REGIONAL

Accelerating NDC implementation. Unlocking clean buses in LAC

RG-T3078

TERMS OF REFERENCE

1. Background

1.1. As part of the Paris Climate Agreement, countries pledged to implement specific actions to meet the global objectives. These actions are framed as Nationally Determined Contributions (NDCs). Improving the fuel and vehicle efficiency of the transport system is stated as a key action in most of the NDCs[1] of the Latin America and the Caribbean (LAC) countries. This is a line of action that brings co-benefits in other areas besides the environment, such as mitigating urban congestion and improving public health.

1.2. Clean technology buses are already deployed at scale in USA, Europe and China. The technologies are now mature and alternative business models have been successfully implemented. Despite these good experiences worldwide, the political support[2] for decarbonizing bus systems, and the large potential market volume, the uptake of clean bus options has been limited in LAC. Bogota, Medellin, Asuncion, Buenos Aires, Mexico City, Sao Paulo, San Jose or Santiago are examples of LAC cities which will be renewing their fleet in the next 3 to 5 years. The window of opportunity is open to explore innovative business models and financial incentives to increase the penetration of clean technologies in these cities. Failure to embed clean technologies could lock-in cities with high-emission buses for the lifespan of these vehicles (10-12 years).

1.3. From an economic perspective, bus fleet represents up to 75% of the operator company´s assets.[3] The higher costs[4] of hybrid and electric buses are offset by their long-term benefits in terms of lower operating costs and their co-benefits. Their financial and fiscal feasibilities, from the perspectives of the concessionaires and of the public authorities, depend on variables such as the interest rate, tenure, grace period, technical and passenger tariffs, compensation, and fuel and electricity prices, etc. All economic, financial and fiscal feasibility need to be confirmed to ensure success of clean technology bus adoption.

---

1 For instance, GHG emissions reduction and energy efficiency in the transport sector is stated in Colombian NDC and National Urban Transport Program, Mexican NDC, Brazilian NDC, Paraguayan NDC and congress decree on Asuncion BRT, Argentine NDC, Peruvian NDC and NAMA.

2 In 201518 of the biggest LAC cities singed the C40 Clean Bus Declaration sending clear signals to the market about their commitment to transitioning their bus fleets to low or zero emissions buses.

3 Díaz, R. 2015. *Oportunidades de financiamiento a operadores privados de transporte público en Latinoamérica.* Online at https://publications.iadb.org/handle/11319/7748

4 Grütter, J. 2014. *Real World Performance of Hybrid and Electric Buses*. Online at http://www.repic.ch/files/7114/4126/7442/Grutter_FinalReport_e_web.pdf

LAWDP. 2016. EV Bus Charging Utility Opportunities. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA: Los Angeles Department of Water and Power. Online at http://www.arb.ca.gov/msprog/bus/meet/tspresent/s3_moon.pdf

Papson, A. 2016. Ecoliner electric bus. Overview and lessons learned. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov

1.4. The literature[5, 6] shows several known market barriers affecting the transition to clean buses. While some of these barriers have been overcome in some cities, the sector is transitioning very slowly:

a. Direct capital expenditures: Hybrid and electric buses represent a higher initial cost to bus operating companies compared to diesel buses. Even though the prices have fallen in the last five and though operating clean technology buses brings additional savings during the bus life cycle (compared to ICE bus operation), there is still a gap to cover in capital expenditures (CAPEX).

b. Lack of access to long-term finance:[7] Concessionaries and technology providers do not have access to the required long-term capital to finance investment in these high CAPEX projects. Most of the operators finance the acquisition of their fleet through manufacturer´s financial schemes while commercial banks remain adverse in some cities.[8] Furthermore, the debt capacity of concessionaries, and the exposure of the finance sector to the transport sector further diminish the ability to invest in these projects absent adequate financing conditions, such as ancillary guarantees.

c. Limited institutional coordination to fix financial disincentives:[9] While most clean technology vehicles are produced elsewhere, there are tariffs and taxes to protect local vehicle manufacturing and assembly industries, fossil fuel subsidies and favorable financing for ICE buses.

