



**GREEN
CLIMATE
FUND**

Meeting of the Board
17 – 20 July 2022
Incheon, Republic of Korea
Provisional agenda item 9

GCF/B.33/02/Add.03

24 June 2022

Consideration of funding proposals - Addendum III

Funding proposal package for FP189

Summary

This addendum contains the following seven parts:

- a) A funding proposal titled "E-Mobility Program for Sustainable Cities in Latin America and the Caribbean";
- b) No-objection letters issued by the national designated authority(ies) or focal point(s);
- c) Environmental and social report(s) disclosure;
- d) Secretariat's assessment;
- e) Independent Technical Advisory Panel's assessment;
- f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
- g) Gender documentation.

Table of Contents

Funding proposal submitted by the accredited entity	3
No-objection letters issued by the national designated authority(ies) or focal point(s)	94
Environmental and social report(s) disclosure;	106
Secretariat's assessment	109
Independent Technical Advisory Panel's assessment	126
Response from the accredited entity to the independent Technical Advisory Panel's assessment	133
Gender documentation	136

Funding Proposal

Project/Programme title:	E-Mobility Program for Sustainable Cities in Latin America and the Caribbean
Country(ies):	Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay
Accredited Entity:	Inter-American Development Bank IDB
Date of first submission:	2021/11/22
Date of current submission	2022/06/13
Version number	V.6



GREEN
CLIMATE
FUND

Contents

Section A	PROJECT / PROGRAMME SUMMARY
Section B	PROJECT / PROGRAMME INFORMATION
Section C	FINANCING INFORMATION
Section D	EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA
Section E	LOGICAL FRAMEWORK
Section F	RISK ASSESSMENT AND MANAGEMENT
Section G	GCF POLICIES AND STANDARDS
Section H	ANNEXES

Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

“FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]”

A. PROJECT/PROGRAMME SUMMARY			
A.1. Project or programme	Programme	A.2. Public or private sector	Public
A.3. Request for Proposals (RFP)	<u>Not applicable</u>		
A.4. Result area(s)	Check the applicable GCF result area(s) that the <u>overall</u> proposed project/programme targets below. For each checked result area(s), indicate the estimated percentage of GCF and Co-financers' contribution devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.		
		GCF contribution	Co-financers' contribution¹
	Mitigation total	<u>Enter number</u> %	<u>Enter number</u> %
	<input type="checkbox"/> Energy generation and access	<u>Enter number</u> %	<u>Enter number</u> %
	<input checked="" type="checkbox"/> Low-emission transport	39 %	61 %
	<input type="checkbox"/> Buildings, cities, industries and appliances	<u>Enter number</u> %	<u>Enter number</u> %
	<input type="checkbox"/> Forestry and land use	<u>Enter number</u> %	<u>Enter number</u> %
	Adaptation total	<u>Enter number</u> %	<u>Enter number</u> %
	<input type="checkbox"/> Most vulnerable people and communities	<u>Enter number</u> %	<u>Enter number</u> %
	<input type="checkbox"/> Health and well-being, and food and water security	<u>Enter number</u> %	<u>Enter number</u> %
<input checked="" type="checkbox"/> Infrastructure and built environment	76 %	24 %	
<input type="checkbox"/> Ecosystems and ecosystem services	<u>Enter number</u> %	<u>Enter number</u> %	
A.5. Expected mitigation outcome <i>(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)</i>	7,547,602 tCO ₂ eq	A.6. Expected adaptation outcome <i>(Core indicator 2: direct and indirect beneficiaries reached)</i>	8,890,000
			1,446,298
			7,443,703
			1.4%
			9%
A.7. Total financing (GCF + co-finance²)	450,000,000 USD	A.9. Project size	Large (Over USD 250 million)
A.8. Total GCF funding requested	<u>200,000,000</u> USD		

¹ Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

² Refer to the Policy of Co-financing of the GCF.

<p>A.10. Financial instrument(s) requested for the GCF funding</p>	<p><i>Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.</i></p> <p> <input checked="" type="checkbox"/> Grant <u>55,000,000 USD</u> <input type="checkbox"/> Equity <u>Enter number</u> <input checked="" type="checkbox"/> Loan 145,000,000 USD <input type="checkbox"/> Results-based payment <u>Enter number</u> <input type="checkbox"/> Guarantee <u>Enter number</u> </p>		
<p>A.11. Implementation period</p>	<p>6 years</p>	<p>A.12. Total lifespan</p>	<p>30 years</p>
<p>A.13. Expected date of AE internal approval</p>	<p>IDB approval of the program will follow GCF board approval <i>10/30/2022</i></p>	<p>A.14. ESS category</p>	<p>B</p>
<p>A.15. Has this FP been submitted as a CN before?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>A.16. Has Readiness or PPF support been used to prepare this FP?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>A.17. Is this FP included in the entity work programme?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>A.18. Is this FP included in the country programme?</p>	<p>Yes <input checked="" type="checkbox"/> ³ No <input type="checkbox"/></p>
<p>A.19. Complementarity and coherence</p>	<p><i>Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</i></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>		
<p>A.20. Executing Entity information</p>	<p>See Section B.4 of this Funding Proposal.</p>		
<p>A.21. Executive summary (max. 750 words, approximately 1.5 pages)</p>			
<p>Climate vulnerability context: Latin America and the Caribbean (LAC) is one of the most vulnerable regions to the impacts of climate variability and change. This is due to its socio-economic context⁴ and its already high exposed populated areas, infrastructure, and ecosystems to multiple climate related hazards, such as tropical cyclones, heatwaves, droughts, floods, among others. According to a recent United Nations Office for Disaster Risk Reduction (UNDRR) report, nine out of ten people in this region affected by disasters were impacted by climatic events (mostly floods). Climate change medium-term impacts will include desertification, rapid glacier retreat, longer periods of hotter weather, lower and/or extreme rainfall, intensification of the La Niña or El Niño phenomena, sea level rise and a likely increase in the intensity and frequency of tropical cyclones. Data between 1998 and 2017 indicate that 53% of global economic losses from climate-related disasters occurred in LAC (RAR,2021). As urban areas continue to grow in this region, disaster risks linked to climate change will be an important element to be considered in the planning and design of cities and their key infrastructure such as urban transport systems. Thus, building climate-resilient infrastructure has</p>			

³ As of March 21st 2022, only Country programmes of Uruguay and Jamaica are available on GCF website. Both include reference to this FP.

been identified as one of the key adaptation priorities in most of LAC countries' Nationally Determined Contributions (NDCs).

Greenhouse gases (GHG) emissions context: Transport contributes to almost one-quarter of the current global energy-related GHG emissions and is growing faster than any other energy end-use sector. GHG emissions from the transport sector are anticipated to rise from today's levels by nearly 20% by 2030 and close to 50% by the year 2050 unless major action is undertaken. Between 2000 and 2018 the total GHG emissions of the participating countries grew on average annually 1.5% whilst transport emissions in the same period grew annually by 2.8%.

The **average carbon intensity of electricity** generated by Program countries is 0.243 kgCO_{2e}/kWh which allows electric vehicles (EVs) to reduce GHG emissions on a well-to-wheel (WTW) base by around 80% compared to fossil units. As countries are progressing towards decarbonization of their power supply, reductions of GHG will be even larger.

Cities are suffocated by bad air: Air pollution is a major problem in most Latin American cities with levels affecting seriously human health. The population of major cities of participating countries is exposed to levels of air pollutants that significantly surpass WHO guideline levels. The WHO estimates that annually 4.2 million deaths result due to excessive exposure to fine particulate matter equivalent to 7.6% of all deaths⁵. The transport sector is a major source of air pollution.

Baseline trends: Fossil vehicles will continue to dominate the landscape as electric vehicles (EVs) remain, even with decreasing prices, financially and from the convenience point of view not yet sufficiently attractive to be commercially viable. Public transport (PT) mode share is also expected to continue to decline. The result of this Business as Usual (BAU) scenario is that by 2030 transport emissions will be significantly higher than their current level with air pollution remaining at very high levels as the impact of new vehicle emission standards is offset by increased vehicle numbers and a mode shift towards private and more polluting vehicles.

Transformational change is required: Limiting the global temperature increase to below 2 degrees Celsius requires changing this transport emissions trajectory, which includes as core components the development of an integrated electromobility ecosystem (Paris Declaration on Electro-Mobility and Climate Change & Call to Action, 2015) and the fostering of public and non-motorized transport (NMT). The Paris Declaration on Electro-Mobility calls for the deployment of EVs compatible with a 20% share of all road transport vehicles in 2030. To achieve this goal, the International Energy Agency (IEA) modelling indicates that EVs need to represent 35% of global sales in 2030. EV deployment is however still at an infant stage in all Program countries. Closing the gap between the BAU reality and the target requires policy changes and corrective market interventions. Additionally, and in connection to the climate vulnerability context described above, as climate change-related risks continue to materialize, additional challenges will appear to effectively manage sustainable urban development. This will be further aggravated by the effects of forced migration and a growing incidence of systemic risk overall (RAR, 2021). Along these lines, and to support countries in LAC to build sustainable climate-resilient and carbon-neutral development pathways, infrastructure for electrified urban transport need to manage observed and anticipated climate impacts throughout its design, operation, and maintenance.

The main **motivating forces** to foster e-mobility are to (i) reduce GHG emissions; (ii) improve air quality and reduce health problems associated with air pollution; (iii) reduce dependency on imported fossil fuels and exposure to external price shocks; (iv) capture a positive economic impact related to reduced health costs, reduced fuel import bills and job creation, v) increase climate resilience of urban and grid infrastructure, and (vi) assess option of the hydrogen economy for the country. The majority of NDCs of Program countries specifically mention EVs as an important measure to achieve climate targets. Many countries have also initiated policies to foster the deployment of EVs.

Barriers to massive EV deployment are primarily: (i) limited commercial viability of EV investments related to high upfront costs, low or negative profitability, long payback times and possible loss of income if assets cannot perform at the equal level as fossil units; (ii) business models and policies which are not conducive to a mass EV deployment; (iii) limited know-how on climate risk assessments that quantify the severity and frequency of potential extreme climate-related events that can happen in the future and impact the IEUTS, and limited experience with cost-effective measures

⁴ The region has the greatest disparity in income distribution in the world. According to ECLAC, the percentage of extreme poverty increased from 7.8% to 11.3% of the population and that of poverty rose from 27.8% to 30.5% between 2014 and 2019. In these last two years due to the COVID-19, poverty and extreme poverty levels have increased even further.

⁵ <https://www.who.int/gho/phe/en/>

to increase the resilience of urban transport infrastructure; and (iv) lack of financial support for investments to reduce climate vulnerability of urban transport infrastructure.

The E-Mobility Program links EV deployment with sustainable low-carbon urban development and increased climate resilience of urban transport infrastructure and the grid (*Integrated Electrified Urban Transport Systems, IEUTS*).⁶ Sustainable urban development includes measures to strengthen and improve the public transport (PT) sector, NMT, electric micro-mobility and measures to increase the quality of life of city centers with a gender sensitive approach while responding to observed and anticipated climate-related risks associated to more intense precipitation and flooding, heat waves, sea level rise and more intense and frequent hurricanes. The focus of the Program is on commercial e-mobility including buses, taxis, institutional fleets, trucks and vessels. Private usage vehicles such as private passenger cars and motorcycles are not fostered. Program components are **(i) climate resilient transport infrastructure; (ii) increase climate resilience of grid with green hydrogen and vehicle to grid (V2G) pilot projects; (iii) electrified integrated urban mobility and (iv) technical assistance.** All projects will review all type of hazards to which the IEUTS is exposed [OBJ:OBJ] in cities in LAC, with emphasis on climate-related hazards such as intense precipitation and flooding, extreme heat, sea level rise, hurricanes and strong winds. The results of the screening will determine the need for a qualitative or quantitative disaster (see Annex 2b) and climate risk assessment that will guide the identification, prioritization and design of specific adaptation measures to reduce climate vulnerability and risk of the *IEUTS* to these hazards. In Component 2 green hydrogen pilot projects shall include the entire value chain and is for transportation usage (preferable trucks, vessels or mobile machinery) and include piloting the usage of hydrogen for energy storage and explore the potential of hydrogen storage to increase the grid resilience whilst V2G projects explore the option of linking EV deployment with renewable energy deployment whilst increasing the grid resilience with a focus on Small Island Developing States (SIDS) which are highly vulnerable to more intense and frequent hurricanes. Technical Cooperation assistance under Component 4 includes consulting services related to the establishment of a conducive e-mobility framework at project/local level (e.g. business models which favor EV deployment), at national level (e.g. public transport electrification roadmaps) and at a regional level to foster the interchange of experiences and know-how facilitated by a Resource Center (Regional Sector Skills Council for Electromobility) common to all participating countries; and activities to build institutional adaptive capacity such as customized training to enhance the operation and maintenance of assets financed by the Program. Component 4 includes a comprehensive gender action plan to ensure that the Program components and projects consider the differentiated needs and travel patterns between women and men when using public transportation and transport infrastructure during the design and implementation of the activities, increase access to economic opportunities for women in the electromobility sector. Additionally, this component will also include activities to improve existing planning and design methodologies and processes to integrate and manage uncertainty in the decision-making; a knowledge management strategy (KMS) will be developed to gather, synthesize and apply lessons learned and practical experiences on climate risk management, aiming at creating benchmarks, regulations and/or norms at the city level for designing and operating climate resilient IEUTS.

Financial instruments will be concessional loans (Sovereign Investment Loans) and grants (Investment Grants) for components 1, 2, and 3 of the Program, which will be formalized through Subsidiary Agreements⁷. Also, GCF resources will be used for non-reimbursable Technical Cooperation activities for Component 4 of the Program executed by an EE under a prior Subsidiary Agreement or, where appropriate, directly by IDB. For more information, see Section B.4 of this Funding Proposal.

The **paradigm shift** of the Program is achieved by having as a long-term outcome an EV conducive ecosystem which results in investors purchasing EVs on a commercial base. The Program fosters a structural shift towards low-carbon, climate-resilient, sustainable and attractive PT systems which can revert the declining PT mode share trend. Barriers towards mass EV deployment can successfully be eliminated or reduced through Program interventions. The Program proposes an adaptation approach to investments in e-mobility that consists of: (i) the deployment of climate-resilient IEUTS and (ii) institutional capacity building activities aimed at improving existing planning, design and decision-making processes for urban transport projects, aiming at defining long-term frameworks and/or local regulations and norms to sustainably manage climate-related risks associated to intense precipitation and flooding, extreme heat and more intense and frequent tropical cyclones and strong winds (see Annex 2b for additional details). Accelerated EV

⁶ This includes infrastructure, ancillary equipment for electromobility, surrounding public spaces of stations and terminals, green infrastructure, among other elements.

⁷ As defined in the Accredited Master Agreement (AMA) between IDB and the Fund, dated 29th of August, 2017, a Subsidiary Agreement means “any agreement entered into by the Accredited Entity, in its capacity as Accredited Entity and administrator of the GCF Proceeds, on the basis of or in connection with this Agreement, unless expressly agreed otherwise in an Funded Activity Agreement (FAA), with an Executing Entity (that is not the Accredited Entity).”

investments take place due to an e-mobility conducive policy environment, innovative business models, lower performance and income risks and the entrance of new market players. The Program acts basically as a market accelerator. The main contribution of the GCF towards this paradigm shift is that it happens far earlier and at a larger scale than under a BAU scenario. The Program creates added value through knowledge management, interchange of experience, development of the skills and competences needed in the workforce and through creating a critical mass of commercial EV deployment in various countries which goes far beyond the simple aggregation of individual projects.

The expected **GCF fund-level impacts** are (i) a total investment of 450 MUSD of which the GCF 200 MUSD (leverage ratio of 1.25) of which 54% for mitigation and 46% for adaptation measures resulting in (ii) 7,547,602 MtCO_{2e} of direct GHG emission reductions with a GCF cost of intervention of 26 USD/tCO_{2e} (iii) 549 tPM_{2.5} and 5,211 tNO_x reduced, economic benefits due to reduced emissions valued at 400 MUSD of which 74 MUSD due to reduced local air pollution, plus nearly 1.5 million direct and 8 million indirect beneficiaries of adaptation measures representing 9% of the entire population of Program countries.

The initial **Sub-Project pipeline** of the Program for implementation within the first 2-3 years includes indicative projects from Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama Paraguay and Uruguay.⁸

⁸ Sub-Project identification will follow IDB programming procedures considering Program's eligibility criteria, government priorities, and consistency with overall Bank activities and programming in the country.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

CLIMATE CHANGE PROBLEM AND THE RELEVANCE OF ELECTRIC MOBILITY

Transport contributes almost one-quarter of the current global energy-related GHG emissions and is growing faster than any other energy end-use sector. Latin America already accounts for 10% of global GHG emissions as of today. Transport related GHG emissions in program countries represent in 2018; 12% in Barbados, 26% in Chile, 16% in Colombia, 37% in Costa Rica, 18% in the Dominican Republic, 19% in Jamaica, 27% in Panama, 19% in Paraguay and 10% in Uruguay.⁹

Regarding urban development, LAC is among the most urbanized regions in the world with over 80% of its population living in cities.¹⁰ Its coastline extends over 700,000 km and it is where many of the largest cities are located. More than 27% of its population lives in coastal areas, with an estimated 6–8% living in areas that are at high or very high risk of being affected by coastal hazards- among them, the low-lying Caribbean states, which are especially vulnerable (WMO). Cities in LAC are projected to continue growing in the next decades and electrified urban transport infrastructure is expected to be an important element of their vitality and economic growth. For that reason, as climate change impacts continue to evolve and intensify, transport urban infrastructure in these cities need to be designed and operated so that climate-related risks are managed. According to UNDRR, risk is concentrating in the region's fastest-growing small and medium-sized urban areas (home to approx. 340 million people). An illustration of this situation is the large number of high-impact hydrometeorological events that occurred during 2020 and that were associated with loss of or damage to vital infrastructures of communities and populations in urban areas. Consequently, climate-resilient infrastructure has been identified as a priority in almost every single NDC within the LAC region.

Hydrometeorological events, such as floods, storms, droughts and heatwaves, account for 93% of all disasters that took place in the region over the last 20 years (WMO, 2020). Along previous lines, climate hazards of highest concern for the LAC region to be exacerbated by climate change include, (i) intense precipitation and flooding; at the end of 2020 for example intense rainfall events brought landslides, floods and flash floods to rural and urban areas in Central and South America, (ii) temperature increase, drought and extreme heat; major heatwaves affected the region, especially in many cities of South America, with temperatures above 40°C several days in a row, (iii) sea level in the Caribbean, rising at a slightly higher rate than the global average (3.3mm/year) and (iv) more destructive hurricanes; for example category 4 hurricanes Eta and Iota affected over 8 million people in Central America in 2020.

Regarding GHG emissions, transportation emission in LAC could reach 1.4 GtCO_{2e} by 2050 under a BAU scenario whilst under a 2050 decarbonization pathway heavily counting on transport electrification, the GHG emissions could be limited to 0.2 GtCO_{2e} (Vergara L., 2015). Limiting the global temperature increase to below 2°C requires changing this transport emissions trajectory, which involves the development of an integrated electromobility ecosystem encompassing various transport modes, coupled with the low-carbon production of electricity (Paris Declaration on Electro-Mobility and Climate Change & Call to Action, 2015). Latin American countries have above-average transport GHG emissions and for deep carbonization to happen large-scale resetting of transportation technology to zero end-use emissions through electrification including green hydrogen usage is necessary (IDB, 2020).

Electrification is a paradigm change and a game-changer. It is a must if carbon neutrality shall be achieved. Shift and improve measures are not capable to reach carbon neutrality whilst electrification coupled with a fossil-free grid creates this opportunity. Electrification is happening within all vehicle segments. However, long-range vehicles such as inter-urban buses or long-haul trucks are only at the start of electrification. Hydrogen technology is, at least initially, a more appropriate technology solution for these vehicle segments. Battery Electric Vehicles (BEVs) are the most competitive and also have the largest environmental impact in urban areas. Hybrid and plug-in hybrid vehicle technologies have been outgrown by the fast development of battery technology and only offer a limited GHG impact and are therefore not considered in this Program (see for further details Annex 2a). The Program focuses on high-utilization commercial vehicles and excludes passenger cars and motorcycles for individual usage. Replacing commercial units has a high GHG as well as air quality and health impact and avoids a negative social impact which could result from fostering individual usage passenger cars.

⁹ <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=ZJ>

¹⁰ [10 Ferreyra, Maria Marta; Roberts, Mark. 2018. Raising the Bar for Productive Cities in Latin America and the Caribbean. World Bank Latin American and Caribbean Studies; Washington, DC: World Bank](#)

NEED TO ADAPT E-MOBILITY SOLUTIONS TO CLIMATE CHANGE ASSOCIATED RISKS

Many countries in LAC are betting on electromobility and expect it to be an important element of their climate-resilient and carbon-neutral development pathways. Although the region contributes only to 8.4% of global CO₂ emissions, it already pays a heavy price from extreme hydrometeorological events. More than 152 million people in LAC have been affected by climate-related disasters between 2000 and 2019. Furthermore, 56% of losses suffered by firms in LAC after a disaster are due to transport disruptions. This is the highest share in any region (global average is around 40%) (WB, 2019). Therefore, cities in the region need to act and prepare future electrified urban transport for the challenges ahead brought by climate change, so that climate-resilient IEUTS can bring benefits to local communities which span from improved accessibility and stronger economic growth to social inclusion.

In connection to the above, electromobility assets such as V2Gs for example, may also contribute to strengthening the reliability of local electricity grids as their exposure to climate hazards increases over time. Such is the case of cities in Central America and the Caribbean which have seen an increase in the number and intensity of annual tropical cyclones in the last decade.

The IDB has led research on the vulnerability of hydropower to climate change in Latin America, specifically in Central America¹¹ and the Andean¹² region, being hydropower the main source of electricity in the region with almost 50% installed capacity in its power matrix. The studies conclude that impacts are geographically differentiated but significant depending on the country analyzed, with average electricity supply costs increasing by up to 7% in some cases. In the case of Central America, a generalized decrease in precipitation is expected in the basins analyzed in 7 countries, significantly affecting future hydroelectric production; while an increase in average precipitation and seasonality is expected in large areas of the Andean region, with significant geographic differentiation. Considering these possible future impacts, it is foreseen that power grids in countries with high shares of hydropower will become less flexible to accommodate and integrate new variable sources of energy, such as solar and wind. These two technologies have become the preferred choice when it comes to capacity expansion for electricity generation in Latin America due to their price competitiveness. In this context, additional flexibility services and measures will be required by power network operators to maintain system reliability and adequacy. Energy storage possibilities and auxiliary services provided by stand alone or mobile batteries, for example through V2G technologies, or seasonal storage through hydrogen, have the potential to help alleviate some of this climate change induced impacts in the power grid and contribute to increase its resiliency. In this regard, additional vulnerability assessments may also be carried out, as deemed necessary under IDB's Disaster and Climate Risk Assessment Methodology (DCRA).

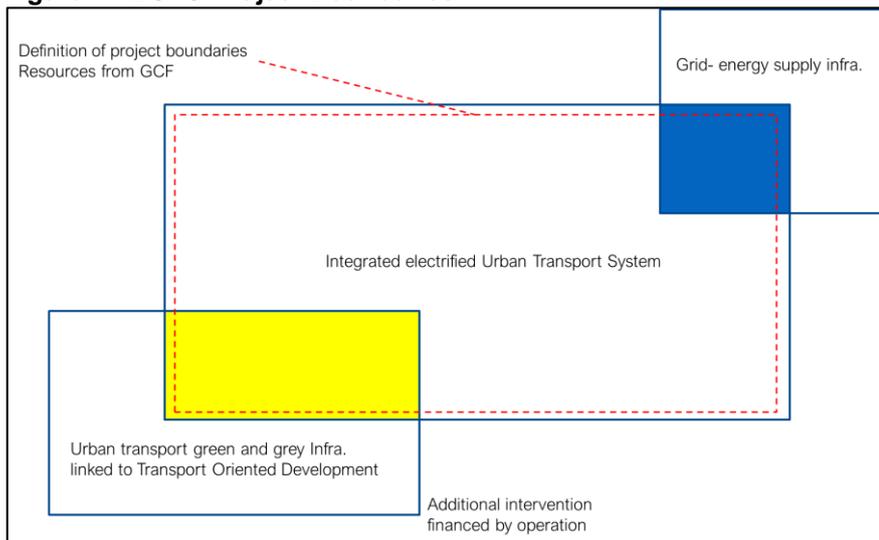
In order to address the challenges that electromobility investments face in the region in light of climate change, the proposed program presents an adaptation approach that covers two aspects. The first will look into climate change-associated risks of the program's financed infrastructure (included in Components 1 to 3). For this purpose, IDB's DCRA¹³ will be used as the framework to guide the identification, design and implementation of adaptation hard measures. The second aspect is related to building/strengthening the adaptive capacity of stakeholders to better manage the program's financed infrastructure and associated ancillary equipment in light of new operational challenges created by climate threats (this includes also creating awareness of climate hazards and risk-reduction processes) (included in Component 4). Planned activities include among others, developing a KMS, training to enhance the system's operation, maintenance and the improvement of planning and design methodologies and processes to duly incorporate uncertainty in the decision making. This second aspect of the approach shall also contribute to gather, synthesize, and apply new knowledge on climate risk management in the design of sectorial regulations/norms for the service reliability of e-mobility solutions at a national and/or regional scales. This approach is transversal to the E-Mobility Program and is aimed at building climate resilience of the IEUTS which encompasses e-mobility infrastructure, urban infrastructure (green and grey), and grid infrastructure (see Figure 1).

¹¹ <https://publications.iadb.org/en/publication/17190/vulnerability-climate-change-hydroelectric-production-systems-central-america-and>

¹² <https://publications.iadb.org/es/vulnerabilidad-al-cambio-climatico-y-medidas-de-adaptacion-de-los-sistemas-hidroelectricos-en-los>

¹³ <https://publications.iadb.org/en/disaster-and-climate-change-risk-assessment-methodology-idb-projects-technical-reference-document>

Figure 1: IEUTS Project Boundaries



Dashed boxes indicate elements that are part of the integrated system and that will be included in the DCRA methodology.

Under this systemic approach, specific e-mobility infrastructure’s climate resilience shall not only be improved but also be combined with measures to reduce the vulnerability of urban areas and grid infrastructure to climate change that lay within the defined boundaries of the IEUTS. This means the Program will directly contribute to increase climate resilience of the IEUTS as a whole, in order to ensure that e-vehicles offer expected quality service under observed and expected extreme weather conditions such as high temperatures or high-intensity precipitation that exacerbate flooding hazards (including also elements of e-mobility infrastructure such as charging infrastructure and bus depots). Along these lines, investments in urban areas to increase climate resilience of the IEUTS include for example grey infrastructure to mitigate flood hazards, support of public, non-motorized and electric micro-mobility and the customized design of Nature-Based Solutions (NBS). In regard to the third element (e.g., grid electricity infrastructure) project activities may include investments to facilitate linking of 100% renewable energy generation with e-mobility. This is key especially for SIDS and includes projects with V2G potential. This technology can help sustain electricity supply to critical building infrastructure from EVs in case of extreme climate events such as hurricanes and thereby improving the resilience and independence of the grid at critical spots. In the long-term V2G can also give utilities access to electricity stored in vehicles to improve load balancing and to mitigate supply bottlenecks: this feature is especially important for grids moving towards high rates of (supply unpredictable) renewables. The 2nd life application of used EV batteries as storage units can also reduce costs of stand-alone or backup renewable energy units or they can increase grid resilience through acting as grid shavers, especially in urban settings, thus reducing peak impacts (applied e.g. to high-powered chargers to reduce maximum power demand and peak loads).

CONTEXT

Latin America has strong enabling conditions in terms of clean transport and e-mobility. The region has one of the cleanest electricity generation portfolios in the world (high hydroelectric production and growing deployment of wind and solar power plants). Therefore, the adoption of an e-mobility strategy would allow the sector to move towards a decarbonization pathway. The table below shows the carbon intensity of electricity generated by Program countries. With these grid factors, EVs can reduce GHG emissions on a well-to-wheel base by 70-80% compared to fossil units.¹⁴

Table 1: Carbon Grid Factor of Program Countries (kgCO_{2e}/kWh)

Country	Carbon Grid Factor Electricity
Barbados	0.484
Chile	0.235
Colombia	0.208
Costa Rica	0.039
Dominican Republic	0.426
Jamaica	0.498

¹⁴ See Annex 22

Panama	0.230
Paraguay	0.000
Uruguay	0.065
Average	0.243

Source: IFI, Version 3.1, 2/2022

Program countries that currently have above-average carbon grid factors have all adopted ambitious renewable energy (RE) targets for the near future with the goal of reducing dramatically GHG emissions from electricity production and therefore also from EV deployment. The IDB is supporting these countries in their efforts to increase RE targets.

- Barbados is committed to reduce 22% of electricity consumption compared to BAU by 2029, and to have 20% and 29% of RE supply by 2026, and 2029 respectively. The Barbados National Energy Policy launched in 2017 includes suggested targets for solar, wind, and biomass energy sources, as well as biofuels for the transportation sector and natural gas as a bridging fuel to reduce the use of heavy fuels. In the past five years a growing number of solar PV systems have been and continue to be interconnected to the grid. Investment in renewable energy and energy efficiency through the IDB led Energy Smart Fund has allowed annual savings of 4,403 MWh and installed 1.9 MW of solar PV generation, distributed among various sectors. To date, another IDB loan operation, the Public Sector Smart Energy Program (BA-L1025) has installed approximately 4.3 MW of solar PV generation, distributed among 15 government buildings. The IDB group (including the private sector arm IDB invest) is also supporting the market reform, administrative processes for licensing, and competitive procurement of new renewable energy capacity and its associated regulation.
- Chile has a target of 80% RE generation by 2030¹⁵ compared to 45% in 2019¹⁶.
- The Dominican Republic has a target of 25% of RE by 2025¹⁷ compared to 10% in 2019¹⁸ and 30% by 2030 as part of the RELAC initiative¹⁹.
- Jamaica has a RE target of 33% in 2030 and 50% by 2037²⁰ compared to 11% in 2019²¹. Jamaica is making rapid progress in diversifying its energy matrix away from an overwhelming dependence on oil for electricity generation towards LNG and increasing the penetration of variable renewable sources, namely wind and solar PV. On the energy efficiency side Jamaica has one of the highest energy intensity rates in the LAC region, as well as one of the highest electricity tariffs, which together represent an important opportunity for intervention with a compelling return on investment. The \$40m Energy Management and Efficiency Program (EMEP) underway, financed and led by the IDB, is a demonstrative step in this direction for the public sector, aimed at reducing electricity consumption in 80 government buildings by 30%. In terms of energy planning the most recent draft Integrated Resource Plan (IRP) document indicates an increasing RE penetration to 35% of generation by 2035 and to 41% by 2037 from 17% by 2019.

Latin America is also well known for innovative e-bus business models in Colombia and Chile (see Inbox).

Inbox: Innovative Business Models for e-Bus Promotion

Chile

The case of Chile is especially interesting due to the introduction of new business models separating bus ownership and bus operations. The first batch of 200 electric buses was based on investments of electric utilities leasing e-buses to operators, in order to boost their core business (energy sales and the installation of charging infrastructure). Critical for the first batch of e-buses was not only the investment of electric utilities but also a government subsidy for the entire incremental investment cost of e-buses versus fossil units as well as changes in concession contracts reducing risks for investors in vehicle assets and ensuring payments from vehicle operators. In subsequent tenders ownership of e-buses is mixed with some offers based on JVs (Joint Ventures) of bus operators with bus suppliers and others being JVs of bus operators with investment firms. Electric utilities are currently no longer engaged in new investments or have teamed up with capital investment firms as they do not consider vehicle investments to be a part of their core business (e.g. AMP Capital and NEoT Capital have entered as investors). The government no

¹⁵ [Innovative Decarbonization Policies: Chile | Column | Renewable Energy Institute \(renewable-ei.org\)](#)

¹⁶ [Data tables – Data & Statistics - IEA](#)

¹⁷ [Energy - Climate Targets - Dominican Republic - Climate Change Laws of the World \(climate-laws.org\)](#)

¹⁸ [Data tables – Data & Statistics - IEA](#)

¹⁹ <https://hubenergia.org/relac>

²⁰ [Leveraging Energy From Renewable Sources Key To Creating New Jamaica – Minister Vaz – Jamaica Information Service \(jis.gov.jm\)](#)

²¹ [Data tables – Data & Statistics - IEA](#)

longer pays for incremental investment costs but still offers other advantages for e-buses such as longer concession periods and additional points in the bidding process representing effectively a subsidy to e-buses. Critical take-aways from the Chilean case are: (i) separation of ownership and operations can be an effective instrument to promote e-buses and can bring in new financially strong players into the industry; (ii) for kick-starting the process investment subsidies are critical; (iii) e-buses still require incentives to be competitive with fossil buses; (iv) required subsidies can be reduced significantly after an initial fleet of e-buses and after having established a working business model.

Colombia

Large Colombian cities already run successfully since many years BRT systems with large private companies working as operators and a public system manager paying companies based on distance driven cum service delivery targets. E-buses have been introduced for secondary routes based on local e-bus targets. The initial batch of 500 e-buses in Bogota (2019) was based on a tender which only allowed for the provision of e-buses. A subsequent second tender which allowed for any technology resulted in all winning offers to be fossil buses, thereby clearly showing that e-buses are not yet commercially competitive (end 2019). The third tender (2020) included significant additional points for e-buses as well as longer concession periods. This made electric buses competitive with fossil units but also resulted in 16% higher per-km costs of buses which is being paid by the municipality. The experience of Bogota reveals two important points: (i) e-buses can be inserted into public transport operations and will be offered by private operators if concession contracts are sufficiently attractive and if e-buses receive benefits compared to fossil units; (ii) without financial incentives e-buses are commercially not yet competitive. However, some large cities such as Bogota are willing to pay for these incremental costs due to e-buses improving air quality and reducing GHG emissions.

The e-Mobility Program will work frequently in smaller and medium sized cities where such business models might be less applicable due to lower levels of planning, and regulation as well as much smaller volumes and sizes of transport companies making e.g. the involvement of 3rd party asset owners less probable. For such cities the Program will therefore develop business models apt to their size, structure and conditions.

The COVID'19 pandemic has created an unprecedented challenge for many Latin American countries, from the health and economic perspectives, but it is also opening new opportunities for an accelerated sustainable transformation of its energy, transport, and urban landscapes while contributing to economic recovery. A report prepared by the ILO shows that fostering of electric mobility can have a significant positive job impact primarily due to the induced impact of savings of consumers on fossil fuels and vehicle maintenance resulting in increased spending on goods with a high income elasticity which tend to be labor intensive service-goods (ILO, 2020). Equally a recent study by the IDB and the International Labor Organization identifies that a Net-Zero Emissions Future can create 15 million net jobs in the LAC region by 2030 (IDB, 2020). Thus, accelerating transformation in energy and transport, among other sectors, make decarbonization possible and can create jobs, unlock economic and social benefits, and help protect the region's unique natural resource treasures. Some countries in LAC are already responding to these challenges and opportunities by adjusting their growth and stimulus strategies to accelerate green transformation. While the transition to electro mobility offers great potential for the creation of new jobs, it will also negatively affect some high-emitting sectors and alter most existing occupations in terms of task compositions and skills requirements. In order to ensure a Just Transition for all, skills development measures will be instrumental in reaping the benefits of potential job creation in new green activities and in addressing the social challenges in shifting to more sustainable models.

A brief context per country is given below.²²

Barbados

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
430 km ²	0.3 million	15,200 USD	0.11 million	1.57 USD/l	0.24 USD/kWh

Barbados is among the countries most vulnerable to climate change (Stennett-Brown RK, 2019). The 2021 Physical Development Plan (PDP) is based on a vision of sustainable growth and development of Barbados. It addresses the critical impacts of climate change on Barbados through policies and strategies that enable the people to thrive and remain resilient under changing climate conditions. The Roofs-to-Roofs Program (R2RP), supported by the GCF, operationalizes the PDP and includes roof-top solar PV installation increasing distributed electricity generation which

²² Sources: World Bank database for population and current USD GDP/capita (2020); Local data for vehicle fleet; Diesel and electricity price (average households and businesses) based on www.globalpetrolprices.com for August 2021

shortens recovery time post-disaster and increases resilience. Barbados has put as goal in its updated NDC to be a 100% fossil-free island by 2030. This implies not only 100% renewable electricity generation but also 100% EV or alternatively-fueled vehicles rates. This is hardly a realistic target as it would require replacement and scrapping of the entire fossil vehicle stock by 2030. Effective April 2021, the government's procurement policy is to prioritize the purchase of electric or hybrid vehicles and the Barbados Transport Board's intention is to operate a fully-electrified government bus fleet by 2030.

Chile

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
756,950 km ²	19 million	13,200 USD	5.6 million	0.89 USD/l	0.16 USD/kWh

At the end of 2017 Chile published its National Electromobility Strategy, a document realized jointly by the Ministry of Energy, the Ministry of Transport and Telecommunications and the Ministry of the Environment (MinEN, MTT, MMA, 2017). The National Strategy for Electromobility is currently being updated. Chile has also a National Green Hydrogen Strategy (MinEN, 2020). The updated NDC Chile has as target that the country will be carbon neutral by 2050, and includes the following measures for electric mobility: (i) 100% of e-taxis by 2050; (ii) 100% of electric public transport buses by 2040; (iii) 60% of light vehicles in stock, private and commercial, shall be electric by 2050. Chile has numerous policies and incentives to promote different categories of electric vehicles including buses and taxis and has as of end 2021 more than 800 e-buses operating primarily in Santiago de Chile.

Colombia

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
1,141,750 km ²	51 million	5,300 USD	8.5 million	0.58 USD/l	0.13 USD/kWh

Colombia has an automotive industry dedicated mainly to vehicle assembly, auto parts production and motorcycle assembly. The NDC contemplates for the transportation sector amongst others to achieve 600,000 registered electric taxis, buses, light commercial vehicles including small trucks and official vehicles. The Government has developed the National Strategy for Electric Mobility, which aims to promote the electrification of the transportation sector. Bogota has purchased as of end 2020 nearly 1,500 electric buses, whilst Cali and Medellin have pilot fleets of e-buses. The Congress also issued the Electromobility Law (No.1964 of 2019) which establishes goals and incentives and requires that all public buses purchased from 2035 onwards be electric.

Costa Rica

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
51,100 km ²	5 million	12,100 USD	1.5 million	0.96 USD/l	0.09 USD/kWh

Costa Rica reaffirmed its aspiration of becoming a Carbon Neutral economy and aims for a decarbonized economy with net-zero emissions in 2050. The updated NDC of Costa Rica has concrete 2030 e-mobility targets for public transport, passenger cars and fleets (8% of the vehicle stock). For other vehicle categories such as motorcycles targets and measures shall also be developed to migrate towards EVs. Costa Rica has published a national plan for electric transport which includes concrete steps towards electrification of vehicles and has approved 2018 the law on incentives and promotion of electric transportation which includes targets for EV penetration, the establishment of a public charging infrastructure as well as important tax incentives for private EVs.

Dominican Republic

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
48,400 km ²	11 million	7,300 USD	4 million	0.88 USD/l	0.16 USD/kWh

The updated NDC of the Dominican Republic proposes as mitigation actions the electrification of buses, taxis, school buses, minibuses and "conchos" and the creation of policies to encourage the transition to electric and hybrid mobility for private usage. The country has realized a National Strategic Plan for Electric Mobility with specific EV targets for 2030 (30% of official vehicles and public buses, 10% of private vehicles) and for 2050 (100% EVs for official vehicles and public buses and 70% of all private vehicles shall be electric).

Jamaica

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
10,990 km ²	2.9 million	4,700 USD	0.5 million	1.10 USD/l	0.27 USD/kWh

Jamaica's geographical location and biophysical landscape make it vulnerable to climate change impacts, especially for coastal sectors. Jamaica plans to increase its share of renewables in electricity generation creating a greener grid. Jamaica is lagging behind in the uptake of EVs when compared to other countries in the Caribbean. The adoption of EVs in the transport sector however aligns with the National Energy Policy goals for secure energy supply, efficient use of energy, and minimizing the environmental impacts of energy production and utilization. Jamaica Public Service is deploying charging infrastructure and the Jamaican Office for Utility Regulation is discussing an EV charging tariff for public charging infrastructure²³ (JPS, 2021) whilst the Ministry of Science, Energy and Technology proposes a target of EV take-up of 10% of the transport mix by 2030 (around 50,000 vehicles).

Panama

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
75,480 km ²	4.3 million	12,300 USD	1.4 million	0.77 USD/l	0.17 USD/kWh

Panama's national government aims to reduce GHG emissions from the transport sector, hence different departments promote sustainable mobility and alternative means of transport. The National Strategy for Electric Mobility was approved in 2019, promoting four objectives until 2030: 10-20% of the total fleet of private vehicles shall be electric; 25-40% of private vehicle sales shall be electric vehicle sales; 15-35% of the buses in the authorized concession fleets shall be electric; 25-50% of the public fleets shall be made up of electric vehicles. Panama's updated NDC focuses mainly on mitigating emissions from the land use change sector and the energy sector, of which transportation accounts for about half of the sector's emissions and represents the biggest challenge.

Paraguay

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
397,300 km ²	7.1 million	4,900 USD	2.5 million	0.83 USD/l	0.06 USD/kWh

Paraguay's NDC aims to reduce 20% of the fossil fuel consumption by 2030, compared to the projected baseline. Paraguay has three hydroelectric plants that generate a large surplus of renewable energy, thus EVs provide the opportunity to reduce various environmental and financial externalities resulting from mobility dependent on fossil fuels. In this context, the country is taking its first steps in the transition towards electric mobility, advancing with the development of technical standards for EVs, and implementing "green routes" with chargers installed between the three main cities – Asunción, Ciudad del Este, and Encarnación. The National Development Plan 2030 and the National Energy Policy 2040 consider e-mobility as one of the dimensions to achieve the country's development goals.

Uruguay

Area	Population	GDP/Capita	Vehicle Fleet	Diesel price	Electricity price
176,220 km ²	3.5 million	17,700 USD	1.2 million	1.13 USD/l	0.21 USD/kWh

Uruguay is a country recognized for its recent transition to renewable energy in the power system, with 95% renewable sources in the power mix. Uruguay has adopted several national strategies that promote energy efficiency, increased renewable energy supply, and the reduction of fossil fuel consumption. The National Sustainable Mobility Plan promotes a transition towards transport technologies with better energy efficiency. The NDC of Uruguay sets specific goals for electric mobility categories towards 2025: e-Buses (15 units unconditional and 110 conditional), e-taxis (150 units unconditional and 550 conditional) and electric light commercial vehicles (LCVs) (150 units unconditional and 900 conditional), a network of electric vehicle charging stations throughout the main roads across Uruguay (52% completed in 2020), and a fast-charging network. However, these goals are part of a scenario conditional on access to international financing.

²³ Time of use residential tariff plus 5%

CURRENT STATUS

Between 2000 and 2018 the total GHG emissions excluding Land-Use Change and Forestry (LUCF) of the participating countries grew on average annually 1.5% whilst transport emissions in the same period grew annually by 2.5%. Transport emissions as share of total emissions increased from 17% in the year 2000 to 21% in the year 2018²⁴.

Current transport demand per capita in developing and emerging economies is far lower than in Organisation for Economic Co-operation and Development (OECD) countries but is expected to increase at a much faster rate in the next decades due to rising incomes and development of infrastructure²⁵. Limiting the global temperature increase to below 2 degrees Celsius requires changing this transport emissions trajectory, which involves the development of an integrated electromobility ecosystem encompassing various transport modes, coupled with the low-carbon production of electricity and hydrogen (Paris Declaration on Electro-Mobility and Climate Change & Call to Action, 2015). The Paris Declaration on Electro-Mobility calls for the deployment of EVs compatible with a 20% share of all road transport vehicles in 2030. To achieve this goal modelling of the IEA indicates that EVs need to represent 35% of global sales in 2030²⁶.

Electric mobility is still in its infant stage: End 2020 nearly 7 million Battery Electric Vehicles (BEVs) were circulating worldwide (IEA, 2021)²⁷. This represents less than 1% of the total vehicle stock. 5 countries (PR China, USA, Germany, France and UK in decreasing order) represent 78% of the worlds sales of BEVs in 2020 and 82% of the world's stock of BEVs²⁸. The BEV sales share is worldwide around 3% as of 2020. The only country in Latin America with more than 1,000 BEVs sold in 2020 was Mexico with around 1,900 units. With exception of Mexico which has a sales share of 0.2% of BEVs all other countries in Latin America have BEV sales share below 0.0%. EVs as percentage of total car stock rises much slower due to vehicle replacement rates. In Norway as leading country worldwide the EV car stock was in June 2021 14% although EV car sales are since more than a year > 50% of all new car sales²⁹. This shows clearly that achieving significant environmental impacts, which are dependent on the car stock and not new registration numbers, will take time. It also shows the importance of acting early to achieve a high penetration rate of new registered vehicles to enable an impact in the medium term.

Fuel cell vehicles with hydrogen (H2) are still at a demonstration stage. If H2 production is based on water electrolysis using renewable energy sources, it can however offer a way to decarbonize the transportation sector, especially long-haul and heavy transport. First examples of developing entire H2 value chains are currently being realized in countries such as Switzerland³⁰. The IDB has witnessed an increased demand for H2 pilots associated to transport applications. IDB's public and private windows are currently supporting various countries with national hydrogen strategies and roadmaps, piloting implementation, training and capacity strengthening, whilst supporting the creation of local inclusive "hydrogen ecosystems".

Private cars are becoming the dominant mode of transport: The mode share of PT is steadily declining in Program countries and is being replaced by private means of transport including also the strongly growing share of ride-hailing services. This results in increasing emissions of the transport sector as well as increasing economic costs of transportation due to increasing congestion and health costs.

Latin American cities are suffocated by bad air: LAC is the most urbanized region on the planet with an urban population share of 81% in 2019 (World Bank, 2020). According to the latest urban air quality database, 98% of cities in low- and middle-income countries with more than 100,000 inhabitants do not meet World Health Organization (WHO) air quality guidelines³¹. The WHO estimates that annually 4.2 million deaths result due to excessive exposure to fine particulate matter equivalent to 7.6% of all deaths³². The transport sector is thereby a major source of air pollution. The most vulnerable population is disproportionately affected by air pollution, as they tend to live and work closer to its sources (Mitchell G., 2003). Children and the elderly are particularly vulnerable. Recent studies show that women are more

²⁴ Based on data of [Greenhouse Gas \(GHG\) Emissions | Climate Watch \(climatewatchdata.org\)](https://climatewatchdata.org/)

²⁵ https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf

²⁶ This includes battery electric vehicles (BEVs), fuel cell and plug-in hybrid electric vehicles (PHEVs); [paris-electro-mobility-declaration.pdf \(windows.net\)](#)

²⁷ This includes next to full EVs also plug-in hybrid electric vehicles

²⁸ Data compiled by Grutter Consulting based on [Global EV Data Explorer – Analysis - IEA](#)

²⁹ [Elbilbestand | Norsk elbilforening](#)

³⁰ See <https://h2energy.ch/>

³¹ <https://www.who.int/airpollution/data/cities-2016/en/>

³² <https://www.who.int/qho/phe/en/>

affected by poor air quality than men (Clougherty, 2010) due to biological differences, socioeconomic disparities and unequal gender norms. (Mehra, 2021).

Gender and transportation: women and men have differentiated needs in terms of transportations given the social norms and gendered distribution of care and household responsibilities, which affect mobility patterns and access to transport.³³

BASELINE TRENDS

- By 2030 transport emissions will increase in absolute terms and will represent a much higher share of total GHG emissions in participating countries.
- Fossil vehicles will continue to dominate the landscape as EVs remain, even with decreasing prices, financially and from the convenience point of view not yet sufficiently attractive to be commercially viable.
- PT mode share will continue to decrease with private vehicles being the dominant mode of transport.
- Air pollution will remain at high levels: new vehicle emission standards for fossil vehicles will allow for a decrease of emissions per vehicle-kilometer, which will however be (partially) offset through increased vehicle numbers and a mode shift towards private and more polluting vehicles.

RELATED PROJECTS AND INTERVENTIONS

Multiple actors are engaged in promotion of e-mobility. Next to IDB, the AFD group, CABEL, CAF, the GEF, GIZ, KfW, NAMA Facility, the World Bank and UN Environment Programme are all active in this area.

UN Environment Programme is implementing the GCF Readiness Program “Advancing a regional approach to e-mobility in Latin America” in fourteen countries in the region including also Program countries (Argentina, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay and Uruguay are part of the UN program). The project aims at building capacity, development of e-mobility policies and business models, identification of strategies to finance the shift to electric mobility in the region and will be implemented combining a national with a regional approach.

The Global Environment Facility (GEF) is implementing through UNEP a Global E-Mobility Program including as Program countries Chile, Costa Rica and Jamaica. Technical Assistance (TA) of this program relates to awareness raising campaigns, capacity building and the development of instructional structures to support the introduction of electric mobility. It furthermore includes laying the ground for large-scale market introduction of electric mobility through (i) the development of policies, including fiscal, regulatory and local measures; (ii) the establishment of adequate business models and finance mechanisms; and (iii) the development of plans and studies to ensure environmental and social sustainability, including promoting gender equality. The investment component of the Country Child Projects will be used for electric mobility demonstration projects to allow for the creation of local experience to de-risk the technology and to attract investors to upscale electric mobility in the respective countries.

AFD together with CAF, GIZ and KfW have put forward an e-mobility Program to the GCF which includes Colombia, Costa Rica, Dominican Republic, Panama and Paraguay. AFD includes only mitigation and focuses on commercial electric vehicles, primarily e-buses. The IDB proposal is complementary (i) by having a comprehensive approach for urban mobility including sustainable urban development with a gender perspective and micro-mobility as well as activities to increase urban resilience, (ii) by including advanced technological trends such as green hydrogen usage in transportation, and (iii) by including also electric vessels for commercial usage. A Memorandum Of Understanding (MOU) between IDB and AFD has been signed to strengthen the collaboration and synergies on Electromobility.

Coordination with other domestic or international activities in e-mobility is made on a national level. On-going initiatives are focused on technical assistance and pilot projects. This Program shall complement these efforts by strengthening financial assistance whilst improving the e-mobility ecosystem through targeted TA. The IDB Program will act in a complementary manner to other assistance already offered with a focus on countries where TA of other organizations is not available or limited and by including the aspects not covered by other projects or programs such as green hydrogen usage for transportation or integration of e-mobility with improved urban resilience. Additionally, the

³³ World Bank. 2020. Why does she move? A study of women’s mobility in Latin American cities.

implementation experience of large-scale projects will help to strengthen existing TA activities which currently lack practical experience outside pilot projects thereby being often too abstract and theoretical.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

IF IEUTS pilot green hydrogen and V2G projects are implemented **THEN** the population will have access to climate resilient, affordable, attractive and convenient urban mobility systems and investors will be interested in pouring resources into EVs projects which helps the involved countries to meet their GHG reduction targets **BECAUSE** transportation systems will be less vulnerable to climate risks, will better address the differentiated needs of women and men in transportation and will have a more comprehensive mobility offer using low carbon electric vehicles combined with NMT and electric micro-mobility.

The potential **paradigm shift** of the Program in terms of **scale** is a shift from the current reliance on fossil-fuel powered transportation with high vulnerability of urban transport infrastructure against impacts of climate change towards electrified climate resilient transportation means. Higher quality public transport and urban infrastructure catering to the needs of people cycling, walking and using electric micro-mobility combined with gender-sensitive design of urban transport systems allow for behavioral change reversing the current trend towards private means of transportation and increasing use of public and NMT, especially women's satisfaction and safety in public transportation. The Programs technical and financial assistance in the design and implementation of business models in line with the specific needs of electric mobility and in fostering comprehensive urban mobility interventions centered around public and NMT are decisive factors to foster this paradigm shift. The development and implementation of business models which tackle the barrier of high upfront investments pulls in other investors and allows for massification at scale in a commercial manner. Innovative business models include such which separate asset ownership and asset operations, bulk purchase or pay-as-you-go schemes. The Program's assistance in developing tools and methods for increasing grid and transport infrastructure resilience in a cost-effective manner has the potential for a shift towards more resilient urban transport infrastructure and towards mass usage of hydrogen and batteries of EVs as storage facilities to enable improved grid stability whilst increasing the share of renewables. In terms of **replicability** the Program's investments in IEUTS combined with the market trend of strongly decreasing prices of EVs allow for solutions to be replicated across other cities in Program countries. This is enabled through knowledge management and outreach instruments and the implementation of at-scale IEUTS as well as initial pilot projects in the fields of hydrogen usage for transportation and V2G which reduce decisively the risk levels for follow-up investors. The paradigm shift is **sustainable** due to the promotion of government policies favoring investments in EVs and resilient infrastructure combined with a market where EVs will achieve price-parity with fossil units within this decade. Business models which favor the deployment of EVs are fostered in the different countries which allow for scaling up measures and for making them financially more sustainable. The interventions make cities more livable resulting also in a behavioral change towards public and non-motorized mobility in people and not car-oriented cities. The Program's technical assistance focus on the design and promotion of policies which enable a commercial mass-uptake of e-mobility, development of human capital in the transition to e-mobility and the interaction with the private sector in the implementation of projects are critical for achieving this target. The main contribution of the GCF is that this paradigm shift towards climate-resilient electric mobility happens faster and at a much larger scale than under a BAU scenario.

The expected **outcomes** of the Program are (1) an urban transport system which is less vulnerable to extreme climate events³⁴, including floods, heatwaves and landslides, by implementing climate-proof urban transport infrastructure which is expected to reduce the vulnerability of cities and their transport system to climate hazards; (2) an electric grid which could be made more resilient to climate events through the possibility of using hydrogen and EV batteries as energy storage providing electricity during climate hazards; (3) reduced GHG emissions from the commercial vehicles (public transport, taxis, institutional fleets, freight transport) due to mode shift towards public and NMT and a shift from fossil to electric means of transportation resulting in 7.55 MtCO_{2e} decreased GHG emissions and energy savings of 128,000 TJ due to EVs being on average factor 3 times more energy efficient than fossil units resulting in economic benefits reflected in reduced fuel imports, and less foreign dependency and environmental benefits of reduced resource usage; and (4) improved public and private sector capacity, including for the development of human capital, and a more favorable enabling policy framework for low carbon and climate resilient transport in the domain of electric mobility.

³⁴ The main hazards that will be considered are intense precipitation and flooding, extreme heat, sea level rise, hurricanes and strong winds. Please see Annex 2b for more information: Table 3 for *City typologies to guide the climate risk assessment*.

Expected **co-benefit outcomes** are (i) an improved air quality resulting in environmental co-benefits of 549 tons less PM_{2.5} and 5,221 tons lower NO_x emissions which again result in economic health cost savings estimated at 74 MUSD; (ii) increased use of public and NMT resulting in lower costs for mobility as economic benefit and gender co-benefits due to implementing measures which favor a safe, available and affordable usage of public and NMT by women by incorporating a gender perspective in the system's design.

Outputs of the Program are (1.1) Fewer urban infrastructure damaged resulting from climatic shocks because of higher investments in vulnerability reduction; (1.2) Fewer days to restore the IEUTS public transport service after climate shocks due to investment in climate resilience; (2.1) H2 and V2G pilot projects are used to assess the potential of such projects to increase the grid stability through usage of H2 and batteries of EVs as storage medium for electricity production during critical weather events and/or as peak shavers realized in 4 projects; (3.1) E-mobility interventions are integrated with measures to strengthen attractiveness and convenience of public and NMT including measures such as exclusive bus and cycle lanes, improved pedestrianization and public transport accessibility, transit-oriented development, fostering of electric micro-mobility and gender sensitive interventions realized in 7 cities; (3.2) EV fleets are deployed with innovative business models and supported by regulatory policies to enable mass application of EV fleets; (4.1) A climate resilient e-mobility ecosystem integrated with urban transport is established to enable mass uptake of e-mobility; and (4.2) Strengthened institutional and regulatory systems for climate-responsive planning and development.

