJK.04/2019 regarding Mutual Funds in the form of Limited Participation Collective Investment Contracts (**"POJK 34/2019"**)

General Briefing

Capital transactions through Limited Participation Mutual Funds ("RDPT") are entirely within the scope of the **POJK 24/2014** and **POJK 34/2019**. POJK 24/2014 regulates guidelines for Investment Managers in carrying out their duties in issuing RDPTs. While POJK 34/2019 regulates more about the RDPT instrument itself. POJK 34/2019 regulates that RDPT is an entity used to raise funds from professional investors which are then invested by Investment Managers in real sector activity-based securities portfolios. The basis for the issuance of this RDPT is a Collective Investment Contract ("**KIK**") drawn up by the

Investment Manager and Custodian Bank that binds the unit holder where the investment manager is authorised to manage collective investment portfolios and the custodian bank is authorized to carry out collective custody. This RDPT will then be distributed to the RDPT unit holders ("**Target Companies**") to be used for project funding.

RDPT Relevant Regulations

Table 18. Relevant Regulations on the RDPT Issuance.

Regulations No.	Regulations Level	Topic of Regulations
POJK No. 24/ 2014	National Level	Guidelines for Implementation of Investment Manager Functions
POJK No. 34/ 2019	National Level	Mutual Funds in the Form of Limited Participation Collective Investment Contract

Legal Requirements

Table 19. Stages of Implementation, Legal Complaint, Parties Involved, Analysis, and Recommendations of Each Implementation Stage for Scheme B-2, Alternative 1 Structured Financing

Stages	Process	Legal Requirement	Parties, Status, and Analysis	Recommendations
1	Investment Management Agreement	POJK No. 24/ 2014	In drafting the Investment Management Agreement, the Fund Manager must comply with the guidelines set out in this regulation	
2	Fund Investment	Contractual		
3	Issuance unit of RDPT (*Pernyataan terdaftar oleh OJK)*	POJK No. 34/ 2019	i. KIK; ii. RDPT Disclosure Document – from Investment Managers to unit holders; iii. Info memo; iv. Agreement with investment committee members; v. Issuance agreement; vi. Guarantee documents; vii. legal audit report (legal opinion) on (i) equity securities; and (ii) RDPT viii. Submission by Investment Managers 10 working days after the KIK is signed. ix. Obtain registration statement	Liaise the procedure to institutional investors. Apply to investment managers. Therefore, **Transjakarta must have a contract with an investment manager.**
4	Manage Investment and Undertakes Operational Activities	Contractual		

Stages	Process	Legal Requirement	Parties, Status, and Analysis	Recommendations
5a	Company Establishment	Company Law (Establishment of SPV to become shareholder at the target company)	Holders of the RDPT unit, Transjakarta (as the e-bus project manager)	KBLI 64931 (Conventional Venture Capital Companies)
5b	Target Companies become the shareholders of the RDPT	Target Companies directly invest to RDPT and become its shareholder.	Target Companies and Fund Managers	
6	Investment agreement	Contractual between SPV and target company	SPV and Target Companies	
7	Project Management Agreement	Contractual between Transjakarta (as project owner) and SPV Holding Company.	Transjakarta and The SPV Holding Company	
8	Purchase Agreement	Contractual between SPV and manufacturers.	SPV and manufacturers.	
9	Agreement between SPV and target company	Contractual between SPV and target company		

Timeline/ Duration

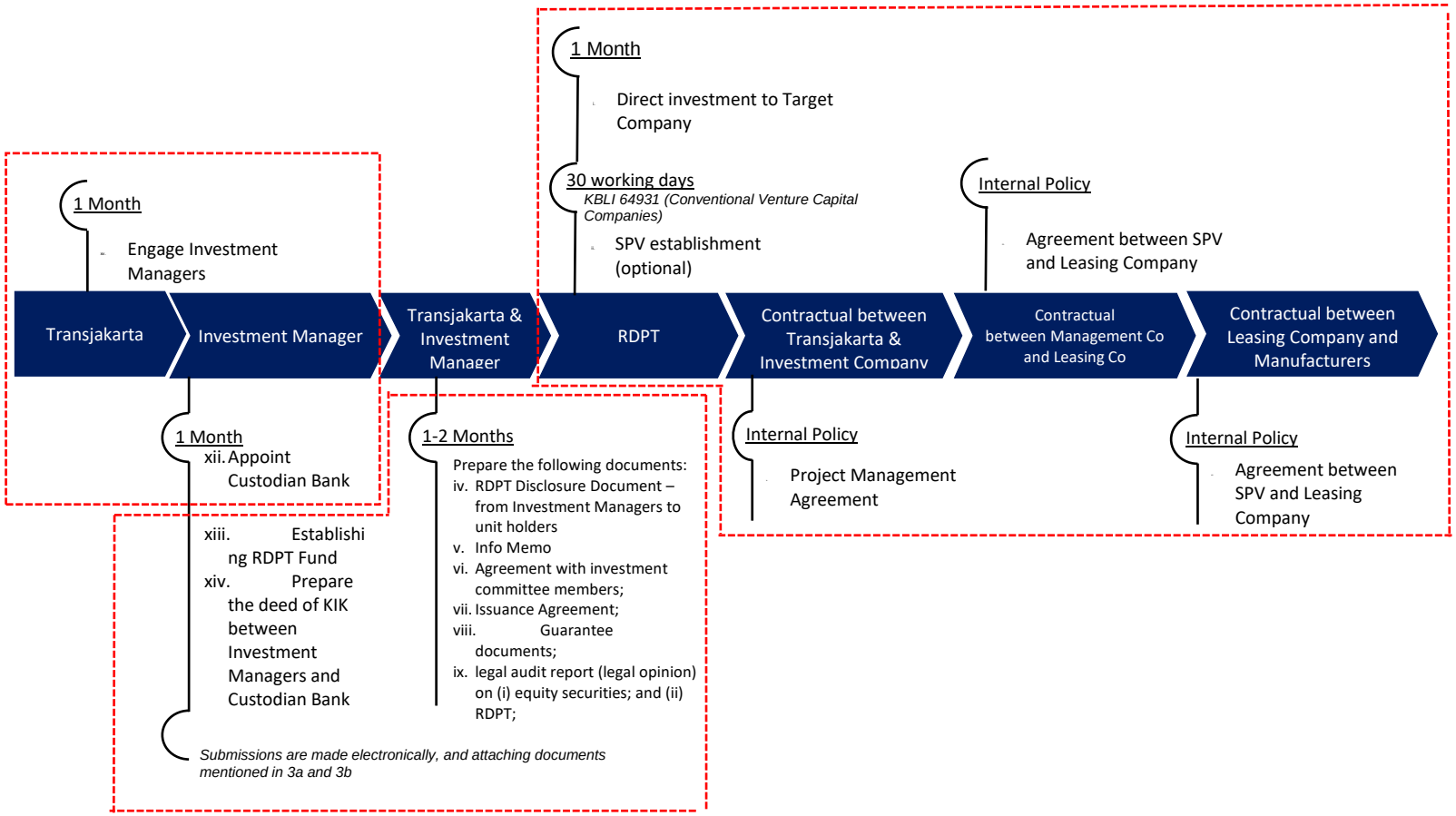

Figure 18. Timeline and Duration for Proposing Scheme B-2

Scheme B-2, Alternative 2

Instead of directly contracting with the SPV, bus operators will have finance lease agreement with leasing company. The leasing company will act as a brokerage where they will perform purchasing agreement with the OEM to buy the assets and then leased it to the operators. To ensure the electrification program run, SPV will conduct an agreement, a strategic alliance with the leasing company.

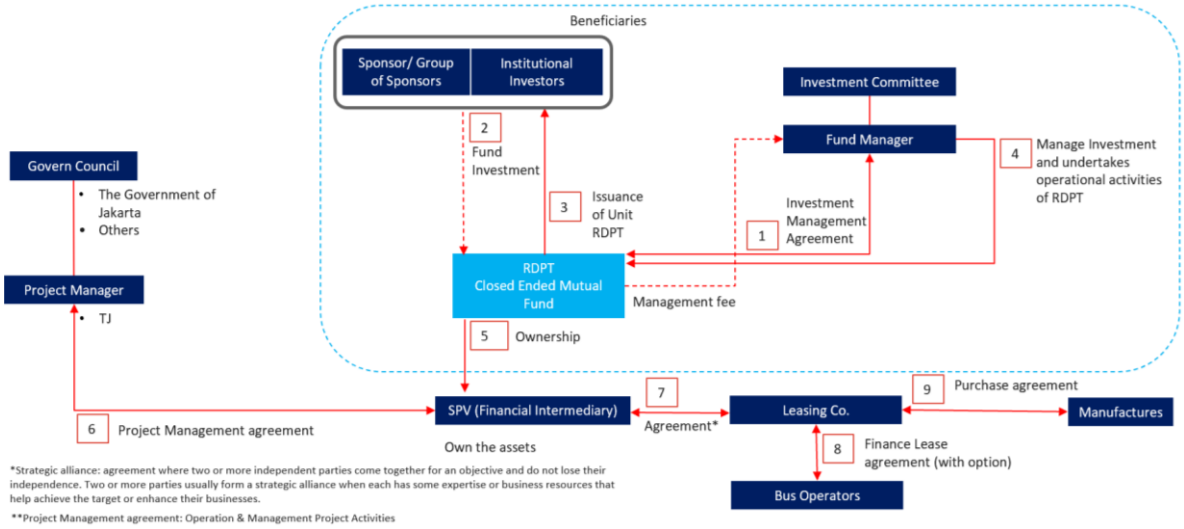

Figure 19. Scheme B-2, Alternative 2 Structured Financing

Legal Requirements

Table 20. Stages of Implementation, Legal Complaint, Parties Involved, Analysis, and Recommendations of Each Implementation Stage for Scheme B-2, Alternative 2 Structured Financing

Stages	Process	Legal Requirement	Parties, Status, and Analysis	Recommendations
1	Investment Management Agreement	POJK No.24/ 2014	In drafting the Investment Management Agreement, the Fund Manager must comply with the guidelines set out in this regulation	
2	Fund Investment	Contractual		
3	Issuance unit of RDPT (*Pernyataan terdaftar oleh OJK)*	POJK No. 34/ 2019	i. KIK; ii. RDPT Disclosure Document – from Investment Managers to unit holders; iii. Info Memo; iv. Agreement with investment committee members; v. Issuance Agreement; vi. Guarantee documents; vii. legal audit report (legal opinion) on (i) equity securities; and (ii) RDPT viii. Submission by Investment Managers 10 working days after the KIK; ix. Obtain registration statement	**Transjakarta must have a contract with an investment manager**.
4	Manage Investment and Undertakes Operational Activities	Contractual		

Stages	Process	Legal Requirement	Parties, Status, and Analysis	Recommendations
5	Ownership	Company Law (Establishment of SPV)		KBLI 64931 (Conventional Venture Capital Companies)
6	Operation & Management Agreement	Contractual between Transjakarta & SPV Company	Transjakarta and SPV company.	
7	Agreement between SPV and Leasing Company	Contractual between SPV and Leasing Company	SPV and leasing company.	
8	Finance Lease Agreement	Contractual Between Leasing Company and Bus Operator	Leasing company and bus operators.	
9	Purchase Agreement	Contractual between Leasing Company and Manufacturers	Leasing company and e-bus and/ or charging facilities manufacturers.	

Timeline/ Duration

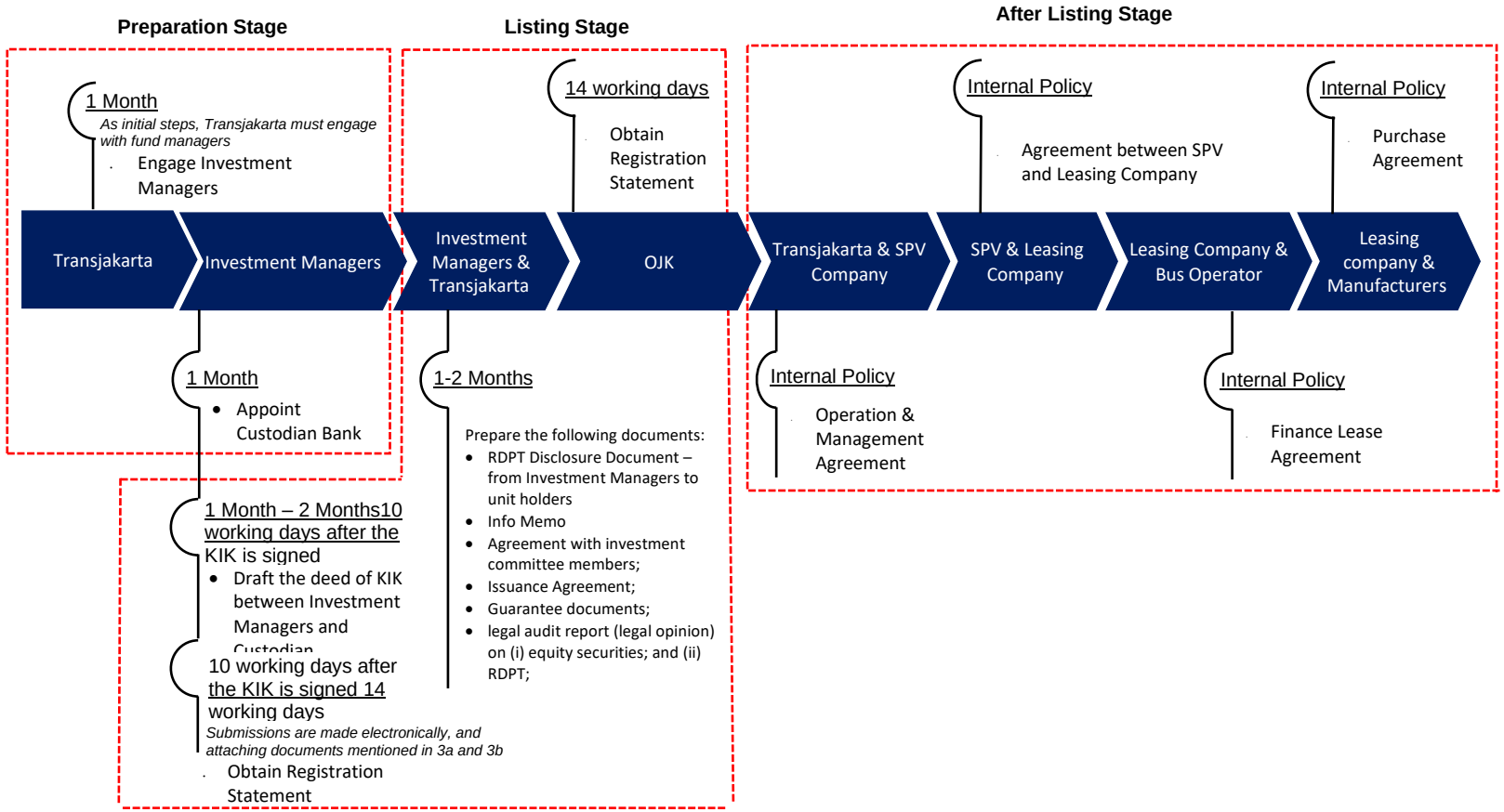

Figure 20. Timeline and Duration for Proposing Scheme B-2, Alternative 2 Structured Financing

Scheme B-2, Alternative 3

Under this scheme, The SPV and a leasing company will perform a leverage lease agreement for providing the assets from the manufacturers. The main difference of this alternative compared to alternative 2 is that the operators do not have to provide the down payment to purchase the assets as the SPV will support the operators to secure the assets needed.

