Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 24-Jul-2025 | Report No: PIDIA01224

BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Brazil, Brazil, Brazil	LATIN AMERICA AND CARIBBEAN	P504543	Brazil Electromobility Multiphase Programmatic Approach – MPA Phase 1 Caixa
Financing Instrument	**Estimated Appraisal Date**	**Estimated Approval Date**	**Practice Area (Lead)**
Investment Project Financing (IPF)	04-Aug-2025	08-Oct-2025	Transport
Borrower(s)	**Implementing Agency**		
Caixa Economica Federal	Caixa Econômica Federal		

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve quality and reduce emissions of public transport in Brazilian cities.

Components

Component 1: Investment in electromobility and associated infrastructure projects
Component 2: Project Development Facility and institutional strengthening

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	Yes
Is this project Private Capital Enabling (PCE)?	Yes

SUMMARY

Total Operation Cost	**500.00**
Total Financing	**500.00**
of which IBRD/IDA	**500.00**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	500.00

Environmental And Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

A. Introduction and Context

Project Strategic Context

1. **Brazil's public transport, a vital driver of sustainable mobility and social inclusion, is facing a structural financial crisis worsened by the pandemic.** With 107,000 vehicles operating in 2,703 municipalities, it serves about 53 million passengers daily—80 percent low-income.[1] Passenger demand, already declining over the past decade, fell sharply during COVID-19[2] and by 2024 had only partially recovered, with most cities operating at 70–80 percent of pre-pandemic levels. Heavy reliance on user-paid fares, combined with fare freezes and rising costs—especially diesel and labor—has undermined financial sustainability. About 365 cities introduced subsidies[3] to maintain minimum service, yet these remain insufficient for fleet renewal or long-term investment.[4] This, coupled with a lack of financing instruments, has led to an aging fleet, declining service quality, and a shift to private transport,[5] driving congestion, accidents, emissions, and air pollution.[6]

2. **The transition to electric buses (e-buses) represents a strategic opportunity to address the sector's structural crisis by enabling fleet modernization, service improvement, and stronger financial sustainability.** Despite the initial costs are three to four times higher than diesel models, e-buses already offer advantages in terms of total cost of ownership (TCO) in several Brazilian cities, due to their longer service life and at least a 30 percent reduction in energy and maintenance costs.[7] They also eliminate local emissions and significantly reduce noise, improving public health and urban quality. Redirecting part of current operating subsidies to support upfront electrification costs is both fiscally efficient and an opportunity to renew fleets with modern, efficient vehicles that enhance user experience and attract

1 NTU. *NTU Yearbook: 2023-2024.* Available at: <https://static.poder360.com.br/2024/08/anuario-ntu-2024.pdf>
2 NTU. *Public Transportation by Bus: Impacts of the COVID-19 Pandemic.* Available at: <https://www.ntu.org.br/novo/upload/Publicacao/Pub638168022171830458.pdf
3 NTU, 2024. Subsidies for urban public transport by bus. Available at: <https://ntu.org.br/novo/upload/Publicacao/Pub638603637807379901.pdf>
4 Public Transportation by Bus: Impacts of the COVID-19 Pandemic. Available at: <https://www.ntu.org.br/novo/upload/Publicacao/Pub638168022171830458.pdf
5 Pereira, Rafael H. M. et al. (2021) Tendências e desigualdades da mobilidade urbana no Brasil I: o uso do transporte coletivo e individual. Texto para Discussão 2673. Ipea - Instituto de Pesquisa Econômica Aplicada. Available at: <http://repositorio.ipea.gov.br/handle/11058/10713>
6 Observatory of the Metropoles. State of individual motorization in Brazil 2019 - 2019 Report. Available at: <https://www.observatoriodasmetropoles.net.br/wp-content/uploads/2019/09/mapa_moto2019v2.pdf>.
7 See Annex 4 – Economic Analysis

riders. Combined with new business and financing models electrification can progressively reduce dependence on operating subsidies, serve as a lever for improving concession contracts, and induce institutional reforms in the sector.

3. **Despite this potential, the transition to e-buses faces significant barriers in the current bus fleet financing environment in Brazil, marked by high perception of risk, high interest rates and short terms.** Viable financing options for operators are scarce, with most credit restricted to niche lenders or manufacturer-affiliated banks offering unattractive terms,[8] such as high interest rates reaching 22 percent and short repayment periods of up to 60 months.[9] The recent rise in base interest rates in Brazil has made credit even more expensive and less accessible.[10] These challenges are amplified for e-buses, which are significantly more expensive, require a higher initial investment than diesel models, and require longer payback periods. However, the lack of long-term credit instruments and structured guarantees severely limits their bankability. Furthermore, commercial banks in Brazil are generally not positioned to provide long-term financing, especially for contracts dependent on decisions by subnational governments, which introduce regulatory and payment risks.

4. **In the face of persistent market and structural barriers, the public sector is strategically positioned to drive the transition to e-buses by mitigating key risks and leading structural reforms to modernize the sector.** First, given the low-return nature of public transport and reliance on subnational revenue policies, the public sector will be able to access capital on more favorable terms, such as longer tenors and lower interest rates, often supported by sovereign guarantees.[11] Second, reallocating public resources from short-term operational subsidies to long-term capital investment, particularly in fleet electrification, will offer a strategic opportunity to modernize public transport systems without burdening the system. This shift could improve service quality, attract demand, and reduce operational costs, easing public budget pressures and accelerating decarbonization, all of which would contribute to the sector's financial and environmental sustainability. Third, the public sector is well positioned to lead broader structural reforms by improving concession contract design, strengthening governance and compliance mechanisms, and enhancing institutional capacity to manage commercial and technological risks. By assuming a catalytic role, the public sector can reduce perceived risks, lower financing costs and create conditions to attract private capital for large-scale fleet renewal.

5. **In this context, the proposed Project comprises Phase 1 of the Multiphase Programmatic Approach (MPA) of the Brazil Electromobility Program that seeks to enhance public transport quality and lower emissions by driving the transition to e-buses through targeted investments and structural reforms.** The initiative combines concessional financing for subnational entities with technical support for revising concession models and developing risk mitigation instruments. Its objectives are to enhance bankability, achieve scale, reduce technological and market barriers, strengthen institutional capacity, and pave the way for private capital mobilization in later phases. Phase 1 will also establish a Project Development Facility to provide technical, legal, financial, and environmental support to public and private entities throughout preparation and implementation, building a robust pipeline of projects. Additionally, the project will support the creation of a digital marketplace for aggregated e-bus procurement, driving economies of scale, reducing costs and acquisition time, and facilitating access for medium-sized municipalities in the transition to electromobility.