d. Unfavorable regulatory & procurement frameworks and limited institutional capacity to adjust:[10] Governments have limited capacity to manage, structure and negotiate the necessary regulatory adjustments: These include (i) the certification of new types of vehicles (e.g. weight restrictions, technical certifications); (ii) the application of new revenue models for concession contracts; (iii) the different requirements for age limits for bus fleets of different technologies and (iv) the public procurement rules based on

---

5 Sims, R., R. Schaeffer, F. Creutzig, X. Cruz-Núñez, M. D'agosto, D. Dimitriu, … O. Lah. 2014. Chapter 8: transport. Presented at the *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom: Cambridge University Press. Online at http://www.ipcc.ch

Clark, N. N., F. Zhen, and W. S. Wayne. 2009. *Assessment of hybrid-electric transit bus technology* (Vol. 132). Washington, D.C.: Transportation Research Board.

Rillera, L. 2016. For Transit Buses : Infrastructure. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov/msprog/bus/meet/tspresent/s4_rillera.pdf

TfL. 2014. *Transport Emissions Roadmap*. London, UK: Transport for London. Online at http://content.tfl.gov.uk/transport-emissions-roadmap.pdf

UITP. 2015. *Pollution, emissions and noise: what's driving advances in bus technology*. International Organisation for Public Transport. Online at http://www.uitp.org/news/bus-technologies2015

6 Carroll, S. 2015. *Green Fleet Technology Study for Public Transport*. Cenex. Online at www.sustainprocure.org/.

7 Lajunen, A. 2014. Energy consumption and cost-benefit analysis of hybrid and electric city buses. *Transportation Research Part C: Emerging Technologies*, *38*, 1–15.

8 Díaz, R. 2015. *Oportunidades de financiamiento a operadores privados de transporte público en Latinoamérica.* Online at https://publications.iadb.org/handle/11319/7748

9 Eudy, L. 2016. U.S. Zero Emission Bus Evaluation Results & Status. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov/

Goodarzi, A. 2016. ACT Technology Symposium. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov/msprog/bus/meet/tspresent/s2_goodarzi.pdf

10 Ercan, T., and O. Tatari. 2015. A hybrid life cycle assessment of public transportation buses with alternative fuel options. *The International Journal of Life Cycle Assessment*, *20*(9), 1213–1231.

Ercan, T., Y. Zhao, O. Tatari, and J. A. Pazour. 2015. Optimization of transit bus fleet's life cycle assessment impacts with alternative fuel options. *Energy*, *93*(1), 323–334.

diesel buses characteristics, and lowest upfront cost criteria.

e. Scale economies and transaction costs: Transforming the technological make-up of a bus fleet has high transition costs. In a context where competing operators are vying for portions of the transit market, the transaction cost can become a major disincentive for first movers.

f. Lack of knowledge and capacity leading to high perceived risks:[11] Operators that have traditionally employed ICE buses lack the knowledge and capacity to operate clean buses. This generates uncertainty about the performance of electric buses, including lifecycle cost and operational characteristics (e.g. battery ranges, charging times), therefore augmenting the risk perception of operators and financiers.

1.5. These market barriers signal that the incorporation of clean technologies is unlikely, unless a combination of business model analyses, regulatory adjustments, technical assistance and financial incentives are enacted to ensure their viability for private investors and sustainable from a fiscal standpoint.

1.6. To address those needs and barriers, IDB launched a program named “Accelerating NDC implementation. Unlocking clean buses in LAC”. This program brings together a suite of IDB Group services (technical assistance and financing) under a single-engagement aimed at creating viable markets for clean buses in each client country. This “one-stop-shop” program aims to increase the likelihood of adopting clean buses in client cities that hope to improve the greenhouse gas footprint of their transport systems.

1.7. The program will support at least three countries in developing and implementing operational business models that support the integration of clean buses in the fleet renewal of a major municipality. This is a demand-driven program that will allocate its resources to specific projects upon request and compliance with the eligibility criteria. The program will support the stages of (i) client engagement; (ii) bus service project preparation; (iii) bid preparation; and (iv) tendering process and awards. Moreover, the program will also finance capacity building for project execution. The program will thus support the pre-investment activities required to ensure that the bus fleet renewal investments advance the implementation of the countries’ NDCs while ensuring fiscal and financial sustainability of the transport projects.