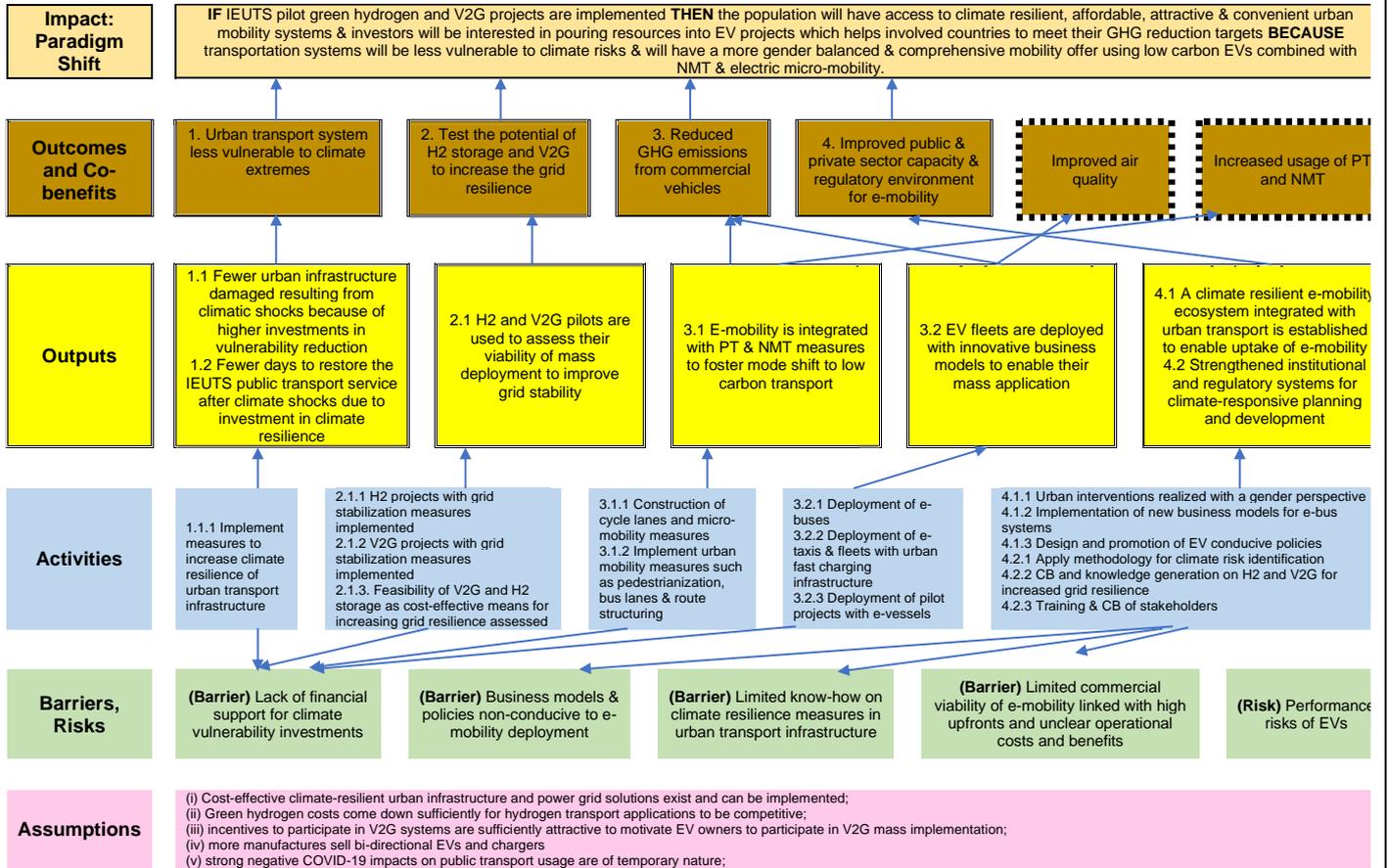
Activities related to the integration of urban infrastructure with climate resilient measures are (1.1.1) identification and implementation of measures to increase the climate resilience of urban transport infrastructure. Activities related to the assessing the feasibility and commercial attractiveness of using H2 and V2G projects to increase the grid resilience (2.1.1) at least 2 H2 projects can produce electricity for insertion into the grid during critical periods; (2.1.2.) At least 1 V2G projects implemented which can deliver electricity for critical periods (2.1.3.) The technical and commercial feasibility of H2 storage and V2G for increasing grid resilience is tested and assessed. Activities related to the integration of e-mobility with PT and NMT are (3.1.1) Construction of around 60km of exclusive cycle lanes and micro mobility measures; (3.1.2.) Implementation of urban mobility measures such as improved pedestrianization, bus lanes, route restructuring and accessibility measures implemented in minimum 50% of all city projects

Activities related to the deployment of EV fleets linked with innovative business models and supportive policies are (3.2.2.) deployment of around 470 electric buses; (3.2.2) deployment of 250 e-taxis linked with an urban fast-charging infrastructure; (3.2.3.) Deployment of 2 pilot projects with electric vessels. Activities related to the establishment of a climate resilient e-mobility ecosystem integrated into urban transport include (4.1.1) Urban interventions realized with a gender perspective; (4.1.2) Implementation of new business models for e-bus systems for investments under output 3; (4.1.3) Design and promotion of EV conducive policies. Activities related to the strengthening of institutional and regulatory systems for climate-responsive planning and development include (4.2.1) Apply methodology for climate risk identification for investments under Output 1; (4.2.2) Capacity Building (CB) and knowledge generation on H2 and V2G for increased grid resilience for investments under output 2; and (4.2.3) Training & CB of stakeholders

The **barriers** identified and which shall be overcome with this Program are (i) limited commercial viability of EV investments related to high upfront costs, low or negative profitability, long payback times and possible loss of income if assets cannot perform at the equal level as fossil units e.g., due to range limitations. The commercial viability barrier is especially true for electric vessels and hydrogen applications in the transport sector which are still at the initial phase of the learning curve; (ii) Business models and policies which are not conducive to a mass EV deployment including e.g. atomized public transport operators with limited capital access, contracts for public transport services which have a too short duration to be viable for EVs, policies favoring investments in roads and private means of transport or transport policies not taking into account gender aspects. This barrier is linked to limited experience with and knowledge on innovative business models, E-mobility system designs and on effective policy instruments (iii) limited know-how on climate risk assessments that quantify the severity and frequency of potential extreme climate-related events and their impacts on the IEUTS, and limited experience with cost-effective measures to increase the resilience of urban transport infrastructure; and (iv) lack of financial support for investments to reduce climate vulnerability of urban transport infrastructure. The identified major **risk** is technological, operational and performance risks of EVs linked also with a limited availability of skilled maintenance staff. Project monitoring, training and CB as well as outreach activities allow to manage this risk by providing stakeholders with updated performance data and actual experience of fleet managers.

Core **assumptions** are (i) Climate change will increase the severity and frequency of intense precipitation and flooding, extreme heat, sea level rise, hurricanes and strong winds events, which present a greater risk to the urban infrastructure

and the operation of the IEUTS. Cost-effective climate-resilient urban infrastructure and power grid solutions can reduce such risks; (ii) Green hydrogen costs come down sufficiently for hydrogen transport applications to be competitive; (iii) incentives to participate in V2G systems are sufficiently attractive to motivate EV owners to participate in V2G mass implementation; (iv) more manufactures sell bi-directional EVs and chargers (v) strong negative COVID-19 impacts on public transport usage are of temporary nature.



B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	MRA 2 Low-emission transport	MRA 3 Building, cities, industries, appliances	MRA 4 Forestry and land use	ARA 1 Most vulnerable people and communities	ARA 2 Health, well-being, food and water security	ARA 3 Infrastructure and built environment	ARA 4 Ecosystems and ecosystem services
Outcome 1: Reduced GHG emissions from the transport sector	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outcome 2: Urban transport systems less vulnerable to climate extremes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Outcome 3:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Electric grid more resilient to climate events								
Outcome 4: Improved public and private sector capacity and regulatory environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1 Improved air quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-benefit 2 Increased usage of PT and NMT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

PROGRAM DESCRIPTION

The Program links EV deployment with sustainable urban mobility solutions through bus lanes, bus system upgrades, bus route restructuring, smart fare systems, and urban interventions in public spaces surrounding e-bus stations and terminals to facilitate and foster the use of PT, NMT and electric micro-mobility. This shall result in low carbon and resilient sustainable urban transport systems. Electric buses can thereby be the trigger to modernize and upgrade the PT sector and to improve its acceptance and image amongst the public.

The Program links mitigation with adaptation efforts and includes activities to increase the climate resilience of urban transport infrastructure as well as increased climate resilience of the power sector, latter especially in SIDS. This includes (i) adapting the design of IEUTS to potential climate associated risks; (ii) structural and non-structural measures to increase the climate resilience of urban transport infrastructure within the IEUTS; (iii) pilot project with V2G in SIDS and infrastructure for testing of peak shaving and as storage option to increase with a potential mass deployment grid resilience, (iv) assessment of options of 2nd hand EV battery usage to increase the grid resilience. Hydrogen as energy carrier is attractive because it can be stored and transported in a stable way and can add to a stock-based instead of a flow-based energy system with the advantage that demand must not match supply in real time. This can increase the grid resilience and can facilitate the achievement of a 100% renewable energy system. Additional adaptation efforts include strengthening awareness of climate hazards and risk-reduction processes of stakeholders to better manage program's financed infrastructure and associated ancillary equipment in light of new operational challenges created by climate threats.

The Program has an integral system approach for electric mobility including the vehicles themselves, the identification of the most appropriate charging infrastructure, depot infrastructure upgrades and upgrades to the grid. In the case of hydrogen pilot projects, the entire value chain from green hydrogen production, hydrogen storage, logistics/distribution, filling stations to Fuel Cell Electric Vehicles (FCEVs) is included. The Program however not only includes technical aspects but also matches electric mobility projects with the most appropriate business model and implementation structure.

The Program shall contribute to overcome the barriers to mass deployment of EVs. The Program has a comprehensive approach and combines targeted policy advice and CB to ensure a favorable e-mobility environment with financial instruments to ensure deployment of large-scale fleets. The operation of large-scale EV fleets works as proof of concept of their commercial viability and fosters a mass replication without further concessional finance. The Program can reduce risks through investment interventions combined with attractive and innovative business models appropriate for EVs such as separation of asset ownership and asset management, leasing systems and Private Public Partnership (PPP) schemes.

The Program is for commercial EVs and charging infrastructure only. Privately used passenger cars, motorcycles and vessels are not financed³⁵. Commercial vehicles result in a much larger impact in terms of reduced GHG emissions and improved air quality and have significantly lower abatement costs than private vehicles due to being high mileage and larger vehicles. Concessional finance for privately used vehicles is socially inequitable and can result in a mode-shift towards private transportation. Commercial EVs targeted are primarily urban e-buses which have attracted the most attention from stakeholders and which are integrated with measures to increase the attractiveness, performance and resilience of cities. Other EV types potentially included are taxis/ride-hailing vehicles, trucks (especially for hydrogen pilots), vessels and mobile machinery e.g. forklifts or cranes. The Program does not increase the vehicle stock of taxis/ride-hailing vehicles compared to a BAU scenario but results in purchasing an electric instead of a fossil unit.

The Program only includes 100% EVs either as BEVs or as FCEVs powered by green hydrogen. Hybrid electric vehicles (HEVs) and plug-in hybrid electric vehicles (PHEV) are excluded. Latter are an intermediate technology. The average monitored emission reduction of hybrids is only around 20% (see Annex 2a). A review of >50,000 PHEV buses deployed in PR China revealed that the overwhelming share of these buses are never re-charged at the grid and thus only result in 20% energy and GHG savings (ADB, 2018). Exceptional cases where such buses can make sense are in cities with electricity supply problems³⁶. PHEV taxis are commercially not attractive. The battery size of PHEVs is small resulting in an electric driving range of only 30-50km and models can only use AC slow chargers with a maximum

³⁵ Buses, taxis or vessels can be privately owned but vehicles are used for public or freight transport.

³⁶ This is the reason why plug-in hybrid buses and not full electric buses were purchased for the BRT Peshawar.

charge rate of 3.6kW which means more than 1 hour to re-charge their already small batteries. A recent study of ICCT revealed that commercial PHEVs only run 20% of real-world driving on electricity (ICCT, 2020). Also, PHEVs are more complex and expensive to maintain due to having both electric and internal combustion powertrains.

The Program only includes green H2 produced by using renewable electricity to electrolyze water³⁷. This is pure enough for fuel cells used in transport application without further processing. This is the only method which can ensure zero GHG emissions. Blue H2 is produced from reformation of natural gas (methane) combined with carbon capture, utilization and storage technology with all its issues of energy usage as well as permanence of carbon capture and is thus not considered as zero GHG technology. Blue H2 also requires for use in fuel cells further clean-up. Grey, black and brown H2 use natural gas, coal or lignite for production. Pink, purple or red H2 is based on electrolysis using nuclear power³⁸. Projects with H2 production must ensure that freshwater access is not an issue in water-stressed areas e.g. by usage of seawater using reverse osmosis for desalination in dry coastal areas.

The main motivating forces to foster e-mobility in the countries included in the Program are:

- Reduce GHG emissions;
- Improve air quality and reduce health problems associated with air pollution;
- Reduce dependency on imported fossil fuels and exposure to external price shocks;
- Positive economic and social impact due to reduced health costs, less fuel imports and job creation;
- Increase climate resilience of urban and grid infrastructure;
- Assess option of the hydrogen economy for the country.

MARKET ASSESSMENT

IDB has realized a **benchmark study on commercial e-mobility** to assess the technical options, major business models and financing structures prevalent in countries worldwide to foster commercial e-mobility (see Annex 2a).

The major results of the benchmark study on **Battery Electric Buses (BEBs)** are:

- Large-scale deployment of BEBs is still limited to few countries but picking up very rapidly. Whilst PR China still dominates in numbers of buses deployed, Indian, European and some Latin American cities are increasingly electrifying their fleets.
- BEB deployment requires a system design optimizing bus types and chargers. Investments need to be made in buses, charging equipment, grid connections and bus depot upgrades.
- Favorable BEB business models include bulk purchasing of buses and leasing structures limited to the bus or including also charging infrastructure, energy supply systems and bus depots. Leasing structures separating vehicle ownership and operations is interesting for BEB deployment as it resolves the problem of high upfront investments. Different types of companies have entered BEB leasing systems including electric utilities, investment funds and traditional finance institutions. However, the applicability of such business models might be restricted to large cities with a sound legal, regulatory and financial base.
- The total e-bus system requires a 2-3x higher investment than purchasing fossil buses³⁹. This incremental investment can potentially be recovered with lower Operational Expenditures (OPEX)– however, the fact remains that more capital is required. For a traditional bus operator this results in a higher equity demand (buses are normally financed @ 60-80%) a higher debt load, and a higher guarantee demand (e-buses due to insecure re-sale value are not necessarily accepted by financial institutions at the same guarantee level; charging infrastructure and bus depot infrastructure are to a large part sunk costs). The operator/municipality could purchase with the same investment 2-3x more diesel buses and thus either expand public transport operations or renovate quicker a larger part of the fleet. The large incremental CAPEX thus poses more risk and more financial burden on private entities purchasing buses or on municipalities which might also have maximum lending levels linked to their tax revenue base.
- Total Cost of Ownership (TCOs) of BEBs are in many countries comparable or lower than of fossil units. This is related to lower OPEX and longer lifespan of BEBs with results depending on various critical assumptions

³⁷ Various colour codes are being used to differentiate the production method for hydrogen

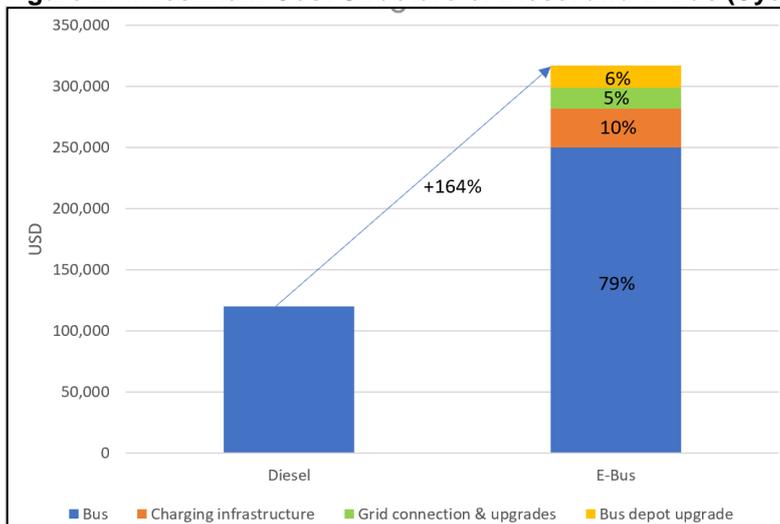
³⁸ [The hydrogen colour spectrum | National Grid Group](#)

³⁹ This includes the e-bus, charging infrastructure, grid connection and bus depot upgrade see section 3.5. for incremental cost components

including the bus life-time, maintenance costs, energy usage, energy costs and battery replacement costs. All of these factors influence the result and are not yet well known. TCOs are based in general on static calculations not discounting future benefits and costs.

- The payback time of BEBs is in general very long (> 8 years) and sometimes exceeds the commercial vehicle lifespan thus making investments non-feasible. The Financial Internal Rate of Return (FIRR) is in general below the Weighted Average Capital Cost (WACC) and does not warrant the considerable risks involved.
- The risks of the new technology are not adequately reflected in the FIRR. Loan payments for e-buses are well known – however, savings are based on assumptions concerning electricity usage, the future development of diesel prices, maintenance costs as well as bus performance including bus availability rates. High upfront investments of e-buses are thus a fact whilst savings over lifetime are a possibility and not a given. Risks include those related to (i) technology performance (e.g. actual electricity consumption influenced strongly by heating/cooling which can result in operational problems as electricity consumption will influence the bus range); (ii) risks related to the lifespan of equipment (including the bus itself, batteries and charging equipment); (iii) risks related to a change of bus providers (major e-bus providers are from PR China which has not been previously a common bus providers in many countries); (iv) risks related to maintenance and repair costs including costs of spare parts; (v) risks related to bus availability rates; (vi) operational risks due to reduced flexibility (e.g. buses cannot be used on all routes and at all times);
- The lack of large fleets results in skepticism concerning the reliability and performance of BEBs and a potential lack of know-how on e-bus maintenance. Also, spare parts are scarce in the country without deployment of large fleets. No operator wants to be the first-mover and take the risk, although many acknowledge that this might be an interesting investment.
- Regulations are often not conducive for BEB investments e.g., the length of concession contracts is often too short for long-term investments, vehicle transfer in case of operator bankruptcy is unclear (creating problems for leasing companies) or tariff systems do not take into account EVs. Many cities for example give concession periods for PT operators of 8 years which are insufficient to recover all investments related to e-bus systems. Cities such as Bogota or Santiago de Chile have therefore extended concession periods for PT operators using electric buses thereby allowing them to operate longer assigned routes which allows them to recover their investments and contributes to make e-bus investments more attractive than fossil bus investments.
- Countries with large fleets of BEBs have **all** supplied significant upfront subsidies to cover 80-100% of the incremental CAPEX of BEBs and in most cases also finance the charging infrastructure and other BEB system components. This is done independent of TCO calculations. Without investment subsidies BEB deployment on a mass scale will take at least another 5-10 years until BEB investment costs are comparable to those of fossil units and performance risks are perceived by operators to be manageable.
- The experience of BEB incentive programs is that these schemes can be scaled back quickly after deployment of initial large fleets. This together with the global price decrease of BEBs and charging infrastructure gives a clear indication that initial investment subsidies are required but will only be needed temporary.

Figure 2: Investment Cost Structure of Diesel and E-Bus (System Cost per Bus)



Note: Based on urban 12m bus

Source: Grutter Consulting; see Annex 2a; based on average actual costs of investments realized in e-bus systems of various countries in the last 3 years

New business models (see for more details section below) based on separation of asset ownership and operations require risk instruments to be in place e.g., fare systems managed by third parties with automated debiting to the vehicle asset company to ensure payments, vehicle transfer agreements in case of operator default, vehicle insurance systems or bankable concession contracts.

The major results of the benchmark study on **electric taxis** are:

- Mileage and utilization rate of taxis is often very high. Frequently more than 1 driver shares the cab which can be in operations for 24/7. Slow-charging at home is thus in most cases not a feasible option. High-range EVs require home-charging of 8 or more hours, even if installing a Type 2 charger at home. This means that e-taxis not only require a large battery set to enable a long range, but also need to have fast-chargeable batteries and a network of fast chargers. As example a claim given by taxi drivers in Washington, DC, states that the Nissan Leaf in the fleet take too long to charge and sometimes require going well out of the way to find a publicly accessible charger. The city offered a series of grants to offset the cost of purchasing EVs, but drivers said they ended up losing income because of the charging difficulties.
- In many countries with initial e-taxi fleets subsidies cover at least 50% of the incremental cost. However, investment subsidies only for vehicles are insufficient. A fast-charging network is at least as important. Non-monetary incentive policies are also an important driving force. These include privileged ranks at popular waiting sites e.g., train stations or airports, usage of bus lanes, access to taxi licenses, limitation of city centre access for fossil taxis, usage of e-taxis on all days whilst fossil units have usage restrictions etc. Getting priority at a taxi rank can for example be more valuable than a subsidy scheme as it results in more clients and a reduced waiting time.
- Electrification of taxis requires a systematic and combined approach of incentives of financial and other nature with the establishment of a well-planned fast-charging infrastructure with priority for e-taxis and good coordination and information of taxi owners to inform them of important aspects of e-taxis. Without public finance a fast-charging network in the density required cannot be established.

The major results of the benchmark study on **electric vessels** are:

- Small electric vessels have a TCO which is lower than of fossil units, especially due to low maintenance costs. However, this is basically true for low-powered, slow-moving vessels. Upfront costs are around 50-200% higher than for conventional units. Retrofitting is possible but should only be done of good quality boats.
- Electrification of medium sized vessels e.g. ferries operating on short routes is a feasible option and reduces air as well as water pollution. However, such electric vessels are still at an initial stage and require adequate design including an integration of the charging infrastructure, pier upgrades as well as upgrades to the grid.
- Financial support schemes are required to reduce the upfront incremental cost as well as to ensure profitability of operations. This is applied by countries which have succeeded in getting electric vessels into operations. An additional important element especially for medium sized vessels is to establish (fast) charging infrastructure at ports and at stops of ferries.

Electric vessels are especially attractive for shorter distances and inland waterways or coastal activities. Long-haul maritime transportation requires other solutions such as e-fuels (e.g. e-methanol, green ammonia or green hydrogen). Sub-Projects shall be selected which have the potential to run a large amount of commercial electric vessels used for passenger transport, fishing or cargo transport within these conditions where battery electric propulsion technology can be realized in the short term at commercial terms.

The major results of the benchmark study on **hydrogen usage for transportation** is:

- Hydrogen usage for transport is most promising in long-haul heavy-duty vehicles where BEVs have serious shortcomings due to low energy density of batteries resulting in large battery sets with a high weight and a large volume plus requiring high powered chargers on-route. Other applications of H2 in transport are e.g., for replacement of diesel trains on rural / low frequency tracks and in short-medium distance maritime transport.
- The major challenges of FCEVs are that it requires a different filling infrastructure and coordinated efforts along the entire value chain of hydrogen production, storage, distribution, delivery and usage.

- Hydrogen usage in transportation is still at an initial stage and commercially not yet viable. However, H2 production cost trends, FCEV cost trends and cost trends of fossil fuels point to H2 trucks being commercially viable by the end of the decade. For this to happen it is important to establish initial pilot experiences and to foster business models along the entire value chain integrating main stakeholders and reducing technology risks to initial transport operators. This can be done e.g., through pay-as-you-go models as successfully applied with H2 trucks in Switzerland.

PROGRAM STRUCTURE

Through the Program, GCF financing of 200 MUSD will leverage 250 MUSD in IDB and national financing to support around 16 low-emission projects with total costs of 450 MUSD.

FINANCIAL SUPPORT INSTRUMENTS AND TERMS

Funds will be provided, alongside IDB Sovereign Investment Loans and Grants, to borrower Host Countries or other IDB eligible borrowers, for financing Sub-Projects, either directly or through a LFI. In either case, provision of funds will be to Sub-Projects that comply with the eligibility criteria and conditionalities given (see “Project Eligibility Criteria” below). The level of support is determined per project type to get to the minimum concessionality level (see the following table).

Table 2: GCF Loan and Grant and Co-Finance Shares of Total CAPEX of Project⁴⁰

Project Type	max. GCF loan share	max. GCF grant share	min. co-finance share
Component 1: Increase climate resilience of urban transport infrastructure	90%	50%	10%
Component 2: Increase climate resilience of grid with H2 and V2G pilot projects	80%	30%	20%
Component 3: Electrified integrated urban mobility Public transport and NMT measures	50%	25%	50%
Component 3: Electrified integrated urban mobility Buses and others	40%	0%	60%
Component 3: Electrified integrated urban mobility Electric vessels	70%	30%	30%

No investment grants are given by the GCF for commercial EVs including e-buses, e-taxis or other electric fleets. Such vehicles do however need financial support which shall be obtained from government sources. Pilot electric and FCEV vehicle programs shall receive limited grant support by the GCF related to being first-of-its kind with novelty costs and high risks. All pilot projects must include a business design which allows for widespread commercial replication. Investment grants are to finance also adaptation measures in Components 1 to 3.

The proposed terms for GCF funded Sovereign Investment Loans are related to GCF financial terms for high concessionality and low concessionality.⁴¹ GCF high concessionality terms will be applied to sovereign investments related to adaptation.

The same financial hurdles are faced if vehicles are operated and owned by a private or a public entity. Program finance will not result in competitive distortions or favoring of specific private service providers as loans for taxis and private

⁴⁰ The sum of maximum GCF loan and grant share is not equal to 100% minus co-finance as GCF shares are maximum i.e. in general the project cannot receive from loans as well as grants the maximum share. Based on the individual project the minimal concessionality required is defined which can result in some projects with a higher grant (and lower loan) share and other projects with a higher loan (and lower grant) share. The maximum GCF loan share and the minimum co-finance share add to 100% in case of not using any investment grants.

⁴¹ High concessionality: Tenor 40 years, grace 10, pricing 0%. Low concessionality: tenor 20 years, grace 5 years and pricing 0.75%

institutional vehicle fleets are given through open-access FIs and loans to private or public owned public transport operators are based on competitive bidding or other equal access mechanisms.

In absence of this financial support, investment in fleets will not take place. Initial financial support for large-scale fleet deployment of electric buses is critical and the international experience in this area is clear: No country worldwide has been able to deploy on a large-scale fleets of BEBs without financial support:

Table 3: Investment Grants for E-Bus Purchase of Countries with large E-Bus Fleets

Country	Incentive
China	100% of incremental bus cost subsidized; chargers and grid connection up to 100% subsidized; electricity price initial 3-5 years subsidized; decreasing rates since Program start in 2009
India	80-100% of incremental bus cost subsidized in Fame II; chargers subsidized. FAME I 2015-2019 had 20 percentage points higher subsidy levels than FAME II
Germany	80% of the total incremental cost of BEBs and 40% of costs for charging infrastructure, grid connection, bus depot upgrades subsidized plus coverage of 100% of costs for the establishment of new maintenance centers
Switzerland	80-100% of incremental costs of BEBs and 100% of charging infrastructure and grid connection costs
UK	75% of incremental bus and charging infrastructure costs subsidized under Phase II (since 2019); under Phase I (2016-2019) 90% of incremental costs were financed
Poland	100% of incremental cost of entire e-bus system subsidized
USA	90% of incremental cost of entire e-bus system subsidized
Colombia	100% of incremental CAPEX of entire e-bus system was paid in Medellin and Phase I in Bogota. 100% of incremental total lifetime cost of e-bus system (CAPEX plus OPEX) subsidized in Phase III in Bogota (16% incremental cost compared to fossil units) ⁴²
Chile	100% of incremental cost of entire e-bus system for Phase I (200 buses) subsidized with monthly installments during 10 years; phase II longer concession periods for e-buses compared to conventional units (+40%) and additional points in tenders

Source: Grutter Consulting (2021), (Annex 2a).

Countries consistently subsidized 80-100% of the entire e-bus system incremental cost for the initial phase. The experience shows that once a large fleet is established subsidies can be reduced gradually and even be eliminated due to more competitive prices of e-buses combined with the experience of mass operations of e-buses. Concrete examples are⁴³:

- In PR China, the average subsidy level per 12m urban e-bus decreased within 5 years from 150,000 USD per bus to 30,000 USD per bus and is expected to be fully eliminated by 2022 (ADB, 2018).
- In India, under FAME I 2017-2019, e-buses were subsidized with 60% of incremental costs. This was reduced to 40% under FAME II 2020-2021 (40% of a lower absolute value meaning absolute subsidies were reduced by more than 50% within 2 years).
- In the UK, the 1st scheme for low carbon buses (until 2017) subsidized 90% of the incremental cost and the 2nd scheme, since 2018, 75% of the incremental cost of e-buses (including charging infrastructure).
- Chile subsidized for the first lot of 200 electric buses 100% of incremental costs. The next lots received no more investment gap subsidies but some additional benefits for e-buses relative to fossil units in tenders which is translated into higher payments per distance driven or per service unit for e-buses (TransMilenio, Colombia analyzed the tenders of Santiago and estimates the subsidy as 16% of total costs per km⁴⁴).

Countries with a e-taxi fleets which go beyond pilots have put significant incentives in place. The following table summarizes incentives provided by different countries.

Table 4: Incentives for E-Taxi Purchase (Subsidies)

Country	Incentive
---------	-----------

⁴² Phase II had no subsidies or technical points advantage for e-buses and all contracts were awarded to fossil bus systems as e-bus offers were non-competitive; phase III gave additional points for e-buses compared to fossil units which allowed to the offeror of e-buses to be competitive with a significantly more costly financial offer as this was compensated with additional free technical points for e-buses – TransMilenio estimated that this resulted in a lifetime sur-cost for e-buses paid by the government of 16%.

⁴³ See Annex 2a

⁴⁴ Grutter Consulting, personal communication with TransMilenio

PR China	Subsidy of 11,000 USD in Beijing covering 100% of the incremental investment cost
Chile	Subsidy of 10,500 USD covering 60-70% of the incremental investment cost
Colombia	Subsidy of 5,000 USD plus no driving restrictions plus ability to charge 25% higher fee
Netherlands	Subsidy of 6,000 USD per vehicle plus establishment of fast-charging stations for taxis. By 2025 only 0-emission taxis are allowed to operate.
UK	Purchase subsidy for electric taxi of 9,000 USD per vehicle ⁴⁵ plus requirements in cities such as London that taxis since 1.2018 need to have a 30-mile 0-emission capability for a new licence, plus subsidies for home-chargers plus establishment of fast-chargers in urban areas partially exclusively for taxis.

Source: Annex 2a

Initial subsidies cover at least 50% of the incremental cost. The case of various countries however also clearly shows that investment subsidies only for vehicles are insufficient. Home-charging is not a solution for most taxi drivers. This has been recognized by California as well as cities such as Amsterdam or London which are offering a full package including subsidized vehicles, an urban fast-charging network with DC chargers of 50-150kW plus non-financial incentives or regulations which give preference to e-taxis at attractive sites (e.g., airports) or which restrict usage of fossil vehicles. Stand-alone vehicle subsidies are clearly not a solution to the problem and should be matched with regulatory measures which require taxi and ride-hailing services to go electric within a given time frame e.g., by 2030. The Program will therefore only invest in taxi projects where a roadmap towards full electrification is available and linked with regulatory measures.

DELIVERY CHANNELS AND NEW BUSINESS MODELS

Sovereign Investments Loans (funded with GCF and/or IDB resources) and Investment Grants (funded with GCF resources) will be provided by IDB to eligible sovereign borrowers and will be executed by EEs identified in the corresponding Subsidiary Agreements. The possible contractual structures that could be used for the Program, depending on the type of Sub-Project, which will be reviewed, analyzed, detailed, and/or modified as needed on a case-by-case basis is mentioned in Section B.4 of this Funding Proposal.

OBJECTIVES, IMPACTS AND OUTCOMES

The Program supports a paradigm change to low-emission and resilient transportation systems. The Program shall overcome the barriers identified to kick-start the mass deployment of commercial EVs. The following outcomes shall be achieved:

- (1) An urban transport system which is less vulnerable to extreme climate events by implementing climate-proof urban transport infrastructure which is expected to reduce the vulnerability of cities and their transport system to climate hazards.
- (2) An electric grid which is more resilient to climate events through the possibility of using hydrogen and EV batteries as energy storage providing electricity during climate hazards.
- (3) Reduced GHG emissions from commercial vehicles. EVs have significantly lower lifecycle GHG emissions than fossil units in all countries included in the Program. Mode shift to NMT and electric micro-mobility results in additional GHG reductions.
- (4) Improved public and private sector capacity, including for the development of human capital, and a more favourable enabling policy framework for low carbon and climate resilient transport.
- Improved air quality: EVs have no combustion emissions and are a crucial instrument to achieve clean air in cities. Commercial vehicles are a major source of PM_{2.5} and NO_x emissions in cities.
- Reduced energy dependency: EVs use domestic resources and reduce reliance on imported fossil fuels. They thereby also increase the resilience of the country's economy to external oil price shocks.
- Increased energy efficiency: BEVs are up to 4x more energy efficient than fossil vehicles. Electricity consumption even if pursuing an ambitious EV penetration level is marginal compared to production levels – however, localized grid problems need to be addressed.

The expected GCF fund-level impacts are reduced GHG emissions through increased access to low-emission transportation resulting in direct emissions reductions of 7,547,602tCO_{2e} over the asset lifetime of investments co-

⁴⁵ [EV and EV Charger Incentives in Europe: A Complete Guide for Businesses and Individuals \(wallbox.com\)](https://www.wallbox.com/en/ev-incentives)

financed by the Program, plus nearly 1.5 million direct and 9 million indirect beneficiaries of adaptation measures representing 9% of the entire population of Program countries.

PROGRAM COMPONENTS

The Program is structured in 4 components:

- Component 1: Increase climate resilience of urban transport infrastructure
- Component 2: V2G and H2 pilot projects to assess the potentials and viability of such interventions for increasing the grid resilience
- Component 3: Electrified integrated urban mobility
- Component 4: Technical assistance

Component 1: Increase climate resilience of urban transport infrastructure

The outcome of this component is (1) Urban transport system less vulnerable to climate extremes.

To increase climate resilience of the IEUTS, it is important to understand the climate hazards conditions at which its infrastructure is exposed to and how vulnerable it is to climate stressors. The design and implementation of climate resilient transport infrastructure can prioritize such measures that mitigate the risk of transport system failures. Then, to better understand the conditions of urban transport infrastructure in the selected cities, a risk identification methodology is proposed following a quantitative disaster and climate change risk assessment for the IEUTS (see Annex 2b). The outputs of this analysis will estimate the incremental costs related to climate change and perform economic analysis for the pre-feasibility stage of the implementation of urban interventions considered as adaptation measurements. This analysis carries out a quantitative assessment of the baseline risk conditions (current risk), as well as under climate change scenarios and adaptation alternatives, for (i) the network of routes of the bus system and (ii) terminals, bus stops, maintenance facilities, charging centers and parking yards of the system. Adaptation measures, considering nature-based solutions, can be derived from projects underway in the city. The methodology defines climate resilience criteria that allow an analysis of the bus routes that may be beneficiaries of electro-mobility considering the urban interventions carried out along the route and its components (terminals and stations) and make an economic evaluation of the benefits of implementing adaptation measures and their impact on the resilience of the city's public transport system. To contribute towards local transformative adaptation processes, the Program will use the Disaster Risk Assessments and Management Plans (DCRMP) as inputs to develop at least one regulatory system for the IEUTS operators, that improve investment and sustainability incentives for climate resilience and EV, by defining clear guidelines for the planning, design and operation of the system to make it reliable to future climate.

The outputs of this component are (1.1.) Fewer urban infrastructure damaged resulting from climatic shocks because of higher investments in vulnerability reduction and (1.2) Fewer days to restore the IEUTS's public transport service after climate shocks due to investments in climate resilience.

The activity of this component is 1.1.1 Implement measures to increase climate resilience of urban transport infrastructure. This component will finance (i) the development of climate-resilient micro mobility infrastructure; (ii) the allocation and improvement of supporting urban spaces and infrastructure for public e-transport addressing men and women's differentiated needs when using public transportation. The Program will prioritize solutions that integrate into the urban fabric, are compatible and conducive to modes of sustainable mobility guaranteeing universal access, have important elements for NMT and electric micro mobility such as electric cycles, shared mobility schemes or special lanes for micro mobility users and incorporate a gender perspective. This can include the infrastructure connecting public transport systems to alternative modes of urban mobility (electric and non-motorized) such as cycling lanes, pedestrian streets, etc., and/or providing the infrastructure conditions to facilitate these alternative modes of urban mobility as bicycle parking, park and ride, waiting areas, charging areas etc. The Program will also finance all supporting urban spaces and infrastructure for public e-transport. It will target projects that lead to the generation of qualitative, accessible, and safe environments around public transit nodes, such as parks, boulevards, terminals, transport stops, etc.

The activities address the barrier of lack of financial support for climate vulnerability investments.

This component will be implemented directly with transport operators, with local and national government agencies, power utilities, and with financial and intermediary agents that develop urban mobility and infrastructure solutions. It will include modalities for developing PPPs and SPVs. The main funding mechanisms are Sovereign Investment Loans and Grants.

Component 2: V2G and H2 pilot projects to assess the potentials and viability of such interventions for increasing the grid resilience

The outcome of this component is (2) The potential of H2 storage and V2G to increase the grid resilience has been assessed.

This component addresses the barriers of limited commercial attractiveness of e-mobility and performance risks of EVs and also includes specific investments on adaptation such as V2G and infrastructure for peak shaving, both measures aimed at increasing grid resilience.

The output of this component is (2.1.) H2 and V2G pilots are used to assess their viability of mass deployment to improve grid stability.

The activities of this component are (2.1.1) H2 projects with FCEVs & with grid stabilization measures implemented; (2.1.2.) V2G projects with grid stabilization measures implemented. (2.1.3) Feasibility of V2G and H2 storage as cost-effective means for increasing grid resilience assessed. The component finances (i) pilot green hydrogen projects with usage in transportation which work along the entire value chain of the hydrogen economy including hydrogen production, storage, distribution, filling stations and its usage in transportation. All pilots must have a business model which allows for massification on commercial terms. Private usage vehicles including passenger cars are not financed i.e. the Program encompasses only commercially used vehicles with a focus on long-haul trucks and buses, mobile machinery and vessels where H2 usage is considered to be the efficient and effective as zero emission technology; (ii) V2G pilot projects are used to assess the technical and commercial viability as well as barriers to and potentials to use e-mobility and V2G as a cost-effective means to increase the grid resilience with a focus on SIDS; (iii) additional storage infrastructure, a stationary fuel cell and other components to assess the technical and commercial viability and cost-effectiveness of using H2 for peak shaving to increase grid climate resilience. The Program supports the establishment of hydrogen production infrastructure, FCEV vehicles, filling stations and equipment for hydrogen storage, stationary fuel cells for electricity production and re-insertion into the grid incl. converter and cabling plus grid adjustments for testing the usage of H2 for grid stabilization and increased grid resilience. The value chain approach is important as a business model to allow for a widespread application and to avoid stranded assets. Investments are however in pilot projects and their infrastructure which are not commercially oriented but for piloting and testing the technology. Direct H2 usage in vehicles is not common although it can be used potentially for vessels. Alternatives of retrofit versus new-built vessels are assessed in projects which work with H2 vessels. For trucks and other vehicles FCEVs are used i.e., H2 is used to produce on-board electricity for traction and storage in a small battery. Only projects running 100% on green hydrogen are included. Green H2 is based on renewable energy sources. In the case of Paraguay, the electricity will be taken from the grid, which is 100% renewable and to a large extent based on hydropower. For Uruguay the situation is similar with large shares of electricity being also produced by wind power. In the case of Chile solar systems will produce the required electricity for green H2 production.

The activities address the barrier of lack of financial support for climate vulnerability investments.

The following table shows initial indicative Sub-Projects to be considered for financing. The main funding mechanisms are Sovereign Investment Loans and Grants.

Table 5: Indicative Initial Sub-Projects under Component 2

Country	Components	Investment (MUSD)				Total	GHG reduction tCO _{2e} ⁴⁶
		GCF loan	GCF grant	IDB	Local		

⁴⁶ Lifetime project

Chile	H2 pilot project	4	2	2	2	10	10,000
Paraguay	H2 pilot project with trucks	4	2	3	2	11	10,000
Uruguay	H2 pilot project	4	3	2	2	11	32,000
Barbados	V2G pilot project	2	1	1	1	5	5,000
Jamaica	V2G pilot project	2	1	1	1	5	5,000

Brief H2 Pilot Project Paraguay (see Annex 2c)

The project is a demonstration cum pilot project which shall be the catalyzer for the development of a hydrogen economy in Paraguay. Paraguay has vast renewable energy as well as water resources whilst fossil fuels need to be imported. The demonstration project shall create capacities and know-how among stakeholders on how best to develop the hydrogen economy. The project includes production of green hydrogen based on electrolysis at 3 strategic locations with small plants and the usage of hydrogen in different types of vehicles with a focus on heavy duty trucks where hydrogen has its competitive advantage. The project shall produce some 120 tons of H2 annually and includes 3 heavy-duty trucks, 3 passenger cars and 3 light commercial or utility vehicles. Additionally, the viability of using H2 on vessels will be assessed. The pilot project shall also create the information, know-how and identify the components of a business case for applying hydrogen storage to increase grid resilience and has as objective to demonstrate that (i) a fuel cell can support the grid at times of peak load by producing electricity from hydrogen; (ii) a fuel cell can act like a back-up in case of a disconnection from the main grid. It therefore also includes a 250 kW fuel cell and connections to the LV switch board idem to the electrolyzer. The project also includes TA to create capacities on hydrogen technology at the different stakeholders, training of technical staff and the development of business models which make the adoption of hydrogen technology commercially viable. The total budget of the project is 11 MUSD of which 9.5 MUSD for the demonstration project including grid resilience measures, 1 MUSD for TA and 0.5 MUSD for project administration.

Brief V2G Pilot Barbados (similar project for Jamaica)

EVs can enable utilities to balance loads through V2G technology which is a particularly useful application for the integration of variable renewable energy such as wind and solar. EVs can be charged when VRE sources provide excess supply, or when power demand is low. When power demand is high, they can reinject power into the grid thereby reduce the need for new capacity, make the power system more efficient and facilitate the introduction of more VRE into the grid. EVs can also be used to bolster disaster resilience. EVs can be used to transport doctors and emergency supplies amid severe fuel shortages and to provide electricity from EVs during outages e.g. caused by hurricanes. The project seeks to test the ability of EVs to provide grid services including peak shaving, disaster relief and supply services during power outages. It shall also allow to identify the most appropriate vehicle segments and charging systems and the commercial viability compared to other storage options. The project consists of 10 electric school buses with a relatively large battery set. School buses have the advantage of limited day usage and therefore long potential grid connection times which can be used for load balancing. Together with the 10 buses 10 bi-directional chargers are purchased. The total investment in the pilot project is 5 MUSD of which 3 MUSD for vehicles, 1 MUSD for chargers and connections and 1 MUSD for testing and pilot project management

Component 3: Electrified integrated urban mobility

The outcome of this component is (3) Reduced GHG emissions from commercial vehicles.

This component addresses the barriers of limited commercial attractiveness to invest in e-buses, performance risks of e-buses, limited know-how and experience with cost-effective measures to increase the resilience of urban transport infrastructure, and lack of financial support for investments to reduce climate vulnerability of urban transport infrastructure.

The outputs of this component are (3.1.) E-mobility is integrated with PT & NMT measures to foster mode shift to low carbon transport; (3.2) EV fleets are deployed with innovative business models to enable their mass application

The activities of this component are (3.1.1) Construction of cycle lanes and micro-mobility measures; (3.1.2) Implement urban mobility measures such as pedestrianization, bus lanes & route structuring; (3.2.1) Deployment of e-buses; (3.2.2) Deployment of e-taxis & fleets with urban fast charging infrastructure; and (3.2.3) Deployment of pilot projects with electric vessels.

The goal is to deploy large-scale fleets of public transport e-buses that provide a reliable and sustainable service to the city. This can include different e-bus technologies and bus sizes (slow-, fast-, opportunity charged buses, hybrid trolleybuses). The targeted BEB fleet size is 50 or more units per city⁴⁷. The Program will not finance pilot projects of less than 20 buses. Business models and financial structures are defined per project based on local circumstances. This can include separation of ownership and operations of buses, e-bus-leasing systems or PPPs. E-bus projects will be embedded with urban sustainable mobility programs including the design and implementation of adaptation measures (as explained above) as well as improved NMT, micro-mobility, and mobility accessibility. Alternative and new modes of urban mobility are changing the urban mobility infrastructure. Common urban spaces and new urban mobility services facilitate the independence and mobility of all residents and are key to promote sustainable, competitive cities while increasing the quality of life of citizens taking into account the different mobility patterns in women and men. Public spaces for mobility such as bike lanes, pedestrian lanes, mixed mobility lanes (buses, bikes, 3-wheelers) shall be properly integrated into the urban space to further improve cities' quality of life and climate resiliency. All projects include a comprehensive capacity building for training and capacity building part and serve as input for the development of an action-oriented roadmap for the electrification of public transport. Innovative business models to be deployed include a separation of ownership and operations of assets, pay-as-you-go models and bulk purchase models (see "Delivery Channels and Business Models" above).

The component finances commercially used EVs including buses, vessels, taxis/ride-hailing vehicles, last-mile delivery service vehicles, trucks, and institutional fleets. It does not finance private usage vehicles including passenger cars or motorcycles.

The following table shows initial indicative Sub-Projects to be considered for financing. The main funding mechanisms are Sovereign Investment Loans and Grants.

Table 6: Indicative Initial Sub-Projects under Component 3

City, Country	Components	Investment (MUSD)				Total	GHG reduction tCO _{2e} ⁴⁸
		GCF loan	GCF grant	IDB	Local		
Panama City, Panama	100 12m e-buses; PT enhancement: NMT and micromobility; climate resilient infrastructure	25	13	28	7	73	1,139,000
Manizales, Colombia	50 12m e-buses; restructuring and upgrading of PT system; NMT and micromobility; climate resilient infrastructure	8	3	15	3	29	365,000
Asuncion, Paraguay	50 12m e-buses; upgrading of PT system; NMT and micromobility; climate resilient infrastructure	8	2	15	3	28	1,593,000
Santo Domingo, Dominican Republic	250 electric taxis plus fast charging urban infrastructure	2.7	0	4.6	2	9.3	29,000
Cartagena, Colombia	Electric vessel project	4	2	3	2	11	131,000
Costa Rica	Electric vessel project	2.5	0.5	1	1	5	66,000

⁴⁷ Fleets of 50 or more units are far more cost effective and allow for efficient usage of charging infrastructure and grid upgrades. They also result in more reliable operations due to availability of technicians from the manufacturer on-site and sufficient spare parts.

⁴⁸ Lifetime project

Brief Panama City Project

The Panama City project aims at providing a resilient public transport service in Panama City. The project builds on previous analyses and ongoing pilot projects in the city⁴⁹. To increase the resiliency of the urban transport system the urban infrastructure will be electrified and upgraded and/or adapted as well as its surrounding urban public areas.

The project will (i) introduce 100 12m e-buses and its associated infrastructure to the city distributed over 7 bus routes which have been preidentified in the World Bank study⁵⁰; (ii) design and (re)develop public spaces around public transit nodes of these 7 e-bus routes guaranteeing universal access of all citizens, and fostering and facilitating the use of public transport and alternative modes of urban mobility such as NMT and electric micro-mobility; (iii) design and implement urban adaptation measures along the route and around stations, access areas, terminals and charging stations to contribute increasing climate resilience of the IEUTS; and (iv) increase institutional capacity to design, implement and operate climate-resilient IEUTS (including vulnerability/risks assessments and better managing uncertainty).

In order to implement this project different studies will be conducted: a quantitative risk assessment for hazards such as floods⁵¹ and extreme heat⁵² for the public urban transport system and its adjacent areas to identify adaptation measures (see Annex for details on the methodology); urban mobility and public spaces analysis around the different e-bus routes to identify and prioritize integrated urban interventions around public transit nodes that are resilient, accessible and safe, and incorporate infrastructure connecting public transport modes to alternative modes of urban mobility (electric and non-electric); the design for the implementation of the e-bus system on the 7 preidentified routes.

The quantitative risk assessment will analyze hazards such as floods⁵³ and extreme heat⁵⁴ for the public urban transport system in Panama City. This assessment will properly model and integrate the four components which make up a risk assessment: hazard, exposure, vulnerability, and risk. The risk assessment will consider multiple scenarios: (i) baseline climate conditions; (ii) conditions including climate change projections from ensemble Global Circulation Models; and (iii) risk conditions considering the implementation of adaptation measures, including simultaneous initiatives that are taking place in Panama City⁵⁵. The assessment will report which components (road infrastructure, stations of terminals, maintenance facilities, charging stations) are critical to the operation of the system because of its vulnerability to climate-related hazards and develop a sensibility analysis to determine the criteria to prioritize each of the critical components to increase the resilience of all the urban transport systems. An economic analysis of the adaptation measurements can define which bus route to prioritize, with special attention in estimating the increased costs of the interventions due to climate change impacts and the potential reduction in losses following the implementation of adaptation measurements in the impact area of the route.

Brief: Electric Taxis for Dominican Republic

2 Private taxi operators are interested in incorporating around 250 electric taxis into their fleet. The taxis shall be financed through a loan (no grant component) through the national finance system. A pre-condition for successful operations is the establishment of an urban fast-charging infrastructure in Santo Domingo. The project includes the

⁴⁹ Hazards and Risk Study and Greenhouse Gas Inventory under the IDB's Emerging and Sustainable Cities Initiative from 2016; Analysis of electromobility solutions for public transport in Panama, Deliverable 5: Final report and recommendations. World Bank, 2021; and the ongoing e-bus pilot route in Panama's historic city center which is an initiative of the IDB through the Living Heritage program and the local bus authority MiBus

⁵⁰ World Bank (2021). Analysis of electromobility solutions for public transport in Panama. Report prepared by Deloitte Project ID: 1266780 as a part of the NDC Partnership.

⁵¹ Data available from the baseline studies for the IDB Emerging and Sustainable Cities Program (ESCI) in Panama City, including high-resolution flood hazard maps and flood risk maps, available at https://issuu.com/ciudadesemergentesysostenibles/docs/panam__plan_de_accion_lr

⁵² EH-GLOBAL-VITO Extreme Heat map for T100, 20, 5 available online at <https://thinkhazard.org/en/report/93693-panama-panama-panama/EH>

⁵³ Data available from the baseline studies for the IDB Emerging and Sustainable Cities Program (ESCI) in Panama City, including high-resolution flood hazard maps and flood risk maps, available at https://issuu.com/ciudadesemergentesysostenibles/docs/panam__plan_de_accion_lr

⁵⁴ EH-GLOBAL-VITO Extreme Heat map for T100, 20, 5 available online at <https://thinkhazard.org/en/report/93693-panama-panama-panama/EH>

⁵⁵ Including, but not limited to: Plan de Resiliencia Panamá 100 Resilient Cities, ICES: Plan de Acción Panamá Metropolitana, Proyectos del Plan Estratégico de Patrimonio Vivo Panamá

purchase of 250 electric taxis including their home chargers, the deployment of 15 urban fast-chargers (presumably 100kW chargers) in the city and the establishment of incentives such as preferred access (no queuing) for the usage of e-taxis in the city in collaboration with the municipal government. At the policy level the project includes the establishment of a roadmap specifically for the electrification of taxis and ride-hailing services in the country. The estimated project investment is 9.3 MUSD of which 8.2 MUSD for vehicles and 1.1 MUSD for the charging infrastructure. Project finance is proposed at 30% with a loan from the GCF and 70% co-finance from IDB and the taxi companies. The expected GHG benefit over the lifetime of the vehicles is 29,000tCO₂. In total nearly 30,000 taxis and ride-hailing vehicles operate in the country and this initial project is an important component to gain experience and to kick-start massive electrification of this sector. The program will not expand the number of taxis but finance the purchase of electric taxis instead of fossil units.

Brief Electric Vessel Project, Colombia (see Annex 2d)

The objective of the pilot project is to contribute to the mass deployment of electrified mobility by piloting different types of electric vessels in Cartagena. The pilot project shall create capacities and know-how among stakeholders on how best to design and structure electric vessel projects and shall create information on the appropriate vessel design, charging systems and electric vessel operations. The proposed project has following components: (i) Deployment of 6 small 20 passenger electric vessels on different public transport routes; (ii) Deployment of 2 medium scale 200 passenger fast electric vessels for public transport routes with fast-charging technology for re-charge at piers during boarding and de-boarding of passengers; (iii) Technical assistance for design of vessels and charging infrastructure as well as for design of operational procedures; (iv) Capacity building of local and national authorities on regulatory and safety aspects of electric vessels; (v) Training and capacity building of vessel operators; (vi) Technical assistance for the design of business models to implement on a mass-scale electric vessels for passenger transport and for other fields of usage; (vii) Outreach and knowledge management products. A pre-feasibility study realized 2018 showed that increased water-based transport could reduce transport times, congestion, pollution and costs. Electrifying vessels would further reduce emissions and also results in lower costs, once the technology is established. The electric vessel routes serve a total population in the catchment area of 112,000 persons representing 11% of the urban population of Cartagena. A large share of people living in this area are poor and the residential areas are considered as vulnerable (Universidad Tecnológica de Bolívar, n.a.). The pilot has the potential to reduce more than 130,000 tCO₂ (lifetime vessels) as well as significant reductions of local pollutants with highly positive economic impacts and profitability. Electric vessels are not yet used except for very singular cases and only as small units in Latin America. However, a study by the IDB⁵⁶ analyzed a significant pipeline of ferry routes (132 under 750 km distance) and found that 52 of them (39%) could be feasibly switched to a mid-size ferry using current battery technology, representing a cumulative addressable market of \$6.8 billion by 2040. No other program in the region has been implemented so far to address this market. This is why this pilot project has the potential to showcase the benefits of electric technology for vessels – not only for passenger transport vessels but also for short-haul cargo vessels, for cargo vessels and for vessels used for port management. This can result in a significant reduction of emissions and a transformational change of water-transport⁵⁷. The impact also goes well beyond Cartagena to other coastal areas of Colombia, inland-waterway transport vessels as well as to other countries in Latin America. The total budget of the pilot is 10 MUSD of which 55% are expected from the GCF.

Component 4: Technical assistance

The outcome of this component is (4) Improved public & private sector capacity & regulatory environment for e-mobility.

This component addresses the barriers of (i) Business models & policies non-conducive to e-mobility deployment; (ii) Limited know-how on climate resilience measures in urban transport infrastructure; and (iii) Limited commercial viability of e-mobility linked with high upfronts and unclear operational costs and benefits. It also addresses the performance risk of EVs,

The outputs of this component are (4.1.) A climate resilient e-mobility ecosystem integrated with urban transport is established to enable uptake of e-mobility, and (4.2) Strengthened institutional and regulatory systems for climate-responsive planning and development.

⁵⁶ Opportunities for electric ferries in Latin America. Online: <https://publications.iadb.org/en/opportunities-electric-ferries-latin-america>

⁵⁷ Alone Cartagena could reduce annual GHG emissions by 60,000 tCO₂ with electrified vessels for passenger transport.

The activities of this component are (4.1.1) Urban interventions realized with a gender perspective; (4.1.2) Implementation of new business models for e-bus systems; (4.1.3) Design and promotion of EV conducive policies; (4.2.1) Apply methodology for climate risk identification; (4.2.2) CB and knowledge generation on H2 and V2G for increased grid resilience; and (4.2.3) Training & CB of stakeholders.

This component addresses the barriers of business models and policies non-conducive to e-mobility deployment, lack of skills and competences for e-mobility in the workforce, limited know-how on mainstreaming climate resilience into design, planning and operation of IEUTS and ineffective efforts to achieve gender equality. For more information on possible business models see Delivery Channels and Business Models above. Activity 4.1.2. proposes and discusses different business models with stakeholders and identifies the most appropriate business model based on the project context.

This component and associated activities provide technical assistance to enable effective financial assistance and to create a policy and business framework conducive for massive deployment of EVs. Activities are coordinated and realized together with national authorities to ensure complementarity of different endeavors. Adaptation related activities include capacity building such as training to improve IEUTS operation, improvement of existing IEUTS planning and design methodologies and processes to adequately manage uncertainty in the decision making, knowledge management strategies to facilitate the creation of benchmarks, regulations and norms for designing and operating IEUTS.