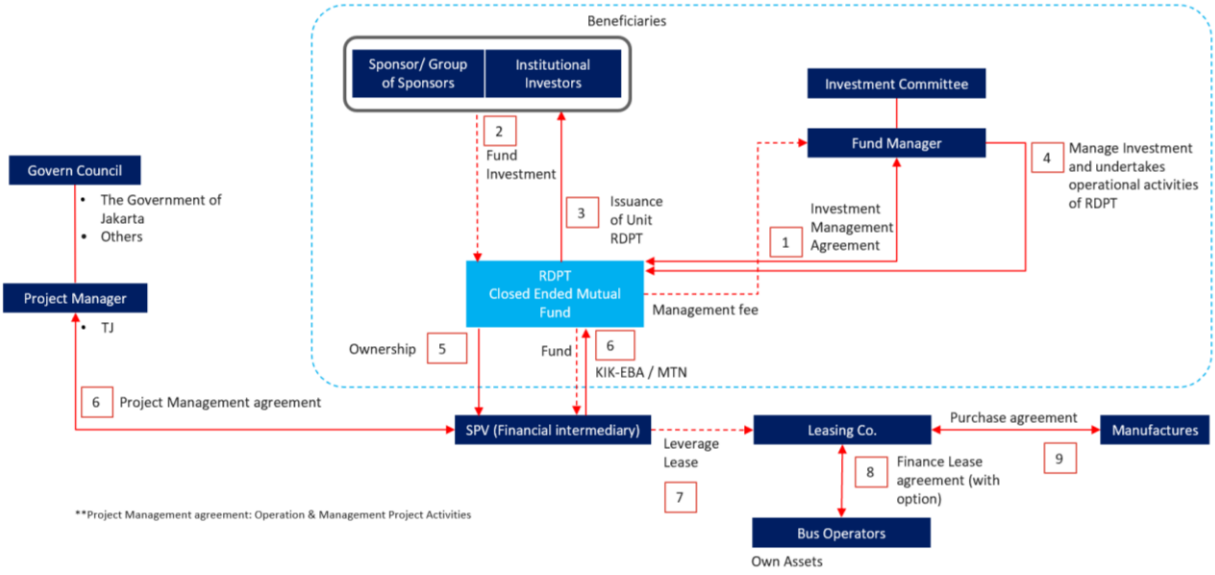

Figure 21. Scheme B-2, Alternative 3 Structured Financing.

Legal Requirements

Table 21. Stages of Implementation, Legal Complaint, Parties Involved, Analysis, and Recommendations of Each Implementation Stage for Scheme B-2, Alternative 3 Structured Financing

Stages	Relation	Legal Requirement	Parties, Status, and Analysis	Recommendation
1	Investment Management Agreement	POJK No. 24/ 2014	In drafting the Investment Management Agreement, the Fund Manager must comply with the guidelines set out in this regulation	
2	Fund Investment	Contractual		
3	Issuance unit of RDPT (*Pernyataan terdaftar oleh OJK)*	POJK No. 34/ 2019	i. KIK; ii. RDPT Disclosure Document – from Investment Managers to unit holders; iii. Info Memo; iv. Agreement with investment committee members; v. Issuance Agreement; vi. Guarantee documents; vii. Legal audit report (legal opinion) on (i) equity securities; and (ii) RDPT viii. Submission by Investment Managers 10 working days after the KIK; ix. Obtain registration statement	**Transjakarta must have a contact with an investment manager.**
4	Manage Investment and Undertakes Operational Activities	Contractual		
5	Ownership	Company Law (Establishment of SPV)		KBLI 64931 (Conventional Venture Capital Companies)

Stages	Relation	Legal Requirement	Parties, Status, and Analysis	Recommendation
6	Operation & Management Agreement	Contractual between Transjakarta & SPV Company	Transjakarta and SPV company.	
7	Agreement between SPV and Leasing Company	Contractual between SPV and Leasing Company	SPV and leasing company.	
8	Finance Lease Agreement	Contractual Between Leasing Company and Bus Operator	Leasing company and bus operators.	
9	Purchase Agreement	Contractual between Leasing Company and Manufacturers	Leasing company and e-bus and/ or charging facilities manufacturers.	
10	Issuance of Medium-Term Notes	Between RDPT and Professional Investors	RDPT must prepare and submit the following documents to OJK: 1. Cover letter for the issuance of Debt securities and/ or Sukuk without public offering (**"EBUS**"); and 2. Information Memorandum.	

Timeline/ Duration

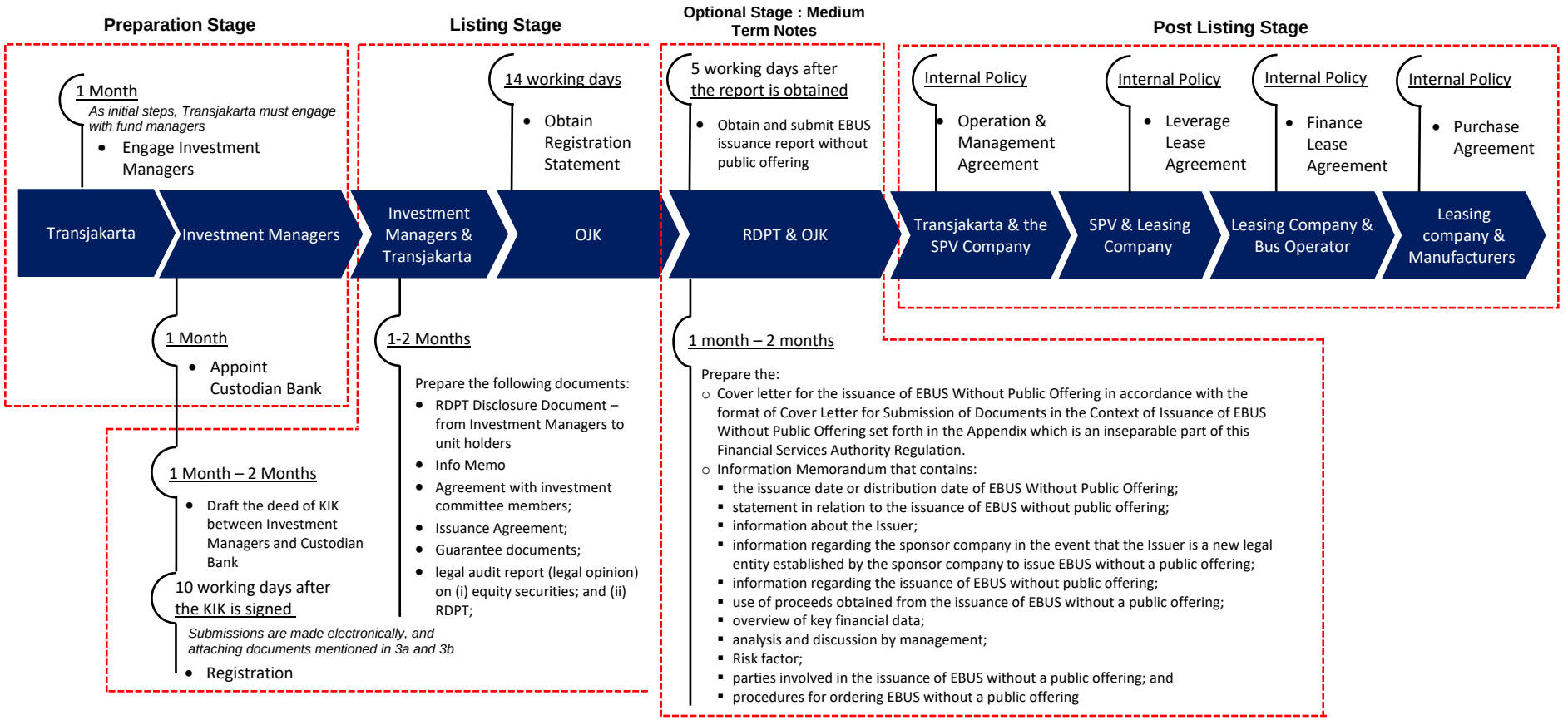

Figure 22. Timeline and Duration for Proposing Scheme B-2, Alternative 3 Structured Financing

4.4. Regulatory Barriers of Transjakarta Electrification from Business and Financing Aspects

The implementation of possible business models and fund channelling schemes mentioned in previous section are facing several gaps on the current regulations. Possible business models, fund channelling, or contractual frameworks aspects for having regulatory barriers are identified, such as:

- Leasing scheme and the separation of asset ownership and operations;
- Bankability of Transjakarta Electrification project; and
- E-Bus Operators Open Competition to Enhance the Value of Money;

which will be discussed on the following section.

4.4.1. Leasing Scheme and The Separation of Asset Ownership and Operations

On the current contractual framework, existing bus operators under the Transjakarta service needs to have their own asset and operate their own fleets. Separation of assets ownership and operation become one of the main arrangements on the alternative business models analysed by ITDP, to reduce the cost to operators as well as spread the risks associated with it. The assets will be owned and maintained by a Special Purpose Vehicle and bus operators operate the buses and/ or charging infrastructures.

Based on the legal analysis, existing regulations promulgated that route permit is attached to bus ownership. To apply the leasing scheme, there needs to be an amendment to the existing regulations, specifically on Ministry of Transport Regulation No. 15/ 2019 which states that bus operators need to own the bus at least 5 buses.

Moreover, Governor Regulation 9/ 2017 and Governor Regulation 7/ 2016 state that e-buses with operating lease can be given route permit (IPA/ *Izin trayek*) and Control Card (*Kartu Pengawasan*), because for now, the route licence is attached to bus ownerships. Revision of those regulations need to accommodate Jakarta Transport Authority to recommend route licence for operators with no ownerships. However, the government must ensure operators who do not have any fleets are still eligible to operate the electric bus. The operators should have a license stating that they have capacity to run the fleets, even though they do not have any fleets.

4.4.2. Bankability of Transjakarta Electrification Project

Based on the Law No. 1/ 2022 and National Government Regulation No. 54/ 2017, Transjakarta as a regionally owned enterprise cannot directly receive loan from foreign institutions. Therefore, The Government of Jakarta will be the lender for the electrification. The Government of Jakarta needs to ensure that the loan will be paid during the repayment period. Although, they have a concern that the repayment of the loan will reduce the

Regional Budget (*Anggaran Pendapatan dan Belanja Daerah*, "APBD") for other purposes. Moreover, double bookkeeping will potentially occur for Transjakarta Electrification, because at the same time, The Government of Jakarta gives Public Service Obligations subsidy to Transjakarta which the source of fund also originated from the regional budget. New mechanism to fund Transjakarta should be introduced to avoid these issues.

4.4.3. E-Bus Operators Open Competition to Enhance the Value of Money

In carrying out the assignment from the Government of Jakarta to provide subsidized public transportation, Transjakarta subcontracts the buses operations to private bus operators. There are 4 types of Bus Operators:

a. Bus Operator (*Operator Angkutan Umum*) means the bus/fleet operator/owner which, at the date of Pergub 74/2021, owns Transport Business License (Izin Usaha Angkutan)/City Transport Operation License (Izin Penyelenggaraan Angkutan/IPA Perkotaan) from Jakarta Government, possesses buses which are still in operation, whether already under contract(s) with PT Transjakarta or not. Bus Operators which meet this definition are the private bus operators, (1) already in contracts with Transjakarta, such as Mayasari Bakti, Bianglala, Steady Safe; and (2) have not yet in contractual arrangement with PT Transjakarta, but their buses are still in operation in Jakarta, and they hold transport license (IUA or IPA).
b. Existing Bus Operator (*Operator Angkutan Umum Lama*) means the Bus Operators operating Busway corridors, in the same routes as Busway or outside of Busway routes. Originally, the concept of "Existing Bus Operator" gives preference to those private bus operators who have been running public transportation in Jakarta before Transjakarta is introduced up to date.
c. New Bus Operator (*Operator Angkutan Umum Baru*) means the bus operators selected through public tender to become Transjakarta Partner Operator within a certain period pursuant to a cooperation agreement.
d. Transjakarta Partner Operator (*Operator Angkutan Mitra Transjakarta*) means the Existing Bus Operators and the New Bus Operators.

Transjakarta Partner Operators provide bus operator services within the BRT services, feeders services, and other transportation services. The number of buses allocated to bus operators is determined by The Jakarta Transport Agency. This allocation is referred to bus quota that has been determined earlier. The quota analysis is determined based on their business licenses, the demand analysis, and network coverage.

The key issue is that quota allocation to private bus operators is exclusive which does not reflect the fair competition to get the best operators. With this predetermined allocation, competition to get the best operators will be limited. Thus, Pergub 96/2018 needs to be revisited to allow for more competitive environment for Transjakarta Electrification.

5. Regulatory Framework Assessment of Transjakarta's Electrification from Technical Aspects

5.1. Overview of Technical Requirements to Support Transjakarta's Electrification

Several aspects need to be highlighted based on the implementation phase from the technical aspects that has been developed on **Report Task 3.2 & 3.3**. Moreover, desktop research and consultations with e-bus market players on **Report Task 3.1**. emphasize several points on the technical aspects, too. The aspects to be highlighted regarding the technology introductions are described as follows:

1. Based on the discussions with Transjakarta, it plans to **retrofit** some of the existing fleets in 2025.
2. **Terminal opportunity charging** needs to be deployed in 2023 as Transjakarta aims to implement 8-m medium electric buses which will need en-route charging at terminals.
3. Based on the analysis, available land area on existing depots and terminals cannot accommodate the requirements for establishing charging infrastructure by 2027. Therefore, **additional charging locations** outside the existing depots and terminals need to be provided.
4. Due to its efficiency and technology maturity, in the future, it recommends introducing pantograph charging at the stations. However, current standards by Ministry of Energy and Mineral Resources only regulates plug-in charging.
5. There is also a gap on the regulation regarding the **Gross Vehicle Weight (GVW) maximum requirement**, as the GVW limit become the concern of OEMs, bus operators, and Public Transport Authorities (PTA) to operate the electric buses. Compared to similar ICE buses models, e-bus models will be weightier due to the weight of the battery that is typically counts for 30% - 50% of the total weight of the fleets. This will reduce the number of passengers that can be carried in the bus.
6. Moreover, regulations gap concerning the conversion of the diesel bus to the electric bus also exists. The regulation has not clearly stated and clarified regarding the following issues:
    a. **The maximum vehicle life span after being retrofitted**. Existing regulations in the regional level limit the maximum life span of the electric bus is 10 years. This will raise a question for a retrofitted bus, e.g., for an ICE fleet that already been issued for 7 years, it is still not clear whether the age of the bus will restart to zero years or having only 3 remaining years.
    b. **The licence, brand, and guarantee of a retrofitted vehicle.** The licence holders or owners of a fleet after being retrofitted is not regulated. Whether the retrofitted bus will use similar original manufacture brand or use the manufacturer brand who conduct the retrofitting process. Moreover, the guarantee of retrofitted bus is most likely does not attach to the older brand.

The following section will discuss two main technical things on the electrification of Transjakarta fleets: **retrofitting (conversion) of electric bus and Gross Vehicle Weight**. Bus retrofitting needs to be discussed further as Transjakarta plans to retrofit their existing fleets. In 2022, Transjakarta already signed an MoU with Equipmake, a manufacturing company from the UK, for retrofitting diesel and CNG buses into electric buses. Baseline regulations on the implementation of electric bus on the technical aspects will be discussed first.

5.2. Baseline Regulations in Technical Aspects of Transjakarta Electrification

There are three baseline regulations that will be discussed on this subsection: Government Decree No. 1053/ 2022 on the Acceleration Program of Battery Electric Vehicle Deployment under The Transjakarta Services ("**Kepgub 1053/ 2022**"); National Government Regulation No. 55/ 2012 on Transportation ("**National Government Regulation 55/2012**")—which regulates the GVW for bus, and Ministry of Transportation Regulation No. 15/ 2022 on the Conversion of Motor Vehicles Other Than Motorcycles with Combustion Engines to Battery-Powered Electric Motor Vehicles ("**Permenhub 15/2022**")—which regulates the retrofitting process and bus standards.