6. **This Project will be implemented by Caixa Econômica Federal (CEF), as a financial intermediary, leveraging its experience and capillarity to facilitate the transition on a national scale.** CEF is a key partner of the Federal Government,

8 CNT 2023 Survey: Urban Road Passenger Transport – Brasília: CNT, 2023. Available at:https://cnt.org.br/documento/59b56d6e-b661-4158-a337-0a932c2af996>
9 See Annex 2 – Market Consultation
10 The Selic rate rose from a historic low of 6.5% in April 2019 to 14.25% in March 2025, driven by inflationary pressures and fiscal uncertainty. Available at: <https://www.bcb.gov.br/controleinflacao/historicotaxasjuros>
11 See Annex 6 – FIF Assessment

with a mandate to support public and private sector projects and to manage major federal programs. It operates as the agent for the *Fundo de Garantia do Tempo de Serviço* (FGTS), which provides resources for national initiatives, and has led programs such as *Refrota 2017* for diesel fleet renewal and Pro-Transporte (2023) for urban mobility investments. Present in 99 percent of Brazilian municipalities and experienced in fleet financing and municipal credit risk assessment, CEF has the technical capacity and institutional reach to support local governments and private operators nationwide. Under the Project, CEF will also receive targeted institutional strengthening to standardize processes, train teams, and align operations with international best practices in environmental and social safeguards, gender inclusion, public procurement, and carbon market engagement.

Sectoral and Institutional Context

Transport Context

7. **Public transport, especially buses, is the primary mode of transportation in Brazilian cities, playing a fundamental role in social inclusion, access to employment, and the promotion of sustainable mobility**. Present in 2,703 municipalities—half of the country's total—bus-based public transport serves 95 percent of large cities and 85 percent of medium-sized cities,[12] accounting for 41 percent of motorized urban trips and 85 percent of all public transport trips. [13] Roughly 80 percent of users are low income, [14] and the majority are women—62 percent in Salvador and 55 percent in São Paulo. The system also plays an important redistributive role in contexts of urban inequality: in Salvador, for example, 92 percent of passengers identify as Black or mixed race, underscoring the redistributive function of public transport in Brazil.

8. **Despite its social and territorial relevance, public transportation has faced a severe financial crisis over the past decade, exacerbated by the effects of the COVID-19 pandemic.** Between 2020 and 2021, several cities registered drops of more than 80 percent in ridership,[15] and by 2024, most still operated with demand 20 percent below pre-pandemic levels.[16] The loss of fare revenue resulted in cumulative losses estimated at US$7.25 billion between 2020 and 2023.[17] At the same time, the freezing of fares limited the ability to recover revenue in the face of inflation and rising operating costs. With reduced profitability and the increase in the basic interest rate (from 6.5 percent per year in April 2019 to 14.25 percent in April 2025),[18] financing fleet renewal has become even less viable. As a result, the average age of buses has increased by 28 percent since the start of the pandemic, the highest level in 30 years, increasing operating costs and compromising service quality.

9. **The decline in public transport quality has accelerated the shift to private motorized modes, such as cars and motorcycles, increasing negative externalities in Brazilian cities.** Between 2001 and 2020, the number of private vehicles grew by 331 percent, with motorization rates rising from 16 to 47 vehicles per 100 inhabitants.[19] This growth was especially pronounced in smaller cities, where car ownership tripled and motorcycle use grew sixfold.[20] As a result, cities have experienced significant productivity losses, increased pollution and adverse public health effects, costing up to 8

[12] National Confederation of Municipalities (CNM). Overview of Public Collective Transport in Municipalities. Technical Study, 2024. Available at: <https://cnm.org.br/storage/biblioteca/2024/Estudos_tecnicos/202403_ET_MOBI_Panorama_geral_de_Transporte_Publico_Coletivo_Municipios2.pdf>
[13] National Urban Mobility Survey. Urban Mobility Information System. Available at: https://simu.cidades.gov.br/pesquisa-nacional-de-mobilidade-urbana/
[14] National Confederation of Transport, 2024. Urban Population Mobility Survey. Available at; https://eventos.cnt.org.br/pesquisa-mobilidade-urbana/
[15] Moovit. (2021). Moovit Global Public Transit Report 2020. São Paulo.
[16] NTU. NTU's Yearbook: 2023-2024. Available at: https://static.poder360.com.br/2024/08/anuario-ntu-2024.pdf
[17] NTU - National Association of Urban Transport Companies. (2023). Public Bus Transport: Impacts of the COVID-19 Pandemic (February 2020 to April 2023).
[18] Banco Central do Brasil. Available at: https://www.bcb.gov.br/controleinflacao/taxaselic
[19] Observatory of the Metropoles. State of individual motorization in Brazil 2019 - 2019 Report. Available at: <https://www.observatoriodasmetropoles.net.br/wp-content/uploads/2019/09/mapa_moto2019v2.pdf>.
[20] In Belém, for example, the number of motorcycles per 100 inhabitants rose from 1 to 28.

percent of local GDP in São Paulo and other large cities.[21] Simultaneously, the sector's dependence on fossil fuels has made transport the third-largest source of GHG emissions in Brazil. In 2021, the sector emitted 204 million tons of CO_2 equivalent—8.5 percent of national emissions—with urban passenger transport responsible for 44 percent of the total.[22] Although Brazil adopted the Euro VI emissions standard in 2023, [23] the environmental gains achieved through bus fleet modernization are quickly offset by the accelerated growth in private vehicle use. Without investments to make public transport more attractive and prevent the shift to private vehicles, transport-related CO_2 emissions could more than double by 2050.[24]

Transport Finance Context

10. Brazil's current fleet financing model has structural weaknesses that constrain operators' ability to invest and modernize services. Over the past decades, the country has advanced in formalizing public bus services through a concession-based regulatory model, where public authorities set service parameters—such as vehicle standards, routes, and fare structures — while private operators are responsible for service provision and vehicle acquisition and maintenance.[25] This approach has helped mobilize private capital, particularly in large urban centers, where approximately 57 percent of services operate under formal concession contracts.[26]

11. **Despite these regulations, the sector's business structure remains weak, marked by low institutional capacity and limited governance among operators.** Most companies are small, family-owned businesses with unstructured financial practices and no audited statements, undermining credibility and access to credit. This high-risk profile discourages commercial banks[27] from offering long-term financing, especially in a high-interest environment like the 14.75 percent recorded in 2025.[28] Even with public policies aimed at fleet renewal, Brazil's bus financing market remains underdeveloped. Until 2020, programs such as FINAME (Machinery and Equipment Financing Program), operated by public banks like the National Bank for Economic and Social Development (BNDES), helped achieve the region's lowest average fleet age—six years. However, most operators were ineligible and relied instead on costly financing from manufacturers' financial arms, which charged interest rates of 18 to 22 percent with repayment terms of just 60 months. [29] These lenders often used resources from programs like FINAME while adding intermediation fees—costs ultimately borne by passengers or public subsidies.