To address the technical assistance needs of each country and of each Sub-Project in particular, it is contemplated to work through TA packages for e-mobility at a regional, national and local level, TA activities for increased resilience urban and grid infrastructure and improved gender equality. This assistance packages will take the form of Technical Cooperation granted by the IDB with resources of the Program.

Within activity (4.1.3.) EV policies following sub-activities are made:

- **E-mobility conducive local ecosystem** established with activities related to the local environment such as business model design and development, advice on concession contracts for bus services (e.g. concerning concession length as this is important for e-bus deployment), capacity building and training of operators, safety staff, maintenance staff etc. Technical assistance is used to ensure delivery of adequate training from equipment suppliers or third parties for EV and charger operations and maintenance, safety trainings and capacity building in optimal management of EV fleets. This activity also includes performance monitoring of electric vehicles in technical (energy usage, emissions) and financial terms (operational expenditures, vehicle availability rates). **E-mobility conducive national ecosystem** established with activities such as design and divulgation of sectoral roadmaps (electrification of public transport, electrification of taxi and ride hailing services; electrification of urban delivery services, electrification of long-haul freight and passenger transport, electrification of the rail system, electrification of mobile machinery, electrification of vessels, hydrogen economy), support of national enabling policies for EV deployment, advice on battery re-usage, recycling and disposal and capacity building at a national level. This includes also policies which affect directly the investment components of the Program such as concession contracts and structuring of public transport. Sectoral roadmaps shall improve the framework conditions and enable large scale EV deployment in the areas financed and will help to inform and/or further detail the countries long term mobility strategies and their Nationally Determined Contributions (NDCs). Activities developed will be country specific and complementary to those realized by other entities, especially GEF, AFD, GIZ, BCIE (Central American Bank for Economic Integration), and the UN.
- **E-mobility conducive regional ecosystem** which is core for learning and experience exchange between countries with activities such as the realization of different knowledge materials including publications, webinars, benchmark and best-practice studies, and outreach events included in a learning and KMS. The Program will not create own platforms or channels for information dissemination but use already existing platforms such as the MOVE platform of UNEP. The MOVE platform is already fully funded and does not require additional funding but is interested in including more materials on its site to make it more attractive. IDB will thus feed this platform with reports and discussion papers. The platform realizes online training and provides for information and knowledge materials. A first package of assistance will be established at the regional level for SIDS countries. This will serve as a sharing platform to provide information and general technical assistance to create a community of practice in electromobility in aspects especially relevant for SIDS

such as the role of e-mobility in achieving 100% renewable electricity generation, V2G projects and usage of electricity, hydrogen or ammonia for vessels.

The Program will realize under 4.2.1, 4.2.2 and 4.2.3. TA activities within the area of increasing the climate resilience of IEUT'S infrastructure and of grids to identify and assess cost-effective measures to increase the climate resilience of cities in transport infrastructure linked with e-mobility development and to increase grid resilience through projects on the e-mobility field such as V2G, hydrogen energy storage or usage of 2nd hand EV batteries. It will also include training to improve the way climate resilience is mainstreamed in existing processes for planning, designing, and operating IEUTS. The Program creates different knowledge materials including publications, webinars, benchmark and best-practice studies, and outreach events in this area that may lead to new regulatory systems for PT designers and operators.

The **Gender action plan** (activity 4.1.1.) will boost women's participation and gender awareness in the electromobility sector. They will (i) increase women's access to economic opportunities through the development of technical and entrepreneurial skills; the implementation of incentives to hire women; and the inclusion of gender eligibility criteria for the selections of the projects; (ii) increase gender awareness to recognize women as part of the electromobility sector and address their needs through the development of gender training, which must be included in any CB activity in the Regional Sectorial Council of Skills for Electromobility or any training activity in the Program; the inclusion of a gender perspective in the frameworks, including EV conducive policies which will incorporate explicit requirements for E-buses to assure universal accessibility and to address men and women's differentiated needs when using public transportation; the establishment of women's networks; and several communication activities; and (iii) increase gender activities, specially safety initiatives, in the projects financed with the development of a gender toolkit and gender case studies and the support in the development of gender action plan for the projects financed.

Under the activity (4.2.3) training and CB of stakeholders a Regional Sectorial Council Skills for Electromobility (RSCSE) is created which aims at improving sector productivity and contributing to a just transition, with solutions for the development of human capital (studies, standards, train the trainers, online courses, etc.) available to member countries. This Resource Center will develop labor market intelligence, labor and training standards, train of trainer's packages and learning resources, allowing to assist each of the member countries in the development of their human capital, in their transition to electromobility. Guidelines and recommendations for gender equality and inclusion in new skills and positions in the workforce will be established.

PROJECT ELEGIBILITY CRITERIA

All Sub-Projects financed by this Program must meet the following eligibility criteria:

In terms of eligible financial intermediaries for investment Sub-Projects:

- IDB eligible borrowers that include within their mandates the development and/or financing of local infrastructure and/or mobility assets at the local, national and/or regional level, including low-carbon infrastructure, mobility and renewable energy.
- For climate change mitigation focused subprojects, which target a reduction of GHG emissions, eligible investments should qualify as climate change mitigation finance as per the Joint MDBs-IDFC Common Principles for Climate Mitigation Finance Tracking. These should be included in the list of eligible categories (based on principles), demonstrate a reduction in GHG emissions against a baseline scenario and at least 50% of the total project cost should qualify as climate finance.
- For climate change adaptation / infrastructure resilience focused subprojects, which address current and expected effects of climate change and target an improvement in resilience or a reduction in vulnerability of affected population, eligible investments should qualify as climate change adaptation finance as per the Joint MDBs-IDFC Common Principles for Climate Adaptation Finance Tracking. These should intent to address the identified risks, vulnerabilities and impacts stated and able to demonstrate link between the identified risks, vulnerabilities, and impacts, and financed activities. At least 50% of the total project cost should qualify as climate finance.

In terms of financial instruments (Sovereign Investment Loans and Investment Grants):

- GCF total financing: not more than USD30 million per Investment Sub-Project.
- The Program aims to finance at least one Sub-project in each Host Country.

- Not more than 25% of GCF funds shall be invested in one specific Host country.
- Maximum GCF loan and grant and minimum co-finance shares of total costs per project in each component and subcomponent⁵⁸ should follow concessionality limits as per Table 2 of this Funding Proposal. As an example, co-financing requirements per Sub-project in component 2: minimum 20% co-financing of total Sub-project costs (including IDB Co-financing and other Co-financing) for H2 or V2G pilot projects.

In terms of Investment Grants:

- Investment Grants shall not be used to finance any commercial EVs including e-buses, e-taxis or other electric fleets in components 3.2.1 and 3.2.2.
- Pilot electric and FCEV vehicle programs shall receive limited Investment Grant support by the GCF related to being first-of-its kind with novelty costs and high risks. All pilot projects must include a business design which allows for widespread commercial replication.
- Investment grants are to finance also adaptation measures in Components 1 and 2.

Eligibility criteria per component:

- Applicable to Components 1,2, and 3:
 - All Sub-projects must prove a reduction in GHG emissions against a baseline and demonstrate a contribution to a co-benefit. The approach to be used is determined in Annex 22a to the Funding Proposal and is based primarily on UNFCCC methodologies registered under the Clean Development Mechanism (CDM).
 - Each Sub-project within Components 1, 2 and 3 will need to be screened against a climate related risk following IDB's Disaster and Climate Change Risk Assessment Methodology (DCRA). Projects resulting with a Moderate or High Disaster Risk Classification will complete a climate risk assessment.
 - Sub-Projects with exception of pilot projects must comply with economic viability threshold values of projects in accordance with IDB practices.
 - Safeguards: Compliance with IDB's environmental and social safeguards policies as outlined in the environmental and social management framework (see Annex 6). All Sub-Projects must have a positive sustainable development impact.
 - Sub-Projects must be in compliance with relevant national and local laws and regulations.
 - Each Sub-project shall have a gender action plan taking into account guidelines developed in Annex 8.
 - In the case of Colombia, the Program will limit financing to intermediate cities without established mass rapid transit systems.
 - Gender: All Sub-projects financed by the Program, including pilot projects, must include the IDB's gender alignment requirements, which are: (i) an analysis identifying relevant gender gaps, (ii) gender actions to narrow the gaps, (iii) at least one indicator to measure the progress of the gender actions (sex-disaggregated indicators do not qualify as gender related indicators), and (iv) allocated resources for the implementation of the actions. By the quality of these inputs the IDB will assess the EE's capacity to deliver on gender issues. If the input is not satisfactory, the IDB could provide additional support or suggest the hiring of an external consultant, depending on the project's complexity.

⁵⁸ The sum of maximum GCF loan and grant share is not equal to 100% minus co-finance as GCF shares are maximum i.e. in general the project cannot receive from loans as well as grants the maximum share. Based on the individual project the minimal concessionality required is defined which can result in some projects with a higher grant (and lower loan) share and other projects with a higher loan (and lower grant) share. The maximum GCF loan share and the minimum co-finance share add to 100% in case of not using any investment grants.

- Component 1. Increase climate resilience of urban transport infrastructure
 - EIRR – 12%
 - GCF Proceeds will finance only the incremental cost of adaptation related intervention as calculated in project's economic analysis (the Disaster and Climate Change Risk Assessment Methodology) will generate an economic assessment for the adaptation measures that will inform the project's economic analysis).
- Component 2. Increase climate resilience of grid with hydrogen (H2) and V2G pilot projects
 - Only H2 pilot projects with usage of 100% renewable energy will be financed and where no conflict with freshwater usage occurs.
 - H2 pilot projects in areas with limited freshwater availability must prove that the H2 production activity will not reduce freshwater availability.
 - H2 projects with usage from grid electricity for hydrogen production will only be supported in countries with a grid factor below 0.1 kgCO₂/kWh (currently Paraguay and Costa Rica) or where additional renewable electricity is generated by the project for hydrogen production.
- Component 3. Electrified integrated urban mobility:
 - EVs financed: Only BEV or FCEV commercial vehicles including vessels and mobile machinery are financed (no vehicles for private usage);
 - Retrofits: For road-based vehicles retrofits are only eligible if security can be duly justified according to national recognized standards. For vessels electric retrofits are eligible.
 - Taxis and ride-hailing vehicles are only financed if the city or country has a roadmap and regulatory measure which results in a full conversion to electric taxis and/or ride-hailing vehicles latest by 2040.
- Other eligibility requirements:
 - According to IDB's ESG classification, Category A⁵⁹ investments (pursuant to the Environmental and Social Risks Categories) are excluded from eligibility for financial support under this Programme.
 - For Sub-Projects for Global Credit Program and consistent with IDB's ESG classification only ESS Category C low risk investments (equivalent to GCF Category C) will be eligible.
 - The EE shall commit to only finance with resources from this Programme projects that, in addition to complying with the eligibility criteria previously described, comply with all pertinent regulatory requirements of each Host Country in environmental, social, health, safety and labor matters.

Pass-through of GCF concessionality:

Any Sub-project structured as a global credit program needs to ensure that final borrowers can benefit from the concessional terms provided by the GCF. To this effect, a methodology to ensure the transfer of this concessionality will be developed for each Sub-project during the preparation phase. Concretely, this methodology will ensure that final borrowers effectively benefit from the improved financing conditions –at least one of the terms previously mentioned (i.e., interest rate, tenor, amortization profile, grace period, etc.).

The preparation process of this customized methodology to transfer concessionality will consider local market conditions and the specific context of each Sub-project, so that the concessionality is used to effectively address the most relevant inadequacy of identified available financial terms in each local context. For instance, if the main obstacle is the level of interest rates, the financial solutions structured and the concessionality transfer approach (and thus the

⁵⁹ A project will be classified as Category "A" when it is likely to cause significant negative environmental and associated social and cultural impacts whether direct, indirect, regional or cumulative. This concept applies also to the operation's associated facility. Negative impacts are considered significant when: (i) they extend over a large geographic area; (ii) they are permanent or occur for an extended period of time; and (iii) they are of high intensity and/or high magnitude.

methodology to ensure it) will be focused at supporting access to lower interest rates; if the main challenge is instead related to tenor, the financing solutions and methodology will be focused at supporting access to longer tenors.

An indicative approach to a methodology⁶⁰ aimed at ensuring the transfer of concessionality through the enhancement of interest rates and/or tenor, as per the two scenarios exemplified, is presented below. This will be further tailored and expanded, as needed, during each Sub-project preparation process:

- To ensure end beneficiaries access concessional interest rates:
 - Each EE will offer an interest rate lower⁶¹ than that associated to its existing financial products for similar loan recipients (which are themselves normally already more attractive than comparable products in the market in the case of NDBs); and
 - LFIs in Tier 2 operations will be required to declare (1) the average interest rates applied to their loan portfolio under similar tenors and with similar uses of funds, and (2) that the beneficiaries financed with GCF resources will be offered a final interest rate lower than said average. This aims to ensure that LFIs apply concessionality relative to similar existing financing lines.
- With regards to tenors, for EEs and LFIs the same logic applies but, in this case, declared information should be associated to existing average tenors in similar loan portfolios and requirements to provide longer tenors in GCF-funded loans.

The AE will require EEs to report how the concessionality would be passed onto the loan recipients (final borrowers) using the following criteria:

- For Tier 1 (direct) financing to loan recipients, the difference between EEs financing conditions (interest rate and/or tenor) and: a) financing conditions of GCF-funded loans after blending with co-financing, and b) financing conditions of loans without GCF resources.
- For Tier 2 (indirect) financing to loan recipients via LFIs, the difference between LFIs' financing conditions (interest rate and/or tenor) and: a) financing conditions of GCF-funded loans, and b) financing conditions of loans without the GCF resources.

Data on the described reports will be sourced from a combination of publicly available data, internal EEs data, and LFIs declarations, as applicable.

Given the above conditions, whenever final borrowers decide to take on a loan from a GCF-supported financing line, the concessionality provided will be deemed adequate. Adequate concessionality is driven by the decisions of the final beneficiary to act in favor or against taking an investment loan, as well as the lack of incentive for the loan provider to offer interest rates lower (or tenors shorter) than required by borrowers, which would go against its own financial interest and profitability. The above-described methodology aims to (i) reduce costs and subjectivity for all actors involved, (ii) provide a feasible and implementable application.

Each concessionality methodology will be incorporated in the Operating Regulations (OR) of the Sub-Projects. As such, compliance with the methodology by EEs will be part of the requirements for disbursements of Programme funds. In addition, the EE will have to report periodically and ex post on the application of the methodology of concessionality transfer and how it was ensured throughout a Sub-Project execution.

EVs are purchased instead of new conventional vehicles i.e., the old unit is at the end of its lifespan and not retired or phased out prior normal replacement. The intervention of the Program is that instead of a new fossil vehicle a new EV is purchased. What happens with the old vehicle is the same in the project case or in the baseline case. All emission impacts and financial calculations are a comparison of a new fossil against a new electric unit. The Program does not promote earlier replacement or scrapping of vehicles. Scrapping Programs in any case have limited merits as for example in the case of buses old municipal buses could still be used to replace even older rural or private transport

⁶⁰ Subject to further validation and definition with each EE, at the time of sub-project preparation.

⁶¹ The objective of such lower interest rate is to induce the uptake of eligible investments under the FAA, and changes current behavior by all stakeholders involved. The lower interest rate or longer tenor thus needs to make a significant contribution to the cash-flow profile of the investments, to be deemed to provide financial additionality. NDBs' policy mandate is to provide long-term concessional finance and thereby to crowd-in private investments. NDBs' role is to address the lower risk appetite of LFIs by financing sectors with economic and societal benefits which currently do not attract LFI financing due to higher perception of risk for these types of activities. NDBs already utilizes longer than market tenors and concessional interest rates in its traditional operations. The GCF-financed line will allow NDBs to increase both its tenors as well as its concessional interest rate beyond its own existing financing conditions and extend that benefit to final-end beneficiaries.

buses with low mileage. The Program therefore does not change the number or age structure of vehicles but the vehicle technology. Instead of for example 100 new diesel buses (BAU) the Program will support 100 new electric buses. What happens with the old buses being replaced by new diesel or electric units is the same in the baseline as in the project case. Therefore: the Program does not add vehicles. In absence of the Program exactly the same amount of vehicles would be purchased, just fossil instead of electric units.

PRIORITY INVESTMENTS AND PROJECT PIPELINE

The indicative Sub-Project pipeline for the Program is given in the following table. For the first set of potential Sub-Projects (2022 to 2024), 10 Sub-Projects have been initially identified. The identified Sub-Projects include ‘shovel-ready’ projects with high likelihood of being financed by the Program in 2023.

Table 7: Indicative Pipeline Projects

Project	Investment	Status
V2G pilot project Barbados	5 MUSD	Pre-feasibility
V2G pilot project Jamaica	5 MUSD	Pre-feasibility
Electric vessel pilot project Cartagena, Colombia	11 MUSD	Pre-feasibility
Electric vessel pilot project Costa Rica	5 MUSD	Pre-feasibility
Pilot hydrogen project Chile	11 MUSD	Pre-feasibility
Pilot hydrogen project Uruguay	11 MUSD	Pre-feasibility
Pilot hydrogen project Paraguay	11 MUSD	Pre-feasibility
Integrated urban electric bus project Asuncion, Paraguay	28 MUSD	Pre-feasibility
Integrated urban electric bus project Manizales, Colombia	29 MUSD	Pre-feasibility
Integrated urban electric bus project Panama City	73 MUSD	Pre-feasibility

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Sub-Projects: Components 1, 2 and 3 will be implemented through a set of sub-projects approved by the AE in accordance with its internal policies and procedures that may consist of a single Activity or a set of Activities under the respective Components (“**Sub-Project**”). A Sub-Project can be financed by a single Financial Instrument or multiple Financial Instruments including, in the case of Sovereign Investment Loans, High Concessional Loan and/or Low Concessional Loans, as well as the Investment Grants. There can be more than one Sub-Project in a Host Country. Activities under Component 4 will be financed by Technical Cooperation Grants. For the avoidance of doubt, the Activities under Component 4 will not be included in a Sub-Project under Components 1, 2 and 3. The AE, will evaluate and select, the Sub-Projects that meet eligibility criteria set forth in Section B.3 of this Funding Proposal and the overall Program objective.

Host Countries. The Program will be implemented in Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay (the “**Host Countries**”). For the avoidance of doubt, the Funded Activity will not finance activities or Sub-projects in countries other than these listed Host Countries. Inclusion of a new Host Country to the Funded Activity will constitute a Major Change.

GCF Proceeds and Financial Instruments. The total amount to be disbursed by the Fund to the AE under the FAA is up to USD 200,000,000 (Two hundred million United States Dollars) in the form of:

- USD 145,000,000 in the form of GCF Reimbursable Funds which the AE will use, as the trustee of the GCF Proceeds, to provide sovereign investment loans to finance (“**Sovereign Investment Loans**”):
 - USD 57,100,000 in the form of high concessional Sovereign Investment Loans for financing Activities under Component 1 and Component 2 (“**High Concessional Loans**”), related to the integration of urban infrastructure with climate resilient measures in countries targeted by the Program; and
 - USD 87,900,000 in the form of low concessional Sovereign Investment Loans financing Activities under Components 2 and 3 (“**Low Concessional Loans**”) related to the integration of e-mobility with public transportation and non-motorized transportation sectors as well as to the deployment of EV fleets linked with innovative business models and supportive policies in countries targeted by the Program; and
- USD 55,000,000 in the form of GCF Non-Reimbursable Funds which the AE will use, as the trustee of the GCF Proceeds to provide:
 - USD 44,100,000 for investment grants to finance Activities 1.1.1 under Component 1, Activities 2.1.1 and 2.1.2 under Component 2, and Activities 3.1.1 and 3.2.3 under Component 3 (“**Investment Grants**”);

- USD 9,934,200 for technical cooperation grants to finance Activities 4.1.1, 4.1.2, 4.1.3, 4.2.1, 4.2.2, 4.2.3 and monitoring and evaluation under Component 4 (“**Technical Cooperation Grants**”); and
- USD 965,800 for the project management costs,

together, (the “**GCF Proceeds**”). Sovereign Investment Loans, Investment Grants and Technical Cooperation Grants are collectively referred to as **Financial Instruments**. The AE Fee is not included in the GCF Proceeds.

Co-financing. The total amount of expected Co-financing for the Programme is estimated to be USD 250,000,000 subject to the approval of allocation of funds to each individual Sub-Project on case-by-case basis and contingent on such approvals being obtained and subject to the terms of the corresponding legal agreement(s), including the co-financing ratio set out in this Term Sheet to be provided by the following indicative co-financiers:

- an estimated amount of USD 200,000,000 by the AE, including IDB own resources and other resources administered by IDB; and
- an estimated amount of USD 50,000,000 by the Countries (the co-financing source under “Countries” is explained in the Budget, Annex 4).

“**Co-financing**” means jointly the amounts of estimated funding to be provided by the co-financiers, and separately, any of such co-financing (as detailed Annex 4).

1. Implementation Arrangements

1.1. Introduction

The GCF and the AE will enter into a Funding Activity Agreement (FAA) in the form of a trust agreement applicable to the GCF Trust Fund⁶² based on the terms and conditions set out in the Term Sheet of the Program. As provided in the Accreditation Master Agreement (AMA), the FAA will establish the requirements for the transfer, administration and use of GCF Proceeds for the financing of the Program. The AE will be solely responsible for the management and administration of GCF Proceeds in accordance with its policies, procedures and practices, and following the provisions set forth in the AMA and the FAA. In this context, AE will provide management, monitoring and supervisory mechanisms to maintain a transparent and effective administration of the Program.

The IDB, in its capacity as the AE, will execute Subsidiary Agreements pursuant to the terms and conditions of the FAA, once the relevant Sub-Projects are approved by the IDB and for the implementation of Component 4 (except in some cases of Technical Cooperation Grants executed directly by the IDB, as explained below). The Subsidiary Agreement will establish the applicable framework and conditions for execution of each Sub-Project.

Selection and approval of Sub-Projects. Following a request from a specific Host Country to the AE, a Sub-Project will be prepared, assessed and approved as an individual IDB project financed with GCF Proceeds and Co-financing under this Program. Each Sub-Project shall be consistent with the objective, scope and activities of the Program as established in Section B.3 of this Funding Proposal and aligned with one or more of the expected results, as presented in the Program performance indicators in Section E.5 of this Funding Proposal. All Sub-Projects shall also be included in IDB programming and strategic dialogue with each Host Country, in the context of local government priorities and existing collaboration with the IDB.

The AE will carry out all appropriate due diligence on each Sub-Project, including all checks and assessments on the Borrowers and/or Grantees, and if applicable, EE identified for such Sub-Project, in a manner that it ordinarily would carry out in any project/program financed by the AE and in accordance with the AMA and FAA.

1.2 Contractual and Implementation Arrangements

1.2.1. Components 1, 2, and 3 of the Program

Sub-Projects under Components 1, 2, and 3 of the Program will be executed through EE. For the avoidance of doubt, the AE will not act as an EE of a Sub-Projects under Components 1, 2 and 3.

⁶² The Trust Fund being referred to is the same established by the IDB for other Funded Activities.

For the financing and implementation of the Sub-Projects, the AE will enter into the following Subsidiary Agreements with the relevant borrower (“**Borrower**”) and/or grantee (“**Grantee**”), as applicable:

- Sovereign Investment Loan Agreements for High Concessional Loan and/or for Low Concessional Loan, and/or
- Investment Grant Agreements.

For the avoidance of doubt, the Borrower and the Grantee are the EEs, unless otherwise specified below.

Guarantee Contract. The Borrower shall be an eligible borrower (either the Host Country or public entities of the Host Countries) under the AE policy. If the Host Country is not the Borrower of the Sovereign Investment Loan, in accordance with the AE policy, a Sovereign Guarantee will be provided by the Host Country under a Guarantee Contract under which the Host Country, as the guarantor, agrees to be jointly, severally and unconditionally responsible for the financial obligations contracted by the Borrower in the Sovereign Investment Loan Agreement with respect to the GCF Reimbursable Funds. For example, if the Borrower in a Sovereign Investment Loan is an autarchic public entity (i.e., an autonomous public company) or a subnational government (i.e., a municipality or state) or a national development bank in the Host Country, in addition to the Sovereign Investment Loans between the Borrower and the AE, the AE will enter into a Guarantee Contract with the Host Country.⁶³ It is understood that private sector entities will not be eligible to be a Borrower and/or Grantee.

EEs. In respect of each Sub-Project, it is expected that the Borrower and/or Grantee will be the EE for the Sub-Project. If the Borrower/Grantee is the Host Country, the Host Country may act through one its sovereign organs or agencies as an EE.

There may be circumstances where a Sub-Project needs to be carried out, in whole or in part, by an entity other than the Borrower/Grantee. In such a case, the AE and the Borrower/Grantee will jointly determine, and designate in the Subsidiary Agreement, the relevant third-party EE that will be responsible for the implementation of the Sub-Project. The Borrower/Grantee may enter into a project execution agreement with the EE (“**Execution Agreement**”). If the technical execution of the Sub-Project is to be carried out, in whole or in part, by a separate legal entity, the AE shall establish the following contractual arrangement in the following order of preference:

- **Option 1.** If permitted under the laws, rules and regulations applicable to the Borrower and/or Grantee and third-party EE, the third-party EE will also sign the Subsidiary Agreement(s) to confirm its capacity and to agree on its role as EE, and its obligations as such established therein. The AE will monitor and supervise that EE. This option will not preclude the existence of an additional Execution Agreement on terms and conditions approved by the AE.
- **Option 2.** If Option 1 is not feasible, the Subsidiary Agreement(s) set out above, shall cause the Borrower and/or Grantee to engage the third-party entity through an Execution Agreement. The Execution Agreement will require the third-party EE to execute the Sub-Project in accordance with the Subsidiary Agreement. The AE will be required to approve the Execution Agreement and no amendments may be made to the Execution Agreement without AE’s prior written consent., Under this arrangement the AE will monitor and supervise the EE in order to perform its functions under the AMA and FAA, and the EE will report to the AE.
- **Option 3.** If the foregoing Options are not feasible, on a case-by-case basis in respect of the relevant Sub-Project the AE shall seek GCF’s instructions on the implementation arrangement for that Sub-Project.

In any event, under the terms of the Subsidiary Agreement, the Borrower/Grantee will be accountable for all the actions and activities of the third-party EE. To this effect, the Subsidiary Agreement shall establish that all obligations of the Borrower/Grantee or the third-party EE, as the case may be, shall be fulfilled to the satisfaction of the AE. The Subsidiary Agreement will establish the remedies available to the AE in the event the Sub-Project is not executed as required therein.

The Sub-projects may be structured and implemented in the following manner:

A. Specific, pre-determined Sub-Projects⁶⁴ allow financing a specific project for specific purposes with interdependent components and activities which are wholly defined at the time of approval of the Sovereign Investment

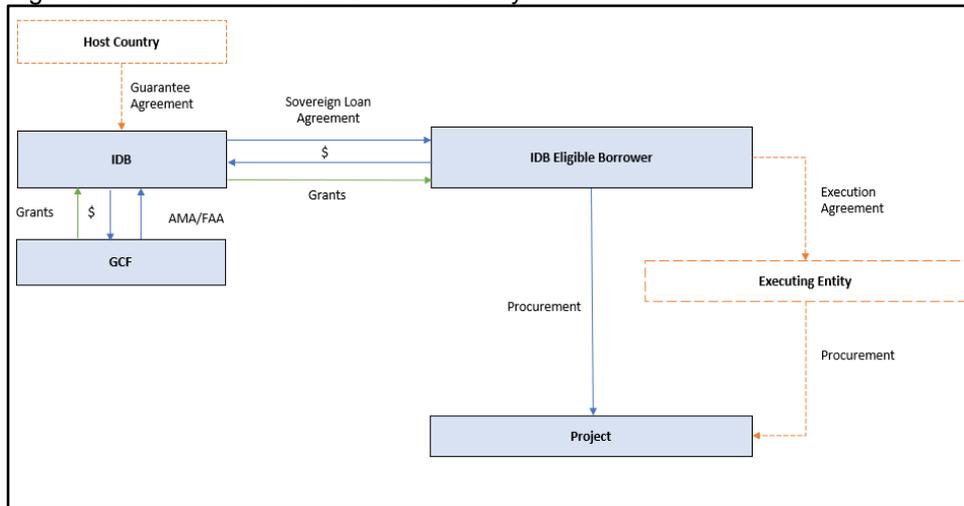
⁶³ Pursuant to IDB policy, this does not apply with regard to loans to development banks or agencies that have ample financial capacity to meet the obligations they would assume towards the Bank, provided that their charters include the provision that all the operations they enter into as borrowers are covered by a joint and several or subsidiary guarantee of the nation.

⁶⁴ Figures 3, 4, and 5 of the Funding Proposal present examples of possible financing structures that could be used in Sub-Projects funded with Sovereign Investment Loans for Specific Projects.

Loans. The Sub-Project cost, including Co-financing requirements, its preliminary design, and its technical, financial, and economic feasibility need to have been estimated, and due diligence has been carried out when the IDB approves the Sub-Project. This type of Sub-Projects may be implemented in three different ways:

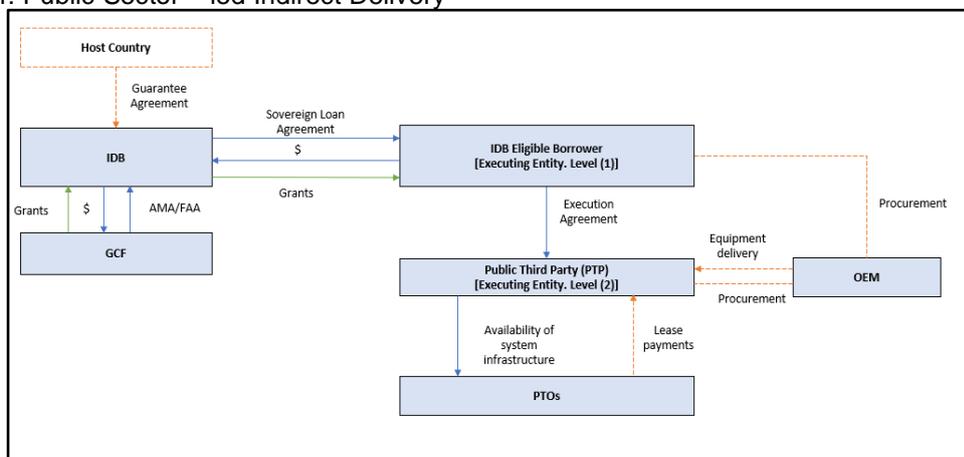
- **Option 1: Public Sector-led Direct Delivery:** The AE will enter into Subsidiary Agreement(s) with the Borrower/Grantee, under which it will provide the Borrower/Grantee with a Sovereign Investment Loan and/or an Investment Grant.

Figure 3: Public Sector – led Direct Delivery



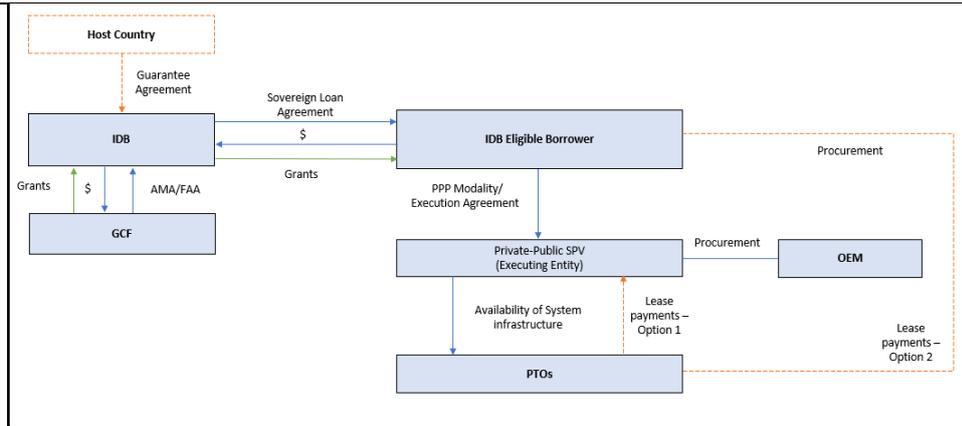
- **Option 2: Public Sector-led Indirect Delivery:** The AE will enter into Subsidiary Agreement(s) with the Borrower/Grantee under which it will provide the Borrower/Grantee with a Sovereign Investment Loan and/or potentially an Investment Grant. The Borrower/Grantee will then enter into an Execution Agreement with a further EE, which will be a public third party (the “PTP EE”). Both the Borrower/Grantee and/or the PTP EE could be EEs under this implementation modality. Where the Sub-Project requires that investments be made or procurement be undertaken, these tasks may be carried out by either the Borrower/Grantee or the PTP EE. The PTP EE will either (i) provide services to final beneficiaries directly or (ii) procure a public transport operator (a “PTO”) under a procurement agreement to provide such services. As the PTO is procured and has no discretion, it shall not be an EE.

Figure 4: Public Sector – led Indirect Delivery



- **Option 3: Public-Private Sector-led Indirect Delivery:** The AE will enter into a Subsidiary Agreement with the Borrower/Grantee under which it will provide the Borrower with a Sovereign Investment Loan and/or an Investment Grant). The Borrower will then enter into an Execution Agreement with a public-private entity (the “Public-Private SPV”). The Public-Private SPV will then be responsible for implementing the Sub-Project.

Figure 5: Public-Private Sector – led Indirect Delivery



B. Sub-Projects for Global Credit Programs allow financing multiple eligible investments through intermediary financial institutions or similar agencies (such as national development banks or “NDBs”) in the Host Countries, which will act as the EEs. The sub-borrowers that receive the resources from the financial institutions or similar agencies will be the final beneficiaries (“Final Beneficiaries”) of this kind of sub-projects. Funds will be passed on to Final Beneficiaries in the form that can provide terms (e.g., tenor, price, amortization profiles, collateral requirements) more adequate to finance individual investment projects of Final Beneficiaries.

To this effect, the IDB transfers the Sovereign Investment Loan and Co-Financing from IDB to the EEs in accordance with the terms of the Subsidiary Agreements. If applicable, Co-financing other than IDB Co-financing, as specified in each Sub-Project may be provided by the Host Country or the EE, or as otherwise specified in the relevant Subsidiary Agreement. Then, EEs will enter into funding agreements (“**Sub-Loan Agreements**”) with eligible local financial institutions (“**LFIs**”) and/or directly with Final Beneficiaries of private projects. Following the criteria established in the corresponding Subsidiary Agreement, the EE will approve the financing of investments to be funded under the Global Credit Program Sub-Project. The AE will develop detailed requirements and eligibility criteria to be applied to the Sub-Loans to be financed under the Global Credit Programs which will be passed down to the EE under the Subsidiary Agreement. The EE will be required to apply those requirements and criteria when selecting the Final Beneficiaries and Sub-Loans.

- **Option 1: Global Credit Programs via LFIs:** The AE will enter into a Subsidiary Agreement with the Borrower under which it will provide the Borrower with a Sovereign Investment Loan (and/or an Investment Grant). The LFI will then enter into a further Sub-Loan Agreement with the Final Beneficiary.
- **Option 2: Sovereign Investment Loans for Global Credit Programs without LFIs:** The AE will enter into a Subsidiary Agreement with the Borrower under which it will provide the Borrower with a Sovereign Investment Loan (and/or an Investment Grant). The Borrower will then enter into a Sub-Loan Agreement with the Final Beneficiaries.

The funding (in the form of loan) provided to the Final Beneficiaries either via LFIs or directly from the **Borrower** are referred to as **Sub-loans**.

C. Additional implementation arrangements for Components 1, 2 and 3

Subsidiary Agreements will contain provisions related to the financial terms and conditions, disbursements and use of resources, execution scheme of the Sub-Project, as well as to the supervision, monitoring, and evaluation of the Sub-Project, including the necessary provisions to comply with the corresponding requirements and/or obligations set forth, as applicable, in the AMA and FAA. In addition, Subsidiary Agreements will require compliance with IDB’s policies and procedures, as specified in such agreements.

EEs will be responsible for the full execution of the Sub-Projects in accordance with the provisions of the Subsidiary Agreements and Execution Agreements, if applicable. Eligible EEs will be identified jointly with national governments based on the relevance of their public mandate to the Program activities, experience in finance structuring and fiduciary management, and track record, including with the IDB.

As per IDB policy, prior to the approval of each Sub-Project, IDB’s fiduciary team will perform and/or update an institutional capacity assessment on the corresponding EEs in accordance with the information provided in Schedule

3.B. This assessment includes overall technical capacity, adequacy of information systems, internal and external controls, and recommendations on any fiduciary risks identified.

1.2.2 Component 4 of the Program

Activities under Component 4 of the Program will be financed through the Technical Cooperation Grants. Technical Cooperation Grants will be approved by the AE as a separate Technical Cooperation Sub-Project, which may be linked to Sub-Projects under Components 1 to 3. For the avoidance of doubt, the Technical Cooperation Grants will not finance or be a part of the Sub-Projects under Components 1, 2 and 3, but may support analytical work required for the preparation or execution of those Sub-Projects at the national and/or regional levels. The execution of Technical Cooperation under this Program will be done under the IDB's Technical Cooperation Policy, related operational guidelines and the Eligibility Criteria, if applicable. According to the IDB's Technical Cooperation Policy, IDB may be the EE for Technical Cooperation, and/or it may enter into Technical Cooperation Grant Agreements with another EE. Whether the EE would be the IDB, or a third party will depend on the specific Host Country context and beneficiaries' preferences and capacity. The IDB will determine along with Host Country and potential beneficiaries, the detailed deployment of specific Technical Cooperation Grants and define on the basis of it the best execution option. If the IDB is not the EE, the EE will be determined and assessed as part of the preparation of every Sub-Project to be designed under the Program.

- Third-party EE. EEs for Technical Cooperation activities must be legally established entities. This includes: (i) national and subnational institutions from borrowing member countries of the IDB with the legal capacity to enter into agreements with the IDB; (ii) regional and subregional agencies established by the same countries; (iii) private companies eligible to receive loans from the IDB; and (iv) not-for-profit institutions, including civil society associations. When the IDB is not the Executing Entity, IDB will enter into Technical Cooperation Agreements, which will be Subsidiary Agreements, with eligible EEs. In this case, EEs will be required to use applicable IDB's procurement policies for their use of GCF Proceeds and Co-financing.

According to IDB procedures, a formal diagnosis of the EEs (similar to the one performed for EEs of Sovereign Investment Loans and Investment Grants) is required to assess legal and institutional capacity, fiduciary management, eventual execution risks and identify and implement mitigation measures.

- IDB execution. The IDB may execute Technical Cooperation activities depending, for example, on the local context or high technical complexity of the activities. The execution by the IDB would enhance the quality control of the studies and methodologies to be developed and would improve the efficiency and velocity in the design and execution at the Sub-Project level. When acting EEs, the IDB would apply its own policies and procedures for the hiring of individual consultants and/or procurement of consulting and other services, ensuring the fulfilment of applicable AMA and FAA requirements.

2. EEs of Approved Sub-Projects

Following the effectiveness of the FAA for this Program, GCF Proceeds and Co-financing would be allocated by the IDB in the context of Sub-Projects and multi-country Technical Cooperation Grants. The assessment of the institutional and legal capacity and eligibility of EEs will be individually undertaken as part of the preparation process for each Sub-Project conducted by IDB and will follow IDB policies, procedures, and due diligence standards. Only after a Sub-Project has been approved by IDB, may IDB enter into any Subsidiary Agreement with the relevant EE. IDB will inform the GCF prior to the disbursement by GCF to IDB for a specific Sub-Project, the contractual arrangement and structural options applied to such Sub-Project.

As per IDB policies and procedures, prior to the approval of each specific project, IDB's fiduciary team will perform and/or update an institutional capacity assessment on the corresponding EE. This assessment includes overall technical capacity, adequacy of information systems, internal and external controls, and recommendations on any fiduciary risks identified.

In the case of Technical Cooperation executed by EEs, four basic areas are evaluated: (i) Management of Contracting of Services and Procurement of Goods; (ii) Administrative, Financial and Accounting Management; (iii) Technical and Monitoring Capacity; and (iv) Knowledge Management and Strategic Communication Capacity. It should be noted that this analysis is comprehensive as it also identifies institutional characteristics and capacities associated with the management of resources from national and international donors, good practices, experience, and use of systems to strengthen these, with a view to efficient and transparent project execution.

An indicative list of already identified EEs, especially for the execution of Financial Instruments (Sovereign Investment Loans and Investment Grants):

Host Country	Indicative EEs
Barbados	<ul style="list-style-type: none"> Ministry of Energy, Small Business and Entrepreneurship Ministry of Transport, Works and Water Resources
Chile	<ul style="list-style-type: none"> Ministerio de Energía Ministerio de Transportes y Telecomunicaciones Ministerio de Economía a través de Corporación de Fomento a la Producción (CORFO)
Colombia	<ul style="list-style-type: none"> BANCOLDEX FINDETER Ministerio de Energía y Minas
Costa Rica	<ul style="list-style-type: none"> Instituto Costarricense de Electricidad Ministerio de Medio Ambiente y Energía Ministerio de Obras Públicas y Transportes
Dominican Republic	<ul style="list-style-type: none"> Corporación Dominicana de Empresas Eléctricas Estatales Oficina Metropolitana de Servicios de Autobuses (OMSA) Banreservas
Jamaica	<ul style="list-style-type: none"> Ministry of Science Energy and Technology Jamaican Urban Transit Corporation (JUTC) Jamaica Transport Authority
Panama	<ul style="list-style-type: none"> Secretaría de Energía MiBus – Autoridad de Tránsito y Transporte Terrestre
Paraguay	<ul style="list-style-type: none"> Ministerio de Obras Públicas y Comunicaciones Viceministerio de Minas y Energía Viceministerio de Transporte Administración Nacional de Electricidad
Uruguay	<ul style="list-style-type: none"> La Administración Nacional de Usinas y Trasmisiones Eléctricas (UTE) Ministerio de Industria, Energía y Minería. Intendencia de Montevideo

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

Rationale for and Additionality of GCF Funding

The Program introduces a concessional financing mechanism that addresses barriers to the uptake of commercial EVs, supports a transformative shift to low carbon transportation and increase climate resilience of urban transport infrastructure and the grid. Currently fossil vehicles dominate the market. Except in Santiago de Chile and Bogota no large fleets of commercial EVs operate. In Chile the Program will not finance e-buses and in Colombia only in intermediate cities without mass transit system. The paradigm shift towards electric mobility not only entails new vehicles but a new fueling/charging infrastructure, changes in vehicle maintenance and operations and frequently also requires changes in the business model and reduce vulnerabilities of the urban transport infrastructure. Actors in the commercial vehicle sector fear such disruptive changes as it can affect their core business. Government on the other hand are keen on promoting e-mobility as this can reduce emissions and dependence on fossil fuels whilst also creating long-term sustainable jobs. They therefore often state political targets or objectives to promote e-mobility coupled with stand-alone EV pilots. The missing link is however to kick-start EV massification with a first batch of at-scale implementation projects. Such initiatives are dependent on concessional funding to make them financially and from a risk perspective feasible. These projects are also the base for meaningful, practical, realistic and action-oriented roadmaps and for developing policies which are cost-effective and reduce actual barriers towards e-mobility. Stand-alone pilots or technical assistance has proven to be to theoretical and insufficient to kick-start mass deployment of EVs. GCF concessional financing is critical to ensure this comprehensive e-mobility approach – in absence of concessional GCF finance, such projects will not materialize in the short or medium term. Also, IDB links the e-mobility

projects with sustainable urban mobility components and with investments to improve the resilience of urban transport infrastructure as well as measures to increase the grid resilience. GCF concessional financing is critical to strengthen the capacities cities have to identify climate risks and formulate adaptation measures. Also, GCF concessional financing is imperative to finance prioritize measures to reduce vulnerability to such risks and build resilience for an optimal and safe operation of e-mobility.

The e-mobility report (Annex 2a) clearly shows that all countries with large fleets of commercial EVs (>100 units) have used, at least initially, financial support instruments to kick-start mass EV deployment. The experience of countries is however also that once a large fleet is established subsidies can be reduced gradually and even be eliminated with 5-10 years due to more competitive prices of EVs combined with the experience of mass operations of such vehicles. Also, the magnitude of subsidies can be reduced with adequate policies and regulations (e.g. concession periods for buses) and business models per vehicle sector. Concessional finance from the GCF is not required in replication projects which happen at a later stage as:

- EV market prices decrease: EV prices are decreasing in all vehicle segments due to decreasing battery prices and increasing competition and supply of EVs. TCO parity with fossil vehicles is expected in the targeted vehicle categories between 2025 and 2030 and price tags of EVs will get close to fossil models by 2030. TCO alone will in many cases however not be a sufficient argument to move for EVs if the upfront incremental investment is still significantly higher and the risks are still perceived to be higher. However, decreasing vehicle costs are a very important ingredient to make EVs commercially viable without need for subsidies and further financial assistance.
- Reduced risks and costs for 2nd and 3rd projects due to showcasing of successful implementation projects and business models. Risks which are reduced by large fleet applications are (i) vehicle reliability and vehicle performance risks; (ii) improved information and therefore lower risk on assessing the re-sale value of used EVs important for introducing business models based on leasing; (iii) less risk concerning maintenance & repair capabilities and availability of spare parts including secondary spare parts markets; (iv) reduced risk on the workability of new business models in practice. The Program assists in this process by designing and implementing business models and by enabling with concessional finance the uptake of large fleets which are critical to reduce these risks.
- Policies which are more conducive for e-mobility and restrict fossil vehicle usage. This allows EVs to be more competitive. Lower costs, reduced risks, and improved framework conditions all create favorable conditions for investors to pour capital into this market as profit rates improve and risks get down. This will allow for widespread replication based on commercial terms in 5-10 years if the country has already gained experience with initial fleet deployment.

GCF concessional finance is critical to close the gap between fossil and electric vehicle technologies and to deliver a Program which realizes investments combined with TA. Guarantees do not resolve the barriers of EVs of lack of profitability and performance risks. Potential investors as well as FIs interviewed were only interested in guarantees if these incur no cost and if guarantee levels are very high (100%).

The major financial barriers for the potential beneficiaries which prevent alternative financing options are (i) the low financial profitability of EV investments reflected in a low FIRR and very long payback times (ii) the high risk profile of EV investments due to performance risks, asset risks (e.g., re-sale value of assets), and replacement investments (batteries) and (iii) high capital and investor's capital demand resulting in high debt and risk exposure levels of the investing entity. Commercial funding is thus not willing to enter this market. Alternative funding vehicles with a higher risk appetite are potentially interested but are critical of the lack of profitability and/or the high-risk profile. A good example for this case is Chile where traditional banks were reluctant to finance commercial EVs and private electric utilities entered the market with a leasing scheme for buses thus creating a new business approach (see Annex 2a). However, also these entities were only willing to kick-start the process when the government recognized and paid for the incremental investment cost of e-buses plus guaranteed payment of the leasing fees i.e., without concessional finance and risk mitigation instruments the deal would not have taken place.

Conventional financial institutions are also not willing to enter the market due to the novelty of the technology. The establishment of new technologies and new business models also entails significant additional transaction costs. Concessional GCF finance including grants can provide for technical assistance to design and structure in an optimal manner e-mobility investments and reduce design and performance risks whilst the financial instruments reduce risk exposure and increase profitability of the investment.

For pilot projects including electric vessels, hydrogen and V2G the current status is still at the learning curve. Pilot projects which have a potential to be replicated on a broad scale and which already have integrated a business plan for commercial mass deployment are supported. V2G and hydrogen projects also have the potential to increase the grid resilience through energy storage.

The multi-country approach is critical for a transformative and accelerated shift towards e-mobility which is again required to achieve the target of limiting the global temperature increase to below 2 degrees Celsius. The Paris Declaration on Electro-Mobility calls for the deployment of electric vehicles (EVs) compatible with a 20% share of all road transport vehicles in 2030 idem to 35% of vehicle sales in 2030. A multi-country programmatic approach is necessary given the scale of climate change challenges facing countries and the critical need to deliver transformative change at scale as quickly as possible as vehicle replacement rates are low thus resulting in long lock-in times of investments. Multi-country approaches are critical for learning and experience exchange between Latin American countries with activities such as the realization of different knowledge materials including publications, webinars, benchmark and best-practice studies, preparation of capacity building guidelines and outreach events including trainings and workshops. Through participation of various countries with a similar context the learning effect can be much larger. If the program is limited to one country, the replication will be basically on a national level. National programs are important but experiences from other countries can be brought in much easier if the Program covers multiple countries. The GCF involvement is critical to support low-carbon transport investments across multiple countries and vehicle sectors. With a multi-country programmatic approach resources can be used efficiently to highest priority investment projects – this cannot be achieved with a piecemeal, project-by-project approach. Individual projects are in most cases too small to warrant a Funding Proposal to the GCF with all transaction costs involved. IDB would thus refrain from financing electric mobility in most cases and not integrate it into its transport investments. The Program can also capitalize on synergies and lessons learned across countries and vehicle sectors and can effectively ensure transfer of knowledge and capacity building between stakeholders.

GCF assistance enables linking finance with technical and policy assistance. Investments alone are insufficient to achieve the transformation in climate action needed by the transport sector. Strategic sectoral planning and policy reform are critical aspects to enable the transformation towards electric mobility. The GCF, with the goal of supporting paradigm shifts in climate action, is critical for sufficient funding of the policy and technical assistance component of the Program.

Concessional of GCF Funding

The Program will benefit from technical assistance that will be made available to accompany each project and will ultimately serve to enhance the viability of the projects. TA will also support the development of e-mobility roadmaps for commercial vehicles, charging infrastructure and a H2 economy, which is essential to achieve the Program's targeted trajectory change. TA related to knowledge generation and dissemination will ensure an enabling environment for the Program.

Projects involved in the proposed Program will not be dependent on a continuous flow of GCF funds. Rather, the Program aims to achieve substantial reduction in the need for concessional financing in future projects. It is expected that, over the course of implementation of the Program, e-mobility will gradually move towards commercial viability in countries which have kick-started the process. The use of GCF funds de-risks similar future investments and demonstrates the viability of e-mobility investments on commercial terms.

This Program is critical to reduce the cost of capital to offset partially incremental costs and mitigate the risks from initiating climate investments in a new technology. GCF's ability to offer concessional terms in investments enables prospective clients to invest in e-mobility which would otherwise not be able to do with IDB finance alone. The e-mobility report in Annex 2a clearly shows that all countries with large fleets of commercial EVs (>100 units) have used, at least initially, financial support instruments basically in the form of grants to kick-start mass EV deployment. Incremental investment costs of e-buses were grant financed by countries by 80-100%, e-taxis have been subsidized on average by 50% of their incremental investment cost plus subsidizing the establishment of dedicated urban fast-charging infrastructure and light commercial vehicles (LCVs) have received as subsidy 75-100% of the incremental investment cost. These subsidies come next to other benefits such as e.g., preferred urban access for electric LCVs or purchase tax incentives. The magnitude of subsidies can be reduced with adequate policies and regulations (e.g., concession periods) and business models per vehicle sector. GCF concessional finance combined with national support is critical

for sustainable market uptake linking initial pilot projects with commercial EV viability by inserting the missing part of initial large-scale fleets combined with business models, policy advice and technical designs which reduce risks related.

Technical cooperation assistance is used as support for the investment components and for policy and knowledge management to ensure a transformational impact. TA is used in the following areas:

- **Project sourcing and preparation:** The Program will provide direct TA to projects that will potentially receive later financial assistance. TA can include pre- and full feasibility assessment, legal, institutional, financial and technical advisory as well as advisory on possible business models and financial structuring. TA packages will support the local governments in the planning of EV routes and charging infrastructures, and include concept design, technology selection, charging strategy, operation and maintenance plan and battery handling and disposal strategy. This also includes the optimal design of e-mobility ecosystems including charging networks and the interface between vehicle, charging, and the grid. It also includes the identification and design of adaptation measures to increase the resilience of urban infrastructure.
- **Capacity building, training and monitoring:** TA is used to ensure delivery of adequate training from equipment suppliers or third parties for EV and charger operations and maintenance, safety trainings and capacity building in optimal management of EV fleets. This activity also includes performance monitoring of electric vehicles in technical and financial terms. In capacity building the emphasis will be on battery handling, re-usage, re-cycling and disposal.
- **Support of enabling public policies for EV deployment:** Technical support will be provided to the relevant national and local authorities in the countries and cities where the Program will support investments in order to set-up, improve and/or enforce enabling public policies and legal, regulatory, fiscal and/or normative frameworks for e-mobility and a hydrogen economy. The Program intends to establish in all countries where not yet available roadmaps for electrification of public transport, roadmaps for public charging infrastructure and in countries with potential roadmaps for hydrogen usage in transportation. Sectoral and specific roadmaps are a tool to steer climate investments and initiatives beyond the Program's scope and will help to inform and/or further detail the countries long term mobility strategies and their NDCs.
- **Development and advisory services on optimal business models and financial structuring** which relate to the peculiarities of EVs. This is targeted for PT to identify business models, models which allow for increased influx of private capital and which lower financing costs and risks for operators, leasing models, inclusion of electric utilities etc.
- **Advisory services in the linkage of e-mobility with increased grid resilience** via usage of 2nd hand batteries, hydrogen storage and V2G.
- **Advisory services around increased resilience of urban infrastructure**, the identification of potential measures, analysis of their cost-effectiveness and outreach activities on successful interventions.
- **Inclusion of gender aspects in all projects to be financed** as well as on a national and regional level.

Support for development of human capital in the transition to e-mobility through solutions, such as studies, standards, train the trainers, online courses, etc.) available to member countries by the RSCSE. Knowledge management strategy and regional outreach: The Program will develop knowledge products and share experiences and cases through channels such as webinar, electronic reports, case-studies, and workshops to disseminate experiences and build a base for replication. The Program will not create own platforms or channels for information dissemination but use existing channels.

B.6. Exit strategy (max. 500 words, approximately 1 page)

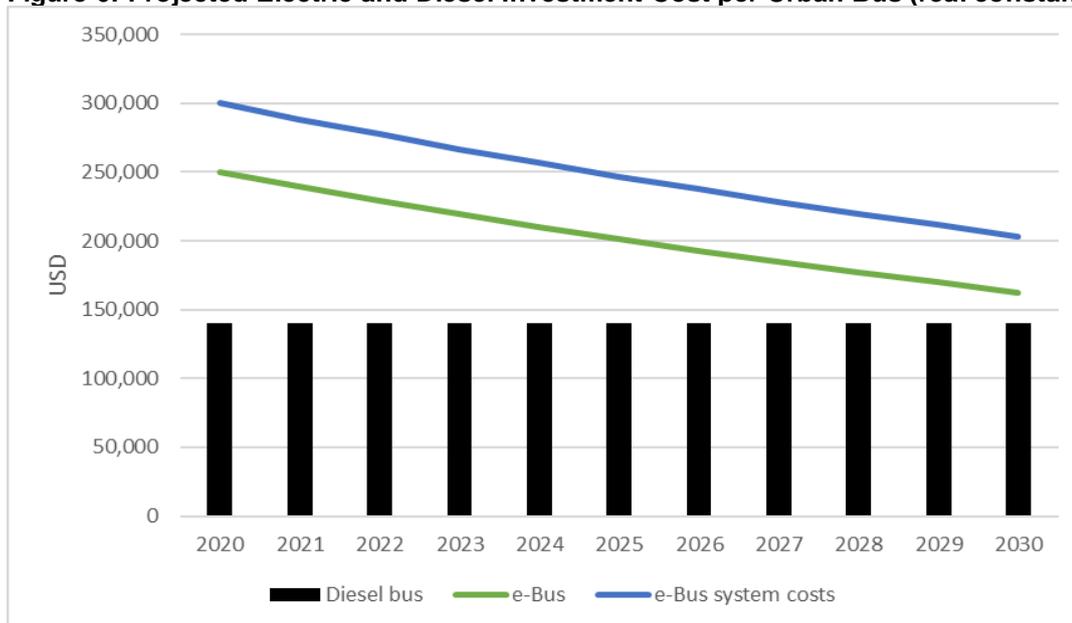
Exit Strategy

Repayments under concessional loans provided with GCF funds under the Program will be managed through the IDB-GCF Special Fund in accordance with repayment schedules set forth in IDB's loan agreement. All loans will be monitored by IDB. GCF resources will be reflowed back to the GCF in accordance with the terms of the FAA. The individual funded projects continue for their lifespan. Operational costs are lower for electric mobility investments than for conventional units – thus once the system is established all operators will continue using the assets.