Acceleration Program of Battery Electric Vehicle Deployment under The Transjakarta Services

Table 22. Programs and E-Bus Implementations Stated on Government Decree 1053/ 2022

Program	Implementation
a) Acceleration of the use of 10.047 Battery Electric Bus under The Transjakarta Services until 2030; b) Provision of charging infrastructure to support the electrification; c) Procurement and/ or financing of activities to accelerate the Transjakarta Electrification Program	Electric bus share target by gradually transitioning conventional fleets to battery electric fleets (starting in 2022): i. 50% by 2027 ii. 100% by 2030
	Provision of **charging infrastructure**: i. In the form of **overnight charging, opportunity charging, etc., at depots, terminals, or other places** ii. Inventory of charging locations for Transjakarta battery electric buses at locations in regional-owned assets or other locations
	Procurement and/ or Financing: 1. Rupiah per Kilometre financing scheme (Rp/Km) 2. Other financing schemes to ensure efficiency and effectiveness of APBD usage

Gross Vehicle Weight

Table 23. Specification of Each Bus Types as Stated on National Government Regulation No. 55/ 2012

Type	Specification			
	Total Allowable Weight[41]	Length	Width	Height
Small Bus	JBB > 3.500 - 5.000 kg	≤ 6.000 mm	≤ 2.100 mm	≤1.7 times the width of the vehicle
Medium Bus	JBB > 5.000 - 8.000 kg	≤ 9.000 mm	≤2.100 mm	≤1.7 times the width of the vehicle
Large Bus	JBB > 8.000 - 16.000 kg	> 9.000 -12.000 mm	≤2.500 mm	≤4.200 mm and ≤1.7 times the width of the vehicle
Maxi Bus	JBB > 16.000 - 24.000 kg	>12.000 - 13.500 mm	≤2.500 mm	≤4.200 mm and ≤1.7 times the width of the vehicle
Articulated Bus	JBKB 22.000 - 26.000 kg	>13.500 - 18.000 mm	≤2.500 mm	≤4.200 mm and ≤1.7 times the width of the vehicle
Double-Decker Bus	JBB 21.000 - 24.000 kg	≥ 9.000 - 13.500 mm	≤2.500 mm	≤4.200 mm

Allowable bus that can operate on every road class is determined based on size, dimension, heaviest axle load, and request for transportation.

Table 24. Criteria for Bus Operating on Each Road Class

Bus that can have traffic on class I Road is of the following criteria:
a. Width size is not more 2,550 (two thousand and five hundred fifty) millimetres; b. Length size is not more than 18,000 (eighteen thousand) millimetres; c. Height size is not more than 4,200 (four thousand and two hundred) millimetres; and d. Heaviest axle load size is 10 (ten) ton.
Bus that can have traffic on class II Road is of the following criteria:
a. Width size is not more than 2,550 (two thousand and five hundred fifty) millimetres; b. Length size is not more than 12,000 (twelve thousand) millimetres;

[41] Total Allowable Weight (*Jumlah Berat yang Diperbolehkan*, "JBB") or Total Allowable Combination Weight (*Jumlah Berat Kombinasi yang Diperbolehkan*, "JBKB")

c. Height size is not more than 4,200 (four thousand and two hundred) millimetres; and d. Heaviest axle load size is 8 (eight) ton.
Bus that can have traffic on class III Road is of the following criteria:
a. Width size is not more than 2,200 (two thousand and two hundred) millimetres; b. Length size is not more than 9,000 (nine thousand) millimetres; c. Height size is not more than 3,500 (three thousand and five hundred) millimetres; and d. Heaviest axle load size is 8 (eight) ton.

Table 25. Vehicles Specifications and Technical Requirements for Each Road Class

Road Class	Specifications	Technical Requirements
Class I	1. Covers arterial and collector roads with Heaviest Axle Load ("HAL") of 10 tons; and 2. Must measure no more than 2,500 millimetres in width, 18,000 millimetres in length and 42,000 millimetres in height.	a. Must have a minimum bend radius of 110 meters; b. Must consist of at least two lanes running in both directions; c. Must be able to be used by containers of a maximum size of 45 feet; d. Must be able to be used by motor vehicles with HAL of 10 tons and so forth.
Class II	1. Covers arterial, collector, local and environmental roads with HAL of 8 tons; and 2. Must measure no more than 2,500 millimetres in width, 12,000 millimetres in length and 42,000 millimetres in height.	a. Must be able to accommodate lane traffic of at least 7 meters in width; b. Must consist of at least two lanes running in both directions; c. Must be able to be used by containers of a maximum size of 20 feet; d. Must be able to be used by motor vehicles with HAL of 8 tons and so forth.
Class III	1. Covers arterial, collector, local and environmental roads with HAL of 8 tons; and 2. Must measure no more than 2,100 millimetres in width, 9,000 millimetres in length and 3,500 millimetres in height.	a. Must have a slope rate of 12%; b. Must be able to accommodate lane traffic of at least 5.5 meters in width; c. Must be able to be used by vehicles with HAL of 8 tons and so forth.

Retrofit

The Minister of Transportation has issued Regulation No. PM 15 of 2022 on the Conversion of Motor Vehicles Other Than Motorcycles with Combustion Engines to Battery Electric Vehicles ("**Permenhub 15/ 2022**"), which addresses the following specific matters:

a. Implementation of conversions;
b. Conversion workshops; and
c. Conversion certification.

Implementation of Conversions

All non-motorcycle motor vehicles with combustion engines may be converted into battery electric motor vehicles through the changing of their motor engine systems from combustion engines to electric motors ("Conversions"), provided that:

a. Said motor vehicles have been registered and identified, as evidenced through motor-vehicle owners' books (*Buku Pemilik Kendaraan Bermotor* – "BPKB") and motor-vehicle registration certificates (*Surat Tanda Nomor Kendaraan Bermotor* – "STNK");
b. Said motor vehicles have copies of the relevant master cards and/ or test cards, as issued by periodic test working units (for conversions of motor vehicles that are required to undergo periodic testing only).

Conversion Workshops

In order to be able to apply for said approvals, general workshops, agencies, or institutions are first required to possess the following items:

a. Special equipment for the installation of electric motor engine systems in motor vehicles;
b. Hand tools and power tools;
c. Electric touch protection testing equipment;
d. Insulation resistance testing equipment;
e. Manufacturing machines for supporting installation components;
f. Work safety and security facilities; and
g. Technicians with competence in motor vehicles.

Conversion Certification

All non-motorcycle motor vehicles that have undergone conversions and that have received testing cover letters should undergo the testing process, which comprises conversion-component feasibility checks and physical-type testing. The scope of said checks and tests are elaborated upon in the following table:

Table 26. Conversion's Components Feasibility Check and Physical Type Testing

Conversion's Components Feasibility Checks	Physical-Type Testing
Conversion-component feasibility checks are carried out on: a. Electrical motors; b. Battery systems; c. Battery management systems; d. Battery charging systems; e. Supporting electrical systems; and f. Supporting components.	Physical-type testing encompasses the following: a. Weight of the motor vehicle; b. Braking system; c. Direct contact protection; d. Indirect contact protection; e. Insulation resistance; f. Functional safety;

In addition to the feasibility checks outlined above, examinations will also be carried out in order to check the conformity of the following: a. Vehicle structures and layouts; b. Conversion components; c. Low-voltage circuits; d. Speed regulation systems; e. Electromagnetic compatibility of electrical components; and f. Restrictions on features/components.	g. Headlights; h. Horn loudness; i. Speedometer accuracy; j. Construction; k. Incline testing; l. Wheel flick testing; and m. Testing of the sound of electric motor vehicles.

Implication on SUT and SRUT

Physical-type testing units should issue the results of all tests within five business days of said tests taking place. If a vehicle passes the test, then the relevant testing unit will forward the test results to the Directorate General, who will then issue conversion type-test evidence, which includes Conversion test-type certification (*Sertifikat Uji Tipe Konversi*).

Conversion test-type certificates are the basis for the issuance of conversion test-type registration certificates (*Sertifikat Registrasi Uji Tipe Konversi*), which are a requirement for the amendment of registrations and identifications, as well as for the periodic testing (if applicable) of converted non-motorcycle motor vehicles. Conversion test-type registration certificates should be delivered by the persons in charge of Conversion workshops to the owners of converted non-motorcycle motor vehicles.

Implication on 10 Years Lifetime Limit of Public Transport Vehicles

In accordance with Government Regulation No. 5/ 2014 on Transportation ("Perda 5/2014"), the maximum usage period of public transport vehicles is 10 years. Conversion test-type certification consists of the year of manufacturers and the year of conversion, but **it is not clearly stated whether the provision regarding the age of the vehicle is calculated from the year of being manufactured by the original OEM or the year of conversion**.

6. Gender Impact Assessment

6.1. Background and Objectives

Previously, the assistance of ITDP through the UK PACT E-Bus project led to fruitful participatory workshops resulting in major intervention on fleets' design of Transjakarta's e-buses. This includes wide access doors for the easy boarding alighting process of people with wheelchairs, additional spaces for wheelchair and strollers on board, additional spaces for hand-carries, groceries, and/or other stuffs, and additional bars to ensure safety and unexpected emergency situations. The takeaways of the discussion have also led to the importance of reviewing related regulations in terms of securing inclusive e-bus deployment and services provided by Transjakarta.

As mentioned in the previous sections, a gender impact assessment should be done to complete all the proposed inputs and/or suggestions of new versions of regulations which may affect the deployment of Transjakarta e-buses. This approach is selected to oversee all related regulations and ensure all GESI perspectives have been considered in the upcoming regulations which also support and/or enable the acceleration of Transjakarta e-bus deployment.

In this part, there will be a list of regulations to review. Most of the regulations have been listed in the previous chapters which include existing regulations, draft of regulations, and proposed regulations. Additional regulations are discussed in this section due to its significance impact to women and other vulnerable groups participating in bus electrification.

The analysis is made based on the desktop study toward a number of selected regulations and followed by the public discussions with the various stakeholders, especially the women and other vulnerable groups. To enhance the study, the evaluation is made in the lens of both groups, vulnerable groups as passengers and vulnerable groups as the service providers. These perspectives are considered to enrich the recommendations.

In this chapter, gender impact assessment is expected to aim:

a. Comprehensive study ensuring GESI perspective to be addressed in Transjakarta's e-bus regulatory frameworks;
b. Essential inputs and recommendations to review or renew the related regulations; and
c. Inclusive measures to be adopted in e-bus deployment.

6.2. Gender Impact Assessment (GIA) Definition and Framework

6.2.1. Gender Impact Assessment Definition

Women and other vulnerable groups may not have equal access to resources and equal access to decision making processes, including those living in urban areas. These existing inequalities hinder their social and economic opportunities, making it difficult for them to break out of the cycle of poverty. To improve policies, programs, and services that meet the different needs of women, men, children, older persons, and people with disabilities, a gender impact assessment is necessary to be developed.

Gender impact assessment is defined by the European Commission as “the process of comparing and assessing, according to gender relevant criteria, the current situation and trend with the expected development resulting from the introduction of the proposed policy” and “the estimation of different effects (positive, negative or neutral) of any policy or activity implemented to specific items in terms of gender equality”. In short, GIA is an analysis of policy or regulation to identify the likelihood of their consequences given the inequality that exists in the society in which the policy is enforced. As with other policies and regulations, the primary objective of conducting GIA is to adapt the policy/regulation to make sure that any discriminatory effects are either removed or mitigated, as well as to proactively promote gender equality and social inclusion in the targeted sector, in this case Transjakarta e-bus deployment.

6.2.2. Gender Impact Assessment Tools and Components

For this assessment we used a combination of two frameworks. This combination allows us to analyse the regulations’ level of recognition of GESI issues, while also identifying its beneficial impact and unfavourable effect. The two frameworks used for the analysis are:

1. **The Longwe Framework**

   This framework aims to achieve equal control in development sectors, including transportation, especially between women and men. For this analysis, other groups are also considered, focusing on the vulnerable and marginalised. To assess existing regulatory frameworks that are the basis of Transjakarta’s bus electrification policy and plan, one of the tools under the Longwe Framework is used, which is the level of recognition of women’s issues with addition of other vulnerable groups’ issues in existing regulations. Components from this tool is tailored to fit the project objectives, they include:

   - Positive level or fully incorporated
   - Neutral level or partially incorporated
   - Negative level or not incorporated

2. **The Gender Audit Framework**

   This framework assesses the integration of gender into policies and programs. In line with the project’s focus, this assessment is not only looking at the integration of gender, but also of other vulnerable groups affected by the policies and plan to electrify Transjakarta buses. To analyse the regulatory framework of Transjakarta electrification plan, the following components are used:

   - Identifying beneficial impact of the related regulations
   - Identifying unfavourable effect of the related regulations

6.3. GESI Perspectives in Transjakarta Regulatory Framework

Transjakarta's electrification process has started a pilot and will be continued to the first phase of deployment. To support and/ or accelerate the process, various regulations and policies are produced. Some of these regulations are directly related to the Transjakarta commitment and operations, but not all related to the electrification process. Some others are indirectly related, such as the regulation on air quality control. Understanding the importance of no one left behind principles, the assessment will be conducted to these listed regulations:

1. Regional Regulation No. 5/ 2014 about Transportation
2. Regional Regulation No. 10/ 2014 about Transjakarta BRT system management
3. Governor Regulation No. 90/ 2021 about Local Low Carbon Development Plan
4. Governor Regulation No. 74/ 2021 on the Second Amendment to Governor Regulation No. 96/ 2018 on the Integration of Feeder Transport in the Bus Rapid Transit System
5. Governor Decree No. 1053/ 2022 regarding the Guidelines for Acceleration the Use of Battery Electric Bus under the Transjakarta Services
6. Governor Instruction 66/ 2019 on Air Quality Control
7. Technical Specifications of Non-BRT Battery-Based Low Floor Electric Buses in the Transjakarta Service System 2021
8. Draft of Jakarta Regional Regulation on Jakarta Transportation Master Plan
9. Draft of Jakarta Regional Regulation on Jakarta Regional Spatial Plan (Rencana Tata Ruang Wilayah, “RTRW”) for 2022-2042
10. Draft of Governor Regulation on Air Quality Control Strategy
11. Draft of Governor Regulation on the Service Level Agreements for Transjakarta Public Transport Services
12. Changes on Local Government Regulation No. 4/ 2014 about PT. Transportasi Jakarta

As stated before, these regulations are selected as they are identified in the previous sections to be mitigated in the Transjakarta electrification process. These listed regulations may play an important role in Transjakarta electrification plan and are predicted to have certain impact on social inclusion matters. To learn more about these regulations detail analysis is conducted as can be seen below:

1. **Regional Regulation No. 5/2014 about Transportation**

   In the previous section, it is mentioned that this regulation may also differentiate between electric fleets lifetime and conventional fleets lifetime. In that perspective, the passenger’s safety can be added up elaborating the calculation made by the battery usage and/or lifetime. However, related to this concern, bus ownership should be assessed since it may affect the business run by the existing operators while electrifying the buses (or even more for the microbuses).

   Overall, this regulation has addressed the GESI perspective by mentioning the personas, the universal designs, given priority to the vulnerable groups, and even the subsidy which is prioritised for the public transport passengers. Civil societies have a chance as well to be empowered and participate in the implementation of this regulation.

The only concern related to this regulation is about the road design where it stated that bus rapid transit services should be operated in the bus lane. In reflection to the pilot and/or trial phase of Transjakarta e-bus, the selected routes are running as a non-BRT bus and may come in and out from the dedicated lane. These electrified buses serve curb stations and stay next to the bike lane. When the buses stop at the curb stations, sometimes they cut through the bike lane or more often the drivers cannot pull over the buses and this condition can be a threat for the passengers' safety, especially the vulnerable groups which find these gaps as danger.

This regulation can lead to the implementation of complete streets and later enhance road safety especially when the electric buses are coming to the city. This regulation can be updated with the suggestions of charging infrastructures placement which should not disturb or reduce the minimum width of sidewalk and features for people with disabilities. The Service Level Agreement has been mentioned within this regulation and should be detailed in other regulations. Specific terminology of electric buses can be added to this regulation that led to the other regulations.

2. Regional Regulation No. 10/2014 about Transjakarta BRT System Management

This regulation can be classified as partially incorporating the GESI perspective by mentioning general ideas on how to provide reliable public transport service which may benefit the vulnerable groups. This regulation does not have a specific section regulating the electrified services of Transjakarta BRT. However, in the same logic as conventional buses, this regulation mandates Transjakarta to obey, manage, and evaluate the Service Level Agreement strictly. This statement should be applied to the operation of e-BRT as well.