12. **Direct financing initiatives also faced low uptake due to persistent structural barriers, even under favorable conditions.** The high perceived risk and limited financial credibility of bus operators discouraged commercial banks from providing long-term credit, reinforcing the central role of government-led programs in supporting fleet renewal.[30] In 2017, the Federal Government launched the *Refrota 17* program to expand access to long-term financing for diesel bus replacement. Managed by CEF with resources from the FGTS (Government Severance Indemnity Fund for Employees),

[21] Estado de São Paulo 2021. Summit Mobilidade.
[22] The Climate Observatory, "Analysis of Brazilian Greenhouse Gas Emissions and Their Implications for Goals of Climate of Brazil 1970–2019: Greenhouse Gas Emission and Removal Estimation System (SEEG 8)," The Climate Observatory, Brazil, 2020, https://seeg-br.s3.amazonaws.com/Documentos%20Analiticos/SEEG_8/SEEG8_DOC_ANALITICO_SINTESE_1990-2019.pdf
[23] Proconve P8. https://conama.mma.gov.br/?option=com_sisconama&task=arquivo.download&id=767
[24] IPCC (2014). Climate Change 2014: Mitigation of Climate Change – Working Group III Contribution to the Fifth Assessment Report. Chapter 8: Transport. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf
[25] Vasconcellos, E. A., & Mendonça, A. (2010). National Public Transport Policy in Brazil: Organization and Implementation of Bus Corridors. Instituto Movimento, São Paulo. Study financed by the Volvo Foundations, supported administratively and technically by ANTP. Published in Revista dos Transportes Públicos – ANTP.
[26] ITDP. Inputs for the National Urban Mobility Strategy. Available at: <https://itdpbrasil.org/insumos-para-a-estrategia-nacional-de-mobilidade-urbana/>
[27] See Annex 2 – Market consultation
[28] From 2004 to 2023, Finame disbursed around USD 82 billion for vehicles and transport equipment, of which 83 percent went to truck purchases, while bus financing accounted for just 11.3 percent (USD 9.28 billion) over 20 years. Available at: https://www.bndes.gov.br/wps/portal/site/home/financiamento/finame
[29] See Annex 2 – Market Consultation
[30] See Annex 6 – FIF Assesment

the program offered concessional terms well below market rates: an annual base interest rate of 6 percent, amortization periods of up to 20 years, and a 48-month grace period. The program aimed to replace 10,000 buses and provide direct financing to private operators. However, only 350 buses were financed, due to ongoing structural challenges such as limited operator financial capacity, weak guarantee structures, fragile concession contracts, and insufficient technical capacity to prepare robust financing proposals.

13. Since the pandemic, conditions have worsened, with the sector's deteriorating financial health and increased commercial risk—driven by reduced demand—discouraging investment. As a result, direct financing initiatives through CEF and BNDES have fallen short of expectations, and the sector continues to struggle to attract commercial lenders, which typically offer better terms than manufacturers' financial arms. As a result, direct financing initiatives through the CEF and BNDES have fallen short of expectations, and the sector has struggled to attract commercial lenders, which typically offer better terms than the financial arms of bus manufacturers.[31]

Public Sector Intervention

14. **To prevent the collapse of public transport systems during the COVID-19 pandemic, the federal government provided emergency subsidies for the first time.**[32] In 2020, US$493 million was transferred to 539 municipalities, 19 states, and the Federal District. With the termination of this support in 2023, local governments assumed responsibility for operational expenditures (OPEX) through subsidies.[33] However, reliance on operating subsidies in a system facing rising costs, declining revenues, and deteriorating service quality is inefficient and unsustainable in the long term. It strains public budgets and limits the investment capacity of municipalities and states. [34] While essential to keep fares affordable, these *ad hoc* subsidies depend on annual public budget negotiations, increasing uncertainty and failing to address structural issues of quality, efficiency, and governance.

15. **In 2023, to move beyond short-term relief, the federal government shifted its strategy toward capital investments to modernize public transport systems and enable a cost-effective transition to e-mobility.** As part of this effort, it relaunched the *Pró-Transporte* Program under the *Novo PAC (New Growth Acceleration Program)*,[35] focused on fleet renewal through CEF and BNDES now open to both public and private sector actors. That year, the program approved financing for 61 municipalities and 7 states to acquire 5,311 buses—2,296 electric and 3,015 Euro VI. [36] While an important step, the initiative falls short of national needs, covering only 5 percent of the fleet and failing to meet strong demand from cities. With 107,000 buses in operation and a recommended replacement cycle of 10 years, Brazil must renew at least 10,000 buses annually. Pandemic-related delays have widened this gap. As of March 2025, most projects selected under the program had not yet reached effective contracting, mainly due to a lack of feasibility studies, technical limitations, and the absence of financing for supporting infrastructure, such as power grid upgrades. As a result, the program's tangible impact remains limited, with only about 365 e-buses effectively contracted by 2025.

[31] Some local commercial banks provided loans to the sector and developed limited expertise in evaluating risks. National development banks and major commercial financiers both carry out detailed risk assessments and often exclude buses as collateral, given that they generally hold limited value for these institutions.
[32] NTU - National Association of Urban Transport Companies. (2022). The saga of 2.5 billion. Available at: <https://www.ntu.org.br/novo/ckfinder/userfiles/files/Capa59(1).pdf>.
[33] NTU, 2024. Subsidies for urban public transport by bus. Available at: https://ntu.org.br/novo/upload/Publicacao/Pub638603637807379901.pdf
[34] Rising fuel prices have increased diesel bus operational costs, while e-bus costs are expected to drop due to falling battery prices. Source: Walter, M; Bond K.; Butler-Sloss S; Speelman S.; Numata, Y; Atkinson W. (2023). The X-Change: Batteries - The Battery Domino Effect. RMI.https://rmi.org/wp-content/uploads/dlm_uploads/2023/12/xchange_batteries_the_battery_domino_effect.pdf].
[35] the Novo PAC is a federal program to mobilize over USD 283 billion by 2026 in strategic sectors such as urban mobility, housing, sanitation, energy, and green transition, supporting transport projects like fleet renewal and infrastructure upgrades through institutions such as CEF.
[36] Novo PAC (2023) results, available at: https://agenciagov.ebc.com.br/noticias/202407/novo-pac-selecoes-destinara-recursos-expressivos-para-obras-de-drenagem-urbana-e-mobilidade-no-pais

16. **To enable a large-scale transition to e-buses, public support must combine long-term financing, structural investments, and institutional reforms.** The public sector can mitigate key risks and lay the foundation for renewed private sector engagement by accessing long-term, low-cost credit from development banks, backed by federal sovereign guarantees.[37] Well-targeted public financing can reduce perceived risks, improve credit conditions, and unlock investment-ready projects. Concessional investment in charging infrastructure and power grid upgrades is essential, as current systems are unprepared for the operational demands of e-buses. With adequate technical support, the public sector can also use this transition as an opportunity to implement complementary reforms, such as modernizing concession contracts, adjusting remuneration formulas, and embedding climate targets and emissions-reduction clauses. These actions align incentives, provide long-term certainty for operators and financiers, improve project bankability, reduce technology risks, and build market confidence for a sustainable, large-scale transition—one that, in the medium term, can once again be driven by private capital.