Program Sustainability

It is expected that by 2030 commercial EVs as targeted by the Program are fully commercial viable and more attractive financially than fossil units. This is accelerated with the Program which provides for kick-starting the process thereby reducing performance risks for followers, establishing adequate business models and creating an enabling framework for further investments in e-mobility. The main Program impact is to initiate this process much earlier than under BAU. However, the Program sustainability is given through the market development of EVs going towards a commercially attractive product and through the Program activities which act as accelerator of this process. The trend of e-bus system investment costs relative to diesel units is shown in the graph. Whilst the investment cost is still expected to be higher for an e-bus system the significantly lower OPEX (basically energy plus maintenance cost) make the TCOs significantly lower than for fossil bus systems (in many countries the TCOs are already today lower but not sufficient i.e. the payback period is still long and sometimes longer than the concession period of PT operators thus not making the investment financially attractive under a risk viewpoint).

Figure 6: Projected Electric and Diesel Investment Cost per Urban Bus (real constant USD of 2020)



Source: Grutter Consulting

It is expected that by 2030 e-buses will be close to sticker price parity with diesel units, whilst total system costs per e-bus are still expected to be around 40-50% higher than of a fossil unit. However, the significantly lower OPEX of e-buses together with the technology and market maturity will make purchases of e-bus the standard, without necessity of further concessional finance. TCO costs will be significantly lower and payback periods of incremental e-bus investments under this investment price trend will be less than 5 years. This commercial uptake will only be realized if the investment risks of e-buses are reduced. This is possible through the establishment of new business models and through operations of initial large fleets which allow for performance monitoring thereby reducing uncertainty for follow-investors.

Similar trends of cost projections exist for other vehicle categories. For taxis/passenger cars and light commercial vehicles sticker price parity is expected by 2030⁶⁵. This does not include the cost of public charging infrastructure which is not borne by the vehicle purchaser (except home chargers which are low cost) but are paid through usage fees of the public charging infrastructure. For trucks, FCEVs and vessels investment cost parity (only for the vehicle, excluding charging infrastructure) is expected some years later.

At the sectoral level the Program will deliver road maps for electric mobility in public transport and for public charging infrastructure. The roadmaps guide policymakers in creating a long-term enabling policy environment conducive towards increased investments in e-mobility. On a regional level the knowledge products and outreach events assist other countries in also implementing e-mobility projects and contributes towards the creation of a non-reversible dynamic towards electrification of the transport sector.

⁶⁵ See Electric vehicle trends | Deloitte Insights, (McKinsey, 2019), (UBS, 2021) or (MJB&A, 2021)

C. FINANCING INFORMATION						
C.1. Total financing						
(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount			Currency		
	200			million USD (\$)		
GCF financial instrument	Amount	Tenor	Grace period	Pricing		
(i) Senior loans Mitigation	88	20 years	5 years	0.75 %		
(ii) Senior Loans Adaptation	57	40 years	10 years	0.0%		
(iii) Equity	Enter amount					
(iv) Guarantees	Enter amount					
(v) Reimbursable grants	Enter amount					
(vi) Grants	55					
(vii) Results-based payments	Enter amount					
(b) Co-financing information	Total amount			Currency		
	250			million USD (\$)		
Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
IDB ⁶⁶	Senior Loans	195	million USD (\$)	Up to 25 years 5.5 years ⁶⁷	SOFR based ⁶⁸	Options
IDB	Grant	5	million USD (\$)			Options
National ⁶⁹	In kind Equity	50	million USD (\$)			Options
Click here to enter text.	Options	Enter amount	Options	Enter years Enter years	Enter%	Options

⁶⁶ IDB financing may include IDB's own resources or other funds administered by IDB (different from GCF resources). IDB loans financed with its own resources have flexible terms. Financial terms subject to agreements with each borrowers and updated IDB terms. The estimated total amounts of IDB and other co-financiers are subject to the approval of allocation of such funds for each individual Sub-Project on a case-by-case basis and is contingent on such approvals being obtained and subject to the terms of the corresponding legal agreement(s).

⁶⁷ Under IDB FFF Investment Loans standard financial terms, the grace period is flexible as long as the Original Weighted Average Life (WAL) and Maturity Date does not exceed the limitations approved by the Bank; Maximum Tenor; 25 years, Maximum Wal:15.25 years.

⁶⁸ SOFR-Based interest rate comprised of: SOFR + IDB Funding Margin + Variable OC Margin. The IDB's Lending Rate is composed of 3 components, 1. SOFR rate applicable to the specific billing period, 2. IDB's funding Margin, average bank's cost to issue its debt (computed on a quarterly basis), which is expressed as a spread over SOFR and 3. IDB's Lending Margin. IDB publishes its Lending rate once a quarter, with the transition to SOFR, the periodicity of the calculation remains the same.

⁶⁹ Regarding the national contribution, the distribution between in kind and equity might change at the time of the design of sub-projects. It will vary for each sub-project and could include different options: in-kind national contributions, grant, and lending from other national sources such as National Development Banks.

(c) Total financing (c) = (a)+(b)	Amount	Currency
	<u>450</u>	<u>million USD (\$)</u>
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	National finance may include grant, tax exemptions, and other in-kind contributions depending on country circumstances.	

C.2. Financing by component

Component	Output	Indicative cost million USD (\$)	GCF financing		Co-financing		
			Amount million USD (\$)	Financial Instrument	Amount million USD (\$)	Financial Instrument	Name of Institutions
Component 1: Increase climate resilience of urban transport infrastructure	1.1 Fewer urban infrastructure damaged resulting from climatic shocks because of higher investments in vulnerability reduction	97	54	Senior loans	27	Senior loans	IDB
	1.2 Fewer days to restore the IEUTS public transport service after climate shocks due to investment in climate resilience		17	Grants	0		
Component 2: Test the potential of H2 storage and V2G to increase the grid resilience	2.1. H2 and V2G pilots are used to assess their viability of mass deployment to improve grid stability	53	18	Senior loans	10	Senior loans	IDB
	Click here to enter text.		14	Grants	11	Grants	National co-finance
Component 3: Electrified integrated urban mobility	3.1. E-mobility is integrated with PT & NMT	105	12	Senior loans	62	Senior loans	IDB
			12	Grants	19	Grants	National co-finance

	measures to foster mode shift to low carbon transport						
	3.2. EV fleets are deployed with innovative business models to enable their mass applicatio	180	61	Senior loans	96	Senior loans	IDB
			2	Grants	20	Grants	National co-finance
Component 4: Technical assistance	4.1. A climate resilient e-mobility ecosystem integrated with urban transport is established to enable uptake of e-mobility	8	5	grants	3	grants	IDB
	4.2 Strengthened institutional and regulatory systems for climate-responsive planning and development	4	3	grants	1	grants	IDB
	Monitoring and Evaluation	1	1	grants	0	grants	IDB
	PMC	2	1	grants	1	grants	IDB
Indicative total cost (MUSD)		<u>450</u>	<u>200</u>		<u>250</u>		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
C.3.2. Does GCF funding finance technology development/transfer?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Capacity Building

Capacity Building is delivered under Component 4. This includes specifically:

- Capacity building and technical resources for training of operators, safety staff, maintenance staff etc. Technical assistance is used to ensure delivery of adequate training from equipment suppliers or third parties for EV and charger operations and maintenance, safety trainings and capacity building in optimal management of EV fleets. This activity also includes performance monitoring of electric vehicles in technical (energy usage, emissions) and financial terms (operational expenditures, vehicle availability rates);
- Support of national enabling policies for EV deployment, advice on battery re-usage, recycling and disposal and capacity building at a national level. Capacity building in the elaboration of sectoral roadmaps (electrification of public transport, electrification of taxi and ride hailing services; electrification of urban delivery services, electrification of long-haul freight and passenger transport,

electrification of the rail system, electrification of mobile machinery, electrification of vessels, hydrogen economy), and in the design and implementation of national policies which enable EVs. This includes also policies which affect directly the investment components of the Program such as concession contracts and structuring of public transport;

- Capacity Building on the design and implementation of measures to increase urban transport infrastructure and grid climate resilience. This includes the identification and assessment of cost-effective measures to increase the resilience of cities in transport infrastructure linked with e-mobility development and on measures to increase grid resilience through projects in the e-mobility field such as V2G, hydrogen energy storage or usage of 2nd hand EV batteries.
- Learning and experience exchange between countries with activities such as the realization of different knowledge materials including publications, webinars, benchmark and best-practice studies, and outreach events included in a learning and Knowledge Management Strategy (KMS).
- Capacity building for the development of human capital through the RSCSE solutions, such as studies, labor market intelligence, labor and training standards, train of the trainer's packages, learning resources and online courses.

Technology Transfer

Technology Transfer is facilitated through identification and design of appropriate e-mobility technologies and projects (technical design under Component 4) and their subsequent funding under Components 1 to 3.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 500 words, approximately 1 page)

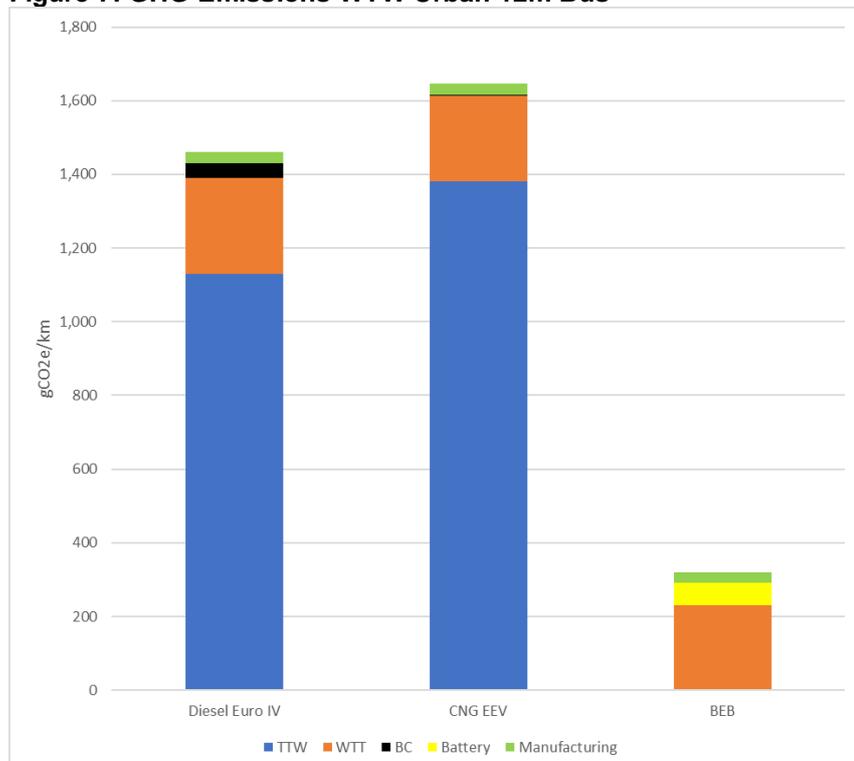
GHG emission calculations have been made per project type and were then expanded to the entire Program based on the expected number of projects and vehicles per project type. GHG impacts included are well-to-wheel i.e. include upstream electricity generation related emissions as well as transmission and distribution losses of the grid. Areas of emission reductions are (i) impact of replacing fossil with electric vehicles (BEV or FCEV), and (ii) impact of increased PT ridership due to PT system improvements (iii) cycle lanes and increased usage of NMT and (electric) micro-mobility impact. Details can be found in Annex 22 and the project reports in Annex 2.

Impact of EVs

The GHG reduction is due to operation of EVs procured with investments of the Program. The methodology used to determine emission reductions of EVs is based on the UNFCCC methodology AMS.III.C⁷⁰. The GHG impact is determined based on a well-to-wheel (WTW) approach including carbon emissions from electricity production including transmission and distribution losses.

The comparison base are always new fossil vehicles and not the currently circulating units as the baseline case is that the operator would purchase a new fossil vehicle but with the Program purchases a new electric unit. Emissions of the old unit (if latter continues to operate) are the same in the baseline as in the project case and therefore not accounted for. The following graph shows GHG reductions on average for the included countries based on the median grid factor of Program countries for different vehicle categories.

Figure 7: GHG Emissions WTW Urban 12m Bus



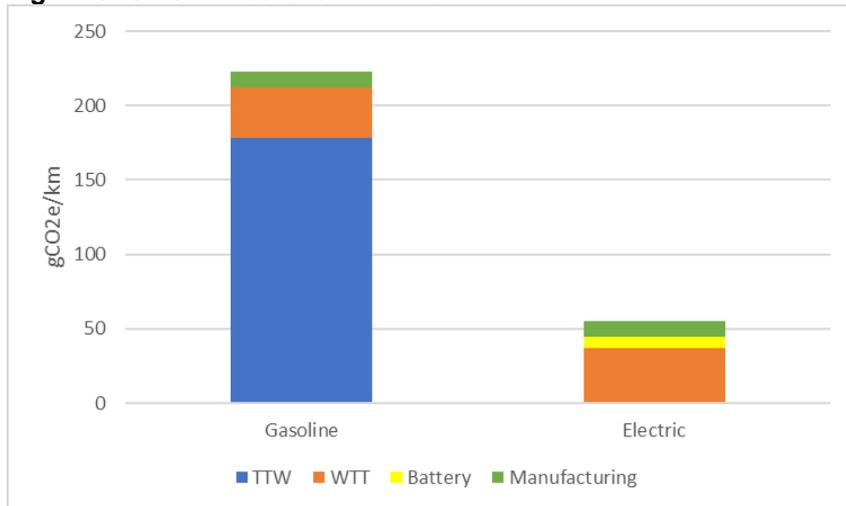
Note: TTW = tank to wheel; WTW = well to wheel; median carbon grid factor of Program countries (0.230 kgCO_{2e}/kWh); Source: Annex 22

On average over all Program countries BEBs have 80% lower WTW emissions than diesel units. Inclusion of upstream emissions (vehicle manufacturing including batteries) only changes the picture marginally. Even in the country with the

⁷⁰ [untitled \(unfccc.int\)](#)

highest carbon grid factor (Jamaica, grid factor of 0.498 kg CO_{2e}/kWh) included in the program BEBs still reduce GHG emissions by 60%.

Figure 8: GHG Emissions WTW Taxi

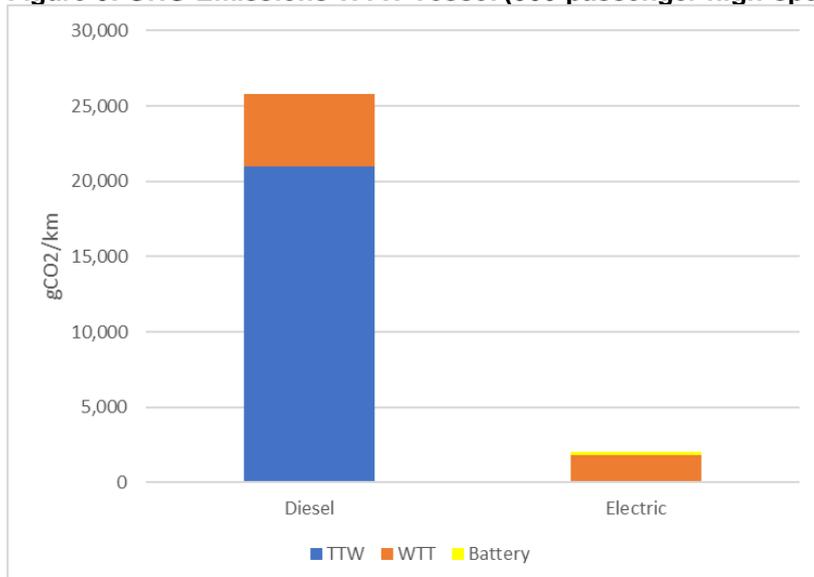


Note: TTW = tank to wheel; WTW = well to wheel; median carbon grid factor of Program countries (0.230 kgCO_{2e}/kWh); Source: Annex 22

On average over all Program countries electric taxis have 80% lower WTW emissions than gasoline units. Inclusion of upstream emissions (vehicle manufacturing including batteries) only changes the picture marginally. Even in the country with the highest carbon grid factor (Jamaica, grid factor of 0.498 kg CO_{2e}/kWh) included in the program e-taxis still reduce GHG emissions by 60%⁷¹.

Only green H₂ projects will be supported with 100% renewable electricity being used. In these cases the hydrogen trucks reduce 100% of GHG emissions compared to a diesel unit (this is a project eligibility criteria; see section B3).

Figure 9: GHG Emissions WTW Vessel (300 passenger high-speed ferry)



Note: TTW = tank to wheel; WTW = well to wheel; median carbon grid factor of Program countries (0.230 kgCO_{2e}/kWh); 300 passenger high-speed vessel with data of Bangkok vessels of Energy Absolute Source: Annex 22

On average over all Program countries electric vessels have 90% lower WTW emissions than fossil units. Inclusion of battery manufacturing emissions only changes the picture marginally. Even in the country with the highest carbon grid

⁷¹ Values of institutional fleets are comparable

factor (Jamaica, grid factor of 0.498 kg CO_{2e}/kWh) included in the program electric vessels still reduce GHG emissions by more than 70%.

The following table shows the annual and lifetime average GHG reduction per vehicle unit.

Table 8: GHG Reduction per Vehicle (average figures for Program countries in tons CO_{2e})

Vehicle type	Annual average GHG reduction	Vehicle lifetime GHG reduction
Urban bus (12m)	87	1,391
Taxi	12	142
40t truck ⁷²	158	3,156
300 passenger vessel	1,344	26,884

Source: Grutter Consulting; see above and Annex 22b

Impact of PT Measures

The methodological approach to determine the impact of improved PT measures including system improvements as well as last-mile connectivity measures is based on the approved CDM methodology ACM0016 which allows to estimate the impact caused through mode switch from private means of transport to PT. Estimations of the incremental patronage of PT systems is thereby based on monitored results of already implemented projects. Measures which increase the PT usage include infrastructure investments in bus lanes and bus stations, smart ticketing, improved connectivity and intermodality, modern electric bus fleets and preference for PT systems in urban settings. The emission factor of private means of transport is per passenger-kilometer factor 4-5x lower than for PT in Latin American cities (see Annex 22). The assumed lifetime of measures is 20 years in accordance with infrastructure lifespan.

Impact of NMT Measures

The methodological approach to determine the GHG impact of cycling lanes established in the urban development measures of projects is based on a Global Environment Facility approach (GEF, 2015) based on (i) km of cycle-lanes (ii) number of additional cycling trips (iii) trip length (iv) baseline mode (v) emission factors of baseline modes. GEF default values are used for projections. This results 270 tCO₂ of annual GHG emission reductions per kilometer of grade-separated cycle lane. Assuming a lifespan of cycle lane measures of 30 years the GHG lifespan reduction per km of cycle lane is estimated at 8,089 tCO₂ (see Annex 22b)

Accelerated Market Uptake of EVs due to the Program

The Program creates the conditions for an accelerated uptake of EVs due to reducing risk factors for investors thereby reducing the required level of FIRR to switch from a fossil to an electric vehicle. The Program implements interventions to kick-start EV mass deployment significantly earlier than under a Business as Usual (BAU) scenario by reducing the risk profile of investments and by comprehensive technical assistance. The key strategic value of the Program is that it functions as market accelerator enabling a far faster uptake of e-mobility than under a BAU scenario avoiding a lock-in of long-lived assets in fossil technology. The Program influences core parameters which determine the risk premium e.g. the performance uncertainty and operational costs of electric buses.

Impact of Adaptation Interventions

The Program aims to build resilience for the IEUTS to ensure cities have resilient transport to face climate hazards and potential emergencies in extreme weather events. Measures to reduce vulnerability to climate risks aim to minimize the interruption of service and maintain the level of safety, frequency, and capacity of the system, while protecting the urban dwellers. Such adaptation measures must be defined case-by-case, but can be classified as (i) direct physical interventions to the transport infrastructure, such as protective measures, grey infrastructure and NBS, improvement of existing drainage and integration of sustainable urban drainage systems; and, (ii) interventions to the vehicles and operation, such as improvement of thermal insulation of buses, use of high-efficiency AC systems, training of drivers and update of emergency plans (see Table 3 in Annex 24 for more examples).

The impact of adaptation interventions will be reported as the cost required for rehabilitation and improvement of physical assets that will increase the resilience of the IEUTS. Adaptation interventions will also be evaluated to determine their climate resilience benefits through an associated ratio that will use a combination of metrics. Applying

⁷² Based on hydrogen truck with 0-emission grid

the climate resilience benefit methodology to each project valorises its physical climate outcomes while placing it in the context of the local, project specific climate risks.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

The **paradigm shift** of the proposed Program is achieved by having as long-term outcomes an EV friendly policy environment where successful EV city and national policies have been replicated at the national and regional level; a mature EV ecosystem; a charging and grid infrastructure which facilitates a mass EV deployment; and enabling financial and business models. Accelerated EV investments take place due to experiences made, business models established, reduced entry barriers, lower costs and new market players. The transformative shift is possible through the uptake of commercial EVs (the countries included in the Program at this moment only have pilot EV fleets) and the improved ecosystem for EVs resultant of the concrete interventions as well as of policy assistance and capacity building. The transportation sector is transformed to a sustainable low-carbon and climate resilient urban mobility system with a dominance of public transportation and inclusion of NMT and electric micro-mobility. Multiple countries in the region are establishing Green Recovery Plans due to the COVID-19 crisis as a vehicle to transform the society by investing in profitable infrastructure which creates economic, environmental and social benefits, short-term jobs and a long-term greening of the economy. Electrified, sustainable and climate resilient mobility systems are thereby a core feature.

The **potential for scaling up and replication** is ensured at the national and the international level through capacity created in the E-mobility ecosystem, proven cases of successful business models, improved profitability and reduced risks of EV investments and knowledge products. The experience of various countries shows that once fleets of EVs are operational and not only pilot projects, the technology is taken up quickly if the business environment is conducive. The projects financed under this Program function as trigger projects demonstrating the commercial viability of EVs. Performance risks are reduced greatly, and business models have been introduced which make the uptake of EVs on a purely commercial base viable. This is linked with decreasing investment costs of EVs reaching cost-parity to fossil units in the medium term. Scaling up and replication is also enabled through TA at policy level including the development of sectoral roadmaps, design and establishment of appropriate policy incentives and knowledge management instruments as well as capacity building.

Potential for knowledge sharing and learning: The TA Component includes capacity building, technical resources for training and monitoring. Technical assistance is used to ensure delivery of adequate training from equipment suppliers or third parties for EV and charger operations and maintenance, safety trainings and capacity building in optimal management of EV fleets. Training materials, reports and knowledge products elaborated under this header in the different countries will be shared through multiple channels under the knowledge management strategy. This will be realized at a national level thus removing one of the barriers to more widespread deployment of EVs in each country and also on an international level by sharing documents and experiences between countries and also with countries outside the Program. The Program will also develop professional knowledge products and share experiences and cases through channels such as webinar, electronic reports, case-studies, and workshops to disseminate experiences and build a base for replication. The Program will use existing channels within IDB as well as those of other platforms for information dissemination.

Contribution to the creation of an enabling framework: The TA Component includes the support of enabling policies for EV deployment: Technical support will be provided to the relevant national and local authorities in order to set-up, improve and/or enforce enabling public policies and legal, regulatory, fiscal and/or normative frameworks for e-mobility. One of the main instruments used thereby are sector roadmaps for electrification of public transport, roadmaps for electrification of taxis, roadmaps for a hydrogen economy and for electrification of trucks as well as vessels. Whilst various countries have general EV roadmaps or targets these remain at a macro-level. Sectoral roadmaps combined with investment projects perform a base for more specific targets, intervention instruments and actions allowing to take steps towards actual implementation. Sectoral and specific roadmaps are a tool to steer climate investments and initiatives beyond the Program's scope and will help to inform and/or further detail the countries long term mobility strategies and their Nationally Determined Contributions.

Contribution to the regulatory framework and policies: The TA Component includes activities such as roadmaps (see above) which outline an agreed-upon set of pragmatic and realistic measures to achieve EV sectoral targets. Regulatory activities realized by the Program will also include aspects such as battery management and disposal regulations, charging infrastructure standards, pricing policies for EV charging, public transport regulatory aspects including aspects such as concession contracts (concession length, vehicle turnover guarantees), separation of vehicle

ownership and vehicle operations, tariff structure etc. Technical assistance in this area is linked up with investment projects making it more credible and pragmatic.

Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans: Transport contributes almost one-quarter of the current global energy-related GHG emissions and is growing faster than any other energy end-use sector. Limiting the global temperature increase to below 2 degrees Celsius requires changing this transport emissions trajectory. The Paris Declaration on Electro-Mobility and Climate Change & Call to Action, calls for the deployment of EVs compatible with a 20% share of all road transport vehicles in 2030. As of mid-2021 only Chile and Colombia had significant e-bus fleets. In Chile the Program will not support further e-bus purchase whilst in Colombia e-bus projects are limited to intermediate cities without mass rapid transit system. All countries have expressed their keen interest in embarking on this transformational shift towards e-mobility. Without significant GHG reductions in the transportation sector countries will not be able to achieve their decarbonization plans. Fostering e-mobility and kick-starting EV deployment is thus consistent with relevant national climate -resilient development pathways. The Program also combines mitigation with adaptation measures by linking e-bus investments with urban development including investments in climate resilient urban infrastructure and by developing especially in SIDS projects which can increase the grid resilience (e.g., V2G, hydrogen energy storage or 2nd hand EV batteries as energy storage units).

D.3. Sustainable development (max. 500 words, approximately 1 page)

Sustainable Development Goal alignment

The Program has as main target to reduce GHG emissions. It contributes significantly to sustainable development goals (SDG) 3 (“good health and well-being”), SDG goal 7 (“affordable and clean energy”), SDG goal 9 (“industry, innovation and infrastructure”), SDG goal 11 (“sustainable cities and communities”), and SDG 13 (“climate action”).

Environmental co-benefits

Major environmental co-benefits are reduced pollutants and noise emissions. The major concern for air pollution in cities is PM_{2.5} and NO_x emissions. The impact of the Program on these pollutants has been quantified based on combustion emissions of new fossil baseline vehicles using the EU COPERT model i.e., this is a conservative approach as emission reductions are not based on comparing the old replaced with a new EV but on comparing a new (BAU) fossil with a new EV. For the methodology used, the database as well as calculations see Annex 22. The following table shows the estimated reduction of pollutants per vehicle category.

Table 9: Lifetime Reduction of Pollutants per Vehicle (average figures for Program countries in tons)

Vehicle type	PM _{2.5}	NO _x
Urban bus (12m)	0.07	9
Taxi	0.001	0.05
40t truck	0.1	15
300 passenger vessel	10	580

Source: Grutter Consulting; see above and Annex 22b

The following table shows the projected impact of the Program.

Table 10: Projected Lifetime Pollutant Reductions per Program Component (in tons)

Component	Projected tons of PM _{2.5} reduced	Projected tons of NO _x reduced
1. Electric buses and urban mobility	34	4,217
2. EV fleets	0	12
3. Pilot projects	515	992
Total Program	549	5,221

Source: Annex 22c

Additional non-quantified environmental co-benefits are reduced noise emissions and reduced water pollution caused by fossil vessels. I

Social co-benefits

The major social benefit is improved air quality (plus reduced noise). Air pollution is a major problem in most Latin American cities with levels affecting seriously human health. According to the latest urban air quality database, 98% of cities in low- and middle-income countries with more than 100,000 inhabitants do not meet WHO air quality guidelines⁷³. The WHO estimates that annually 4.2 million deaths result due to excessive exposure to fine particulate matter equivalent to 7.6% of all deaths⁷⁴. The poor are disproportionately affected by air pollution as they tend to live and work closer to its sources⁷⁵. Children and the elderly are particularly vulnerable. Recent studies show that women are more affected by poor air quality than men⁷⁶. The transportation sector is thereby a major source of urban air pollution. Commercial fossil vehicles are a major source of air pollution in cities. Although they do not represent a majority of vehicles they are extensively used (large mileage), have high emission factors and are basically diesel powered. Replacing such vehicles with EVs thus has a significant impact on air quality and health of people.

Other social benefits of the Program are related to increased patronage of public transport, NMT and micro-mobility resulting in less accidentality, less congestion, time savings and improved quality of life in cities.

The increased resilience of urban infrastructure and increased grid resilience also results in social co-benefits of people which would otherwise be affected especially by extreme weather events resulting in disruptions of mobility services and of electricity supply.

The COVID'19 pandemic has created an unprecedented challenge for many Latin American countries, from the health and economic perspectives, but it is also opening new opportunities for an accelerated sustainable transformation of its energy, transport, and urban landscapes while contributing to economic recovery. A recent report prepared by the International Labor Organization (ILO, 2020) shows that fostering of electric mobility can have a significant positive job impact primarily due to the induced impact of savings of consumers on petrol and maintenance resulting in increased spending on goods with a high income elasticity which tend to be labor intensive service-goods. A report of McKinsey also reveals that with the COVID pandemic the interest in EVs has risen amongst customers due to the fact seemingly that the pandemic has raised the awareness among people of the negative impact of fossil transport modes being suddenly being able to experience clean air during lockdowns⁷⁷.

Economic co-benefits

The monetary value of reduced air emissions (GHG and air pollutants) has been calculated (see Annex 22 for the methodology, dataset and results). The economic cost of pollution is calculated by assigning a monetary value to emissions of PM_{2.5} and NO_x for each country based on local levels of pollution at the ground level and the impact on health and costs caused by this type of pollution per country. This is based on the exposure of the population to contamination and how increased pollution increases mortality risks using the World Health Organization's dose response functions to concentration. The greater risk of mortality or, more precisely, the cost of premature death is valued economically on the basis of stated preference studies as performed by the OECD. The global warming externality cost is expressed through the social cost of carbon (SCC).

The total economic co-benefits from reduced emissions of the Program are estimated at 400 MUSD of which 74 MUSD due to reduced air pollutants and avoided health costs and the rest due to reduced GHG emissions.

Additional economic co-benefits not calculated at the Program level are for reduced subsidies to fossil fuels, minor usage of foreign exchange for the import of fossil fuels, economic benefits of time savings, accidentality and vehicle operating costs related to increased usage of public transportation and NMT and economic benefits of improved grid and urban infrastructure resilience.

At project level during project design and due diligence the total economic benefits are calculated per project based on the framework and approach of IDB.

⁷³ <https://www.who.int/airpollution/data/cities-2016/en/>

⁷⁴ <https://www.who.int/gho/phe/en/>

⁷⁵ (Mitchell G., 2003)

⁷⁶ (Clougherty, 2010)

⁷⁷ [Mobility investments in the next normal | McKinsey](#)

Gender-sensitive development impact

Gender issues and development impact will be described in the gender-disaggregated targets in projects' targets. Each program will be required to meet IDB's policy on gender equality. Individual projects will also be guided by the template gender action plan as included in Annex 8. The GAP includes actions and targets to (i) increase women's access to economic opportunities, (ii) increase gender awareness to recognize women as part of the electromobility sector and address their and (iii) include gender activities, specially safety initiatives, in the projects financed with the development of gender toolkits and gender cases and the support in the development of gender action plan for the projects financed.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

The following barriers hindering a take-up of EVs in the countries involved have been identified:

- High upfront investment;
- Lack of profitability of EV investments;
- High risk of EV investments (financial and technical risks);
- Lack of know-how on appropriate system design, business models, financial models and technical know-how;
- First-mover problem as no commercial EV fleets yet operate in the country or comparable cities of the country;
- Lack of an enabling (policy) framework for EV deployment.

IDB has realized benchmark costing studies on the different vehicle segments for different price ranges and countries. This services to determine the commercial attractiveness of EVs versus fossil vehicles in terms of TCO, relative profitability, capital requirements and risks. This again serves as base to structure the financial instruments required to resolve the barriers to commercial viability of EVs in the selected vehicle segments. The conclusions from the benchmark study are that countries which have provided for financial incentives have been able to get on the path of mass deployment of EVs whilst other countries got stuck in the pilot stage.

Contrary to renewable energy generation that is increasingly cost competitive, EVs are not yet commercially viable. Commercial EVs in program countries are at the verge of the market growth stage but will not take this step from pilots to commercial growth without an impulse. If unaddressed, commercial EV deployment on a mass scale will not take place in the Program countries in the next 5-10 years with exception of e-bus systems in major cities in Colombia and Chile where the step from pilots to mass deployment of e-buses has already taken place and therefore does not require further support and assistance from the GCF. The transformation towards low carbon transport systems in other countries (plus in Colombia in cities without mass rapid transit system) will be delayed without concessional finance. The EV sectors targeted have (i) limited access to commercial funding, (ii) early-mover costs and disadvantages including high performance risks (iii) lack of sufficient commercial viability including profitability and acceptable risk levels. This is even more pronounced in electric vessels, hydrogen transport applications and V2G mobility solutions which are still at an introductory and experimental market stage Therefore financiers are not in a position to fund such activities with commercial loans at the current stage.

Governments and transport operators also lack capacity and know-how on the appropriate technology choices, the most appropriate and conducive policies and business models to foster in a cost-effective manner EV deployment. This is clearly evident from public statements in favor of electric mobility which is however not followed up with concrete actions and implementations.

D.5. Country ownership (max. 500 words, approximately 1 page)

Section B1 already includes a short overview of countries including the carbon grid factor, population and vehicle data, energy prices and major EV policies. This section therefore focuses on the climate policies of the involved countries. In the framework of the elaboration of the Program Concept Note and the Funding Proposal, IDB has held meetings with the NDAs of the Program countries and key actors in e-mobility to ensure that the FP responds to the country's needs.

Barbados

The GHG emissions of Barbados are 3.79 MtCO_{2e} excl. LUCFs in 2018. Same year transportation emissions are 0.46 MtCO_{2e} (18% of total emissions excl. LUCF) transport emissions have remained constant since 2010 (total emissions

also)⁷⁸. The climate change risk profile of the country is dominated by coastal and weather effects, especially sea level rise, storm surge, and increased tropical storm and hurricane intensity and frequency. Barbados wants to put its efforts into a green recovery to exit from the COVID-19 pandemic. This includes a transformation for inclusive and sustainable development including accelerated investments in green mobility (Government of Barbados, 2021, S. 12).

The updated NDC of Barbados has put as target for 2030 to be a 100% green and fossil-free island-state. This is an aspirational goal and would require for example the retrofit or replacement of all fossil powered vehicles or the substitution of fossil with zero-carbon emission fuels. The unconditional (conditional) target per 2030 is a reduction of 35% (70%) of GHG emissions relative to a BAU scenario. The 2021 Physical Development Plan (PDP) and the same year Roofs to Reefs Program (R2RP) which operationalizes the PDP are the relevant framework for Barbados' resilience goal. The PDP guides future development of the country inter alia in mobility. The R2RP has as one focal area distributed electricity generation. It has received from the GCF readiness support from the GCF for its development. The updated NDC has as target that 100% of electricity produced is renewable by 2030 (as of 2016 97% of electricity was fossil produced)⁷⁹. By 2030 100% of the vehicle fleet shall be either electric or powered by biofuels. Based on standard vehicle replacement rates even if 100% of all newly sold vehicles would be electric by 2025, the vehicle stock will still be >70% fossil by 2030 i.e. to have fossil free mobility within such a short time-frame, the largest burden would initially be on biofuels. The NDC states that the starting point will be public buses and light duty / passenger vehicles. The government already operates 35 e-buses since August 2020.

Chile

Chile's GHG emissions excl. LUCF are 2018 110 MtCO_{2e}. The emissions of the transport sector in the same year are 28MtCO_{2e} or 26% of total GHG emissions. Transport emissions have grown since the year 2000 on average annually by 2.9% whilst total GHG emissions grew on average by 2.4%⁸⁰. At the end of 2017 Chile published its National Electromobility Strategy, a document realized jointly by the Ministry of Energy, the Ministry of Transport and Telecommunications and the Ministry of the Environment (MinEN, MTT, MMA, 2017). The National Strategy for Electromobility is currently being updated. Chile has also a National Green Hydrogen Strategy (MinEN, 2020). The updated NDC has as target that the country will be carbon neutral by 2050. It includes a decarbonization plan of the electric matrix by 2040 which would also result in higher GHG emission reductions of electric mobility (the 2018 carbon grid factor of Chile is 0.418 kgCO_{2e}/kWh). It is not structured on the basis of sectoral mitigation target but includes a set of transport-related goals and measures to lower the sector's emissions, namely electric mobility, shifting modes and green hydrogen. The updated NDC specifically also includes the reduction of Black Carbon to mitigate short-lived climate pollutants. This can be achieved well with e-mobility. Within electric mobility the following targets are set: (i) 100% of e-taxis by 2050; (ii) 100% of electric public transport buses by 2040; (iii) 60% of light vehicles in stock, private and commercial, shall be electric by 2050. For hydrogen the targets are that 71% of cargo transport shall use green hydrogen by 2050 and 12% of motor usage in mining and industry shall use hydrogen. The Ministry of Energy estimates that electric mobility alone will contribute to 17% of the decarbonisation scenario projected for Chile by 2050. Chile has numerous policies and incentives to promote different categories of electric vehicles including buses and taxis and has as of mid-2021 more than 800 e-buses operating primarily in Santiago de Chile.

Colombia

Colombia's GHG emissions for 2014 are estimated at 237 MtCO_{2e}. Transportation emissions are 29 MtCO_{2e} (31% of total emissions) with a growth of 20% since 2010. Colombia's NDC Update estimates that according to the reference scenario for 2030 emissions would reach 346 MtCO_{2eq}. Within the mitigation goals Colombia commits to emit a maximum of 169 MtCO_{2e} in 2030 (equivalent to a 51% reduction of emissions). The NDC contemplates for the transportation sector amongst others to achieve 600,000 registered electric taxis, buses, light commercial vehicles including small trucks and official vehicles. The Electric Mobility Law has managed to provide for measures in public transportation services such as compliance with a minimum quota of 30% of EVs in new acquisitions or contracts, taking into account the commercial offer in Colombia. According to the same law, the goals for the incorporation of EVs in the acquisition of the fleet of zero-emission mass transportation systems must follow the scheme of minimum proportions of 10% in 2025, 20% in 2027, 40% in 2029, 60% in 2031, 80% in 2033 and 100% in 2035 (Congress of Colombia, 2019). As a complement to the Law, the National Government has developed the National Strategy for Electric Mobility, which aims to promote the electrification of the transportation sector. In addition to the above, the

⁸⁰ [Chile | Transportation | Greenhouse Gas \(GHG\) Emissions | Climate Watch \(climatewatchdata.org\)](https://climatewatchdata.org/)

National Energy Plan 2020-2050 presents projections for the incorporation of EVs, under the scenario of meeting the GHG reduction commitments (20% by 2030) (UPME, 2019). Projections for 2030 include 630,000 electric motorcycles, 370,000 electric light vehicles, 40,000 e-taxis and 20,000 electric urban freight vehicles.

Costa Rica

Total GHG emissions of Costa Rica are estimated at 10.9 million tCO_{2e} in 2019 with land transport being responsible for more than 50% of emissions. Emissions under a BAU scenario are expected to increase by 45% by 2050. The updated NDC of Costa Rica includes as target net emissions of 9.1 MtCO_{2e} by 2030 and holds on to the net zero target by 2050. Greening the transportation sector is key to achieving these targets. Electrifying mobility is considered as essential and a national priority. The updated NDC has quantified 2030 electric mobility targets for public transport, passenger cars and fleets (8% of the vehicle stock). For other vehicle areas e.g., motorcycles targets and measures shall be developed to migrate towards EVs. Costa Rica has also developed a national plan for electric transport which includes concrete steps towards electrification of vehicles and has approved 2018 the law on incentives and promotion of electric transportation which includes targets for EV penetration, the establishment of a public charging infrastructure as well as important tax incentives for private EVs.

Dominican Republic

In 2015 the gross GHG emissions of the Dominican Republic were 35 million tCO_{2e} (Gobierno de la República Dominicana, 2020) of which 35% (7.7 million tCO_{2e}) from the transport sector⁸¹. The updated version of the Nationally Determined Contribution NDC-RD 2020 (Gobierno de la República Dominicana, 2020) has as target a 27% reduction in GHG emissions in relation to a BAU scenario by 2030. In terms of electric mobility, the NDC-RD proposes (i) Electrification of the fleet of diesel buses; (ii) Renewal of public transportation vehicles, such as cabs and "conchos" with electric and hybrid vehicles; (iii) Introduction of electric buses for school transportation service; (iv) Regulation and creation of policies to encourage the transition to electric and hybrid mobility for private usage. In 2020 the Dominican Republic adopted a National Strategic Plan for Electric Mobility (INTRANT, 2020) developed by INTRANT in collaboration with the IDB. It provides for a short-, medium- and long-term transformation of the transportation sector. The plan is aligned with both the UN SDGs 2030 and the Sustainable Development Plan 2030 of the Dominican Republic (Ministerio de Economía, Planificación y Desarrollo, 2012) and aims at all modes of road transportation. Targets of the plan are 30% of official vehicles and public buses shall be electric by 2030, whilst the target for the private sector is 10%. 14,000 public chargers shall be operational by 2030. By 2050 the respective goals are 100% EVs for official vehicles and public buses and 70% of all private vehicles shall be electric. For the freight sector the target for 2050 is 50% of all units to be electric.

Jamaica

Jamaica's 2018 GHG emissions excl. LUCF are estimated at 10 MtCO_{2e} with transportation accounting for 2.3 MtCO_{2e} or 23% of total emissions. Transport emissions have grown since 2000 by annually on average 1% whilst total emissions have decreased in the same period by 1%⁸². The updated NDC of Jamaica has a conditional and unconditional target relative to a BAU scenario. Jamaica plans to increase its share of renewables in electricity generation creating a greener grid. The country is lagging behind in the uptake of EVs when compared to other countries in the Caribbean. The adoption of EVs in the transport sector however aligns with the National Energy Policy goals for secure energy supply, efficient use of energy, and minimizing the environmental impacts of energy production and utilization. Jamaica Public Service is deploying charging infrastructure and the Jamaican Office for Utility Regulation is discussing an EV charging tariff for public charging infrastructure⁸³ (JPS, 2021) whilst the Ministry of Science, Energy and Technology proposes a target of EV take-up of 10 per cent of the transport mix by 2030 (around 50,000 vehicles).

Panama

Panama's 2018 GHG emissions excl. LUCF are estimated at 18 MtCO_{2e} with transportation accounting for 4.8 MtCO_{2e} or 27% of total emissions. Transport emissions have grown since 2000 by annually on average 4.1% whilst total emissions have increased annually on average in the same period by 3.2%⁸⁴. The updated NDC has set a target of

⁸¹ www.climatewatchdata.org

⁸² www.climatewatchdata.org

⁸³ Time of use residential tariff plus 5%

⁸⁴ www.climatewatchdata.org

reducing at least 11.5% of total emissions from the energy sector in 2030, and 24% in 2050 with transportation accounting for about 50% of the sector's emissions. It includes concrete e-mobility targets as percentage of vehicle stock: 10% of all private vehicle fleets, 25% of private passenger cars, 20% of public transport vehicles and 30% of government vehicle fleets shall be electric by 2030. For 2050 the targets are 30% of all private vehicle fleets, 75% of private passenger cars, 60% of public transport vehicles and 90% of government vehicle fleets. The National Strategy for Electric Mobility has similar goals for 2030 (i) 10-20% of the total fleet of private vehicles shall be electric; (ii) 25-40% of private vehicle sales shall be electric; (iii) 15-35% of the buses in the authorized concession fleets shall be electric, and (iv) 25-50% of the public fleets shall be electric. The National Energy Plan 2015-2050 promotes a higher share of non-conventional renewable energy (39%) towards 2050 versus 4% penetration in a baseline scenario. The Energy Transition Agenda 2020-2030 proposes, among others, to decarbonize transport sector through e-mobility.

Paraguay

Paraguay's 2018 GHG emissions excl. LUCF are estimated at 49 MtCO_{2e} with transportation accounting for 7.6 MtCO_{2e} or 15% of total emissions. Transport emissions have grown since 2000 by annually on average by 5.7% whilst total emissions have increased annually on average in the same period by 2.6%⁸⁵. Paraguay's updated NDC aims to reduce 20% of the GHG emissions by 2030, compared to the projected baseline of which 10% unconditional. The NDC as transport measure the substitution of ICE with electric and hybrid vehicles without including a specific target. It also previews the usage of hydrogen in the transportation sector (especially for heavy-duty trucks). Five different scenarios have been constructed: scenarios 3 to 5 include increasing penetration levels of electric and hydrogen vehicles. Paraguay has three hydroelectric plants that generate a large surplus of renewable energy, thus EVs provide the opportunity to reduce various environmental and financial externalities resulting from mobility dependent on fossil fuels. In this context, the country is taking its first steps in the transition towards electric mobility, advancing with the development of technical standards for EVs, and implementing "green routes" with chargers installed between the three main cities – Asunción, Ciudad del Este, and Encarnación. The National Development Plan 2030 and the National Energy Policy 2040 consider e-mobility as one of the dimensions to achieve the country's development goals. The Agenda for the Transition of Technology towards Electromobility is structured around five fundamental axes under a common vision of promoting the adoption of EVs and 21 strategic lines that shall allow the achievement of the objectives. The Guide for the Standardization of Electric Mobility in Paraguay, published in 2020, shall provide the basis for regulations and standards related to e-mobility.

Uruguay

Uruguay's 2018 GHG emissions excl. LUCF are estimated at 36 MtCO_{2e} with transportation accounting for 3.6 MtCO_{2e} or 10% of total emissions⁸⁶. Uruguay's NDC target certain goals towards 2025 for E-motion categories. Also, Uruguay aims at establishing a network of electric vehicle charging stations throughout the main roads across Uruguay. The most relevant policies for the country's climate change agenda are the following: (i) In its NDC, Uruguay's specifically target to attain 110 units e-Buses, 550 units e-taxis, and 900 units e-LCVs; (ii) The National Climate Change Policy promotes several initiatives to mitigate transport sector GHG emissions, among others, the increase share of electric vehicles, hybrids and other, in the different transport subsectors; (iii) The National Environmental Plan for Sustainable Development, established in 2019, brings together the main environmental strategies and lines of action in the country; (iv) The National Sustainable Mobility Plan is an outcome of the National Environmental Plan for Sustainable Development. The plan promotes a transition towards transport technologies with better energy efficiency, lower emissions through several initiatives (incentives, regulation, among others) until 2030. Also, it has a strategic line to improve public fleets in their renewal process and the development of a scrapping program to remove older vehicles; (v) The Energy Policy and the approved Energy Efficiency Law establishes the need to reduce fossil fuel consumption in the transport sector.

Regional Initiatives

The GEF Global E-Mobility Program implemented by the UN Environment Program (UNEP) in partnership with the International Energy Agency (IEA) is active in various targeted countries. Its focus is on technical assistance and pilot projects i.e., it complements very well the proposed Program. Complementarity will be ensured through close coordination with the existing programs and initiatives. The proposed Program is focused on investment projects and market transformation whilst existing initiatives are more for creating readiness for electric mobility in general.

⁸⁶ www.climatewatchdata.org

Engagement with Civil Society

In each country IDB has performed multiple interviews and meetings with all major stakeholders including national and local governmental bodies, energy utilities, transport operators and civil society.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

The Program introduces a concessional financing mechanism that addresses barriers to the uptake of commercial EVs and supports a transformative shift to low carbon transportation. GCF concessional financing is critical – in absence of concessional GCF finance, such projects will not materialize in the short or medium term. The e-mobility report (Annex 2a) clearly shows that all countries with large fleets of commercial EVs have used, at least initially, financial support instruments in the form of grants to kick-start EV deployment.

The major financial barriers for the potential beneficiaries which prevent alternative financing options are (i) the low financial profitability of EV investments reflected in the low FIRR and very long payback times (ii) the high risk profile of EV investments due to performance risks, asset risks (e.g. re-sale value of assets), and replacement investments (batteries) and (iii) high capital and investor's capital demand resulting in high debt and risk exposure levels of the investing entity. Commercial funding is thus not willing to enter this market. Conventional financial institutions are also not willing to enter the market due to the novelty of the technology. Concessional GCF finance including grants can provide for technical assistance to design and structure in an optimal manner e-mobility investments and reduce design and performance risks whilst the financial instruments reduce risk exposure and increase profitability of the investment.

Projects involved in the proposed Program will not be dependent on a continuous flow of GCF funds. Rather, the Program aims to achieve substantial reduction in the need for concessional financing in future project. It is expected that, over the course of implementation of the Program, commercial e-mobility will gradually move towards commercial viability in countries which have kick-started the process. The use of GCF funds de-risks similar future investments and demonstrates the viability of e-mobility investments in commercial terms.

The FIRR and EIRR of individual projects is determined during the project preparation and the due diligence phase. IDB will assess the financial soundness of each project. The Program EIRR is estimated at 20% (see Annex 3).

The total capital investment is 450 MUSD with a requested GCF finance of 200 MUSD and a GHG reduction of 7.55 MtCO₂ resulting in an effectiveness of the GCF investment of 26 USD/tCO₂. Only 54% of the GCF investment however goes to mitigation and 46% is for adaptation which explains also the high abatement costs. Also, GHG marginal abatement costs of transport projects tend to be higher than of other interventions as they are also not realized primarily due to the GHG impact. The value of 26 USD/tCO_{2e} is significantly lower than applying the subsidy finance as given by countries with significant EV numbers for buses which result in average costs per tCO₂ of 227 USD (see table below).

Table 11: Average GHG Abatement Cost of Fostering E-Buses

Country	CAPEX subsidy per bus USD	Carbon factor of grid (kg CO ₂ /kWh)	GHG reduction per bus lifespan tCO ₂	Cost per tCO ₂ in USD
PR China (subsidy level 2019; former years significantly higher)	40,000	0.71	412	97
India (FAME II)	80,000	0.90	626	128
Germany (2019)	300,000	0.51	1,039	289
UK (2019 level)	230,000	0.25	1,307	176
Switzerland (only carbon finance; excludes additional municipal subsidies, 2020)	200,000	0.04	1,521	132
Poland (2019)	300,000	0.90	630	476
USA (2019)	400,000	0.43	1,116	358
Chile initial 200 e-buses (2019)	180,000	0.42	1,130	159
Average				227

Source: Grutter Consulting; see Annex 2a

Notes:

1. Subsidies include those for buses and chargers
2. Carbon grid factor based on IEA for 2018

3. GHG reduction based on lifespan of 16 years of bus (iexcept PR China where major cities have a maximum age level of 8 years), WTW

4. Based on 12m urban Euro V diesel bus; 65,000 km/a; EEA COPERT data for fuel usage of diesel bus; e-bus 1.0 kWh/km

56% of the total investment is co-financed (leverage ratio of 1.3).

E. LOGICAL FRAMEWORK

E.1. Project/Programme Focus

- Reduced emissions (mitigation)
- Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	<p>Transportation in Program countries is nearly to 100% fossil fuel based. Most cities suffer from decreasing mode shares of PT due to lack of convenience of the systems. NMT is poorly developed with no or only very limited dedicated cycle lanes. Urban transport infrastructure is often not resilient to extreme weather events resulting in many cities in flooding events.</p>	<u>Low</u>	<p>The paradigm shift is a move from fossil to electric vehicles including road-based transport as well as vessels. A behavioral shift towards public and non-motorized transport is expected based on the Program activities which increase the attractiveness of non-private means of transport. Cities evolve to being people instead of car oriented. A shift towards resilient urban transport systems takes place in cities.</p>	<p>The Program intervention already reduces 7.55 MtCO₂. The shift to e-mobility goes in scale beyond the project as initial positive applications are scaled up within the city to encompass the entire fleet. Pilot projects on H2 or V2G already include a business approach for commercial upscaling e.g., by working along the entire value chain of a hydrogen economy and ensuring that pilot results and approaches can be scaled up massively in short time. The establishment of more livable urban centers with a more convenient PT system, a safer NMT based on exclusive cycle lanes and improved pedestrianization and through PT mode-integrated electric micro-mobility results in attractive urban centers with a shift towards public and NMT. Results obtained in certain areas of the city can then be scaled up to the entire city as stakeholders recognize the improved quality of life. The interventions of the Program towards gender sensitive</p>

				<p>transport systems allows to upscale the usage of PT and especially of NMT of women. Means and methods to make the urban transport infrastructure in a cost-effective manner more resilient towards climate events are applied in certain areas of the city. Again, this can be scaled up assuming positive results to the entire city.</p>
<p>Replicability</p>	<p>Electric mobility is not yet used at scale and thus replicability is very limited to individual purchases. Limited experience with NMT and high-quality PT means is available in the different countries with efforts not being sufficient yet to revert the decreasing mode share trend of PT.</p>	<p><u>Low</u></p>	<p>The combination of successful implementation of new business models and electric fleet operations combined with the market force of decreasing EV prices form the base of a fast and massive replication potential. Cities which adopt successfully a people-centered urban mobility system with a focus on high quality PT and NMT will be replicated within the country and can serve as lighthouses also for other countries. This replication effect in mass transit has been clearly demonstrated e.g., with the rollout of BRTs worldwide triggered by Curitiba and Bogota or the rollout of metros in India triggered by the successful implementation of Delhi metro. Cost-effective resilient urban transport infrastructure will also see replication across other cities which want to avoid high future costs caused by climate events.</p>	<p>Through knowledge management instruments successful business models, performance results of EVs and the results of EV pilots will be disseminated amongst stakeholders. Capacity created will also allow to design new systems at a high quality. Once the high initial barrier in electric mobility of uncertainty about performance, operational risks and financial cum business models to make them commercially viable is removed, the lower total cost of ownership is a core argument to achieve widespread replication. The same approach applies to replication of successful urban development models for cities. Well documented methods and means to increase the resilience of urban infrastructure and demonstrating the cost-effectiveness of such interventions allows other cities to make similar interventions as they will have the information, the concepts and the know-how how to approach the task.</p>

<p>Sustainability</p>	<p>The NDCs of countries increasingly include targets on EVs as well as improving PT. However, targets are often not lined with a regulatory framework and an attractive business proposal thus not achieving the goals. Also, investments in mass transit systems are taking place in many countries. However, they are often not linked up with integration into NMT and micro-mobility means and do not include climate resilient measures thus remaining often in pure infrastructure investments with limited behavioral or paradigm change.</p>	<p><u>Medium</u></p>	<p>Successful business models and a policy framework which effectively encourages the adoption of e-mobility linked with decreasing market prices of such vehicles make efforts sustainable. Lining PT with NMT and micro mobility and climate proofing investments results in a sustainable behavioral change towards NMT, and PT linked with various forms of micro-mobility.</p>	<p>The program will work with local and national institutions in developing mechanisms and modes to ensure resilient transport infrastructure. It will also with the private and the public sector in designing and implementing business models and policies which are effective in encouraging the adoption of EVs.</p>
------------------------------	---	----------------------	---	---

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)						
GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term ⁸⁷	Final ⁸⁸	
<u>MRA2 Low-emission transport</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	Ex-ante and ex-post analyses (conducted by a 3rd party independent contractor)	0	226,964tCO _{2e}	End of Program: 1,176,240tCO _{2e}	No delays in implementation which would result in lower midterm and final but not lifespan GHG reduction. Lifespan: 7,547,602tCO _{2e} Lifespan calculations dependent on measure and country for EVs (maximum 16 years), 20 years for PT & 30 years for NMT infrastructure. Annual average GHG reduction of 387,043t and 6,590 TJ energy saved Source: Annex 22c FP Methodologies: CDM ACM0016 (PT), AMS.III.C (EVs) and GEF methodology for NMT
	<u>Supplementary 1.1: Annual energy savings</u>	Ex-ante and ex-post analyses (conducted by a 3rd party independent contractor)	0	10,949TJ energy saved	End of Program idem lifespan: 23,452 TJ	

⁸⁷ Cumulative impact year 1 to 3

⁸⁸ Cumulative year 1 to 6; The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

<p><u>ARA3 Intrastructure and built environment</u></p>	<p><u>Core 2: Direct and indirect beneficiaries reached</u></p>	<p>Ex-ante and ex-post analyses (conducted by a 3rd party independent contractor)</p>	<p>0</p>	<p>Direct: 723,149 Women: 362,125 Indirect: 3,721,852 Women: 1,847,826</p>	<p>Direct: 1,446,298 Women: 724,249 Indirect: 7,443,703 Women: 3,695,651</p>	<p>The number of direct beneficiaries is the population using PT. The number of indirect beneficiaries is the total population benefiting from IEUTS investments. Data will be provided gender disaggregated. Program's beneficiaries are only calculated for adaptation related interventions and not for mitigation.</p>
<p><u>ARA3 Intrastructure and built environment</u></p>	<p><u>Core 3: Value of physical assets made more resilient to the effects of climate change and/or more able to reduce GHG emissions</u></p>	<p>DCRAs⁸⁹</p>	<p>0</p>	<p>Component 1: 48,500,000 Component 2: \$8,500,000</p>	<p>Component 1: \$97,000,000 Component 2: \$17,000,000</p>	<p>Estimate values are based on the value of projects approved by the IDB reporting under the IDB Corporate Results Framework (CRF)'s indicator "2.23 Value of investments in resilient and/or low carbon infrastructure (\$)</p>
<p><u>ARA3 Intrastructure and built environment</u></p>	<p><u>Supplementary 3.1: Change in expected losses of economic assets due to the impact of extreme climate-related disasters in te</u></p>	<p>Model developed for the project will be run using a specialized software package to assess risks</p>	<p>0</p>	<p>\$7,080,000</p>	<p>\$14,160,000</p>	<p>Based on damages caused by flooding as it is the most common hydrometeorological hazard</p>

⁸⁹ To be performed during Sub-Projects due diligence

	<u>geographic area of the GCF intervention</u>					with the highest economic impacts in urban areas
--	--	--	--	--	--	--

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
<u>Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner</u>	Regulatory measures and policies to promote EVs are in many countries weak, incomplete or not enforced.	<u>medium</u>	Regulatory measures and policies are in place which favor the purchase and usage of EVs, especially of commercial units.	Component 4 of the Program is the establishment of a conducive e-mobility framework. The outputs of this component are the establishment of an e-mobility conducive local, national and regional ecosystem, and mainstreaming of increased climate resilience of IEUTS which can lead to new regulatory systems for PT designers	<u>Multi-countries</u>
<u>Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation</u>	Baseline vehicles are fossil powered. Urban transport infrastructure is often not resilient to extreme climate events. H2 usage in transportation and V2G technologies are not known. Usage of H2 and batteries of EVs to enhance grid resilience is not used.	<u>low</u>	In all Program countries fleets of commercial EVs operate. In all projects focusing on urban areas methods to increase the resilience of urban transport infrastructure have been implemented. H2 powered vehicles in long-haul transportation and electric vessels are used in at least 2	The Program finances the purchase of E-mobility systems, H2, V2G and e-vessel pilots and climate resilient infrastructure and provides TA for their appropriate design, implementation and maintenance.	<u>Multi-countries</u>

			Program countries. V2G is used in at least 2 SIDS. The Program countries have a vibrant commercial EV market.		
<u>Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level</u>	Declining market share of PT and very low market share of NMT. Women share in cycling and micro mobility very low.	<u>low</u>	The increased attractiveness of PT results in increasing passenger numbers and a reversal of the trend of declining PT market shares. Persons use on a regular base NMT and electric micro-mobility means	The project finances and provides TA for the design and implementation of PT improvement measures, cycling lanes, pedestrianization efforts and electric micro-mobility schemes. The Program's work to build gender sensitive infrastructure will support market development. More broadly, the Program will promote the benefits of NMT, micro mobility and PT to the general public	<u>Multi-countries</u>
<u>Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards</u>	Limited awareness and know-how on effective business models & policies to promote EVs. Limited know-how and information on effective means to increase the resilience of urban transport infrastructure	<u>low</u>	Various business models conducive to EV fleet deployment have been applied to countries and cities depending on local and national circumstances. Tools for identification and design of climate resilient urban transport measures are applied by multiple cities of Program countries	The Program's KM strategy will ensure that lessons learnt are shared with interested parties and stakeholders on a national, regional and international level.	<u>Multi-countries</u>

E.5. Project/programme specific indicators (project outcomes and outputs)						
Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
Output 1.1 Fewer urban infrastructure damaged resulting from climatic shocks because of higher investments in vulnerability reduction	Reduction in modeled expected annual economic losses from hydrometeorological hazards per square meter in the IEUTS area ⁹⁰	Model developed for the project will be run using a specialized software package to assess risks	0	\$8,260,000	\$16,520,000	Based on damages caused by flooding as it is the most common hydrometeorological hazard with the highest economic impacts in urban areas. Expected annual losses (PAE) calculated using the trend scenario (2050) for Panama (\$0.59) multiplied by four countries (conservative approach). Total expected losses were calculated as the product of expected annual losses for the implementation period (7 years).
Output 1.2. Fewer days to restore the IEUTS' public transport service after climate shocks due to investments in climate resilience	Reduction in the days out of service due to a climate shock	Daily operations report	0%	10%	20%	This will be measured in percentage or in number of days

⁹⁰ Bus routes, charging stations, parking, bus stops.