On the other hand, this regulation leads to another possible regulation related to the workers. In addition to that verse, this regulation should mention the role of BRT management to provide training and capacity building for the staff ensuring equal opportunity for women and vulnerable groups. Aligned with the previous section, the additional chapter related to electric bus management should be addressed as well. To enrich the articles, the company should be mandated to anticipate the capability of existing engineers and mechanical personnels to adapt with the new technology.

In the perspective of enabling existing operators to electrify their buses, this matter should be addressed in article 11 and clarify the potential incentives such as bank guarantee, low bank interest, or tax exemption which can be granted to the operators.

3. Governor Regulation No. 90/2021 about Local Low Carbon Development Plan

This regulation has partially incorporated the needs of women and other vulnerable groups in Jakarta. By mentioning the scheme of collaboration and possible participatory forum to plan and implement the action plans as stated, this regulation shows willingness to minimise the

potential gaps neglecting the vulnerable groups' roles. This effort can be considered as a way to empower civil society to contribute to the city's development.

A number of strategies and actions are mentioned about mitigating the possible risks made by climate change to vulnerable society including abandoned children and people with disabilities. However, the further impact and follow up actions are not elaborated enough. Indicators and measures should be explained to let people understand the whole picture of the mitigation and adaptation plan.

The redevelopment of specific residential areas and areas around the riverbanks may result in housing and job security issues. The absence of further mitigation plans while doing the redevelopment can cause threat to existing society, especially to the vulnerable groups. The redevelopment plan can induce a housing relocation program which affects the mobility pattern and daily expenses. By amending the regulations, the attachment should be detailed to mitigate the risks.

In the regulation's attachment, electrification on BRT is mentioned as one of the actions taken by the city. The same notes go with this point where the further targets or indicators should follow the statement. By stating the indicators and targets, it may set clear understanding on the scale of the impact.

4. Governor Regulation No. 74/2021 on the Second Amendment to Governor Regulation No. 96/2018 on the Integration of Feeder Transport in the Bus Rapid Transit System

The regulation does not incorporate the GESI perspective. It is too vague to acknowledge that gender equity has mainstreamed in this regulation.

In article 5, the additional definition of bus drivers can be explored by mentioning the company's target to fulfil gender ratio of drivers. However, it should be followed by inclusive and fair job opportunities not only limited to Transjakarta company but also the other operators.

Following the new term in article 5 verse (7) about the contract period for electric fleets that may end up to 10 years and article 5A verse (1) and (2) about the operators' responsibility on meeting the fleets number set by Transjakarta and the consequences for the failure meeting the targets, it may still leave concerns for the existing operators. The absence of any details related to the time given to fulfil the obligations and also the absence of articles related to any support to boost the existing operators' capacity will be disadvantages for the existing operators. To broaden the chances, these matters should be regulated. It includes the circumstances happening related to institutional problems.

5. Governor Decree No. 1053/2022 regarding the Guidelines for Acceleration the Use of Battery Electric Bus under the Transjakarta Services

This regulation has not incorporated the GESI perspective. This regulation is supposed to incorporate the GESI perspective by adding more points related to human resources. In terms of enabling a supportive environment for the e-bus deployment, the manpower should be noticed as one concern in this regulation.

Additional dictums about labours can be considered. These dictums may illustrate the needs of specific skills and/ or abilities of employees. These dictums can also give mandate to Jakarta Representative of the Manpower Ministry to anticipate specific needs and gaps in the existing field. The needs of training and certain targets for gender ratio can also be mentioned in this governor decree.

6. Governor Instruction 66/2019 on Air Quality Control

This instruction controls sources of air pollution and applies stricter rules for air pollution emitters, across various agencies. The document does not specifically mention GESI considerations, however the impact of the application of this instruction can have a positive impact on public health, especially vulnerable groups. This instruction can be completed by an attachment placing a detailed table that illustrates the certain impacts to the vulnerable groups.

7. Technical Specifications of Non-BRT Low-Floor Battery Electric Buses in the Transjakarta Service System (2021)

This document is a legally binding commitment between Transjakarta, bus operators and Jakarta's transportation agency and has implications of GESI in aspects in terms of safety, comfort, security and accessibility of Transjakarta's e-buses, in which all aspects have implications on vulnerable groups. In terms of safety, the document sets out requirements for a cooler and an overheating alarm for the battery to prevent incidents of overheating which may lead to the battery setting on fire. The document also mentions requirements for safety features for the motor. Therefore, the document sets out mitigation measures in case of accidents for passengers and Transjakarta staff, in which vulnerable groups such as people with disabilities, children, older persons, and people with mobility issues may have more barriers to evacuate.

In terms of accessibility, the bus dimensions are set to ensure accessible doors for access of wheelchair users and strollers and low deck buses that ease entry for users, children, older persons, and strollers. Ramps to access the bus are also specified, in which they must be able operate, the bus is hindered from moving when the ramp is in place, the door cannot be closed when the ramp is in place, and the disability symbol on the back of the bus will turn on. Audio visual information which is provided by LED screens and announcements also ensures people with visual and hearing disabilities can obtain passenger information easily. The document also specifies the need for at least one wheelchair area and a minimum of 2 priority seats. Security facilities such as CCTVs are also specified, such as the various places in which they must be placed and a minimum of 12 CCTVs in which the CCTV footage can be stored for

at least one month. This poses an opportunity for victims of sexual harassment to use for evidence when they report an incident.

8. Draft of Governor Regulation on Air Quality Control Strategy

The Draft of Governor Regulation on Air Quality Control sets strategies, programs and action plans for air quality control in Jakarta, as well as air quality targets and key performance indicators. As of 2023, the regulation has its final draft, however, has not yet been legalised, therefore it is not yet effective. As this regulation aims to improve air quality, once put into effect, the impacts of this regulation can potentially improve public health, especially for the vulnerable groups who are more prone to health risks due to air pollution.

Strategies of air quality control set in the regulation include improving the governance of air pollution control and the reduction of air pollutant emissions from mobile sources, being transportation as a main source. In terms of improving the governance of air pollution control, increases in monitoring and evaluations regarding air quality and studies regarding the health, social, and economical impact of air quality are set as strategies. With more studies and increased monitoring and evaluation, plans and supporting policies of e-bus deployment can be more effectively put in place to prioritise the most vulnerable. Impacts of air pollution can be studied among different vulnerable groups such as older persons, children, infants, lower income families, people living in urban slums, women, pregnant women, people with disabilities, and other marginalised groups. Therefore, plans for climate action, including the electrification of Transjakarta buses, can be more effective and target the needs of various groups to ensure equitable outcomes to all.

In regard to the reduction of air pollutant emissions, electrification of transportation was not specifically mentioned as a strategy. However, public transport reform and the development of environmentally friendly public transport and government transport was mentioned. Therefore, electric vehicles, being e-buses, can therefore support the strategy of developing environmentally friendly public transport. Moreover, low emission zones were also mentioned as a strategy for mobility, in which the planning e-buses can support that plan. As low emission zones are areas where access by some polluting vehicles is restricted or deterred with the aim of improving air quality, access to those areas can be maintained by electric buses. Here, therefore, the phase deployment of Transjakarta e-buses can also be in line with plans of low emission zones in Jakarta.

9. Draft of Governor Regulation on the Service Level Agreements for Transjakarta Public Transport Services

The Service Level Agreement for Transjakarta Public Transport Services sets standards for Transjakarta regarding its services, which include bus stations, bus stops, fleets, and its performance as indicators. Recently, the 2019 minimum service standard has been updated to ensure aspects of inclusivity is included to provide high quality services. Currently the Service Level Agreement has been revised and is undergoing its legalisation phase. Several aspects that have been addressed in the draft Service Level Agreement include increase in comfort, security, safety, easement, equity, and order.

As Transjakarta deploys their e-buses, the buses, facilities, and services that are provided must conform to the standards that will be established in the draft Service Level Agreements. This implies that the new e-buses and supporting facilities must adhere to the universal design standards that will be put in place, such as the provision of wide gates for wheelchair access, accurate and clear audiovisual information for people with people with visual and hearing disabilities, priority seatings, space for wheelchair users and people with strollers, stop buttons, and CCTVs for increased women's and other vulnerable groups safety. The driver's conditions are also included in the revision, ensuring rest times for the driver's wellbeing, safety, as well as the safety of passengers. Furthermore, the new standard requires Transjakarta to provide standard operating procedures (SOP) provided by Transjakarta regarding inclusivity procedures, emergency situations procedures and the security breaches procedures.

The SOPs that must be provided by Transjakarta however, are not available to the public, however they must also identify safety and security procedures that may be different with electric buses than conventional buses. For example, although technical specifications for e-buses have specified the provision for coolers to prevent batteries from overheating, there is still a possibility of an incident, although small. Overheating of batteries may cause the battery to explode or catch fire in which the SOP for e-bus must address. Evacuation and emergency procedures in case of an event must also specify the prioritisation of vulnerable groups that may need more assistance. Moreover, with GESI being a growing topic, standards must be evaluated and updated accordingly.

10. Changes on Local Government Regulation No. 4/2014 about PT. Transportasi Jakarta

This regulation outlines the role of Transjakarta in operating its bus system, whereby Transjakarta's scope of work includes managing, operating and maintenance of BRT facilities, bus stops, stations, fuel stations. Moreover, Transjakarta is responsible for the development, operation and maintenance of management systems, business development and management of BRT system assets operated and maintained by the company, such as bus stops, and lastly, property and/or business development and management of company assets. Through this regulation Transjakarta is given various obligations by the provincial government, and therefore is responsible for the quality of service provided by the bus system.

The regulation also stipulates Transjakarta's correlations with the provincial government in which the latter must provide a Service Level Agreement that should be followed by Transjakarta. Here the provincial government must ensure a standard that has incorporated aspects that accommodate the needs of vulnerable groups, and Transjakarta should uphold the standards.

In terms of its relation to the deployment of electric buses, the regulation has yet to define if Transjakarta will also manage, operate and maintain charging stations, which is an inseparable aspect of e-buses. Whether or not Transjakarta will be responsible for the charging stations, the charging stations must ensure safety, security, and inclusivity of charging stations at all times.

6.3. Inclusive Participatory Dialogue on Transjakarta Regulatory Framework

From the months of September 2021 until December 2021, During Transjakarta's e-bus trial phase, Transjakarta, supported by ITDP conducted several focus group discussions (FGD) and bus trials with representatives of vulnerable groups, mainly, women, children, older persons, and people with disabilities. The constant engagement with these groups aimed to ensure the needs of the various vulnerable groups had been accommodated in the fleet design of the Transjakarta e-buses. The input gathered from these discussions have resulted in evaluation and recommendations to ensure that Transjakarta's fleet design is accessible to everyone, by utilising universal design and gender-based approaches.

As the e-bus deployment program proceeds in 2022, ITDP Indonesia conducted a participatory dialogue called "E-Bus Focus Group Discussion: GESI Perspective in the Regulatory Framework of Transjakarta E-Bus Deployment in Jakarta". This dialogue was conducted on the 24th of September 2022 and focused on the regulatory framework for Transjakarta in support of the government's program to reduce GHG emission.

In addition to various representatives of vulnerable groups, the dialogue also brought together representatives from national and provincial government, as well as legal experts for a fruitful and meaningful discussion in the effort to integrate gender-responsiveness and inclusion within public transportation policies and regulations, specifically on the Transjakarta's e-bus deployment program. In the dialogue, government representatives presented the existing regulations related to public transport and Transjakarta, including its e-bus deployment program; while representatives of vulnerable groups voiced their concerns and highlighted specific points to be included within the regulatory framework on Transjakarta electrification.

The objectives of the dialogue are as follows:

1. Ensure equal understanding of the existing policies and regulations related to public transportation and Transjakarta, both at the national level and the Jakarta Province;
2. Trigger dialogue between government, parliament, and civil society representatives on gender-responsive and inclusive aspects of the existing policies and regulations;
3. Gather input and recommendations from all stakeholders regarding policies and regulations which underlie Transjakarta e-bus deployment program; and
4. Obtain input from all stakeholders to enrich GESI impact assessment on the regulatory framework of the Transjakarta e-bus deployment program.

This dialogue is expected to produce the following output:

- Comprehensive input and recommendations on the national and the Greatest Jakarta's public transportation regulatory framework from GESI perspectives.
- Comprehensive record and recommendations on regulatory framework specifically related to Transjakarta from GESI perspectives.
- The integration of inputs and recommendations regarding the above regulatory frameworks into the GESI impact assessment for Phase I of electrification program.

Participants of the dialogue include:

1. Mohammad Ridwan, Head of Development Standardization Service Department, PT. Transjakarta.
2. Maftuh Muhtadi, Representative of the Ministry of Women Empowerment and Child Protection
3. Afrinda Triwardani, Head of Transport Section, DKI Jakarta Province Transportation Agency
4. Himpunan Wanita Disabilitas Indonesia (HWDI).
5. Perhimpunan Jiwa Sehat Indonesia (PJS).
6. Pusat Studi Hukum dan Kebijakan (PSHK).
7. Forum Pengada Layanan (FPL).
8. Koalisi Perempuan Indonesia (KPI).
9. Pusat Kajian dan Advokasi Perlindungan dan Kualitas Hidup Anak (PUSKAPA).
10. Koalisi Ruang Publik Aman (KRPA).
11. Persatuan Tunanetra Indonesia (Pertuni).
12. Gerakan Aksesibilitas Umum Nasional (GAUN).
13. Gerakan untuk Kesejahteraan Tunarungu Indonesia (Gerkatin).
14. UN Women Indonesia.
15. Forum Anak Jakarta.

The dialogue highlighted several issues on the existing regulatory framework that is relevant to its e-bus deployment project in relation to GESI. The FGD focused on Transjakarta's e-buses regulatory framework, however, participants also discussed Transjakarta's regulatory framework as a whole, which may include dialogue on Transjakarta's conventional buses (not specific to e-buses). This account and analysis of the FGD will mostly highlight e-buses and their impact on vulnerable groups.

Regarding GHG emissions and air pollution and impact on vulnerable groups, participants highlighted how vulnerable groups are and how they are more negatively impacted by poor air quality. As currently, there are only 4 routes in which the e-buses operates on, Terminal Senen – Blok M (1P), Tanah Abang - Blok M (1N), and Tebet - Karet (6N). Ira, from the Mental Health Association (PJS) raised her concern regarding the prioritisation of the deployment of e-buses. To this comment, another participant, Dave, from the National Public Accessibility Movement (GAUN), also added how prioritisation should be given residential areas where there are a lot of inhabitants.

"Will this electric bus be used for wider routes, for example from Senayan to the south of Jakarta? Or is it only the route from Thamrin to Blok-M, which is mainly the city centre?" - Ira, PJS

"Regarding Emissions, there should be a clear prioritisation towards inhabitants of the city and residential areas" - Dave, GAUN

Addressing both concerns made by Ira and Dave, policies such as the Governor's Regulation No. 90/2021 on Local Low Carbon Development Plan that can also include prioritisation of areas to undergo low carbon developments such as residential areas. Jakarta's Governor Instruction No.

66/2019 on Air Quality Control may also address these inputs by not only monitoring emissions, but also monitoring the unequal negative impact of air pollution and GHG emissions to vulnerable groups such as women, children, older persons and people with disabilities. Examples of indicators are premature deaths, life expectancy, and respiratory diseases. In regard to the latter comment by Dave, Transjakarta can also prioritise the electrification of feeder systems such as Mikrotrans, which go through residential areas and is highly used by vulnerable groups with 49% of their passengers being older persons (ITDP, 2021).

In regard to the impact of electric buses, specifically on people with disabilities, concerns were raised regarding the lower noise that is produced by electric buses and may cause barriers for people with visual disabilities when locating when has made a stop. Previously, this comment had been addressed in the phase I e-bus program during the FGDs on fleet design but was highlighted again by Hari from Indonesian visual disability association (PERTUNI).