2. Consultancy Objective

2.1. The main aim of the consultancy will be to assess the potential opportunities and to prepare the engagement.

2.2. The consulting firm(s) will realize the corresponding studies and carry on the discussion with relevant authorities and stakeholders, under the supervision of the IDB team.

2.3. This consultancy is expected to take no more than 6 months.

3. Scope of Services

3.1. The hired firm(s) will need to provide consultancy services to deliver the activities described below, including logistics and travel arrangements needed for its delivery.

[11] IDB. 2013. *Hybrid – Electric Bus Test Program in Latin America*. Washington, D.C.: Inter-American Development Bank. Online at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37760935

4. Key activities

4.1. **Activity 1: "Market assessment of technological alternatives":** The consultancy will first carry out a "Market assessment of technological alternatives" for clean technology buses. This market assessment will take the form of a report that will be used for the engagement with local stakeholders. It will be based on the existing literature, interviews and analysis of cases studies where clean technology buses have been successfully adopted. A special focus will be given to the business models mobilized to ensure financial and fiscal sustainability.

4.2. **Activity 2: assessments of the potential opportunities:** The consultancy will second carry out assessments of the potential opportunities through an engagement with transport authorities at the national and local levels, bus operators, bus providers and local financers. This assessment will lead to present a thorough analysis about the barriers and opportunities, and will ultimately design a strategy for an urban transport transformation with a focus on clean technology fleet renewal.

5. Deliverables

5.1. Deliverable of activity 1 consists of a "Market assessment of technological alternatives" for clean technology buses. This market assessment report that will be used for the engagement with local stakeholders. It will be based on the existing literature, interviews and analysis of cases studies where clean technology buses have been successfully adopted. A special focus will be given to the business models mobilized to ensure financial and fiscal sustainability.

5.2. Deliverables of activity 2 include, for each participating city:

a. A kick-off workshop in each participating city and a workshop summary

b. A report for presenting a diagnosis of the current situation: policy landscape analysis; assessment of the opportunities; identification of key stakeholders and an analysis of their roles, responsibilities and capabilities (e.g. public authorities, operators, bus manufacturers, capital providers); assessment of funding and financial situation; market assessment of existing technology alternatives (e.g. hybrid, electric); main barriers for clean bus adoption; draft strategy for subsequent steps;

c. The establishment of a focal group convening key stakeholders and endorsed by decision-makers

5.3. The selected Consulting firm will develop all deliverables in coordination with and under the supervision of the IDBG team. This implies that: (i) the IDBG team will provide inputs, review and comment the draft version of each deliverable and associated materials; (ii) the selected Consulting firm will incorporate possible comments and suggestions into the final version of each deliverable.

6. Payment Schedule

6.1. The Consultancy services will include all costs associated to the development and execution of the activities needed to achieve the objective of this terms of reference, including possible travel and per diem costs of the selected Consultant.

6.2. The IDB will pay the selected Consultant according to the following indicative schedule that will be fine-tuned when formalizing the contract with the selected Consultant.

a. 25% upon signature of contract and completion and approval of work plan and design of methodological and implementation approach

b. 25% upon completion and approval first deliverable ("Market assessment of technological alternatives" report)

c. 25% upon completion and approval of second deliverable ("City diagnosis" report)

d. 25% upon completion and approval of all the activities covered by the terms of reference. (workshop, summary and focal group)

7. Selected Consultant Qualifications

7.1 The firm selected for this Consultancy should encompass experts with demonstrated knowledge, professional experience and expertise at least in the following areas:

a. Sustainable transport investments

b. Hybrid and electric bus technologies

c. Economics, financing and fiscal sustainability of bus operation

d. Regulatory framework and (alternative) legal instruments related to bus service

e. Alternative business models to fund, finance and deliver clean bus service

f. Local policy making and national – sub-national coordination

g. Financial and capital markets, financial institutions including national and international commercial banks, and institutional investors globally and/or LAC

h. Strong and effective written, visual and verbal communication skills including excellent proven ability to communicate complex concepts and prepare reports that are concise, clear and meaningful to the intended audience

i. Project management

j. Analytical skills i.e. ability to design, develop and implement context-specific practical approaches to translate theory, principles, ideas into practice

k. Academic Degree / Level & Years of Professional Work Experience: Master's degree in environment, climate change, natural resources management, international development, or related area; 10 years of relevant experience including in the Latin America and Caribbean contexts.

l. Working proficiency in English and Spanish is required. Working knowledge of a third official IDBG language (French or Portuguese) is desirable.

m. Previous experience in working with multilateral institutions and/or other financial institutions as well as experience in and knowledge on LAC is desirable.