17. The transition to e-buses offers a timely and strategic opportunity to transform Brazil's public transport system—enhancing service quality, improving financial sustainability, and accelerating decarbonization of transport sector. Key opportunities include:

(a) **Clean energy matrix**: Brazil is well positioned to support large-scale e-mobility deployment with its clean electricity mix. In 2023, renewable sources accounted for 89 percent of electricity generation, led by hydropower (58 percent), solar (13 percent), and wind (12 percent). Over the next decade, electricity demand is expected to rise by 30 percent, driven largely by transport electrification—a growth Brazil's renewable energy capacity is well equipped to accommodate.[38]

(b) **Lower Total Cost of Ownership (TCO):** While e-buses cost three to four times more upfront than diesel models, they offer longer lifespans, at least 30 percent lower operating costs, and are already more cost-effective over a 15-year lifecycle in most Brazilian cities.[39] As diesel prices rise, electricity remains stable, and battery costs fall by 7 percent annually, e-bus TCO is projected to drop 25–40 percent by 2030.[40]

(c) **Improved user experience**: E-buses enhance the user experience, as they are quieter, nonpolluting, and the transition offers the opportunity for introducing new technological features that improve service quality, such as air conditioning, Wi-Fi, USB chargers and accessible low-floor entrances. Advanced telemetry systems also improve reliability of the services. A study in Chile found that 83 percent of users would be willing to wait longer at bus stops for an e-bus, due lower noise and pollution, and smoother rides in Santiago's BRT. [41]

(d) **Job creation**: The transition to e-buses can drive job creation and economic growth, unlocking opportunities across the entire EV value chain. It can generate employment in labor-intensive activities such as manufacturing, operations and maintenance, as well as in high-skilled sectors such as engineering, research and technology. Furthermore, it is estimated that the adoption of a strong nationalization strategy for the electric bus chain in Brazil could generate up to 280,300 new direct jobs by 2030, in the manufacture and operation of vehicles.[42]

37 In 2024, state-owned banks provided 98.5 percent of all new municipal loans, led by CAIXA, Banco do Brasil, and BNDES. Most loans (93 percent) were secured with guarantees, primarily from the National Treasury and the Municipality Participation Fund (FPM).
38 Brazil. Ministry of Mines and Energy, Energy Research Office. National Energy Balance 2023: Base Year 2022. Rio de Janeiro: EPE, 2023.
39 See Annex 4 – Economic Analysis
40 International Council on Clean Transportation (ICCT). (2019). *Update on electric vehicle costs in the United States through 2030*. Washington, DC: ICCT. Available at: https://theicct.org/wp-content/uploads/2021/06/EV_cost_2020_2030_20190401.pdf
41 World Bank. (2020). *Lessons from Chile's Experience with E-mobility: The Integration of E-Buses in Santiago*. Washington, DC: The World Bank.
42 Barassa, E. (2024). *Diretrizes e propostas para um plano nacional da cadeia de ônibus elétricos no Brasil*. Santiago: Comissão Econômica para a América Latina e o Caribe (CEPAL). LC/TS.2024/116. Available at: https://hdl.handle.net/11362/80983.

(e) **Gender equity.** The transition to e-buses requires new skills for operation and maintenance, creating opportunities to reskill the workforce and increase women's participation in public transport. Women currently represent 13 percent of the workforce, earn 30 percent less than men, and 63 percent occupy low-paying roles like administrative staff and fare collectors. These disparities stem from structural barriers such as limited technical training, caregiving constraints, and unsafe working conditions. With electronic ticketing in 85 percent of major cities, fare collector roles are declining, making retraining essential. At the same time, electrification boosts demand for skilled drivers and technicians, enabling women to access better-paying roles in driving and electrical maintenance. E-buses also offer safer, cleaner, and more comfortable working conditions. Programs like those led by Social Transportation Service (SEST) and the National Transportation Apprenticeship Service (SENAT), which have trained over 6,600 participants with category D licenses in 46 cities, highlight the potential to create more qualified, inclusive jobs aligned with sector modernization.

(f) **Growing demand**: Brazil has 902 e-buses in operation—327 trolleybuses and 573 battery-electric—across 18 cities and three metropolitan regions.[43] Brazil now leads e-bus demand in LAC, and requires an estimated US$5.3 billion to procure 11,000 units by 2030.[44] São Paulo alone is deploying 2,200 e-buses in the next two years, while the federal government's Novo PAC program aims to finance 2,500 more—driving market scale.

(g) **Industrial potential:** As the world's third-largest producer of diesel bus chassis and bodies, Brazil is well-positioned to lead regional e-bus manufacturing. [45] Companies like Eletra, Marcopolo, Caio, BYD, and Mercedes-Benz already produce e-buses locally, while Volvo, Volkswagen, Scania, and Higher Bus plan to expand or localize production. The battery sector is also growing, with WEG investing US$20 million in a local plant in 2022. Although domestic demand is rising, it remains fragmented, making a strong, coordinated demand signal essential to attract the capital needed to scale production and supply chains. This demand will reinforce federal initiatives such as New Industry Brazil (NIB), which promotes competitiveness, sustainable technologies, and local value chains, and the Mover Program (Green Mobility and Innovation), which offers tax incentives like reduced excise tax for green vehicles and mandates measures such as battery recycling. Together, these policies lay the foundation for positioning Brazil as a regional leader in e-bus production and adoption.

(h) **Climate and public health.** E-mobility reduces GHG emissions and local air pollutants, improving urban air quality. Each e-bus can save up to US$5,000 in lifetime GHG emissions[46] and eliminates emissions of NOx, SO_x, CO, and $PM_{2.5}$. In São Paulo, buses contribute 47 percent of local air pollution, with PM2.5 levels up to four times above WHO limits. Meeting WHO standards could prevent more than 5,000 premature deaths, add 266,486 life years, and save US$15.1 billion annually.[47]

Key barriers to Large-scale E-bus Adoption

18. **In addition to the lack of long-term financing, the large-scale deployment of e-buses in Brazil faces other structural, regulatory, institutional and infrastructure-related challenges.** Key barriers include:

(a) **Nascent e-bus market.** The absence of a secondary market amplifies the perceived risk to investors. Diesel buses retain high resale value and liquidity, especially in smaller cities with more flexible fleet age requirements. For e-