"Regarding Transjakarta's plan to use electric buses, the resulting sound is much quieter than conventional buses, which hampers our visually impaired friends as they rely on their hearing to know the position of the bus when it stops. Maybe the minimum standard service needs to ensure the addition of a working audio signal so that the blind can understand that the bus is in front of them." - Hari, PERTUNI

Currently, the Governor Regulation No. 13/2019 on Amendment of the Service Level Agreements for Transjakarta Public Transport Services is undergoing revision to ensure the needs of vulnerable groups will be accommodated in the received Service Level Agreement. One of the points of revision is the requirement of functioning audio systems for passenger information to ensure accessibility for people with visual disabilities. Although electric buses are not specifically mentioned in the Service Level Agreement, the standard mentioned that this requirement will apply to BRT and non-corridor buses, in which e-buses will operate on.

In regard to gender issues, participants mentioned the need for gender mainstreaming with the addition of electric buses. Maftuh, from the Ministry of Women Empowerment and Child Protection mentioned that the Regional Regulation No. 37/2012 regarding Gender Mainstreaming (PUG) can be used as a tool for Transjakarta to integrate gender into all dimensions of the development of the organisation and especially the deployment of E-buses. Starting from the planning, budgeting, implementation, monitoring, to evaluation stages.

"Regional Regulations on Gender Mainstreaming should also be considered as a tool to encourage commitment from the leaders. However, the regulation is deemed less relevant because it was ratified in 2012" - Maftuh, Ministry of Women Empowerment and Child Protection

This excerpt also shows the need for ratification of regulations, especially with GESI as an increasingly growing topic. Ratification of the regional regulations on gender mainstreaming can ensure high-level stakeholders in Transjakarta and related agencies are increasingly aware of how to mainstream gender within their organisation. Within the e-bus, this also may include ensuring equal opportunities and job security regardless of gender for staff with the electrification of e-

buses, equal opportunity for operators during the procurement process, as well as gender budgeting and the monitoring and evaluation using gender segregated data.

As mentioned previously, participants also highlighted various regulations to mainstream GESI in the Transjakarta system as a whole, not just within the E-Bus Deployment programme. In regard to gender, the under reported cases of sexual harassment in public transport was highlighted, in which Nunik, from UN Women elaborated that with the Law no. 12/2022 regarding Sexual Violence Crimes could cause further amendment of regulations related to transportation, In particular, Regional Regulation No. 5/2014 regarding Transportation.

"In particular, DKI Regional Regulation No. 5/2014 regarding Transportation, where this regulation emphasises access to public transportation comfortably and safely, both during the day and at night." - Nunik, UN Women

Other participants also added, emphasising Sexual harassment reporting process is still too bureaucratic and complicated, therefore victims may be reluctent to report the violence they experienced, as well as the reporting system have yet to connect with other existing service agencies. Here, direct connections to Legal aid organization Indonesian Women's Association for Justice (LBH APIK), can increase support for victims of sexual harassment. Lastly, Officials, especially first responders such as drivers and security officers, must have increased understanding of the GESI perspective and on dealing with cases of harassment.

In terms of general disability issues that refer to the Transjakarta system as a whole, participants highlighted the need for capacity building of drivers or staff to communicate with all types of disabilities, including sign language and the correct mannerisms when trying to help people with disabilities. Inclusive infrastructure design and information were also mentioned by participants, in which many of the inputs were also already mentioned and discussed in the previous FGDs.

Takeaways from the participative discussions:

1. The effect of e-buses towards GHG emissions and air pollution should be monitored regularly through Jakarta's Governor Instruction No. 66/2019 on Air Quality Control with consideration to the unequal negative impacts towards vulnerable people who are more susceptible to premature deaths due to respiratory diseases.
2. Policies should prioritise actions that significantly lowers negative impacts on public health, especially vulnerable groups. This can be addressed in the Governor's Regulation No. 90/2021 on Local Low Carbon Development Plan which may result in the prioritisation of routes for e-bus deployment as well as prioritisation of supporting push and pull policies for sustainable transportation (for example: Low Emission Zones).
3. Minimal and outdated regulations on GESI within the government such as Regional Regulation No. 37/2012 cause a lowered understanding of ways to mainstream gender within the organisation as opposed to tackling GESI issues for the passengers. Both are equally important, however, lack of gender mainstreaming within Transjakarta during the phases of bus electrification may lead to unequal opportunities for jobs, unequal opportunity for operators during the procurement process, as well as ineffective gender budgeting and the monitoring and evaluation using gender-segregated data.

6.4. Recommendations

To conclude the regulation study and additional reflections from the vulnerable groups, following notes are recommended to be followed up in the near future:

1. In the lens of GESI, as passengers, the vulnerable groups' safety must be guaranteed in all aspects while implementing bus electrification. It includes universal design provided by the fleets designs (Technical Specifications of Non-BRT Battery-Based Low Floor Electric Buses in the Transjakarta Service System 2021), inclusive Service Level Agreement of Transjakarta, the minimum risk of the battery (Draft of Governor Regulation on the Service Level Agreements for Transjakarta Public Transport Services), and the high road safety (Regional Regulation No. 5/2014 about Transportation).

2. To minimise possible threats and issues throughout the electrification process, the GESI approach should be examined by ensuring that existing operators can join the future electrification program. The financial and technical capacity gap should be acknowledged and mitigated by a number of regulations. Transjakarta itself has to assure the operators have enough ability to follow steps and be sustainable. Companies should show a strong commitment and have a GESI perspective by enabling more job opportunities for women and other vulnerable groups. This goal can be stated in the official company statement.

3. GESI impact in larger society can be anticipated by adding more articles and/ or verses to the regional regulations crossing the issues of e-bus routes and land uses. It may be reflected toward the planning of Low Emission Zones, Transit Plazas, and Low Traffic Neighbourhoods. Regular monitoring of the air quality and its public report can also raise more support from the public to accelerate the e-bus deployment. Detailed data on air quality and its different impacts on the vulnerable groups should be mentioned and mandated to monitor regularly. By doing this, this issue can be seen as a comprehensive matter.

7. Stakeholder Mapping

Stakeholders that already been mentioned in the previous sections on this report, including the policymakers at national and regional level, are mapped on this section. The stakeholders are mapped to know how they related each other and to identify the role and influence with regards of the Transjakarta's electrification. In addition to the stakeholders at the policy making sectors, industry players and the end-user are also discussed. Financing institutions are also mapped in order to analyse their roles in more detail regarding the Transjakarta e-bus implementation.

Transjakarta, Jakarta Transport Agency, and bus operators will be demonstrated on the "centre" of the mapping result, considering:

- **Jakarta Transport Agency** as the main policymaker on the regional level that giving mandates to **Transjakarta** for deploying the electric bus.
- Important roles of the **bus operators** as stated on the Governor Decree 1053/ 2022, where the contractual framework for operating the e-bus occurs between Transjakarta and bus operators.

In addition, stakeholders on GESI mainstreaming are also taken for the discussion, considering the importance of GESI & LNOB aspect for the electrification.

7.1. Policymakers at National Level

According to Presidential Regulation No. 55/ 2019, in order to accelerate the BEV program for road transportation and reduce GHG emissions, a coordination team consisting of various ministries and agency at the national level must be formed. In response to this, the Coordinating Minister for Maritime Affairs and Investment issued Regulation No. 8/ 2020 on Work Procedures of the Coordination Team for the Acceleration of the BEV Program for Road Transportation. The regulation specifies the composition of the coordinating team, which serves as the foundation for identifying national parties who will be involved in the process of accelerating electrification. This section will discuss further the roles, interests, and influence of each national government agency in Indonesia's BEV acceleration, especially Transjakarta electrification program in more detail.

1. **Coordinating Ministry for Maritime and Investment Affairs (CMMIA)**

   The CMMIA is responsible for coordinating, developing, and controlling policies in the maritime and investment sectors (CMMIA, 2020a). As the coordinating ministry, CMMIA is responsible for coordinating four ministries: the Ministry of Transportation (MoT), the Ministry of Maritime Affairs and Fisheries (KKP), the Ministry of Tourism and Creative Economy (MTCE), and the Ministry of Energy and Mineral Resources (MEMR).

   In terms of BEVs, CMMIA assists in the coordination and synchronization of BEV acceleration related to inter-ministerial investment, develops national policies to support national BEV adoption, and is responsible for monitoring, evaluating, and reporting in the BEV energy, industrial, and manufacturing sectors (CMMIA, 2020b).

As the coordinating minister, CMMIA is involved as part of the Coordinating Team for the Acceleration of the Battery Electric Vehicle Program. According to the Regulation of the Coordinating Minister for Maritime Affairs and Investment No. 10/ 2020, the tasks of Assistant Deputy for the Maritime, and Transportation Industry, under the Deputy for Infrastructure and Transportation Coordination, is coordinating, synchronising the formulation, determination, and implementation of policies related to the manufacturing industry and electric vehicles. The CMMIA is the head of the coordinating team in supporting the acceleration of the KBLBB program, which includes providing recommendations to the relevant ministries/ local governments on policy adjustments to accelerate KBLBB. In addition, the CMMIA monitors and evaluates the policymaking process.

2. Coordinating Ministry for Economic Affairs (CMEA)

The Coordinating Ministry for Economic Affairs is responsible for coordinating, synchronising, and controlling ministry affairs in the economic sector (CMEA, 2020). CMEA, as the coordinating ministry, is responsible for coordinating 10 ministries, including the Ministry of Finance (MoF), the Ministry of Public Works and Housing (MPWH), the Ministry of Labour (MoL), the Ministry of Environment and Forestry (MoEF), the Ministry of Industry (MoI), the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (MAASP), the Ministry of Trade (MT), the Ministry of State-Owned Enterprise (MSOE), Ministry of Cooperative Small and Medium Enterprises (MCSME), and other agencies that deemed necessary.

In terms of the BEV, CMEA intends to participate by appointing the Coordinating Minister for the Economy as the deputy chairman of the coordination team in order to support the acceleration of the KBLBB program and the acceleration of the BEV. In accelerating the BEV, CMEA plays a role in developing national economic and fiscal policies, including the transportation sector, as well as providing economic policies for urban transportation proposed by different ministries—that impacts the fiscal policies for the Transjakarta e-bus fleets procurement as well.

3. Ministry of Trade (MT)

The Ministry of Trade is responsible for coordinating, formulating, and supervising trade policies such as developing and standardizing domestic and goods trade activities, controlling the quality of goods, controlling the circulation of goods, and facilitating the export of goods (MT, 2020). In order to accelerate the BEV, The Ministry of Trade is responsible for ensuring the use of domestic components, as well as determining procedures and specifications for importing lithium battery raw materials, in accordance with Ministry of Trade Regulation No. 100/ 2020 on Provisions for the Import of Non-New Lithium Batteries as Raw Materials for the Lithium Battery Industry for Supporting the Growth Acceleration of the BEV Industry.

4. Ministry Of Industry (MoI)

The Ministry of Industry is responsible for the industrial sector's governance and regulation (Ministry of Industry, 2021). As part of the BEV acceleration, Directorate General of Metals, Machinery, Transportation Industry, and Electronic under the MoI contributes to the formulation and implementation of BEV materials policies and import duty incentives for industrial spare parts. The MoI plays a role in accelerating the production of various types of BEV, including motorcycles and four-wheeled or more motorised vehicles, in providing technical support for assessing the structure of the domestic BEV industry so that it can meet achievement targets at the Domestic Component Level (*Tingkat Komponen Dalam Negeri,* "TKDN"), in accelerating the development of the main components and supporting components for the BEV industry, and accelerating the production of charging stations for the BEV, as mandated on The President Instruction No. 7/ 2022).

To support the acceleration of BEV Industry, the MoI issued three Ministerial Regulations: (1) Ministry of Industry Regulation No. 36/ 2021 concerning Low Carbon Four-Wheelers Motorized Vehicles to support the acceleration of BEV Production; (2) Ministry of Industry Regulation No. 6/ 2022 concerning Specifications, Development, Roadmap, and Provisions for Calculating Domestic Component Level (TKDN) Values for BEVs; (3) Ministry of Industry Regulation No. 28/ 2020 concerning BEV in a Complete or Incomplete Knock Down, which amended by Ministry of Regulation No. 7/ 2022.

Currently, the MoI is collaborating with various domestic and foreign parties to accelerate the development of Indonesia's electric vehicle ecosystem, including The New Energy and Industrial Technology Development Organization (NEDO), a Japanese Executing Agency, and an Indonesian R&D Institution.

5. Ministry of Energy and Mineral Resources (MEMR)

The Ministry of Energy and Mineral Resources is responsible for energy and mineral resource governance and regulation in Indonesia, including oil and gas, electricity, minerals and coal, new energy, renewable energy, energy conservation, and geology (MEMR, 2021). MEMR plays a critical role in achieving the government's goal of increasing renewable energy by 23% in 2025 and 31% in 2050, in accordance with the national energy policy.

In terms of BEV implementation and Transjakarta Electrification, MEMR plays a role in develops energy planning and supply for BEVs and their infrastructure (MEMR Press Release 112.Pers/04/SJI/2022), handles standardisation of charging infrastructure, pricing, and business schemes, and formulates national policies to support charging infrastructure provision, as issued in MEMR Regulation No. 13/ 2020 concerning Provision of Electric Charging Infrastructure for Electric Charging for BEV.

6. Ministry of Transportation (MoT)

The Ministry of Transport is in charge of transport governance and regulation in Indonesia. The Ministry of Transportation has several responsibilities, including policy formulation for transportation safety and security, and increasing the accessibility, connectivity, and capacity of transportation facilities and infrastructure (Presidential Decree No. 23/ 2022).

In terms of BEV Implementation and Transjakarta Electrification, the Ministry of Transportation, specifically the Director General of Land Transportation, who is in charge of electrifying public transportation, develops a BEV target for public transportation and developing BEV testing facilities, as well as developing national transportation policies and guidelines to support BEV acceleration and to encourage the adoption of BEVs, including a technical standard for bus retrofitting.

The Ministry of Transportation issued a target for electrifying 90% of road-based public transportation across Indonesian Cities by 2030 and 100% by 2040. They preliminary identifying electric bus fleets needed across 42 cities in Indonesia, including Jakarta, which stated to have 10,000 e-bus by 2030. However, this target does not formally state on a legally binding regulation.

7. Ministry of Finance (MoF)

The Ministry of Finance is responsible for financial sector governance and regulation, including budgeting, non-tax state revenue, taxes, customs and excise, state treasury, state assets, balance sheet, and state financial and risk management, as well as fiscal and financial sector policy recommendations (Ministry of Finance, 2018).

In terms of BEV implementation and Transjakarta Electrification, MoF is involved in the preparation of the state budget, the provision of fiscal incentive funds for BEV import duties and registration, and the collection of national taxes such as import duties, VAT, and luxury goods taxes. To encourage BEV adoption, MoF has established a special zero percent Import Duty rate for electric vehicles imported in incomplete conditions, or Incompletely Knocked Down (IKD), as outlined in Ministry of Finance Regulation Number PMK-13/MK. 010/2022 on Stipulation of Goods Classification System and Imposition of Import Duty Tariffs on Imported Goods. MoF also plays a role in the electrification of Transjakarta by issuing a GoI Guarantee Letter (GGL) for approval in granting credit to be carried out by financing institutions.

8. Ministry of Home Affairs (MoHA)

The Ministry of Home Affairs is responsible for guiding and supervising regional autonomy implementation. Local government implementation in question is development, empowerment, and public services.

To accelerate BEV adoption, MoHA oversees development programs at the provincial, city, and district levels, including transportation. Through the provisions of Ministry of Home Affairs Regulation No. 82/ 2022, MoHA supports and plays a role in providing incentives for the exemption or reduction of regional taxes in the form of Motorized Vehicle Tax (PKB) and Motorized Vehicle Title Transfer Fee (BBNKB).