<p>Output 2.1. H2 and V2G pilots are used to assess their viability of mass deployment to improve grid stability</p>	<p>V2G enabled vehicles have delivered electricity to the grid; H2 production sites have delivered electricity to the grid using stored H2Pilot projects have been implemented Potential of V2G and H2 storage as grid stability instruments has been assessed</p>	<p>IDB and 3rd party reports⁹¹ Vehicle, charging infra and production site inventories</p>	<p>0</p>	<ul style="list-style-type: none"> - All V2G enabled vehicles have supplied at least 20x electricity to the grid - H2 production sites have delivered during at least 20 days electricity to the grid - Report in 1 country on option of H2 for energy storage and increased grid resilience - Report for 1 SIDS on options for usage of batteries of EVs as grid storage and to increase grid resilience - 3 H2 pilots with green H2 production and usage in transportation 	<ul style="list-style-type: none"> - All V2G enabled vehicles have supplied at least 50x electricity to the grid - H2 production sites have delivered during at least 50 days electricity to the grid - Reports in 2 countries on option of H2 for energy storage and increased grid resilience - Report for 2 SIDS on options for usage of batteries of EVs as grid storage and to increase grid resilience - 4 H2 pilots with green H2 production and usage in transportation 	<p>H2 produced is more than demanded by vehicles to allow for storage and grid re-insertion</p> <p>Smart grid systems in place at sites for bi-directional chargers</p>
--	--	---	----------	---	--	---

⁹¹ Reports realized by agency implementing the H2/V2G projects and/or reports of consultants engaged for monitoring; annual reports provided

				<ul style="list-style-type: none"> - 20 FCEV trucks - 10 other FCEVs - 2 V2G projects in SIDS - 10 bidirectional chargers and EVs 	<ul style="list-style-type: none"> - 30 FCEV trucks - 10 other FCEVs - 2 V2G projects in SIDS - 10 bidirectional chargers and EVs 	
Output 3.1 -mobility is integrated with PT & NMT measures to foster mode shift to low carbon transport	Electric buses are integrated with PT and NMT / micro-mobility measures	Reports from city authorities in cities with e-bus deployment providing evidence of cycle lanes constructed and in operations and listing PT and NMT measures taken	0	<ul style="list-style-type: none"> - 2 projects with e-buses and PT/NMT measures - 20km of segregated cycle lanes 	<ul style="list-style-type: none"> - 6 projects with e-buses and PT/NMT measures - 60 km of segregated cycle lanes 	Municipal and national leadership can delay the implementation of urban mobility measures e.g. for construction of cycle lanes which would result in outputs being achieved at a later stage
Output 3.2 EV fleets are deployed with innovative business models to enable their mass application	EV fleets deployed	Vehicle inventories of operators	0	<ul style="list-style-type: none"> - 150 e-buses - 3 cities with e-buses - 250 e-taxis - 2 pilot e-vessel projects - 90 e-vessels - report on optimal usage of e-vessels - 1 city with urban fast charging infra - Report on business models used 	<ul style="list-style-type: none"> - 470 e-buses - 7 cities with e-buses - 250 e-taxis- 1 city with urban fast charging infra - 2 pilot e-vessel projects - 90 e-vessels - report on optimal usage of e-vessels - Report on business models used 	

				for EV deployment	for EV deployment	
Output 4.1 A climate resilient e-mobility ecosystem integrated with urban transport is established to enable uptake of e-mobility	Trainings and CB events realized e-mobility roadmaps	Training and CB event reports by independent 3rd party Roadmaps published by country/city	0	1 event per country 2 roadmaps	2 events per country 3 roadmaps 3 Business model for mass deployment of H2 economy	Trainings and CB events realized
Output 4.2. Strengthened institutional and regulatory systems for climate-responsive planning and development	Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation	Disaster and Climate Change Risk Management Plan	0	3	9	Capacity building and generation of climate information for decision making leads to improved regulatory systems for public transport designers and operators. All projects will have a qualitative or quantitative DRA. DRAs are context-specific and include climate change scenario analysis.
Project/programme co-benefit indicators						
Co-benefit 1: Improved air quality	<i>Reduced emissions of NOx and PM2.5</i>	3rd party report based on default values for baseline fossil vehicles replaced by EVs	0	- 80 t PM _{2.5} reduced - 283 t NO _x reduced	- 163 t PM _{2.5} reduced - 1,074 t NO _x reduced	Baseline fossil vehicle emissions based on EU COPERT model; impact based on assumptions of mileage of vehicles

Co-benefit 2: Increased usage of PT and NMT	<i>Increase in number of PT users and number of NMT users on cycle lanes</i>	PT operators and surveys realized by 3rd parties	0% growth of PT users per city i.e. the PT users remain constant ⁹²	- +20% PT users per city projects - 54,000 additional NMT users daily cumulative all project cities	- +20% PT users per city projects - 130,000 additional NMT users daily cumulative all project cities	Refers to increased ridership on PT and increased usage of NMT due to measures taken.
---	--	--	--	--	---	---

E.6. Project/programme activities and deliverables

Activity	Description	Sub-activities	Deliverables
1.1.1. Implement measures to increase climate resilience	E-bus projects are integrated where feasible with low carbon and resilient urban development. The identification & design of these measures is realized under components 1 to 3.		All EV investments undergo climate proofing In minimum 4 cities measures to increase the resilience of urban transport infrastructure are implemented
2.1.1 H2 projects with FCEVs & with grid stabilization measures implemented	Pilot projects are designed and implemented	- design of projects - procurement of goods - implementation of projects	4 H2 pilot projects
2.1.2 V2G projects with grid stabilization measures implemented	Pilot projects are designed and implemented	- design of projects - procurement of goods - implementation of projects	2 V2G pilot projects in SIDS
3.1.1 Construction of cycle lanes and micro-mobility measures	The Program will prioritize solutions that integrate into the urban fabric, are compatible and conducive to modes of sustainable mobility guaranteeing universal access and have important elements for NMT and electric micro mobility.	- design of cycle lanes - construction of lanes	60 km of segregated cycle lanes
3.1.2 Implement urban mobility measures such as pedestrianization, bus lanes & route structuring		- identification & assessment of intervention options - implementation of selected intervention options	Improvements of pedestrianization in minimum 50% of involved cities Integration of electric micro mobility means in minimum 50% of involved cities
3.2.1 Deployment of e-buses	E-bus fleets are financed based on project design & structuring realized under component 4. This includes the entire system of buses, charging	- Procurement of E-bus fleet including associated components (charging infrastructure, depot, grid connection)	Minimum 7 e-bus projects implemented with 470 e-buses

⁹² PT users in baseline assumed as constant

	infrastructure, grid connection and depot upgrades.	- Implementation of e-bus fleet including associated components	
3.2.2 Deployment of e-taxis & fleets with urban fast charging infrastructure	<p>EV fleets are financed based on project design & structuring realized under component 4.</p> <p>EV fleet deployment includes vehicles and their charging infrastructure, grid connection including if required grid upgrades.</p> <p>The component includes also the establishment of urban public fast charging infrastructure oriented towards taxis/ride-hailing vehicles and urban delivery vehicles.</p>	<ul style="list-style-type: none"> - Design of intervention - Procurement of EV fleet - Implementation of EV fleet - Procurement of urban fast charging infrastructure - Implementation of urban fast charging infrastructure 	Implementation of urban fast charging infrastructure in minimum 1 city with 250 electric taxis
3.2.3 Deployment of pilot projects with electric vessels	<p>Financing of electric vessel pilot projects.</p> <p>The pilot project design and structuring is realized under component 5.</p>	<ul style="list-style-type: none"> - Design of projects - Procurement of equipment - Implementation of vessel pilot projects 	2 Pilot electric vessel projects
4.1.1 Urban interventions realized with a gender perspective	Implement GAP	<ul style="list-style-type: none"> - Develop a technical training program for women. - Develop a training program for women entrepreneurs. - Create an incentive inside the program for the projects to hire women - Include gender lens in the program eligibility criteria for women projects. - Develop a gender training that is included in any capacity building activity in the Regional Sectorial Council of Skills for Electromobility or any activity training in the program. - Include a gender perspective during the design of sectoral roadmaps and 	<ul style="list-style-type: none"> - 30% of women trained in the Regional Sectorial Council of Skills for Electromobility - 1 entrepreneur training programs for women is developed - 50% of projects adhere to the incentive program. - 40% of project that access the program have a gender lens - 100% Of capacity building activities include a gender training module - 100% frameworks or policies that include a gender perspective - Two networks created - One summit organized

		<p>the support of national enabling policies</p> <ul style="list-style-type: none"> - Develop a network of women in electromobility in LAC. - Organize a regional EV Summit of women in LAC - Carry out a survey among the sector companies to identify women in the e-mobility and hydrogen sectors - Create an electromobility online platform to disseminate sector gender information. - Development of a toolkit to mainstream gender in electromobility projects that can be used for entities applying to the program. - Design a complete GAP for pilot projects included in the FS that incorporate a gender evaluation to create gender cases studies - Develop a GAP in the projects financed by the program - Design and implement safety initiatives for women that include awareness and education, prevention, access to justice, infrastructure with a gender approach, new technological tools, generation of knowledge and job opportunities. 	<ul style="list-style-type: none"> - One survey carried out. - One online electromobility gender platforms created, - One toolkit to mainstream gender. - 6 GAP designed. - 100% of projects include a GAP. - 100% of projects include safety initiatives for women during the design, disaggregated by type of activity. - 100% of projects that include safety initiatives for women during the implementation, disaggregated by type of activity.
<p>4.1.2 Implementation of new business models for e-bus systems</p>			
<p>4.1.3 Design and promotion of EV conducive policies</p>	<p>This is realized on a local, national and regional level.</p> <p>These are activities such as design and divulgation of sectoral roadmaps, hydrogen roadmaps, support of national enabling policies for EV</p>	<ul style="list-style-type: none"> - TA measures per project identified - TA measures contracted - TA measures implemented 	<p>Realized in all Program countries Realized in all invested projects</p> <p>Develop minimum one regulatory system for the Integrated Electrified Urban Transport System operators, defining clear guidelines for the planning, design and operation of the</p>

	<p>deployment, advice on battery re-usage, recycling and disposal and capacity building at a national level.</p> <p>The identification of activities is made at country level when designing the projects</p> <p>The Program will also realize TA activities to identify and assess cost-effective measures to increase the resilience of cities in transport infrastructure linked with e-mobility development and to increase grid resilience through projects in the e-mobility field such as V2G, hydrogen energy storage or usage of 2nd hand EV batteries.</p>		<p>system to make it reliable to future climate (focused on the Caribbean countries).</p> <p>1 event per country for national level</p> <p>1 event for regional learning</p>
4.2.1 Apply methodology for climate risk identification			100% of projects complete the climate risk screening and 100% of moderate and high-risk projects have a full disaster and climate change risk assessment and management plan
4.2.2 CB and knowledge generation on H2 and V2G for increased grid resilience	Pilot projects are designed and implemented	<ul style="list-style-type: none"> - design of projects - procurement of goods - implementation of projects 	<ul style="list-style-type: none"> - 4 H2 pilot projects - 2 V2G pilot projects in SIDS
4.2.3. Training and CB of stakeholders	<p>CB and knowledge are generated with the pilots</p> <p>Training and CB of project participants and regional/national stakeholders</p>	<ul style="list-style-type: none"> - TA measures per project identified - TA measures contracted - TA measures implemented - Technical reports on potential for increased grid resilience with H2 - Technical reports on potential for increased grid resilience with V2G - CB events 	<p>One learning and Knowledge Management Strategy (KMS) per investment project</p> <p>2 training events per investment project (including e.g., risk concepts, robust decision making, NBS)</p> <ul style="list-style-type: none"> - 2 H2 reports - 2 V2G reports - 4 CB events

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

Monitoring for the Program will be in line with IDB's policies and the terms of the AMA/FAA. Specifically, the implementation of each project will be managed and monitored at project and Program level by IDB's in-house staff, project management unit and procured consultants. As specified in Loan and Grant Agreements between project implementing agencies and IDB, they are obliged to report on the use of proceeds of the Program and the environmental and social performance of the project to the IDB on an annual basis, in line with IDB's standard reporting requirements.

Program Level

IDB will prepare Program-level Annual Performance Reports (APRs) in the format specified by GCF detailing:

- a) activities conducted during the year, status of implementation, potential issues and solutions
- b) progress against targets and indicators given in this proposal (see above)

The APRs will include further details about each project approved, including rationale, description and screening against the criteria set out in this proposal. Impact potential estimates will be supported by a methodology note.

Project Level

A monitoring manual has been realized to provide a guideline on how to determine the impact of projects (Annex 11).

Evaluations

A mid-term review of the program will be conducted in implementation year 3 to a) take stock of emerging results from the TA activities, b) portfolio distribution, projected impacts and implementation of the first phase of investments under the program c) performance on safeguards and gender and social inclusion. This will be an independent review, undertaken by an external team engaged for this purpose. Based on the review, an updated Gender and Social Inclusion Action Plan (GESIAP) will be prepared and finalized.

A final program evaluation will be conducted after the end of the implementation period to evaluate program results and impacts.

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Selected Risk Factor 1: Credit default risk

Category	Category	Category
Credit	Credit	Credit

Description

Inability of lender to service debt.

Mitigation Measure(s)

All loans from the program will be aligned with IDB loans. As such the credit or loan default risk on repayment of program loans is low. To further ensure that underlying projects of the Program are financially sustainable themselves and don't create a further burden on the lender, all economic and financial analyses of each project (with exception of hydrogen and V2G pilot projects) shall be conducted in accordance with IDB's Guidelines for the Economic Analysis of Projects. The Program explicitly focus on developing financially bankable models at the project level itself.

Selected Risk Factor 2: EV technology risk

Category	Category	Category
Technical and operational	Technical and operational	Technical and operational

Description

EVs do not perform as expected and the operator cannot realize standard operations.

Mitigation Measure(s)

IDB's comprehensive technical design and structuring of projects minimize this risk. All technologies have been proven at least in pilot cases in other countries.

Selected Risk Factor 3: Lack of alignment of ESS

Category	Category	Category
Technical and operational	Technical and operational	Technical and operational

Description

Beneficiaries' failure to comply with national regulations and/or IDB and GCF environmental, social policy, gender requirements and compliance with standards, policies and procedures.

Mitigation Measure(s)

All projects shall be prepared and implemented in compliance with IDB's Safeguard Policy Statement, which may be updated from time to time. Each Project will be appropriately appraised and structured to meet IDB's and GCF's requirements. Environmental, Social and Gender Action Plans will be developed as part of the due diligence process during project appraisal and preparation to achieve this. Implementation of such safeguards requirements will be covenanted through financing agreements, monitored by IDB.

Selected Risk Factor 4: Design risk

Category	Category	Category
Other	Other	Other

Description

Limited capacity or experience to design and implement e-mobility projects by beneficiaries.

Mitigation Measure(s)

<p>Technical assistance will focus on supporting entities to identify, design and structure e-mobility projects. Detailed legal and technical due diligence will be carried out by the IDB to develop robust projects. Support will be provided under the Program to assist in developing favourable policies for deployment of e-mobilities.</p>		
<p>Selected Risk Factor 5: Illicit practices</p>		
Category	Category	Category
Prohibited practices	Prohibited practices	Prohibited practices
<p>Description</p>		
<p>Risk of projects being involved in illicit practices (money laundering, terrorist financing or other prohibited practices).</p>		
<p>Mitigation Measure(s)</p>		
<p>GCF financing will be provided as loans or grants to sovereign and sovereign-backed entities. As GCF funds will be provided alongside co-financing from IDB, IDB Integrity Principles and associated due diligence will apply at project level, which will also mitigate this risk. All projects shall comply with IDB's Anticorruption Policy and acknowledge that IDB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the projects; and recipients of the grant/loan shall cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation. As per IDB policies and procedures, prior to the approval of each specific project, IDB's fiduciary team will perform and/or update an institutional capacity assessment on the corresponding EE. This assessment includes overall technical capacity, adequacy of information systems, internal and external controls, and recommendations on any fiduciary risks identified.</p> <p>The Office of Institutional Integrity of the IDB (OII) plays a key role in the IDB's integrity efforts. OII is an independent office responsible for the prevention and investigation of prohibited practices, including fraud, corruption and misappropriation of funds, in all activities financed by the IDB. OII's investigative team is responsible for conducting investigations and for the submission of administrative charges to the Sanctions System against parties involved in Prohibited Practices. OII follows the Principles and Guidelines for Investigations, incorporated in the Uniform Framework for Preventing and Combating Fraud and Corruption adopted by the International Financial Institutions Anti-Corruption Task Force. OII has different channels to report allegations of prohibited practices, including an independent reporting hotline available 24/7 and an online form to report allegations of prohibited practices.</p> <p>In addition, OII's preventive team provides advisory services to project teams to identify, assess and mitigate integrity risks and their related reputational impact throughout the lifecycle of a project, including when an allegation is received, and operational measures need to be taken. As part of its preventive activities, OII carries out trainings for different organizational units, including country offices, to reinforce employees' awareness of the IDB's integrity framework and of managing integrity risk in IDB-financed operations, executing agencies, and other external stakeholders.</p> <p>Internally, the Office of Ethics of the IDB investigates ethical violations by Bank staff and ensures compliance with financial disclosure requirements, including completion of the annual declaration of interests or affidavit form by all IDB staff. The Office of Ethics also investigates allegations of prohibited practices by IDB staff, such as theft, workplace fraud, and abuse of authority.</p> <p>The IDB has strong mechanisms to protect whistleblowers. The IDB's Whistleblower Policy was approved by the Board of Directors of the IDB in 2011 and further strengthened in 2012. The IDB's policy for whistleblower protection expressly prohibits acts of retaliation against IDB employees and external parties that report allegations of Prohibited Practices or cooperate with Bank authorities in investigations, audits, or other inquiries. This policy also establishes the measures the IDB will take to prevent retaliation against employees and external parties that make a report.</p> <p>None of the project activities will be undertaken in any jurisdiction which is subject to or affected by United Nations Security Council. The IDB Project Procurement Policies that will regulate the procurement activities of the program establishes that firms of a country or goods manufactured in a country may be excluded if by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations,</p>		

the Borrower's country prohibits any import of goods from, or payments to, a particular country, person, or entity. Where the Borrower's country prohibits payments to a particular firm or for particular goods by such an act of compliance, that firm may be excluded. Notwithstanding, the current sanctions to countries and the nationalities of the individuals sanctioned are not eligible to participate as bidders in IDB financed activities as per the Bank's country eligibility requirements.

Selected Risk Factor 7: Procurement

Category	Category	Category
Technical and operational	Technical and operational	Technical and operational

Description

Lack of compliance with procurement rules and / or limited capacity in procurement issues.

Mitigation Measure(s)

All procurement to be financed under the program must be carried out in accordance with IDB's procurement policy and regulations. As required, and on a project-by-project basis, IDB will support procurement processes and offer procurement training. Procurement risks, procurement capacity assessment and market analysis will be carried out in accordance with the IDB Guidance on Procurement Risk Framework. Procurement will be undertaken in accordance with the IDB Procurement Guidelines. All consultants will be engaged following the IDB Guidelines on the Use of Consultants.

Selected Risk Factor 8: Forex

Category	Category	Category
Forex	Forex	Forex

Description

Volatile local currencies versus the USD loans from the Program create financial viability stresses on underlying projects.

Mitigation Measure(s)

All lending from the Program and IDB will be assessed for financial risks in project specific financial models which include local currency to USD likely long-term swap rates. This should provide adequate comfort that project financials are able to cope with any future currency volatility. In addition in most sovereign loan projects, the sovereign government assumes currency risks before passing on loans to projects in local currency. This also provides adequate comfort on this risk, with sovereigns better able to match currency outflows and inflows.

Selected Risk Factor 9: Co-financing

Probability	Probability	Probability
Low	Low	Low

Description

Co-financing from IDB or the national part does not materialize.

Mitigation Measure(s)

IDB co-financing will be identified for every project due to a) projects being selected through IDB's country policy dialogue with developing member countries to determine IDB's funding allocations on selected priority projects to be agreed between IDB and the countries; b) sub-project eligibility criteria requiring minimum co-financing shares from IDB and/or national / other parties.

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

IDB's Safeguard Policy (SP) is a consolidated policy covering environment, involuntary resettlement, and indigenous peoples. All projects will be prepared in accordance with the SP requirements. All projects undergo environmental and social due diligence at appraisal to help IDB decide if the project should be financed and, if so, the way in which environmental and social risks and impacts should be addressed in its planning, implementation and operation. The appraisal process also identifies opportunities for additional environmental or social benefits. IDB seeks that projects are designed, implemented, and monitored in compliance with its policies, applicable regulatory requirements and international best practices. The SP sets out principles, rules, procedures and guidelines for conducting environmental and social due diligence of the potential projects. These procedures and guidelines also describe the process for developing measures to avoid and mitigate potential adverse impacts as well as opportunities to improve the environmental and social outcomes of the projects.

IDB is committed to the principles of transparency, accountability and stakeholder engagement, and promoting adoption and implementation of these principles by its clients. Proportionate to the nature and scale and environmental and social risks and impacts of the project, IDB requires its clients to disclose sufficient information about the risks and impacts arising from projects, engage with stakeholders in a meaningful, effective, inclusive and culturally appropriate manner and take into consideration the feedback provided through such engagement.

Each project under the Program will require a Stakeholder Engagement Plan, including a grievance mechanism. IDB will disclose on its website appropriate information on environment and social safeguards aspects and due diligence for each project under the Program.

IDB works very closely with governments, authorities and civil society, to uphold the principle of country ownership via direct partnerships (regional offices); via IDB's Resident Mission offices in the field and via the country and sector strategies (energy and transport as relevant sectors for this Program) that are developed jointly with the country and in consultation with stakeholders including amongst others the energy sector, electric utilities, the transport sector, private and public transport operators, universities, FIs, involved donors and NGOs. Previous to the realization of this FP, IDB has undertaken extensive dialogues and discussions on intervention options with the selected developing member countries and with relevant stakeholders. IDB has also discussed the Program, key interventions, program components, program financing and the project pipeline with the GCF focal points and relevant staff in all involved countries.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

A gender assessment has been realized for all countries as well as a gender action plan. This serves as guideline for each individual project to be funded under the Program and as a framework to develop a gender approach for the Program (see Annex 8).

The outlook to both keeping the progress and continue reducing the gaps in gender equality is challenging after the COVID-19 pandemic. UN Women and other international organizations fear that recent gains in gender equality might be lost. The COVID-19 pandemic has worsened women's situation and has aggravated differences amongst groups. Gender based violence has increased and women in lockdowns are living with their aggressor under the same roof and can't access support networks. As example in Colombia the calls to the domestic violence helpline increased by 91%; adding to that, figures of actual gender-based violence are worse during COVID-19 because the fear of getting infected prevents women from seeking help in health services.⁹³ Many women have abandoned the labor market to lead their household's dynamics during the pandemic, with severe lockdowns in most countries in the region and schools and workplaces closed, while access to decent work has deteriorated for all.

According to UN Habitat, two-thirds of the population will be living in cities by 2050 (UN Habitat, 2018). Together with pollution, overcrowding, lack of modal integration, are some of the problems that the increase of urban population is exacerbating. Lack of access to transportation and safety issues limits women's participation in the labor market and

⁹³ Gender dimensions of the COVID-19 Pandemic, WB April 2020

reduces their participation in the economy by 16.5%⁹⁴. Women turn away working opportunities depending on the traveling conditions to the work station (time spent, return timing, expenses). Besides providing access to education, health and jobs, the sector generates jobs itself but traditionally most opportunities are likely to remain in men's hands. Hence, when we use gender lens to analyze urban transportation, we discover that the conditions, priorities, and beliefs about urban transport infrastructure and services vary between women and men and, consequently, the decisions that they make about mobility are shaped by these conditions, priorities and beliefs. The lack of certain safety features in the design of the transport system can constrain a woman's decision to choose a certain mode of transportation, sometimes in ways that are inoculate to men, such as dark bus stops or overcrowded buses. When it comes to the design of the transport infrastructures, the realities of women, the elderly and people with disabilities are many times alike and need be taken into account when designing a transport operation. There is myriad of links between gender and urban transportation. There are gender differences in the purpose, time, mode of transportation, or perceptions on safety, that affect women's mobility agency and access to economic opportunities, and the differences comprised in this section are shared among the countries in the region.

The investments projects of the Program need to include a gender strategy with actions to increase women's mobility, promote safety and access to jobs. This Program can improve women's agency in mobility if mainstreaming gender equality in its projects becomes systematic. Gender-based violence is endemic in these countries and underreported; the COVID-19 pandemic is exacerbating the numbers. The urban transport system represents an environment where harassment and sexual abuses occur quotidianly in the regular trips women do every day. Incidents will happen in the e-buses, in the e-taxis, while waiting, walking to and from the stops or using charging stations; incidents will increase at night, in isolated vehicles and unattended places, but in crowded units as well. Women are not represented in the jobs generated by the construction and transport sector in the region. The pandemic complicates the return to work for those women who lost their jobs and those whose care responsibilities have increased; the Program is an opportunity for women in these eight countries to access the new jobs that will be generated. The investment projects for e-taxis adoption must learn from the segregated ride-hailing market which is growing in the region, and adapt to vulnerable groups without access to technology.

The Gender Action Plan guarantees that these general recommendations are transformed into specific activities at the Program and project levels, and that they are measured and adequately monitored, and adjusted when needed.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

Financial resources from the GCF will be managed according to the general provisions of the AMA. IDB has thus established the GCF Trust Fund ('GCF Account') internally, through which all GCF resources under this Program will be transferred to the GCF Account, based on the forecast of expected approval and disbursement requests of sub-projects. Based on such sub-project disbursement requests, the IDB will request, for each underlying transaction, the commitment of GCF resources to behold in the GCF Account to a specific sub-project.

The financial management and oversight of any of the above-mentioned operations, including reporting requirements, would follow IDB policies and procedures, and applicable AMA and FAA requirements, which would be reflected as needed in any Subsidiary Agreements. The Subsidiary Agreements would require that use of GCF resources be for eligible activities under the applicable components of the Program, would establish the disbursement period and will establish other implementation requirements, including regarding the executing structure of GCF funded activities within the EE.

The disbursements, reporting (including external audit reports), monitoring, and evaluation of the Project will be done in accordance with IDB Policies and Procedures, among others the IDB's Financial Management Guidelines (OP-273-6) and reflected in the Term Sheet and FAA.

Disbursement of GCF resources to the IDB under the FAA would be subject to the IDB having approved the allocation of Program resources to individual reimbursable (sovereign guaranteed loans) or non-reimbursable (technical cooperation assistance and investment grants) operations and following the effectiveness of the corresponding Subsidiary Agreements for such individual operations, if such agreements are needed.

⁹⁴ World Employment and Social Outlook: Trends for women 2017. International Labour Office – Geneva: ILO, 2017

Loan resources will be disbursed to the corresponding EE as an advance of funds or as reimbursement of expenses at any time within the established loan disbursement period, in accordance with IDB policies. Proceeds disbursed as reimbursement of expenses that were already made by the EE in accordance with the terms of the Subsidiary Agreement may then be freely used by the EE in accordance with its mandate and for purposes that may be unrelated to the corresponding Sub-Project.

EEs will be required to submit audited financial statements within 120 days after the closing of each fiscal year throughout the execution period, as per standard IDB practice. Financial statements shall be duly audited by an independent firm acceptable to the IDB and in compliance with local regulation. EEs are also required to prepare and submit periodical reports (at least annually) including financial information and compliance with eligibility criteria for sub-loans, as well as progress with regards to the development objectives based on a set of predefined results indicators. These reports will provide the inputs for the APRs the IDB will have to deliver for the GCF according to the AMA.

When acting as EE, IDB would apply its own policies for hiring of individual consultants and/or procurement of consulting and other services and would require other EEs to use applicable IDB's procurement policies for their use of GCF resources.

In accordance with the AMA, the GCF Account will be subject to an external audit requirement. No later than June 30 of each year, the IDB will deliver to the GCF an assertion report by the IDB management and a report by the Bank's external auditors, on the effectiveness of internal controls and on the accuracy of the combined financial statements of all trust funds under the IDB's administration with an external audit requirement, including the Fund, together with the combined financial statements of all trust funds for the previous calendar year. Such audited financial statements are prepared in accordance with the IDB's existing policies and accounting standards for trust funds' financial reporting, as updated from time to time. The cost of such audits will be deducted from the resources of the Fund.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Information provided in confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

No confidential information: The accredited entity confirms that the funding proposal, including its annexes⁹⁵, may be disclosed in full by the GCF, as no information is being provided in confidence.

With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

⁹⁵ **Funding Proposal is public. List of confidential annexes is included in the Disclosure Form - Funding proposal annexes**

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

- Annex 1 NDA no-objection letter(s) [\(template provided\)](#)
- Annex 2 Feasibility study - and a market study, if applicable
- Annex 2b Rationale for adaptation
- Annex 2c Summary hydrogen project Paraguay
- Annex 2d Summary electric vessel project Cartagena
- Annex 3 Economic and/or financial analyses in spreadsheet format
- Annex 4 Detailed budget plan [\(template provided\)](#)
- Annex 5 Implementation timetable including key project/programme milestones [\(template provided\)](#)
- Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
[\(ESS disclosure form provided\)](#)
 - Environmental and Social Impact Assessment (ESIA) or
 - Environmental and Social Management Plan (ESMP) or
 - Environmental and Social Management System (ESMS)
 - Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People’s Plan, Land Acquisition Plan, etc.)
- Annex 7 Summary of consultations and stakeholder engagement plan
- Annex 8 Gender assessment and project/programme-level action plan [\(template provided\)](#)
- Annex 9 Legal due diligence (regulation, taxation and insurance)
- Annex 10 Procurement plan [\(template provided\)](#)
- Annex 11 Monitoring and evaluation plan [\(template provided\)](#)
- Annex 11b Monitoring manual
- Annex 12 AE fee request [\(template provided\)](#)
- Annex 13 Co-financing commitment letter, if applicable [\(template provided\)](#)
- Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- Annex 15 Evidence of internal approval [\(template provided\)](#)
- Annex 16 Map(s) indicating the location of proposed interventions
- Annex 17 Multi-country project/programme information [\(template provided\)](#)
- Annex 18 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 19 Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
- Annex 20 First level AML/CFT (KYC) assessment
- Annex 21 Operations manual (Operations and maintenance)

- Annex 22a Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)⁹⁶
- Annex 22b GHG calculations
- Annex 22c Total investment pipeline projects
-

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

⁹⁶ Annex 22 is mandatory for mitigation and cross-cutting projects.



GOVERNMENT OF BARBADOS

The Hon. Ryan Straughn, M.P.

MINISTER IN THE MINISTRY OF FINANCE & ECONOMIC AFFAIRS

Ministry of Finance, Economic Affairs and Investment

Government Headquarters,

Bay Street, St. Michael, BB11156, Barbados, W.I.

Our Ref.: 7045/79/1 Vol. 5

Tel.: (246)535-5300

Fax: (246)535-5629

Date: May 10, 2022

Mr. Yannick Glemarec
Executive Director
Secretariat of the Green Climate Fund
175 Art Center-daero
Yeonsu-gu, Incheon 406-840
REPUBLIC OF KOREA

Dear Mr. Glemarec,

**Funding Proposal for the Green Climate Fund by the
Inter-American Development Bank Regarding
E-Mobility Program for Sustainable Cities in
Latin America and the Caribbean**

We refer to the programme titled E-Mobility Program for Sustainable Cities in Latin America and the Caribbean in Barbados as included in the funding proposal submitted by the Inter-American Development Bank to us on March 25, 2021.

The undersigned is the duly authorized representative for the Economic Affairs and Investment Division of the Ministry of Finance, Economic Affairs and Investment, the National Designated Authority of Barbados.

Pursuant to the Green Climate Fund's (GCF) decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) the Government of Barbados has no-objection to the programme as included in the funding proposal;
- (b) the programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Barbados; and

- (c) in accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

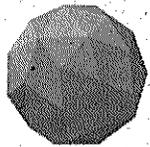
Yours sincerely,

A handwritten signature in black ink, appearing to read 'Ryan Straughn', written in a cursive style.

HON. RYAN STRAUGHN, M.P.

Minister in the Ministry of Finance and Economic Affairs

No-objection letter template for programmes



GREEN
CLIMATE
FUND

To be printed on letterhead of NDA

To: The Green Climate Fund ("GCF")

Santiago, Chile, 28 March 2022

Re: Funding proposal for the GCF by Inter-American Development Bank IDB regarding E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

Dear Madam, Sir,

We refer to the programme titled **E-Mobility Program for Sustainable Cities in Latin America and the Caribbean** in Chile as included in the funding proposal submitted by **Inter-American Development Bank IDB** to us on 22 November 2021.

The undersigned is the duly authorized representative of Ms. Claudia Sanhueza, the National Designated Authority of Chile.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Chile has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Chile;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



[Handwritten signature]
Claudia Sanhueza
Undersecretary of Finance
National Designated Authority
Chile



El futuro
es de todos

DNP
Departamento
Nacional de Planeación

Bogotá D.C., jueves, 24 de marzo de 2022

DADS



Al responder cite este Nro.
20224500260371

The Green Climate Fund – GCF
Att. executive-office@gcfund.org

Subject: Funding proposal for the GCF by Inter-American Development Bank – regarding **E-Mobility** Program for Sustainable Cities in Latin America and the Caribbean.

Dear Madam, Sir,

We refer to the programme titled **E-Mobility** Program for Sustainable Cities in Latin America and the Caribbean, in Colombia as included in the funding proposal submitted by the Inter-American Development Bank to us on November the 30th 2021.

The undersigned is the duly authorized representative of the National Planning Department of Colombia the NDA of Colombia.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Colombia has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Colombia;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.





El futuro
es de todos

DNP
Departamento
Nacional de Planeación

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind Regards,

CAROLINA DIAZ GIRALDO

Director of Environment and Sustainable Development
National Planning Department
Colombia

CC: jmanuelsa@iadb.org; gloriav@iadb.org; mariej@iadb.org; raulr@iadb.org; laureenm@iadb.org; fannyb@iadb.org; alexapla@iadb.org; vvilloria@gcfund.org; mrestrepo@dnpgov.co

Prepared: Lukas Socarras
Revised: María del Pilar Restrepo





**Despacho de la Ministra
Ministerio de Ambiente y Energía**

To: The Green Climate Fund (“GCF”)

San José, March 22nd 2022
DM-0268-2022

**Re: Funding proposal for the GCF by the Inter-American Development Bank (IDB)
regarding E-Mobility Program for Sustainable Cities in Latin America and the
Caribbean**

Dear Madam, Sir,

We refer to the programme titled E-Mobility Program for Sustainable Cities in Latin America and the Caribbean in Costa Rica as included in the funding proposal submitted by the Inter-American Development Bank (IDB) to us on 9 March 2021.

The undersigned is the duly authorized representative of the Ministry of Environment and Energy, the National Designated Authority of Costa Rica.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Costa Rica has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Costa Rica;
- (c) In accordance with the GCF’s environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

**Andrea Meza Murillo
Minister of Environment and Energy**

To: The Green Climate Fund (“GCF”)

Santo Domingo, 29 March 2022

Re: Funding proposal for the GCF by Inter-American Development Bank regarding “E-Mobility Program for Sustainable Cities in Latin America and the Caribbean”

Dear Madam, Sir,

We refer to the programme titled “E-Mobility Program for Sustainable Cities in Latin America and the Caribbean” in Dominican Republic as included in the funding proposal submitted by Inter-American Development Bank to us on 1 February 2021.

The undersigned is the duly authorized representative of the Ministry of Environment and Natural Resources, the National Designated Authority of Dominican Republic.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Dominican Republic has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Dominican Republic;
- (c) In accordance with the GCF’s environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

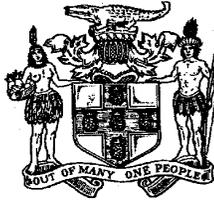
We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,


Milagros De Camps
Deputy Minister of International Cooperation
Ministry of Environment and Natural Resources
Dominican Republic





ANY REPLY OR SUBSEQUENT
REFERENCE SHOULD BE ADDRESSED
TO THE PERMANENT SECRETARY
AND THE FOLLOWING REFERENCE
NUMBER QUOTED:
Tel : Number : 876-926-1690-3
926-1590-9 FAX 754-0975

**MINISTRY OF HOUSING, URBAN RENEWAL, ENVIRONMENT
AND CLIMATE CHANGE
25 DOMINICA DRIVE
KINGSTON 5
JAMAICA**

October 15, 2021

Mr. Yannic Glemarec
Executive Director
Green Climate Fund
Korea

Re: Funding proposal for the GCF by Inter-American Development Bank regarding E-Mobility Programme for Sustainable Cities in Latin America and the Caribbean

Dear Mr. Glemarec,

We refer to the programme **E-Mobility Programme for Sustainable Cities in Latin America and the Caribbean** as included in the funding proposal submitted by The Inter-American Development Bank to us on 26 August 2021.

The undersigned is the duly authorized representative of Ministry of Housing, Urban Renewal, Environment and Climate Change, the National Designated Authority of Jamaica.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme activities as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Jamaica has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with Jamaica's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed. We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Sincerely,

UnaMay Gordon (Ms.)
**Principal Director,
Climate Change Division**

Panama, October 22, 2020
DM-1276-2020

Mr.
YANNICK GLEMAREC
Executive Director
Green Climate Fund

Dear Sir,

We refer to the project “E-Mobility Fund for Sustainable Cities in Latin America” in the Republic of Panama as included in the funding proposal submitted by the Inter-American Development Bank (IDB) to us on October 2020.

The undersigned is the duly authorized representative of the Ministry of Environment of Panama, the National Designated Authority/focal point of Panama.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project “E-Mobility Fund for Sustainable Cities in Latin America” as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Panama has no-objection to the project as included in the funding proposal;
- (b) The project as included in the funding proposal is in conformity with Panama’s national priorities, strategies and plans;
- (c) In accordance with the GCF’s environmental and social safeguards, the project, as included in the funding proposal, is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project, as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all activities to be implemented within the scope of the project.

We acknowledge that this letter will be made publicly available on the GCF website.

Sincerely,

MILCIADES CONCEPCION

Minister of Environment

MCI/JUQ/YR/v



Albrook, Calle Broberg, Edificio 804
República de Panamá
Tel.: (507) 500-0855

www.miambiente.gob.pa



Nota N.G. N° 634.-

To: The Green Climate Fund ("GCF")

Asunción, 10 May 2022

Re: Funding proposal for the GCF by The Inter-American Development Bank regarding E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

Dear Madam, Sir,

We refer to the programme titled *E-Mobility Program for Sustainable Cities in Latin America and the Caribbean* in Paraguay as included in the funding proposal submitted by The Inter-American Development Bank to us on 29 October 2022.

The undersigned is the duly authorized representative of Ministry of Environment and Sustainable Development, the National Designated Authority of Paraguay.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Paraguay has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with the national priorities, strategies and plans of Paraguay;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Cesar Ariel Oviedo Verdún
Minister
Ministry of Environment and Sustainable Development
Paraguay



Ministerio
de Ambiente

To: The Green Climate Fund ("GCF")

Montevideo, 7th April, 2022

Re: Funding proposal for the GCF by Inter-American Development Bank regarding E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

Dear Madam/ Sir,

We refer to the programme E-Mobility Program for Sustainable Cities in Latin America and the Caribbean as included in the funding proposal submitted by the Inter-American Development Bank (IDB) to us on December 7th 2021.

The undersigned is the duly authorized representative of the Ministry of Environment, the National Designated Authority of Uruguay.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Uruguay has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with Uruguay's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Name: Ms. Natalie Pareja

Title: National Climate Change Director, Ministry of Environment, Uruguay

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	E-mobility Program for Sustainable Cities in Latin America and the Caribbean
Existence of subproject(s) to be identified after GCF Board approval	Yes
Sector (public or private)	Public
Accredited entity	Inter-American Development Bank (IDB)
Environmental and social safeguards (ESS) category	Category B
Location - specific location(s) of project or target country or location(s) of programme	Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, and Uruguay
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Tuesday, June 14, 2022
Language(s) of disclosure	English and Spanish
Explanation on language	English or Spanish is the official language of the countries eligible under this Program.
Link to disclosure	English: http://www.iadb.org/document.cfm?id=EZSHARE-1304725458-29 Spanish: http://www.iadb.org/document.cfm?id=EZSHARE-1304725458-28
Other link(s)	N/A
Remarks	An ESIA consistent with the requirement for a Category B programme is contained in the "Environmental and Social Analysis and Environmental and Social Management Framework".
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	Tuesday, June 14, 2022
Language(s) of disclosure	English and Spanish
Explanation on language	English or Spanish is the official language of the countries eligible under this Program.
Link to disclosure	English: http://www.iadb.org/document.cfm?id=EZSHARE-1304725458-29

	Spanish: http://www.iadb.org/document.cfm?id=EZSHARE-1304725458-28
Other link(s)	N/A
Remarks	An ESMP consistent with the requirement for a Category B programme is contained in the “Environmental and Social Analysis and Environmental and Social Management Framework”.
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity’s website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)	
Description of report/disclosure on accredited entity’s website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Friday, June 17, 2022
Place	Physical copies, upon request, will be available at the following IDB country offices: Barbados “Hythe” Welches Maxwell Main Road BB17068 Christ Church Barbados Chile Avenida Pedro de Valdivia 0193 10º piso Santiago Chile Colombia Carrera 7 N 71-21, Torre B Piso 19. Edificio Avenida Chile Bogotá Colombia Costa Rica Piso 4, Torre 1 Centro Corporativo El Cedral 300 metros este del Peaje Autopista Próspero Fernández Escazú, San José Costa Rica

	<p>Dominican Republic Calle César Nicolás Penson Esquina Calle Leopoldo Navarro Sector Gascué Santo Domingo, Distrito Nacional República Dominicana</p> <p>Jamaica 6 Montrose Rd Kingston 6 Jamaica</p> <p>Panama Calle 50 con calle Elvira Méndez, Edificio Tower Financial Center (Towerbank), piso 23. Panamá Panamá</p> <p>Paraguay Calle Quesada esq. Legión Civil Extranjera Asunción Paraguay</p> <p>Uruguay Rincón 640 esq. Bartolomé Mitre Montevideo Uruguay</p>
Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	Wednesday, November 16, 2022
Date of GCF's Board meeting	Sunday, July 17, 2022

Note: This form was prepared by the accredited entity stated above.

Secretariat’s assessment of FP189

Proposal name:	E-Mobility Program for Sustainable Cities in Latin America and the Caribbean
Accredited entity:	Inter-American Development Bank (IDB)
Country/(ies):	Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay
Project/Program size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Program serves nine countries in the Latin America and the Caribbean (LAC) region with expanding e-mobility in public transportation. It provides concessional loans and grants for innovative projects aimed at building public fleets as well as grid and infrastructure resilience.	Executing entity capacity to deliver on a strong pipeline of subprojects will need oversight by the accredited entity (AE), as required by the accreditation master agreement. The Inter-American Development Bank has extensive experience in supporting e-mobility in the LAC region and is expected to manage this role well. Moreover, a robust indicative pipeline has been prepared and reviewed with the GCF.
Program prioritizes secondary cities and promotes innovative vehicle-to-grid and e-vessel projects, which are not the focus of most investment flows into e-mobility in LAC.	The Program’s methodology for estimating adaptation beneficiaries reached needs some refinement. The AE has agreed to further review the approach and report to GCF in the initial stages of the program.
Program integrates adaptation and resilience, including disaster and climate risk screening into transport systems and subproject design, with a strong emphasis on gender-sensitive development in the design of integrated electrified urban transport systems across the LAC region.	
Strong mitigation impact from GCF and co-financed funds based on indicative pipeline of subprojects.	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the term sheet and addendum VI titled “List of proposed conditions and recommendations”, respectively.

II. Summary of the Secretariat's assessment

2.1 Programme background

3. The E-Mobility Program for Sustainable Cities in Latin America and the Caribbean (the Program) links electric vehicle (EV) deployment with sustainable low-carbon urban development and increased climate resilience of urban transport infrastructure and the grid (i.e. integrated electrified urban transport systems) in Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay and Uruguay. It targets sustainable urban development via measures to strengthen and improve the public transport sector, non-motorized transport, electric micro-mobility and measures to increase the quality of life of city centres with a gender-sensitive approach while responding to observed and anticipated climate-related risks associated with more intense precipitation and flooding, heat waves, sea level rise and more intense and frequent hurricanes.

4. The Programme has a strong and clearly articulated climate objective. Latin America and the Caribbean (LAC) is among the most urbanized regions in the world with over 80 per cent of its population living in cities. More than 27 per cent of its population lives in coastal areas, with an estimated 6–8 per cent living in areas that are at a high or very high risk of being affected by coastal hazards. Hydrometeorological events, such as floods, storms, droughts and heatwaves, account for 93 per cent of all disasters that took place in the region over the last 20 years (World Meteorological Organization, 2020). Climate hazards of highest concern for the LAC region to be exacerbated by climate change include (i) intense precipitation and flooding (e.g. at the end of 2020, intense rainfall events brought landslides, floods and flash floods to rural and urban areas in Central and South America); (ii) temperature increases, droughts and extreme heat (e.g. major heatwaves affected the region, especially in many cities of South America, with temperatures above 40 °C several days in a row); (iii) sea levels in the low-lying States of the Caribbean, which are rising at a slightly higher rate than the global average (3.3 millimetres/year); and (iv) more destructive hurricanes (e.g. category 4 hurricanes Eta and Iota affected over 8 million people in Central America in 2020).

5. As climate change impacts continue to evolve and intensify, urban transport infrastructure in cities needs to be designed and operated so that climate-related risks are comprehensively managed. The Program aims to do so via its four components: (i) climate-resilient transport infrastructure; (ii) increase climate resilience of grid with green hydrogen and vehicle-to-grid (V2G) pilot projects; (iii) electrified integrated urban mobility; and (iv) technical assistance and project structuring.

6. The Program fosters a structural shift towards low-carbon, climate-resilient, sustainable and attractive public transport systems, which can reverse the declining public transport mode share trend and also reduce barriers towards mass EV deployment. The focus of the Program is commercial e-mobility, including buses, taxis, institutional fleets, trucks and vessels. Private usage of vehicles such as private passenger cars and motorcycles are not supported. The Program aims to act as a market accelerator for EV financing and deployment in nine countries, with replication within and beyond its initial set of countries. The Program also creates added value through knowledge management, interchange of experience, development of the skills and competences needed in the workforce, and the establishment of a critical mass of commercial EV deployment in the nine countries with an impact that goes beyond the simple aggregation of individual projects.

7. The Inter-American Development Bank (IDB), as an accredited entity (AE), is seeking USD 145 million in reimbursable, sovereign-guaranteed loans from GCF. In addition, GCF is requested to provide USD 55 million in non-reimbursable grants for investment subsidies for

high-risk and innovative V2G and e-vessel investments, and for technical assistance, including project origination and structuring. The Program duration is 6 years, with a lifetime of 30 years.

8. The Program's environmental and social safeguards risk category is B (medium)/I-2.

2.2 Component-by-component analysis

9. The Program is structured in 4 components: component 1: Increase climate resilience of urban transport infrastructure; component 2: Increase climate resilience of the grid with Hydrogen and V2G pilot projects; component 3: Electrified integrated urban mobility; and component 4: Technical assistance and project structuring.

Component 1: Increase climate resilience of urban transport infrastructure (total cost: USD 97 million; GCF cost: USD 71 million, with USD 54 million in loans and USD 17 million in grants)

10. The output of this component is (1.1.) Urban mobility and climate resilience investments are integrated to reduce climate vulnerability. The activity of this component is 1.1.1 Implement measures to increase the climate resilience of urban transport infrastructure. This component will finance (i) the development of climate-resilient micromobility infrastructure; (ii) the allocation and improvement of supportive urban spaces and infrastructure for public e-transport that addresses men's and women's differentiated needs when using public transportation.

Component 2: Increase climate resilience of the grid with H2 and V2G pilot projects (total cost: USD 53 million; GCF cost: USD 32 million, with USD 18 million in loans and USD 14 million in grants)

11. This component addresses the barriers of limited commercial attractiveness of e-mobility and performance risks of EVs. It includes specific investments in adaptation such as V2G and infrastructure for peak savings, which are both aimed at increasing grid resilience. The outcome of this component is to make electric grids more resilient to climate events with new energy storage options. The output of the component is (2.1.) H2 and V2G projects that will promote improve grid stability.

12. The activities of this component are (2.1.1) H2 projects with Fuel Cell Electric Vehicles and with grid stabilization measures implemented; and (2.1.2.) V2G projects with grid stabilization measures implemented. The component finances (i) pilot green hydrogen projects with usage in transportation, which work along the entire value chain of the hydrogen economy, including hydrogen production, storage, distribution, filling stations and its usage in transportation; (ii) V2G pilot projects linked with increased grid resilience with a focus on small island developing States; and (iii) additional infrastructure used for peak shaving to increase the climate resilience of the grid by investing in stationary fuel cells.

Component 3: Electrified integrated urban mobility (total cost: USD 285 million; GCF cost: USD 87 million, with USD 73 million in loans and USD 14 million in grants)

13. This component addresses the barriers of limited commercial attractiveness to invest in e-buses, performance risks of e-buses, limited know-how and experience with cost-effective measures to increase the resilience of urban transport infrastructure, and lack of financial support for investments to reduce the climate vulnerability of urban transport infrastructure.

14. The outcome of this component is reduced greenhouse gas (GHG) emissions from commercial vehicles. The outputs of this component are (3.1.) E-mobility is integrated with public transport and non-motorized transportation measures to foster mode shift to low-carbon transport; and (3.2) EV fleets are deployed with innovative business models to enable their mass application. The activities are (3.1.1) Construction of cycle lanes and micromobility measures; (3.1.2) Implementation of urban mobility measures such as pedestrianization, bus

lanes and route structuring; (3.2.1) Deployment of e-buses; (3.2.2) Deployment of e-taxis and fleets with urban fast-charging infrastructure; and (3.2.3) Deployment of pilot projects with electric vessels.

Component 4: Technical assistance and project structuring (total cost: USD 13 million; GCF cost: USD 9 million in grants)

15. This component addresses the barriers of (i) business models and policies non-conducive to e-mobility deployment; (ii) limited know-how on climate resilience measures in urban transport infrastructure; and (iii) limited commercial viability of e-mobility linked with high upfront costs and unclear operational costs and benefits. It also addresses the performance risk of EVs.

16. The outcome of this component is (4) improved public and private sector capacity and regulatory environment for e-mobility. The output of this component is (4.1.) A climate-resilient e-mobility ecosystem integrated with urban transport is established to enable uptake of e-mobility. The activities of this component are (4.1.1) Apply methodology for climate risk identification; (4.1.2) Cost-benefit analysis and knowledge generation on H2 and V2G for increased grid resilience; (4.1.3) Urban interventions realized with a gender perspective; (4.1.4) Implementation of new business models for e-bus systems; (4.1.5) Design and promotion of EV-conducive policies; (4.1.6) Training and capacity-building of stakeholders; and (4.1.7) Project sourcing, structuring and monitoring.

Programme management (total cost: USD 2 million; GCF cost: USD 1 million)

17. The programme management cost (PMC) is shared between IDB and GCF in proportion to the two organization's grant contribution to the overall Programme, in accordance with GCF's Policy on Fees.

III. Assessment of performance against investment criteria

18. The Program is in broad alignment with the GCF mandate and supports the transformation of and innovation in low-emission urban transport and planning in the LAC region, using the Avoid-Shift-Improve model. The Program is also consistent with the draft GCF guidance documents on the urban and transport sectors and complements GCF programmes already under way in the LAC region, including potential readiness for e-mobility. A detailed assessment of performance against investment criteria is described in the following.