[43] E-Bus Radar. (2024). *Electric Bus Observatory for Latin America*. Available at: https://www.ebusradar.org
[44] C40 Cities and ICCT. (2023). *Pipeline of Electric Bus Projects in Latin America*. October 2023. Available at: https://www.c40.org/wp-content/uploads/2023/10/Pipeline-of-Electric-Bus-Projects-in-Latin-America.pdf. Accessed April 2025.
[45] Helgi Library. (2020). *Who Produces the Most Buses?* Available at: . Brazil ranked as the third-largest bus producer globally, behind China and India.
[46] The Economics of Electric Vehicles for Passenger Transportation, The World Bank Group, 2023. Available at: https://openknowledge.worldbank.org/entities/publication/a2948821-50df-5304-94d0-0db5a6e338c5
[47] Abe, Karina, and Simone Miraglia, 2016. *Health Impact Assessment of Air Pollution in São Paulo, Brazil.*

buses, technological uncertainty, limited skilled labor, and concerns about battery degradation and residual value further reduce their attractiveness as financeable assets, discouraging adoption by operators.[48]

(b) **Inadequate regulatory and concession framework.** Scaling public programs to finance the fleet transition will require risk mitigation instruments and business models adapted to the economics of e-buses. Traditional Internal Rate of Return (IRR)-based concessions used for diesel fleets are not adequate for e-buses, as their higher upfront costs make investment compensation unsustainable—even with lower operating expenses. Unbundled models that separate fleet ownership from operations offer a promising alternative by improving risk-sharing for private investors, as demonstrated in Chile and Colombia.

(c) **Inadequate grid infrastructure.** Although Brazil's energy matrix is largely renewable and capable of meeting additional electricity demand, the distribution infrastructure is not equipped to handle the load from large-scale public transport electrification. In São Paulo, for instance, connecting 2,200 e-buses to the high-voltage grid will require an estimated US$430 million to upgrade depots. These costs are excluded from financing agreements and depend on utilities, which can take up to a year to complete connections—creating delays and uncertainty in project timelines.

(d) **Low institutional and technical capacity.** Municipalities and operators still face limitations in structuring e- mobility projects, which require feasibility studies, contractual reviews, new business models, and the definition of goals and indicators. It's also necessary to plan charging infrastructure, adapt parking garages, and build technical capacity. In the absence of technically structured projects, many entities are unable to access public financing, which compromises the viability and scale of the transition to electromobility.

(e) **Lack of experience with public procurement.** Limited public sector experience with e-bus procurement has led to failed bids, inflated costs and implementation issues. Oversight bodies have suspended tenders due to lack of economic justification,[49] lack of standardization, unclear maintenance and warranty terms, and limited familiarity with the technology.[50]

Brazil E-Mobility MPA – Phase 1 CAIXA

19. **The proposed Project integrates financing solutions, capacity building, and market instruments to create the technical and institutional conditions necessary for a large-scale transition to e-buses in Brazil.** Through dedicated credit lines with terms aligned to the useful life of the assets, the Project will support the procurement of e-buses and complementary investments in associated infrastructure. It will also finance upgrades to the electrical grid—currently excluded from federal support programs—focusing on substations, transformers, and connections to medium- and high-voltage networks. To address institutional and technical constraints, the Project will establish a permanent technical assistance facility to structure bankable projects, develop contractual and financial models, and build the capacity of subnational entities and operators. CEF's own institutional capacity will also be strengthened through training, standardized appraisal tools, and specialized advisory services. Finally, the Project will enable the monetization of carbon credits generated by fleet electrification through an aggregation and trading platform, diversifying revenue streams and enhancing the financial sustainability of operations.

[48] See Annex 2 – Market consultation
[49] The Court of Accounts of the State of Paraná (TCE-PR) determined that the Curitiba City Hall halt the subsidy for the purchase of e-buses. Available at: <https://www1.tce.pr.gov.br/noticias/subvencao-de-r$-317-milhoes-de-curitiba-para-onibus-eletricos-e-suspensa-novamente/11146/N>
[50] In Belém, the state audit court halted the purchase of 30 buses and 15 chargers due to overpricing and planning gaps. In Curitiba, a R$317 million tender for 70 buses was suspended for lack of technical and environmental studies. In São José dos Campos, a R$2.7 billion leasing contract for 400 e-buses was questioned due to low competition and concerns over the selected firm's capacity. These cases underscore the need to equip public agencies with tools to standardize procurement, aggregate demand, reduce costs, and streamline acquisition.

20. **The proposed MPA is fully aligned with Brazil's Nationally Determined Contribution (NDC, updated in 2023) and National Adaptation Plan (NAP, adopted in 2021).** In its latest NDC, submitted to the United Nations Framework Convention on Climate Change (UNFCCC), Brazil committed to (a) reducing its emissions by 50 percent from 2005 levels by 2030; (b) preparing new climate change plans, including a national mitigation strategy; and (c) updating the 2016 National Adaptation Plan (NAP) to include sectoral initiatives, including in transport. The NDC aims to reduce GHG emissions by electrifying transport and leveraging renewable energy resources. The MPA aligns with the NDC by expanding the operation of e-buses in Brazil's public transport system and introducing technology upgrades to encourage a shift to higher-occupancy transport modes, helping to reduce GHG emissions and improve air quality. The MPA is also aligned with the recommendations of Brazil's Country Climate and Development Report (CCDR), which highlights the importance of (a) improving public transport in cities to reduce GHG emissions and address local air pollution; and (b) transitioning to low or zero-emissions transport to achieve carbon neutrality by 2050.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The Project Development Objective (PDO) is to improve quality and reduce emissions of public transport in Brazilian cities.

Key Results

21. PDO indicators include:

a. **Improved access to sustainable transport.** Inferred beneficiaries of improved access to sustainable transport infrastructure and services, disaggregated by gender, youth, low-income and race (number).
b. **Mitigation of GHG emissions**. CO_2 emissions avoided from public transport (number in $tC0_2eq$).
c. **Mitigation of local pollutant emissions.** NO_x emissions avoided from public transport (tNO_x) and PM_{10} emissions avoided from public transport (tPM_{10}).
d. **Service quality.** Users satisfied with the quality of public transport, disaggregated by income and gender (percentage of "good" and "excellent").

D. Project Description

Component 1: Investment in electromobility and associated infrastructure projects (US$490 million)

22. **Subcomponent 1.1: Decarbonize public transport with e-buses and associated infrastructure (US$320 million).** This subcomponent establishes a credit line dedicated to financing urban electric mobility projects, focusing on replacing diesel fleets with e-buses and implementing the associated infrastructure necessary for their operation. Eligible items for financing include, inter alia: (a) purchase of e-buses; (b) climate-resilient civil works for bus depots and terminals, both construction and upgrades/adaptations, as necessary; (c) road paving works and signage related to e-mobility projects; (d) implementation of technological and efficiency innovations such as intelligent transport systems (ITS) and electronic ticketing systems; and (e) development of complementary urban infrastructure to support sustainable and resilient mobility, such as bike lanes, accessibility improvements and other elements, provided they are integrated into an e-mobility project.