9. Ministry of Environment and Forestry (MoEF)

The Ministry of Environment and Forestry is responsible for environmental governance and regulation, including forest and environmental management, waste and hazardous material management, pollution and climate change control, environmental partnerships, and law enforcement.

MoEF plays an important role on the deployment of battery electric bus by controlling air pollution, managing the environmental impact of the transportation sector, and reducing carbon emissions through the development of policies on used battery management and emission quality standards for lithium battery recycling. This national policy is the responsibility of the Directorate General of Solid Waste, Hazardous Waste, and Hazardous Material Management. As part of its efforts, MoEF has recently issued Ministry of Environment and Forestry Regulation No. 12 of 2021 on Quality Standards for Lithium Battery Recycling Emissions.

Moreover, MoEF established a mechanism for issuance and utilisation of Indonesia Certified Emission Reduction, or ICER, for climate change mitigation actions. As mentioned on the Section 3, Transjakarta needs to register the electrification programme to SRN PPI and issue ICER to obtain their carbon credits.

10. Ministry of State-Owned Enterprises (MoSOE)

MoSOE is responsible for governance and regulation in the State-Owned Enterprises (*Badan Usaha Milik Negara,* "BUMN") sector, including strategic business initiatives, creating sustainable growth, business development, and increasing SOE business infrastructure capacity.

In terms of BEVs, MoSOE manages national transportation infrastructure and plays a role in mandating BUMN to carry out business development in the electric vehicle battery industry, such as encouraging several BUMN companies, including IBC (Indonesia Battery Corporation), PLN (State Utility Company), Pertamina, and LEN, to engage in battery maintenance for electric vehicles, electricity distribution, and charging station infrastructural development. Furthermore, MoSOE also plays a role in accelerating electric vehicles from a financial perspective by mandating state-owned banks to provide loans to fund programs and other financial support.

IBC is the first step in managing the integrated BEV industry ecosystem from upstream to downstream. Indonesian Mining Industry (Mind ID), PT Indonesia Asahan Aluminum (Inalum), PT Aneka Tambang Tbk. (Antam), PT Pertamina, and the State Electricity Company (PLN) are among the companies involved in IBC. Mind ID and Antam will be involved in the mining and processing of raw minerals as part of the industrial ecosystem management. Meanwhile, PLN and PT Pertamina will be in charge of producing battery cells and packs, establishing electrical connectivity, and constructing Public Electric Vehicle Charging Stations (*Stasiun Pengisian Kendaraan Listrik Umum,* "SPKLU") in Indonesia.

11. National Development Planning (*Badan Perencanaan Pembangunan Nasional,* "Bappenas")

Bappenas has the responsibility for national development plans by establishing national development directions, priorities, and targets, developing macroeconomic systems, and developing development strategies, policies, and budgeting (Bappenas, 2021). Bappenas also oversees development plans at the provincial, district, and city levels to keep them in line with national plans.

Bappenas is not directly involved in accelerating electric vehicles, but one of the priorities, development targets, and strategic policy directions outlined in the National Long Term Plan (*Rencana Jangka Panjang Nasional,* "RPJPN") and National Medium Term Plan (*Rencana Jangka Menengah Perusahaan*, "RPJMN") 2020 -2024 has a strong focus on low-carbon development, to ensure Indonesia's climate action targets (Nationally Determined Contributions/ NDC) and Indonesia's commitment to Sustainable Development Goals (SDGs) can be achieved through the development of a public transportation system (Indonesia Green Growth, 2018). The RPJM encourages development plans at the provincial, district, and city levels to have the same focus.

Bappenas is also committed to begin the transition to low-carbon development in order to encourage electrification. This is accomplished by incorporating Indonesia's Low Carbon Development Initiative (LCDI) into the RPJMN, with the goal of achieving net zero emissions by 2050. To accomplish this, the Strategy entails the deployment of scalable electric vehicles to assist in the reduction of emissions from the transportation sector.

Bappenas also publishes national-level regulations in the Blue Book and Green Book, which consist of a list of approved projects to obtain external loans. If the electrification of Transjakarta can be included in the Blue Book and Green Book, then it can secure financing from external loans for electrification.

12. Ministry of Women Empowerment and Child Protection (MoWECP)

The Ministry of Women Empowerment and Child Protection established umbrella issues regarding women's empowerment and child protection. The ministry is vital in providing guidance or mandates for mainstreaming gender and inclusivity to other technical ministries. The ministry does not have direct involvement regarding Transjakarta's electrification.

Moreover, the ministry oversees, advocates, and encourages tagging for the responsive-gender budget. Responsive gender budget tagging signals that the programs that respective ministries will implement are already incorporated gender issues. Based on the ministry data, per the 2023 Workplan for All Ministries in Indonesia per May 2022, programs that already integrate gender issues across multiple ministries need the national government's budget as much as IDR 77.5 T, around 3% of the total federal government's budget. 14% of the tagged budget comes from the Ministry of Transportation.

13. Ministry of Agrarian Affairs and Spatial Planning (MoAASP)

The Ministry of Agrarian Affairs and Spatial Planning is in charge of managing government affairs, including the formulation, determination, and implementation of agrarian land and spatial planning policies. MoAASP also works on spatial mapping, land registration, agrarian planning, spatial control, and land conflict resolution. The implementation of the Transjakarta e-bus requires synchronisation between policies and cross-sectoral strategies, so that MoAASP plays an important role in carrying out supervision and setting programs on spatial planning in the transportation sector, including networks, infrastructure, terminal development plans, and traffic restriction zones. Regarding Transjakarta electrification, the ministry collaborates with Bappenas in monitoring and evaluating various regional spatial plans at the national scale (RTRWN) as well as at the provincial, district, and city scales (RTRW).

14. National Research and Innovation Agency (*Badan Riset dan Inovasi Nasional*, "BRIN")

BRIN is a non-ministerial government institution that assists the government by conducting R&D, assessment, application, and integrated invention and innovation (BRIN, 2021).

In terms of BEV, BRIN conducts research, development, and studies on EV components such as battery technology. BRIN through the Agency for the Assessment and Application of Technology (BPPT) also plays a role in the development, study, and application of the battery exchange system platform and the charge. To deal with shifting automotive trends, BRIN is currently conducting R&D related to the development of autonomous systems for BEV equipped with detection system technology, artificial intelligence, and big data (Dananjaya, 2022).

15. National Standardization Agency (*Badan Standardisasi Nasional*, "BSN")

The National Standardization Agency, or BSN, is a non-ministerial government agency tasked with fostering, developing, and coordinating national standardization activities. (BSN, 2021)

To support BEV, BSN contributes to the establishment of the Indonesian National Standard (SNI) for electric vehicles, beginning with vehicle systems and components and progressing to infrastructure such as e-bus batteries and charging stations. Furthermore, BSN has the authority to select certification bodies that meet the requirements for issuing standard certification and certification procedures (e.g., PLN has fulfilled the requirements to issue SPKLU certification).

16. Indonesian National Police (*Polisi Republik Indonesia*, "POLRI")

POLRI is responsible for maintaining public order and security, enforcing the law, providing protection, and providing community service (Pemerintah Indonesia, 2002). POLRI plays a role in developing policies relating to special number markings for BEV in order to support BEV. Another function of POLRI is to provide legitimacy on the origin and eligibility, ownership, and operation of motorised vehicles through motorised vehicle registration and identification. In regards of Transjakarta electrification, POLRI ensures that vehicles

operated by the fleets' owners, either it is bus operators, Transjakarta, OEMs, or other third party, comply with the designated guidelines.

7.2. Policymakers at Regional Level (Jakarta Provincial Governments)

Policymakers at the regional level presented on this section is identified from the Governor Decree 1053/ 2022 on The Guidelines on Accelerating Battery Electric Bus under the Transjakarta Services. The decree mandates several agencies under the government to conduct the activities related to Transjakarta electrification. In addition, the policymakers involved on developing the regulations, such as The Regional Secretary, The Regional Representatives Council, and Bureau of Law also being analysed further.

1. Governor

The governor is responsible for supervising and coordinating the administration of regency and city administrations within the province. Within the BEV framework, the governor has the duty to issue provincial-level BEV regulations and decide the procurement/ financing of BEV acceleration.

Regarding BEVs, the Governor has issued regulations that encourage the acceleration of BEVs, namely Governor Regulation Number 90 of 2021, whereby The Government of Jakarta has a Climate Resilient Regional Low Carbon Development Plan with a target of achieving a GHG emission reduction of 30% in 2030 and net zero emission in 2050, one of which is through electrification. To realise this, Governor Decree 1053/ 2022 was issued, in order to mandates Transjakarta to reach 50% electrification by 2027 and 100% by 2030. Furthermore, the Governor signed the governor's decree to provide incentives in the form of exemption from title transfer tax for BEVs, which was signed in Governor Decree No. 3/ 2020.

2. Regional Secretary

The Regional Secretary is responsible for assisting the governor in policy development and coordinating the implementation of regional apparatuses and administrative services. The regional secretariat is responsible for developing regional government policies—e.g., The Regional Secretary stipulated a list of Governor Regulations that will be issued each year.

To undertake its tasks in a more organised manner, the Regional Secretary is supported by three assistants: Government Assistant of The Jakarta Regional Secretary (*Asisten Pemerintahan*); Economic Affairs and Finance Assistant of The Jakarta Regional Secretary; and Development and Environment Assistant of The Jakarta Regional Secretary. Each assistant is overseeing agencies or bureaus. The Jakarta Transport Agency is supervised by the Economic Affairs and Finance Assistant. All regional-owned enterprises (ROE), along with Economic Affairs and Finance Bureau, are also overseen by the Economic Affairs and Finance Assistant. Because of that, Economic Affairs and Finance Assistant plays an important role on the Transjakarta's electrification.

The implementation of air quality control policies carried out by the Regional Secretariat is delegated to the Development and Environment Assistant of The Jakarta Regional Secretary,

who is responsible for coordinating activity implementation, monitoring and evaluating implementation, and submitting activity results to the governor on a designated term or schedule.

3. Jakarta Transport Agency (JTA)

JTA is responsible for developing policies, guidelines, and technical standards, as well as monitoring and evaluating land, water, sea, and rail transportation implementation. In terms of BEV, in general, JTA plays a role in formulating policies and strategic plans, developing plans and budget allocations, and reviewing and approving budget proposals for the use of BEV submitted annually by PT Transportasi Jakarta to be determined in the Regional Revenue and Expenditure Budget (APBD). The Jakarta Transport Agency also allocates quota for Transjakarta operators.

More specifically, the following units or sectors under the JTA will be directly involved in the BEV:

- **Road Traffic Department (Bidang Lalu Lintas Jalan)**

  The Road Traffic Department is in charge of both road traffic management and transportation integration and development. In terms of BEVs, the road traffic department is responsible for determining the formulation, implementation, and control of electronic road pricing (ERP) management policies to encourage the use of the Transjakarta BEV and reduce the use of private vehicles. The Road Traffic Department determines the type of services offered by electric buses.

- **Road Transport Department (Bidang Angkutan Jalan)**

  In terms of BEVs, the road transport department contributes to the preparation of the general route network plan, which includes determining the origin and destination of BEVs, the road network to be served, the number of vehicle requirements based on estimated BEV passenger demand, and the number of subsidies and fares that Transjakarta will receive.

  The Road Transport Department is involved in the implementation of BEV education and training, as well as driver certification. Human resources play a strategic role and are critical in vehicle electrification. To accelerate the electrification process, qualified human resources capable of operating the BEV are required.

- **Road Transport Terminal Management Unit (*Unit Pengelola Terminal Angkutan Jalan*, "UPTAJ")**

  One of the responsibilities of UPTAJ is to carry out the functions of planning, implementing, developing, supervising, and controlling the management of road transport terminals. In terms of BEV, UPTAJ plays a role in the development of the charging terminal for the BEV. This unit is responsible for determining the location points for charging infrastructure and supporting infrastructure at the terminal, as well

as managing vehicle circulation during the charging process to avoid crossings with other vehicles or passengers.

4. **Jakarta Manpower, Transmigration, and Energy Agency (JMTEA)**

JMTEA responsible for developing policies, business processes, standards, and procedures for implementing training institution certification and accreditation, monitoring the evaluation of employment and electricity, and approving the supply and price of electricity.

In terms of BEVs, the JMTEA is responsible for the approval of the electricity tariff, both for sell and lease, the approval of the connection of EVSEs to the electricity network and regulating recommendations for the supply of electricity for EVs charging. Furthermore, as part of the acceleration of the battery electric buses deployment program under the Transjakarta services, the JMTEA provides assistance, technical consultations, and recommendations for the development and construction of electricity infrastructure, including charging facilities.

5. **Jakarta Planning Agency (JPA)**

Jakarta Planning Agency is responsible for developing policies, guidelines, and technical standards for regional development planning, as well as conducting research and development, preparing spatial planning documents, and coordinating and controlling the implementation of regional development planning and budgeting policies.

Regarding the BEV, JPA is responsible for implementing and compiling policies, guidelines, and technical standards for development planning, regional research and development related to EV and its infrastructure and preparing the Funding framework for the EV Program Plan, which is indicative for a 5-year period. Furthermore, the JPA is responsible for ensuring that the electrification of Transjakarta becomes a priority development program in the medium- and long-term plans (RPJMD and RPJPD).

6. **Jakarta Environmental Agency (JEA)**

JEA has the responsibility to develop and implement policies, guidelines, and technical standards of environmental protection and management.

As part of the Transjakarta electrification program, JEA is responsible for monitoring air quality and noise levels as the result of the electrification, implementing Urban Air Quality Monitoring and Evaluation (EKUP), and supervising B3 waste management related to the use of BEV in transport services.

7. **Jakarta Financial Management Agency (*Badan Pengelolaan Keuangan dan Aset Daerah,* "BPKD")**

BPKD has the responsibility of supporting government affairs in the financial sector. The BPKD plays a role in drafting the Provisional Budget Ceiling Priority Public Policy Draft *(Kebijakan Umum Anggaran & Prioritas Plafon Anggaran Sementara*, "KUA-PPAS") in the context of preparing regional budgets to fund supporting infrastructure for public transportation in the

context of electrification (roads, bus stops, etc). Furthermore, BPKD is authorized to grant PT Transjakarta PSO and PMP (Rudi, 2015).

8. **Development Agency of Regional-Owned Enterprises (*Badan Pembinaan Badan Usaha Milik Daerah*, "BP BUMD")**

BP BUMD is responsible for supporting government affairs in the financial sector for the development of BUMD. In terms of the Transjakarta electrification, BP BUMD is responsible for ensuring that the electrification program is included in the PT Transportasi Jakarta Work Plan and Budget, compiling Key Performance Indicators (KPI) for the Directors of PT Transportasi Jakarta related to the electrification program, and supervising and evaluating the electrification.

9. **Procurement of Goods and Services Agency (*Badan Pelayanan Pengadaan Barang dan Jasa,* "BPPBJ")**

In general, BPPBJ is responsible for supporting government affairs in the financial sector, specifically in the sub-sector of government procurement of goods/services. BPPBJ is in charge of developing, facilitating, and implementing policies, guidelines, and technical standards for the procurement of goods and services.

In terms of Transjakarta electrification, BPPBJ is authorised to open tenders Transjakarta operator services through the e-catalogue system for operators who have received quotas (Governor Regulations No. 98/ 2018). In addition, BPPBJ also conducts the administrative selection and determining technical specifications, owners' estimation prices (*Harga Perkiraan Sendiri, "*HPS"), cost negotiations with operators, and contract drafts (Presidential Decree No. 54 of 2010 and Mulyana Abrar Advocate).

10. **Jakarta Human Settlement, Spatial Planning, and Land Affairs Agency (*Dinas Cipta Karya, Tata Ruang, dan Pertanahan*, "DCKTRP")**

DCKTRP is responsible for spatial planning and evaluation, controlling spatial utilization, building maintenance, and land planning. In terms of BEV, DCKTRP involved in determining the location of land use for charging points, electric bus parking areas, and providing space requirements/land allocation for other EV infrastructure.