3.1 Impact potential

Scale: High

19. The expected fund-level impacts for the total investment programme are rated as High. The Program is expected to contribute 7,547,602 tonnes of carbon dioxide equivalent (tCO₂eq) of direct GHG emission reductions with a GCF cost of intervention of USD 26/tCO₂eq and 622 tPM_{2.5} and 5,190 tonnes of nitrous oxide (tNO_x) reduced. Economic benefits due to reduced emissions are valued at USD 418 million, of which USD 108 million is due to reduced local air pollution. As its adaptation impact, the Program reaches 1.5 million direct and 8.9 million indirect beneficiaries of adaptation measures, representing 9 per cent of the entire population of Program countries.

20. Transport contributes almost one quarter of the current global energy-related GHG emissions and is growing faster than any other energy end-use sector. Latin America already accounts for 10 per cent of global GHG emissions as of today. Transport-related GHG emissions in 2018 make up the following percentages of total emissions in Program countries: 12 per cent in Barbados, 26 per cent in Chile, 16 per cent in Colombia, 37 per cent in Costa Rica, 18 per cent in the Dominican Republic, 19 per cent in Jamaica, 27 per cent in Panama, 19 per cent in

Paraguay and 10 per cent in Uruguay. As such, the Program makes a significant contribution to altering the GHG pathways of these countries through low-emission transportation systems in line with the nationally determined contribution (NDC) targets of each country.

21. Latin America has strong enabling conditions in terms of clean transport and e-mobility. The region has one of the cleanest electricity generation portfolios in the world (high hydroelectric production and growing deployment of wind and solar power plants). Therefore, the adoption of an e-mobility strategy would allow the sector to move rapidly towards a decarbonization pathway. The carbon intensity of electricity generated by Program countries is deemed low for most Program countries, given reliance on hydro-electric power generation. With favourable grid factors, EVs can reduce GHG emissions on a well-to-wheel base by 70–80 per cent compared to fossil units.

3.2 Paradigm shift potential

Scale: High

22. Paradigm shift is achieved via the development of the policy environment for EV, which can be adopted by and replicated at the national and regional level; a mature EV ecosystem; a charging and grid infrastructure which facilitates a mass EV deployment; and enabling financial and business models. The Program considers that transformational shifts in mobility towards e-mobility are possible through the large-scale uptake of commercial e-vehicles. The countries included in the Program at this moment only have pilot EV fleets. Moreover, an improved ecosystem for EVs requires concrete financing interventions as well as support for technical assistance and capacity-building, as anticipated in the Program's activities.

23. The potential for scaling up and replication is ensured at the national and international level through (i) capacity-building; (ii) establishing a track record of successful business models; (iii) demonstrating improved profitability and reduced risks of EV investments; and (iv) developing knowledge products. Technical assistance is embedded into the Program's activities to ensure delivery of adequate training from equipment suppliers or third parties on EV and charger operations and maintenance, safety, and management of EV fleets. The technical assistance component includes the support of enabling policies for EV deployment. Technical support will be provided to the national and local authorities in order to set up, improve and enforce enabling public policies and legal, regulatory, fiscal and normative frameworks for e-mobility. The Program therefore contributes significantly to the creation of a regulatory environment and conducive policy frameworks that will help transform the urban and transport development trajectories of the participating countries.

3.3 Sustainable development potential

Scale: High

24. The Program's main mitigation-oriented target is to reduce transport-led GHG emissions and increase the adaptation and resilience of urban transport systems. The Program's adaptation impacts are multifaceted and include transit-oriented infrastructure and electricity grid resilience, and complement various Sustainable Development Goals (SDGs) through environmental, social and economic co-benefits. The Program contributes to SDG 3 (Good health and well-being), SDG 7 (Affordable and clean energy), SDG 9 (Industry, innovation and infrastructure), SDG 11 (Sustainable cities and communities), and SDG 13 (Climate action).

25. Major environmental co-benefits are reduced pollutants and noise emissions. The major concern for air pollution in cities is PM_{2.5} and NO_x emissions. Additional non-quantified environmental co-benefits are reduced noise emissions and reduced water pollution caused by fossil fuel vessels.

26. The Program's major social benefit is improved air quality and reduced noise pollution. High levels of air pollution caused by the transport sector are a major problem for human health

and well-being in most Latin American cities and will be addressed via cleaner and less polluting transport options supported by the Program. Other social benefits of the Program are related to increased patronage of public transport and increased usage of non-motorized transport and micromobility, resulting in fewer accidents and less congestion and improved quality of life for commuters and residents in cities. The increased resilience of urban infrastructure and electricity grids also results in social co-benefits for people who would otherwise be affected especially by extreme weather.

27. The Program's economic co-benefits arise from reduced emissions and are estimated at USD 418 million, of which USD 108 million in impact is due to reduced air pollutants and avoided health costs and the rest is due to reduced GHG emissions. Additional economic co-benefits not calculated at the Program level are for reduced subsidies to fossil fuels, reduced usage of the foreign exchange for the import of fossil fuels, economic benefits of time savings, fewer accidents and reduced vehicle operating costs related to increased usage of public transportation and non-motorized transport, and economic benefits of improved grid and urban infrastructure resilience.

3.4 Needs of the recipient

Scale: High

28. GCF support is assessed as being critical to the development of the financing environment for the EV sector in LAC. Most Program countries have limited experience in e-mobility via small-scale pilot programmes for e-buses, which have relied on significant government subsidies. GCF concessional loan resources and technical assistance grants are required given the fiscal constraints of Program countries and limited alternative sources of financing for urban and transport sector projects and programmes.

29. The major financial barriers for the potential beneficiaries that prevent alternative financing options are (i) the low financial profitability of EV investments reflected in a low financial internal rate of return and very long payback times; (ii) the high-risk profile of EV investments due to performance risks, asset risks (e.g. resale value of assets) and replacement investments (e.g. batteries); and (iii) high capital and investors' capital demand resulting in high debt and risk exposure levels of the investing entity. Commercial funding is thus not willing to enter this market. Alternative funding vehicles with a higher risk appetite are potentially interested but are critical of the lack of profitability and/or the high-risk profile.

30. GCF concessional finance is viewed as critical to close the gap between fossil and EV technologies and to deliver a Program which realizes investments combined with technical assistance. Guarantees do not resolve the EV barriers of lack of profitability and performance risks. All Program countries have expressed a commitment to de-carbonize transport sectors and expand e-mobility in cities. The Program provides the financial and technical assistance support to help operationalize this vision.

3.5 Country ownership

Scale: Medium to high

31. IDB has held meetings with the national designated authorities (NDAs) of the Program countries and key actors in e-mobility to ensure that the Program responds to each country's needs. No-objection letters (NOLs) have been obtained from all Program countries as evidence of the NDAs' commitment. The IDB has also provided as part of its assessment the carbon grid factor, population and vehicle data, energy prices and major EV policies of each country served by the Program's outputs and outcomes. The Program is designed to support the climate policies of the countries and specifically the fulfilment of NDCs for emissions reductions arising out of the transport sector. The Program also responds to country ambitions regarding the building of resilience and adaptive capacity of urban environments and integrating climate risk

adaptation into infrastructure and energy systems planning. The funding proposal and its annexes include a detailed country-level analysis, which informs the design of the Program's four components.

32. IDB, as the AE, expects that the Program will be implemented in close coordination with other existing Programs and initiatives, thereby ensuring complementarity and coherence. The Program is focused on investment projects and market transformation, whilst existing initiatives are more for creating readiness for electric mobility in general. For example, the Global Environment Facility Global E-Mobility Program implemented by the United Nations Environment Programme in partnership with the International Energy Agency is active in various targeted countries. Its focus is on technical assistance and pilot projects, and it complements the IDB Program well. IDB has performed multiple interviews and meetings with major stakeholders in each Program country. These stakeholders include national and local governmental bodies, energy utilities, transport operators and civil society members.

3.6 Efficiency and effectiveness

Scale: Medium to high

33. The expected GCF fund-level impacts for a total investment of USD 450 million are (i) 7,547,602 tCO₂eq of direct GHG emission reductions with a GCF cost of intervention of USD 26/tCO₂eq; (ii) 622 tPM_{2.5} and 5,190 tNO_x reduced, with economic benefits due to reduced emissions valued at USD 418 million, of which USD 108 million is due to reduced local air pollution; and (iii) nearly 1.5 million direct and 8.9 million indirect beneficiaries of adaptation measures, representing 9 per cent of the entire population of Program countries.

34. The Program scores well against the Strategic Plan for the GCF 2020–2023 targets for mitigation and adaptation. Mitigation impacts are 460 MtCO₂eq / USD 1 billion whereas adaptation impacts are 166 million beneficiaries /USD 1 billion. The Program helps GCF to meet the 2020–2023 Strategic Plan targets of a mitigation and adaptation allocation balance of 50:50, as it is a cross-cutting Program: 44 per cent adaptation and 56 per cent mitigation. It includes Dominica Republic and Barbados as small island developing countries recipients of funding.

35. The Program's leverage ratio is 1:1.25. This is based on the initial subproject pipeline for implementation within the first two to three years of indicative projects. It is expected that as the subproject pipeline is matured and extends to the full six years of implementation, the Programme's mobilization and leverage potential will be higher. Also, the Program will use technical assistance to develop tools and methodologies that will be used by local financial institutions to better assess and underwrite e-mobility projects in future.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

36. Programme background. The E-Mobility Programme aims to strengthen and improve the public transport sector, non-motorized transport, and electric mobility in the urban areas in participating countries and support measures for e-buses, taxis, light commercial vehicles, trucks including supporting hydrogen and vehicle to grid pilot projects. Among the key environmental co-benefits of the programme includes the reduction of air pollutant and noise emissions as well as water pollution caused by fossil-fueled vessels. Among the key social co-benefits include the enhancement of people's health as a result of improved air quality and reduced nuisance noise. The increased use of safe public transport, non-motorized transport and micro-mobility options are also expected to result to lower accident rates, lesser road congestion and improved quality of life for urban dwellers. The increased resilience of the

infrastructure that will be supported by the programme also allows for increased grid resilience and lesser disruptions of services as regards mobility and electricity supply.

37. Environmental and social risk category and safeguards instrument: The Accredited Entity (AE) classified the programme as Category B. The Secretariat confirms the categorization and that this is within the AE's environmental and social risk accreditation level. The AE has prepared an Environmental and Social Analysis and Environmental and Social Management Framework (ESAESMF) that outlines the structure for the assessment of risks and impacts of the programme as well as the mitigation measures to address these risks and impacts.

38. Compliance with GCF's Environmental and Social Safeguards (ESS) Standards: The paragraphs below provide a brief description of the Programme's compliance to ESS standards.

39. **ESS 1: Assessment and Management of Environmental and Social Risks and Impacts.** The ESAESMF provides a description of the environmental and social risks and impacts of the subprojects under the programme and how these will be assessed, managed, mitigated, and monitored at the programme and operational activity levels. The selected EEs (such as LFIs and NDBs) will be required to adopt an environmental and social management system (ESMS) as applicable, and screen subprojects in accordance with the Programme's exclusion list and applicable national environmental and social laws and regulations.

40. **ESS 2: Labor and Working Conditions.** Potential risks and impacts of the programme as regards labor and working conditions will be in relation to construction and operation activities of the subprojects. This would relate to occupational health and safety (OHS) risks as workers could be exposed to physical and chemical hazards particularly in relation to batteries and e-waste handling. To mitigate this, the AE through the EEs will develop guidance in the form of sectoral labor practices and working conditions checklist to be implemented on the ground. Proper handling protocols will also be developed. Compliance to labor practices and requirements as per the national and the AE's requirements pursuant to the GCF's policies will also be implemented and monitored.

41. **ESS 3: Resource Efficiency and Pollution Prevention.** The activities under the programme will potentially result to generation of wastewater and hazardous materials. Additionally, impacts that can be attributed to construction activities include the generation of noise, dust particles, solid and liquid waste, including risk related to potential for fuel spillage and increased traffic due to the use of heavy equipment and machineries. Impacts on soil quality during soil excavations and concreting may also be expected. Potential conflict with other users as regards water use may also occur particularly in the hydrogen production facility. Accidental spills may also take place during storage and handling processes. To manage these, the programme intends to ensure that operators will be licensed and that appropriate environmental permits are acquired depending on the specific sector and national requirements. Management plans will likewise be developed which shall include prior water balance studies and adequate water management plan. Production, storage and handling procedures will be aligned with globally accepted environment, health and safety (EHS) guidelines and good international industry practice (GIIP).

42. **ESS 4: Community Health, Safety and Security.** The communities where the infrastructure will be located may experience adverse impacts as regards construction and operation of the facilities. These include potential exposure to nuisance noise and dust particularly during construction activities, exposure to physical and chemical hazards, increased potential for traffic accidents due to movements of heavy machineries and vehicles, as well as decreased amenity as a result of diminished access to housing and/ or public utility infrastructure. Possible conflicts between construction workers, security personnel and the local population may also occur. Nevertheless, these risks and impacts will be assessed in detail during the subproject identification and specific management plans will be developed. This will include measures as regards management of possible impacts generated by the presence of

construction workers in relation to health, accidents, social conflicts and tensions that may occur through preparation of a workers' code of conduct as well as development of emergency preparedness and response plan.

43. ESS 5: Land Acquisition and Involuntary Resettlement. The Programme will exclude activities that will involve involuntary resettlement (particularly physical displacement) and will use existing right of ways for electrical lines. However, while there will be no physical resettlement allowed under the programme, should there be instances of temporary economic impacts, compensation plans and/or livelihood restoration plans will be developed in accordance with the AE's Environmental and Social Performance Standards (ESPS) 5 on Land Acquisition and Involuntary Resettlement. The programme will ensure that relevant permits and land rights in the installation of the facilities (e.g. electric vehicle charging stations and hydrogen plant) will be acquired by the subprojects.

44. ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. The programme could potentially induce deforestation and habitat degradation because of enhanced entry to previously inaccessible areas which could result to land conversion. Nevertheless, the programme will ensure the exclusion of locating subprojects in critical habitats and that involves land clearing activities. The programme will also implement a supervision and monitoring programme to check on land use and land cover change in the locations where the infrastructure such as the pilot hydrogen plant as well as other associated facilities are sited. Waste management plans will also be developed to ensure that no habitat degradation will result due to inappropriate solid waste management.

45. GCF Indigenous Peoples Policy and ESS 7: Indigenous Peoples. As indigenous peoples are present many of the countries where the project is being implemented (e.g. Panama, Colombia, Paraguay and Uruguay), the programme recognizes the potential for impact and ensures that proposed sub-projects with potential adverse impacts on indigenous peoples will not be eligible. The AE and implementing partners will develop and rollout consultation and stakeholder engagement strategies with indigenous peoples in case it will be necessary to ensure other impacts are properly managed. A series of direct dialogue roundtables were organized involving over a hundred participants. The following elements were developed in the FP because of the dialogue: i) small grants program for indigenous and traditional communities, ii) continuous stakeholder engagement, iii) strengthening of the inclusion mechanism for gender and diversity, iv) amplification of the dialogue process on the topic of indigenous ancestral practices. In line with the GCF Indigenous Peoples Policy, the GCF independent Redress Mechanism and the Secretariat's indigenous peoples focal point will be available for assistance at any stage, including before a claim has been made.

46. ESS 8: Cultural Heritage. The Programme's activities particularly during construction could adversely affect physical cultural resources. The programme will however ensure that these will be protected in the implementation of the subproject activities and their preservation will be supported. The EE's environmental and social management systems (ESMS) will likewise ensure provisions for managing chance finds through implementation of a chance find procedure will be operationalized should cultural heritage be discovered.

47. Sexual Exploitation, Sexual Abuse, and Sexual Harassment (SEAH) safeguarding. The programme has identified potential SEAH risks and impacts among project workers and community members, and during the deployment of EV vehicles, the construction and operation of urban charging infrastructure, and piloting of hydrogen vessels and hydrogen production. The programme will ensure that mitigation measures on SEAH will be applied across all targeting countries and sub-projects, and that SEAH Prevention and Management Plan must be developed as part of the sub-project Environmental and Social Management Plan (ESMP) by borrower, financial intermediaries, EEs or implementing partners, where SEAH risks are identified during the sub-project due diligence process. The programme will ensure that all sub-projects put into place a grievance mechanism with specific procedures to receive, register and

manage SEAH allegations. The programme will also take additional measures to tackle sexual harassment in public transportation that are detailed in the Gender Action Plan.

48. Implementation arrangements. Each subproject that will be supported under the programme will have an assigned primary safeguards specialist from the AE's Environmental and Social Solutions Unit. Additional specialists (as required) may also be allocated including the engagement of support from external consultants. Each of the participating EEs are expected to manage their supported portfolio by applying a specific ESMS to be approved by the AE during subproject preparation in line with the AE's ESPS 1 requirements. Capacity building as regards improving environmental and social capabilities of the EE's will also be looked into by the AE. The EEs will be responsible in their ESMS's implementation during subproject operation including monitoring and compliance with the environmental and social management plans of third parties and sub-contractors. The AE will have the overall responsibility in the management, supervision, monitoring and reporting of the programme's E&S safeguards implementation.

49. Stakeholder engagement and information disclosure. The AE has conducted stakeholder consultations during the preparation of the programme which included direct dialogue roundtables, meetings and presentations with and among representatives from government ministries, academe, private sector, and donor organizations, among others. A stakeholder engagement strategy at the programme and subproject levels is likewise developed to guide future consultations and participation of stakeholders. The nature of engagement including the frequency and level of effort will be commensurate with the potential risks and impacts of the subproject as well as its stage of development. Subproject developers will also be required to disclose subproject environmental and social reports and information to allow stakeholders (particularly project-affected people) to be able to have a clear understanding of the subproject's risks and impacts, and the potential opportunities and development benefits that the subproject may offer.

50. Grievance redress mechanism (GRM). The AE has an established institutional grievance redress mechanism which includes access to its Independent Consultation and Investigation Mechanism (MICI) as a last resort that is accessible to group of individuals or communities who may be adversely affected by the AE's financed operations. The AE's safeguards policies also require EEs under the programme to implement grievance redress mechanisms including requiring developers to have subproject level GRMs that will be accessible to stakeholders and subproject affected peoples at the local level.

4.2 Gender policy

51. The AE has provided a Program-level gender assessment and gender action plan and has complied with the requirement of the updated gender policy.

52. The gender assessment was conducted based on desk reviews with the expectation that primary data and stakeholder engagement-led gender analysis will be conducted for each country and project level at a later stage. The primary data and analysis are expected to identify actionable interventions to enable the Program to achieve gender equality and women's empowerment within country contexts.

53. The gender assessment provided some general gender-related realities, including (i) an enabling environment and legal framework for gender-related work in countries; (ii) employment status in the sectors; (iii) access to public transport; and (iv) challenges in these areas. It acknowledges challenges in access to data for the most relevant aspects of the Programme, such as women's employment, women's mobility, violence against women, and the transportation sector, to name a few. Broadly speaking, however, it acknowledges that the countries have gender policies and frameworks that support equal opportunities for women

and men. Program countries are party to the Convention on the Elimination of All Forms of Discrimination Against Women and other regional gender-related commitments. The attainment of gender equality is at different levels in the nine countries, where disparities exist in education, employment opportunities, access to financial services, use and design of transport facilities, differentiated needs in mobility of women and men and other vulnerable groups, unequal sociocultural positions and roles of women and men in the different societies, as well as the magnitude and presence of violence against women and, relatedly, access to and safe use of public transport. Data on women and women entrepreneurs in electromobility and employment within the sector is scarce for the region and countries in focus. Finding educated women in the industry is difficult, and based on the country assessment, it is clear that women do not seem to be present in the Science, Technology, Engineering and Mathematics (STEM) fields. Even where they are present, there seems to be a lack of career information as well as a glass ceiling preventing women from moving beyond certain levels in the decision-making ladder. These issues have been identified as some of the factors leading to a lack of women employed in the transport and energy sectors. The AE has included the eligibility criteria for selecting projects' gender aspects, which include (i) an analysis identifying relevant gender gaps; (ii) gender actions to narrow the gap; (iii) at least one indicator to measure progress in gender action; and (iv) allocated resources for the implementation of the actions. The assessment identified violence against women to be a concern across all countries and in the transport sector and will use a behavioral approach that is ultimately expected to address undesirable behavior. In this case, it will endeavour to prevent and mitigate harassment and violence against women in public transportation. The AE is also committed to ensuring three gender experts will be in place to support implementers and ensure the implementation of the gender action plans in each country.

54. To address the challenges identified, the AE has provided a gender action plan that includes activities, baselines, indicators, targets, a timeline, gender expertise and a budget to implement the gender action plan. Activities are geared towards (i) the training and skills development needs of women with the expectation that the skills will allow them to be employed in the sector; (ii) gender-related actions and requirements to be included in existing systems and processes to ensure inclusivity; (iii) networking and learning opportunities for women; and (iv) interventions to address violence against women in public transportation and training programmes to build the understanding of gender-related issues in the sector.

55. The AE will ensure the undertaking of further gender assessments in the countries of focus along with the development of context and project specific gender action plans. The AE expects changes to the gender action plans in the areas of only baseline and goals. The AE is however recommended to be open to entertain and include additional gender related activities that could be identified in the course of the gender analysis and action plan development process in countries. These should of course be of relevance to the sector and the country. In the event such changes take place, a revised gender action plan should be submitted to the fund. Further, the AE is recommended to ensure to also consult with and bring to the stakeholder engagement discussions, women, women's groups, women's ministries, vulnerable groups and women entrepreneurs and such organizations.

4.3 Risks

4.3.1 Overall programme assessment (Medium risk)

56. The Programme will be supporting EV deployment with sustainable urban mobility solutions, including e-buses, taxis, infrastructure and the grid in Latin America. GCF is investing USD 145 million in senior loans and USD 55 million in grants. The total co-financing amount is estimated at USD 250 million from AE's own resources and other resources administered by AE, and national governments in the form of senior loans, grants and in-kind contributions. It is

expected that the AE will provide co-financing of USD 195million in senior loans and USD 5 million in grants. The AE will be pari passu with GCF.

57. The GCF concessional financing will address barriers to the uptake of commercial EVs, including performance risks (e.g. novelty of the technology), asset risks (e.g. resale value of assets) and operations and maintenance risks (e.g. replacement of batteries). All technologies in this programme have been proven at least in pilot cases in other countries. The grant will (i) provide technical assistance to enhance the capacities of different stakeholders on the adoption of EV technologies and structuring EV investments; and (ii) contribute to the regulatory frameworks and policies. Therefore, the sustainability of the Programme will rely on the long-term policy environment and regulatory measures conducive to scaling up EV deployment so that it can be fully commercially viable and financially more attractive than fossil fuel units.

4.3.2. **Accredited entity/executing entity capability to execute the current programme (Medium to High risk)**

58. The AE, IDB, has an extensive track record in implementing projects and programmes to reduce poverty and increase economic growth in Latin America and Caribbean. The AE has been supporting USD 3.3 billion in green investments in 19 countries of the region for the past five years. It has seven approved projects with GCF and is rated Aaa by Moody's.

59. The EEs for this programme may include ministries, public entities, national development banks and private sector entities. For the execution of sovereign investment loans and grants, the EEs will be selected jointly with the AE and the national governments, and the AE will assess the capacity of each EE before entering into any subsidiary agreement. For the technical cooperation, the IDB may be the EE, or it may enter into a subsidiary agreement with other EEs.

60. The GCF proceeds may be directly executed by the EE, or the eligible borrowers (i.e. first-level EEs) may transfer to the second-level EEs to execute the subproject. It may also be channelled through NDBs to local financial institutions for on-lending. Depending on the type of the subproject, different contractual structures will be analysed and modified on a case-by-case basis. Given the lack of visibility in EEs and structures at the subproject level and the nascent nature of the EV market in the region, the AE/EE capability risk is assessed as Medium to High.

4.3.3. **Programme-specific execution risks (Medium risk)**

61. **Credit risk:** The GCF loans will be either directly provided to the sovereign governments or to an EE with a sovereign guarantee. In case the statute of the EE does not provide a sovereign guarantee, the AE will ask for a separate sovereign guarantee. Therefore, the GCF loan of USD 145 million may be exposed to sovereign credit risks. The level of credit risks differs in each participating country: while Chile (rating A1), Colombia, Panama and Uruguay (rating Baa2) have investment grades, Barbados, Costa Rica, the Dominican Republic, Jamaica and Paraguay have non-investment grades. Comfort can be derived from the covenant that no more than 25 per cent of the funds will be invested in one country.

62. **Impact risk:** The Programme envisages reducing USD 7.5 MtCO₂eq GHG emissions. The current mitigation impact is based on the pipeline discussed with participating countries. According to the information provided by the AE, the pipeline subprojects beyond year 3 are yet to be determined, and this accounts for approx. 59 per cent of the total amount of sovereign investment loans and grants. The AE also stated that some of the pilot projects (e.g. V2G) will not be commercially oriented but will instead be used for testing technology. Therefore, there is a risk the current impact potential might not be materialized as envisaged. It is recommended that the impact calculation be readjusted after the midpoint of the Programme implementation period when there is better visibility for the subsequent pipeline.

63. **Co-financing risks:** The co-financing amount from each co-financier is not confirmed, including AE's own resources as it is subject to the approval of allocation of funds to each individual Sub-Project on case-by-case basis. Depending on the contractual arrangement, the potential of the EE to raise additional financing is also stated in the funding proposal. If the amount of co-financing is lower than currently estimated, the impact envisaged will also be decreased. Thus, the AE's ability to provide and/or mobilize the current estimated amount of co-financing will be critical to implement funded activities. Therefore, to mitigate the risk of low co-financing, the term sheet includes a clause requiring the AE to report to the GCF on the co-financing ratio at the mid-term of the Programme. Further, achieving a total of 1:0.75 ratio of GCF Proceeds and Co-financing by the 4th anniversary of the FAA is as a condition precedent to disbursements requested from the GCF.

64. **Foreign exchange risks:** GCF and IDB lending will be in USD, and loans to the final beneficiaries may be in local currency. The volatility of local currency is high in some participating countries, and shocks relating to the exchange rate would affect the borrowers' ability to repay. The sovereign government will assume the currency risks, and IDB will assess financial risks in project-specific financial models, which include local currency-to-USD long-term swap rates.

65. **Carbon credit:** The current term sheet does not include any covenant to cancel or retire carbon credits by subprojects to be financed by the GCF. Any sale of carbon credits would reduce the impact of the Programme and should be properly monitored to account for effective emission reduction.

4.3.4. Programme viability and concessionality

66. GCF-financed sovereign investment loans will be provided with low and high concessional terms, and the high concessional terms will be used for financing adaptation activities. No investment grants will be used for commercial EVs, but they will be used for pilot EVs and adaptation measures. For the global credit programme, which has a pass-through structure, a methodology to pass down the GCF concessionality will be submitted by the AE for each subproject. The methodology is to ensure that final beneficiaries are sufficiently benefiting from the GCF concessionality.

4.3.5. Compliance risk (high risk)

67. The beneficiary countries are not subject to United Nations Security Council restrictive measures. The AE – through its procurement policies – also ensures that any services associated with sanctioned entities are excluded from any Programme activities. Office of Risk Management and Compliance (ORMC)/Compliance notes that three beneficiary countries (Barbados, Jamaica and Panama) are listed by the Financial Action Task Force as jurisdictions with strategic deficiencies in their respective anti-money-laundering and countering the financing of terrorism regimes. Given these countries high level of exposure to these risks, ORMC/Compliance recommends performing enhanced due diligence and monitoring on all project activities pertinent to these countries. The AE has identified potential EEs, and no red flags were associated with their abilities to fulfil their responsibilities. The AE also intends to perform its institutional capacity assessments for all subprojects, thereby ensuring adequate fiduciary risk management throughout the programme implementation. The AE will implement its procedures in accordance with its whistle-blower policy, thereby allowing counterparties to report any irregularities which may arise. ORMC/Compliance has conducted a review of the Programme in accordance with relevant Board-approved policies and, based on available information for this funding proposal, have determined a risk rating of 'High' and have no objection to this request proceeding to the next steps for processing.

4.3.6. GCF portfolio concentration risk (Low risk)

68. In the case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

4.3.7. Recommendation

69. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		Risk assessment
Overall programme	Medium	The project success will depend on the AE's ability to provide and mobilize the current estimated co-financing to achieve the target impact. Also, the support from the governments to create long term policy environment and regulatory measures conducive for the scale-up of the EVs.
Accredited entity/executing entity capability	Medium to high	
Project-specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	High	

4.4 Fiduciary

70. The Inter-American Development Bank (IDB) is the AE for the Programme. Several indicative EEs are already identified, however, most of the EEs will be decided at a later stage. IDB, as an AE, may also carry out the functions of an EE for technical cooperation activities.

71. For the execution of sovereign investment loans and grants, each EE will be responsible for the full execution of the sovereign investment loans and grants (see the subsidiary agreement). Eligible EEs will be identified jointly with national governments based on the relevance of their public mandate to implement the Program activities, experience in finance structuring and fiduciary management, and track record, including with the IDB. For all technical cooperation activities, IDB may be the EE and/or it may enter into a subsidiary agreement with other EEs. As EEs are not fully known at this stage, condition precedents have been added that require the AE to perform capacity assessments on EEs, and that require co-financing information to be submitted before each disbursement, along with pipeline information.

72. For each of the Program's components, IDB, as AE, will evaluate and, where appropriate, approve the subprojects. For the approval of each proposed subproject, IDB will apply its applicable internal policies and procedures and will ensure that the approved subprojects meet all the eligibility criteria mentioned in the funding proposal and the funded activity agreement (FAA) at the time of approval. During the implementation period, following the entry into effect of the FAA for this Program, GCF resources will be allocated by IDB into country-specific subprojects in accordance with the provisions and conditions established in the FAA. The subprojects will be fully or partially financed with GCF resources through the following instruments: (i) sovereign investment loans; (ii) sovereign investment grants; and (iii) technical cooperation.

73. Monitoring for the Program will be in line with IDB's policies and the terms of the accreditation master agreement (AMA)/FAA. Specifically, the implementation of each project will be managed and monitored at project and Program level by IDB's in-house staff, project management unit and contracted consultants.

74. The disbursements, reporting (including external audit reports), monitoring and evaluation of the Programme will be done in accordance with IDB policies and procedures, including the IDB's Financial Management Guidelines, and reflected in the term sheet and the

FAA. Loan resources will be disbursed to the corresponding EE as an advance of funds or as a reimbursement of expenses at any time within the established loan disbursement period, in accordance with IDB policies. EEs will be required to submit audited financial statements within 120 days after the closing of each fiscal year throughout the execution period, as per standard IDB practice. EEs are also required to prepare and submit periodic reports (at least annually), including financial information and evidence of compliance with eligibility criteria for subloans, as well as progress made with regard to the development objectives based on a set of predefined results indicators.

4.5 Results monitoring and reporting

75. The funding proposal is a cross-cutting programme aimed at reducing emissions to the tune of 7,547,602 tCO₂eq from low-emission transport and benefiting 10.3 million people with measures for adaptation to climate hazards across nine countries of Latin America and Caribbean.

76. The funding proposal has been found to use the revised template in line with the IRMF requirements. The sections on Theory of Change and the logical framework have been aligned with the suggested structure and format. The AE had been responsive in addressing the feedback from GCF secretariat and the revisions are appreciated. The revised TOC and logical framework would allow to capture the desired results, facilitate results monitoring and periodic reporting.

77. However, the estimation of adaptation benefits and beneficiaries in relation to the funding proposal remains a concern. There is a need to develop and present a methodology used for identifying the adaptation benefits and estimating the adaptation beneficiaries. As it is a cross-cutting programme, the adaptation benefits and beneficiaries need to be analysed in a systematic manner and duplication must be avoided. In that respect, the following covenant is suggested:

78. “The AE shall provide to the GCF a revised methodology for the estimation of beneficiaries by clearly identifying the adaptation benefit for each of the sub-projects under the program, and how beneficiaries are identified against those particular adaptation benefits. The revised methodology shall be provided to and agreed with the Secretariat at first APR”.

79. With respect to the monitoring and evaluation plan, the secretariat’s feedback on budgetary revisions have been found to be addressed. Monitoring and reporting at project level and their consolidation at program level have also been improved.

80. Implementation timetable: The implementation timetable has been provided in the required structure and format. The revised plan contains the milestones and deliverables that are envisaged at different stages of programme implementation which in turn is expected to facilitate progress monitoring and reporting.

4.6 Legal assessment

81. The Accreditation Master Agreement was signed with the Accredited Entity on 29 August 2017 (the “AMA”), and it became effective on 30 March 2018.

82. The Accredited Entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the programme. It is recommended that, prior to submission of the Funding Proposal to the Board (a) the Accredited Entity has obtained all its internal approvals, and (b) the Fund has received a certificate or legal opinion from the Accredited Entity in form and substance satisfactory to the

Fund confirming that all final internal approvals by the Accredited Entity have been obtained and that it has the authority and capacity to implement the programme.

83. The proposed programme will be implemented in Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, and Uruguay. The GCF has signed a bilateral agreement on privileges and immunities with Barbados and Uruguay. However, GCF has not signed a bilateral agreement on privileges and immunities with Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama or Paraguay and, therefore, in these countries the GCF is not provided with privileges and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in these countries, which risks need to be further assessed. Specifically:

- (a) Chile: A draft bilateral agreement is under negotiation with the last contact in October 2018;
- (b) Colombia: A draft bilateral agreement was dispatched to the government of Colombia in April 2019;
- (c) Costa Rica: A draft bilateral agreement is under negotiation and the government of Costa Rica confirmed it was reviewing the draft agreement in April 2022;
- (d) Dominican Republic: A draft bilateral agreement was dispatched to the government of the Dominican Republic in December 2020;
- (e) Jamaica: A draft bilateral agreement is under negotiation with the last contact in October 2020;
- (f) Panama: A draft bilateral agreement was dispatched to the government of Panama in July 2020 and the government of Panama confirmed their review of the document in December 2020; and
- (g) Paraguay: A draft bilateral agreement is under negotiation with the last contact in October 2020.

84. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the countries or has been provided with appropriate privileges and immunities.

85. The Funding Proposal is a programme to be implemented in nine countries and consists of several sub-projects to be developed after the GCF Board approval of the Funding Proposal. Therefore, at the stage the implementation arrangement and contractual structure of sub-projects are not known. The Funding Proposal presented a few possible structures and scenarios through which the sub-projects may be implemented. Under one of the scenarios, the relevant sub-project may be implemented by an executing entity ("**Executing Entity**") that is different from the borrower and/or the grantee of the GCF Proceeds, and the Accredited Entity will not have contractual privity with the Executing Entity. The Accredited Entity will enter into sovereign investment loan and/or investment grant agreements with the borrower and/or grantee ("**Subsidiary Agreements**") to channel the GCF proceeds. The borrower and/or the grantee will then enter into a separate project execution agreement with the Executing Entity ("**Execution Agreement**"). The Accredited Entity will not be a party to the Execution Agreement. The Accredited Entity explained that the borrower and/or grantee will be responsible under the Subsidiary Agreements to cause the sub-project to be implemented by the Executing Entity in accordance with the Subsidiary Agreement and will require the Executing Entity to report to the Accredited Entity. The absence of contractual privity between

the Accredited Entity and the Executing Entity poses certain risks such as, the Accredited Entity not having the right and ability to monitor and supervise the performance of the executing entity and the project implementation process, and not able to have a direct recourse against the executing entity. Moreover, the GCF cannot exercise its step in rights under the AMA in respect of the Execution Agreement.

86. To mitigate this risk, the Secretariat has agreed the following options in the term sheet:
- (a) If permitted under the laws, rules and regulations applicable to the borrowers and/or the grantees, and the Executing Entity, the Executing Entity will be made a party to the Subsidiary Agreement, thus creating contractual privity with the Accredited Entity, and the Accredited Entity will monitor and supervise the Executing Entity ("**Option 1**");
 - (b) If Option 1 is not feasible, the Accredited Entity will be required to approve the terms and conditions of the Execution Agreement and no changes will be made to the Execution Agreement without the Accredited Entity's written consent. The Subsidiary Agreements and the Execution Agreement should be linked in a way that in effect enables the Accredited Entity to monitor and supervise the Executing Entity in order to perform its functions under the AMA and FAA, and the Executing Entity to report to the Accredited Entity ("**Option 2**"); and
 - (c) If Options 1 and 2 are not feasible, the Accredited Entity shall seek GCF's instructions on the implementation of each sub-project on a case-by-case basis ("**Option 3**").
87. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:
- (a) Submission by the Accredited Entity to the Fund of a certificate or legal opinion, in form and substance satisfactory to the GCF Secretariat, within 120 days after Board approval, confirming that the Accredited Entity has obtained all final internal approvals needed by it and has the capacity and authority to implement the proposed programme;
 - (b) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval, or the date the Accredited Entity has provided a certificate or legal opinion confirming that it has obtained all final internal approvals, whichever is later; and
 - (c) Completion of the legal due diligence to the satisfaction of the GCF Secretariat.

V. List of proposed conditions (including legal)

88. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:
- (a) Submission by the AE to GCF of a certificate or legal opinion, in form and substance satisfactory to the Secretariat, within 120 days after Board approval, confirming that the AE has obtained all final internal approvals needed by it and has the capacity and authority to implement the proposed programme;
 - (b) Signature of the FAA in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval, or the date the AE has provided a certificate or legal opinion confirming that it has obtained all final internal approvals, whichever is later; and
 - (c) Completion of the legal due diligence to the satisfaction of the Secretariat.

Independent Technical Advisory Panel's assessment of FP189

Proposal name:	E-Mobility Program for Sustainable Cities in Latin America and the Caribbean
Accredited entity:	Inter-American Development Bank (IDB)
Country/(ies):	Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay
Project/Program size:	Large

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential *Scale: Medium to high*

1. **Overview:** The E-Mobility Program for Sustainable Cities in Latin America and the Caribbean (the "Program") seeks to promote a structural shift towards low-carbon, climate-resilient public transport systems by reducing barriers to mass electric vehicle (EV) deployment. It will accomplish this through the financing of EV deployment efforts in the Latin America and Caribbean (LAC) region along with financing for the increased climate resiliency of urban transport infrastructure and corresponding grids (i.e., integrated electrified urban transport systems). The primary focus of the Program will be on commercial e-mobility including buses, taxis, institutional fleets, trucks and vessels. The Program aims to act as a market accelerator for EV financing and will be deployed in nine initial countries (Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay and Uruguay), with replication potential beyond this first set of countries.
2. The total financial size of the Program is USD 449 million, with GCF expected to provide USD 199 million, approximately 44 per cent of total funds. The Inter-American Development Bank (IDB), as an accredited entity (AE), is seeking USD 145 million in reimbursable sovereign-guaranteed loans from GCF and USD 54 million in non-reimbursable grants. IDB will co-finance with USD 195 million in senior loans and USD 5 million in grants. IDB will be *pari passu* with GCF. Additional equity and in-kind contributions are expected from the participating governments. The Program duration is 6 years for deployment with a lifetime of 30 years.
3. The sovereign guaranteed loan portion of the Program will be on-lent to executing entities at GCF public sector concessional rates and terms to finance e-mobility and related adaptation interventions. Highly concessional loans will be used for adaptation-related investments for which the participating country has no revenue. Less concessional loans are for mitigation-related investments. Both loans for adaptation and loans for mitigation are to support the public sector.
4. The USD 55 million in non-reimbursable grants requested of GCF will go to investment subsidies for higher-risk vehicle-to-grid (V2G) and e-vessel investments, and for technical assistance, including project origination and structuring. This component addresses the barriers of limited commercial attractiveness of e-mobility and performance risks of EVs. It also includes specific adaptation investments such as V2G and infrastructure for peak savings, both of which are aimed at increasing grid resilience. A goal of this component is to make electric grids more resilient to climate events with new energy storage options.

5. The Program is structured in 4 components: (1) Increase climate resilience of urban transport infrastructure; (2) Increase climate resilience of grid with H2 and V2G pilot projects; (3) Electrified integrated urban mobility; and (4) Technical assistance and project structuring to improved public and private sector capacity and regulatory environment for e-mobility.

6. Impacts: In our view, the Program has a well-articulated climate objective. We note that transport contributes almost one quarter of the current global energy-related greenhouse gas (GHG) emissions and is growing faster than any other energy end-use sector. Latin America accounts for 10 per cent of global GHG emissions, with a significant portion coming from the transport sector. Transport-related GHG emissions in Program countries are significant (2018): 12 per cent in Barbados, 26 per cent in Chile, 16 per cent in Colombia, 37 per cent in Costa Rica, 18 per cent in the Dominican Republic, 19 per cent in Jamaica, 27 per cent in Panama, 19 per cent in Paraguay and 10 per cent in Uruguay. Transport emissions are expected to continue growing under a business-as-usual (BAU) scenario, fueled by increasing private car ownership (corresponding to economic growth) and a shift away from public transportation use.

7. Absent public policy and finance interventions, transportation GHG emissions in LAC could reach 1.4 gigatonnes of carbon dioxide equivalent (GtCO₂eq) by 2050 under a BAU scenario. However, the 2050 decarbonization pathways included with the funding proposal demonstrate that transport electrification approaches could have significant positive impacts, including limiting GHG emissions to 0.2 GtCO₂eq.¹ Limiting the global temperature increase to below 2 °C will require changing the transport emissions trajectory. Latin American countries have above-average transport GHG emissions, and for deep carbonization to happen, there needs to be a rapid development of the e-mobility ecosystem, including various transport modes and the production of low-carbon electricity.

8. Moreover, LAC is among the most urbanized regions in the world with over 80 per cent of its population living in cities. Cities in LAC are projected to continue growing in the coming decades, and electrified urban transport infrastructure is expected to be an important element of their economic growth. For that reason, as climate change impacts continue to evolve and intensify, transport urban infrastructure in these cities needs to be designed and operated so that climate-related risks are managed. Consequently, climate-resilient infrastructure is identified as a priority in nearly every single nationally determined contribution within the LAC region.

9. The Program expects to contribute 7,552,386 million tonnes of carbon dioxide equivalent (MtCO₂eq) of direct GHG emission reductions with a GCF cost of intervention of USD 26/tonnes of carbon dioxide equivalent. The GHG reductions result from the operation of EVs procured with investments from the Program. The GHG impact is determined based on a well-to-wheel approach, which includes carbon emissions from electricity production (incl. transmission and distribution losses). Areas of emission reductions are (i) impact of replacing fossil fuel vehicles with electric vehicles; (ii) impact of increased public transportation ridership due to system improvements; and (iii) cycle lanes and increased usage of non-motorized transport.

10. Latin America is well-suited for the Program's interventions. The region has strong enabling conditions in terms of clean transport and e-mobility. The region also has one of the smallest GHG-emitting electric generation portfolios in the world (high hydro production coupled with growing wind and solar deployment). Therefore, the adoption of an e-mobility strategy would allow the sector to move towards a decarbonization pathway rapidly. The carbon intensity of electricity generated by Program countries is mostly favourable. With favourable grid factors, EVs can reduce GHG emissions on a well-to-wheel basis by 70–80 per cent compared to fossil fuel alternatives.

¹ Vergara L., 2015.

11. As to adaptation impact, the Program's adaptation measures reach 1.5 million direct and 9 million indirect beneficiaries, representing 9 per cent of the entire population of Program countries. Program funds are expected to fund mitigation and adaptation measures at a 54:46 per cent ratio.

12. Overall impact potential is assessed as Medium to High. The Program could make a significant contribution to altering the GHG pathways of these countries through low-emission transportation systems in line with the Nationally Determined Contribution targets of each country.

1.2 Paradigm shift potential

Scale: High

13. The Program seeks a paradigm shift by promoting and financing robust EV ecosystems in the target countries. These efforts include enabling financial and business models that shift transport towards e-mobility solutions through the large-scale uptake of commercial e-vehicles. The participating countries in the Program currently only have pilot EV fleets with significant headroom to grow and scale. The Program also seeks to facilitate mass EV deployment by funding and climate-proofing complimentary infrastructure such as charging facilities and grid upgrades. Moreover, an improved ecosystem for EVs requires a suite of technical assistance interventions and capacity-building for policymakers and other stakeholders, as provided under component 4 of the Program.

14. We note again that transport contributes almost one quarter of the current global energy related GHG emissions and is growing faster than any other energy end-use sector. Limiting the global temperature increase to below 2 °C will require changing this transport emissions trajectory.² Although each of the participating Program countries has expressed interest in shifting to e-mobility, only Chile and Colombia have notable e-bus fleets, and in both cases these fleets are of limited ambition. Without significant GHG reductions in their transportation sectors, participating countries will not be able to achieve their decarbonization plans. Fostering e-mobility and kick-starting EV deployment is thus consistent with relevant national climate-resilient development pathways.

15. The Program intends to couple funding for e-mobility and climate-resilient integrated electrified urban transport systems with capacity-building efforts in the target countries. This combination of efforts is intended to accelerate the e-mobility market in the participating countries. We view the kick-starting of e-mobility efforts in the LAC region as paradigm-shifting with the potential to transform transportation at scale and earlier than under a BAU scenario.

16. The Program creates added value through capacity-building aimed at training equipment suppliers and third parties in EV and charger operations/maintenance, safety, and management of EV fleets. Additionally, the Program will provide support to national and local authorities to set up, improve and enforce enabling public policies and legal, regulatory and fiscal frameworks for e-mobility. The Program intends to contribute to the creation of a regulatory environment that is conducive to transforming the transport development trajectories of the target countries. Lastly, the Program aims to integrate improved planning, design and decision-making processes for urban transport projects that consider climate-related risks. The concept is to fund a transition to e-mobility – both at the EV uptake level and the infrastructure level – that is more resilient to expected climate impacts (intense precipitation and flooding, intense and frequent hurricanes, etc.).

17. Finally, it is our view that part of the paradigm shift potential involves the demonstration effect of successful e-mobility interventions. The experience of various countries

² The Paris Declaration on Electro-Mobility and Climate Change & Call to Action calls for a deployment of EVs compatible with a 20 per cent share of all road transport vehicles by 2030.

shows that once fleets of EVs are operational, the technology is taken up quickly if the business environment is conducive. The projects financed under this Program are intended to have such a catalytic effect by demonstrating the commercial viability of EVs.

18. Overall paradigm shift potential is assessed as High.

1.3 Sustainable development potential

Scale: Medium to high

19. The Program's primary goal is to reduce GHG emissions and increase the adaptation capacity and resilience of urban transport systems. In so doing, it seeks to contribute significantly to Sustainable Development Goal (SDG) 3 (Good health and well-being), SDG goal 7 (Affordable and clean energy), SDG goal 9 (Industry, innovation and infrastructure), SDG goal 11 (Sustainable cities and communities) and SDG 13 (Climate action).

20. Environmental co-benefits: Significant environmental co-benefits are achieved through reduced air and water pollution and reduced noise emissions. By replacing and displacing fossil fuel transport with low-carbon EVs, the Program will reduce air pollution from particulates and nitrous oxides emissions. Air pollution is a major problem in most Latin American cities, with levels seriously affecting human health. The World Health Organization estimates that each year, 4.2 million deaths around the world are due to excessive exposure to fine particulate matter (equivalent to 7.6 per cent of all deaths).³ The poor are disproportionately affected by air pollution as they tend to live and work closer to its sources.⁴ Children and the elderly are particularly vulnerable. Replacing fossil fuel combustion vehicles with EVs thus has a significant impact on air quality and the health of people.

21. Social and gender benefits: The Program's major social benefit is improved air quality and reduced noise pollution. Other social benefits are related to increased patronage of public transport, resulting in greater road safety, less congestion, time savings and improved quality of life in cities. The increased resilience of urban infrastructure and electricity grids, which would otherwise be especially affected by extreme weather, also results in social co-benefits for people.

22. Each Program investment will be required to meet IDB's policy on gender equality. This policy includes actions and targets to (i) increase women's access to economic opportunities; (ii) increase gender awareness to recognize women as part of the electromobility sector and address their concerns; and (iii) include gender activities, especially safety initiatives, in the projects financed with the development of gender toolkits and case studies as well as support in the development of gender action plans for the projects financed.

23. Economic co-benefits: The Program's economic co-benefits arise from reduced emissions and are estimated at over USD 400 million, of which a quarter is due to reduced air pollutants and avoided health costs and the rest due to reduced GHG emissions. Additional economic co-benefits not calculated at the Program level are reduced subsidies for fossil fuels, diminished usage of the foreign exchange for the import of fossil fuels, economic benefits of time savings, fewer accidents and reduced vehicle operating costs related to increased usage of public transportation and non-motorized transport, and economic benefits of improved grid and urban infrastructure resilience.

24. The independent Technical Advisory Panel (TAP) assesses this Program as having Medium to High sustainable development potential with significant social, economic and health co-benefits.

³ <https://www.who.int/gho/phe/en/>.

⁴ (Mitchell G., 2003).

1.4 Needs of the recipients

Scale: High

25. Most Program countries have limited experience in e-mobility via small-scale pilot e-bus programmes, which have relied on significant government subsidies. The Program provides long-term financing at concessional rates and technical assistance grants, which are required given the fiscal constraints of Program countries and limited alternative sources of financing for urban and transport sector projects.

26. Contrary to renewable energy generation that is increasingly cost-competitive, EVs are not yet commercially viable. The following barriers hindering a take-up of EVs in the countries involved have been identified: (i) high upfront investment requirements; (ii) the low financial profitability of EV investments (low returns, very long payback times); (iii) high technical risk of EV investments (performance risks, replacement costs (e.g. for batteries)); (iv) lack of local know-how and enabling environment frameworks; and (v) first mover problem (no local track record). Commercial funding is thus reluctant to enter this market, creating a need for alternative funding vehicles with a higher risk appetite, such as the Program. This is even more pronounced for electric vessels, hydrogen transport and V2G mobility options, which are still embryonic and thus not suitable for commercial finance as yet.

27. GCF concessional finance is expected to have a material impact on closing the gap between fossil fuel vehicles and electric vehicle technologies.

28. All Program countries have expressed a commitment to decarbonizing the transport sectors and expanding e-mobility in cities. The Program is intended to provide the financial and technical assistance support to help operationalize this vision.

29. The independent TAP assesses this Program as High in terms of the needs of its recipients.

1.5 Country ownership

Scale: Medium to high

30. IDB has held meetings with the national designated authorities of the Program countries and key actors in e-mobility to ensure that the Program aligns with each country's needs. Additionally, the IDB has conducted meetings with relevant stakeholders, including local governmental bodies, energy utilities, civil society and transport operators.

31. No-objection letters (NOLs) have been obtained from all participating Program countries.

32. From our review, the Program responds to country ambitions on integrating climate risk adaptation into infrastructure and decarbonizing the transport sector.

33. IDB, as the AE, expects that the Program will be implemented in close coordination with existing initiatives, thereby ensuring complementarity and coherence. In fact, the IDB has been working closely with ministries of energy and transport in Latin America and the Caribbean since 2011, improving the institutional and regulatory environment for the accelerated deployment of electric mobility. IDB's support has been fundamental to set up strategies and regulatory road maps for electric mobility in Bolivia, Costa Rica, the Dominican Republic and Jamaica.

34. The participating countries in the Program have committed to providing co-finance and in-kind contributions in support of the Program. This is a good indicator of country ownership. Nevertheless, the firmness of these commitments is unclear, and the funding proposal is not very specific on this point. We understand that additional public funding will most likely come alongside specific e-mobility investments that are yet to be concluded. The IDB has a working project pipeline for the Program, but this may be subject to change. However, even taking this into consideration, we would prefer to see greater clarity and assurance around participating

contributions as a demonstration of true country ownership. The provision of NOLs is indicative of country ownership, but true ownership typically takes the form of intense government engagement, policy reform and direct contributions (skin in the game), among other things.

35. We assess the country ownership of the funding proposal as Medium to High. The Program fails to achieve a High rating primarily due to the lack of clarity around the contributions of participating countries.

1.6 Efficiency and effectiveness

Scale: Medium

36. The Program introduces a concessional financing mechanism that addresses barriers to the uptake of commercial EVs and supports a transformative shift to low-carbon transportation. GCF concessional financing plays a material role insofar as such projects are unlikely to materialize in the short or medium term in the absence of GCF financing.

37. Total investment in the Program is USD 449 million, of which USD 199 million would be provided by the GCF. With this funding, the expected mitigation impacts are 7,552,386 MtCO_{2e} of direct GHG emission reductions with a GCF cost of intervention of 26 USD/tCO_{2e}. This cost is relatively high, but we note that only 54 per cent of the total GCF investment goes to mitigation (46 per cent for adaptation), which has an impact on the high GHG abatement cost. Additionally, the Program is expected to achieve reductions of 622 tPM_{2.5} and 5,190 tNO_x due to reduced air pollution. Economic benefits due to reduced emissions are valued at USD 418 million, of which USD 108 million is due to reduced local air pollution. Lastly, the Program's adaptation measures benefit nearly 1.5 million direct and 9 million indirect beneficiaries, representing 9 per cent of the entire population of Program countries.

38. The Program's leverage ratio is 1:1.25. This is based on the initial project pipeline for implementation within the first two to three years of indicative projects. This ratio may improve as the project pipeline matures and extends to the full six years of implementation. The direct mobilization impact is not materially meaningful considering the size of the GCF funding request. We generally discourage market-making that has low mobilization impacts, as a core mission of the GCF is to drive financial leverage into developing countries for climate purposes. However, the Program targets replication; therefore, indirect mobilization potential (e.g., initial investments in large fleets of EVs and innovative H₂, V2G and e-boats combined with an improved enabling framework) is, together with market price development, key for a mass uptake of e-mobility. The mass uptake of e-mobility is promoted by this Program, and this is an area where mobilization impacts can occur in future (albeit this is difficult to predict or measure).

39. We also draw comfort from the fact that projects involved in the proposed Program will not be dependent on a continuous flow of GCF funds. Rather, the Program aims to achieve a substantial reduction in the need for concessional financing in future projects. It is expected that, over the course of implementation of the Program, commercial e-mobility will gradually move towards commercial viability in countries which have kick-started the process. The use of GCF funds de-risks similar future investments and demonstrates the viability of e-mobility investments in commercial terms.

40. The funding proposal is assessed with a rating of Medium in terms of efficiency and effectiveness.

II. Overall remarks from the independent Technical Advisory Panel

41. Based on the assessment above, the independent TAP endorses this funding proposal. However, the independent TAP makes the following recommendations that will further improve the success of this funding proposal:
- (a) The independent TAP recommends that equity and/or in-kind contributions from the participating governments be confirmed;
 - (b) The independent TAP recommends that the assessment of adaptation benefits be further developed. There is a need to develop and present a methodology used for identifying the adaptation benefits and the estimation of adaptation beneficiaries; and
 - (c) The independent TAP also notes that the Program pipeline is indicative at this stage. The success of the Program will require participating countries to commit to e-mobility interventions and take on financing from the Program. This has yet to happen so there is always some risk that the facility could be over funded if uptake is dampened. The independent TAP is aware that IDB has extensive experience in supporting e-mobility in the LAC region, and therefore it expects IDB to manage the pipeline well. However, the independent TAP recommends that the Secretariat consider flexible funding mechanisms in the future that allow it to deploy capital in tranches against actual capital needs and not just projected needs. This should provide for greater flexibility of GCF funds and reduce fee obligations.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP189)

Proposal name:	E-Mobility Program for Sustainable Cities in Latin America and the Caribbean
Accredited entity:	Inter-American Development Bank (IDB)
Country/(ies):	Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay, Uruguay
Project/Program size:	Large

Impact potential

We thank the ITAP for the assessment. Regarding the reference to the use of non-reimbursable grants, the team would like to highlight that those resources will mainly finance adaptation interventions, and GH2 pilot projects.

Programme's components providing grants have the objective to make both the electric grids and the Integrated Electrified Urban Transport System more resilient to climate events.

Paradigm shift potential

We agree with the assessment from the ITAP.

Sustainable development potential

We thank the ITAP for the assessment. We would like to clarify that vehicle operating costs have been provided. Also, time savings and accidentality costs have not been included at a program stage, because default data will not be representative of specific circumstances that will be defined at sub-project level.

Needs of the recipient

We agree with the assessment from the ITAP.

Country ownership

As stated by ITAP under the criteria "Needs of the recipients", "*...all Program countries have expressed a **commitment** to de-carbonizing transport sectors, and to expanding e-mobility in cities*". Given the programmatic nature of the E-Mobility Programme, participating countries contributions, will be confirmed at sub-project level once specific projects will be discussed

and negotiated with Government's authorities. This will be an integral part of standard IDB programming activities with countries.