23. **Potential clients include public and private sector entities located in cities or metropolitan regions with a population exceeding 100,000 inhabitants** that: (a) are already implementing or have demonstrated a commitment to the adoption of e-buses; (b) have valid concession, permission or authorization contracts; and (c) operate electronic ticketing systems or commit to implementing them within the scope of the project. Public sector beneficiaries may include state agencies responsible for metropolitan transport, municipal governments, public companies and intermunicipal

consortiums. Eligible private sector clients may include transport operators, private consortiums or special purpose vehicles (SPVs) with valid concession contracts, infrastructure providers, and e-bus asset companies.

24. **In addition, eligible public and private entities must have adopted, or be in the process of adopting, business models that accommodate necessary investments while improving transport governance.** A comprehensive legal analysis of four types of models was conducted to ensure legal certainty for CEF in its credit operations. For each model, the analysis identifies the relevant legal framework, outlines necessary adjustments to existing contracts, and recommends legal and regulatory reforms essential for the effective implementation of e-bus projects. With support from the IFC team, these revisions will focus on redesigning business models and adjusting concession terms to create the conditions needed for financially sustainable, investment-ready e-bus projects. The goal is to unlock a second wave of private capital mobilization. The models under consideration include:

1. **Public procurement:** e-buses are purchased by local governments and transferred or leased to the concessionaire through a contract amendment and financial rebalancing mechanism.
2. **Viability gap:** the concessionaire acquires the e-buses, supported by public subsidies provided by the granting authority to close the financing gap.
3. **Direct private procurement:** e-buses are purchased directly by the private operator.
4. **Third-party leasing:** a third-party investor, such as an asset management company, acquires the fleet and leases it to the operator under a separate contractual arrangement.

25. As a condition for financing, clients must show that concession contracts will be adjusted to align with the chosen business model and the revised CAPEX and OPEX structure for e-bus deployment. For instance, under Model 1 (public vehicle procurement), contracts must shift to compensate operators solely for OPEX, as CAPEX will be borne by the government. This may involve reallocating subsidies from OPEX to CAPEX and rebalancing contractual terms. Contracts must clearly define responsibilities for vehicle, charging infrastructure, and battery acquisition, operation, maintenance, and disposal, as well as any changes to remuneration formulas, reversible assets, and governance requirements. Eligible projects must range between US$2 million and US$100 million.

26. **To access the CEF credit line, proponents must submit a formal request accompanied by documentation demonstrating the proposal's pre-feasibility from a technical, legal, and economic-financial perspective.** If the proposal is not sufficiently developed, it may be forwarded for technical support through the project development mechanism provided for in Subcomponent 2.1. The Project Development Center will offer personalized technical assistance through CEF's internal teams or specialized external consultants. The pre-feasibility analysis will follow a standardized checklist, which will assess the presence of the following elements: (a) technical, economic, and environmental studies that support the project; (b) a proposed contractual adjustment with a defined business model, clear distribution of responsibilities, and a cost rebalancing structure; (c) an operational plan and a charging plan for the electric fleet, defining energy demand; (d) an energy supply strategy, indicating how the anticipated demand will be met; and (e) engineering designs for depots, terminals, and grid connections.

27. **The credit lines will offer favorable terms and technical support to facilitate implementation.** For public sector beneficiaries: repayment terms of up to 15 years (aligned with e-bus lifespan), a 12-month grace period, first disbursement within 180 days, and concessional interest rates. For the private sector: (i) e-buses and related infrastructure—financing up to 90 percent of investment, payback up to 144 months (within concession term), grace period up to 48 months based on delivery schedule, and collateral including receivables, shareholder guarantees, vehicle pledges, and supplementary guarantees tied to client rating; (ii) construction—financing up to 95 percent of investment, term up to 240 months, grace up to 48 months plus 3–6 months post-completion, with guarantees based on project profile. These terms will be

complemented by technical assistance for planning and execution, support for procurement processes, and potential access to voluntary carbon markets under Component 2.[51]

28. **Subcomponent 1.2: Supporting the energy transition and enhancing distribution networks (US$170 million).** This subcomponent will finance investments in electrical infrastructure to enable the transition to electric mobility and increase the climate resilience of energy distribution networks. Eligible investments include, inter alia: (a) e-mobility charging infrastructure and equipment; (b) strengthening and expanding the medium and high voltage network to meet the additional demand for energy, including primary cabins, transformers and substations necessary to connect charging stations to the electricity grid;[52] and (c) acquisition of distributed renewable energy systems, including solar photovoltaic panels, inverters, dedicated cabling and transformers, when co-located with e-bus charging infrastructure. The credit line will also support investments aimed at improving the reliability and resilience of electricity networks, particularly those not currently recognized within the regulatory asset base or incentivized under existing energy regulations. Such investments may include (d) the acquisition and installation of energy storage systems and conversion equipment associated with the operation of the electric fleet; (e) the implementation of smart grid technologies to modernize the management and operation of distribution networks; (f) energy efficiency measures, reduction of technical losses, and demand response solutions; (g) climate change adaptation interventions, focusing on reducing the vulnerability of electric mobility infrastructure to extreme weather events. The Operational Manual will provide detailed criteria and investment guidelines to ensure alignment with Brazil's energy sector framework and prevent crowding out private capital.

29. **Potential clients include public and private entities** such as (a) state and municipal governments and public consortiums aiming to reduce their carbon footprint and energy costs; (b) private companies in the infrastructure and energy sectors investing in grid enhancements to meet increased energy demand from e-mobility and make the grid more resilient to climate events; and (c) public transportation operators implementing e-bus fleet projects. Only projects with a minimum value of US$2 million and a maximum of US$100 million will be eligible. Funding conditions will be similar to those detailed in subcomponent 1.1.

Component 2: Project Development Facility and institutional strengthening (US$10 million)

30. **Subcomponent 2.1: Project Development Facility (US$5 million).** This subcomponent will establish a dedicated mechanism to help eligible beneficiaries structure bankable e-mobility projects through specialized technical consulting. It will support: (i) technical, economic, and environmental feasibility assessments; (ii) financial modeling and long-term viability analyses; (iii) identification of energy demand, charging strategies, and required infrastructure; (iv) operational plans for electric bus fleets; (v) business model design and concession contract reviews; and (vi) detailed engineering designs for depots, terminals, charging stations, and related civil works. Technical assistance will be delivered by CEF's in-house team and external consultants through *Caixa Políticas Públicas* (CPP), which already provides engineering, financial modeling, social development, and operational planning services. To address e-mobility needs, CPP staff will receive targeted training, and a framework agreement will allow hiring of specialized firms as needed. Key legal instruments—such as contract amendments, responsibility matrices, and remuneration structures—will be standardized for transparency. The project will also implement environmental and social risk management practices focused on climate resilience and provide guidelines to mitigate risks in depot operations.