8. Characteristics of the Consultancy

8.1 Consultancy category and modality: Consultancy Firm, Lump sum

8.2 Contract duration: The Consultancy will run for about 6 months from the signature of the contract with the possibility of extension or earlier conclusion of activities.

8.3 Place(s) of work: External consultancy

8.4 Division Leader or Coordinator: Claudio Alatorre, Climate Change Specialist, CSD/CCS; Carlos Mojica, Transport specialist, INE/TSP

8.5 Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

8.6 Consanguinity: Pursuant to applicable Bank policy, candidates with relatives (including the fourth degree of consanguinity and the second degree of affinity, including spouse) working for the Bank as staff members or Complementary Workforce contractuals, will not be eligible to provide services for the Bank.

8.7 Diversity: The Bank is committed to diversity and inclusion and to providing equal opportunities to all candidates. We embrace diversity on the basis of gender, age, education, national origin, ethnic origin, race, disability, sexual orientation, religion, and HIV/AIDs status. We encourage women, Afro-descendants and persons of indigenous origins to apply.

REGIONAL

Accelerating NDC implementation. Unlocking clean buses in LAC

RG-T3078

TERMS OF REFERENCE

1. Background

1.1. As part of the Paris Climate Agreement, countries pledged to implement specific actions to meet the global objectives. These actions are framed as Nationally Determined Contributions (NDCs). Improving the fuel and vehicle efficiency of the transport system is stated as a key action in most of the NDCs[12] of the Latin America and the Caribbean (LAC) countries. This is a line of action that brings co-benefits in other areas besides the environment, such as mitigating urban congestion and improving public health.

1.2. Clean technology buses are already deployed at scale in USA, Europe and China. The technologies are now mature and alternative business models have been successfully implemented. Despite these good experiences worldwide, the political support[13] for decarbonizing bus systems, and the large potential market volume, the uptake of clean bus options has been limited in LAC. Bogota, Medellin, Asuncion, Buenos Aires, Mexico City, Sao Paulo, San Jose or Santiago are examples of LAC cities which will be renewing their fleet in the next 3 to 5 years. The window of opportunity is open to explore innovative business models and financial incentives to increase the penetration of clean technologies in these cities. Failure to embed clean technologies could lock-in cities with high-emission buses for the lifespan of these vehicles (10-12 years).

1.3. From an economic perspective, bus fleet represents up to 75% of the operator company´s assets.[14] The higher costs[15] of hybrid and electric buses are offset by their long-term benefits in terms of lower operating costs and their co-benefits. Their financial and fiscal feasibilities, from the perspectives of the concessionaires and of the public authorities, depend on variables such as the interest rate, tenure, grace period, technical and passenger tariffs, compensation, and fuel and electricity prices, etc. All economic, financial and fiscal feasibility need to be confirmed to ensure success of clean technology bus adoption.

---

[12] For instance, GHG emissions reduction and energy efficiency in the transport sector is stated in Colombian NDC and National Urban Transport Program, Mexican NDC, Brazilian NDC, Paraguayan NDC and congress decree on Asuncion BRT, Argentine NDC, Peruvian NDC and NAMA.

[13] In 201518 of the biggest LAC cities singed the C40 Clean Bus Declaration sending clear signals to the market about their commitment to transitioning their bus fleets to low or zero emissions buses.

