

100 E-Bus Trial Jakarta

Good Governance Report

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ABOUT THE C40 CITIES FINANCE FACILITY

The C40 Cities Finance Facility (CFF) is a collaboration of the C40 Cities Climate Leadership Group and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The CFF supports cities in developing and emerging economies to develop finance-ready projects to reduce emissions to limit global temperature rise to 1.5°C and strengthen resilience against the impacts of a warming climate. The CFF is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), the Children's Investment Fund Foundation (CIFF), the Government of the United Kingdom and the United States Agency for International Development (USAID).

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LIST OF ACRONYMS

AC	Airconditioned
BC	Business Case
BMTC	Bangalore Metropolitan Transport Corporation
BoC	Board of Commissioners
BoD	Board of Directors
BPPBJ	Badan Pelayanan Pengadaan Barang/Jasa
BRT	Bus Rapid Transit
BTS	Buy the Service
BUMD	Regional Owned Company
CapEx	Capital Expenditure
CFF	Cities Finance Facility
CNG	Compressed Natural Gas
DISHUB	DKI Transport Agency
DKI	Daerah Khusus Ibukota or Special Capital Region of Jakarta
E-Bus	Electric bus
EV	Electric Vehicle
FAME	Faster adoption and manufacturing of electric vehicles
FFS	Financial Feasibility Study
GCG	Good Corporate Governance
GEF-SUTP	Global Environment Facility – Sustainable Urban Transport Project
Gol	Government of Indonesia
HPS	Harga Perkiraan Sendiri (Owner's Estimate)
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
K/ L/ PD	Public sector Agency/ institution using Income & Expenditure budget
KPIs	Key Performance Indicators
LF	Low Floor
LKPP	National Public Procurement Agency
M&E	Monitoring and Evaluation
MIS	Management Information Systems
MoHUA	Ministry of housing and urban affairs
MoT	Ministry of Transport
Non-AC	Non airconditioned
NOx	Oxides of nitrogen
O&M	Operations and Maintenance
OEM	Original Equipment Manufacturer
OpEx	Operating Expenditure
PLN	PT Perusahaan Listrik Negara
PPP	Public Private Participation
PSO	Public Service Obligation
RE	Renewable Energy
SCC	Social Cost of Carbon
SLF	Semi Low Floor
SOP	Standard Operating Procedure

SPV	Special Purpose Vehicle
TA	Technical Assistance
TFS	Technical Feasibility Study
TJ	TransJakarta
UKPBJ	work unit in the Ministry/ Local Government Institutions / Governments which becomes the centre of and advantages from procurement of goods / services.
ZEB	Zero Emission Buses

EXECUTIVE SUMMARY

As part of a move towards the use of clean energy sources for urban public transport, DKI Jakarta through TransJakarta is planning the progressive deployment of electric buses. The 100 E-Bus Trial project is supported by C40 CFF, backed by strong political will from the Governor's office. For Jakarta, the 100 E-Bus Trial project and its preparation are seen as an opportunity to learn about the technology, operation and business model of E-Bus fleet and associated charging infrastructure.

Governance can be considered as a system of interplay of players, processes and performance. Good governance or lack of it is reflected through the success or failures across multiple factors, for example, the E-Bus Trials useful life, expenditures incurred, prospective outcomes and ultimately satisfaction levels amongst key stakeholders.

In general, bus procurement and operations are prone to various degree of losses and failures world-wide. Low financial and operational performance is attributable to individual as well as to organisational inefficiencies and inexperience. Given the lack of E-Bus operational experience in Jakarta, a higher risk of failures and losses could be expected, if not well managed. However, such enhanced risks are customary in Bus Technology Trials, which should be closely monitored and from which lessons should be learned, leading to more optimised phases of E-Bus rollout in future years. The higher than usual initial investments required for the E-Bus Trial could further amplify the impact of operational failures; although this initial high investment cost is off-set to a certain extent by the lower cost of E-Bus operations, when compared with conventional ICE bus operations.

Risks identification and mitigation strategy formulation has been undertaken for minimizing potential governance failures in 100 E-Bus Trial. The adopted analytical framework for risk analysis and corresponding mitigation is **Process-based**, further supported by an **Actor-based** assessment. Processes are set of involved activities and their approaches while Actors are represented by entities and institutions responsible to carry out the processes.

Due to unfamiliarity of existing institutions/ entities with E-Bus technology and their operations, process-based gaps are identified first, for the next steps and updating of needs, followed by a broad assessment of the strengths of involved actors. A perception-based risk scoring is performed by the Consultant's team based on recommendations of Technical Feasibility Study (TFS), Financial Feasibility Study (FFS), a Market Study of operators conducted by TJ, on the short-listed routes (Nos. 6, 6D and 9D), the Business Case (BC) Study, Capacity Development undertaken by CFF/C40 and discussions held with TJ, DISHUB and BPPBJ.

Four project phases (denoting the Processes) are at the centre of governance failure risk assessment and their implications on achievement of 100 E-Bus Trial project outcomes. These four phases are Appraisal, Planning, Tendering and Implementation. Further, the 100 E-Bus Trial project implementation primarily involves TransJakarta as the lead implementing agency, with the global level project monitoring and procurement related procedural support from DKI agencies (namely Transport agency

(DISHUB) and the provincial procurement agency (BPPBJ). The bus routes operations and maintenance are carried out by public and private sector bus operators. A brief review of these organisations identifies areas of potential governance failure. Additionally apex governance institutions such as MoT and DKI Governor's office are considered for their policy, legal and regulatory roles in the 100 E-Bus Trial as well as the wider E-Bus roll-out.

The risk assessment has considered the support provided by the CFF technical assistance for the planning phase and consequent capacity development of TJ.

Risk assessment appears to be heavily tilted towards the **Tendering and Implementation** phases, although the risk levels are expected as **'Very low' to 'Low'**. This is on account of **a dependence on the public and private sector operators** for procurement and operations under the BTS model. Potential for **Delayed procurement** is expected with **Medium to High level** risk. **'Low' financial risk** is expected with most of the CapEx+OpEx dependence on the private and public operators. However, absence of a finalised and approved **legal and regulatory framework** is foreseen as **a potential High-risk** governance failure as it concerns E-Bus fleet imports/ manufacturing, registration and on-road operations. This can potentially stall or delay the 100 E-Bus Trial project activities.

As the threat of corruption grows out of conflicting interest of direct and indirect stakeholders whilst deepening its roots in the absence of transparency, accountability and integrity controls and monitoring, the draft GGAP requires to simultaneously consider minimising corruption risks in parallel with the design of required transparency and accountability measures. The draft Good Governance Action Plan (GGAP) provided below consists of a range of potential mitigation measures, responsible agencies and approximate timelines (Table 1).

Table 1: GGAP for Implementing the 100 E-Bus Trial

Sl. No.	Mitigation Measure (Good Governance Actions)	Responsible agency	Timelines
1	Technical Assistance for 100 E-Bus Trial implementation advisory and support	TJ	2021 - 2024
2	Technical Assistance for M&E advisory and support	TJ, PIU	2021-2024
3	Capacity Development Programs (On site and Off site)	TJ, PIU	2021-2024
4	Legal & regulatory framework for E-Bus Trial	MoT (with support from DISHUB/ PIU)	2021 - 2022
5	Deepened Market survey	BPPBJ/ TKPP with support from TJ	Second Quarter of 2021
6	Tender Documents (for bidding and contract conditions)	BPPBJ/ TKPP	2021 (starting March 2021)

Sl. No.	Mitigation Measure (Good Governance Actions)	Responsible agency	Timelines
7	Monitoring & Evaluation Framework (with ready base line)	TJ, DISHUB, DKI Governor's office	2021
8	Tender Award and Contract Signing	BPPBJ/ TKPP with support from TJ	Late 2021/ 2022
9	Contract Management	Private or Public Operator/ Concessionaire	2022/ 2023 onwards
10	Review Meetings/ Seminar	TJ and DISHUB	2022/ 2023 onwards

Source: Consultant's team

In order to avoid or at least minimise above negative outcomes from this 100 E-Bus Trial project implementation, relevant mitigation measures are identified (a) to strengthen the tendering process through a deepening of the existing market survey; (b) for inclusion and integration of a robust monitoring & evaluation mechanism in the project processes; and (c) for capacity development of both public and private sector operators. Necessary E-Bus related legal and regulatory framework needs to be in place, in parallel to progress on desired implementation path.

With the completion of ongoing technical assistance to TransJakarta on 100 E-Bus Trial, an initial support (planning phase) is completed. Further technical assistance during the procurement and implementation phases is recommended. Technical assistance for implementation shall assist incorporation of suggested mitigation measures and GGAP.

1 INTRODUCTION

1.1 Background

As part of a move towards the use of clean energy sources for urban public transport, DKI Jakarta through TransJakarta is planning the progressive deployment of electric buses. The 100 E-Bus Trial project is supported by C40 CFF, backed by strong political will from the Governor's office. Jakarta is among the 34 cities worldwide committed to the C40 Green and Healthy Streets Declaration. Transport sector is among the highest priority in the RAD-GRK energy sector. Backed by the Governor Regulation 131/2012, the Jakarta's Governor champions the introduction of electric buses for urban public transport.

The population of Jakarta is nearly ten (10) million inhabitants with thirty-two (32) million people living in the metropolitan area, a satellite area known as Jabodetabek. Each day many commuters travel to and from Jakarta from the Metropolitan area. The migration to electric vehicles is seen as an important measure in Jakarta's air quality improvement. The City Government intends to completely 'electrify' commercial vehicles used for public transport in Jakarta. This project concerns implementation of an operational trial for 100 E-Buses and associated E-charging Infrastructure in Jakarta. CFF supports fleet electrification and the reduction of urban public transport emissions in Jakarta, in compliance with national and regional policies.

For Jakarta, the 100 E-Bus Trial project and its preparation are seen as an opportunity to learn about the technology, operation and business model of E-Bus fleets and associated charging infrastructure. A number of demonstration runs of battery electric buses have been undertaken over past years. These have imparted confidence for initiating commercial operations of 100 E-Buses on a trial basis with the primary purpose of gaining knowledge around their performance and suitability to the local operating conditions. The lessons learned will be used for later phases of roll-out with necessary updates in future E-Bus project design and implementation features.

1.2 Need for Good Governance

Governance can be considered as a system of interplay of players (entities), processes and performance. Good governance, or lack of it, is reflected through the success or failures across multiple factors namely a project's useful life, expenditures incurred, outcomes and satisfaction levels amongst stakeholders. The lack of good governance can potentially nullify the expected gains and render the 100 E-Bus Trial less effective than planned. Accordingly, good governance is needed to:

- a. Improve project implementation, operations and functions,
- b. Minimise losses or cost over runs,
- c. Maximize project's public appeal/benefits; and
- d. Minimise corruption risks.

The project implementation mechanism should be capable of detecting wrong-doings and failures over the whole project cycle. Accordingly, elements of transparency,

accountability, clarity, integrity and presence of necessary processes/ systems are integral to good governance, supported by the following important pillars:

- strong institutional framework and capabilities through understanding of their role, hierarchy and powers;
- existence of processes and systems for assuring transparency within the organisational functions as well as across them;
- available/ planned monitoring and evaluation setup for a continual project update that enables timely interventions, as needed; and
- prospects of communication and collaboration/ partnerships, internally as well as externally, to support the project planning, procurement and implementation.

The above forms the basis for the formulation of a draft good governance action plan (GGAP) to mitigate potential governance failures.

1.3 Objective of Good Governance Study

The primary objective of the good governance study draft GGAP is to support and advise the city on adoption of timely mitigation measures that can enhance project governance for identified risks of potential project failure. Good Governance support includes the following components, to be translated into an appropriate good governance action plan (GGAP):

1. Analyse to what extent opportunities, incentives or costs for wrongdoing exist based on potential risks of corruption, followed by identification of their negative impacts on the project performance;
2. Propose integrity and transparency measures that are crucial for effectively countering corruption risks and to deliver high quality project outcomes in the sphere of influence of the client and its partners; and
3. Propose capacity building measures that support the professionalisation and integrity of public servants and suppliers and that are within the Capacity Development Framework of the client (C40 Cities Finance Facility Capacity Development Framework, 2017).

The scope of Work Package 2.5 concerning Good Governance study is available in Annex 1.

1.4 Approach for study

Assessment of governance failures in the 100 E-Bus Trial project follows the **risk-based approach** involving the identification of potential project failures across each of the 100 E-Bus Trial project phases, in parallel with identification of actors or processes, or both, that contribute to exacerbation of the problem and which potentially form part of the solution framework.

The adopted analytical framework for risk analysis and corresponding mitigation is a combination of **Process-based** analysis supported by **Actor-based** assessment. Process is defined as a set of activities that are interrelated or that interact with one

other. Processes use resources to turn inputs into outputs, and as the activities are interacting, outputs from one phase become inputs to the others. The Process-based approach is defined as a management strategy that adopts a systems approach to control the processes.

Due to unfamiliarity of existing institutions/ entities with E-Bus technology and operations, process-based gaps are identified for next steps/ updating of needs. A perception-based risk scoring was performed by the Consultant's team based on lessons learned from the Technical Feasibility Study (TFS), Financial Feasibility Study (FFS), a market study of operators on short-listed routes (Nos. 6, 6D and 9D) conducted by TJ, the Business Case (BC) Study, capacity development undertaken by CFF/C40 and discussions held with TJ, DISHUB and BPPBJ. The propensity of governance failure of an involved process and entity is utilised for attributing risk levels to identified project risks. Four project phases and their associated processes are at the centre of governance failure risk assessment and their implications on achievement of 100 E-Bus Trial project outcomes. These four phases are Appraisal, Planning, Tendering and Implementation.

The What, How and Who of ongoing and planned process chain have been studied to identify good governance gaps and assess impacts on the 100 E-Bus Trial's outputs and outcomes. This approach can help maximise the Trials intended benefits through process corrections and strengthening of actor-based support. Corruption has been a major indicator of governance failure, when measuring a project's outcomes compared to what was envisaged at the beginning. However, due to involvement of multiple agencies with sometimes divergent interests, it's often difficult to clearly pinpoint corruption risks. This threat of corruption grows out of conflicting interest of direct and indirect stakeholders whilst deepening its roots in the absence of transparency, accountability and integrity controls and monitoring. The GGAP requires to simultaneously consider minimising corruption risks in parallel with the design of required transparency and accountability measures.

A risk score is attributed to each process and institutions; the higher the score greater is the risk of failure of the institution or process in implementing the 100 E-Bus Trial over next couple of years, followed by its successful operation. Risk scores vary from '1' for No foreseen Risk to '10' for Certainty of failure. The processes have been scored on the basis of above assessment of completed, ongoing and planned procedures for each identified phase/ process. The institutions are however scored across four attributes, namely organisational strength, preparedness for M&E activity as well as for institutional, policy and regulatory reforms; as well as their capacity development gaps.

Table 2: Scoring scheme adopted for risk perception allocations

1 - NIL	2 - Very Low	3 - Low	4 - Low to Medium	5 - Medium
6 - Medium to High	7 - High	8 - High to Very High	9 - Very High	10 - Certain

Source: Consultant's team

Potential governance failures are assessed as a by-product of the risk perception/scores attached to the involved processes and entities/ institutions. For example, if the risk allocation score of an involved process is an 'a' and that of an institution is a 'b'; then the combined risk score for a particular project failure will be (a*b). In this manner, the chance of project failure gets amplified, if both the involved process and the institutions have high risk scores. On the other hand, the chances of project failure significantly come down for low-risk score allocations to involved entities and processes. Multiplication of risk scores attached to involved process and actor is finally indexed over a range of 1-10 for ease of comprehension. The above approach is applied for risk level allocations to each of the identified project failures, as further elaborated in section 5.

2 POTENTIAL GOVERNANCE FAILURES AND OUTCOMES FOR AN E-BUS PROJECT

2.1 World-wide Experiences

The following sub-sections provide an illustration of how a lack of good governance in infrastructure projects and E-Bus operations could hamper the expected returns of the 100 E-Bus Trial in Jakarta.

2.1.1 PIMA Framework

International Monetary Fund (IMF) initiated country-wise PIMA framework analysis since 2015. The main purpose was to identify the reasons for governance failure in public sector investments in different economies. A total of fifteen key indicators over three project phases were considered for their design, effectiveness and priority (refer [*Annex 2.1 for details*](#)). Additionally, three cost-cutting enabling factors namely (a) Legal and Institutional framework to support governance, (b) staff capacity to implement and manage the processes, and (c) Adequacy of IT systems to enable good governance practices; across all the three phases of the public investment cycle are considered an integral part of the comprehensive PIMA framework.

Some important themes have emerged in PIMAs, conducted to date:

- The design of PIM indicators/ institutions is generally stronger than the implementation of those systems. That is, there is often a gap between the design of formal rules governing public investment, and how they are followed in practice,
- There is room to strengthen the effectiveness of indicators/ institutions at all stages of the PIM cycle viz., planning, allocation and implementation. Project appraisal and selection are often the weakest; and
- The effectiveness of PIM indicators/ institutions can be improved for countries across all income groups. Advanced economies, on average, have the highest PIMA scores, followed by emerging economies—however, scores vary greatly among countries within each income group.

The PIMA framework further indicates that low-income countries tend to suffer much more heavily from their public investment inefficiencies than advanced economies, due to their low public capital stock per capita as well.

The PIMA framework is designed for country-level analysis and focuses on public investment in infrastructure sector. Its findings are helpful in elucidating where the Jakarta 100 E-Bus Trial project could indicate potentially high risks of Governance failure. Accordingly, appropriate risk mitigation measures need to cover the setting up a good set of performance indicators, a strong legal and institutional framework, as well as the capacity development of human resource and IT systems-based functions.

2.1.2 Bus modernisation project – Indian Experience

With a strong focus on urban transport improvements and goals underlying National Urban Transport Policy-2006, the ministry of urban affairs and housing (MoHUA) of the Government of India initiated an ambitious city bus funding program in the year 2009-10 under its flagship program of national urban renewal mission, branded as

JnNURM (started in the year 2004-05¹). As part of additional assistance to the urban transport sector, a bus funding program was approved by the Government of India. (Refer [Annex 2.2](#) for more details).

A program evaluation study supported under GEF-SUTP program, covered 30 sampled cities (out of 61 mission cities) of various population size, and collected data across aspects of operational and financial performance, new fleet procurement and reforms progress. The following main findings emerged:

- The program did not have any formal appraisal and project selection mechanism to generate an overview of potential positive and negative externalities, or risks in program implementation and mitigation plan;
- It was over-ambitious in trying to fulfil multiple objectives, namely bus service enhancement (in quantity and quality), progressing urban reforms and providing impetus to the automobile industry,
- No business models were examined and recommended as part of funding support.
- Capacity gaps identification and strengthening were neither structured into the funding program nor were envisaged by transit agency.
- No Key Performance Indicators (KPIs) attached to fund disbursements, except those related to technical specifications and reform institutionalisation, which caused delays to procurement of buses and their deployment.
- Short time-lines provided for planning the new bus procurement, route allocations and the institutionalisation of urban reforms. This drawback got reflected in multiple modifications to fleet specifications, non-readiness with requisite funds and the lack of ancillary infrastructure to support operations.
- Non-clarity in the future market of new technology JnNURM buses contributed to OEMs not investing for necessary ramping up of production lines, thereby causing delays in supply of buses.
- Substantial fare revisions were seen across many cities along the service/ routes served by JnNURM buses. Most of the users on JnNURM buses were existing patrons of services but now had to pay higher prices.

Above governance failures were reflected in total sanctioned funds remaining under-utilised while money spent was not effective towards intended enhancement in public transport availability and affordable bus services. Some of the positive outcomes from the JnNURM bus funding program were:

- Exposure of new, modern and attractive buses into public space,
- New buses attracted positive user perceptions; and
- Modern bus introduction in many small to medium sized cities for the first time, initiating positive change in service levels and user perceptions.