11. **Regional Asset Management Agency (*Badan Pengelolaan Aset Daerah*, "BPAD")**

BPAD is responsible for coordinating and implementing the utilisation and management of regional property assets for the electrification program's implementation. BPAD can assist DCKTRP in utilising regionally owned land as charging facilities for electric buses.

12. **Legal Bureau of Jakarta Provincial Secretary**

The Legal Bureau, as part of the Provincial Government, is responsible for the preparation, harmonisation, research and development, promulgation of regional legal products, publication and documentation of statutory regulations, advice, assistance, legal services, cooperation, and human rights. In terms of Transjakarta's electrification, the legal bureau has a

role in compiling the necessary regulations and develop regulations for the Transjakarta's electrification, along with the agency that propose the draft regulation.

13. Economic Affairs Bureau of Jakarta Provincial Secretary

Economic Affairs Bureau of Jakarta Provincial Secretary is responsible for coordinating, monitoring, evaluating, and promoting the implementation of BEV Program policies.

14. Regional Heads and Foreign Cooperation Bureau of Jakarta Provincial Secretary

The Bureau of Regional Heads and Foreign Cooperation responsible for the Governor and Deputy Governor's administration, protocol, guest services, official travel, and foreign cooperation.

In terms of Transjakarta's electrification, this bureau is responsible for establishing bilateral and multilateral cooperation in renewable energy, climate and environment sectors, smart transportation, and financing for sustainable transportation, as well as optimizing regional finance (EV). To support The Government Jakarta's commitment, the foreign cooperation bureau has collaborated with foreign agencies such as ADB, C40-CFF, UNEP, TUMI Initiative, CTCN, UK PACT, ICTT, and Federal Ministry of Economic Cooperation and Development Germany (BMZ) on a technical assistance program for Transjakarta's electrification.

15. Jakarta Regional People's Legislative Council (*Dewan Perwakilan Rakyat Daerah*, "DPRD")

One of the DPRD's responsibilities is to draft regional regulations with the Governor and coordinate with The Government of Jakarta on the design, discussion, stipulation, and supervision of the Jakarta's APBD draft regional regulations.

In terms of the Transjakarta's electrification, DPRD is responsible to issue regulation to support the e-bus implementation. In addition, DPRD has a role in approving the budget including determining the amount of BEB subsidies and allocating the budget for the procurement of BEBs and their infrastructure based on the Jakarta Transportation Agency's draft budged.

7.3. Non-policy makers

The non-policy maker stakeholder's analysis is also conducted in the context of implementing and procuring Transjakarta's electric bus. Non-policymakers are institutions or agencies that play an important role in accelerating the adoption of electric buses, starting from e-bus financing, manufacturing of electric buses, procurement, and provision of supporting infrastructure, and the operational process of electric buses. Identification of roles, influence, and interests is analyzed to ensure that each stakeholder delivers their responsibilities. This section will explore the roles, interests, and influence of each non-policymaker involved in accelerating the Transjakarta electrification in more detail. In general, non-policy makers discussed in this section is divided into two: **e-bus industry key players**—such as financing institutions, original equipment manufacturers (OEMs), bus operators, charging infrastructure providers, and retrofitting companies; and **end users** (citizen). Vulnerable groups as end users are also considered on this section.

7.3.1. Financing Institutions

Financial institutions discussed in this report are identified based on their existing or potential involvement on the electrification, based on the status quo and discussions with Transjakarta. There are several types of financial institutions that will be discussed on this section, such as

1. **State-Owned Bank Association *(Himpunan Bank Milik Negara*, "Himbara") & Bank BSI**
   Himbara is a designation for 4 state-owned banks consisting of Bank Rakyat Indonesia (BRI), Bank Mandiri, Bank Nasional Indonesia (BNI), and Bank Tabungan Negara (BTN).

   Regarding Transjakarta's electrification, Bank Mandiri has experience in funding the Transjakarta electric bus program. Bank Mandiri is currently making an active contribution as the mandated lead arranger and bookrunner in the financing of the syndicated electric battery smelter with three regional banks totaling IDR 3.98 T (Utami, 2022).

   Along with Bank Mandiri, Bank BNI is also involved in providing commercial loans for Transjakarta bus operators. However, the involvement of Bank BNI in operators' financing applied for the conventional fleets, not e-bus fleets.

   Bank BNI seeks to be involved in the BEV acceleration program by adding a portfolio of green financing and green activity classifications. So far, BNI green financing has been provided for economic development needs by empowering MSMEs (Dewi dan Damara, 2022). At Bank BRI, BRI Finance is taking several strategic steps to increase financing for electric vehicles. For example, providing incentives such as a 10% down payment and 0% interest for individual customers who apply for financing with a term of up to 2 years (Ardianto dan Lumanauw, 2022).

   Aside from Bank Himbara, Bank BSI—formed from several sharia state-owned banks, having land transportation as one of its leading sectors. More than 10% of Bank BSI's portfolio in the land transportation sector is for Transjakarta operators' financing, indicating that this bank is experienced for assisting Transjakarta in support financing and assets needed for Transjakarta's electrification.

2. **Exporting Credit Agencies (ECA)**

   Export Credit Agency (ECA) assists Indonesian trading companies in collaborating with companies in other countries. They offer financing solutions and risk insurance (guarantee) to businesses attempting to export and import goods.

   In the case of Transjakarta electrification, UK Export Finance (UKEF), a UK ECA, is willing to assist in providing funding for electric buses. However, UKEF could not provide loans directly. They need to collaborate with commercial banks. With loans from a commercial bank that cooperates with UKEF, electric bus projects can have a repayment period of up to 14 years, not taken into account the repayment delivery period. With conditions, 20% of infrastructure development activities must go through partnerships with UK business players, while the remaining 80% can come from the Indonesian domestic market (Anwar, 2019). However, in

order to be approved for credit, UKEF requires a GoI Guarantee Letter (GGL) from the Ministry of Finance. UKEF currently issued an Expression of Interest (EoI) to Transjakarta to support the electrification program.

3. Development Financial Institutions (DFIs)

Development Finance Institution (DFI) is a financial institution that provides capital or other credit facilities to support and promote development in the financial, industrial, agricultural, commercial, or other economic sectors. Asia, particularly Indonesia, is currently working with the Development Finance Institution, such as ADB.

ADB's country partnership for Indonesia 2020–2024 is focused on enhancing Indonesia's economic recovery through sustainable and resilient energy infrastructure (ADB, 2021). The Sustainable Development Goals Indonesia One-Green Finance Facility (SIO-GFF) program of the Asian Development Bank (ADB) aims to support climate-friendly infrastructure and assist Indonesia in making progress. In terms of Transjakarta's electrification, ADB potentially provides funding, loan, capital injection, or credit enhancement for Transjakarta electrification. This loan will be distributed to designated entities that have already passed the ADB due diligence process, or through PT. SMI.

4. Financing Service Companies

One example of financing service companies is fund managers. A fund manager, also known as an investment manager, is a professional management company with a legal entity that manages funds into a variety of investment instruments for the benefit of customers. Investment managers are responsible for building customer trust in order for them to invest in a company. The Investment Manager is a professional team that has a permit/ license and is supervised by the OJK.

In terms of BEV, fund managers play a role in the issuance of financing instruments, e.g., RDPT (Limited Participation Mutual Funds), an alternative financing scheme for the procurement of e-buses. Fund managers/ investment managers are also responsible for negotiating investment management contracts, raising funds, and managing funds raised from investors/ sponsors. The managed RDPT funds can then be lent to appointed entities, such as SPV, for asset provisions.

5. Indonesia Central Bank (*Bank Indonesia,* "BI")

BI, as the central bank of Indonesia, has the responsibility to establish and implement monetary policy, regulate and maintain the payment system, as well as regulate and supervise banks.

To encourage the BEV industry in Indonesia, BI issues policies to implement a Green Down Payment policy. BI provides exemption of down payments for motor vehicle loans/ Motorised Vehicle Tax to 0% for environmentally sound vehicles, such as EV. To encourage credit growth in the BEV sector, BI issued BI Regulation No. 23/2/PBI/2021 on the Third Amendment of BI Regulation No. 20/8/2018 on Loan to Value (LTV) Ratio for Property Loans, Financing to Value (FTV) Ratio for Property Financing, and Down Payment for Motorised Vehicle Loans or Financing.

6. Financial Services Authority (*Otoritas Jasa Keuangan*, "OJK")

OJK has the responsibility to regulate and supervise financial services in the banking, capital market, and non-bank financial industry (IKNB) sectors. In order to support green financing, OJK has currently issued the Sustainable Finance Roadmap Phase I (2015-2019) and Phase II (2021-2025), with the goal of increasing awareness and capacity of the financial services sector to operate in an environmentally friendly manner.

In supporting the Transjakarta electrification program, OJK plays a role through (1) providing fiscal incentives such as providing funds for BEV purchases, developing upstream industries (batteries, charging stations and components), providing funds for BEV infrastructure production, and providing insurance companies for electric vehicle protection; (2) providing credit quality assessment for BEV purchase and upstream industry development. The issuance of financing instruments for the development of public infrastructure is also under the supervision of OJK. Moreover, according to OJK's regulation, a corporation which was permitted to be funded by commercial banks is a corporation which has already run commercially for at least 2 years—even though in special cases, banks could propose an exemption to OJK.

Credit for BEV purchases and credit for upstream industry development for individuals or MSMEs can be subject to a risk weight of 75% in the Risk Weighted Assets calculation. In this case, OJK lowers risk-weighted assets by 25% to reduce the risk of placing bank assets (Damara, 2022). In October 2022, OJK also began encouraging and assisting insurance companies in providing protection for the use of electric vehicles in Indonesia (Abdila, 2022).

7. Indonesian Financial Services Association (*Asosiasi Perusahaan Pembiayaan Indonesia*, "APPI")

APPI is a government-supported organization that serves as a forum for Indonesian finance companies. The goal of APPI is to continue government guidance in developing the role of Indonesian financial institutions and to have an impact on the national economy. This organization also serves as a communication forum for stakeholders in the leasing, factoring, consumer finance, and credit card industries. APPI also provides various programs such as certification of billing staff, economic outlook, digital economic transformation, and recovery of the financing industry.

As Transjakarta aims to have separate asset ownership and operations, in which the asset will be provided by leasing companies instead of procured solely by bus operators, the involvement of APPI is important in order to gather their interest and readiness on joining Transjakarta electrification program.

8. Regional Bank of Jakarta (Bank DKI)

Bank DKI is a Regional Owned Enterprise in the banking sector, with shares owned by the DKI Jakarta Provincial Government and PD Pasar Jaya (ROE Pasar Jaya). Bank DKI is a fund distributor for Kredit Usaha Rakyat (KUR). In terms of Transjakarta electrification, Bank DKI potentially becomes a lender to existing bus operators in the context of implementing electric bus under

the Transjakarta services. There has been a discussion between Bank DKI and microbus operators on providing the KUR to procure the e-bus. A microbus operator also highlighted the importance of Bank DKI to be more involved in the transportation financing mechanism. Given its establishment as a Regional Owned Enterprise, The Governor of Jakarta can directly give a mandate to Bank DKI to involve in providing loans or support the financing for the electrification.

7.3.2. Original Equipment Manufacturers (OEMs) & Authorised Local Distributors (*Agen Pemegang Merk,* "APM")

The Original Equipment Manufacturer (OEM) is a company that is crucial in the provision of electric buses. OEMs play a role in supplying the electric vehicles and their supporting industries, including manufacturing, distribution, spare parts, and electric vehicle supporting infrastructure. International OEMs could not directly sell their product in Indonesia hence they need to conduct joint corporation with *Agen Pemegang Merek* (APM), the OEMs' authorized distributor in Indonesia. However, Indonesia already had its locally manufactured e-bus models under two OEMs: Mobil Anak Bangsa and PT. INKA.

Even though Transjakarta eligible to have an MoU with OEMs, as of now, the e-bus services contract is conducted between Transjakarta and bus operators. The operators, during the bidding process of e-bus services tender, have proposed the cost per km along with its specific e-bus model from a certain OEM.

i. International OEM

For now, Transjakarta has commercially operates electric bus from BYD, an OEM from China. VKTR acts as the APM for BYD E-Bus. Transjakarta has signed a collaboration with Switch Mobility, a UK-based provider and manufacturer of electric-based buses, in order to provide electric buses in Jakarta.

ii. Local (National) OEM

As mentioned before, Indonesia currently has local electric bus manufacturing companies, such as Mobil Anak Bangsa (MAB). MAB is a national automotive company with the body worked on the New Armada, Magelang. Aside from MAB, there is also PT INKA, which provides electric buses with the body manufactured by PT Tentrem, Malang. MAB and INKA supply electric buses, which will be operated by Transjakarta bus operators. MAB has conducted its pre-trial phase for a high-deck 12-m fleet operated on a BRT route.

7.3.3. Bus Operators

As mentioned earlier, Transjakarta cannot directly contract with OEMs for operating the e-bus. Transjakarta contracted the services with a gross-cost mechanism on a cost per km basis with the operators. This contractual framework has also been mandated in The Governor Decree 1053/ 2022, so that the bus operators' role is crucial. For now, more than 80% of fleets are owned or

leased by 18 operators. Based on the business entity, there are two difference entities of Transjakarta bus operators:

1. **Limited Liability Company (Perseroan Terbatas "PT")**

   PT Mayasari Bakti is currently the only Transjakarta electric bus operator, operating 30 electric buses made by BYD. All of the large bus operators are a limited liability company (company), either state-owned or private. For now, one state-owned company (PPD) operates 12-m high deck single buses and 18-m articulated bus. PPD owns 23% of Transjakarta large bus fleets. Previously, Perum DAMRI as the State-Owned Enterprise on road-based public transport has become one of Transjakarta operators. Other than that, several microbus operators, such as Lestari Surya Gema Persada, is also a company-based operator.

2. **Cooperative**

   Cooperatives play an important role in operating microbus and medium buses of Transjakarta, such as Kopaja or Koantas Bima that operate medium bus, and Koperasi Wahana Kalpika (KWK) or Koperasi Mikrolet Jakarta Raya (Komilet Jaya) that operate microbus.

   The buses that are operated by company-based operators generally belong to the company itself, so all profits are gained to the company. Cooperatives, unlike most business entities, are owned and managed by their members. The cooperative handles and manages all bus operational activities, but the cooperative's capital (in this case is the fleets) is obtained from all of its members, who are all individually owned. As a result, the cooperative's profits will be managed for the improvement of the cooperative's performance and distributed equally to members who own the bus.

   The difference between company-based and cooperative-based operators results in the difference of creditworthiness, bankability, and the loan issuance process for procuring assets for Transjakarta's electrification. For example, the KUR (Kredit Usaha Rakyat) for microbus operators is mainly issued by existing fleets owner. The cooperative will only support the issuance by providing a recommendation letter, stating that the issuer is the cooperative member.

7.3.4. Charging Infrastructure Providers

SPKLU and SPBKLU are the two types of BEV charging infrastructure in Indonesia. The Public Electric Vehicle Charging Station (SPKLU) is a charging station designed specifically for electric vehicles. SPKLU was established by companies that already have IUPTL. However, there is also SPKL that are privately owned and utilised by the entities themselves (not commercialised), such as the SPKL owned by Mayasari Bakti, located at Mayasari Bakti's depots, and be utilised only for Transjakarta's e-bus, not for other purposes.

Charging facilities or charging infrastructure, in short, consisted of procuring land for establishing the facility, supplying EVSEs unit, constructing connection to electricity grid and other construction works, also providing the electricity itself. Thus, establishing charging infrastructure for

Transjakarta e-bus requires the coordination and collaboration of multiple stakeholders, such as electricity company, energy company, and EVSEs providers.

1. **Electricity Company**

In terms of BEV, MEMR assigned the electricity company, in this case PLN, for providing charging infrastructure for BEVs (Dirjen ESDM, 2020). The electricity company is also responsible for establishing network connectivity for BEV charging infrastructure.