[14] Díaz, R. 2015. *Oportunidades de financiamiento a operadores privados de transporte público en Latinoamérica.* Online at https://publications.iadb.org/handle/11319/7748

[15] Grütter, J. 2014. *Real World Performance of Hybrid and Electric Buses*. Online at www.repic.ch

LAWDP. 2016. EV Bus Charging Utility Opportunities. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA: Los Angeles Department of Water and Power. Online at http://www.arb.ca.gov

Papson, A. 2016. Ecoliner electric bus. Overview and lessons learned. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov

1.4. The literature[16, 17] shows several known market barriers affecting the transition to clean buses. While some of these barriers have been overcome in some cities, the sector is transitioning very slowly:

a. Direct capital expenditures: Hybrid and electric buses represent a higher initial cost to bus operating companies compared to diesel buses. Even though the prices have fallen in the last five and though operating clean technology buses brings additional savings during the bus life cycle (compared to ICE bus operation), there is still a gap to cover in capital expenditures (CAPEX).

b. Lack of access to long-term finance:[18] Concessionaries and technology providers do not have access to the required long-term capital to finance investment in these high CAPEX projects. Most of the operators finance the acquisition of their fleet through manufacturer´s financial schemes while commercial banks remain adverse in some cities.[19] Furthermore, the debt capacity of concessionaries, and the exposure of the finance sector to the transport sector further diminish the ability to invest in these projects absent adequate financing conditions, such as ancillary guarantees.

c. Limited institutional coordination to fix financial disincentives:[20] While most clean technology vehicles are produced elsewhere, there are tariffs and taxes to protect local vehicle manufacturing and assembly industries, fossil fuel subsidies and favorable financing for ICE buses.

d. Unfavorable regulatory & procurement frameworks and limited institutional capacity to adjust: [21] Governments have limited capacity to manage, structure and negotiate the necessary regulatory adjustments: These include (i) the certification of new types of vehicles (e.g. weight restrictions, technical certifications); (ii) the application of new revenue models for concession contracts; (iii) the different requirements for age limits for bus fleets of different technologies; and (iv) the public procurement rules

---

16 Sims, R., R. Schaeffer, F. Creutzig, X. Cruz-Núñez, M. D'agosto, D. Dimitriu, … O. Lah. 2014. Chapter 8: transport. Presented at the *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom: Cambridge University Press. Online at http://www.ipcc.ch

Clark, N. N., F. Zhen, and W. S. Wayne. 2009. *Assessment of hybrid-electric transit bus technology* (Vol. 132). Washington, D.C.: Transportation Research Board.

Rillera, L. 2016. For Transit Buses : Infrastructure. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov/msprog/bus/meet/tspresent/s4_rillera.pdf

TfL. 2014. *Transport Emissions Roadmap*. London, UK: Transport for London. Online at content.tfl.gov.uk

UITP. 2015. *Pollution, emissions and noise: what's driving advances in bus technology*. International Organisation for Public Transport. Online at http://www.uitp.org/news/bus-technologies2015

17 Carroll, S. 2015. *Green Fleet Technology Study for Public Transport*. Cenex. Online at http://www.sustprocu.org

18 Lajunen, A. 2014. Energy consumption and cost-benefit analysis of hybrid and electric city buses. *Transportation Research Part C: Emerging Technologies*, *38*, 1–15.

19 Díaz, R. 2015. *Oportunidades de financiamiento a operadores privados de transporte público en Latinoamérica.* Online at https://publications.iadb.org/handle/11319/7748

20 Eudy, L. 2016. U.S. Zero Emission Bus Evaluation Results & Status. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov

Goodarzi, A. 2016. ACT Technology Symposium. Presented at the *Advanced Clean Transit Technology Symposium*. Sacramento, CA. Online at http://www.arb.ca.gov/msprog/bus/meet/tspresent/s2_goodarzi.pdf

21 Ercan, T., and O. Tatari. 2015. A hybrid life cycle assessment of public transportation buses with alternative fuel options. *The International Journal of Life Cycle Assessment*, *20*(9), 1213–1231.

Ercan, T., Y. Zhao, O. Tatari, and J. A. Pazour. 2015. Optimization of transit bus fleet's life cycle assessment impacts with alternative fuel options. *Energy*, *93*(1), 323–334.

based on diesel buses characteristics, and lowest upfront cost criteria.

e. Scale economies and transaction costs: Transforming the technological make-up of a bus fleet has high transition costs. In a context where competing operators are vying for portions of the transit market, the transaction cost can become a major disincentive for first movers.

f. Lack of knowledge and capacity leading to high perceived risks:[22] Operators that have traditionally employed ICE buses lack the knowledge and capacity to operate clean buses. This generates uncertainty about the performance of electric buses, including lifecycle cost and operational characteristics (e.g. battery ranges, charging times), therefore augmenting the risk perception of operators and financiers.