¹ [http://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English\(1\).pdf](http://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English(1).pdf)

2.1.3 Procurement for pilot E-Buses by a metropolitan bus operator – Indian experience

Bangalore Metropolitan Transport Corporation (BMTC) is a prominent metropolitan public bus agency from India. Funding for induction of 300 standard size Air-conditioned electric buses was sanctioned to BMTC under the FAME-II program in early 2019, whereby the fund dispersals are linked to adoption of Gross Cost Contract (similar to the BTS model) for private sector engagement. The fund dispersal would come into effect upon contract signing between the public bus transit agency and private sector concessionaires, selected through an open bid system.

The procurement process/ tendering process for BMTC is underway since late 2019 alongside few other Indian cities, who have finalised their tendering process and moved on to the next stage of contract signing. On the other hand, BMTC has been inviting bids for 300 E-Buses since late 2019 with a latest tender re-published in early 2021 for the fifth time. The evaluation process and subsequent results were not final at the time of writing this documentation. Much higher than expected per km rate (BTS/ GCC rate) has been the primary reason for retenders. Different combination of battery size, minimum daily kms per bus and Ac/ Non-AC E-Bus have surfaced in re-tendered documents.

The challenges faced by BMTC, a prominent metropolitan transport organisation, in finalising its 300 E-Bus tendering process is characterised by the following main issues:

- **Inexperience of BMTC** in dealing with private operator supported bus operations – the organisation has 100% of its bus operations managed in-house. BMTC had to adopt GCC model for E-Bus induction due to requirement of the FAME-II funding scheme.
- **Unbalanced contractual conditions-** Tender conditions were heavily biased in its own favour, transferring a greater risk/ risk perception onto the PPP operator. The outcome has been much higher than the envisaged per km rates, primary reason for multiple tendering.
- **Capacity gaps in dealing with E-Bus technology** and its planning for daily operations- This has been reflected in varying E-Bus technology requirement, starting from Standard size Air-conditioned bus meeting daily run of 300km a day (in the first tendering attempt) to non-AC standard bus doing minimum daily run of 180km a day.

With significant dependence upon private bus operators, tender and contract conditions needed to be attractive by minimising the risk perceptions as well as by provisioning of less cumbersome operating conditions. These two aspects together could improve market participation and yielded competitive per km rates. However, in case of BMTC tender/ contract conditions this did not seem to be the case.

2.2 Governance failures and impacts on bus-based operations – A generic view

The bus procurement and operations are prone to various degrees of losses and failures. Decades of public bus (diesel) operations' experience has shown that bus systems make continual financial losses and experience lower than expected operational performance. Financial losses are directly caused by the constrained revenue potentials (low fare, low or declining ridership) and pilferage during fare collection and materials consumption (diesel and spares). The operational under-performance (inefficient vehicle and staff resource utilisation) also indirectly contributes to the financial losses through the inability to fully exploit the money spent.

Low financial and operational performance is attributable to individual as well as organisational inefficiencies and inexperience. Additionally, corruption adds to the list of governance failures while it grows off the weak institutional framework and procedures. Inadequate policy and deficient legal framework notify the failure of governance that becomes a cause of corrupt practices.

The E-Bus deployment and operations can potentially expect similar fate as those observed in diesel bus-based operations, the extent of failures will, however, vary across the project stages. Given lack of E-Bus based operational experience, a higher degree of above-mentioned failures and losses are expected for new inductions. High initial investment required for E-Bus based operations further amplifies the risks of failures.

It is estimated that approximately 60-65% of project cost/ money circulation is during daily operations of E-Buses. This is significantly lower than that of diesel/ CNG fueled buses where OpEx is generally 75-85% of total cost over the useful bus life. Moreover, with very low maintenance and spares requirements for E-Bus, chances of pilferage are minimised. Electric bus, therefore, reduces greater loss of public money during the operations stage but there is higher risk of losses during procurement stage, on account of substantially higher CapEx (2-3 times of diesel bus).

Good governance during the procurement as well as operations stage therefore gains importance for E-Bus based operations. Clarity, responsibility, accountability, transparency and integrity are essential good governance attributes and are expected in a project's structure and procedures, to minimise project losses and/ or enhance its benefits. Digital transformation of working style and appropriate monitoring can restrict unaccounted cost over runs by curtailing the opportunities for occurrence of corrupt practices. Privatisation of operations has been instrumental in bringing down cost and enhance efficient resource utilisation, although privatisation has its own ailments in disguise of profiteering through exploitation of men and machine.

2.3 Potential risks to 100 E-Bus Trial outcomes

In the absence of good governance practice, potential risks to the 100 E-Bus Trial outcomes, spread over its life cycle, are listed below. These risks are synonymous with the usual public infrastructure projects, but with differing and multiple governance factors at their roots (identified as underlying causes/reasons below).

A. Delays in project execution- are mostly on account of delayed procurement and operations thereby affecting implementation timelines. This leads to losses in opportunity of OpEx reductions and of other project benefits.

Potential **Causes/ Reasons** are -

- i. delay in Financial Closure,
- ii. lack of regulatory and legal framework for E-Bus deployment,
- iii. delayed provisioning for manpower and land allocation; and
- iv. delays in power supply and physical infrastructure availability.

B. Short-fall in technical performance- anticipated in the form of *lower-than-expected fleet and vehicle utilisation as well as lower ridership*, thus escalating the risk of assets not lasting their usual project life.

Potential **Causes/ Reasons** are -

- i. low product performance due to cheap design features/ product quality,
- ii. poor maintenance quality and mis-management of charging cycles causing faster product deterioration,
- iii. operational difficulties with road congestion, power supply and its quality; and
- iv. change in travel patterns and/or inter-modal competition along assigned routes of operations.

C. Short-fall in financial performance (during project procurement and implementation)

Potential **Causes/ Reasons** are -

- i. capital cost over runs,
- ii. higher Operations and Maintenance (O&M) costs,
- iii. lower ridership/ ticketless travel; and
- iv. high cost of borrowing by Operators/ Concessionaire.
- v. revenue leakage

D. Project is shelved or postponed for implementation - such a risk could arise in case trial project takes too long to materialise or funds are not available

Potential **Causes/ Reasons** are -

- i. Lack of interest from private bus operators due to low capacity and capability;
- ii. Government priority shifts due to extreme and unforeseen situations such as COVID-19 (due to which all pre-COVID-19 times economic activities and passenger transport sector came to a grinding halt as funds and had to be shifted to health and allied social sectors),
- iii. Better competitive vehicle technology becoming available than E-Bus technology.

Tracking the governance failures, for the above potential risks, across processes and entities is discussed in next section to respond to the questions : What/ Who can cause such governance failures.

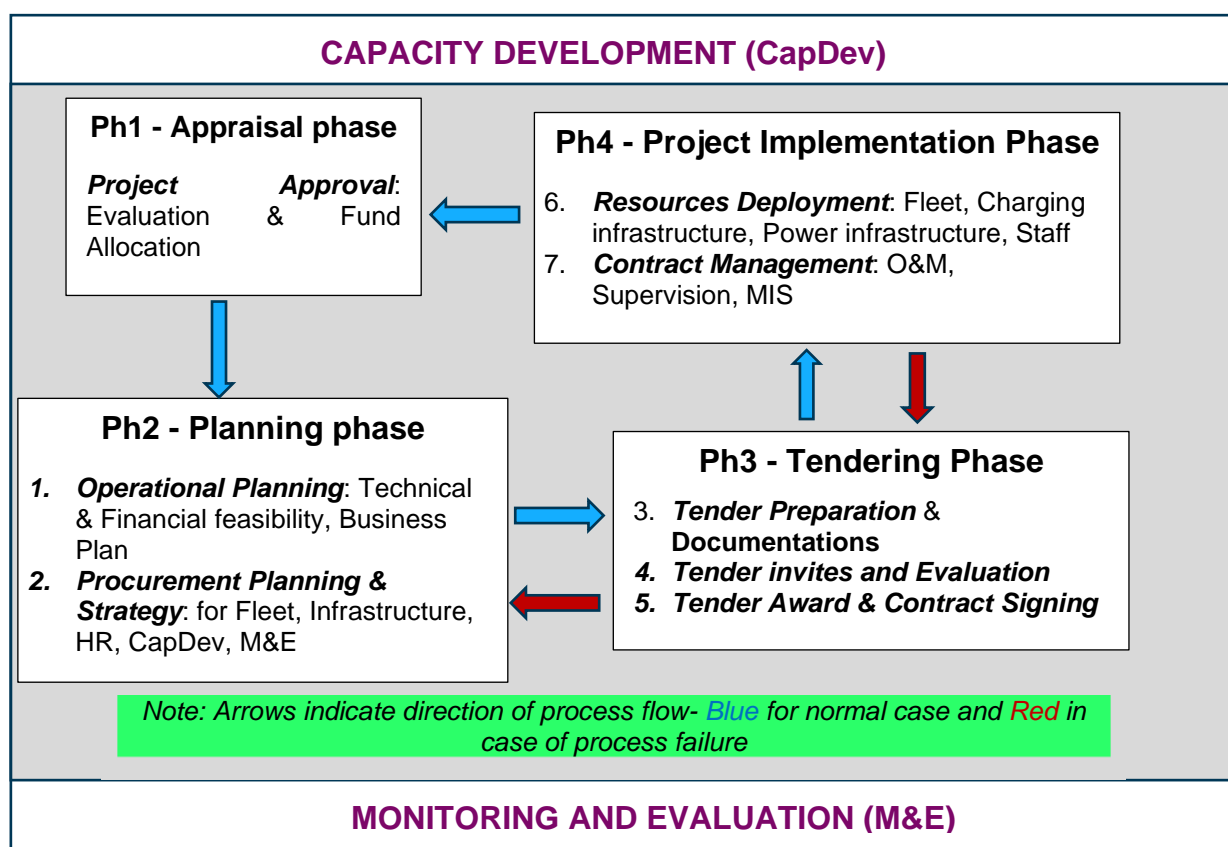
3 PROCESS FLOW OF E-BUS DEPLOYMENT FOR COMMERCIAL OPERATIONS

3.1 Process flow mechanism

Appropriate good governance measures can be spelt out from process-based risk analysis, whereby integrity and corruption risks can be traced. An E-Bus project cycle comprises the following phases and processes, also depicted graphically in *Figure 1*. Capacity Development (CapDev) and Monitoring & Evaluation (M&E) are overshadowing activities that run in parallel to identified processes for enhancing their efficiency and effectiveness.

A description of processes involved in the 100 E-Bus Trial project, alongside objectives, outcomes and expected good governance performance is available in *Annex 4*.

Figure 1: Generic Process Flow Chart for E-Bus Project Implementation



Note: 'Ph' used in place of 'Phase' for the sake of space optimisation

Source: Consultant's Team

3.1.1 Phase 1 - Appraisal Phase

Appraisal is the first phase in project's life-cycle that involves project selection consequent to evaluation of competitive projects or alternative choices for satisfying a given set of objective and goals. Subsequently, project approval from apex government/ decision-making body is confirmed alongside broad fund allocation structure. Concerned public and private sector institutions are allocated responsibilities for further detailed studies, investigations and planning.

3.1.2 Phase 2 - Planning phase

Planning is the project conceptualisation and preparation phase. It comprises processes of Operational planning and Procurement planning to support the technical details and funding arrangements for project implementation over identified timelines.

3.1.2.1 Phase 2.1 - Operational Planning

This process comprises a comprehensive technical and financial feasibility study, assessment of project benefits and an implementation plan. The necessary regulatory and legal framework as well as institutional and policy framework are identified alongside the capacity development framework.

3.1.2.2 Phase 2.2 - Procurement Planning and Strategy

This process is based on recommendations obtained from technical and financial assessment of the 100 E-Bus Trial together with the Business Case, to identify a cost-efficient procurement strategy as per the identified project time-lines and performance levels. The procurement planning thereby helps in matching supply chain needs of **man, machine and materials** for the on-ground project implementation and running.

The procurement strategy concentrates on the number and size of different procurement packages depending upon resource availability, ease of procurement, financial implications and technical capabilities, supported by market survey.

The planning phase with expected timelines of about 2 to 2.5 years, culminates with the launch of the tendering phase.

3.1.3 Phase 3 - Tendering phase

This phase covers preparation of various documentation and procedures to be followed for procurement of goods and services, as per the procurement planning process. This phase has three distinct processes namely:

3.1.3.1 Phase 3.1 – Tender preparations

This process involves formulation of **bid documents with tender conditions** (technical and financial competence for eligibility to participate, evaluation and selection procedures, documentation, timelines and **contractual conditions** alongside **KPIs**) for comprehensive understanding and confidence of prospective bidders. The tender documents are finalised through a consultation process involving the stakeholders with similar and competing agenda and interest in the project.

3.1.3.2 Phase 3.2 – Invite for Bids Submission and Evaluation

The process includes utilisation of different communication mediums for advertising the invitation of bid submission(s) by the prospective bidders. The tender participation conditions and procedure are decided on basis of magnitude as well as strength of prospective bidders. The bid invites could range from open tender to closed bids, with a single or two stage process, requesting Technical + Cost or Only Cost bid.

A bid evaluation committee is constituted by the procurement agency, given the authority of finalising the tender documents and floating of the tender. This committee is constituted for ensuring an unbiased, fair, transparent and corruption free evaluation process through utilisation of technology and an objective marking system, as much as possible.

3.1.3.3 Phase 3.3 – Tender Award and Contract Signing

This process consists of selection of best bidder, based on approved bid evaluation process, followed by negotiations with the highest ranking bidder. Contract signature according to the agreed form of contract closes the tender process.

This phase culminates with selection of suitable bidder and signing of the contract. Expected timeline for tendering phase is 0.5 to 1 year.

3.1.4 Phase 4 – Project Implementation

This being the final phase in project cycle, comprising three processes namely, Resource deployment, Contract management and Monitoring & Evaluation. This phase ensures the implementation of the program and delivers outcomes according to the objectives and goals set during the planning and tendering phases. The success of previous phases will be reflected in the performance of this final phase.

Financial Closure will have a significant role to play in this process, in case funds are borrowed from financial institutions (regular or green funds) or from donor agencies, as loans for financing project resources including O&M.

Expected timeline for this phase is 10 -12 years, whereby full-scale commercial operations are not expected for the first six months or so.

3.1.4.1 Phase 4.1 – Preparation for Resource Deployment

This process covers ground preparations (power and physical infrastructure installations; rolling stock testing, registration and readiness for traffic operations; staff allocation, orientation & training) for project execution. Additionally, software aspects of deployment stage will engage with preparation of various **data collection routine** and Management Information Systems (MIS) for supporting the **learning-based** corrections and updates in resource deployment on day-to-day basis, during the subsequent process of contract management.

This process is of shorter duration but most cost intensive as it involves procurement of goods and services at pre-determined rates and technical specifications (as per Phase 3). Accordingly, an independent agency is sometimes involved to supervise the

delivery of goods and services for their quantity, quality and timelines, as mandated in contract signed between the procurement agency and the suppliers.

3.1.4.2 Phase 4.2 – Contract Management

This process is a cost intensive and longest process in the project cycle and involves day-to-day operations of 100 E-Buses as per the depots, routes and schedule allocations by the public transit agency. The E-Bus operators and public agencies across the board will get engaged at different levels to enable smooth operations of E-Buses. This operational support will include (1) meeting the E-Bus route service standards by the operator through upkeep of bus maintenance and battery charging regime, and (2) municipal agencies aiding the good road condition and traffic congestion management for bus operations as well as bus stops and footpath improvements by for convenient passenger access and waiting.

The outcome of this process will range from ridership patterns, battery charging, discharging and consumption patterns corresponding to operating conditions across different routes, roads, traffic conditions, loads etc. - systems for which are already setup, in consultations with the operator and crew (as preparations for deployment).

3.2 CapDev and M&E

The CapDev and M&E are important activities for this trial, both for management of KPI's during normal operations and for documentation (Data Collection, Analytics, Reports generation, Corrective action) of collective lessons learnt from different project phases. This activity will require scanning across all facets of the 100 E-Bus Trial, primary areas being:

1. CapEx and OpEx distribution/ breakdowns by cost entities,
2. Charging station and power infrastructure performance,
3. Actual vs. envisaged daily mileage,
4. Maintenance and charging routines,
5. KPI's achievements, and
6. Passenger satisfaction.

The M&E (Monitoring and Evaluation) mechanism will entail readings of actual observations, their recording after verification, regular assimilation, examination and evaluation followed up with possible mitigations for problem issues identified during the process. The M&E is a multi-disciplinary process coordinated by the apex body/ regulator of the 100 E-Bus Trial project for an unbiased, free and fair assessment. This is to support decision making process of further expansion/ scaling up. M&E mechanism covering various project phases, will need to coordinate and coincide with the generic project evaluation setup of the transport agency to inform the appraisal phase of further stages of the E-Bus roll out beyond 2022.

4 OVERVIEW OF INVOLVED ENTITIES AND PLANNED PROCESSES

4.1 Existing institutions engaged in the 100 E-Bus Trial, Jakarta

The capacity and capability of institutions and people involved in the Trial project's processes, can impact its outcome. In this context a review of DKI Jakarta institutions, presently engaged in the bus operations in Jakarta, has been carried out to support the analysis of potential governance failures.

The DKI Jakarta transport agency (DISHUB) and Public Transport Agency TransJakarta (TJ) are the two primary public sector organisations connected with the city bus planning and operations. DISHUB with its role as an umbrella transport sector agency (for all matters of transport and covering all modes of transport namely road, rail and water within administrative boundary of DKI) and TJ with its direct engagement in bus operations. BPPBJ is the centralised procurement agency of DKI Jakarta and conducts all public procurement of goods and services for the administration, including those of bus service providers.

4.1.1 Broad profile

Capacity of these institutions akin to their roles and responsibilities for ongoing activities and for 100 E-Bus Trial requires a detailed study for shaping up of Trial project implementation and for the further transition of most of the public transport fleet to ZEB by 2030. A brief background on roles and responsibilities of relevant existing public sector agencies engaged for the 100 E- Bus Trial project is given in [Annex 3](#).

DISHUB is responsible for Jakarta area transport sector planning for road, rail and water modes. It is the coordinating and controlling agency with its authority and responsibility over the city-wide transport sector performance. With removal of licensing and procurement activities, from its primary functions, the agency (DISHUB) is able to focus and contribute better to core functions of transport sector policy formulation, planning, regulations and monitoring.

TJ has been instrumental in bringing road based large and small bus operations (privately owned) under its fold for a comprehensive and extensive bus service availability at affordable cost and satisfactory user experience across the city area. The organisation presently handles almost 85% of geographical spread. Despite being a professionally managed unit, TJ can make 22% of its cost covered by the operational revenues, while 78% has been supplemented by DKI subsidy. Low fares and no revision since more than a decade are attributed as main reason for smaller than needed fare box collection. The organisation also undertakes provisioning of physical integration facilities within its main operations and with other transport systems of MRT etc.

BPPBJ handles all procurement, those between the public sector offices and from the private sector agencies (vendors, service providers, construction agencies, technical advisor & support), as one centralised agency. The volume and nature of procurement handled by BPPBJ over the last three years is shown in Table 2 below. The agency has shown 100% jump in the procurement by both quantum and value in one year

duration over the period of 2018-19. The procurement in the year 2020, although were impacted by COVID-19, these seem to have met more than a quarter of 2019 quantum and business value during the first quarter of 2020 itself.