[51] These terms are being defined by the CEF team during the project preparation phase and will be further detailed in the next stage of preparation.
[52] When increasing the distribution network's voltage to medium or high levels to support e-bus charging, investments may be shared between the distributor and the network user, which could include bus companies, private investors, or the granting authority. The distributor is compensated through tariffs or other mutually agreed mechanisms.

31. **Additionally, the project will include targeted measures to increase women's participation in the e-mobility sector and expand their access to quality employment opportunities.** CEF will lead a professional training program offering certified courses to female fare collectors for roles in driving, maintenance, and management of e-buses. CEF will provide financial support and scholarships for license upgrades. A digital platform will connect certified women with potential employers, bridging the gap between training and job placement. Municipalities and operators receiving CEF financing will be able to enroll current female employees or hire certified candidates at no additional cost. The program will also offer incentives to private operators who employ trained women and will incorporate workplace safety measures and awareness campaigns to foster inclusive participation.

32. **Subcomponent 2.2: Institutional strengthening of CEF for e-mobility project appraisal and implementation support (US$2 million).** This subcomponent will enhance CEF's institutional capacity to appraise, implement, and monitor e-mobility projects with greater consistency and efficiency. Although CEF has strong experience in infrastructure and social housing finance, its fleet financing activities—such as under the Refrota-17 program—have historically focused on diesel buses, revealing gaps such as the absence of standardized appraisal criteria and excessive documentation requirements that led to lengthy approval processes. To address these gaps, the project will provide targeted technical training and develop standardized internal guidelines covering: (i) economic and financial appraisal of projects, including key components, technology trends, business model structuring, and standardized analysis matrices; (ii) operational planning and its integration with energy demand and charging strategies; (iii) quantification of energy demand and related implications for civil works and electrical infrastructure; (iv) legal aspects of different business models, contractual responsibilities, risk allocation, and minimum guarantee and insurance requirements; and (v) training CEF's commercial teams serving both public and private sectors through technical workshops.

33. **Furthermore, the subcomponent will support the development of a centralized digital marketplace for the acquisition of e-buses.** The platform will be managed by the GEDEP unit (through the CPP) of the CEF and will gather demand for e-bus acquisitions based on predefined and standardized vehicle models, promoting economies of scale, simplifying bidding processes, and reducing institutional fragmentation. Use of the platform will be mandatory for public sector borrowers and will require submission of minimum technical documentation, including a charging strategy, infrastructure specifications, construction schedule, and implementation plan. The marketplace will feature a catalog of prequalified suppliers, procurement tracking, a secure payment system, and an electronic reverse auction mechanism triggered upon reaching the minimum order volume. Established under an Open Framework Agreement in line with World Bank Procurement Regulations, the platform builds on lessons from CEF's successful 2007 *Caminho da Escola* program, which supported large-scale school bus fleet renewal. Additionally, it will include user-friendly features and online training to enhance capacity, significantly reducing procurement time and risks while promoting investment and efficiency in electric bus manufacturing.

34. **Subcomponent 2.3: Carbon market (US$3 million).** This subcomponent will support CEF in creating a specialized service to aggregate and trade carbon credits from e-bus projects in the voluntary market and, later, in the regulated market under national rules aligned with Article 6.4 of the Paris Agreement.[53] The goal is to help beneficiaries monetize emissions reductions through CEF's intermediation, which will pool credits from multiple subprojects to achieve scale, lower transaction costs, and enable structured climate finance operations. Preliminary World Bank and CEF studies indicate that even at conservative prices (US$4/tCO$_2$e), revenues could offset initial costs, including MRV (monitoring, reporting, and verification) platform development, technical expertise, and project registration. Under higher price

[53] Brazil is advancing its carbon market framework through the creation of the National System for GHG Emissions Reduction (SINARE). Law No. 15,042, enacted on December 11, 2024, establishes the Brazilian Emissions Trading System (SBCE), setting the foundation for a regulated carbon market. Full implementation is expected to take up to five years as regulatory and operational mechanisms are phased in.

scenarios,[54] the service could generate recurring revenue, enabling CEF to expand its carbon market role beyond e-mobility. End-borrowers will pay CEF a carbon service fee for credit aggregation, certification, and commercialization, payable in cash or carbon credits. Borrowers may also receive incentives—such as reduced carbon service fees, lower interest rates on e-bus financing, or both—when contracting through CEF's credit line.

35. **CEF already has prior experience with carbon markets in the solid waste sector under a World Bank-supported initiative**.[55] This subcomponent will build on that capacity for the transport sector by: (i) training CEF staff on carbon market operations; (ii) hiring external auditors for project verification; (iii) implementing an MRV platform aligned with international standards; and (iv) engaging specialized consultants for legal, tax, and accounting aspects, credit valuation, and preparation of monitoring plans, technical guidelines, and safeguards manuals. Credit intermediation will be offered as an optional service to CEF borrowers, with full transfer of net credit sales revenue to beneficiaries. CEF may charge a service fee based on transaction volume or offer interest rate discounts for projects using the service. The mechanism will also apply to projects outside this Project's scope, such as those financed under the New PAC or large-city e-mobility programs like São Paulo. CEF's role as an intermediary is legally authorized under the new Carbon Market Law (Federal Law No. 15,042/2024).

36. **The primary beneficiaries[56] of the Project are:** The Project's primary beneficiaries are: (a) 2.3 million residents near public transport systems, who will gain cleaner, higher-quality services through about 540 e-buses; (b) roughly 280,000 regular transit users and drivers, benefiting from improved comfort, lower noise, and potential fare reductions from lower operating costs; and (c) at least seven municipalities and three private companies, which will receive financing and institutional support to implement e-mobility projects. Indirect beneficiaries include: (d) residents of at least eight cities, benefiting from improved air quality and public health due to reduced CO_2, PM10, NOx, and noise; (e) the national bus industry and related sectors, through market growth and economic opportunities; and (f) federal agencies such as MDIC, the Civil House, and other ministries, which will engage in strategic studies under the Program's Learning Agenda to strengthen policies and instruments for electric mobility in Brazil.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

78. **The environmental and social risks are rated as moderate.** The electrification of urban bus fleets brings positive impacts to public health and reduces occupational risks associated with the operation of diesel vehicles, although it involves concerns about the proper disposal and recycling of batteries at the end of their useful life. Small-scale civil works to install charging infrastructure can generate temporary impacts, such as disruptions to the daily lives of affected neighborhoods. During preparation, CEF's Environmental and Social Management System (ESMS) was assessed and found to be compatible with the requirements of the World Bank's *Environmental and Social Standard 9: financial Intermediaries*

[54] A carbon credit from Bangkok E-Bus Programme was sold at US$30 per ton of CO_2e with Switzerland, in line with the conditions outlined in Article 6 of the Paris Agreement. Available at: https://www.southpole.com/news/bangkok-ebus-programme-authorised-by-switzerland-and-thailand
[55] Integrated Solid Waste and Carbon Management Project (P106702).
[56] As the final borrowers under the CEF credit line will be selected during implementation, ten potential clients—seven municipalities, one private operator, and two energy utilities—were identified during market consultations and used as the basis for the Project's economic analysis and beneficiary estimates.