1.5. These market barriers signal that the incorporation of clean technologies is unlikely, unless a combination of business model analyses, regulatory adjustments, technical assistance and financial incentives are enacted to ensure their viability for private investors and sustainable from a fiscal standpoint.

1.6. To address those needs and barriers, IDB launched a program named “Accelerating NDC implementation. Unlocking clean buses in LAC”. This program brings together a suite of IDB Group services (technical assistance and financing) under a single-engagement aimed at creating viable markets for clean buses in each client country. This “one-stop-shop” program aims to increase the likelihood of adopting clean buses in client cities that hope to improve the greenhouse gas footprint of their transport systems.

1.7. The program will support at least three countries in developing and implementing operational business models that support the integration of clean buses in the fleet renewal of a major municipality. This is a demand-driven program that will allocate its resources to specific projects upon request and compliance with the eligibility criteria. The program will support the stages of (i) client engagement (ii) bus service project preparation; (iii) bid preparation; and (iv) tendering process and awards. Moreover, the program will also finance capacity building for project execution. The program will thus support the pre-investment activities required to ensure that the bus fleet renewal investments advance the implementation of the countries’ NDCs while ensuring fiscal and financial sustainability of the transport projects.

2. Consultancy objective(s)

2.1. The main aim of the consultancy will be to carry out preparatory activities, studies and provide technical support prior to the implementation of the new bus fleet.

2.2. The consultancy will provide support to (i) bus service project preparation; (ii) bid preparation; and (iii) tendering process and awards. The consultancy will also provide capacity building for project execution.

2.3. The consulting firm(s) will realize the corresponding studies and carry on the discussion with relevant authorities and stakeholders, under the supervision of the IDB team.

2.4. This consultancy is expected to take between 12 and 24 months for each city, depending on the stage where the IDB support begins.

[22] IDB. 2013. *Hybrid – Electric Bus Test Program in Latin America*. Washington, D.C.: Inter-American Development Bank. Online at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37760935

3. Scope of Services

3.1. The hired firm(s) will need to provide consultancy services to deliver the activities described below, including logistics and travel arrangements needed for its delivery.

4. Key activities

4.1. **Activity 1: Bus service project preparation.** This activity consists in the project preparation. The goals will be to build capacity in public and private stakeholders and to identify (alternative) viable operational model(s)[23] for clean buses adoption.

4.2. **Activity 2: Bid preparation.** This activity consists in the bid preparation. The goal will be to reduce the transaction cost associated to the complexities of preparing a bid for innovative clean technologies, and to build capacity and standard for further scaling up.

4.3. **Activity 3: Procurement process and tender award.** This component will support the procurement process and tender award.

5. Deliverables

5.1. Deliverables of activity 1 are, for each participating city:

a. A report and a workshop presenting the technical studies including: (i) feasibility assessments; (ii) operational modelling; (iii) service planning; (iv) infrastructure requirements; (v) fleet size assessment; (vi) vehicle technical specifications; (vii) systems and other IT requirements; (viii) cost-benefit analysis; and (ix) potential GHG emissions reduction.

b. A report and a workshop to facilitate sectoral dialogue in order to select (i) a viable business model and (ii) a sustainable financing structure, among a set of viable alternatives including: (a) Public-Private partnerships; (b) transport operation concession; and (c) public sector operations.

c. A report and a workshop presenting the legal, regulatory, financial and target sector needs analysis: (i) project financial cashflow; (ii) project impact on bus operators cashflow; (iii) project fiscal impact; (iv) public transport and vehicle regulations; (vii) vehicle import requirements; and (viii) tariff assessments.

d. If required by the client, a report for the design of a pilot test, with stakeholder involvement and results measurement.