Table 3: An Overview of DKI procurement managed by BPPBJ

Procurement Category	2018		2019		2020*	
	Number of Procurement Package	Total Bid Value (Billion Rp)	Number of Procurement Package	Total Bid Value (Billion Rp)	Number of Procurement Package	Total Bid Value (Billion Rp)
Construction Works	473	4427.9	1005	8603.8	173	2639.1
Goods	427	911.2	990	1894.9	209	736.2
Consultancy Services	335	148.7	635	296.3	265	249.7
Other Services	251	577.7	668	823.4	272	615.3
Total	1486	6065.5	3298	11618.4	919	4240.3

**- in 2020 some of DKI Jakarta's budget has been refocused to Covid-19*

Source: BPPBJ, DKI Jakarta

4.1.2 Understanding from discussions

Discussions were held with the three main organisations namely DKI Transport Agency (DISHUB), Jakarta province Procurement Agency (BPPBJ) and Bus transport agency TJ to understand their respective views on the 100 E-Bus project implementation and understand their level of preparedness as well as any issues related to the implementation. Alongside, consultations were carried out with existing bus operators (with TJ) on their preparedness for the 100 E-Bus Trial. The findings from these discussions are available in Annexes 4.1, 4.2, 4.3 and 4.4. Main reflections from these discussions are listed below:

- There is presence of responsive public sector institutions in city bus sector space. They are collectively working towards transitioning to zero emission vehicles by 2030, with well-defined roles and responsibilities.
- Adoption of digital technology in governance is an ongoing process, necessitated by City 4.0 initiative from the Governor's office, DKI. As good governance is strengthened through traits of transparency, standardisation and methodical approaches (inherent to digitisation of procedures), chances of potential unfair practices and thereby corruption is minimised.
- Procurement of all public goods and services are undertaken by a single independent organisation (TKPP the national agency, with BPPBJ as its Jakarta provincial branch) through an online portal. This is expected to bring better credibility to procurement as well as improved cost efficiency. However, it's not

clear how long does this take for a new technology purchase? Normally product dissemination to E-catalogue approximately takes 4 months, as per BPPJ procurement process (refer [Annex 4.5](#)).

- If there are limited bidders, BPPBJ may finalise the contract by negotiation rather than tendering. This may be the case for 100 E-Bus Trial where primary focus is on understanding the technology features and performance for decision making on bigger roll out. Further, for good integration of technology alternatives to actual operating conditions, close interactions with the existing bus operators of shortlisted routes will be helpful in smoother transition.
- TransJakarta (TJ) is well conversed with present procurement setup of private operator services along BRT+Feeder and non-BRT routes, and manages daily operations utilising the BTS model.
- A Good Corporate Governance unit has been recently constituted within TJ for enhancing its systematic approach to good governance and to support improved organisational performance, and reflect integrity and credibility in its operations.
- A Project Implementation Unit (PIU) has been constituted and coordinated by DISHUB while a working group within TJ (Project Management Unit, PMU) has been constituted. These units are actively engaged in preparations and implementation of the 100 E-Bus Trial.
- Absence/ non formalisation of necessary regulations for E-Bus could not only hamper the project structuring/ implementation but also may attribute to corruption/ exploitation of operators (as absence of regulations and standards are often means for rent-seeking).

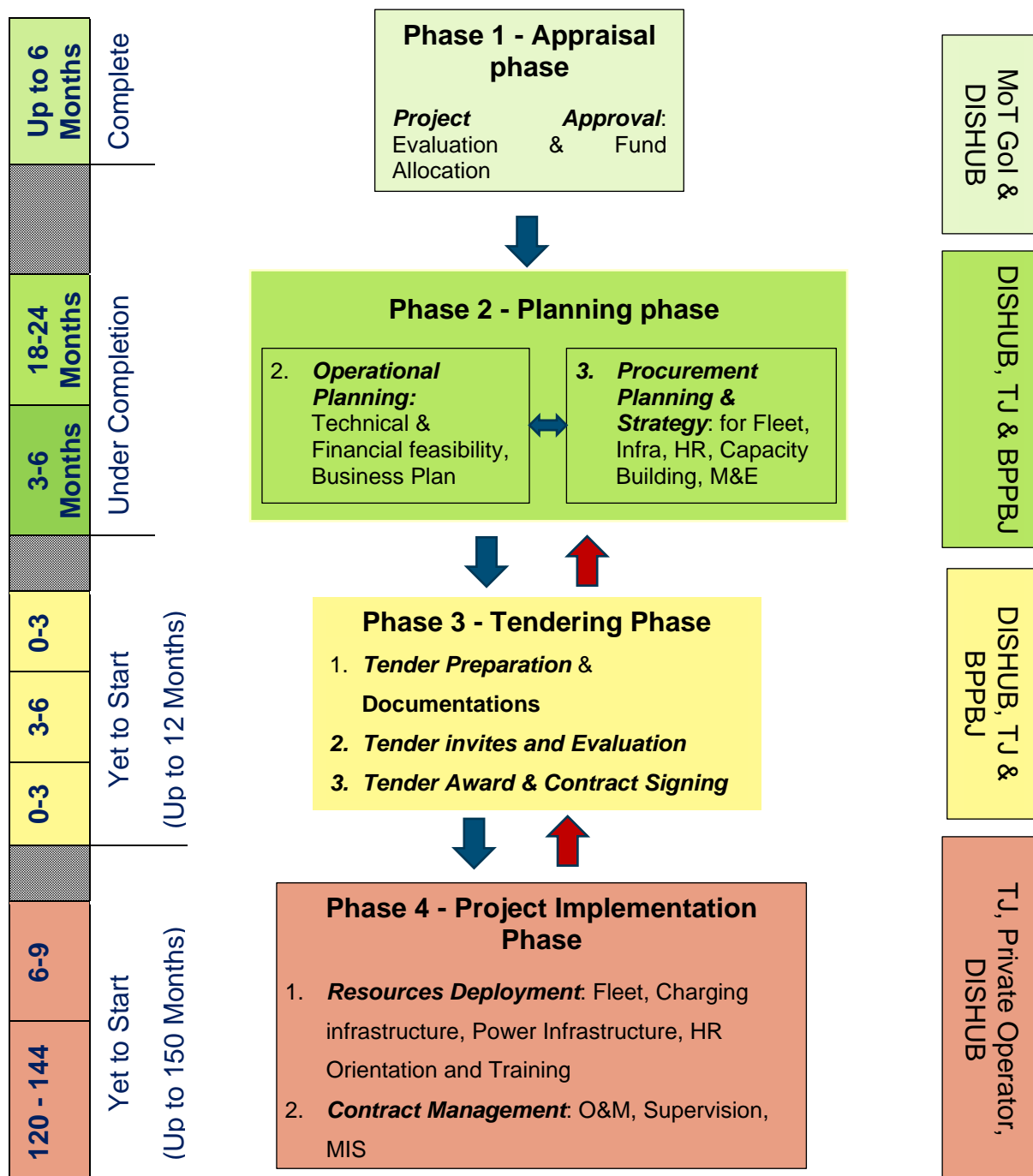
4.2 Ongoing and Planned Processes for the 100 E-Bus Trial, Jakarta

To assist governance failure risk identification for the 100 E-Bus Trial, a review is undertaken of procedures being adopted and actors (entities) engaged during the four project phases, with brief discussed below and details available in [Annex 5](#). A diagrammatic view of process flow chart and the inter-linkages is shown in [Figure 2](#). The Status of each process, timelines and process owners are indicated as well. It may be observed that total project life cycle is nearly 15-16 years (180 – 192 months), covering the Planning, Tendering and Operations (post implementation) phase.

4.2.1 Phase 1 – Appraisal Phase

Given the importance of city bus systems in urban mobility and commitment of highest level of Governance of the country for transitioning to zero emission vehicles (PP55/2019, PP102/2012), the 100 E-Bus Trial project has been adopted by DKI Governor's office, as a base step, towards conversion of public bus fleet to Zero Emission Bus (ZEB) by 2030. The primary aim of the E-Bus Trial is to understand the new technology application in commercial operations, and learn during the pilot project as a means to guide further scaling-up/ rollout of E-Buses in Jakarta in future years.

Figure 2: Process flow chart with interlinkages of phases, processes, timelines and ownership for Jakarta 100 E-Bus Trial project implementation



Note: Arrows indicate direction of process flow-
Blue for normal case and Red in case of
process failure

The Appraisal phase is thereby complete with identification of DKI Transport agency as the process owner and TransJakarta as the project management agency. PSO funding for E-Bus operations have in-principal approval of the government while the new vision of City 4 and urban transport policy will strongly drive in the digital transformation of involved procedures. The future public transit-oriented city developments, along with the well-integrated public transport systems and pedestrian friendly infrastructure, are expected to directly and indirectly support the 100 E-Bus Trial project outcomes.

Ministry of Transport (MoT) supported by DISHUB will oversee the regulatory, institutional and legal framework requirements of E-Bus based commercial operations in the country. In view of existing agencies not having E-Bus experience, two technical assistance services have been initiated in early part of 2020 to support the planning and implementing institutions during the next phase (Planning Phase) on various aspects of E-vehicles in general and E-Buses in particular.

In the meantime, a Project Implementation Unit has been constituted and is coordinated by DISHUB. A working group has been formulated within TJ to closely involve with the planning and implementation phases.

The C40 Cities Finance Facility and UNEP (Consultant: ITDP) are advising the DKI agencies on specifics of the 100 E-Bus Trial and full-scale adaptation of EVs respectively.

4.2.2 Phase 2 - Planning Phase

This phase is comparatively short in the project life-cycle but is important for shaping of the following phases. This phase has prepared a blueprint for implementation of the 100 E-Bus Trial, identifying the strategies and areas of concern to be tackled towards a smooth start of operations. The operational and procurement strategy processes for the 100 E-Bus Trial are almost complete with its main outcomes mentioned below:

The project partners have been identified with DISHUB as the umbrella agency and TJ as project planning and management agency.

1. **Operational Planning for the 100 E-Bus Trial** (selection of appropriate E-Bus technology and associated infrastructure for pilot operations) – Technical Assistance from CFF SCC has looked into the E-Bus technology selection for shortlisted BRT and non-BRT route operations. The process has been completed with details on sampled selection of routes (Nos. 6, 6D and 9D), services and depots from among the overall operations managed by TJ. The vehicle, battery and charging systems characteristics are identified for given operating conditions. Further yearly CapEx, OpEx, traffic revenues and additional funding assessment have been carried out, corresponding to the selected technology and operational characteristics.

Close interactions between the SCC consulting team and TJ have provided implementable routes and E-Bus technology selection plans considering suitability to on-ground operating conditions. Reasonable financial implications of the 100 E-Bus operations over project life has been prepared to assess financial implications and

feasibility of the trial. A Business Case Study has been completed and agreed. The above guides the formulation of an implementable procurement strategy and contractual terms.

With a view on private sector participation in the 100 E-Bus Trial (as per the prevalent practice), an early market survey has been conducted involving consultations with five main bus operators, presently engaged with TJ on Jakarta BRT and non-BRT bus operations. Main points of the discussion are available in [Annex 3.4](#) and conclusions drawn as follows:

In absence of any E-Bus based experience, operators will be heavily dependent upon E-Bus OEMs and EVSE's for installation and O&M. The same will mostly be outsourced by operators. Financial assistance is sought for meeting high CapEx requirements. A clear structure involving the Operators and other players need firming up. This market survey has given some indications of ground reality and a more in-depth assessment can be considered as part of extension of this market survey in coming months.

2. **Procurement planning and strategy** – The recommendations of operational planning process have been used for Procurement planning. The strategy for procuring rolling stock (Bus Fleet), E-Bus charging infrastructure, power supply, E-Bus operators and skilled manpower at a reasonable cost and in a reasonable time, envisages the BTS model and engaging with existing operators of shortlisted routes for the 100 E-Bus trial. Power supply is to be procured from the public sector power generation and distribution company PLN and it's Jakarta subsidiary. Manpower procurement will be through public and private sector operators for E-Buses and E-charging stations' and O&M at operator owned depots. TJ's own/hired staff will be used for revenue collection and operational management.

Since all procurement within DKI are managed by BPPBJ (through their own SOP's under TKPP guidelines), the organisation becomes the process owner with necessary technical support from TJ. The above strategy is to be detailed out using the market study, the TFS, the FFS and Business Case Studies as guidance documents.

3. **CapDev and M&E for the 100 E-Bus Trial** – As part of CFF supported Technical Assistance (TA) to TransJakarta, capacity development activities have been undertaken covering technical and financial feasibility related aspects of E-Bus Trial. Additionally, M&E, project management, and internal and external collaboration needs for E-Bus operations have been covered. C40 Capacity Development Framework provided the basis to develop the Capacity Development Plan. These activities have instilled some confidence as well as have showcased how planning aspects have been covered and utilised to move ahead for implementation. As capacity development is a continuous process, next stages of CapDev are needed in the course of the coming year, when 100 E-Bus tendering and implementation is undertaken. The capacity development activities will be more hands on to tackle day today issues and necessary adaptations.

No M&E framework has been prepared presently, however there is awareness towards its importance and broad idea of its coverage. M&E is an area that needs firming up over the coming phases to cover both O&M related and broader comparative assessment of E-Bus project's progress and outcomes.

Both DISHUB and TJ will be involved in M&E aspects, both internal and external to the 100 E-Bus Trial project.

4. **Policy and Institutional Framework for effective support and guide project implementation** - DISHUB with support from TJ, LKPP/BPPBJ and PLN Jakarta subsidiary are the existing public sector institutions to accelerate and implement the E-Bus Trial. Alongside, there is a PIU (managed by DISHUB) and a E-Bus working group (managed by TJ), both specially constituted for the 100 E-Bus Trial by nominating available staff from the concerned departments.

From a policy and institutional perspective, 100 E-Bus Trial would need further support in the form of lowered electricity tariffs, loan waivers, local industry support, R&D and renewable power sourcing. Additionally, there is absence of E-Bus/ EVs related regulations that need resolving as mentioned below.

5. **Regulatory framework for E-Bus/ EVs** – There is need for formulation/ finalisation of vehicle and passenger carriage regulations for E-Buses, as is customary for motor vehicle usage for commercial purposes. MoT needs to create new regulations for E-Bus technical standards guided by existing regulations 22/2009, 55/2012 concerning motorised road vehicle movement. With the 100 E-Bus Trial under implementation by TJ/ DISHUB, the regulation will have to be pushed by this agency by way of drafting the regulation, followed by carrying out a consultation process. Utilising this support from DISHUB, MoT can quickly move for finalisation and approval of all remaining necessary E-Bus related regulations.

Absence of a competent regulatory framework for E-Buses, within the overall legal framework of Indonesia, can severely obstruct progress of further project phases. Similarly, indicators for policy and institutional support from the GoI and DKI will shape up nitty gritty of tender process and contractual conditions.

4.2.3 Phase 3 - Tendering Phase

Although short, this phase is immensely important for its potential outcomes, impacting the project operations and performance over its life cycle. Three processes namely Tender Preparation, bid invitation and evaluation, and finally Tender Award and Contract signing will complete this phase, and is expected to take off soon after completion of this SCC TA services, supported by CFF. The study recommendations will guide the requisite contractual conditions and procurement strategy formulation.

E-Bus technology adoption needs a close linkage with service and route based operational requirements, and accordingly TJ and private bus operators of the shortlisted routes have been closely involved in formulating various planning level

details for 100 E-Bus deployment. However, since BPPBJ is the centralised procurement agency, it has been initiating the process of E-Catalogue generation for E-Bus service providers.

BPPBJ is the process owner under supervision of TKPP and needs to closely collaborate with TJ.

4.2.4 Phase 4 – Project Implementation Phase

The ground preparations (power and physical infrastructure installations, rolling stock (bus fleet) testing and registration, Staff allocation, orientation & training) for project execution; project running, problem-solving, and lessons learnt will take the centre stage during the 100 E-Bus Trial implementation phase.

This phase has not started yet and will materialise consequent to award of contract with the successful bidders.

TJ will be the process owner of this phase with support from public and private bus operators under coordination with DISHUB.

4.3 Conclusions

The existing institutional arrangements appear to be working smoothly, however capacity gaps through shortages of staff and that of some skill sets have been noted. The online procurement system enhances transparency and credibility of the process while the segregation of procurement from core functions of the agencies, not only enhances their respective performance but could also minimise the chances of corruption as well. Both TJ and BPPBJ are young, professionally managed organisations and seem to be full of enthusiasm and zeal for new projects and activities. DISHUB on the other hand is an arm of the central government (Perhubungan) supported by TJ and BPPBJ, among others to carry on its duties.

However, these institutions will need external support during the 100 E-Bus Trial implementation due to the tight timelines for implementing the 100 E-Bus Trial project so that lessons may be learned towards a goal of 100% ZEB by 2030.

Presently regulatory/ policy/ institutional risk is foreseen to be high, because of their absence and no measurable efforts seen at this point in time. Similarly capacity development related risk is high because of the lack of hands-on experience. The capacity development (CapDev) under CFF TA has, however given a head start and good understanding of what lies ahead. In common with many countries worldwide, legal and regulatory guidance in Indonesia is provided at the Central Government level. To a certain extent, this places Provincial Authorities (such as DKI Jakarta) who wish to spearhead important reforms (such as the introduction of MRT / BRT systems, E-Bus Trials, etc.) at a disadvantage, since they are unable to influence the pace of development of laws and regulations at the Central Government level. The perceptibly minor gaps in the associated Central Government legislation/regulations therefore potentially have a substantial impact on the lower tiers of Government, leading to potential delays in E-Bus operations.

Different potential project failure risk scores have been allocated by the Consultant's team based on perceptions developed from adopted/ planned processes and institutional strength (refer Table 4 and Table 5). These scores were utilised for risk levels attributable to potential project failures.

Table 4: Risk score allocated to institutions engaged in 100 E-Bus Trial, Jakarta*

Institution\	Organisational strength	M&E	Regulatory/ Policy/ Institutional	CapDev
MoT	5	7	8	8
DISHUB	5	7	7	8
TJ	5	5	5	8
BPPBJ	5	5	2	5
Existing Bus Operators	4	3	8	5
PLN	5	5	5	8
Governor's office	2	4	9	9

*- 1 – NIL; 2 - Very Low; 3 – Low; 4 - Low to Medium; 5 – Medium; 6 - Medium to High; 7 – High; 8 - High to Very High; 9 - Very High; 10 - Certain

Source: Consultant's team

Table 5: Risk score allocated to processes engaged in 100 E-Bus Trial, Jakarta*

Process sequence	Phase 1	Phase 2.1	Phase 2.2	Phase 3.1	Phase 3.2	Phase 3.3	Phase 4.1	Phase 4.2
Allocated risk score	2	4	4	5	3	4	7	6

*- 1 – NIL; 2 - Very Low; 3 – Low; 4 - Low to Medium; 5 – Medium; 6 - Medium to High; 7 – High; 8 - High to Very High; 9 - Very High; 10 - Certain

Source: Consultant's team

5 POTENTIAL GOVERNANCE FAIL DEEPENED URES AND MITIGATION MEASURES FOR THE 100 E-BUS TRIAL IN JAKARTA

5.1 Assessment of governance failures and negative outcomes

Various ongoing and planned activities are investigated for possible gaps and failures followed by assessment of their impact on the project. A description of an ideal process setup for the 100 E-Bus Trial is available in [Annex 5](#). It also contains their risk assessment in reference to the confidence on actual/ ongoing procedures. Expected project outcomes and associated risks have been linked to the four project phases. Potential governance failures are identified through ‘what could and what should’ analysis of each of the four project phases, utilising the backdrop of available institutional strength and experience. The risk levels are categorised as No Risk (Nil), Very Low, Low, Medium, and High on the basis of perceived chances of failure and importance of the involved process (*refer section 1.3*).