Efficiency and effectiveness

We appreciate the comments of the ITAP. As also stated by the ITAP the major impact of the Program is to kick-start mass EV deployment and to create favourable conditions and experience for a large EV market. This will allow the influx of large financial flows from the private sector as investments are de-risked. The efficiency and effectiveness potential of this Program is thus considered as very high.

Overall remarks from the independent Technical Advisory Panel:

We thank the ITAP team for their thorough analysis and positive feedback.

Regarding the first two general remarks, we would like to highlight the following:

- **Contribution from the participating governments:**

Participating countries contributions, along with other co-financing resources, will be confirmed at sub-project level once specific projects will be discussed and negotiated with Government's authorities.

The IDB has been working closely with Ministries of Energy and Transport in Latin America and the Caribbean since 2011 improving the institutional and regulatory environment for an accelerated deployment of electric mobility and the GCF Program will be instrumental to mobilize additional resources for a paradigm shift in such an important area for the decarbonization and increased resilience of LAC.

Furthermore, as stated by ITAP under the criteria "Needs of the recipients", "*...all Program countries have expressed a commitment to de-carbonizing transport sectors, and to expanding e-mobility in cities*"

- **Assessment of adaptation benefits:**

The Program will deliver \$114M of physical assets made more resilient to the effects of climate change and \$14M avoided losses of economic assets due to the impact of extreme climate-related disasters while benefiting nearly 9% of the entire population of Program countries. The methodology to calculate these three indicators is part of the Funding Proposal package (Annex 2b).

Given its programmatic nature, the assessment of adaptation benefits will be further developed on a sub-project basis. Adaptation benefits are related to the type and scope of interventions which, as the pipeline is at this stage indicative, have not been defined. As stated in Annex 2b, all sub-projects will assess climate risk and will conclude a Disaster and Climate Change Risk Management Plan (DCRMP) that will develop and present the methodology used for identifying and quantifying the direct and indirect beneficiaries for each adaptation measure. The DCRMP is also the tool to monitor the implementation of the adaptation measures during the supervision phase of the sub-project and is part of the Environmental and Social Management Plan.

More specifically, the methodology to estimate the number of beneficiaries for each sub-project, follows the steps considered in the IDB economic analyses and involves the following: (i) defining types of adaptation benefits, (ii) identifying direct beneficiaries who will receive these benefits as well as indirect beneficiaries and (iii) determining result matrix's metrics (output and outcome indicators) that will be



included in the project Monitoring and Evaluation Plan (MEP) to monitor identified direct benefits.

The Operations Manual will ensure that each sub-project has a localized climate risk and vulnerability assessment. To achieve the goal of financing climate-resilient infrastructure, all eligible sub-projects will complete, during the preparation phase, the identification and quantification of local climate risk, and proposal of site-specific interventions to reduce vulnerability and build resilience. IDB will follow the IDB's Disaster and Climate Change Risk Assessment Methodology (DCRA Methodology).

Gender Assessment

E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

1. INTRODUCTION

Transportation is not gender neutral. Men and women have different socio-economic roles and responsibilities, which are associated with different patterns of use, access and transport needs. Inadequate transport systems can restrict women's access to education, economic opportunities and healthcare.

The nine countries included in the Program *E-Mobility Program for Sustainable Cities in Latin America and the Caribbean* - Barbados, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Panama, Paraguay and Uruguay- present similar development indicators in education, employment, entrepreneurship and political representation. However, significant gender gaps continue to exist for women due to cultural and structural barriers in these countries that limit their participation in the electromobility sector.

2. GENDER CONTEXT

Legal, regulatory and institutional framework. The nine countries have ratified or acceded the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW)¹ and its optional protocol. They also have ratified the Inter-American Convention on the Prevention, Punishment and Eradication of Violence against Women (Convention of Belem Do Para)². Their constitutions address equality before the law and states no one can be discriminated against on the basis of sex. Most countries have performed a normative reform effort to establish an adequate framework for development and have some specific public institution for promoting gender equity. However, normative advances still face a deeply patriarchal and androcentric culture that is reflected in many social and institutional practices.

3. SOCIOECONOMIC INDICATORS

Education. The literacy rate average 95.5% in the countries of the program and is similar between men and women in all the counties except in Jamaica where the gender gap reaches 9 points of difference (M: 92.7% H: 83.4%). (See Table 1 for detailed information on the indicators described in this section).

¹ CEDAW is an international treaty adopted in 1979 by the United Nations General Assembly. Described as an international bill of rights for women, it was instituted on 3 September 1981 and has been ratified by 189 states.

² The Convention of Belem do Pará is an international human rights instrument adopted by the Inter-American Commission of Women (CIM) of the Organization of American States at a conference held in Belém do Pará, Brazil on 9 June 1994. It is the first legally binding international treaty that criminalizes all forms of violence against women, especially sexual violence

Regarding educational attainment, most of the countries present educational gender gaps for men. In primary education, most countries have similar enrolment for women and men, with the highest percentage in Barbados, Costa Rica and Uruguay with more than 95% and the lowest in Jamaica with 81%. In secondary education. The number of women enrolled is higher in all the countries with gender gaps between 8 and 1 points. Paraguay has the lowest enrolment (M:66% M: 65.8%) and the smallest gender gap. Barbados has the higher enrolment and one of the biggest gender gaps (M: 96.8% M: 90.6%). In tertiary education, all the countries present a higher number of enrollments among women with large differences in the number of people enrolled between them, for example, Barbados has 90.6% of women enrolled in tertiary education and 40.3% of men, while in Jamaica 43.7% of women access this type of education compared to 19.9% of men.

Though the percentage of women enrolled in tertiary education is superior to the number of men, the type of education elected is very different, with a low representation of women in STEM programs or engineering careers. Women represent between 6.75% and 12.19% of attainment in STEM and between 4% and 10% in engineering.

Employment. Although women have a higher rate of education than men, they face major inequalities to access employment. All countries present gaps in the participation of women in the labor force. These gaps are wider in some countries such as Costa Rica where only 58.3% of women participate in the labor force compared to 83.9% of men, and smaller in others such as Barbados, where women represent 75.2% compared to 80.4% of men.

The percentage of unemployment among women is higher in all countries. The largest gender gap in unemployment occurs in Costa Rica where 15.30% of women are unemployed compared to 9.29% of men. In Barbados, unemployed women double unemployed men.

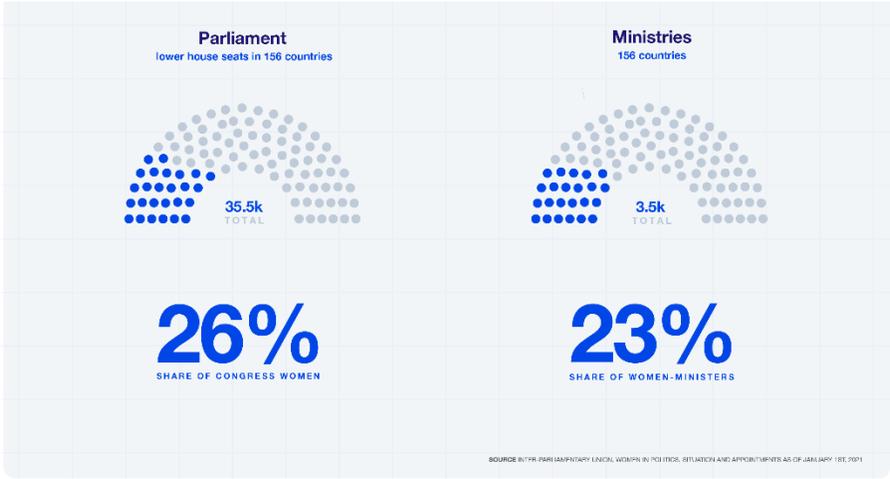
Part-time employment has one of the widest gender gaps. All the countries present large gaps that show women occupying these jobs. For example, in Costa Rica 40.1% of females work part-time compared to 20.05% of men. Similar figures can be observed in Colombia (M: 38.72 H: 18.75%) and Dominican Republic (M: 35.62%, H: 22.69). The share of workers in the informal sector varies among countries with higher number of women in Chile and Costa Rica and higher number of men in the rest of the countries. There are still gaps in the time women and men dedicate to unpaid work. Women keep dedicating more time than men which limit their access to paid jobs or increase their working hours.

Political representation. Women are poorly represented in the parliaments of their countries. They represent between 15% in Paraguay and 45% of parliamentarians in Costa Rica, following the trend in the rest of the world. (Fig 1)

Violence against women. The percentage of ever-partnered women who ever suffered intimate partner physical and/or sexual violence is high in Latin America and the Caribbean. In Colombia and Costa Rica more that 36% of women have suffered that type of violence. Chile is

the country with the lower number of women who had reported violence with a 6.7% of prevalence.

Figure 1: Women's Political Empowerment around the world³



³ World Economic Forum. 2012.1. Global Gender Gap Report.

Table 1. Main gender indicators in the countries of the program

Gender Indicator		Barbados	Chile	Colombia	Costa Rica	Dominic Republic	Jamaica	Panama	Paraguay	Uruguay
Population sex ratio (female/male)		51.57	50.71	50.91	50.02	50.03	50.37	49.93	49.17	51.70
		48.43	49.29	49.09	49.98	49.97	49.63	50.07	50.83	48.30
Labour force participation rate, %		75.2	59.1	61.6	58.3	58.5	65.8	60.0	63.8	68.1
		80.4	78.7	84.6	83.9	83.7	77.1	84.2	88.1	82.6
Wage equality for similar work, 1-7 (best)		4.78	3.82	3.92	4.25	3.85	4.27	4.18	4.05	4.30
Unemployed adults, % of labour force (15-64)		7.48	8.36	13.17	15.30	9.99	10.23	6.03	8.61	11.57
		9.93	7.19	8.04	9.29	4.35	6.08	4.21	5.53	7.87
Workers employed part-time, % of employed people		n/a	39.88	38.72	40.01	35.62	12.98	33.74	35.71	n/a
		n/a	26.12	18.75	20.05	22.69	9.53	25.19	16.81	n/a
Proportion of unpaid work per day, female/male ratio		n/a	2.24	3.43	2.53	n/a	n/a	2.46	2.23	2.32
Gender parity in tech roles, 1-7 (best)		4.36	-	4.43	4.58	4.34	4.64	4.55	4.25	4.67
Literacy rate, %		99.6	96.3	95.3	97.9	93.8	92.7	94.9	93.5	99.0
		99.6	96.5	94.9	97.8	93.8	83.4	96.0	94.5	98.4
Enrolment in primary education, %		95.7	94.8	93.2	96.3	92.7	81.3	85.9	87.3	96.6
		97.6	94.7	92.7	96.4	92.7	80.8	86.6	87.1	96.7
Enrolment in secondary education, %		96.8	89.9	80.2	84.3	74.6	76.3	65.9	66.0	91.1
		90.6	87.5	74.9	80.7	66.8	71.7	61.7	65.8	85.4
Enrolment in tertiary education, %		90.6	94.7	59.7	60.7	77.0	34.7	58.6	40.9	58.0
		40.3	82.5	51.1	50.0	43.0	19.9	37.3	28.6	34.5
Women in parliament, %		20.0	22.6	36.8	45.6	17.4	28.6	22.5	15.0	24.2
		80.0	77.4	63.2	54.4	82.6	71.4	77.5	85.0	75.8
Firms with female majority ownership, % firms		43.50	29.60	66.90	43.50	32.20	38.20	24.70	66.20	37.00
		56.50	70.40	33.10	56.50	67.80	61.80	75.30	33.80	63.00
Firms with female top managers, % firms		25.40	4.50	18.90	15.40	21.20	24.10	23.50	19.60	10.60
		74.60	95.50	81.10	84.60	78.80	75.90	76.50	80.40	89.40
Share of workers in informal sector, % workers		69.70	30.40	61.60	43.20	50.20	n/a	50.90	n/a	23.40
		71.10	28.40	62.40	36.00	57.10	n/a	54.20	n/a	24.60
STEMS, attainment %		n/a	6.76	13.76	8.08	7.02	n/a	10.25	n/a	12.19
		n/a	38.61	35.12	27.28	20.27	n/a	25.06	n/a	26.40
Engineering, Manuf. & Construction, attainment %		n/a	5.07	10.43	4.40	4.03	n/a	5.52	n/a	8.17
		n/a	31.10	25.24	12.90	12.43	n/a	15.41	n/a	16.35
Prevalence of gender violence in lifetime, % women		n/a	6.7	37.4	36.0	20.4	19.7	n/a	17.9	14.8

Source: Prepared by authors based on the data available on the Global Gender Gap Report 2021 of the World Economic Forum

4. WOMEN-LED BUSINESSES

There is mounting global evidence of a correlation between gender diversity and superior business results and then investor returns. McKinsey forecasts a GDP annual growth opportunity of US \$2.6 trillion for Latin America in 2025 in a world in which women participate in the market economy to an identical extent as men. However, gender diversity in companies in LAC is currently low, particularly at leadership levels. The same study concluded that publicly listed companies with higher female representation yielded 44% higher returns on investment and 47% higher profit margins. Despite this evidence, 63% of LAC companies declared that gender diversity is not a strategic priority⁴.

In the countries of the programs, the presence of female top managers in firms is low, with a participation between 4.5% in Chile and 25.4% in Barbados. The figures are, however, very different among the companies where women are majority owners. In Colombia and Paraguay women own more than 60% of the firms while in the rest of the countries the percentage varies between 24.7 in Panama and 43.4 in Barbados and Costa Rica.⁵

Women represent more than 40% of the economically active population in LAC. Only 17% of them are entrepreneurs in the formal economy. The main barriers they encounter to forming formal companies are (i) difficulties in leaving the informal sector (more than 60% of LAC women work in this sector⁶) or going beyond microenterprises, reducing their earning potential, (ii) gender barriers that prevent them from working longer hours outside the home, (iii) ignorance of the financial market and existing opportunities, (iv) reduced levels of financial education, (v) lack of female roles to follow in business, (vi) lack of support networks and (vii) difficulties in accessing financing without legal ownership or guarantee⁷.

According to a study of 35 entrepreneurs in 15 countries in LAC, a high number of women entrepreneurs in the region feel that they have been discriminated against because of their gender (27% versus 4% for men). 50.6% of the women surveyed affirm that there is a general inequality in entrepreneurial opportunities, including access to resources, adequate training and business advice⁸.

The main reason women-led businesses fail is lack of access to capital. LAC is the region with the second highest rate of bankruptcies of companies run by women worldwide. While most male entrepreneurs indicate that they have closed their companies due to low profitability. Women entrepreneurs point to the difficulty of obtaining financing as the main impediment to

⁴ McKinsey, Women matter: A Latin American perspective: unlocking women's potential to negate corporate performance, 2015

⁵ World Economic Forum. Global Gender Gap Report 2020.

⁶ <http://www.unwomen.org/es/news/in-focus/csw61/women-in-informal-economy>

⁷ Buckland, Leonora et al. Gender Lens Investing: How Finance Can Accelerate Gender Equality in Latin America and the Caribbean. IDB Invest. 2019

⁸ G. Cardoz, A. Fernandez, C. Ilie, H. Tejada, Entrepreneurship and Gender in Latin America, INCAE Business School, February 2018

continue with their businesses. The credit gap in LAC is \$5bn for women-led micro businesses and \$93bn for women-led SMEs⁹.

The Global Banking Alliance ensures that women clients show a stronger saving behavior (16% more likely than men to save for futures), with lower risk (on average, they are more likely to repay loans), with higher growth and lower attrition. Evidence shows that financial intermediaries that implement programs that effectively meet the needs of women see excellent financial returns.

5. ACCESS TO FINANCIAL RESOURCES

Women tend to face more barriers to access financial services, including accounts in financial institutions, obtain debit or credit cards, and loans from formal banking institutions for education and enrollment, limiting their financing options. These barriers are due to women's lack to provide collateral for the loans, lack of financial literacy and higher risk aversion in comparison to men; furthermore, these issues deepen when the legal framework to protect creditors and borrowers are weak.^{6 7 8 9}

Currently, the supply of gender-lens financial products in LAC is limited since, on the one hand, only a few fund managers consider gender in their investment analysis and, on the other hand, no efforts are made to search for the growing portfolio of women-led businesses. Furthermore, financial intermediaries are dominated by men, especially at decision-making levels.

Despite this, a gender-lens investing for women-led business is emerging in various types of assets in LAC. In public markets, bonds are being created for socially responsible investors interested in promoting gender equality. In private markets, the microfinance sector has a long tradition, particularly in countries such as Bolivia, Peru, and Colombia. Commercial banks have worked with institutional investors, including multilateral development banks (MDBs), to address the small and medium-sized enterprise (SME) credit gap faced by women-led businesses. These banks offer specific lines of credit and technical assistance to SMEs run by women. In addition, other investments in private markets such as venture capital (VC) and private equity (PE) funds are growing very fast in the region, especially in Brazil, Mexico and Colombia¹⁰.

IDB's program Women Entrepreneurship Banking (weB) facilitates access to financial and non-financial services (training, mentoring, networking) for women-led businesses in LAC through advisory services and investments into financial intermediaries. It has supported 19 banks in 12 countries, approving nearly \$800 million in investments and \$5 million in technical assistance, to develop and market products and services for women-led MSMEs. The banks which are participating in the program are making impressive advancements serving their female customers.

⁹ IFC. MSME Finance Gap, 2017.

¹⁰ Buckland, Leonora et al. Gender Lens Investing: How Finance Can Accelerate Gender Equality in Latin America and the Caribbean. IDB Invest. 2019

Pro Mujer is a leading microfinance organization in Latin America dedicated to improving the livelihoods of women in Latin America through a combination of financial, health, and educational services. Their integrated approach includes financial services (loans, savings, insurance), training in basic business skills and entrepreneurship, health education (e.g., on gender-based violence, disease prevention, wellness, and personal development, etc.) and health screenings (cancer screening, diabetes testing, blood pressure checks). In 2017, Pro Mujer disbursed more than USD 393 million in loans and served 276,000 women. Pro Mujer's services are offered primarily through a communal bank and its clients have an average repayment rate of 97%.

*In 20120, IDB Invest structured and subscribed a **Gender-focused Social Bond issue by Banco Davivienda SA (Davivienda)**. The deal, worth \$100 million has a 7-year maturity. This is the world's first issue of a gender-linked bond based on achieving outcomes. The bond will be exclusively used by the issuer to finance the growth of its women-led SMEs portfolio (WSMEs), as well as the purchase of social interest houses by women in Colombia.*

6. MOBILITY CONTEXT FOR WOMEN

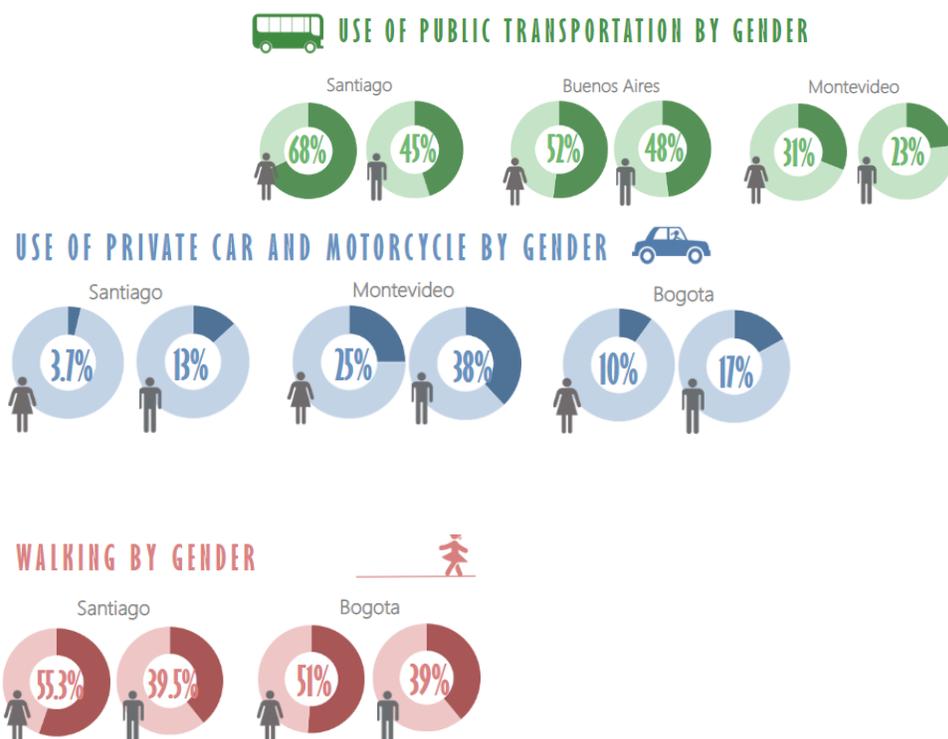
1.1 Women and men patterns

Transportation is not gender neutral. Men and women have different socio-economic roles and responsibilities, which are associated with different patterns of use, access and transport needs. Studies comparing gender differences in travel behavior have found patterns that are consistent across developed and developing countries¹¹:

- Women travel shorter distances and are limited to a more restricted geographical area.
- Women spend less time traveling and cover shorter distances to go to work. They tend to locate their businesses closer to home than men and are more likely than men to work at home and less likely to engage in “extreme commuting”
- Women engage in more non-work travel while men’s mobility evolves around paid work activities.
- Women make more multi-stop trips, while men mainly follow more direct, linear patterns from home to workplace.
- Women are more likely to travel during off peak hours.
- Women use cars less and drive fewer miles than men.
- Women use public transport more.
- Women walk more than men.
- Women cycle less than men.
- Women use cheaper and less efficient modes of transport.

¹¹ World Bank. 2020. Why does she move? A study of women’s mobility in Latin American cities.

Figure 2: What about the trends in Latin America?¹²



Drivers of gender differences in mobility

The main factors driving these gender differences in transportation include¹³ (i) women’s lower financial capacity that makes them more dependent on public transport due to a greater participation in part-time roles and lesser paid careers that weaken women’s financial capacity, and ultimately impacts their ability to pay for public transport; (ii) the unfavorable fare structure for multi-stops journeys due to women’s mobility of care (family errands, care for the elderly, the ill, the kids, and their community) makes transport more expensive for women that pay a higher percentage of their income on public transport than men in their same social groups, even if their trips are shorter on average; (iii) the greater disadvantages in access to transportation faced by women, since they walk more and depend more on public transport, poor pedestrian pathways, and inconvenient access to transport facilities impact more their daily journeys, which are already time-constrained given their multiple responsibilities at home and outside, besides women also find it more difficult to access appropriate transport to informal job locations; (iv) the fewer transport options for women that rely more on circumferential public transport routes, to which transport operators give lower priority in comparison to the radial commuter routes that connect

¹² Granada, Isabel et al. 2015. The relationship between gender and transport. IDB

¹³ World Bank. 2020. Why does she move? A study of women’s mobility in Latin American cities.

directly to downtown areas and that often fail to provide adequate coverage of first and last-mile connectivity; and (iv) the lack of personal safety on public transport impacts women that tend to adjust their travel patterns and behavior according to security considerations, including the fear of sexual harassment.

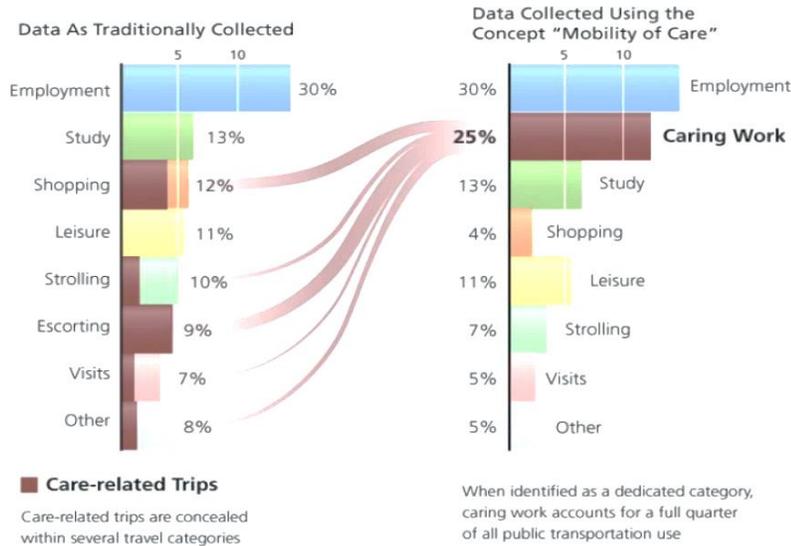
The mobility of care

The mobility of care ¹⁴ is not sufficiently accounted for in transportation datasets. The "mobility of care" includes all travel resulting from home and caring responsibilities: escorting others; shopping for daily living (excluding leisure shopping); household maintenance, organization, and administrative errands; visits to take care of sick or older relatives, etc. Many of these care trips can be hidden under other headings when considering the purpose of trips, such as leisure, strolling, visits, or other trips. Additionally, for the purpose of designing and calculating ridership, data collection methods focus traditionally in one trip pattern (travel to and from work or to and from school) while the mobility related to care responsibilities is overlooked because it is fractured in multitude purposes and fall in different categories (shopping, escorting, etc.).

The Figure 3 visualizes the traditionally collected data on trips purpose on the left and the data collected using the concept "mobility of care" on the right. The number of trips for care work and those for paid work are similar for this example's data.

¹⁴ De Madariaga, Inés Sánchez <https://unhabitat.org/mobility-of-care-ines-sanchez-de-madariaga>

Figure 3: Public Transportation trips by purpose¹⁵



Traditionally, surveys have undervalued the “reproductive” trips, considering only the “productive” trips for the design of transport systems. The chart on the right reconceptualizes public transportation trips by collecting care trips into one category. Visualizing care trips in one dedicated category recognizes the importance of caring work and allows transportation engineers to design systems that work well for all segments of the population, improve urban efficiency, and guard against global warming¹⁶.

2.1 Gender and safety in urban transport

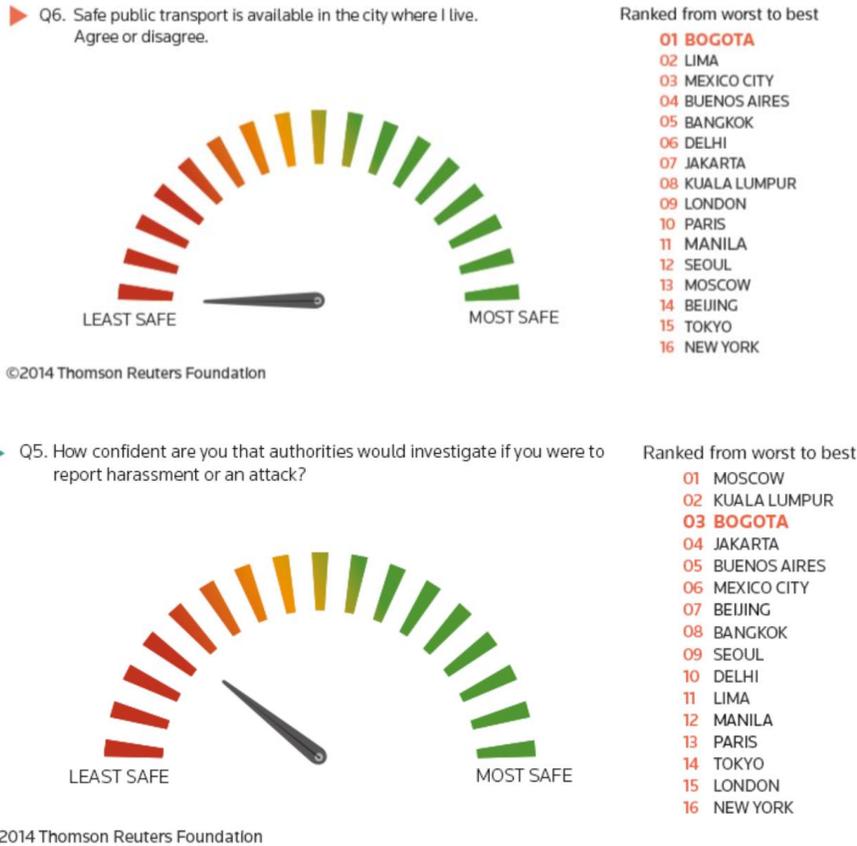
Bogotá, México City and Lima have been classified as the 3 cities in the world with most dangerous transport system for women according to a survey¹⁷ of 6,550 women in 15 of the 20 biggest capitals in the world, as well as New York. The survey questions related to safety at night, verbal and physical harassment, public response to abuse and confidence in authorities.

¹⁵ De Madariaga, Inés Sánchez. Research 2009, 2010, 2013a, 2013b, Image by Eric Steiner <https://genderedinnovations.stanford.edu/case-studies/transportation.html#tabs-2>

¹⁶ De Madariaga, Inés Sánchez (2013). From women in transport to gender in transport: challenging conceptual frameworks for improved policymaking

¹⁷ Thomson Reuters Foundation. 2014. Survey “Most dangerous cities for women”

Figure 4: Answers provided by women transport users in Bogota.



The violence in public places, particularly on public transport systems, reduces the freedom of movement of women and girls. It reduces their ability to attend school or work and to participate fully in public life; limits their access to essential services and to enjoy cultural and leisure opportunities, and has a negative impact on their health and well-being by limiting the area of travel, increasing their travel costs, constraining social interaction and work choices, and increasing the time they allocate to look after their children.

Six out of 10 women reported to have been harassed in public transportation in Latin American countries. Harassment and assault are issues for women of all ages, including young girls. On the street, the riskiest areas apart from the waiting stops were those near bars, often full of men, and pedestrian tunnels, according to several studies in Latin American countries. Women’s fears are worsened by poor public lighting and having to use informal transport, especially at night. Bus stops, often located in unprotected and poorly lit areas in the communities, are especially unsafe for women. For example, in Buenos Aires, women experience 5 times more harassment in buses than in the subway, situation similar, although on a smaller scale, in Santiago de Chile¹⁸.

¹⁸ Allen, H. et al. 2018. Ella se mueve segura. Un estudio sobre la seguridad personal de las mujeres y el transporte público en tres ciudades de América Latina. CAF y FIA Foundation.

Safety and security are major considerations women make when deciding which mode of transport to use, when alternatives are available¹⁹. In Buenos Aires, 7% of women would avoid using public transport if there was a high presence of men (in the vehicle or wagon or loitering in the streets, stops or stations) and 55% if there were crowds or too few people using the system²⁰.

Although women recognized unwelcome sexual advances as an issue during their trips, a frequent tendency is to regard men's behavior as normal or to blame the victims. In many cases, women expresses that it was their responsibility to avoid triggering sexual harassment by wearing certain clothes²¹.

On the other hand, evidence shows that air pollution impacts women and girls differently and, in some cases, more severely than men and boys. Factors involved may include biological differences, socioeconomic disparities, and unequal gender norms that affect both exposure and solutions²². Differences in mobility patterns among women and men make women more vulnerable to exposure to vehicle emissions due to women rely more on public transport and walk more than men.

3.1 Labor market

The future of mobility offers the opportunity for faster, cleaner, cheaper and safer transportation. Accompanying those potential changes could be dramatic shifts in the workforce not only in the assembly lines and network of supply companies, but new opportunities will arise with the creation of new jobs in the manufacture of batteries and electric motors; the infrastructure development needed for the installation of millions of charging points that require changes in the existing infrastructure and the planification of cities; the energy production, transmission and distribution of electricity that is consumed by EVs; as well as all the digital innovation necessary for the development of the new mobility. Occupations in the transport sector are changing, they are being digitized and women must be trained for this change. The fourth industrial revolution is transforming the world of work, rapidly shifting the boundary between activities performed by humans and those performed by machines. A study carried out by the International Monetary Fund (IMF) in 30 countries (OECD, Singapore and Cyprus) concludes that 11 percent (26 million women) of the female workforce and 9 percent of the male workforce have high automation risk in the next two decades²³

¹⁹ Idem

²⁰ World Bank. 2020. Why does she move? A study of women's mobility in Latin American cities.

²¹ Idem

²² Mehra, Rekha, et al. 2021 Clean Air Catalyst: Gender Analysis of Air Pollution and Vehicle Transport, India. USAID
²³ (Brussevich, M. et al., 2018).

According to a Boston Consulting Group study in 2021²⁴, governments should create the framework conditions that enable the automotive industry to master the enormous shift in qualifications. Companies should conduct Strategic Workforce Planning to identify requirements for up- and reskilling as well as goals for recruitment and retention. Individuals should focus on lifelong learning to constantly acquire new skills, and take a more flexible approach to their career paths.

In general, women are under-represented in the transport sector's workforce and their participation is often concentrated in low-paid and vulnerable jobs. Data for Latin America and the Caribbean show that women represent between 1% and 6% of employees in the construction sector, depending on the country. In the transport sector this varies between 8% and

Figure 5: Transport and labor market. An analysis with a gender perspective.

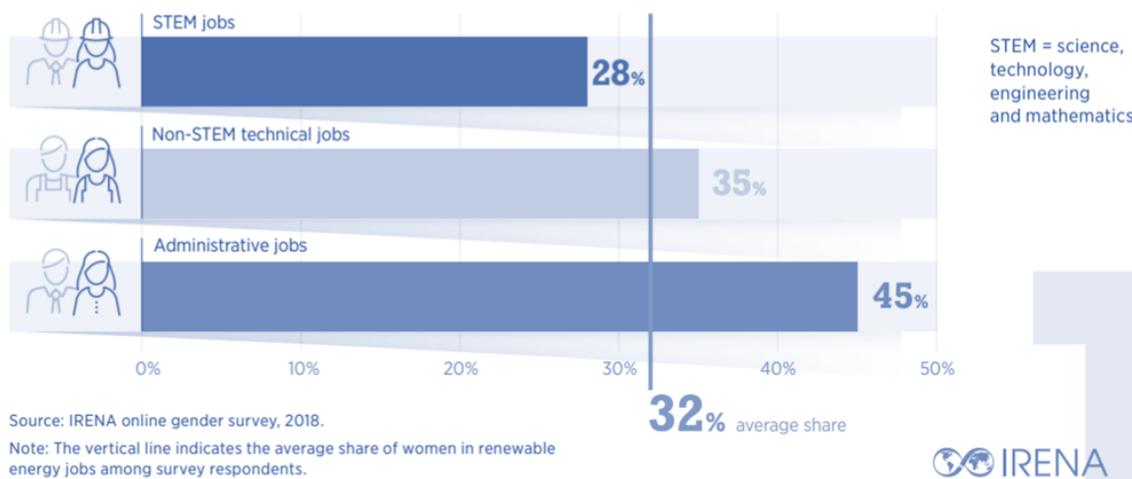


²⁴ Kuhlmann, Kristian. 2021. Is E-mobility a Green Boost for European Automotive Jobs? Boston Consulting Group.

21%. Typically, women work in feminized and low-paid tasks such as cleaning or administration, while men work as drivers, mechanics, or supervisors. Thus, both the number of women hired or trained, and the quality of their contracts are low.

The trends are similar in other sectors affected by the electromobility transition such as the renewable energy sector where women represent 32% of the fulltime employees (or the global oil and gas industry where they represent 22%). In the same way, in renewables, women's participation is much lower in science, technology, engineering and mathematics (STEM) jobs than in administrative jobs²⁵.

Figure 6: Shares of women in STEM, non-STEM and administrative jobs in renewable energy.



The employment barriers to entry in those sectors remain the same²⁶:

1. Perception of gender roles, about what women can or should be expected to do, and about what they can accomplish, are deeply ingrained in society, with restrictive views of gender roles prevailing across generations.

²⁵ IRENE. 2019. Renewable energy: A gender perspective.

²⁶ Idem

2. Women's participation in STEM fields and misperceptions of career pathways, driven by perceptions and misperceptions, only a low percentage of female students choose the STEM fields.
3. Lack of career information. An enduring disadvantage that women and girls face in comparison to their male counterparts is the lack of readily accessible information about employment in non-traditional occupations.
4. Prevailing hiring practices and unequal access to career entry points.

As well as the challenges for retention and career advancement:

1. Glass ceiling blocking ascent to leadership positions. There are persistent barriers to improving women's representation in senior executive positions and on boards of directors.
2. Work schedules and mobility requirements. Rigid work schedules are one of the key barriers women face, given that, in many societies, they are expected not only to excel at work but also to reliably perform many tasks outside of work, including child rearing, other care-giving responsibilities and various household chores.
3. Wage inequities.

4.1 Transport Gender Lab from the IDB

The IDB created the Transport Gender Lab (TGL) to achieve the incorporation and strengthening of the gender perspective in transport that seek collective solutions and respond to measures and challenges through cooperation among member countries, with the goal of obtaining greater development benefits and at a lower cost.

- The TGL focuses on generating and disseminating knowledge about the design and implementation of initiatives, activities and/or studies in favor of gender equality in the transport sector. It is the first and broader knowledge repository of gender initiatives on transportation in the region. It includes a website that gathers all the information available for cities to have direct access to this information. As a lab, it promotes collaborative work among cities through cross-fertilization on good practices and challenges that cities have experienced when implementing a gender perspective in transport. The transport Gender lab classifies these initiatives on seven main areas: Access to justice, prevention, new technological tools, education, knowledge, infrastructure with a gender perspective, and employment opportunities. The IADB provides technical support and financial resources to cities so that they can develop context-oriented projects and data gathering to promote a gender perspective in transport. The TGL focuses on two main areas: Women as users and women as part of transportation's labor market. At this moment, 12 cities are members of this network: Bogota, Buenos Aires, Cali, Guatemala City, Lima, México City, State of Hidalgo, State of Jalisco, Quito, San Salvador, Santiago de Chile and Santo Domingo. Thanks to the joint effort of the member cities and entities of the network, more cities and systems in Latin

America are today aware of the importance of planning and operating the systems taking into account the specific characteristics of the trips of their different types of users. The TGL has funded studies to understand women's travel patterns and experiences in transportation systems and make policy recommendations related to infrastructure adjustments, and service operation scheme: - In the State of Jalisco in México promoted a study based on qualitative and quantitative data to understand the travel patterns of women and girls in a highly traveled corridor in the Metropolitan Area of Guadalajara. Based on the results, the study recommended improving the infrastructure and urban equipment in areas close to stations. Also improving women's access to justice whenever they suffer sexual harassment. Finally, better inter-institutional coordination to implement these initiatives.

- In Bogotá TGL financed a study to understand the mobility patterns of caregivers who take their kids to school using bicycles. Part of the proposals that came from the study include:
 - (I) courses on road safety for men and women and bicycle mechanics for women, visible protection elements for bike riders, better route infrastructure including better lighting;
 - (II) better connection; (III) better signaling, promote the family cycling index in Bogotá's maps; (IV) promote financial accessibility measures to incentivize men and women to use bicycle to take their kids to school; (V) ensure institutional measures so that different government entities promote cycling, among others.
- In association with the behavioural insights team, TGL supported an innovative study where behavioral science methodologies are used to identify and implement nudges for the prevention of sexual harassment in urban transport in Lima and Callao as a supporting tool for the prevention and attention protocol.

7. WOMEN AND ELECTROMOBILITY

There are few data about women and electromobility, especially in Latin America. Most of the information is related to the US and the European EV car markets. Although the electromobility program does not include private vehicles, the information below is related to women's perception on EV that offers a glimpse of how women relate to electromobility. During the implementation of the project, specific gender information in Latin America will be collected from the aspects covered by the program.

In the US, only 30% of EV purchases today are made by women, even though they purchase more than 50% of new cars and influence 80% of the car buying decisions in a household. In Britain, analysts at BuyaCar found that despite women forming a much higher proportion of customers on the site than in traditional dealerships, they are four times less likely to buy an electric vehicle or a hybrid car online than men – and the gap is widening. The top demographic of 2019 EV

owners are middle-aged white men earning more than \$100,000 annually with a college degree or higher and at least one other vehicle in their household²⁷.

The reasons for understanding the low attraction of women to EV cars are now well researched. But according to different articles, analyzes and interviews to women, the main reason is that EV cars are marketed for men. When women buy a car are not shopping for themselves alone. Women drive more trips with passengers than men do and make more multi-stop trips as well. They are more concerned that men with safety, price, and cargo space to fit the kids. None of the EV cars in the market meet all the requirements. That explains why they are mainly purchasing SUVs that are more practical for their needs.

One 2018 study by AAA showed women are more likely to cite environmental concerns as a reason for buying an EV than men, 90 percent to 68 percent. But it did not address how many women intended to buy an EV compared with men.

7.1 New electromobility initiatives to follow up

There are emergent initiatives in electromobility in Latin America and around the world that can offer some good practices to apply in this program during the next months.

Unconventional jobs on electric mobility for women

In 2021, supported by the IADB the District Mayor's Office of Bogotá launched the Project for qualification of women in unconventional jobs for urban transport in Bogotá, a strategy that takes advantage of the energy transition of the transport sector to generate green jobs with Gender approach. The program will make it possible to educate, train and recategorize the driver's license of 450 selected women, so that they can work with the new District Transport Operator or private operators in Bogotá. With the linking of these women to the system, the city hopes to reach a goal of 5% of female drivers in the SITP, when today only 1% of the SITP drivers are women. The Inter-American Development Bank, in collaboration with the Center for Economic Development Studies – CEDE – of the Universidad de los Andes, supports this program, financing and managing the subsidies to the women beneficiaries and carrying out an impact evaluation of the program, on the quality of women's lives and their performance as SITP electric bus drivers.

EV taxis in Habana

²⁷ Fuels Institute. 2021. EV Consumer Behavior.



In La Habana, Cuba, there is a new fleet of electric taxis driven exclusively by women (2021). The fleet consists of 23 electric tricycles assembled in the country. The vehicles are rented to the women who provide the service. To obtain the driving certificate, the women were trained at the National Driving School of the Ministry of Transport.

The vehicles were designed to travel 100 km and reach a speed of 45 km/h. They have the capacity to transport up to six passengers.

Zacua



Zacua is the first Mexican electric car. It wants to ensure Mexico's transition towards the use of environmentally friendly energies, designing and producing zero-emission, small, functional and aesthetic urban vehicles

Founded in 2017, the brand opened its assembly plant in Puebla in mid-2018. The assembly line is artisanal since each car is assembled by hand. The Mexican firm has 25 women in its engineering center where they work both in the design of prototypes, development of new projects to the placement of different parts that give life to the cars. The artisan assembly is carried out by a 100 percent female team.

Ola Electric Mobility

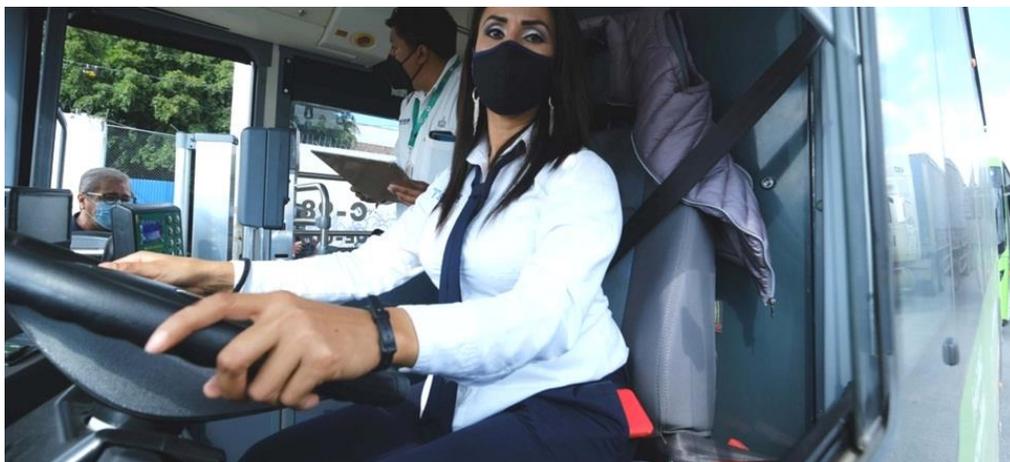
It is a new electric-scooter factory that aims to build 10 million two-wheelers annually, or 15% of the world's e-scooters by 2022, in an operation run, managed and staffed entirely by women.

Led by Bhavish Aggarwal, its vision is to provide the world "clean mobility, a carbon-negative footprint, and an inclusive workforce," the founder said. The first group of workers started in September at the factory in Krishnagiri, India, which will cost \$330 million to complete. "At full capacity, Futurefactory will employ over 10,000 women, making it the world's largest women-only factory and the only all-women automotive manufacturing facility globally," he says.

Mi Transporte Eléctrico

In Jalisco, Mexico, the first public transportation route in the country made up of electric buses called Mi Transporte Eléctrico (My Electric Transport), with a capacity to transport up to 20,000 people a day, started up.

The units, driven by 43 women and 36 men, have universal accessibility and a battery-powered electric motor. For three weeks, drivers, with experience in Sitren (public transportation system in Jalisco), received training to become part of the personnel that will serve in these units.



Women of EVs

An electric vehicle industry that supports diverse people and practices, while creating a welcoming and fair workplace environment with a large proportion of women leading in every part of the value chain. WEVs “eLEVates” women who are working in the EV industry by establishing a community built for “her” from the ground up. A space to coalesce women globally towards the urgent need to rapidly shift to electric transportation. They have chapters in United States, Australia, New Zealand and Canada.



Women in Green Hydrogen

Founded in 2020, Women in Green Hydrogen (WiGH) is a network of women with the goal of connecting, empowering, and boosting the visibility of women in the sector. Women in Green Hydrogen currently counts 1,644 members and 453 experts in its database. They offer a hydrogen-sector specific, global mentoring program for women in junior/middle management positions. More than 300 women from over 40 countries joined the last networking event on “Wind of Change” in April 2021.

Gender Assessment by Country

Data availability is a challenge shared by the nine countries. The Gender Assessments by country were built with available data. Some of the data currently missing include employment data, by position levels in the transport sector per country; mobility data; violence against women in the public transportation; sex-disaggregated data in electromobility. The opportunity identified is to fill the data gaps and produce new and gender-aware data as a new resource for policy and decision-makers.

All projects (concessional loans and grants for pilot projects) financed by the Program will conduct a detailed and context specific gender gap analysis. This gender analysis will be more detailed than the country assessment as it will include qualitative (interviews, focus groups) and quantitative elements (census data, demographics, income, etc.). Additionally, these analyses will be conducted in the project interest areas. The gender gaps might vary depending on the type of project and will expand on the preliminary information from the country assessments. Based on that analysis each project will define actions to close the gender gaps identified and project indicators to measure the progress.

BARBADOS

Legal, regulatory, and institutional framework

Barbados Constitution (1966) and its reforms states every person in Barbados has individual rights and freedoms without discrimination as to race, origin, political opinion, color, creed, or sex. The country has a Bureau of Gender Affairs to promote the integration of the gender perspective in national development policies and plans. Barbados has also ratified in 1993 the Convention on the Elimination of all forms of Discrimination against Women (CEDAW), and the Beijing Declaration and Platform for Action (1995). The government has also implemented Shelter for Abused Women, counselling spaces and research²⁸.

Law/Document	Content
Domestic violence (1993)	Provides provisions for the protection of victims in the case of intimate partner violence.
Constitution of Barbados (1966) and reforms	Every person in Barbados has individual rights and freedoms without discrimination as to race, origin, political opinion, colour, creed or sex.
Domestic Violence (Protection Orders) (Amendment) Act, 2016	Extend the classes of persons who are victims of domestic violence; ensure victims receive counselling or therapy; facilitate the enrolment of perpetrators in the appropriate rehabilitative programs; establish the duties and powers of members of the Police Force, among others.
The Employment Sexual Harassment (Prevention) Act, 2017	Protection of employees in both the public sector and private sector from sexual harassment at their workplace, framework for reporting sexual harassment and method of resolving such cases; among others.
The Trafficking in Persons Prevention Act, 2016	Updating of legislation to prevent, suppress and punish trafficking in persons, especially Women and Children.
Sexual Offences Act Cap 154, 2016	Amended law for intimate partner violence/domestic violence, to provide for the circumstances under which a man can be prosecuted for raping his wife
The Barbados National Strategic Plan 2005 – 2025 (2005)	Among its objectives, it proposes incorporating the gender perspective in all sectors of national development, plans and policies so that women and men can benefit equally from existing opportunities.

²⁸ Barbados Beijing +25 report: progress made on the implementation of the Beijing declaration and platform for action 2014 – 2019.

BID, <https://generoeninfraestructura.iadb.org/pais/barbados>, (Accessed 04-08-2022).

Law relating to the employment of women, Chapter 345A.	Paid maternity leave of not less than 12 weeks in total with at least 6 weeks postpartum is anticipated. Parental leave is not provided.
--	--

Educational gaps

The completion rate for primary female education in 2012 was 99.5%, higher than men with 97.5%. However, but in lower secondary education men reported a higher completion rate with 98.5% compared to 97.9% women²⁹. There are no significant differences in the rate of out of school children for primary and lower secondary education, since the value is 2.3% for men and 2.5% for women³⁰. The gross attendance ratio for tertiary education for women in Barbados for 2012 was 65.8%, higher than ratio for men with 40.2%³¹. Younger cohorts (below 40) are more educated, but males mostly stable³².

Economic Opportunities

In 2017 the labor force participation of women aged 15+ was 62%, meaning a lower participation compared to men with 70%. For the same year, there were no significant differences between men and women regarding the unemployment rate of people aged 15+, with 10% for women and 9% for men³³. There are even employment levels in 15-25 age range³³. By 2017 employment in service-related activities had a higher women participation with 89% of the female working force, and 67% for men. On the other hand, industry had 29% of male working force and only 9% of women. And agriculture have 2% of women working force and 4% of male³⁴. On average, women's income is about 60% of men's in Latin America and the Caribbean, but in Barbados women's income is about 86.8%³⁵. According to the Barbados Survey of Living Conditions 2016, 4.15% of the female population is in extreme poverty compared to the 2.74% of men. This trend repeats for poor women, which represents 21.02% while for men the value is 13.96%³⁶.

Gender Based Violence

29 The little data book on gender, (World Bank, 2019).

30 UN Women data, <https://data.unwomen.org/country/barbados>, (accessed 08-04-2022).

31 World Bank, <https://databank.worldbank.org/reports.aspx?source=Education%20Statistics>, (2019).

32 Barbados Survey of Living Conditions 2016, (IDB, 2016).

33 Barbados Survey of Living Conditions 2016, (IDB, 2016).

34 Idem.

35 Global Gender Gap Report 2021 (World Bank, 2021).

36 Barbados Survey of Living Conditions 2016, (IDB, 2016).

The proportion of women aged 20-24 years who were married or in a union before age 18 is high. The 29.2% of women of the age mentioned married before 18 years, and the 7.7% before age 15³⁷. The rate of women killed by their partners or ex-partners in Barbados is 0.7 for every 100.000 women for 2019³⁸. This value is significantly lower than the data of 2018 when the rate was 3.4, and 2017 when it was 1.3. The percentage of women aged 20 to 24 years who were first married or in union before age 18 was 11% for 2018³⁹. Domestic violence is one of the concerns in the country. Reports show more than one incident per day, and have remained consistent, with 515 cases in 2016, 539 cases for 2017 and 518 for 2018. Changes in the law and training in the Police Force might have increased the numbers of reports, due to a higher trust and expectancy of the response⁴⁰.

37 UN Women data, <https://data.unwomen.org/country/barbados>, (accessed 08-04-2022).

38 CEPLASTAT, 2019. <https://statistics.cepal.org/portal/cepalstat/dashboard.html?lang=es>. (Accessed 08-04-2022).

39 UN Women, Global Database on Violence against Women, (2018).

40 Barbados Beijing +25 report: progress made on the implementation of the Beijing declaration and platform for action 2014 – 2019.

Chile

Legal, regulatory, and institutional framework

Law/Document	Objective
Political Constitution of Chile (1980) and reforms	Equality before the law. In Chile there are no privileged persons or groups. In Chile there are no slaves and whoever steps on its territory is free. Men and women are equal before the law.
National Service for Women and Gender Equity (1991)	It is the body in charge of executing the policies, plans and programs entrusted to it by the Ministry of Women and Gender Equity. It has various programs in the areas of Women and Work, Violence against Women, Good Living of Sexuality and Reproduction, and Women, Citizenship and Participation.
Ministry of Women and Gender Equity (2016)	It ensures coordination, consistency, and coherence of policies, plans and programs on gender equity, which must be incorporated transversally in the State's actions.
Law No. 20,482 (2010)	Men have paid parental leave for 5 days. Co-responsibility in care.
Law No. 20,545 (2011)	Maternity leave is extended from 12 weeks to 24 or even 30, in the event that the woman chooses a partial or "part-time" postnatal parental leave, receiving a subsidy during that time. This law establishes an inalienable right for working women that allows them to combine work with motherhood. Also, based on the principle of co-responsibility, it establishes the power to transfer part of the parental postnatal to the father. This benefit is extended to women with seasonal or temporary jobs.
Law No. 20,764 (2014)	It guarantees the equal rights of both parents and enables an adequate distribution of family responsibilities. Parents will be able to leave their workplace for one hour a day to feed their children up to two years of age.
Law No. 21,212 or Gabriela Law, which expands the legal framework of femicide	Amends the Criminal Code, the Criminal Procedure Code and Law No. 18,216 on the classification of femicide Punish gender-based violence against women by expanding femicide to cases of intimate femicide (incorporating couples without cohabitation and with whom they have or have had a child in common) and femicide based on gender.
Law No. 21,153, which modifies the Penal Code to classify the	Amends the Penal Code, expanding the crime of sexual abuse against people over 14 years of age. It creates the crime of sexual harassment in public places or with public

<p>crime of sexual harassment in public spaces</p>	<p>access as a misdemeanor, the capture and dissemination of audiovisual records with sexual significance, obtained without the consent of the victim in a public place or with free access to the public.</p> <p>It creates the crime of sexual harassment in public places or places of public access as a misdemeanor, and as a simple crime the capture and dissemination of audiovisual records with sexual significance, obtained without the consent of the victim in a public place or with free access to the public.</p>
<p>Law No. 20,066 (2010)</p>	<p>It establishes femicide by increasing the penalties applicable to this crime and reforms the norms on parricide.</p>
<p>Law 20,607 (2012)</p>	<p>Sanctions workplace harassment practices.</p>
<p>Law No. 21,155, establishes protection measures for breastfeeding and its exercises</p>	<p>It enshrines the fundamental value of motherhood for society, recognizing it as a right of children and mothers.</p> <p>It promotes, protects, and supports breastfeeding in all areas of society and safeguards the free exercise of this right, sanctioning whoever limits or restricts this right.</p> <p>Modifies various legal bodies, including the Health Code, establishing a regulation for the incorporation of breast milk banks.</p>
<p>Law No. 21,129, modifies various legal bodies, in order to establish Maternal Jurisdiction to the officials of the Armed Forces, Order and Public Security, in the conditions indicated</p>	<p>It reinforces the rights of the civil servants of the Armed Forces and of Order and Security, so that the maternity jurisdiction is applicable to them, despite having incurred for health reasons in a legal reason for retirement.</p>
<p>Law No. 21,356 on directories of public companies SEP</p>	<p>It is established that both in the Public Companies created by law and in the State Companies that are part of the System of Public Companies, people of the same gender may not exceed sixty percent of the total number of board members, except in the case of of directories composed of 3 members, in which case people of the same gender may not exceed 2.</p>
<p>Plan for Equal Opportunities between men and women 2011-2020</p>	<p>It defines 4 principles and 6 strategic axes for its implementation and guides state policies and all its actions to ensure equal opportunities between men and women.</p>

Educational gaps

Chile has made important advances regarding education indicators for both, women and men. In the education category there is a slight gap in favor of women. However, female labor force participation rate is significantly lower than male. Net primary school enrollment rate for men and women in 2017 was high with 95% for both genders and the completion rate were slightly higher for women with 92% compared to men with 90%.⁴¹ In 2017, net secondary school enrollment rate was 88% for women and 85% for men, and gross tertiary school enrollment ratio (% of relevant age group) was 98% for women and 85% for men.⁴² Gross tertiary graduation ratio was 13% for women and 12% for men in 2000.⁴³

According to the Gender equality education plan 2015-2018, the differences in the dropout rates are more significant when comparing the level of basic and secondary education, which, when comparing by sex, the reasons that explain the dropout are quite different. In addition to the economic factor, in the case of women pregnancy or maternity is added, while men do it to work. Additionally, in Professional Technical Education, women make up more than 80% of the specializations in secretarial, early childhood education, nursing, and social service areas. Men, on the other hand, are concentrated in the areas of construction and works, topography, systems analysis, electronics and automotive. The university courses with the highest selection by women in 2016 were linked to health, design, and social sciences, while the most masculinized correspond to the area of science and mathematics

Access to Financial Resources

In 2017, 77% of men in the country had accounts in financial institutions, in comparison to 71% of women (% of population over 15 years old); for the same year, more men than women obtained loans from financial institutions (17% and 10% respectively).⁴⁴ Chile's gender gap regarding access to loans from the formal financial sector is higher than Latin America and upper-middle income countries (9% of women vs. 11% of men, for both).⁴⁵

41 [World Bank, 2019](#).