5.2. Deliverables of activity 2 include, for each participating city:

a. Legal and regulatory support for the preparation of the project documentation;

b. Support (participate in meetings, revise and develop necessary documents) for the preparation of the final tender documents (bid package);

c. Support (participate in meetings, revise and develop necessary documents) for the financing, insurance, and credit enhancement;

5.3. Deliverables of activity 3 include, for each participating city:

a. Support (participate in meetings, revise and develop necessary documents) for the request for qualification, the bidder consultation, and the request for proposals

[23] The operational model will probably include planning, design, governance scheme, funding, financing, delivery and management mechanism.

b. Support (participate in meetings, revise and develop necessary documents) for the review of proposals and the signing of project documents.

5.4. The selected Consulting firm will develop all deliverables in coordination with and under the supervision of the IDBG team. This implies that: (i) the IDBG team will provide inputs, review and comment the draft version of each deliverable and associated materials; and (ii) the selected Consulting firm will incorporate possible comments and suggestions into the final version of each deliverable.

6. Payment Schedule

6.1. The Consultancy services will include all costs associated to the development and execution of the activities needed to achieve the objective of this terms of reference, including possible travel and per diem costs of the selected Consultant.

6.2. The IDB will pay the selected Consultant according to the following indicative schedule that will be fine-tuned when formalizing the contract with the selected Consultant.

a. 10% upon signature of contract and completion and approval of work plan and design of methodological and implementation approach

b. 20% upon completion and approval by the IDB of the first deliverable of activity 1 (“technical studies” report and workshop)

c. 15% upon completion and approval by the IDB of the second deliverable of activity 1 (“Viable business model and sustainable financing structure” report and workshop)

d. 15% upon completion and approval by the IDB of the third deliverable of activity 1 (“legal, regulatory, financial and target sector needs analysis” report and workshop)

e. 15% upon completion and approval by the IDB of the deliverables of activity 2 (“project documentation and bid preparation”)

f. 15% upon completion and approval of deliverables of activity 3 (“tender process”)

g. 10% upon completion and approval of all the activities covered by the terms of reference. (workshop, summary and focal group)

7. Selected Consultant Qualifications

6.1 The firm selected for this Consultancy should encompass experts with demonstrated knowledge, professional experience and expertise at least in the following areas:

a. Sustainable transport investments

b. Hybrid and electric bus technologies

c. Economics, financing and fiscal sustainability of bus operation

d. Regulatory framework and (alternative) legal instruments related to bus service

e. Alternative business models to fund, finance and deliver clean bus service

f. Local policy making and national – sub-national coordination

g. Financial and capital markets, financial institutions including national and international commercial banks, and institutional investors globally and/or LAC

h. Strong and effective written, visual and verbal communication skills including excellent proven ability to communicate complex concepts and prepare reports that are concise, clear and meaningful to the intended audience

i. Project management

j. Analytical skills i.e. ability to design, develop and implement context-specific practical approaches to translate theory, principles, ideas into practice

k. Academic Degree / Level & Years of Professional Work Experience: Master's degree in environment, climate change, natural resources management, international development, or related area; 10 years of relevant experience including in the Latin America and Caribbean contexts.

l. Working proficiency in English and Spanish is required. Working knowledge of a third official IDBG language (French or Portuguese) is desirable.

m. Previous experience in working with multilateral institutions and/or other financial institutions as well as experience in and knowledge on LAC is desirable.

8. Characteristics of the Consultancy

8.8 Consultancy category and modality: Consultancy Firm, Lump sum

8.9 Contract duration: The Consultancy will run for about 12 to 24 months from the signature of the contract with the possibility of extension or earlier conclusion of activities.

8.10 Place(s) of work: External consultancy

8.11 Division Leader or Coordinator: Claudio Alatorre, Climate Change Specialist, CSD/CCS; Carlos Mojica, Transport specialist, INE/TSP

8.12 Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

8.13 Consanguinity: Pursuant to applicable Bank policy, candidates with relatives (including the fourth degree of consanguinity and the second degree of affinity, including spouse) working for the Bank as staff members or Complementary Workforce contractuals, will not be eligible to provide services for the Bank.

8.14 Diversity: The Bank is committed to diversity and inclusion and to providing equal opportunities to all candidates. We embrace diversity on the basis of gender, age, education, national origin, ethnic origin, race, disability, sexual orientation, religion, and HIV/AIDs status. We encourage women, Afro-descendants and persons of indigenous origins to apply