A detailed view of four possible negative outcomes and responsible governance failures linked to relevant phases of the 100 E-Bus Trial is available in [Annex 6](#). A summarised view of risks and their identified severity level is shown in [Table 6](#) below.

Primary findings on potential governance failures and risk levels across the project life cycle, are bulleted below:

- Risk assessment is heavily tilted towards the **Tendering and Implementation** phases, although the risk levels are expected as ‘**Very low**’ to ‘**Low**’. This is on account of **high dependence on the public and private sector operators** for procurement and operations under the BTS model.
- Potential for **Delayed procurement** is expected with **Medium to High level** risk due to (i) possible delay in timely selection of suitable public and private parties, and (ii) capability gaps of existing bus operators, both in technical and financial terms. **Procurement planning** (precursor to tendering phase) and **Resources Deployment** (at start of Project Implementation phase) are the responsible processes for potential delay in procurement.
- ‘**Low**’ **financial risk** is expected with most of the CapEx+OpEx dependence on the private operator. Moreover, operational revenues and viability gap funding (subsidy/PSO) shall support the operator’s expenses (on per km basis), thereby further helping to keep overall risk levels low.
- Absence of a finalised and approved **legal and regulatory framework** (part of Operational planning process) is foreseen as **a High-risk** governance failure as it concerns E-Bus fleet imports/ manufacturing, registration and on-road operations. This can potentially stall all 100 E-Bus Trial project activities.

Table 6: Summarised risks for 100 E-Bus Trial process linked governance failures

Project Risks	Attributable Governance Failure	Identified Risk Level	Responsible 100 E-Bus Trial Process(s)	Remark
Delay in Project Execution	Lack of required Legal and regulatory framework for E-Bus deployment	High	Phase 2.1 - Operational Planning	Influenced by status of regulatory setup, procurement strategy (for various products and services) and capacity of private sector operators to bear capex
	Delay in Project approval and Fund allocation	NIL	Phase 2.2 - Procurement Planning	
	Delay in procurement (vehicles, charging infrastructure, power supply, manpower)	Medium to High	Phase 2.2 - Procurement Planning Phase 3 - Tendering Phase 4.1 - Resource Deployment	
Lower than expected project outputs	Poor maintenance levels & mis-management	Very Low	Phase 4.2 - Contract Management	Influenced by systemwide support in smooth operations of E-Buses with some linkage to tender phase
	Product quality issues to cause performance failures	Very Low	Phase 3 - Tendering Phase Phase 4.2 - Contract Management	
	Operational difficulties during 100 E-Bus Trial	Low to Medium	Phase 4.1 - Preparations for Resource Deployment	

Project Risks	Attributable Governance Failure	Identified Risk Level	Responsible 100 E-Bus Trial Process(s)	Remark
			Phase 4.2 - Contract Management	
Negative Financial Implications	Capex Over runs	Very Low	Phase 4.1 –Resource Deployment	Influenced by project handling at implementation stage, after successful tendering process
	Higher Cost of Borrowing	Low	Phase 4.1 –Resource Deployment	
	OpEx over-runs	Very Low	Phase 4.2 – Contract Management	
	Lower than expected Ridership	Low to Medium	Phase 4.2 – Contract Management	
	Traffic Revenue Leakage	Low	Phase 4.2 – Contract Management	
Project is Shelved/ Postponed for implementation	Lack of Market/ Stakeholder participation	Low to Medium	Phase 4.2 – Procurement Planning Phase 3 - Tendering	Influenced by Procurement strategy, tendering phase and implementation stage
	Better Technology than E-Bus	Very Low	Phase 4 –Resource Deployment and Contract Management	
	Government priority shifted	Very Low	Phase 1 – Appraisal Phase	Influenced by funding shifted to

Project Risks	Attributable Governance Failure	Identified Risk Level	Responsible 100 E-Bus Trial Process(s)	Remark
				other unforeseen exigencies due to economic/ environmental/ political changes

Source: Consultant's team

- Due to **inexperience of existing entities** with E-Buses, potential governance failures are foreseen in (i) E-Bus operational difficulties, (ii) lower ridership levels, and (iii) lack of market participation. These risks are, however foreseen as **Low to Medium** level, given tender conditions are fair and policy/ regulatory/ institutional support is provided to public and private operators to make the 100 E-Bus Trial project attractive and of lower risk. Additionally, Capacity Development taken up under the CFF SCC TA to TJ will be helpful in reducing the risk of failures attributable to inexperience.

5.2 Recommendations for Mitigation Measures

The abovementioned potential governance failures have been identified on the basis of comparative assessment between what should happen and what could be expected, given present level of preparedness for the implementation of 100 E-Bus Trial. Although no severe risks of governance failure are expected from the existing public sector institutions, heavy dependence on public and private sector operators (both for technical and financial aspects) can potentially be challenging for divergent interests.

Accordingly, relevant mitigation measures are identified and listed in Table 7, followed by a brief elaboration below, around levelling out the potentially low to high risk levelled potential governance failures.

Table 7: Mitigation measures for minimising governance failure of 100 E-Bus trial

Sl. No.	Mitigation measure	Project risk mitigated
1	Regulatory, legal and policy framework to support E-Bus deployment	<ul style="list-style-type: none"> Delay in project execution Project is shelved/ postponed for implementation
2	Conduct deepened market survey to support tendering process/ selection of 100 E-Bus operator(s)	<ul style="list-style-type: none"> Delay in project execution Project is shelved/ postponed for implementation
3	Tender documents supported by latest and extended market surveys	<ul style="list-style-type: none"> Delay in project execution Project is shelved/ postponed for implementation
4	M&E framework (across different dimensions of Project Implementation phase)	<ul style="list-style-type: none"> Delay in project execution Lower than expected technical outcomes Lower than expected financial outcomes
5	Capacity Development support	<ul style="list-style-type: none"> Delay in project execution Lower than expected technical outcomes Lower than expected financial outcomes

Source: Consultant's team

The mitigation measures in Table 7 should minimise corruption risks through inclusion of a transparent and participatory approach, whilst properly attributing responsibility and accountability. These measures are further supported by M&E framework and Capacity Development initiatives during project implementation, thereby providing a strengthened launch of the 100 E-Bus Trial.

- (a) **Legal & Regulatory framework for E-Buses:** E-Buses are new vehicles, being introduced now for commercial route operations on Indonesia's road network. Although PP55/2019 is in force and provides a good basis to allow e-vehicle manufacturing and operations in Indonesia, but it is insufficient to deal with legal issues such as those raised in case of accidents; taxation and pricing; durability and maintenance needs for life cycle costing and also disposal (battery and body).

The E-vehicles need to follow standard rules and regulations applicable for passenger carriage, incorporate vehicle design features/ dimension for safe on-road movements as well as follow standard technical specifications around materials, technology and durability. Compatibility with E-charging mechanism, power consumption and electric circuit functions with local electricity consumption standards will need inclusion under the E-Bus design features.

Some of the abovementioned regulations will require **updating of the motor vehicle rules** with a section on E-Buses/ EVs added. For the 100 E-Bus Trial, such updates need to be focused around route specific corridors or DKI region, instead of its application across the country. These will be necessary not only for legal procedures (testing certificate and registration number), price tagging and infrastructure development. Gradually the pilot set of regulations may be used for country wide implementation over the medium to long run.

- (b) **Deepened Market survey & assessment:** Conduct a deepened market assessment for understanding capability and readiness of concerned market players across E-Bus technical knowhow, city bus operational experience and financial strength. This would capture latest market sentiments to absorb the 100 E-Bus project CapEx as well as associated externalities of operational risks. Additionally, the power sector, financial institutions, multi donor agencies and green funds initiatives need to be covered under market studies for possible bulk power arrangements and funding options in a tripartite mode for the 100 E-Bus Trial project, with the aim to ease difficulties for prospective E-Bus operators and garnering positive market support to partner in the government initiative.

Market research should guide the terms and conditions for tender participation and contracted out 100 E-Bus operations for this trial.

- (c) **Draft tender documentation:** As BTS model is in operation for diesel bus-based city operations, all engaged partners namely, TJ, existing public and private bus operators as well as BPPBJ are well acquainted with this tender process. The E-Bus service procurement under BTS model will, however, require updating for technological/ operational/ financial implications of E-Bus based operations. These are primarily centered around CapEx, power consumption, battery performance and charging technology to help estimate OpEx, and thereby forms a basis for BTS contracts.

Drafting of E-Bus tender documents under BTS model will cover various performance and contractual requirements for the identified 100 E-Bus Trial routes and services. This document should be helpful for market survey for agreed updating of terms and conditions with potential operators of 100 E-Bus. The extended market survey to include financial institutions and power sector, as these two partner groups would be serious stakeholders in the 100 E-Bus Trials from the start. With adoption of this approach, the risk of failed tenders/ repetitive tendering could be reduced, thereby improving success rates of timely project implementation. Moreover, a better information base will help to develop a cost effective BTS rate for the 100 E-Bus Trial and to gather support (possibly direct and indirect) across prominent project stakeholders.

An illustration of attractive tender documentation is available from an Indian experience. The policy and planning agency of Government of India has drafted a model concession agreement for procurement of E-Bus services on BTS model², also referred to as OpEx model. This draft document is binding on the public sector operators for receiving grants, as high as one third of the standard size AC electric bus. This document, applicable for FAME-II funding from the federal government of India, has been generally accepted by private players and has improved market participation in comparison to earlier program supports for bus modernisation.

- (d) **Monitoring & Evaluation framework:** M&E framework across the project cycle (spread over 10-12 years) and project impacts (operational, environmental, financial and socio-economic) needs formulation and supported with regular data collection, collation, sharing, analytics and standardised reports generation. An evaluation framework for electric bus-based operation can be combined with those of diesel bus-based operations for easy comparison and support in decision-making³.

Simultaneously M&E framework for day-to-day operations and that for a broader comparative assessment of E-Bus performance with competitive modes of transportation in the urban space need structuring. The frequency of reporting, data gathering, and report generation will vary accordingly.

The 100 E-Bus project life (over four phases Appraisal, Planning, Tendering, Implementation) is expected between 15-16 years, including E-Bus operational life (as Implementation phase) likely to be 10-12 years; accordingly, a three tier M&E framework is foreseen- first at Governor's (of DKI) level, second at DISHUB level and third at TJ level. The first and third level M&E, though not extensive, are generally in place in some form, but the second level M&E (focused on aiding transport sector wide impact assessment of project), is mostly inadequate and infrequent. A broad M&E framework with ownership and aspects to be covered is listed below (*Table 8*), while actual parameters and frequency of reporting need crystallisation during next stages of project preparation for implementation. The M&E framework, moreover minimises the potential corruption risks in E-Bus operations (power and revenue pilferage, daily

² <https://niti.gov.in/sites/default/files/2019-07/Notification-Model-Concession-Agreement-for-Operation-and-Maintenance-of-Electric-Buses.pdf>

³ https://issuu.com/ssefcommunications/docs/framework_for_electric_buses_in_india

km logs, other rent seeking) through regular project updates and tracking of prospective wrong doings.

Table 8: Broad M&E framework for 100 E-Bus trial project

Level Hierarchy	M&E Owner	Broad M&E framework
Level 1	DKI Governor's office	<ul style="list-style-type: none"> • Financial • Policy & Regulatory • Industrial and Socio-Economic • Power sourcing related
Level 2	DISHUB/ PIU	<ul style="list-style-type: none"> • Corridor/ route level environment impact • Corridor wide traffic impact • Corridor wide Transport infrastructure and service performance • Health and safety aspects • Road safety aspects • User and Non-user perceptions • Transport policy and regulation impact on E-Bus ridership
Level 3	TJ/ E-Bus Working group	<ul style="list-style-type: none"> • Daily Km by route operating condition (Operating speed, passengers carried, Charging cycles and so on) • E-Bus Cost per Km (BTS rate + TJ cost) for BRT and Non-BRT operations • Battery discharge rate and Charging cycle for different stages of E-Bus motions (Start, Stop, acceleration, Deceleration and cruising) • Operating cost breakup (Power, maintenance, crew and staff) for BRT and Non-BRT routes

Source: Consultant's team

- (e) **Extended Capacity Development** of existing stakeholders (public and private sector) through the training programs (both on site and off site). The training to broadly cover Sensitisation & Orientation, Skill enhancement (technical and managerial) and Organisational strengthening. The training can be imparted through regional/ national / international institutions and agencies.

Under CFF SCC TA, an initial capacity development assessment has been undertaken, which is followed up by an action plan and conducting the identified activities. An evaluation analysis is carried out to round off the process. As capacity development is needed for continual improvements especially for the next phase of financial closure, further capacity development needs evaluation can be undertaken before formulation of next stages of the capacity development programs.

5.3 Good governance action plan (GGAP)

For effecting above mitigation measures to potential governance failures, project owning and implementing agency can roll out an action plan as per [Table 9](#) below. Proposed activity, purpose, expected outcome, timelines, alongside the responsible and monitoring agencies are indicated in GGAP for useful support during the project implementation.

One principal and important approach towards mitigation is adopting a systemic approach to E-Bus induction (rolling stock, battery technology, charging infrastructure, power supply and battery disposal) rather than having vehicle-based induction approach, as practiced for diesel buses. This approach needs incorporation in the procurement and implementation phases.

Table 9: Good Governance action plan for 100 E-Bus Trial Implementation

Sl. No.	Mitigation Measure	Need/ Purpose	Responsible agency	Monitoring agency	Timeline
1	Technical Assistance for 100 E-Bus Trial implementation advisory and support	Hand holding for technical and advisory support, imparting training	DISHUB	DKI	2021 - 2024
2	Technical Assistance for M&E advisory and support	M&E framework development support, implementation and training	DISHUB	DKI	2021-2024
3	Legal & regulatory framework for E-Bus based operations	For legal matters and to support, procurement process, marketing and industry growth	MoT (with support from DISHUB)	-	2021 - 2022
4	Deepening of Market survey	Support Tendering process through assessment of industry capability, readiness and product development status	BPPBJ/ TKPP with support from TJ	DISHUB	Over first half of 2021
5	Monitoring & Evaluation	SOP's for M&E containing, necessary parts	DISHUB	DKI	2021

Sl. No.	Mitigation Measure	Need/ Purpose	Responsible agency	Monitoring agency	Timeline
	Framework (with ready base line)	to form part of Tender docs (under draft contract)			
6	Capacity Development Programs (On site and Off site)	For involved stakeholders in public and private sector	TJ, DISHUB	DKI	2021-2024
7	Tender documentation including Contractual terms and conditions	Support Market survey and final documents for two stage tender process	BPPBJ/ TKPP	DISHUB	2021 (starting March 2021)
8	Tender Award and Contract Signing	Selection of successful bidder of 100 E-Bus tender	BPPBJ/ TKPP	DISHUB	2022
9	E-Bus Operations/ Contract Management	100 E-Bus operations along assigned routes and schedules	Private Operator/ Concessionaire	TJ	2023 onwards
10	Review Meetings/ Seminar	Tracking Project Progress and Performance	DISHUB	DKI	2023 onwards

Source: Consultant's team

6 CONCLUSIONS AND WAY FORWARD

The 100 E-Bus Trial implementation is a pilot project to learn from the commercial operations of the new technology battery electric buses in Jakarta. This good governance study undertakes a risk-based approach for a review of key project implementation processes over the life cycle of the E-Bus Trial – from project conceptualization to commissioning to operations over life time of assets. Potential governance failure and outcomes, that could hamper the success of project in both technical and financial terms, have been identified.

CFF supported technical assistance for 100 E-Bus Trial implementation has enhanced the knowledge base and capacity of TransJakarta, the public sector city bus system management company and the primary agency for implementing 100 E-Bus Trial. The planning phase has been completed with the support from this CFF TA.

In order to avoid or at least minimise above negative outcomes from this 100 E-Bus Trial project implementation, relevant mitigation measures have been identified (a) to **strengthen the tendering process** through a deepening of the existing market survey; (b) for inclusion and integration of a **robust monitoring & evaluation mechanism** in the project processes; and (c) for **capacity development** of both public and private sector operators. Necessary E-Bus related legal and regulatory framework needs to be in place, in parallel to progress on desired implementation path.

With the completion of ongoing technical assistance to TransJakarta on 100 E-Bus Trial, an initial support (planning phase) is completed. Further technical assistance during the procurement and implementation phases is recommended. Technical assistance for implementation shall assist incorporation of suggested mitigation measures and proposed GGAP.

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ANNEXES

Annex 1 ToR for Work Package 2.5: Good Governance

Task 2.5 Good Governance

It should be recognized that infrastructure and mobility investments are particularly vulnerable to corruption due to its size and complexity, investment value, and the number of stakeholders involved. Therefore, the contextual background of the project should be assessed in regard to the vulnerability to corruption in all project cycles. Given the high complexity of mobility projects, highly qualified and specialized staff are necessary at every stage of the process. Capacity-building and raising awareness efforts helps familiarise public officials and suppliers with the integrity measures in place or best suited to prevent corruption. They increase their knowledge about integrity risks specific to infrastructure development, how to act when faced with a particular situation, such as how to prevent and manage, for example, conflict-of-interest situations, and equipping them with the skills to identify, seek out advice and guidance when required. In order to support good governance and promote effective safeguards, effective policy solutions, (including measures to enhance transparency of procurement process and prevent conflicts of interests) and measures to ensure detection during the project cycles should be recommended, as long as they are in the sphere of influence of the participating project parties. The objective of this task is to support and advise the city on good governance through a risk-based approach in the respective project context. At a minimum, the Good Governance Support shall include the following components: 1. Identification of all corruption risks and which actors are involved at which stages of the respective project cycles 2. Analysis to what extent opportunities, incentives or costs for wrongdoing exist based on potential risks of corruption, not on actual cases of corruption or evidence of corruption 3. Identification of the negative impact of the above risks on the objectives of the project 4. Propose integrity and transparency measures that are crucial for effectively countering corruption risks and to deliver quality infrastructure in the sphere of influence of the client and its partners 5. Propose capacity building measures (minimum two measures) that supports the professionalization and integrity of public servants and suppliers and are within the capacity development framework of the client (C40 Cities Finance Facility's Capacity Development Framework, 2017)

The Service Provider shall use a risk-based approach for the assessment. The analytical framework should evaluate if a **process-based**, **actors-based** or a **mixed form** of risk analysis is appropriate to specify at which step of the processes are prone to corruption and how. The integrity and corruption risks shall be considered for the following stages of the infrastructure project cycle:

- a. Appraisal phase
- b. Planning phase
- c. Tendering phase
- d. Implementation and contract management phase

The identified processes among those phases should be prioritized in the report according to:

- the extent to which the risks in the process lies in the sphere of influence;
- the negative impact of the corruption risks on the achievement of the process' objective; and
- potential positive impact of mitigation this risk

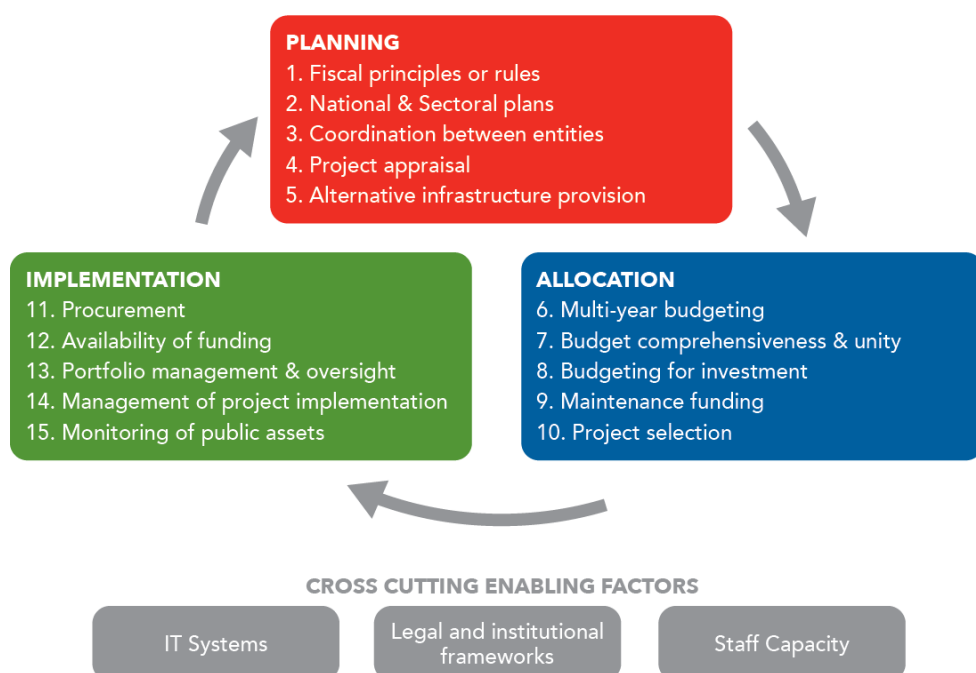
Annex 2 Experiences of Governance Failures in Infrastructure and Bus systems projects

Annex 2.1 Findings of PIMA Framework

Quality infrastructure investment is essential for sustainable and equitable economic growth, and the benefits of additional investment depend crucially on how it is managed. Recognizing the macro-criticality of infrastructure governance, the IMF's 'Public Investment Management Assessment' (PIMA) is a country level comprehensive framework to assess infrastructure governance practices for countries at all levels of economic development. Specifically, PIMA evaluates across 15 key indicators (referred as institutions) involved in the following three key stages of the public investment cycle (**Figure 3**):

- **Efficient Planning Investments** whereby concerning institutions ensure public investment is fiscally sustainable and effectively coordinated across sectors and levels of governments;
- **Allocating investments** to the right sectors based on comprehensive, unified, medium term planning and objective criteria for appraising and selecting projects;
- **Implementing investments** in a timely and cost-effective manner ensuring that projects are fully funded, transparently monitored, and effectively managed throughout their implementation.