Private power generation companies, such as Medco Energy, are collaborating with PLN (State-owned Company) and ride-hailing operators to build BEV charging stations in Indonesia, with a focus on Jakarta and Bali (Ridwan, 2020). In Bali, they launched a charging infrastructure platform in collaboration with local government, OEMs, and charging infrastructure developers to create a new pilot ecosystem with the ultimate goal of expanding to other cities.

Furthermore, PT PLN has collaborated with Perum DAMRI and PT Tri Energi Berkarya (TEB) in providing SPKLU infrastructure through a sharing economic model partnership using Provide, Privately Owned and Operated (PPOO) Scheme. PLN, the holder of IUPTL, will provide the infrastructure and the information & technology platform for SPKLU. Meanwhile, DAMRI will provide the land, and PT TEB will prepare the SPKLU as well as operate and maintain it (Kurniawan, 2022).

2. **Energy Company**

The increasing numbers of EVs will reduce the demand on gasoline. Therefore, the gasoline companies have already announced their plans to transform their business to align with the EV trend and establish their own charging infrastructure.

Several gasoline companies have adapted the transformation aligned with the EV adoption. Pertamina has already developed 6 SPKLUs with fast charging facilities in 6 SPBU across Jabodetabek (Kurniawan, 2022). Furthermore, Shell is currently testing Shell Recharge, a public electric vehicle charging station (SPKLU) using electricity from PLN at Shell Pluit Selatan 1 in North Jakarta and Shell Antasari 1 in South Jakarta. British Petroleum (BP) has also committed to providing EV charging stations to support the Indonesian electric vehicle ecosystem in collaboration with PT AKR Corporindo.

3. **Electric Vehicle Supply Equipment (EVSEs) Providers**

Charging infrastructure is a key role in the implementation of Bus Electric Vehicles (BEV). Electric Vehicle Supply Equipment (EVSE) is the charging device required to set up a secured electrical connection between the EV and the electricity source. EVSE providers, such as ABB, play a crucial role in manufacturing and providing facilities, installing, and maintaining charging infrastructure to meet the needs of BEVs. ABB has created fast charging infrastructure for Shell, and the company also provides overnight charging infrastructure for BYD in Singapore (ABB News, 2019). For the time being, PT Powerindo Prima Perkasa and PT Tri Energi Berkarya are leading and supporting the construction of electric vehicle charging station infrastructure

in Indonesia. In the context of SPKL procurement, PT Powerindo Prima Perkasa provides charging facilities to several companies or operators, including PLN and Mayasari Bakti for operating Transjakarta's e-bus.

7.3.5. Retrofitting companies

PT Transjakarta intends to retrofit its conventional buses to electric buses. Currently, Transjakarta is seeking to collaborate with companies involved in the technology development and supply of electric powertrains for various types of electric vehicles. This retrofitting company will retrofit conventional diesel buses to electric buses through a conversion process. In Indonesia, SporaEV is one of the local start-ups that conducts retrofitting for various types of fleets. Even though they have not been retrofitted buses, they planned to create a prototype of retrofitted diesel to electric microbuses. PT VKTR and Equipmake are two retrofitting companies that have started having discussions with Transjakarta for further collaboration.

7.3.6. Transjakarta Passengers

Transjakarta passengers are users of the electric bus service. Bus passengers are the primary target of the BEV acceleration program, as transportation services play an important role in accommodating their mobility and activity. Using battery electric buses will enhance the city quality of life as air and noise pollution is reduced. However, it should be noted that based on ITDP's survey, women accounts for two-thirds of Transjakarta's passengers. The needs of vulnerable groups, such as women, children, elderly, and People with Disabilities (PwD) need to be considered. Participatory processes with Transjakarta passengers need to be conducted to capture their needs when planning the e-bus deployment program.

7.4. Stakeholder Mapping & Influence – Interest Matrix Results

7.4.1. Stakeholder Mapping Results

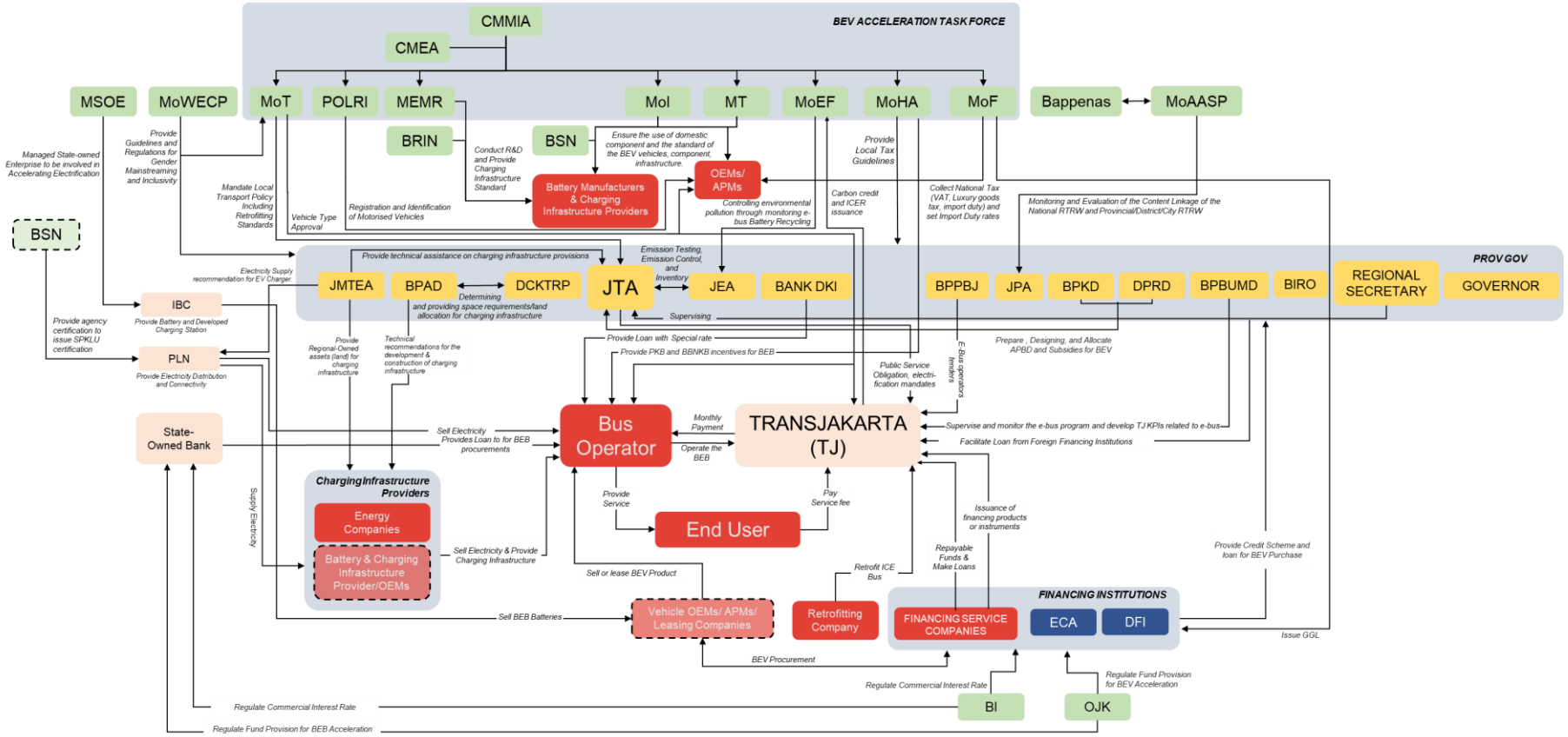

Figure 23. Stakeholder Mapping Results

7.4.2. Influence – Interest Matrix

Influence-Interest matrix is a technique used to help gain from a long list of stakeholders with a more refined understanding of their potential engagement. The matrix determines stakeholders who has high or low power (*influence*) for the electrification programme, and who has high or low interest. The perspective of the low or high interest-influence stakeholders in this analysis is from the Transjakarta perspective and analysed subjectively.

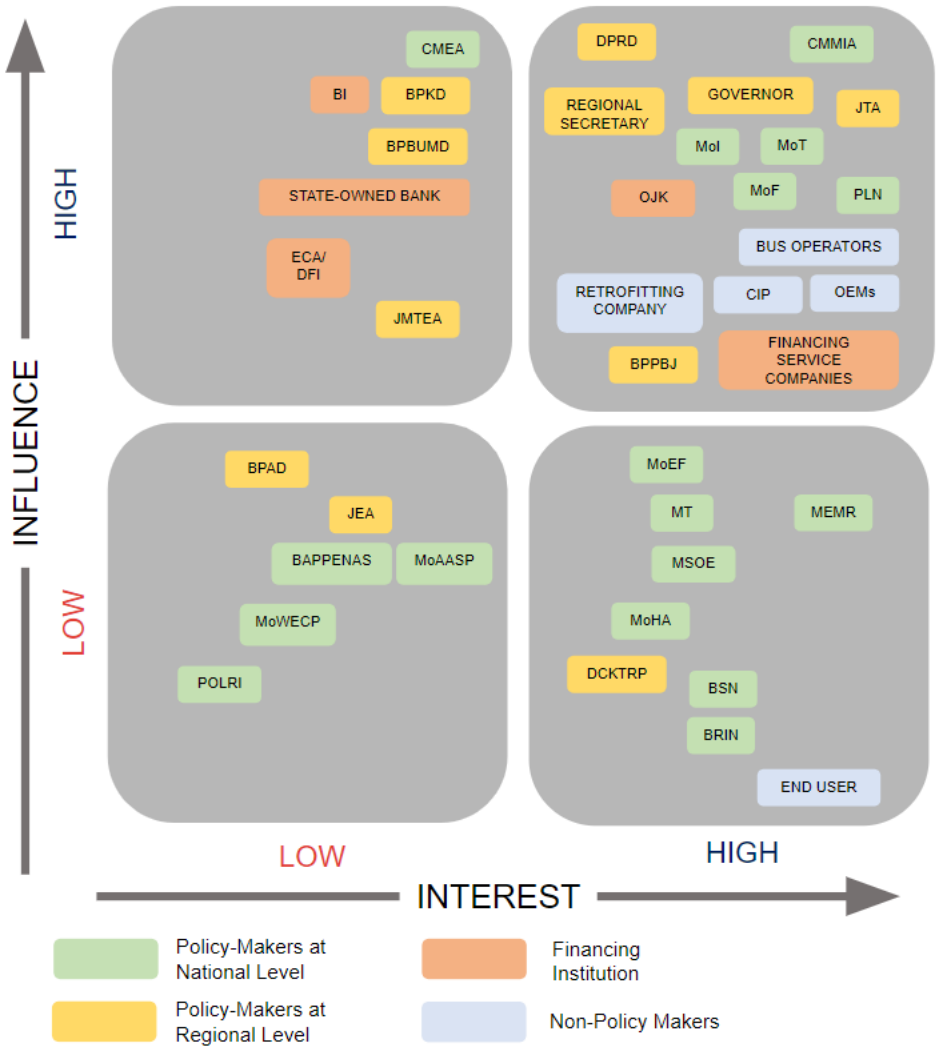

Figure 24. Influence – Interest Matrix

Policymakers such as CMMIA, MEMR, MoT, MoF, MoI at the national level who are included in the task force have high interest in the alignment of responsibilities given to stakeholders in accelerating BEV. Meanwhile, at the regional level, the policymakers, especially agencies that are directly related to Transjakarta.

Policymakers at national level such as Governor, JTA, and Regional Secretary are classified as highly influenced.

The financing institutions such as OJK, BI, DFA have a high level of influence due to the importance of funding the electrification of Transjakarta, which requires innovative financing for the implementation. Along with this, non-policy makers which play an important role on the bus procurement and operation such as bus operators and OEMs also have high influence.

While the passengers or end users, although they have low influence, they have high interest in the implementation of e-bus as they will be the e-bus passengers.

To accelerate the implementation of Transjakarta Electrification, Transjakarta needs to work closely with the key stakeholders which have high influence and interest, such as JTA, Bus Operators, Government of DKI Jakarta, MoT, OJK and OEMs.

8. Conclusions & Next Steps

Governor Decree (Keputusan Gubernur) could serve as the initial legal basis to support the electrification of 10,047 fleets in 2030. Moreover, additional legal supports of electric bus implementation have been identified at this study. There are three existing regulations at the regional level, two existing regulations at the national level on carbon-pricing, four pipeline bills on Drafts of Regional Regulations (Raperda), and one pipeline bill on Governor Regulation Bill (Rapergub) on Air Quality Control Strategy that has been analysed for a stronger regulatory framework of the electrification program. Those regulations need to align with the electrification target that has previously been stated on Governor Decree 1053/ 2022. Further actions for Transjakarta in order to align with the electrification target to existing regulations and pipeline bills are listed below:

- Transjakarta needs to follow the Regional Secretary Decree regarding the Jakarta Governor Regulation Formation Program 2023 which presents a list of Governor Regulation to be issued by 2023. Drafts Governor Regulations related to electrification need to be identified and communicated to respective stakeholders.
- Transjakarta needs to work together with The Government of Jakarta and Regional Representative Council (DPRD) to amend Article 51 on Regional Regulation No. 5/ 2014 to differentiate the maximum life span between non-electric or ICE and electric vehicle fleets for public transportation.
- Transjakarta needs to register the electrification program in SRN PPI to be able to participate in carbon pricing mechanism and obtain the Indonesia Certified Emission Reduction ("ICER," or Sertifikat Penurunan Emisi, "SPE") to obtain their carbon credit.
- Transjakarta needs to propose the alignment of electrification targets stipulated in the Governor Regulation on Air Quality Control Strategy with the target that has been set on The Governor Decree.
- Transjakarta needs to propose:
    - Integrating terminal charging development plan or additional charging facilities for public transportation into the passenger terminal development plan; and
    - Integrating the deployment of battery electric buses for public transportation fleets.

  into the Draft Regulation on Jakarta Regional Spatial Plan 2022 - 2042.
- Transjakarta needs to ensure at least:
    - Electricity consumption projection due to large-scale electrification of Transjakarta;
    - Greenhouse gas reduction due to large-scale electrification of Transjakarta;
    - Electric vehicles—especially public transportation fleets—deployment targets, in line with the target that the Jakarta Transport Agency or Transjakarta has set.

has been stipulated in the Draft of Regional Regulation on Regional Energy General Plan.

- Transjakarta needs to ensure that their scopes of activities are extended by adding financing, leasing, or establishing a subsidiary on the Amendments on Regional regulation No. 4/ 2014 about PT. Transportasi Jakarta.

- Transjakarta needs to work together with The Government of Jakarta to incorporate the large-scale electrification into the National Planning Agency's Blue Book and—further—Green Book, to ensure Transjakarta Electrification Program's sustainability, and to secure its financing from foreign loans.

To enable each fund channeling depending on the financial scheme chosen, Transjakarta needs to:

- Working with The Government of Jakarta to issue Regional Loan to PT. SMI (Scheme A-1 and A-2).
- Working with The Government of Jakarta to have a regress agreement with The Ministry of Finance or IIGF; and request the Ministry of Finance or IIGF to issue a Government Guarantee Letter to obtain funding from ECAs or DFIs for the electrification program (Scheme A-3).
- Establish an SPV for the electrification programme (applies for all possible fund channelling schemes, except for Scheme B-1 and B-1A).
- Have a contract with the fund manager, conduct feasibility study on the electrification (for issuing RDPT, Scheme B-2).

To have a strong regulatory basis for the electrification on the technical aspects, Transjakarta needs to:

- Request the Ministry of Transportation to have a clearer regulation on retrofitting, technical standardisations on non-plug-in charging--e.g., pantograph charging, and reviewing the current regulations of Gross Vehicle Weight for buses regarding the implementation of electric buses.

Regarding the GESI aspects, Transjakarta needs to guarantee vulnerable groups' safety while implementing the electrification by incorporating universal design on technical specifications for each e-bus model. To ensure the social inclusion of electrification, Transjakarta needs to ensure the existing operators can join the e-bus program. The financial and technical capacity gap should be acknowledged and mitigated by a number of regulations. Transjakarta itself has to assure the operators have enough ability to follow steps and be sustainable.

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