(ESS9). CEF had already adopted a Policy on Social, Environmental, and Climate Responsibility (PRSAC) and established a Sustainability Committee to guide the management of environmental, social, and climate (ESC) risks. The PRSAC defines clear procedures for screening and categorizing subproject risks, as well as for monitoring them during implementation. The ESC risk assessment considers the sector of activity, the borrower's track record and capabilities, as well as the specific risks of each transaction. The management measures adopted are proportional to the risk and financing volume. Subprojects valued at over US$10 million or involving infrastructure projects must follow the Equator Principles, which establish robust criteria for assessing and managing socio-environmental risks. Specific additional measures to strengthen CEF's management capacity and reporting to the World Bank were agreed upon and incorporated into the Project's Environmental and Social Commitment Plan (ESCP).[57]

E. Implementation

Institutional and Implementation Arrangements

Brazil Electromobility Multiphase Programmatic Approach – the MPA Program

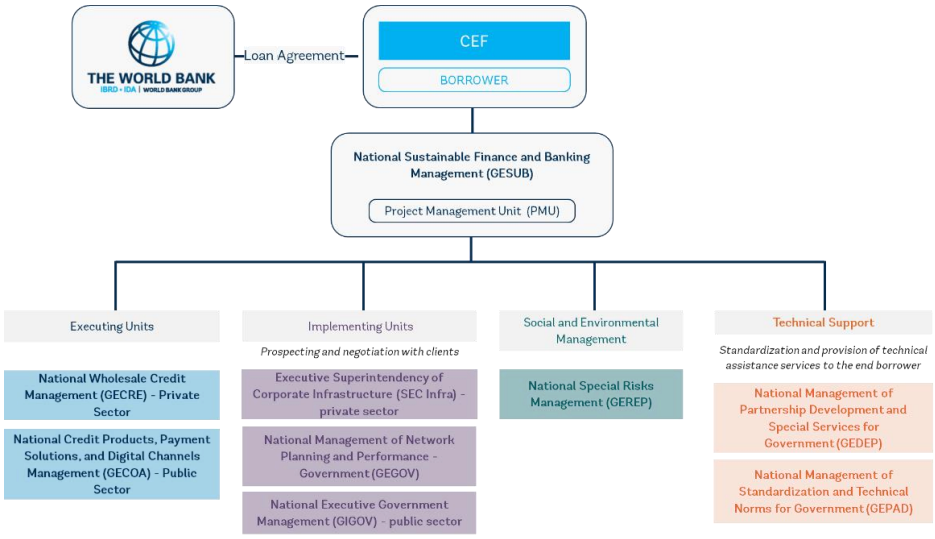
37. **The Bank will collaborate with the Ministry of Cities to coordinate the Learning Agenda across all phases of the MPA.** Knowledge products, workshops, and tools developed in the first four phases will be shared with the Ministry to organize dissemination events, provide open access to materials, and facilitate experience-sharing among participating cities. Other federal institutions—including CEF, the Ministry of Finance, the Ministry of Management and Innovation in Public Services, and the Ministry of Development, Industry, Trade, and Services—may also contribute to coordination and knowledge exchange to ensure effective Program implementation.

The Project – MPA Phase 1

38. **CEF will serve as financial intermediary and implementing agency for MPA Phase 1 Project** As one of LAC's largest state-owned financial institutions, CEF plays a critical role in expanding financial services and supporting public investment in urban infrastructure across thousands of Brazilian municipalities. It operates under strong corporate governance and is closely monitored by federal oversight bodies due to its systemic relevance to the national financial system. Phase 1 will leverage CEF's robust systems and proven track record in managing World Bank-financed projects. Implementation will be coordinated through a dedicated PMU within CEF, staffed by full-time professionals from multiple departments to handle technical, operational, and administrative functions, as shown in Figure 3. Led by CEF's National Sustainable Finance and Banking Management Unit (GESUB), the PMU will oversee fiduciary responsibilities, including management, coordination, monitoring, evaluation, and semiannual reporting.

Figure 1 – Institutional and Implementation Arrangements

[57] The Equator Principles are a risk management framework adopted by financial institutions for determining, assessing, and managing environmental and social risks in project finance. Based on international best practices, the Principles require that borrowers identify and mitigate potential environmental and social impacts, ensure stakeholder engagement, and comply with performance standards throughout the project lifecycle.



39. The PMU will be supported by four functional pillars:

- **Executing Units**, which handle credit structuring— the National Infrastructure Management Department (GEIFA) for private sector borrowers; and the National Credit Products, Payment Solutions, and Digital Channels Management Department (GECOA) for public sector clients.
- **Implementing Units**, lead client engagement and subproject identification, including the Executive Superintendency of Corporate Infrastructure (SEC Infra) unit, the National Management of Network Planning and Performance for Government Department (GEGOV) unit, and the National Executive Government Management (GIGOV) unit.
- **Social and Environmental Management**, which ensures compliance with environmental and social safeguards, led by National Special Risks Management Department (GEREP).
- **Technical Support,** The National Management of Partnership Development and Special Services for Government Department (GEDEP) will provide technical assistance to borrowers, and the National Management of Standardization and Technical Norms for Government Department (GEPAD) will promote internal process improvements.

40. **CEF will implement a transparent decision-making process for allocating financing to borrowers,** adhering to procedures agreed with the WB, ensuring efficient resource management through detailed sub-loan agreements.

41. **Under Component 1, CEF will lead market prospecting and consultations, evaluate a proposed project's maturity, negotiate specific conditions of sub-loans and monitor implementation**. In this capacity, CEF will: (a) identify and select subprojects and beneficiaries based on predefined eligibility criteria; and (b) conduct project appraisal on the technical, legal, economic, environmental, financial feasibility and related aspects of proposed subprojects. As a lender, CEF will be responsible for appraising and investing in projects in the pipeline. For both activities, CEF will have full responsibility to ensure that all activities are implemented in accordance with the Program Operations Manual (POM), as approved by CEF and WB.

42. **Under Component 2, CEF will identify end-borrowers requiring technical assistance and provide support directly or through contracted consultancies.** CEF market consultations supported by the WB will inform the mapping of borrowers with projects at lower maturity levels, which will be eligible for CPP assistance. CEF will establish a comprehensive structure under the CPP for underpinning the structuring and implementation of electromobility projects. CEF staff will offer innovative tools for acquiring e-buses, generating revenue from carbon credits, and standardizing e-bus pricing. CEF will also lead a professional training program to help female fare collectors transition into electromobility-related roles.

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