Figure 3: PIMA Framework

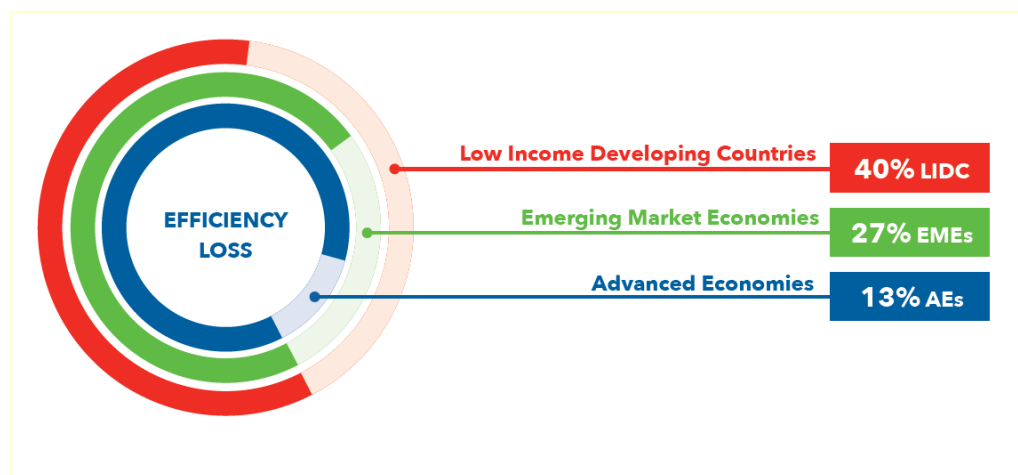


PIMAs evaluate the procedures, tools, decision making, and monitoring processes used by governments to provide infrastructure assets and services to the public; help identify reform priorities; and devise practical steps for their implementation.

Each of the 15 aspects is evaluated against three dimensions namely (a) Institutional strength, (b) its effectiveness and (c) reform's priority; thereby covering a total of 45 dimensions under the framework. Additionally, three cost cutting enabling factors namely (a) Legal and Institutional framework to support governance, (b) staff capacity to implement and manage the processes, and (c) IT systems adequacy to enable good governance practices; across all the three phases of public investment cycle; are considered integral to the comprehensive framework of infrastructure governance.

IMF's PIMA analysis across 50 countries (by mid-2019), suggests that the average country loses about 30 percent of the returns on its investment to inefficiencies in its public investment management processes. Although the low-income countries tend to lose more than richer countries (**Figure 4**), there is substantial scope for improving public investment efficiency across countries of all income groups⁴. Further, Improvements in **public investment management can help countries close up to two-thirds of their efficiency gap**. The growth dividend from doing so is substantial—the **most efficient investors get twice the growth impact for their investment** than the least efficient investors.

Figure 4: PIMA analysis for Loss in Public investment efficiency by Income levels



As per another country-wide analysis, averages (and dispersion) of PIMA scores across the countries shows low-income countries experience lowest effectiveness of their public investments in comparison to advanced countries (**Figure 5**). The

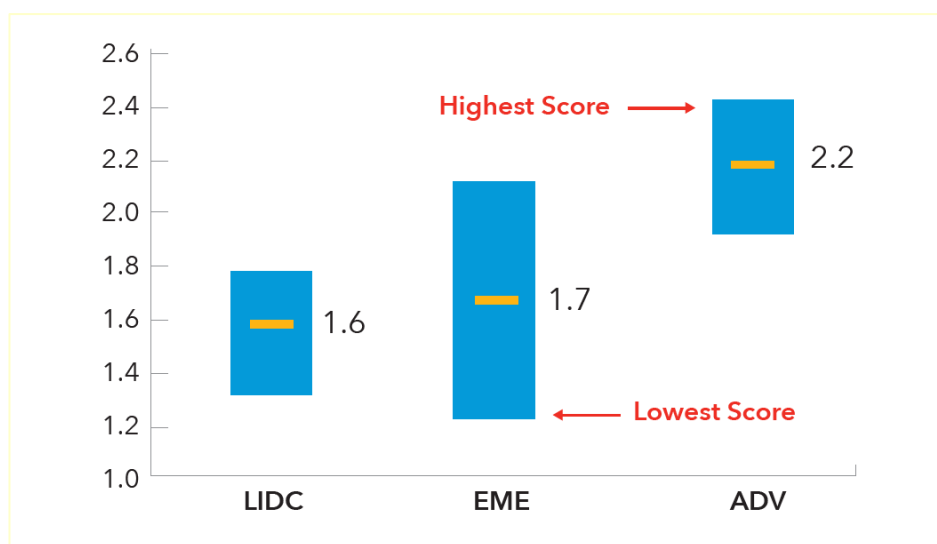
⁴ 2015 IMF Board Paper "Making Public Investment More Efficient"

emerging economies show higher variation in effectiveness levels of their investments, so much so that EME group of countries has the lowest score on effectiveness.

Interestingly, another countrywide aggregated analysis on average effectiveness of 15 key practices across three project phases has revealed that 'Project appraisal' and 'Project selection' are weakest practices (low 'effectiveness' score), while 'Availability of funding', 'Budgeting for investment', 'Fiscal targets and rules' and 'Budget comprehensiveness and unity' are stronger (**Figure 6**).

What lies at above weaknesses of governance is not only absence of perfect institutional design but also lack in the effectiveness of their functions. More the weakness of design, lower their functional effectiveness.

Figure 5: PIMA analysis for effectiveness of public investment by Income levels

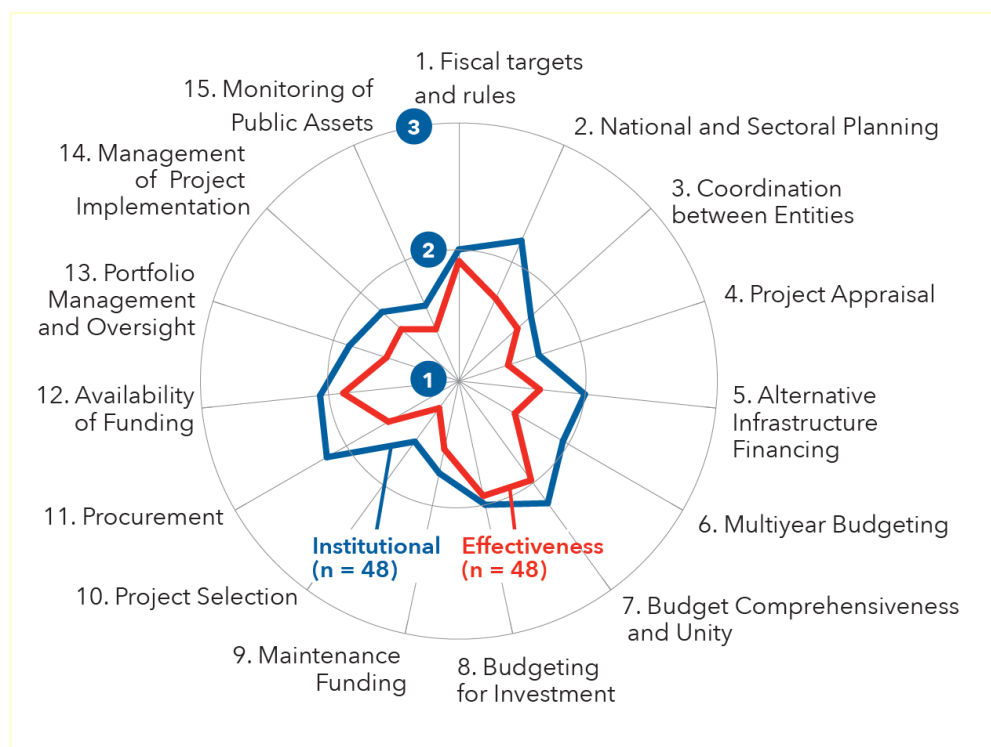


Note: (1: not met, 2: partially met, 3: fully met)

Figure 6: Ranking of PIMA score for average effectiveness across all countries



Figure 7: PIMA Scores – Institutional Design Vs. Effectiveness

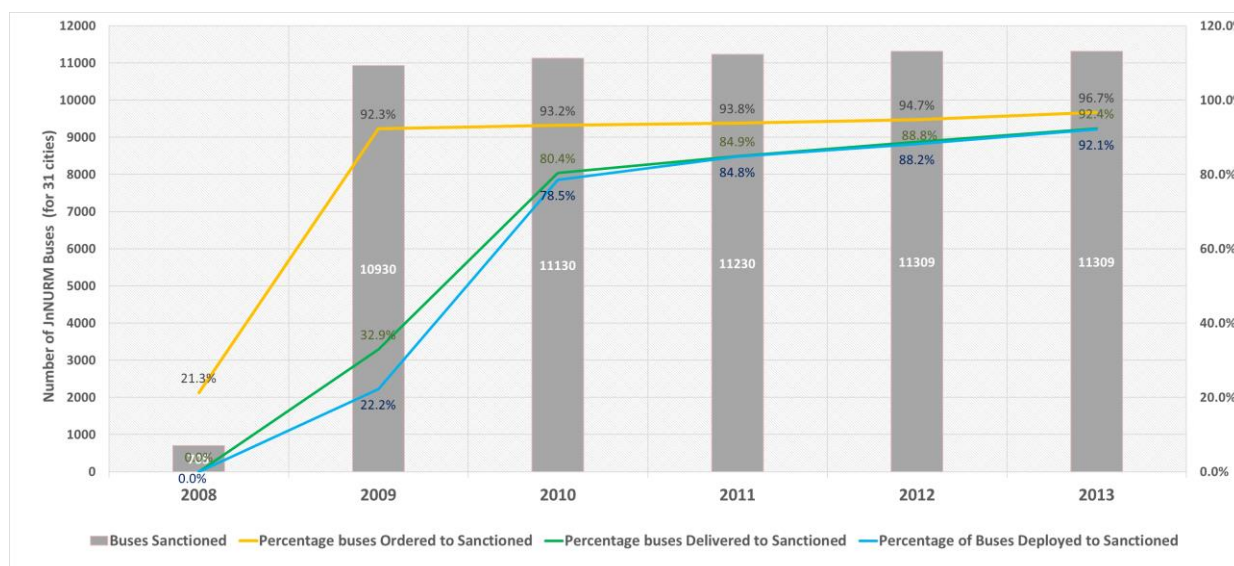


Annex 2.2 New Technology fleet induction - JnNURM Bus Funding Program and Learning

With a strong focus on urban transport improvements and goals underlying National Urban Transport Policy-2014, the ministry of urban affairs and housing of the Government of India initiated an ambitious city bus funding program in 2009-10 under its flagship program of national urban renewal mission program branded as JnNURM started in 2004-05⁵. Under above Phase 1 JnNURM bus funding program, a total of 15,260 buses across 61 mission cities were sanctioned in FY 2008-09. The SPV/ public transport operator was sanctioned grants for purchase of new technology buses (LF/ SLF AC or Non-AC Midi and Standard size buses diesel and CNG fueled buses as per UBS-I). The sanctioned amount was a partial support from Government of India whereby the residual capex and OpEx support was to be provided by the respective provincial government and local municipal agency.

The fund stimulus was to support economic growth during the global slowdown of 2008-09, partly through revival of the automobile sector, directly benefitting from the fund for bus procurement. The funding program further aimed to make a transition to Low floor Air Conditioned CNG/Diesel buses for the first time across Indian 61 mission cities, thereby support enhancing the public transport supply and image, which in turn was expected to cause modal shifts. Total funds allocation of the order of USD 290 million was made with overall program intention to encourage modal shift of the order of 5%. A consolidated view of buses sanctioned, approved, procured and deployed is shown in Figure 8 below.

Figure 8: Cumulative Year wise Status of JnNURM Buses Sanctioned, Ordered and Deployed among 30 shortlisted Cities



Source: Author's analysis

⁵ [http://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English\(1\).pdf](http://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English(1).pdf)

Gauging inability of cities to exploit the scheme during the first phase, a second package of central assistance was sanctioned by the Indian Government in 2013-14 with a total fund allocation of USD 200 million for 10,000 urban buses (and required ancillary infrastructure of depots, terminal, ITS functions)⁶. The new fund disbursements could be exploited by any city (unlike 61 mission cities in Phase 1) on first come first serve basis. The fund disbursement was linked to new buses to follow UBS-II and undertake various urban reforms. The program thereby aimed to improve urban bus service availability while encouraging associated urban reforms such as:

- formation of an urban metropolitan transport authority,
- setting up of an urban transport fund,
- implementation of ITS (on-board and off-board),
- formulation of parking and advertisement policy and
- tax waivers from the city or state level agency.

Additionally, large cities were funded partly while smaller cities were funded up to 90% on account of their low financial capacity. The funds were disbursed to an SPV (necessitated for joint commitment of public bus operator, local municipal body and state transport department). The purpose of bus specification was to standardise urban bus availability across the urban centres.

Under a program evaluation study initiated under GEF-SUTP, jointly supported by the Government of India, Global Environment Facility and The World Bank, 30 cities were shortlisted among 61 mission cities to study the program evaluation of Phase 1

JnNURM bus funding scheme. The data collected across operational, financial, new fleet procurement and reforms progress brought out following issues:

- Program was over ambitious in trying to fulfil multiple objectives namely bus service enhancement (in quantity and quality), progressing urban reforms and impetus to automobile industry. However, total sanctioned fund remained under-utilised and money spent was not completely effective –to cause an increase in public transport availability through affordable bus service. New technology JnNURM buses required change in work culture and upgradation in skill levels of the existing staff. The same was neither structured into the funding program nor was envisaged by transit agency. This was especially true for small and medium size city bus companies. Some of the metropolitan bus agencies initiated new business models such as signing AMC for bus maintenance at time of procurement;
- There were no KPIs attached to fund disbursements, except those related to technical specification and reforms' institutionalisation, which actually in way caused delays to procurement of buses and their deployment. Short timeline provided on planning for new bus procurement, routes allocations and other support through

⁶ <http://mohua.gov.in/upload/uploadfiles/files/Guidelices%20for%20JnNURM-II.pdf>

urban reforms. This restricted detailing out of many practical aspects of fleet procurement and deployment, and these got reflected in multiple modifications to fleet specifications, non-readiness with requisite reforms and lack of support infrastructure etc.

- JnNURM fleet was a miniscule part of overall fleet in operations, across urban, suburban and long-distance routes and services. Non clarity in future market of new technology JnNURM buses contributed to OEMs not investing for necessary ramping up of production lines, thereby causing delays in supply of buses.
- Under-preparedness of OEMs to fulfil bulk orders from public transit agencies comprising different bus types (combinations across Midi, Standard, AC, Non-AC, Low Floor, Semi Low Floor, Diesel, CNG). The bus agencies requested for deviation from UBS to suit their local requirement. The actual procurement of new buses was delayed from the planned timelines and consequently to actual deployment of new-technology buses.
- Capacity restraints by prototype testing agency (ARAI) due to bunching of orders coinciding with implementation of higher emission standards
- Due to three stage fund release linked to progress made by the city/ public transit agency on arranging internal funds and institutionalisation of reforms, actual fund release was delayed for many cities causing delays in procurement
- warranted on account of reduced manual controls in new buses unlike the ongoing fleet operations & maintenance. On many occasions' buses would stop en-route due to a mechanical failure but could not be removed by a crane service, causing traffic blockage on busy urban streets.
- Inadequate expertise with maintenance staff led to high breakdown rates in JnNURM funded buses. Additionally, ITS functionalities mandated by the funding condition remained non-operational due to capacity gaps in O&M of ITS equipment. In a way the money spent on account of ITS was not effective.
- New buses (diesel/CNG) not only costed more at the time of procurement but also had much higher maintenance cost attributable to lower fuel efficiency and higher cost of spares. This caused financial trouble for public transit operators, already burdened with losses.
- The new buses in many cases were used to replace old fleet of buses with UBS buses. This did not increase bus supply while increased cost of operations for the transit agency.
- JnNURM buses had to be operated on high-cost services to match their increased operational cost. Substantial fare revisions were seen across many cities along the service/ routes served by JnNURM buses. Most of the users on JnNURM buses were existing patrons of services but now had to pay higher price.
- The bus funding program has not realised any modal shifts to bus services as the program did not focus on end-to-end user travel, where out of vehicle journey time has higher negative externalities than In-vehicle time of the journey.
- Most of the reforms either did not take off or remained on paper, except in few cases.

Some of the positive outcomes from JnNURM bus funding program were:

- Exposure of new modern attractive buses into public space
- New buses attracted positive user perceptions
- Many small to medium size cities could introduce a modern bus system for the first time, bringing a sizeable positive change in service levels and user perceptions

For providing a head-start to both the public transit agency and the private concessionaires/ operators of E-Buses, the Government of India has issued a model concession agreement MCA)⁷ for public-private participation. The document has good acceptance among the public bus and the private sector operators, reflected in sizeable E-Buses sanctioned (almost 5600 number) over the year 2019 and those tendered out (almost 2,400) over the year 2020, while COVID-19 impacted more promising outcomes.

The concessions are generally front ended by the OEMs who would, undertake operations and maintenance of E-Buses as well as that of E-charging infrastructure. The E-Bus operations will follow routes and schedules allocated by the public transit agency who would make payments to the E-Bus concessionaires, based upon an agreed rate per km.

For providing a head- start to both the public transit agency and the private concessionaires/ operators of E-Buses, the Government of India has issued a model concession agreement MCA)⁸ for public- private participation. The document has good acceptance among the public bus operators and the private sector operators' participants. This is reflected through sizeable E-Buse funds sanctioned (almost 5, 600 number) over the year 2019 and E-Buses tendered out (almost 2,400) over the year 2020.

⁷ https://niti.gov.in/writereaddata/files/document_publication/DraftMCA-Electric-Buses.pdf

Annex 3 Relevant Entities engaged in 100 E-Bus trial project implementation

Annex 3.1 PT TransJakarta (TJ)

TJ is a public sector organization primarily responsible for city bus service in Jakarta. The agency is directly responsible to the Governor of the DKI Jakarta and coordinates its operations under DKI Transport agency (DISHUB), that plans for and coordinates with various road, rail and water transportation in the DKI area.

Roles, duties and functions of TJ are:

- Development and property management of company's assets (BRT infrastructure and Others)
- Operations and maintenance of BRT systems
- Operations and maintenance of fuel stations
- Plan and manage revenue generations from property development of its assets
- Develop and manage physical integration with other mass transport systems intersecting with the

Guided by its vision of becoming a world class transportation company that contributes to the health and wealth of stakeholders and shareholders. The mission statement is further heightened by goal to enhance teamwork, professionalism, excellence, customer satisfaction and integrity in its working.

Since its existence from 2004, Transjakarta has opened many BRT corridors now operational in the city. Its role is a city bus systems manager (as per Governor Decree 110/2003) whereby, TJ is managed in a non-structural manner, using transfer funds, flexible budget income.

During 2006-10, TJ became the technical implementation unit under the DKI Jakarta provincial transportation agency (wide Governor Regulation no. 46/2006). Since 2014, TJ is a Regional Owner Enterprise (BUMD) and officially became PT Transportasi Jakarta. Being BUMD, empowers PT TJ to carry out PSO that can be managed independently to support DKI Jakarta provincial government towards creating a liveable city.

By the year 2019 TJ operated 3435 bus fleet serving 247 routes. More than 50% fleet is small size buses while one fourth of the fleet is on 53 BRT routes, across 13 corridors and serving 256 bus stops, operating 24 hours. Alongside main route services, there is a good focus on feeder services operational in integration with Busways and other mass transit systems. The PT TJ services carried 264 million people in 2019, an increase of 40% over previous year.

Year on year growth in operating revenues as well as non-operating revenues has been the result of expansion of services and operations under its belt. Annual report 2019 declares net profit Rp 55.04 billion in 2019, a growth of 13.65% over 2018 level. The revenues sources are fare box collection (based on tariff rates stipulated in

Governor's decree 1912/2005), non-fare revenues, PSO budgetary allocations and subsidy.

TJ is continuously engaged in its operational development and service improvements. It has implemented an integrated fleet management system, that also integrates the busway feeder service providers, thereby managing the first and last connectivity for its BRT corridors.

TJ is managed by a BoD who in turn is supervised by the Board of Commissioners. BoC is assisted by an Audit committee, GCG Committee and Risk management committee alongside the secretary of the BoC. BOC is fully under the authority of DKI Jakarta Provincial government as the main (99.4% shares) stakeholder of the company

BOC has established a risk monitoring committee as a supporting organ to focus on risk management within the company. This unit is in charge of two new departments (under BoD) namely Risk Management department and Ministry of health & safety and environment (K3L). Through a risk mapping exercise, conducted by BoC and BoD across the core business activities of Transjakarta, risk awareness sessions have been held for the employees.

Good corporate governance, instituted in 2018, focuses on implementing GCG principles (openness, accountability, responsibility, independence and fairness) within the company. The GCG policy tool, developed by BoD, comprise eight modules on guidelines and two audit modules. A whistle blowing system, as part of GCG mechanism allows anyone to register complaints of corruption or wrong doing in operations. GCG implementation is evaluated through a diagnostic assessment tool.

GCG is under its nascent stage in the company as various SOP's, tools, guidelines and awareness & training programs are underway. Over the years, GCG practices are expected to enhance and ensure Accountability of TJ leadership and management in performance of TJ, Transparency of the decision-making process and relevant information/ outcomes, Clarity in roles and responsibilities among different teams, and capability of the teams to Independently manage these responsibilities in a professional and fair manner without influencing and getting influenced.

The BoD of PT TJ is appraised for performance across company's physical, financial and resources development such as Employee engagement, Driver certification, Basic integration, Integrated operator, Achievement of Minimum Service standards (SPM), Customer satisfaction, Service range, Passengers per day and per annum, non-fare box revenue. In carrying out its business activities, TJ is obliged to meet the SPM, and compliance with SPM affects the subsidies that company receives from the government. There are fines levied on TJ for falling short of the annual SPM targets. Board of Commissioners has proposed changes in regulations of SPM to mitigate risk of high SPM fines, observed to quite high in 2019.

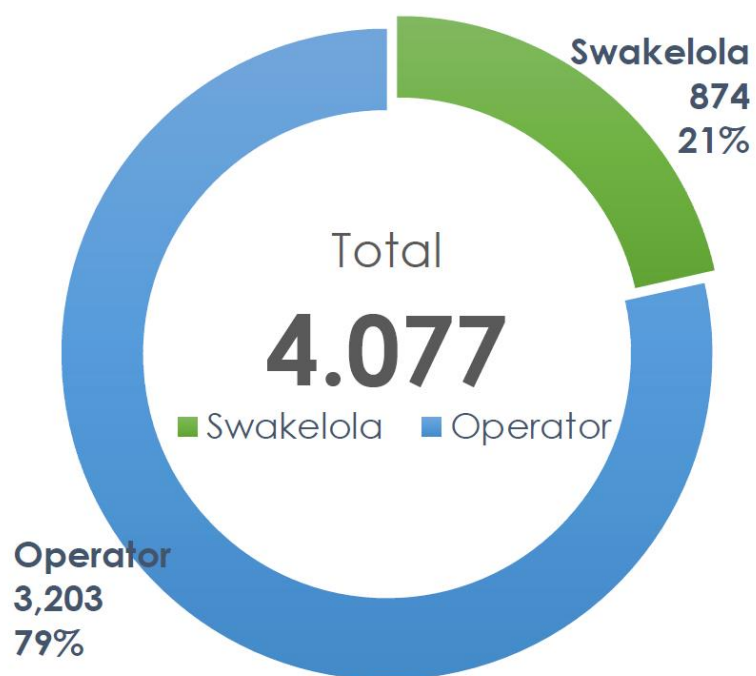
Total employee strength by 2019 was 9549 which has steadily grown from 5615 employees in the year 2015. TJ is powered by its young and energetic (almost 86%) with reasonable educational qualification background (at least 82% with high school degree) while almost 10% are graduates. A large part of employee engagement is on BRT systems for busway infrastructure's site supervision and ticketing.



The 100 E-Bus trial will add new fleet of buses to existing fleet of diesel buses. TJs target is attain a total fleet strength of 7000 odd buses and all ZEB by 2030.

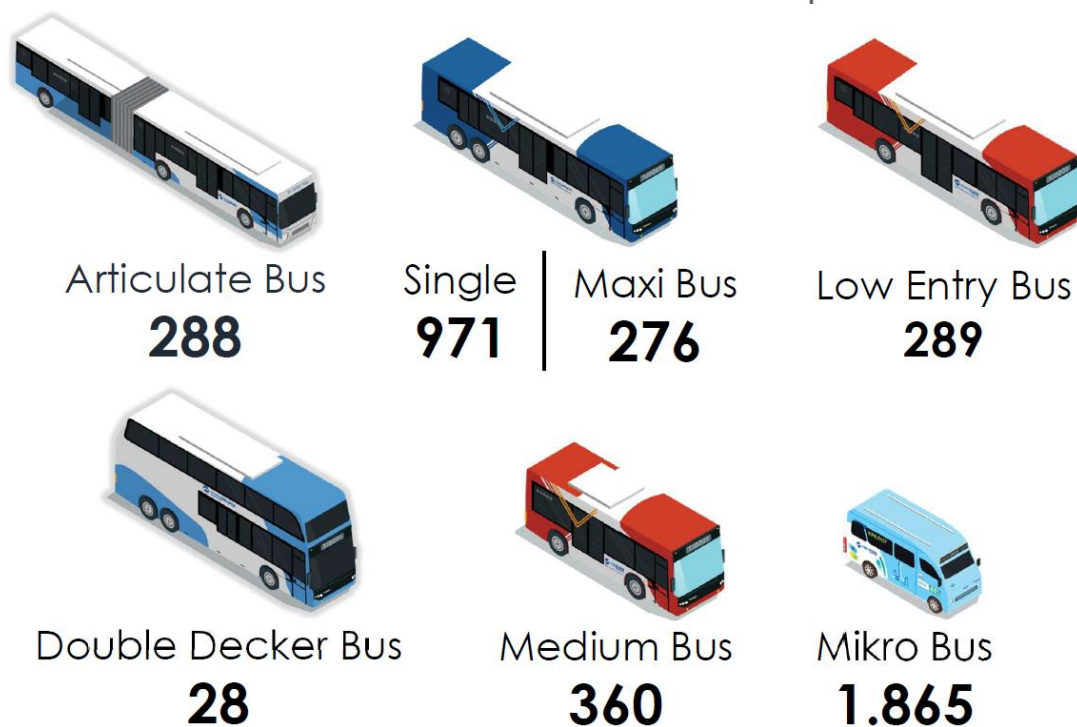
Figure 9: TJ Fleet and Services

Jumlah Armada berdasarkan Kepemilikan



*Armada Sesuai kontrak **tanpa** cadangan
(updated 30 April 2020) & diluar unit transjakarta cares

Jumlah Armada Berdasarkan Tipe



Hanya untuk Konsumsi Internal

ETR April 2020

Annex 3.2: Transportation Agency DKI Jakarta

A. Vision and Mission

Vision:

Create a new Jakarta through the provision of transportation services that are reliable, modern, and internationally competitive, with public transportation as the focal service.

Mission:

- a. To realize a safe, smooth, comfortable, and integrated transportation service
- b. To create an informative transportation service based on information and technology.
- c. To realize environmentally friendly transportation and supporting accessibility for people with disabilities.
- d. To realize an affordable transportation for the community.

B. Task and Function

The primary task of the of Transportation Agency DKI Jakarta is to execute transportation affairs in Jakarta, its function are as follows:

1. Prepare the strategic pans and work plan
2. Implement the strategic plan and budget execution.
3. Formulate the policy and guideline and technical standard for the implementation of transportation affairs.
4. Develop, deploy, guidance, monitoring, control and evaluation of the transportation system.
5. Develop of urban transportation system
6. Operation of land, rail, water and sea transportation.
7. Develop, deploy, guidance, monitoring, control and evaluation of the business and transportation activities.
8. Determine the location, management, control and development of parking business.
9. Carry out the testing of motorized vehicles for public transport and goods and inspection of the quality of the motorized vehicle body.
10. Calculate, supervise, and evaluate the tariffs for road, rail, water and sea transportation.
11. Structure, stipulate, and supervise the network of road transport routes.
12. Develop, foster, monitor, control and evaluate the routes and volumes of road transportation vehicles in the framework of smooth flow of goods and services and economic growth.
13. Collection, administration, deposit, reporting and accountability of revenues, levies in the land, rail, water and sea transportation.
14. Implement and ensure the safety of land, rail, water and sea transportation,
15. Supervise and control of transportation license.

16. Provision, administration, use, maintenance, refurbishment of infrastructure and facilities.
17. Law enforcement in transportation affairs.
18. Providing technical support to the community and regional apparatus.
19. Manage the personnel, finance and goods.
20. Administration and household management.
21. Management of archives, data and information.
22. Reporting and accountability for the implementation of duties and functions.

C. Organization Structure

1. Head of Transportation Agency and Vice Head of Transportation Agency.
2. Head of Secretariat
3. Road Transportation Sector
4. Traffic Sector
5. Rail Sector
6. Control and Operation Sector
7. Cruise Sea Water Transportation Sector
8. Sub regional transportations
9. Management units.

D. Coordination in Public transportation

In addition to coordination within the public transportation, current transportation policy options require cross-sector coordination such as transportation demand management and transit-oriented development. In Jakarta, coordination is more complicated as the government institutions have to harmonize their policies with a *limited amount of financial and human resources on relatively poor infrastructures with unsound institutional framework*. Six major factors of coordination for Jakarta transportation are examined below taking cross-sector and metropolitan-wide aspects consideration.

5. Institutional framework

Although there is usually an institutional and legal framework for an existing mode of transportation such as a railway, a bus line or a road; the ones with a metropolitan point of view are rare. Political instability also affects metropolitan transportation policy such as frequent change in segregation of responsibility and restructuring of governmental institutions. Some metropolitan areas in Jakarta does not have an institutional framework for new modes of transportation such as a MRT or *new transportation policies such as transportation demand management*.

2. Coordination with urban planning

Transit-oriented development (TOD), which promotes mixed and compact land use around transit stations, is a key policy option to promote environmentally and economically friendly transportation systems. TOD requires close

coordination between public transportation network development and land use plans. The walking environment around the transit stations also has to be developed.

3. Infrastructure development

In Jakarta, development of urban transportation infrastructures is considered as significant, however, it usually cannot catch up with the rapid population and economic growth. Due to the huge initial investment required for transportation infrastructures, coordination is required at the planning stage of transportation infrastructure.

In addition to transportation infrastructure development toward TOD, the following coordination for infrastructure development is essential.

- **Consistency of metropolitan transportation network:**
If a missing link or bottleneck exists, the network does not function. The need for consistency of the road network arises at the boundary of local governments. For instance, a section of a road is defined as an arterial road while the adjacent section of the same road within a different local government is defined as a secondary road. It is also observed that the number of lanes of a road often varies at the boundary of local governments
- **Land for transportation:**
A strip of land is scarce in urbanized areas. The complex land acquisition and relocation processes make it difficult for the government to acquire land in some countries. There would be no other choice than to share lands in some sections among several transportation modes. The typical example is BRT which requires a dedicated lane although the initial investment is small. The existing roads and rivers are rare sources of strips of land for transportation. A coordinated plan for utilizing these lands is required.
- **Transit stations and bus terminals:**
These are key transportation infrastructures for promoting use of public transportation. Several modes of public transportation as well as an access road to the stations, station plaza, a park and ride facility and the terminals should be developed in a coordinating manner.
- **Specifications of Public Transportation:**
If direct through operations of several railway operators is required, technical specifications of public transportation have to be consistent. This is also critical in case of vertical and horizontal separation of railway operation and infrastructure management.

4. Transportation Demand Management (TDM)

Especially in part of DKI Jakarta, infrastructure development cannot catch up with the rapid economic growth. Transportation Demand Management (TDM) can be an effective and expeditious policy option. Several TDM measures such

as electronic road pricing, mobility management and parking fare control require high levels of communication.

5. Funding scheme

Due to the limited funding of regional government, a variety of financial resources would be necessary. The road pricing or fixed property tax for urbanized areas can be alternatives. Needless to say, these policies require coordination among governmental agencies as well as revision of laws and regulations.

6. Operation of public transportation

In addition to the infrastructure of public transportation, service integration is required for operation and maintenance.

Annex 3.3 BPPBJ DKI Jakarta



PEMERINTAH PROVINSI DKI JAKARTA
BADAN PELAYANAN PENGADAAN BARANG/JASA
Jalan Kebon Sirih No. 18 Blok H Lantai 20, Telp. 382 – 2874
Faks. 381 1084, 382 2973
JAKARTA

Kode Pos : 10110

January 27th, 2021

Number : 225 / - 072
Importance : -
Attachment : 1 (one) document
Subject : BPPBJ Overview

Dear Dr. Marco Salm
City Coordinator Jakarta
C40 Cities Finance Facility

We would like to thank you for the discussion about the 100 E-Bus Trial project. As requested in the discussion, please find enclosed an overview of BPPBJ's background and organizational governance. Should you have any enquiries, please do not hesitate to contact Tria Karunia (+6285288887170).

Sincerely,

Head of Procurement Agency,
Provincial Government of DKI Jakarta



Blessmiyanda
NIP. 196910131997031004

I. BACKGROUND

Procurement Agency of Provincial Government of DKI Jakarta (Badan Pelayanan Pengadaan Barang/Jasa Provinsi DKI Jakarta - BPPBJ in Indonesia) is one of the Provincial Government DKI Jakarta's agency which is tasked to conduct the goods/service procurement within Provincial Government DKI Jakarta, by using regional budget (APBD). Formed in 2014 by Governor Regulation number 26 of 2014 on Organizational Governance of BPPBJ, BPPBJ implements the procurement process based on Presidential regulation Number 16 of 2018 on Government Procurement and its derivative regulation regulated by National Public Procurement Agency of Indonesia and the related State Ministry.

According to public procurement law in Indonesia, there are purposes, policies, principles and ethics of procurement. One of the purposes which happened to be the procurement law's consideration is to result in the accurate goods/service from the money spent, measured from the aspects of quality, quantity, time, cost, location, and provider. In achieving this purpose, it needs procurement strategy which conduct through these following procurement's principles:

- a. Efficient;
- b. Effective;
- c. Transparent;
- d. Open;
- e. Competitive;
- f. Fair; and
- g. Accountable.

The scope of procurement in Indonesia procurement law includes goods, construction works, consultancy services, and other services. In carrying out those procurement, BPPBJ also formulates derivative regulation in the form of standard operational procedures which should be implemented by these following procurement parties in BPPBJ:

- a. Budget User;
- b. Proxy of Budget User;
- c. Commitment Making Officer;
- d. Procurement Officer;
- e. Selection Committee; and
- f. Deliverables Examination Officer/Committee.

Each party has their duties and authority of conducting procurement process, from the planning, preparation, selection, contract management, until the handover of goods/services according to the procurement method which are:

- a. E-purchasing;
- b. Direct Procurement;
- c. Direct Appointment;
- d. Quick Tender; and
- e. Tender.

As regulated by Indonesia procurement law, the government procurement should be conducted digitally and carry out by using information system consisting of Electronic Procurement System (Sistem Pengadaan Secara Elektronik in Bahasa Indonesia) and its supporting system developed by National Public Procurement of Republic of Indonesia.

Electronic procurement could utilizes e-marketplace in the form of:

- a. Electronic Catalogue;
- b. Online Shops; and
- c. Selection of Provider.

In order to develop and manage the e-marketplace, National Public Procurement of Indonesia may cooperate with procurement agency unit and/or service company.

II. ORGANIZATIONAL GOVERNANCE OF BPPBJ

As of 2016, the regulation of Organizational Governance of BPPBJ has been revised through Governor Regulation number 261 of 2016 on Organizational Governance of BPPBJ which stated BPPBJ consist of:

- a. Head of BPPBJ;
- b. Secretary of BPPBJ, including general affairs, human resources (management), and finance subdivisions;
- c. Division of Procurement Information System Management, including procurement process management, procurement planning, and procurement information system subdivisions;
- d. Division of Human Resources Development;
- e. Division of Law, including advocacy, procurement regulation, and settlement of legal issues subdivision; and
- f. Procurement Unit Representatives at 5 cities, including North Jakarta, South Jakarta, West Jakarta, East Jakarta, (Town hall) Central Jakarta.

Separated from divisions mentioned above, there is a functional personnel group which directly supervise by Head of BPPBJ. This functional personnel is a civil servant who passed procurement competency test held by National Public Procurement of Indonesia (LKPP) and has a role as selection committee, procurement officer, or deliverables examination officer/committee.

The main role of BPPBJ implemented through the functional personnel job description as follows:

- Review procurement planning, procurement planning has to be uploaded to a system called, SiRUP as providers could prepare their documents to meet the requirements of selection;
- Review owner estimate;
- Check provider qualification;
- Manage vendor database;
- Evaluate procurement process; and
- Conduct procurement advocacy.

An overview of tender management in BPPBJ

Procurement Category	2018		2019		2020 (*)	
	Number of Procurement Package	Total Bid Value (Rp)	Number of Procurement Package	Total Bid Value (Rp)	Number of Procurement Package	Total Bid Value (Rp)
Construction Works	473	4,427,903,960,974	1,005	8,603,865,244,858	173	2,639,026,522,862
Goods	427	911,157,427,156	990	1,894,868,047,106	209	736,174,632,590
Consultancy Services	335	148,693,219,236	635	296,261,645,496	265	249,722,423,492
Other Services	251	577,701,108,651	668	823,427,744,175	272	615,342,104,230
Total	1,486	6,065,455,716,017	3,298	11,618,422,681,635	919	4,240,265,683,174

*in 2020 some of DKI Jakarta's budget has been refocused to Covid-19 prevention

In handling over a thousand of procurement package every year, BPPBJ only has 75 functional personnel out of 234 personnel needed according to their work load analysis. Therefore, BPPBJ has to conduct procurement strategy as allowed in procurement law such as:

- Electronic catalogue system, a system contains list of selected products (items) that made through tender of negotiation by selection committee. Every company that passed the product selection shall enter into 3 years of catalogue contracts. In DKI Jakarta's catalogue system, there are 24 commodities, 6815 items, and 274 provider included.
- Consolidation of similar packages;

- c. E-marketplace, BPPBJ has launched a system named E-Order to support micro and small enterprises to sell their product to DKI Jakarta with limitation of Rp50.000.000/transaction. Most of products in E-Order are foods. This innovation of BPPBJ has been recognized by National Public Procurement of Indonesia through their "2020 Innovation Award" given to BPPBJ.

Annex 3.4 Institutional Structure of BPPBJ

A. Vision and Mission

Vision: To realize BPPBJ as a procurement agency that is clean transparent, accountable and public service oriented.

Mission:

- a. To integrate the goods /services procurement process chain.
- b. To Improve the performance of the procurement of goods /services oriented to value of money.
- c. To develop a centre of excellence for the procurement of goods/services in sustainable manner.
- d. To develop the professionalism of PBJ personnel through competency - based integrated human resource management.
- e. To carry out of transparent and accountable governance and regional finance.

B. Task and Function

BPPBJ DKI Jakarta (Badan Pelayanan Pengadaan Barang dan Jasa – DKI Jakarta Public Procurement Agency), the institution which is a second echelon working unit at DKI province organization. The agency, this unit is tasked to formulate government procurement policy and regulations; give public procurement-related technical guidance and advocacy; as well as facilitate the conduct of the public procurement in DKI Jakarta.

With the passion to create a better Indonesia, hope surfaced on developing a more effective and efficient procurement process from state and regional budgets (APBN/APBD) adhering to the applications of sound competition that is transparent, open and equitable to all parties as well as being accountable.

Taking to consideration of the said ideals, therefore a procurement system that encompass clear regulatory and procedural aspects, better institutional framework, competent human resources, accountable and transparent business processes, as well as litigation handling that respects the principles of justice needs to be developed.

With regard to a better institutional framework, therefore, there needs to be an institution that has the authority to formulate strategic planning and development,

policy-making, as well as legal provisions that regulate public procurement that is adaptable to change.

Aside from implementing programs in line with its vision and mission as well as the strategic aims and objectives, the BPPBJ DKI Jakarta is also responsible to achieve *regional development targets as mandated in the Mid-term Regional development plan (RPJMD) 2018-2022*, prioritizing in the field of bureaucratic apparatus reform, improvement of good government that is free of corruption, collusion, and nepotism. Specifically, the agency functions and authorities are directed at creating good governance in the public procurement processes.

C. Organization Structure

- a. Head of BPPBJ
- b. Head of Secretariat
- c. Development and HR Management Sector
- d. Legal Sector
- e. Operation and Procurement Information System
- f. Procurement Unit
- g. Functional Position Group.

D. BPPBJ as Public Institution Service

Public services are all forms of services, both in the form of the public goods and public services which in principle are the responsibility of an implemented by government agencies at the central, regional, SOE and ROE. In relation with service standard of BPPBJ is for the following:

1. Information and Documentation Manager:
Service delivery process consists of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.
2. Regulation interpretation services in government procurement of goods/services.
Service delivery process consist of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.
3. Consultation services and information sources.
 - a. Face to face consultation services regarding the general procurement plan, Monev (monitoring and evaluation) PPBJ, and blacklist broadcast.
 - b. Request services for socialization and technical guidance, training on the plan general procurement, Monev BPBJ, and blacklist broadcast
4. Support services using SPSE (System Electronic Procurement).
Service delivery process consists of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.

5. Advocacy services and contract problems by letters:

Service delivery process consist of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.

6. Advocacy services and contract problems through face advance;

Service delivery process consist of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.

7. Advocacy services and contract problems through Website;

Service delivery process consist of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.

8. Expert description service:

Service delivery process consist of service requirement, SOP, time for completion, service product, handling of complaints, suggestion and inputs.

Performance accountability documents of BPPBJ consist of:

- a. Performance report
- b. Performance agreement report
- c. Work plan
- d. Strategic Plan

BPPBJ must meet the SAKIP (Government Agency Performance Accountability System), which this system is an integration of the planning system, budgeting system and performance reporting system, which is in line with the implementation of the financial accountability system.

E. Procurement Procedure and Process

BPPBJ has a detailed procurement procedures and processes comprising following areas:

1. Governance and

- 1.1. Basic Statutes Governing Public Procurement
- 1.2. Regulations Governing Cost Reimbursement and Pricing
- 1.3. Public Sector Procurement Procedures
- 1.4. Common Types of Procurement Procedures
- 1.5. Eligibility to Bid for Public Sector Opportunities
- 1.6. Compliance and Ethics
- 1.7. Disappointed Bidders
- 1.8. Handling Disputes

2. Contract Award Process

- 2.1 Tender Procedures for Soliciting Offers
- 2.2 Negotiating Tenders
- 2.3 Accounting Standards
- 2.4 Verification of Tenders
- 2.5 Accounting And/ Or Estimating systems

2.6 Accounting and/or Estimating Systems Subject to Audit or Inspection Requirements

3. Post-Award

- 3.1 General Process and Terms and Conditions for Payment to the Contractor
- 3.2 Government Pay Relative to Actual Costs
- 3.3 Rules Governing How Contractors Must Accumulate, Record and Report Costs
- 3.4 Purchasing Goods or Services from a Foreign Contractor
- 3.5 Rules That Apply to a Foreign Subcontractor's Accounting and Pricing
- 3.6 Access to a Contractor's Records
- 3.7 Audit Rights
- 3.8 Recovering Costs

4. Review Procedures

- 4.1 Resolving Disagreements Between the Government and a Contractor
- 4.2 Agencies, Courts and/or Organisations Permitted to Resolve Disputes

5. Miscellaneous

- 5.1 Other Unique Aspects

Annex 4 Major Findings from Discussions with DKI Jakarta agencies

Annex 4.1 Findings of Discussion with BPPBJ – 22nd January 2021

- BPPBJ was set up in 2015. Has been procuring for TJ from 2018.
- BPPBJ does 4 kinds of procurement
 - Goods
 - Consultancy services
 - Construction services, and
 - Other Services
- Business Activities
 - BPPBJ procures for all public institutions in the city of Jakarta with its user and consumer base within Indonesia
 - Has been carrying out procurement of the order of 23 trillion rupiah annually covering almost all types of products and services for the city of Jakarta
 - Undertakes procurement on basis of procedures and principles specified under Presidential decree 16/2018 on public procurement. Alongside SPPBJ follows regulations of national public procurement agency LKPP.
 - follows established Standard Operating Procedures (SOPs), Electronic tendering system
 - has a fund management system including a log book for each procurement to help tracing back
 - is supported by para-legal units of the government in legal matters for protests/lawsuits related to declared tender results.
 - Has certified staff to carry out procurement services, however only 30% of required strength is On rolls.
- Difficulty in procuring E Buses:
 - No experience
 - No information on brands/models
 - Owner estimates (HPS) not available
 - The buses will be imported as “Complete Built Unit”/CBU - Under Government Order no 16/2020, Government wants 40% local content in procurement
 - Supply chain reliability
 - Lack of resources – BPPBJ needs 243 employees but actually only 75 available. So, they try to combine several procurements into one to conserve resources
 - Procurers do not respond to queries of BPPBJ on timely basis
- Process of procurement of Buses/BTS

- TJ needs to provide costing for the BTS including vehicle prices, driver cost, maintenance cost etc.
- The procurement outcome will be compared with the prior estimates
- Requirements from TJ for E Bus procurement
 - Detailed needs/requirement plan
 - Pareto analysis and/or Spending analysis
 - Supply chain information
 - Brand/type
 - Owners Estimates (HPS)
 - Draft contract
 - Market survey by TJ – CFF reports should help
 - Comparison between what they find in the market, results of comparable transactions
 - BPPBJ needs detailed market survey else unit price discovered through procurement may not be as per expectations
 - Procurement principles must be complied with
- Process:
 - TJ should submit a proposal to the Governor, DKI through the Secretary, Transportation
 - Secretary Transportation would then send the approved proposal to BPPBJ
 - BPPBJ will conduct study on feasibility of procurement
 - Identify potential suppliers
 - Review procurement steps
 - Develop procurement catalogue
 - Submit to LKPP (national procurement agency)
 - Launch procurement after approval from LKPP
- Time frame
 - One-month intensive discussions with TJ
 - Six months for procurement process
- If tenders are well defined, procurement is more successful. BPPBJ has won all legal cases related to procurement

BPPBJ will translate to English and share a report submitted to the anti-corruption department of the government on its activities by Wednesday, 27th January.

Feedback by CFF SPA Ms. Gita – If there are limited bidders, BPPBJ may finalise the contract by negotiation rather than tendering.

Annex 4.2 Findings of Discussion with DISHUB – 25th January 2021

1. About Dishub activities and Performance

- Dishub is apex planning and coordination government agency for all transport sector related aspects of Jakarta area
- The organisation functions in coordination with Jakarta provincial and Indonesia central government for a sustainable and zero emission transport
- Following on Governor's vision of transit oriented urban development, Dishub focus is around developing pedestrian friendly city with well-integrated public transport systems including the first and last mile connectivity. In order to disincentivise private vehicle usage, introduction of electronic road pricing is considered for private vehicle restricted zones/road network in certain parts of the city
- Dishub has earmarked implementation of 100 E-Bus (prospectively 70 standard size and 30 medium size) pilot project implementation by end of year 2021 with the overall objective of converting the whole road based public transport fleet to zero emission vehicles
- As E-Bus trial is funding is PSO supported, Dishub will be involved in the M&E of project implementation through the PIU.

2. Good Governance practices in Dishub Operations and functionality

- In accordance with Governor's vision of City-4, Dishub is now converting its various activities and functions to digital platform for their intelligent and better transparency, supervision and control. For example, the penalty charging of illegal/unregulated parking by its ground staff is completely digitised for transparency, fairness and supervision of staff.
- The public dealings related in the matters of Licensing and Goods & Service procurement are no more handled by Dishub. This is helpful in concentrating on its core activities and functions of planning and co-ordination among the transport entities.
- For 100 E-Bus, Dishub is to follow existing guidelines of transport and vehicle namely law 22/2009 (regarding transport) and regulation 55/2014 (regarding the vehicles). The E-Bus manufacturers will first have to get their vehicle type tested and certified from MoT before putting up for registration with Dishub.
- Procurement of bus services and buses is carried out through support from BPPBJ, to whom Dishub communicates the requirements alongside technical as well as O&M rules/regulations, formulated in consultation with TJ.
- Consequently, the service rate of Rupiah per km is put up on E-catalogue by BPPBJ/LKPP for prospective bidders to apply/bid for tendered bus operations.
- The E-catalogue based procurement are limited tender in nature, whereby existing operators are shortlisted parties eligible to bid for the tender.
- New operators will have to apply in Open tenders for eligibility to participate in bids. Many times, existing operators do not participate in open tenders, as they

would need to release their existing quota/permit for participating in open tenders. This makes entry of new operators easier, provided all required tender conditions are satisfied.

3. 100 E-Bus Trial GG risks towards Planning, Procurement/Tendering and Implementation

- The planning stage covers formulation of regulations for E-Bus operations (in coordination with MoT) alongside those of tender guidelines and conditions (in discussion with BPPBJ and TJ).
- TJ is expected to follow already functional regulations and practices for 100 E-Bus implementation projects as it follows for diesel bus operations as part of GG.
- Since the E-Bus project is PSO funded, Dishub will closely oversee and carry out its monitoring & evaluation towards project implementation.
- Existing operators will be given preference in the E-Bus service bids. Accordingly, procurement of E-Bus based operations is planned under BTS model (Rupiah per km) via E-catalogue based limited tender.
- E-Bus contracts are expected to run for a 10-year period. However, there is an issue of battery replacement at the end of 7-8 years. The BTS rate is presently considering 10-year battery warranty over a 10-year contract duration. Accordingly, Dishub is looking for a 10-year battery warranty from the OEM/Operators to coincide with the contract duration.

Annex 4.3 Findings of Discussion with TJ – 27th January 2021

1. About TJ activities and Performance

- TJ procures operator services (Buy the Service, BTS model) not the bus directly, based on pre-determined operational and services performance requirements imposed by Dishub.
- TJ signs contract with selected operators and manages the operations on day-to-day basis. TJ also carries out negotiations with selected operators before signing of contract.
- TJ is given the mandate for conversion of all its fleet to zero emission buses by 2030.
- TJ assists Dishub in preparation and finalisation of supporting documents such as technical specifications, owner's estimates of the service operation. These cover Investment cost for capex and operational expenses for O&M over the life cycle of project. BPPBJ then evaluates and carries out necessary processes for publishing the prices on the E-catalogue.

2. Good Governance practices in TJ Operations

- TJ monitors and manages bus operators as per the contractual conditions. The operators' selection is managed by BPPBJ based on technical specifications and operational conditions determined by Dishub. Dishub proposes Rupiah/km rate to BPPBJ that handles the procurement through E-catalogue.
- The fare from operations is collected by TJ (all ticketing through Automated Ticketing Machines and Jak Lingko cards) and is used to pay the operators on basis of agreed Rupiah/km rate.

3. 100 E-Bus project GG risks towards Planning, Procurement/Tendering and Implementation

- 100 E-Bus procurement will be BTS model based and will be carried through E-catalogue, as per Governor' regulation 98/2019. No internal procurement of 100 E-Bus by TJ is permitted by Dishub.
- Implementation timelines are changing for 100 E-Bus project, attributed to new procurement guidelines and processes to be followed from this year (as per 98/2019). From this year TKPP, the national procurement agency (BPPBJ as its subsidiary for Jakarta province) will carry out evaluation of documents and put the price in E-catalogue for all bus procurement, including the 100 E-Buses.
- Finalisation of E-Bus regulations is perceived as a primary step/condition in 100 E-Bus project implementation. Once the regulations around technical specification, operational conditions and performance levels are available, computation and determination of rupiah/km will be easy.
- The financial capacity of existing private sector operators is another concern due to high capex requirement of E-Bus. Accordingly, dependence on couple

of large operators may not be workable for carrying out future expansion of E-Bus operations. Addition of new Operators/companies will be needed.

- TJ will have no funding issue for the OpEx as E-Bus project is PSO funded and budget allocation is complete and is not expected to change.
- There are no operational capacity gaps for 100 E-Bus operations. However, it is realised that E-Bus may have its own specific risk that may surface during their actual operations. Due to such unforeseeable issues with no existing knowledge of E-Bus with TJ, necessary operational adjustments may be warranted.
- The study of on-ground E-Bus operations over the two-year period will help in understanding and fine tuning the rates and contract conditions better.
- In line with the plan of converting all its operations to electric buses by 2030, TJ also plans to develop charging infrastructure across the city and main terminal points. For 100 E-Bus project however, charging stations will be developed by the selected 100 E-Bus operator(s).

Annex 4.4 Major Findings from Discussions with Public and Private Bus Operators

The city bus operations in Jakarta are undertaken by private agencies managed by TransJakarta. The main challenge for setting up contract structure with bus operator during the pilot of 100 E-Bus is to create acceptable environment. Operator survey was conducted to clarify operators' aspirations for the roll out of 100 E-Bus. The consultations were conducted by CFF, supported by TransJakarta, with five prospective E-Bus operators namely 1.Mayasari, 2.DAMRI, 3.PPD, 4.Sinar Jaya, and 5.Kopaja.

The summary of survey that aim to clarify acceptable environment for E-Bus is presented in following table.

Table 10: Market Survey of Operators: Support sought for 100 E-Bus Trial

Parameters	Mayasari	Damri	PPD	Sinar jaya	Kopaja
Contract	<ol style="list-style-type: none"> 1. Residue 0% 2. Calculate Charging infrastructure on Capex 3. TJ direct contract with APM for maintenance 4. Contingency Plan for Blackout 	Profitable unit price from APM	<ol style="list-style-type: none"> 1. ← Same as Mayasari no-1 and 3 2. Price adjustment for imported spare parts 	Scope of maintenance cost is clearly and fairly	<ol style="list-style-type: none"> 1. Long term contract, such as 10-14 years contract 2. Contingency Plan for Pandemic
Warranty	<ol style="list-style-type: none"> 1. Buy Back Unit 2. Battery Energy Losses 	Maintenance by APM, including spare parts, skill and technical knowledge sharing	← Same as Damri	Product Warranty by APM, including spare parts, skill and technical knowledge sharing	Product Warranty by APM, including spare parts and Battery
Charging & Battery	<ol style="list-style-type: none"> 1. Opportunity Charger on route to reduce overnight charging time 2. Availability Universal Connector type of Charging 	-	APM provide Battery Management Information System	-	Provided and Operated by 3 rd parties (APM)

Parameters	Mayasari	Damri	PPD	Sinar jaya	Kopaja
	3. Availability of Grid which supported by Government				
Policy and Incentive	Government's guarantee to run EV as long-term transportation system	← Same as Mayasari, refer to CNG	Incentive tariff from PLN	← Same as Mayasari, refer to CNG	Subsidy for investment from Government
Other	Long millage route	Government support for License such as Kieur and SKRB	1. ← Same as Damri 2. Treatment for Battery scrap	-	← Same as Mayasari
Procurement	Bid follow BPBBJ	Propose Government to following PP38/2018	-	Select proven APM which have long experience on E-Bus	← Same as Mayasari
Charging	1. Use Cibubur and Jatiasih pool for EV 2. Estimated Cost is 100 MRp /unit (@100 units) from consultant	Overnight on Damri's pool, supported by BUMN (LEN) and PLN	Expand business as provider	-	1. Overnight Charing at Depo Cijantung 2. ← Same as PPD

Parameters	Mayasari	Damri	PPD	Sinar jaya	Kopaja
Financial	80% from national bank's loan. Soft-loan which can achieve with TJ's contract average rate on 6,26%	National bank loan, ADB	1. National bank loan 2. Financial service provided by E-Bus Operator	National bank loan	National bank loan, such as Mandiri and BNI
Operation	Develop a system	1. Operate and take a maintenance on 1 st priority 2. Cooperation with APM (KSO)	Planning will refer to data from TJ's trial	1. Uji Coba by themselves to take data for Operation Planning 2. Maintenance by themselves supported by APM	-

Annex 4.5 Schemes of Local E-Catalogue Development

NOTES:

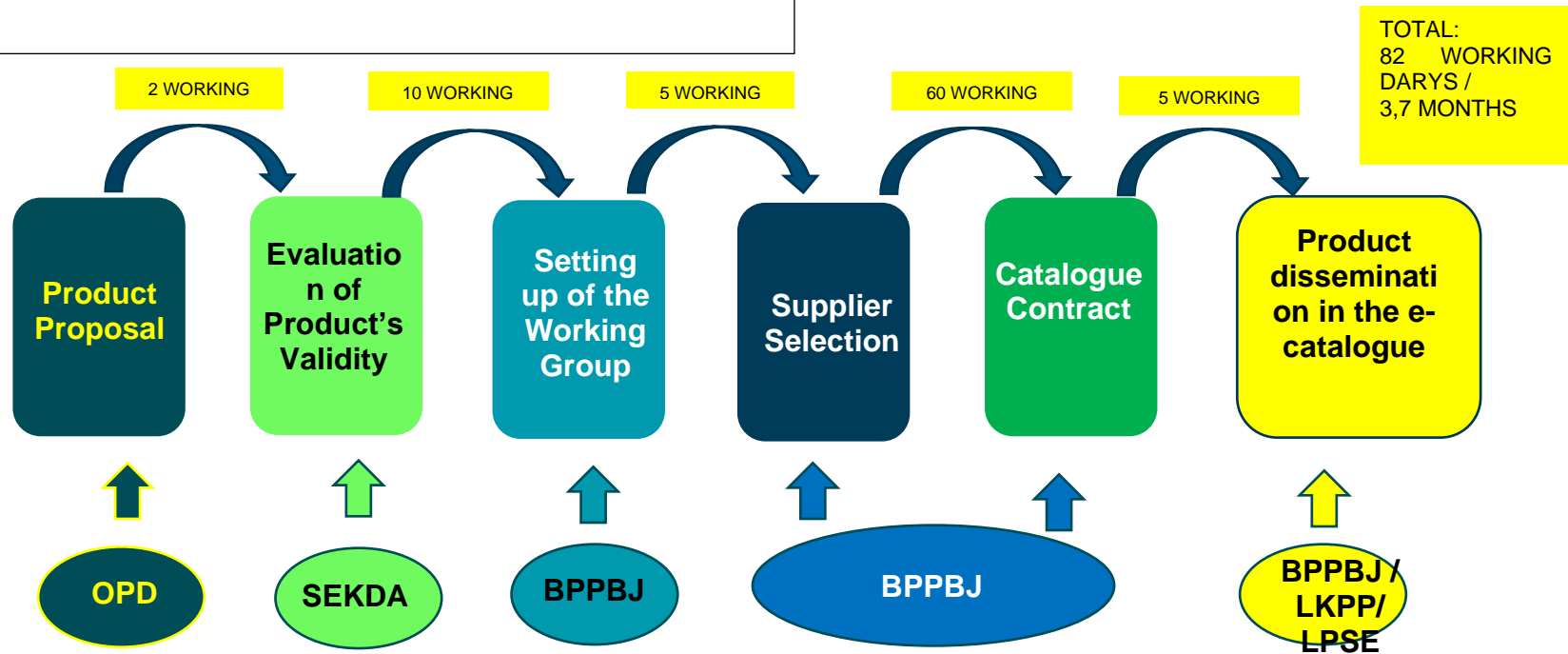
OPD : Local Bureaucracy/Local Government Agency

SEKDA: Regional/Provincial Secretary

BPPBJ : Local Procurement Agency for Goods and Service

LKPP : National Public Procurement Agency

LPSE : Electronic Procurement Services Agency



Annex 5 Generic Process Description for 100 E-Bus Trial Implementation

Various project phases and processes therein are listed below with details on objectives, expected outcomes/outputs and responsible agency/entities. Possible governance failures are identified alongside.

Project Phase/ Process	Objectives	Outcomes/ Outputs	Responsible Agency/ Entities	Supporting document/ Notifications/ Policy Guidance	Reflection of Good Governance	What does Governance Failure entail	Status for Jakarta 100 E-Bus trial project (by February 2021)
Phase 1 - Appraisal Phase							Completed
Process Phase 1.1 -	To evaluate project for its suitability to wider national/ provincial/ local policy framework and goals	1. Project adoption/ approval for implementation and Funding 2. Project fund allocation mechanism over lifecycle identified	National/ Provincial/ Local Governments (MoT and Dishub for Jakarta E-Bus trials project)	Relevant orders/ notifications from GoI and Provincial Governor's office; Approved Plans/ Programs with project inclusion	Project approvals driven by strong desire for change to meet global/ national/ local goals. Such decisions are backed by highest office of the land/ conform to national guidelines/ support national targets	Unsure commitments by highest office of land/ province or city reflected in absence of regulations and notifications alongside policy and fiscal framework	Informed during meeting with Dishub and TJ indicated No documentary support/regulation available separately
Phase 2 – Planning Phase (with expected duration 24 months)							Underway
Phase 2.1 - Operational Planning (with expected duration 12 months)	Examine project feasibility for operational, financial and execution readiness. Identify gaps, actions and timelines for project implementation	Man, machine and material requirement alongside capacity development, institutional, legal and regulatory frameworks	Provincial and Local government agency/ Operator (Dishub with support from TJ)	Technical and Financial Feasibility reports, Business Case, Technical project features, Funding and Procurement planning	Maximise project benefits and improve project implementation in a timely and systematic manner with transparency, integrity and fairness		Mostly completed
Phase 2.2 – Procurement Planning/ Strategy (with expected duration 3-4 months)	Review of identified project procurement needs (as per feasibility study/ business plan) for man, machine and materials; Develop a procurement strategy and plan for cost	Market survey led procurement plan and strategy guided by resources availability (internal and external) and supply chain	Public sector/ Private sector agency with ownership and accountability for the project (TKPP/BPPBJ with support	Market survey report, Procurement strategy paper/ Plan that includes skilled manpower, machines and materials	A transparent, fair, comprehensive procurement strategy identifying market limitations and potentials for requisite supply chain management	Lack of public and private sector players/ entrepreneurs to support project procurement and implementation, Procurement Delays,	Underway (Initiated by BPPBJ under guidance of TKPP)

Project Phase/ Process	Objectives	Outcomes/ Outputs	Responsible Agency/ Entities	Supporting document/ Notifications/ Policy Guidance	Reflection of Good Governance	What does Governance Failure entail	Status for Jakarta 100 E-Bus trial project (by February 2021)
	effectiveness, meeting designated quality standards/ technical specifications as well as identified timelines	needs for project functions	from Dishub/ TJ)			Gaps in resource planning	
Phase 3 – Tendering Phase (with expected duration 8-12 months)							Yet to Start
Phase 3.1 – Floating of Tender (with expected duration 3 months)	Minimise corruption risks and maximise project implementation and facilitate smooth operations	Tender process, tender participation eligibility and draft contract conditions entailing comprehensive evaluation and selection process	BPPBJ under guidance of TKPP	Invites for Expression of interest Legally verified Tender Document	Wider outreach/ participation from industry players	Minimal or no participation in bidding process, High bid pricing through cartel of few eligible bidders Selection of low quality, low-cost bids	
Phase 3.2 – Tender Evaluation (with expected duration 3 months)							
Phase 3.3 – Tender award and Contract signing (with expected duration 3 months)		Selection of appropriate bidder	Dishub/ TJ with go ahead from BPPBJ/ TKPP	Signing of Contract with E-Bus operators/ Vendors	Minimal legal challenge/ protests for tender participation, process and outcome	Long and complicated legal process around lawsuits filed for tender results/ conditions;	
Phase 4 – Project Implementation and Contract Management (with expected duration 10 years)							Yet to Start
Phase 4.1 - Preparations for Resource Deployment (with expected duration 3 months)	Efficient and timely delivery through: related logistics support, testing & installations of equipment,	O&M ready infrastructure and Project Management Systems in place ready for	Project implementing agency with support from selected vendor/ operator	Fortnightly and Bi-Monthly Progress reports as per relevant standard format by E-Bus Operator	Controllable project installations and resource allocations meeting time and quantum-based needs functions, outputs and	Delays in starting actual project operations/ functions; Delays/gaps in provision of support	

Project Phase/ Process	Objectives	Outcomes/ Outputs	Responsible Agency/ Entities	Supporting document/ Notifications/ Policy Guidance	Reflection of Good Governance	What does Governance Failure entail	Status for Jakarta 100 E-Bus trial project (by February 2021)
duration 6-12 months)	HR recruitments for PMU/ PIU, Training program, Orientation and Public awareness programs, Investigations and User Surveys for 'Before the project' evaluations	day-to-day operations/ functions	(TJ with support from PIU and E-Bus Operator(s))	Monthly Action taken report by TJ	outcomes as close to expectations as possible or even beyond it.	infrastructure and services; Notified Corruption cases; Public dissatisfaction during implementation;	
Phase 4.2 - Contract management (with expected duration 10-12 Years)	Maximise project operational performance, minimise losses, minimise corruption and match expected outcomes as much as possible					Lower than expected revenue generation; Operator dissatisfaction due to Non-payments/ losses experienced/ unsettled dispute resolution/; Corruption in O&M; Public dissatisfaction from project operations,	

Annex 6 Potential Governance failures and Process based Risks for 100 E-Bus Trial Implementation

Risk levels scaled as:

1 – NIL; 2 - Very Low; 3 – Low; 4 - Low to Medium; 5 – Medium; 6 - Medium to High; 7 - High ; 8 - High to Very High; 9 - Very High; 10 - Certain

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
A	Delay in Project Execution	Legal, Regulatory and Policy support lacking	HIGH (highlighted during meeting with TJ)	Not clear if requisite clearances/ regulations are in place for 100 E-Bus Trial inductions – their absence has potential to stall or delay the 100 E-Bus Trial	Phase 2.1 – Operational Planning	MoT, Dishub	Drafting and approval of guidelines and regulations
		Delay in Financial Closure required for Project Approvals and Fund Allocation to E-Bus operator	NIL (Meeting with Dishub informed that 100 e-bus trial project is approved by MoT for adoption and implementation by end of 2021. PIU as well as TJ working group are in place. PSO funding for 100 e-bus trial project's OpEx part is confirmed while CapEx to be arranged through Private Operator, who will be contracted through BTS model)	No instructions/ Govt. Order available to confirm.	Phase 1 - Appraisal Phase	Dishub under supervision of MoT, GoI	--
			LOW to MEDIUM (Government would need to support through favourable regulatory and policy framework alongside finalisation of contractual terms and conditions)	Selected private operator is expected to have acceptable credit ratings for borrowings.	Phase 4.1 – Preparation for Resource deployment	TJ, E-Bus operator	Regulatory framework,

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
		Delayed Procurement of Man, Machine and Materials: a. Rolling Stock, Charging stations/EVSEs b. Requisite Power Supply c. E-bus Operator Services d. Depot and terminal infrastructure e. Skilled Manpower	LOW to MEDIUM (Most of procurement to be undertaken through Private operator, whose financial capability if not adequate, will impact procurement. Govt. to sponsor only OpEx part of the project funding while CapEx to be arranged by private operator)	TJ own staff experienced in operational planning on existing routes, where 100 E-Bus Trial project will be implemented, useful for inputs into routes operating requirements for suitable procurement. However, with issues highlighted on requisite financial capacity of existing diesel bus operators, timely Capex funding may become a challenge and needs consideration during procurement planning process	Phase 2.2 - Procurement Planning	TKPP/ BPPBJ with technical support from Dishub & TJ; PLN and its Jakarta subsidiary; E-bus Manufacturers; E-bus battery & charging stations/ EVSEs Vendors	Conditions for tender participation to encourage consortium formations for financial, technical and experience related capabilities enhancement of competing parties Federal/ Provincial Govt. to create opportunities for low-cost loans approvals
			MEDIUM to HIGH (E-bus tendering and procurement being a new area, may pose challenges to established tendering procedures and database). Alongside staff shortage, this new type of procurement can be challenging and affect timelines as well as selection mechanism	BPPBJ/ TKPP undertake all types of procurement (construction works, goods, services, consultancy and others) and has well established systems showcasing integrity, professionalism, transparency and complaints registration platforms.	Phase 3 - Tendering Phase	TKPP/ BPPBJ	???
			MEDIUM Most of procurement will be managed by private operator. Technical and Financial capability of selected operator will influence project implementation. Secondly, due to inter-disciplinary nature of E-Bus	Assumes that suitable private and public sector operators are selected through tendering process	Phase 4.1 - Preparations for Resource Deployment	Dishub, TJ, Private Operator	Include suitable Tender conditions Make PIU/ TJ E-bus working group responsible for project implementation Contractual penalties for delays, while necessary support extended to private player by the PIU/ Working group

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
			operations, efficiency and capability of public sector players will influence implementation				
			LOW to MEDIUM (Financial institutions are not yet normally funding e-bus CapEx (in comparison to Diesel bus) due to lack of actual operational experience over its full life time)	E-Bus CapEx funding arrangements for Private Operator could be challenging	Phase 4.1 – Preparations for Resource Deployment	Pvt Operators, TJ with Dishub supervision	Support Pvt. operator/ concessionaire in Financial Closure to secure CapEx funds. Also, secure funds for E-bus project instead of securing loan for a vehicle. Project funding chances expected to increase with wider array of funding institutions becoming approachable.
B	Lower than expected project outputs due to shortfall in technical performance	Low level of maintenance quality and mis-management of assets causing faster product deterioration	VERY LOW Most of assets procured, operated and maintained by private E-Bus operator/ vendors. With payments to operator linked to kms operated, asset functionality and performance is expected to not be taken for granted	Trial e-bus project outcome primarily includes Daily km run and OpEx (with fixed part comprising manpower, interests, fee, taxes + varying part comprising power consumption, spare parts, tyres & tubes and such cost)	Phase 4.2 - Contract Management	Private Operator	Maintain database of charging practices and performance Maintain database of E-bus maintenance needs/ schedules
		Product performance lower than expected levels	VERY LOW (With BTS model, operator is responsible for most of the assets and their O&M. With payment mode based on Kms performed, operator will keep assets in necessary working conditions for continued payments to recover not only OpEx but CapEx as well.		Phase 3 - Tendering Phase (Tender Conditions and Contracting Conditions covering technical and financial aspects)	BPPBJ/ TKPP with support from TJ	Careful drafting of tender conditions, product specifications and Selection criteria

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
		E-bus operational difficulties with road congestion, erratic power supply and its qualitative issues	<p>LOW to MEDIUM</p> <p>(larger part of 100 E-Bus operations planned along BRT routes, which reduces risk of road congestion affecting daily km runs). Power supply is sufficient, and 100 e-bus power demand does not affect demand & supply equilibrium. Quality of Power supply may be an issue to deal with during charging station</p>	E-Bus operations along BRT routes depend on Opportunity charging and those along non-BRT route can experience road congestion. In both cases daily km runs can get impacted in the absence of sufficient charging station infrastructure and battery charging management	Phase 4.2 - Contract Management	TJ, PIU, Private E-bus Operator	Develop requisite plans/ schedules with support from private operator while dealing with road congestion issues
C	Negative Financial Implications through substantial Cost Over runs and Revenue Shortfalls	CapEx Over runs	<p>VERY LOW</p> <p>Operator is expected to have considered technical expectations and financial implications at the bid submission stage.</p>	E-Bus costs are generally coming down	Phase 4.1 - Preparations for Resource Deployment	Private and Public Operators	
		Higher cost of Borrowings	<p>LOW</p> <p>(Such possibilities taken care of at bidding stage by bidding operators/ consortiums)</p>		Phase 4.1 - Preparations for Resource Deployment	Private and Public E-Bus Operators, TJ	Support in Financial closure to seal such risks
		OpEx over runs	<p>VERY LOW</p> <p>(private sector is generally identified with cost efficiency in operations, to primarily increase profit margins. However, incidences of OpEx over runs are not overruled, especially on account of cost hike due to inflation, higher power consumption and such consumables)</p>	Claims of OpEx over runs can be genuine or driven by profit maximisation goals	Phase 4.2 - Contract Management	Private E-Bus Operator	Contract conditions for Km based payments, annual increments, KPI, Incentives and Penalties clause need careful drafting to steer away as much ambiguity as possible)

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
			LOW to MEDIUM (difficulty in performing assigned daily kms by 100 E-Buses, making it unviable for operator to continue operations)	Traffic congestion, lack of charging infrastructure and inefficient charging strategy can potentially contribute to shortfalls in actual daily km operations by 100 E-Buses	Phase 4 – Preparations for Resource Deployment and Contract Management		Traffic management of road sections/ corridors of 100 e-bus operations to minimise congestion related delays during bus service operations. Allocation of land for opportunity charging infrastructure. Attain proper integration of vehicle schedule and charging schedule
		Lower than expected Ridership	LOW to MEDIUM Ridership may not increase/ remain stagnant/ decline with modal shifts away from e-Bus, thereby increasing dependence on Govt. subsidies, making it unviable over long run.	Integrated and good public transit supported by pedestrian friendly infrastructure to encourage bus usage or at least restrict shift away to other competing modes. PSO funding already approved for financing gaps from ridership/fare box revenue shortfalls.	Phase 4.1 - Preparations for Resource Deployment	Dishub,	Policy and fiscal framework implementation needed through strong institutional framework A cap on this funding gaps needed to minimise corruption as well as mismanagement
			LOW (E-Bus not completing designated daily revenue kms impacting ridership and revenue collection)		Phase 4.2 - Contract Management	TJ	Continuous data gathering on reasons for shortfall in daily kms, if any and corresponding implications. Compare cost and revenue streams of diesel and e-bus on a regular basis
		Revenue Leakage	LOW (revenue collection through ticket vending machines reduces chances of pilferage)		Phase 4.2 - Contract Management	TJ	Necessary supervision on ticketless travel and potential involvement of crew/supervision staff
D	Project is shelved/ postponed	Lack of Market Participation for Financial and Technical Capability shortfalls	LOW to MEDIUM (Existing public and private Operators of diesel buses will be eligible/ preferred bidders for 100 E-bus project. It is	With substantially high initial Capex, existing diesel bus private operators may not be competent to procure and implement 100 E-Bus Trial at reasonable cost and efficacy	Phase 2.2 - Procurement Planning & Strategy	TKPP/ BPBBJ with support from Dishub	Updated market survey by BPPBJ, with consideration of established procurement conditions and systems, to understand market sentiments for participation in 100 e-bus project, to enhance chances

	Nature of project governance failure	Causes/ Reasons attributable to Governance Failure	Assessment based on Ongoing Activities/ Decisions/ Plans				Proposed Mitigation Measure(s)
			Identified Level for Risk of Governance failure	Remarks	Responsible Project Phase/ Process	Responsible Actor(s)/ Institution(s)	
			planned to procure the contractual service under BTS model. Financial and technical capability of such preferred bidders needs a review)	– implying no or low participation. This may even mean high-cost bids or low confidence on operational capability.			of service procurement through competent market players.
			MEDIUM (No response/ poor response received)	Private players do not participate even after a couple of repetitions due to high CapEx requirements, difficulty in arranging funds as well as low confidence on contract handling Eligibility conditions for tender participation to encourage consortium formations for financial, technical and experience related capabilities enhancement of competing parties Federal/ Provincial Govt. to create opportunities for low-cost loans approvals	Phase 3.1 – Floating of Tender	BPPBJ/ TKPP	Flexibility of forming consortiums to satisfy required technical, operational and performance needs; Introduce a two-stage tender process with Expression of Interest phase for shortlisting of capable bidding consortiums and stage 2 for tender submission of shortlisted parties. Simultaneously, inclusion of competitive per km rate, Clarity in responsibilities of stakeholders, and Assurance of timely payments in tender document to mitigate risks for public and private operators' to a reasonable extent
		Alternative technology makes E-Bus less attractive	VERY LOW (this is a pilot project to test applicability of new technology buses and gain knowledge for future expansions. Over project implementation phase of roughly 10 years, technological advancements will keep happening across various energy sources and may possibly make E-Bus technology cheaper than others)	Sole Dependence on Electricity generated through fossil fuel combustion process may become a reason for low competitiveness of E-Buses, in comparison to other advancements of vehicle technologies.	Phase 4.1 - Preparations for Resource Deployment	Power and Transport Ministries of Gol	A policy and strategic shift to renewable power will enhance e-bus attraction for future expansion

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