42 Idem.

43 Idem.

44 [World Bank, Global FINDEX database](#).

45 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.⁴⁶ In Chile, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 32% of women vs. 55% of men have access to emergency funds.)⁴⁷ Additionally, only 13% of Chilean women have savings to start, operate or expand a farm or business, significantly lower to the percentage of men (21%).⁴⁸

Economic Opportunities

The labor force participation rate gender gaps have had modest improvements between 2000 and 2017. Female labor force participation rate (of women over 15 years old) in Chile had a considerable increase, while the rate for women ages 15-24 stayed the same for women. In 2017, labor force participation rate (% of population over 15 years old) was 74% for men and 51% for women, in comparison to 76% and 38%, respectively, in 2000.⁴⁹ For young population, ages 15-24, female and male labor force participation rate has decreased (2000: M: 67%; F: 47%. 2017: M: 61%; F: 45%).⁵⁰

Furthermore, working conditions are similar between men and women: a slightly higher percentage of women are salaried workers (M: 71%; W: 72%), the percentage of women and men in vulnerable employment⁵¹ is slightly higher for women (M: 23%; W:25%) as well as unemployment rate (M: 7%; W:8%).⁵²

The ILO estimates that female labor force participation is significantly lower than male in the transport, storage, and communication sectors (of the total of people employed in these sectors, 80% are men and only 20% are women), and in the mining and quarrying, electricity, gas and water supply (of the total of people employed in these sectors, 88% are men and only 12% are women).³¹

46 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

47 Idem.

48 Idem.

49 [World Bank, 2019](#).

50 Idem.

51 The ILO defines vulnerable employment as people who work independently and do not have employees, and family members who contribute to the business of a household member. ([ILO, 2018](#)).

52 [World Bank, 2019](#).

Gender Based Violence

The results of 2015 survey from the Observatory against harassment in Chile showed that 3 of every 4 people in Chile suffered in the last 12 months some kind of sexual harassment on public spaces. When it is analyzed by gender 85% of women experienced it and 55% of men. 23% of the respondents suffered severe harassment such as persecution, exhibitionism, masturbation.

Young women are the most vulnerable group. 97% of them have suffered harassment in the last year, half at least once a week and two out of 10 daily. In 93% of cases, the harassment is perpetrated by a man. Of the total number of victims, 99% of the women and 50% of the men have been harassed by a man or a group of men.

In Chile, 18.5% of LGBTIQ+ people aged 15 or older have been sexually assaulted at some time in their life for being perceived as an LGBTIQ+ person (MISP, 2021). The personal experiences of victimization of LGBTIQ+ people in Chile occur in public spaces such as streets, parks, or transportation (20.6%).

COLOMBIA

Legal, regulatory, and institutional framework.

The Political Constitution of Colombia on the Article 43 establishes that "women and men have equal rights and opportunities, women may not be subjected to any kind of discrimination", and in its article 13 that "the State will promote the conditions for that equality is real and effective and will adopt measures in favor of discriminated or marginalized groups".

The National Development Plan 2018-2022 'Pacto por Colombia' has for the first time a specific chapter under the 'pact of equity for women' which through eight (8) lines of policy addresses aspects to advance in the guarantee of the rights and interests of various sectors of women; (I) Strengthening gender institutions in Colombia (ii) Education and economic empowerment to eliminate gender gaps in the world of work (iii) Care, a commitment to articulation and co-responsibility; (iv) Participation of women in power scenarios and decision making; (v) Promotion of sexual health and reproductive rights for children and adolescents; (vi) Right of women to a life free from violence; (vii) Rural women as agents of transformation in the countryside; (viii) Equality of women for the construction of peace.

Law/Document⁵³	Content
<u>Document Conpes 161 de 2013</u>	National Public Policy on Gender Equality for women and the Comprehensive Plan to guarantee women a Life Free of Violence.
<u>Document Conpes 147 de 2012</u>	Guidelines for the development of the Strategy for the Prevention of Pregnancy in Adolescence.
<u>Document Conpes 3784 de 2013</u>	Policy for the Prevention, Protection and Guarantee of the Rights of Women Victims of the Armed Conflict.
<u>Decree 1930 of 2013</u>	National Public Policy on Gender Equity and creates an Intersectoral Commission for its implementation.
<u>Law 1496 of 2011</u>	Guarantees equal pay and remuneration between men and women.
<u>Law 1413 of 2010</u>	Through which the inclusion of the care economy in the system of national accounts is regulated in order to measure the contribution of women to the economic and social development of the country and as a fundamental tool for the definition and implementation of public policies.
<u>Law 1257 of 2008</u>	Mandates norms of awareness, prevention and punishment of forms of violence and discrimination against women

53 Source: t.ly/fhzzP

<u>Law 823 of 2003</u>	Mandate regulations on equal opportunities for women, guarantee of their rights and incorporation of gender equity actions at the national and territorial levels.
<u>Law 731 of 2002</u>	Mandates norms to favor rural women.
<u>Law 581 of 2000</u>	Regulates the adequate and effective participation of women in the decision-making levels of the different branches and bodies of public power.
<u>Decree 2737 of 1989</u>	Regulates the adequate and effective participation of women in the decision-making levels of the different branches and bodies of public power. It creates the Family Commissioners and Law 1098 of 2006 obliges all mayors to organize them.

Educational gaps

Colombia has made important advances regarding education indicators for both, women and men. In the education category there is a slight gap in favor of women. Net primary school enrollment rate declined slightly between 2000 and 2017 (2000: Women 94%, Men 95%; 2017: Women 91%, Men 91%), but the completion rate increased for women and men.⁵⁴ In 2017, net secondary school enrollment rate was 82% for women and 76% for men, and gross tertiary school enrollment ratio (% of relevant age group) was 65% for women and 56% for men.⁵⁵ Gross tertiary graduation ratio was 30% for women and 21% for men in 2017, in comparison to 5% and 4%, respectively, in 2000.⁵⁶ Gross enrollment in tertiary education has been increasing, especially female gross enrollment, but the female shares of graduates from STEM decreased from 37% to 34% between 2000 and 2017.⁵⁷

Access to Financial Resources

In 2017, 49% of men in the country had accounts in financial institutions, in comparison to 41% of women (% of population over 15 years old); for the same year, more men than women obtained loans from financial institutions (16% and 13% respectively).⁵⁸ Colombia’s gender gap

54 [World Bank, 2019](#).

55 Idem.

56 Idem.

57 Idem.

58 [World Bank, Global FINDEX database](#).

regarding access to loans from the formal financial sector is similar to Latin America and upper-middle income countries (9% of women vs. 11% of men, for both).⁵⁹

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.⁶⁰ In Colombia, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 27% of women vs. 47% of men have access to emergency funds).⁶¹ Furthermore, the access to emergency funds gender gap in Colombia is higher than the gap in the region, and significantly higher than in upper-middle income countries, 35% of women vs. 52% of men, and 53% of women and 61% of men have access to emergency funds, respectively.⁶² Additionally, only 12% of Colombian women have savings to start, operate or expand a farm or business, significantly lower to the percentage of men (19%).⁶³

Economic Opportunities

The labor force participation rate gender gaps have had modest improvements between 2000 and 2017. Female labor force participation rate (of women over 15 years old) in Colombia had a slight increase, while the rate for women ages 15-24 had a slight decrease. In 2017, labor force participation rate (% of population over 15 years old) was 82% for men and 59% for women, in comparison to 84% and 54%, respectively, in 2000.⁶⁴ For young population, ages 15-24, female and male labor force participation rate has decreased (2000: M: 67%; F: 47%. 2017: M: 61%; F: 45%).⁶⁵

Furthermore, working conditions are similar between men and women: a slightly higher percentage of women are salaried workers (M: 48%; W: 51%), the percentage of women and

59 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

60 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

61 Idem.

62 Idem.

63 Idem.

64 [World Bank, 2019](#).

65 Idem.

men in vulnerable employment⁶⁶ is similar (M: 47%; W:46%). However, unemployment rate is higher for women than for men (M: 7%; W:12%).⁶⁷

The ILO (International Labor Organization) estimates that female labor force participation is significantly lower than male in the transport, storage, and communication sectors (of the total of people employed in these sectors, 86% are men and only 14% are women), and in the mining and quarrying, electricity, gas and water supply (of the total of people employed in these sectors, 83% are men and only 17% are women).⁶⁸

Gender Based Violence

According to the SIEDCO (*Sistema de Información Estadístico, Delincuencial, Contravencional y Operativo de la Policía Nacional*) between January 2019 and January 2022, 97,237 cases of sexual violence were reported. Of that total, 85% (82,873) were committed against women, while 15% (14,364) against men.

The Transmilenio sexual harassment against women survey, conducted in 2017, found that women's security perception when using the system was low: 30% of female users feels very insecure and 54% feels insecure.⁶⁹ Additionally, 65% of surveyed women said they had suffered sexual leering in the last week and 64% said they were touched in their body without consent.⁷⁰ To address the gender gaps in the sector, the Transportation Ministry created the Sectorial Committee for the implementation of the Gender Equality Public Policy. This Committee is responsible of incorporating women's needs in the sector's plans, projects, and strategies.⁷¹

66 The ILO defines vulnerable employment as people who work independently and do not have employees, and family members who contribute to the business of a household member. ([ILO, 2018](#)).

67 [World Bank, 2019](#).

68 Own calculations using ILO data. ILO (2019). [Employment distribution by economic activity \(by sex\) – ILO modelled estimates \(thousands\), Nov. 2019 \(%\) – Annual](#).

69 [Acoso sexual contra mujeres en el transporte público: Caso TransMilenio, Bogotá D.C.](#)

70 Idem.

71 Mintransporte. (2020). [Sector transporte contra la violencia hacia las mujeres](#).

COSTA RICA

Legal, regulatory and institutional framework

Costa Rica is one of the countries in Latin America and the Caribbean (LAC) that has historically demonstrated an important commitment to gender equality and the empowerment of women. In 1986, the country ratified the “Convention for the Elimination of all forms of Discrimination against Women” (CEDAW) of 1979 and its optional protocol in 2001. Subsequently, it approved a series of laws, policies and regulations that aim to close gender gaps, among these we can highlight: the Reform of Articles 58 and 60 of the Electoral Law in 1996 that obliges political parties to contemplate a minimum quota of 40% of women in different political positions ; the establishment of the National Institute for Women (INAMU) in 1998, an entity in charge of supervising all policies related to gender issues; the implementation of the National Policy for Gender Equality and Equity (PIEG) 2007-2017 and respective action plans; and the creation, to date, of 67 Municipal Women's Offices and 26 gender units in Ministries, in the Legislative Assembly, the Judiciary, the Costa Rican Institute of Electricity (ICE) and the Supreme Electoral Tribunal⁷².

Law/Document	Content
Labor Code (1944)	It establishes that the amount of the salary in each class of work is set based on its quantity and quality and no differences can be established based on sex.
Law for the Promotion of Social Equality for Women (1990)	It establishes that the State must promote and guarantee equal rights between men and women in the political, economic, social, and cultural fields. It establishes that working parents will have the right to support services from children's centers. Those with limited economic resources will also have the right to receive a subsidy from the State. In art.94 the employer is prohibited from firing pregnant and lactating women.
Law 7,621 reforms the Labor Code (1996)	Compulsory paid maternity leave during the month prior to delivery and the three months after. The worker who adopts a minor will enjoy the same rights and a three-month license. Parental license.
Creation of the National Institute for Women (1998)	Promotes and protects the human rights of women. It also coordinates and supervises the national policy for gender equality and equity.
Law of Care for women in conditions of poverty (1998)	It establishes special attention for women in conditions of poverty, through training in human development, technical-labor training, labor and

72 UNPFA (2014). Advances towards gender equity: Costa Rica 2014.

	productive insertion, and an economic incentive linked to training processes.
Political Constitution (Reform of 1999)	It establishes that every person is equal before the law and no discrimination contrary to human dignity may be practiced.
Municipal Code (Reforms of 2008)	It establishes that municipalities must promote local public policies for the promotion of women's rights and citizenship, in favor of gender equality and equity.
Gender Based Violence	Law 8,805 (2010). Amendment to the Law Against Sexual Harassment in Employment and Teaching. Law 8,925 (2011). Amendment to the Law against Domestic Violence. Law 8,929 (2011). Reform of the Law on Penalization of Violence Against Women.
Creation of the Gender Equality and Equity Management System (SIGIEG), national technical standard (2013)	It is a tool for organizations that decide on a voluntary basis, to get involved in the process of recognizing the gender gaps that exist within them and, subsequently, apply corrective measures to eliminate them.
National Employment and Production Strategy (2014)	It aims to expand opportunities for women and men to find decent and productive work.
National Development Plan (2014)	Defines as one of the pillars to achieve gender equality and equal citizenship: the ability of women to generate their own income and control assets and resources (economic autonomy).
National Policy for Gender Equality and Equity 2007-2017	Promotes affirmative actions for vertical and horizontal occupational de-segregation, such as: definition of minimum percentages for hiring women in managerial positions, training of women in highly segregated academic areas (scientific and technological careers).

Educational gaps

Specifically, regarding advances in educational participation, the gender gap in the enrollment of girls and boys in primary school is almost non-existent (96.2% and 9.6.1% in 2014, respectively). However, in secondary and tertiary education, the gaps begin to increase, with women having a higher percentage of enrollment in both levels (80.1% vs. 76.2% and 58.8% vs. 47.5% in 2014, respectively).⁷³

Economic Opportunities

73 Banco mundial (2014). Gender Data Portal: Costa Rica.

Although Costa Rica has witnessed advances in terms of gender, one of the most important challenges for the country is, as the WEF report highlights, to close these gaps in the economic participation of women. Data from the International Labor Organization (ILO) from 2012 reveal that female labor participation (43.5%) is well below male participation (75.9%), being one of the countries in the region with the lowest female participation in the labor market.⁷⁴ Additionally, when this analysis is done by areas, it can be seen that the gaps between men and women in rural areas (34.9% and 77.2% respectively)⁷⁵ are more pronounced and the gaps between rural and urban women are also important (8.6 percentage points). This is since formal or quality job options in rural areas are extremely limited due to limited access, among other things, and to this are added the gender stereotypes that still attribute to women the responsibilities of housework, home care and reproduction. In fact, 30.5% of women work in lower quality jobs, compared to 15.1% of men.

To this it can be added that the country presents an important occupational segregation of gender. In fact, women are overrepresented in sectors such as housework, education and social professions, sectors that tend to be less paid; but they are underrepresented in sectors such as transport and construction, sectors that tend to have higher wages, with more stable jobs and better social benefits. For example, women represent almost 70% of all employees in the education sector but represent less than 15% and 5% of employees in the transport and construction sectors, respectively.⁷⁶ When the structure of occupation by area is analyzed for the year 2014, the percentage of participation of women in the construction and transportation sectors is even lower: 0.3% and 1.5%, respectively.⁷⁷

It can be concluded, then, that rural women have less access to jobs and their own income, which results in a greater situation of vulnerability and poverty. In 2014, 22.7% of rural women are in a situation of poverty compared to 21.4% of men and 46.4% of rural women do not have their own income, compared to 31.2% of urban women and 12.4% of rural men.⁷⁸

Access to Financial Resources

In 2017, 75% of men in Costa Rica had accounts in financial institutions, in comparison to 61% of women (% of the population 15 years old); for the same year, more men than women obtained loans (15% and 13% respectively).⁷⁹

74 ECLAC data indicate a slight increase for both sexes in 2015: female labor participation reached 47% and male 78%. See: CepalStat. "Gender Equality Observatory for Latin America and the Caribbean: Costa Rica 2015".

75 ILO (2013). Decent work and gender equality. Geneva: World Labor Organization; and ILO (2012). Labor panorama 2012: Latin America and the Caribbean. Geneva: World Labor Organization.

76 IDB (2015). Infographic: Women's employment by sectors in LAC.

77 CepalStat. "Gender Equality Observatory for Latin America and the Caribbean: Costa Rica 2014".

78 Idem.

79 [World Bank, Global FINDEX database.](#)

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.⁸⁰ In Costa Rica, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 37% of women vs. 54% of men have access to emergency funds).⁸¹ Additionally, only 14% of Costa Rican women have savings to start, operate or expand a farm or business, slightly lower to the percentage of men (19%).⁸²

Gender Based Violence

In Costa Rica, the number of victims under the Law Against the Domestic Violence increased in 2020, 2,549 more victims than 2019, reaching a total of 10,779 individuals, of which 78% were women.⁸³ In 2020, 19 femicides were recorded, representing 31% of females being victims of violent deaths.⁸⁴

Dominican Republic

⁸⁰ Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

⁸¹ Idem.

⁸² Idem.

⁸³ <https://infosegura.org/en/2021/06/18/violence-against-women-costa-rica-2020/>

⁸⁴ Idem.

Legal, regulatory, and institutional framework

The 2010 Dominican Republic Constitution establishes equal rights for men and women (art. 39, 42, 62), including the right to work and to personal integrity. The country has the National Plan for Equality and Gender Equity 2020-2030 (PLANEG III) led by the Ministry of Women (created by Law 86-99) and aligned with the National Development Strategy and the Sustainable Development Goals. The Plan promotes economic, decision making and physical autonomy of women⁸⁵. Regarding domestic violence and gender-based violence, Law 24-97 (art. 309, 330-333) recognizes it is a crime and defined the punishment in these cases⁸⁶. To promote women participation on politics, electoral laws have been modified by defining a percentage of women that have to be part of the candidates and for occupy deputy or municipal positions⁸⁷.

Law/Document	Content
Convention on the Elimination of all forms of Discrimination against Women (CEDAW)	Ratified in 1987. Optional Protocol ratified in 2001. Mandatory reference on equality between men and women. With their ratification or accession, States are legally obliged to adopt all necessary measures, including laws and temporary extraordinary measures, so that women have the full enjoyment of all their human rights and fundamental freedoms.
Beijing Declaration and Platform for Action (1995)	The signatory countries assume the responsibility of implementing the Platform for Action in which 12 critical areas of intervention for the advancement of women are defined.
Labor Code and reforms (1992)	Parental leave 2 paid days.
Ministry of Women (1999)	Defines and leads the execution of public policies, plans and programs that contribute to gender equality and equity and to the full exercise of women's citizenship.
Offices of Gender Equity and Development (OEGD, 2001)	Focal points in the different ministries in order to mainstream the gender perspective in sectoral policies and facilitate the guiding and articulating role of the Ministry of Women with the sectors.

⁸⁵ National Plan for Equality and Gender Equity 2020-2030, Ministry of Women, (2019). https://oig.cepal.org/sites/default/files/2019_planeg_iii_dom.pdf

Law 86-99 creation of the Secretary of State for Women, 1999.

⁸⁶ Law No. 24-97 that introduces modifications to the Penal Code, the Code of Criminal Procedure and the Code for the Protection of Children and Adolescents, 1997.

⁸⁷ Electoral Law 275, <https://oig.cepal.org/es/laws/3/country/republica-dominicana-21>.

Law 87 (2001)	It establishes that the Dominican Social Security System (SDSS) will develop childcare services to care for the children of workers, from 45 days old until they are five years old.
National Plan for Gender Equality and Equity 2007-2017 (PLANEG II)	The plan defines 7 priority national issues through which the main problems faced by women in Dominican society should be addressed. For each of these national issues, the current context is analyzed in relation to the problems it poses for the construction of equality and equity between genders, and from this a set of objectives is derived that seeks to address and solve these problems. Likewise, areas of intervention and priority lines of action are identified that should guide the concrete actions to be developed by the public and private co-executing institutions of PLANEG II.
Political Constitution (2010)	Women and men are equal before the law. Any act that has the objective or result of undermining or annulling the recognition, enjoyment, or exercise under equal conditions of the fundamental rights of women and men is prohibited. The necessary measures will be promoted to guarantee the eradication of inequalities and gender discrimination. The State guarantees the equality and equity of women and men in the enjoyment of their rights to work.
Promulgation of resolution No. 211-14 of the ILO No.183 (2014)	Extension of maternity leave to 14 weeks.
Criminal Code (Law 550/2014)	It typifies Femicide.

Educational gaps

Although gender gaps in the access and level of education of women have reduced in the past year (for example literacy rate for people aged 15+ is the same for both genders⁸⁸), there are still some differences. World Bank data from 2018 show women (96.9%) have higher primary education completion than men (91.2%). Similar situation happens regarding the completion rate for lower secondary education which for women is 91.5% and for men 81.4%⁸⁹. This trend is

88 UN Women data, <https://data.unwomen.org/country/dominican-republic>

89 World Bank data sets, (2019).

consistent with the increment on the average schooling years, which changed from 8.4 years in 2008 to 9.1 years in 2015⁹⁰.

Although the rate of out of school for primary and lower secondary education for women is 7.3% and for male 7.4 %⁹¹, according to UNICEF data (2016), the reasons for early school drop have differences according to gender. The main reasons for quit school for men are preferences to work instead of study (45.7%), no liking school (17%) and lack of financial resources (16.5%). Meanwhile, for women the main reason is house chores (21.3%), lack of money (16.5%), work (15.7%), and marriage, pregnancy and taking care of own children (9.7%). This causes reflect persistency of gender roles⁹².

The gross attendance ratio for tertiary education is higher for women than men. The attendance of female population is 122%⁹³ and for male 71,5%. Students' distribution by gender reveals there are more women in careers like art and humanities (81% are women), health (80% are women), and education (75% are women). While from the total number of students in engineer, 29% are women⁹⁴. Yet, the female share of graduates from STEM in this country is 40%⁹⁵.

Economic Opportunities

According to the Ministry of Economy, Planning and Development, women poverty is higher than for men. The general poverty rate for women in 2020 was 24.61% which increased up to 25.78% in 2021. While for men it was 22.04% in 2020 and reduced to 21.80% in 2021. On the other hand, the poverty femininity index (age 25-59). In 2020, there were 138 women in poverty for every 100 men in the same situation. But for 2021, it increased to 150 poor women per every 100 men. The higher value since 2016⁹⁶. On the other hand, the labor force participation rate of women (over 15 years of age) in 2020 was 47.69%, while for men was 74.12%. This value has decreased if it is compared with 2019, when 52.52% of women and 78.21% of men participated in the labor force. This date evidence economic dependency of women and reduce household incomes, that

90 (INTERED, 2018).

91 UN Women data, <https://data.unwomen.org/country/dominican-republic>.

92 (UNICEF in INTERED, 2018).

93 Includes over-age and under-age students from early or late entry and grade repetition. 4 The little data book on gender, (World Bank, 2019).

94 Gender inequalities in the Dominican Republic 2018 – 2020, (BID, 2019).

95 The little data book on gender, (World Bank, 2019).

96 Official statistics bulletin of monetary poverty in the Dominican Republic 2021. Ministry of Economy, Planning and Development.

might be related to gender assigned roles (domestic chores, caregiving, education level, marital status, mother with young age children, and other factors⁹⁷. Unemployment rate for women in 2020 was 8.94%, which means more than the double of men with 4.21%. If data is compared to 2019, women rate was even higher with 9.27% and men rate remained similar with 4.1%⁹⁸.

Gender differences are also evident in the way people distribute their time for paid and unpaid activities. While women dedicate 31.2 hours per week to unpaid work (meaning 16.2% of their time dedicated to domestic chores and care work), men expend 9.6 weekly hours (equivalent to the 9.6% of their time⁹⁹), which mean one third of the time a women used for unpaid work. Situation is inverse regarding paid work, since women use 19.8 hours of their time and men 37.2 hours¹⁰⁰.

Regarding women participation in the different economic sectors for 2018, there is a higher employment of this gender in services with 89% for women and 59% for men. While in the industry the trend is inverse, with 26% of men working in this area and 10% of women. For agriculture situation is similar, since 15% of the men work in this sector, compared to only 1% of women, showing a masculinized activity¹⁰¹.

The ILO estimates that female labor force participation is significantly lower than male in the transport, storage and communication sectors (of the total of people employed in these sectors, 93% are men and only 7% are women), and in the mining and quarrying, electricity, gas and water supply (of the total of people employed in these sectors, 67% are men and only 33% are women)¹⁰².

Access to Financial Resources

Although there are differences in the access to bank account per gender, these are not significant since the 53% of women in Dominican Republic report have an account, compared to the 56% of men. A similar situation happened with people who borrow from a financial institution, since the percentage is the same for men and women (18%). On the other hand, the

97 <https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.NE.ZS?locations=DO>, (World Bank, 2019).

98 Idem.

99 UN Women data, <https://data.unwomen.org/country/dominican-republic>.

100 Latin America and the Caribbean Gender Equality Observatory, (2017).

101 The little data book on gender, (World Bank, 201).

102 Own calculations using ILO information. ILO (2019). Employment distribution by economic activity (by sex) – ILO modelled estimates (thousands), Nov. 2019 (%) – Annual.

percentage of people able to raise funds for an emergency from a bank, employer or private lender was higher for women in 2017, with the 18% compared to the 14% of men¹⁰³.

Gender Based Violence

According to the Experimental survey about women from 2018, 68.8% of women (aged +15) have experienced violence along their life. Values are higher for rural areas with 71.9% while in cities it is 61%. Violence in the past 12 months remains high with 55.9% in general, but 68.1% in rurality and 54.8% in urban zones. More than half of women (51.7%) have experience violence along their life in the public sphere (labor, education and communitarian or social spaces), and 52.7% in the private dimension. Regarding violence in the public sphere, 84.3% of declared it happened in public spaces like streets, parks or the beach. And 2.5% experience it at public transport. About violence in the private sphere, the 41.8% of women experienced it from their current or last partner¹⁰⁴. Regarding early marriage, the proportion of women aged 20-24 years who were married or in a union before age 18 is 35.9% and for women before age 15 is 12.3%.¹⁰⁵

103 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

104 (Women Ministry, National Statistics Office, BID, 2018).

105 UN Women data, <https://data.unwomen.org/country/dominican-republic>.

Jamaica

Legal, regulatory, and institutional framework

Law/Document	Content
Convention on the Elimination of all forms of Discrimination against Women (CEDAW)	Ratified in 1987. Optional Protocol ratified in 2001. Mandatory reference on equality between men and women. With their ratification or accession, States are legally obliged to adopt all necessary measures, including laws and temporary extraordinary measures, so that women have the full enjoyment of all their human rights and fundamental freedoms.
Beijing Declaration and Platform for Action (1995)	The signatory countries assume the responsibility of implementing the Platform for Action in which 12 critical areas of intervention for the advancement of women are defined.
Constitution of Jamaica and amendments (1962)	Acknowledges rights and freedoms of the individual, such as the right to equality before the law no matter sex, race, and place of origin, social class, color, or political opinions.
Employment Law (1995)	It defines the labor rights of women and men with special attention to equal pay.
Maternity Law (1999)	The maternity leave period should not exceed 12 weeks per pregnancy or childbirth. The weekly maternity benefit corresponds to the remuneration recognized for work done in the last week (100%). Parental leave is not provided.
Law on Domestic Violence (2004 revision)	Provides greater protection for victims of domestic violence and abuse and applies to both spouses and common-law partners.
Jamaica National Development Plan Vision 2030 (2009)	It includes a Sector Plan on Gender that recognizes gender equality as a cross-cutting theme for all national development initiatives.
Law on sexual crimes (2009)	Provides new provisions in case of rape and other sexual crimes. It also provides for the creation of a Registry of Sexual Offenders.
National Policy for Gender Equality (2011)	Its objective is to influence the development and implementation of policies to move from a gender-neutral approach that assumes gender equality and equity to a gender-aware position that recognizes that there are barriers that prevent equal access to opportunities and therefore they create inequality.

Bureau of Gender Affairs (2016)	It is the state agency and national machinery for women's empowerment and an advocate for gender issues.
Gender Advisory Council (2005)	It is a multi-sectoral body charged with guiding the implementation, monitoring, and evaluation of the National Policy for Gender Equality in conjunction with the Bureau of Gender Affairs.

Educational gaps

In the education category Jamaica’s net secondary school enrollment rate for men and women in 2017 was lower with 71% and 77% respectively compared to 75% and 78% in 2000. Similar trends were found on lower secondary completion rate with 97% for men and 98 for women in 2000 and 84% and 87% respectively in 2017.

Economic Opportunities

The labor force participation rate gender gaps have had modest improvements between 2000 and 2017. Female labor force participation rate (of women over 15 years old) in Jamaica had a slight increase, while the rate for women ages 15-24 had a slight decrease. In 2017, labor force participation rate (% of population over 15 years old) was 74% for men and 60% for women, in comparison to 77% and 57%, respectively, in 2000.¹⁰⁶ For young population, ages 15-24, female and male labor force participation rate has decreased (2000: M: 52%; F: 34%. 2017: M: 45%; F: 36%).¹⁰⁷

Furthermore, working conditions are similar between men and women: a slightly higher percentage of women are salaried workers (M: 56%; W: 67%), the percentage of women and men in vulnerable employment¹⁰⁸ is similar (M: 40%; W:31%). However, unemployment rate is higher for women than for men (M: 7%; W:12%).¹⁰⁹

According to the Statistical Institute of Jamaica (SIOJ), estimated for October 2019, female participation in the transport, storage and communication sector was 21.16% of the total people employed in the sector, 21% for the mining and quarrying, electricity, gas and water supply

106 [World Bank, 2019](#).

107 Idem.

108 The ILO defines vulnerable employment as people who work independently and do not have employees, and family members who contribute to the business of a household member. ([ILO, 2018](#)).

109 [World Bank, 2019](#).

sector, and 3.4% for construction.¹¹⁰ Occupational segregation is significant in Jamaica, of the total of women employed, the majority is in the services sector (wholesale and retail, hotels and restaurant services, education, health and social work), while women in the transport, storage and communication, and construction sectors, of the total of women employed, were estimated to represent 2.66% and 0.66%, respectively.¹¹¹

Access to Financial Resources

In 2014, 79% of men in the country had accounts in financial institutions, in comparison to 78% of women (% of population over 15 years old); for the same year, men than women obtained loans from financial institutions with the same rate (11% for both).¹¹² Jamaica's gender gap regarding access to loans from the formal financial sector is similar to Latin America and upper-middle income countries (9% of women vs. 11% of men, for both).¹¹³

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.¹¹⁴ In Jamaica, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 54% of women vs. 64% of men have access to emergency funds).¹¹⁵ Additionally, only 12% of Jamaica women have savings to start, operate or expand a farm or business, significantly lower to the percentage of men (19%).¹¹⁶

Gender Based Violence

Jamaica's women's health survey in 2016 found that 23% of women had been sexually abused by men other than their partners and, for 3%, this happened within the 12 months prior to the

110 Own calculations using data from the Statistical Institute of Jamaica. 2019. Labor force by industry group.

111 Idem.

112 [World Bank, Global FINDEX database.](#)

113 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

114 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

115 Idem.

116 Idem.

interview. One in four women (24%) reported being sexually harassed during their lifetime; 13% per cent reported this happening within the 12 months prior to the interview¹¹⁷.

117 <https://evaw-global-database.unwomen.org/-/media/files/un%20women/vaw/vaw%20survey/jamaica%20womens%20health%20survey%20report%202016.pdf?vs=5406>

PANAMA

Legal, regulatory, and institutional framework

The Political Constitution of Panama (1972) establishes that "women and men have equal rights and opportunities, women may not be subjected to any kind of discrimination", and in its article 13 that "the State will promote the conditions for that equality is real and effective and will adopt measures in favor of discriminated or marginalized groups".

Law/Document ¹¹⁸	Content
Political Constitution (1972) of the Republic of Panama	It establishes the principle of non-discrimination, equal pay under equal conditions without distinction and the protection of maternity.
Labor Code (1971)	It establishes the principle of equal pay (Art. 10), maternity protection and the right to breastfeed (Art. 105, 106, 107, 114, 116).
Law No. 3 of May 17, 1994 ¹¹⁹	Approves the family code that protects the rights of married women or women in common law, in case of divorce in relation to property, that as a partner of marital property, that is, acquired during the marriage.
Law No. 12 of April 20, 1995	Approves the Inter-American Convention to prevent, punish, and eradicate violence against women. Convention Belem Do Pará.
Law No. 50 of November 23, 1995	Protects and encourages breastfeeding.
Law No. 4 of January 29, 1999	Institutes Equal Opportunities for Women.
Law No. 17 of March 26, 2001	Approves the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).
Law No. 38 of July 10, 2001	Reforms and adds articles to the Criminal and Judicial Code, on Domestic Violence and abuse of children and adolescents, repeals articles of Law 27 of 1995 and dictates other provisions.
Law No. 16 of March 31, 2004	Establishes provisions for the prevention of crimes against integrity and sexual freedom, modifies and adds articles to the Penal and Judicial Code.
Law No. 11 of April 22, 2005	Prohibits employment discrimination and adopts other measures.

118 Source: Enred Panamá 2018.

119 Se consiguó la información de la aplicación del Código de Familia a través de consultas con el INSAMU noviembre 2018.

Law No. 71 of December 23, 2008	Creates the National Institute for Women (INAMU) for the protection of women against violence and the protection of their rights.
Law No. 82 of October 24, 2013	This Law criminalizes femicide and aims to guarantee the right of women to a life free of violence, protect the rights of women victims of violence, as well as prevent and punish all forms of violence against women.
Law No. 29 of May 5, 2015	Approves Convention 189 on Decent Work for Domestic Workers.
Law No. 30 of May 5, 2015	Amends and repeals provisions of the Family Code.
Law No. 73 of December 18, 2015	Amends articles of Law 38 of 2001, on the domestic violence procedure.
Law No. 60 of November 30, 2016	Reforms Law 29 of 2002, on pregnant minors and dictates other provisions.
Law No. 27 of May 23, 2017	Creates parental leave for workers of private companies and public servants.
Law No. 56 of July 11, 2017	It establishes the participation of women in state boards of directors.
Executive Decree No. 53 of June 25, 2001	Law No. 4 of January 29, 1999, is regulated with the creation of Government Mechanisms for the Promotion of Equal Opportunities.
Executive Decree No. 443 of November 5, 2001	It guarantees the continuity and completion of studies for pregnant minors.
Executive Decree No. 464 of July 2, 2012	Approves the National Plan against Human Trafficking.
Executive Decree No. 244 of December 18, 2012	Adopts the Public Policy for Equal Opportunities for Women that was optimized through the Action Plan for Equal Opportunities for Women 2016-2019.
Executive Decree No. 100 of April 20, 2017	It regulates the Law 82 of October 24, 2013.

Educational gaps

Panama has made considerable progress in terms of education indices for both men and women. In the education category there is a slight gap in favor of women. Net primary school enrollment rate declined between 2000 and 2017 (2000: Women 95%, Men 95%; 2017: Women 87%, Men 87%), but the completion rate increased for women and men. In 2017, net secondary school enrollment rate was 72% for women and 67% for men, and gross tertiary school enrollment ratio (% of relevant age group) was 58% for women and 37% for men. Gross tertiary graduation ratio was 33% for women and 16% for men in 2017, in comparison to 30% and 13%, respectively, in

2000.¹²⁰ Gross enrollment in tertiary education has been increasing, especially female gross enrollment, including the female shares of graduates from STEM increasing from 41% to 49% between 2000 and 2017.¹²¹

Access to Financial Resources

In 2017, 51% of men in Panama had accounts in financial institutions, in comparison to 42% of women (% of the population 15 years old); for the same year, more men than women obtained loans (9% and 7% respectively).¹²² Panama's gender gap regarding access to loans from the formal financial sector is similar than Latin America and upper-middle income countries (9% of women vs. 11% of men, for both).¹²³

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.¹²⁴ In Panama, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 36% of women vs. 51% of men have access to emergency funds).¹²⁵ Additionally, only 13% of Panamanian women have savings to start, operate or expand a farm or business, significantly lower to the percentage of men (20%).¹²⁶

Economic Opportunities

The labor force participation rate gender gaps have had modest improvements between 2000 and 2017. Female labor force participation rate (of women over 15 years old) in Panama had a slight increase, while the rate for women ages 15-24 had a slight decrease. In 2017, labor force participation rate (% of population over 15 years old) was 80% for men and 53% for women, in comparison to 81% and 45%, respectively, in 2000.¹²⁷ For young population, ages 15-24, female

120 Idem.

121 Idem.

122 [World Bank, Global FINDEX database.](#)

123 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

124 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

125 Idem.

126 Idem.

127 [World Bank, 2019.](#)

and male labor force participation rate has decreased (2000: M: 64%; F: 36%. 2017: M: 58%; F: 34%).¹²⁸

Furthermore, working conditions are similar between men and women: a slightly higher percentage of women are salaried workers (M: 68%; F: 63%), the percentage of women and men in vulnerable employment¹²⁹ is similar (M: 33%; F: 30%). However, unemployment rate is higher for women than for men (M: 3%; F: 5%).¹³⁰

The ILO estimates that female labor force participation is significantly lower than male in the transport, storage and communication sectors (of the total of people employed in these sectors 85% are men and only 15% are women), and in the mining and quarrying, electricity, gas and water supply (of the total of people employed in these sectors, 81% are men and only 19% are women).⁴⁰ IDB estimations in 2015 for Panama, showed that only 13% of transport workers were women and 6% in construction this added to the fact that most of these women work on lower-paid and prospective jobs such as cleaning or on administrative jobs.

Gender Based Violence

Panama is one of the countries with lower rates of GBV (Gender Based Violence) in the region with 16% compared to the regional average with 25%¹³¹. On the National Survey of sexual and reproductive health in 2014-2015, 34% of the female respondents experienced physical, emotional, or sexual violence at least once in their lifetime. Between January and November of the year 2018, 18 femicides and 14 attempted femicides were registered throughout the country, a majority were registered in the city of Panama¹³². Likewise, 14,265 cases of family violence and 2,348 cases of rape were reported during the same period¹³³.

128 Idem.

129 The ILO defines vulnerable employment as people who work independently and do not have employees, and family members who contribute to the business of a household member. ([ILO, 2018](#)).

130 [World Bank, 2019](#).

131 <https://publications.iadb.org/publications/spanish/document/Violencia-sexual-y-basada-en-genero-mapa-de-ruta-para-su-prevencion-y-atencion-en-America-Latina-y-el-Caribe.pdf>

132 Public Ministry, 2018.

133 Idem.

PARAGUAY

Legal, regulatory, and institutional framework

Paraguay has taken various measures to ensure gender equality with the adoption of the new Constitution of 1992 and has developed an institutional structure in women's rights, such as the constitution of the Ministry of Women and the execution of the III National Plan of Equal Opportunities between Women and Men 2008-2017.

Law/Document	Content
Convention on the Elimination of all forms of Discrimination against Women (CEDAW)	Ratified in 1987. Optional Protocol ratified in 2001. Mandatory reference on equality between men and women. With their ratification or accession, States are legally obliged to adopt all necessary measures, including laws and temporary extraordinary measures, so that women have the full enjoyment of all their human rights and fundamental freedoms.
Beijing Declaration and Platform for Action (1995)	The signatory countries assume the responsibility of implementing the Platform for Action in which 12 critical areas of intervention for the advancement of women are defined.
Political Constitution (1992)	Art. 48: Of the equal rights of men and women. Men and women have equal civil, political, social, economic, and cultural rights. It establishes that the State will promote the conditions and create the appropriate mechanisms for equality to be real and effective, smoothing out the obstacles that prevent or hinder its exercise and facilitating the participation of women in all areas of national life. Reform to the Political Constitution to explain legal equality between women and men, Law 19,611 (1999).
Labor Code (1993)	It ensures that women enjoy the same labor rights and have the same obligations as men.
Criminal Code (1997)	The concept of punishable acts against sexual autonomy has been introduced in the current Penal Code.
Law 1,600 against domestic violence (2000)	It is a provisional measure to protect the life of the victim of violence, regardless of whether they live with the aggressor. It stipulates protection measures, dictated by the Justice of the Peace of the area, anticipating police protection.

Ministry of Women (2012)	Promotes and implements public policies with a gender perspective, for the full enjoyment of women's human rights.
Plan for Equality between Women and Men 2008-2017	Promotes the incorporation of the gender perspective in the preparation, coordination, execution, monitoring, and evaluation of public policies through efficient regulatory instruments and actions aimed at eliminating all forms of gender discrimination, as well as equal opportunities and results, favoring the democratization of society.
National Development Plan 2014-2030	It includes gender equality policies to achieve equal opportunities and treatment between women and men.
Law 5,508 on the promotion, protection of maternity and support for breastfeeding (2015)	The law is intended to promote, protect, and support breastfeeding for female workers. In its article 11, the law establishes that every worker shall have the right to fully access the Maternity Leave for a period of 18 (eighteen) uninterrupted weeks; in addition to granting, "in an inalienable way", in its article 13, to every worker father of a newborn, 2 (two) weeks after childbirth, with pay, at the employer's expense.

Educational gaps

In Paraguay, net primary school enrollment rate was 98% for women and 97% for men in 2000.¹³⁴ However, the rate for secondary and tertiary enrollment is lower than the region’s average. In the country, net secondary school enrollment rate was 54% for women and 51% for men, and gross tertiary school enrollment ratio (% of relevant age group) was 18% for women and 14% for men.¹³⁵

Access to Financial Resources

In 2017, 33% of men in Paraguay had accounts in financial institutions, in comparison to 29% of women (% of the population 15 years old); for the same year, more men than women obtained loans (16% and 11% respectively).¹³⁶

134 [World Bank, 2019.](#)

135 Idem.

136 [World Bank, Global FINDEX database.](#)

Loan collaterals and guarantees tend to be stricter for women and regulatory requirements limit their access to financing.¹³⁷ In Paraguay, these barriers impact the percentage of people who have access to emergency funds and women are disproportionately affected (only 46% of women vs. 61% of men have access to emergency funds.¹³⁸ Additionally, only 9% of Paraguayan women have savings to start, operate or expand a farm or business, slightly lower to the percentage of men (12%).¹³⁹

Economic Opportunities

In Paraguay, the participation of women in the labor force remains significantly lower than that of men. In 2017, the participation of women in the labor force was 57% while that of men was 84%.¹⁴⁰ The participation rate of women in the labor force (of the total of women over 15 years of age) increased 4 percentage points in the period 2000-2017, while that of men (of the total of men over 15 years of age) decreased 2 percentage points.¹⁴¹ Additionally, the participation of young people (between 15-24 years old) has decreased, for women it decreased from 48% in 2000 to 43% in 2017, and for men from 78% in 2000 to 69 % in 2017.¹⁴² Working conditions for women and men have improved: the percentage of salaried people increased¹⁴³ and the percentages of people in vulnerable employment¹⁴⁴ and unemployment decreased.¹⁴⁵ However, the percentage of women in vulnerable employment and unemployed conditions continues to be higher than that of men and the gaps in these indicators have increased between 2000 and 2017, except in unemployment.¹⁴⁶ Regarding labor segregation, according to ILO estimates, the majority of women work in the service sector (78% compared to 51% of men).¹⁴⁷ In 2019, the ILO estimated that female labor force participation was significantly lower than male in the transport, storage and communication sectors (of the total of people employed in these sectors, 87% are men and only 13% are women), and in the mining and quarrying, electricity, gas and

¹³⁷ Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

¹³⁸ Idem.

¹³⁹ Idem.

¹⁴⁰ World Bank. (2019). [Little Data Book on Gender 2019](#) - Paraguay.

¹⁴¹ Idem.

¹⁴² Idem.

¹⁴³ Empleados asalariados: (2000: M-44%, H-42%, Brecha: -2 puntos porcentuales); (2017: M-54%, H-57%, Brecha 3 puntos porcentuales). Fuente: World Bank. (2019). [Little Data Book on Gender 2019](#) - Paraguay.

¹⁴⁴ Empleo vulnerable: (2000: M-55%, H-53%, Brecha: 2 puntos porcentuales); (2017: M-43%, H-36%, Brecha: 7 puntos porcentuales). Fuente: World Bank. (2019). [Little Data Book on Gender 2019](#) - Paraguay.

¹⁴⁵ Desempleo: (2000: M-12%, H-8%, Bracha: 4 puntos porcentuales); (2017: M-6%, H-4%, Brachas: 2 puntos porcentuales). Fuente: World Bank. (2019). [Little Data Book on Gender 2019](#) - Paraguay.

¹⁴⁶ Fuente: World Bank. (2019). [Little Data Book on Gender 2019](#) - Paraguay.

¹⁴⁷ ILO. (2019). [Employment distribution by economic activity \(by sex\) – ILO modelled estimates, Nov. 2019 \(%\) – Annual](#).

water supply (of the total of people employed in these sectors, 73% are men and only 27% are women).¹⁴⁸

The Inter-American Development Bank (IDB) carried out a gender study and analysis of the value chain of the transport sector in Paraguay. The study found that in rural areas, 42% of women lack their own income and in cases where they are part of the labor force, their income represents 62.1% of the income of their male peers. The study also noted the low participation of women in non-traditional sectors such as road construction and maintenance, even when there is a labor shortage. The low participation of women in these sectors is because job offers are not directed at women and to stereotypes and cultural and social norms.¹⁴⁹ As a result of the diagnosis, a gender action plan was designed, and the pilot was implemented. of gender within the Neighborhood Roads Improvement Program. The pilot focused on: i) promoting a training, awareness and dissemination plan on gender aspects related to the participation of women in non-traditional trades of civil works and maintenance, with a view to their labor insertion; and ii) promote the participation of women in technical training activities for local labor and their hiring in works to improve and maintain the program. Specifically, the training activities and internships showed positive findings regarding the self-worth of women in non-traditional jobs, and an improvement in the work environment of the work camps, through coexistence manuals and awareness talks.

Gender Based Violence

In Paraguay, between 60-80% of violence against women is perpetrated by the survivor's current or former partner (husband, concubine, ex-husband and ex-concubine, boyfriend)¹⁵⁰. Additionally, of the total number of femicides in the country, around 90% are perpetrated by the victim's current or former partner.¹⁵¹ Most of the GBV reports are made by women between 18-40 years old, and psychological violence is the type of violence with higher incidence (55%) followed by physical (40%).¹⁵² Regarding safety in public transportation, a survey in Asuncion found that 69% of female public transportation users felt unsafe at least once using the transportation system in Asuncion.¹⁵³

¹⁴⁸ Hub de energía. 2020. [¿Qué porcentaje de mujeres trabajan en las empresas de servicios de electricidad, gas y agua?](#). Elaboración del Hub de Energía utilizando la base de datos y estimaciones modeladas de la OIT

¹⁴⁹ [Programa de Habilitación y Conservación de Corredores Agroindustriales \(PR-L1164\): Anexo de Género y Diversidad](#). (2019).

¹⁵⁰ <https://www.cde.org.py/wp-content/uploads/2017/08/2016-ONU-Mujeres-Estudio-violencia-Paraguay.pdf>

¹⁵¹ <https://publications.iadb.org/publications/spanish/document/Violencia-sexual-y-basada-en-genero-mapa-de-ruta-para-su-prevencion-y-atencion-en-America-Latina-y-el-Caribe.pdf>

¹⁵² <https://www.cde.org.py/wp-content/uploads/2017/08/2016-ONU-Mujeres-Estudio-violencia-Paraguay.pdf>

¹⁵³ <https://publications.iadb.org/publications/spanish/document/El-transporte-p%C3%BAblico-desde-una-perspectiva-de-g%C3%A9nero-Percepci%C3%B3n-de-inseguridad-y-victimizaci%C3%B3n-en-Asunci%C3%B3n-Lima.pdf>

URUGUAY

Legal, regulatory, and institutional framework

Uruguay's Political Constitution (1967) states all persons are equal before the law. The country is a signatory of several international women protection agreements like the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) (1981), and the Beijing Declaration and Platform for Action (1995). In 2005 The National Women's Institute (INMUJERES) was created to promote policies of gender equality and promotion of rights. The country also has the National Coordinating Council for Public Policies on Gender Equality (2007) and a National Plan for Equal Opportunities and Rights (2007-2011) to mainstream the gender approach in the State¹⁵⁴.

Law/Document	Content
Labor Activity (law 16,045, 1989)	Prohibits all discrimination in the areas of calls for provision of charges; Selection criteria; recruitment and hiring; performance evaluation criteria; right to promotion and advancement; employment stability; social benefits; suspension and dismissal; possibilities for professional and technical training or reconversion; training and updating; and remuneration criteria.
Domestic work (Law 18065, 2006)	Regulate domestic workers rights and the labor relationship.
Law on Equal Rights and Opportunities between Men and Women (2007).	The State must adopt measures to guarantee the design, follow-up and evaluation of public policies to integrate the gender perspective.
Concubinage union (Law 18246, 2008)	Stablishes rights and obligations for concubinage union.
Sexual and reproductive health (Law 18426, 2008)	To promote responsible sexual and reproductive health, as well as responsible motherhood and fatherhood.
Quota law (Law 18476, 2009)	To integrate Uruguayan women in political life at the legislative chambers.
Sexual harassment (Law 18561, 2009)	To prevent and punish sexual harassment in the workplace and in teacher-student relationships.
Gender identity (Law 18620, 2009)	Recognizes the right to gender identity and allows to modify name, image and sex registered in the documents.
Voluntary interruption of pregnancy (Law 18987, 2012)	Decriminalization of abortion
Parental leave (Law 19161, 2013)	Maternity and paternity right and subsidy, and subsidy for the newborn care.

154 BID, (2019). <https://generoeninfraestructura.iadb.org/publicaciones> (Acceded 08-04-2022)

UN Women. <https://lac.unwomen.org/es/donde-estamos/uruguay> (Accessed 08-04-2022).

Educational gaps

Uruguay has made considerable progress in closing gender gaps in education. According to Batthyany et al., (2016), Uruguayan women record higher educational achievements at all educational levels (primary, secondary and higher education), measured by the completion of educational cycles and attendance at establishments. Primary completion rate in 2018 was 98.4% for female population and 96.9% for male. While the completion rate for lower secondary education was 78.8% for women and for men 68.4%. The net primary enrollment rate for 2017 was 98% for both genders, but in secondary enrollment, there were differences, since it is higher for woman (86%) than for men (80%)¹⁵⁵.

Women represent over 60% of the total number of students who complete the secondary cycle and enter the tertiary cycle. By 2018 the gross attendance ratio for tertiary education is higher for women (103.5%)¹⁵⁶ than men (79.4%) attend. And the female share of graduates from STEM is 45%¹⁵⁷. Yet, there are less women than man in basic and technological careers at the tertiary level.

Economic Opportunities

Labor force participation rate in 2018 for persons over 15+ are, 56% for women 56% and 74% for men 74%. This difference persists for youth people aged 15-24, with 42% for female population and 56% for male. The difference remains for unemployment rate since it is higher for women aged 15+ with 10% and 6% for men. Employment distribution according to economic sector has also some gender differences. 87% of women participate mostly in service-related activities, while the 59% of men work in this area. Employment in industry have a higher participation of men. The 28% of them work in this sector, compared to the 9% of women. While agriculture concentrates 13% of the male work force and 9% of female. This sector has the lower employment occupation¹⁵⁸. The proportion of time spent on unpaid domestic chores and care work is unevenly distributed. Women dedicate 19.9% of their time for these activities, and men 8.5%¹⁵⁹.

155 The little data book on gender, (World Bank, 2019).

156 Includes over-age and under-age students from early or late entry and grade repetition. 4 The little data book on gender, (World Bank, 2019).

157 The little data book on gender, (World Bank, 2019).

158 The little data book on gender, (World Bank, 2019).

159 UN Women data, <https://data.unwomen.org/country/dominican-republic> (accessed 08-04-2022).

Although women participation in the labor force participation grew 39% between 2009 and 2019¹⁶⁰, important salary gaps persist. Women earn 25% less than men¹⁶¹. One of the factors that explains these gaps being the high levels of occupational segregation. Indeed, women are underrepresented in sectors such as construction, where they account for only 5% of employed persons¹⁶², while they are overrepresented in lower productivity jobs¹⁶³. Likewise, analyzes carried out by the UNDP (2014) show that the levels of occupational segregation are lower among the most qualified people.

Regarding women participation in road infrastructure construction, only 6% of the positions are held by them. Usually, the kind of positions occupied by women are in administration, technical and cleaning areas. Few of them work in operational activities. In this country, the transport sector is perceived as masculine, causing women entrance to the sector limited by stereotypes and cultural barriers. Plus, the lack of infrastructure for women, like differentiated bathrooms, and the lack of flexibility of the sector with long working hours and locations away from home, discourage women participation.

Access to Financial Resources

More men (68%) than women (61%) have a financial institutional account, which constitute an important asset for being part of the formal financing system and accessing to loans, having savings, credit card, virtual banking, and others. The relation is inverse if referring to borrowing to a financial institution, since more women (19%) than men (17%) accessed to it in the last 12 months of 2017. The panorama is similar regarding the ability to raise funds from a bank, employer, or a lender. The 18% of women aged 15+ might access to these funds, compared to the 14% of men¹⁶⁴.

Gender Based Violence

In Uruguay, 76.7% of 15-year-old women and more, report have experienced gender-based violence throughout life. The 54.4% of these women have face violence in public spaces along their life. This kind of experiences limit the free of movement of women in places like streets,

160 ILO (2019). Labor Indicators Database (accessed November 2020).

161 Colacce, M. et al. (2020). Gender gaps in labor income in Uruguay. UN Women.

162 Capurro et al., 2019.

163 Granada et al., 2019.

164 Demirgüç-Kunt, Ashly, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC.

transport, bars, parks, sport clubs, dancing clubs, church, health services and virtual spaces. It has impact on women and girls' possibilities to be part of public life, work, study, leisure activities and access to services¹⁶⁵.

Uruguay is one of the countries in Ibero-America with the highest incidence of women killed by their partners or ex-partners (1.22 / 100 thousand in 2019, 22 women). The number of femicides has increased from 18 to 30 murders between 2014 and 2018, followed by a slight decrease in 2019¹⁶⁶.

Regarding the proportion of ever-partnered women and girls subjected to physical and/or sexual violence by a current or former intimate partner in the previous 12 months, aged 15-49, the 4.3% of women have faced this situation. On the other hand, the proportion of women aged 20-24 years who were married or in a union before age 18, is 24.6%¹⁶⁷.

Programmatic Approach of the GAP

Taking into consideration the main gender gaps identified at the sector level and each country assessment, a Gender Action Plan (GAP) was developed to address these gaps. The GAP's objective is to promote gender equality in the electromobility sector and support countries in closing gender gaps.

To address the main gender gaps identified, the GAP has sectoral level activities that focus on capacity building, knowledge development and dissemination and network building. Moreover, the GAP also has country level activities that focus on context specific actions developed during the design phase of each project.

Level	Activity
Sectoral	<p>Develop a training program for women that allow them to acquire the necessary technical skills to work in the electromobility sector</p> <p>Include gender specific procurement requirements in the project eligibility criteria</p> <p>Develop and implement a gender module to include in any capacity building activity in the Regional Sectorial Council of Skills for Electromobility or any activity training in the program</p>

165 Second National Survey about Prevalence of violence based on gender and generations, (Observatory on Gender-Based Violence against Women, 2019).

166 CEPLASTAT, 2019. <https://statistics.cepal.org/portal/cepalstat/dashboard.html?lang=es>. (Accessed 08-04-2022).

167 UN Women data, <https://data.unwomen.org/country/dominican-republic> (accessed 08-04-2022).

	<p>Develop a electromobility chapter within the Transport Gender Lab (TGL) that serves as a network of women in electromobility in LAC to educate, connect, empower and inspire women</p> <p>Organize a regional EV Online Summit for women in LAC</p> <p>Carry out a survey among the sector companies to identify women in the e-mobility and hydrogen sectors, gender gaps, skills required for women, female role models, etc. in the 9 program countries</p> <p>Develop a toolkit to mainstream gender in electromobility projects that can be used by entities applying to the program</p>
Country	<p>Include a gender perspective during the design of sectoral roadmaps and the support of national enabling policies</p> <p>Support countries or cities to join the TGL</p> <p>Design and implement behavioral approaches to address violence against women in public transportation and develop gender case studies</p> <p>Promote gender equality through gender assessment and gender-specific activities in the projects financed by the program</p>

The GAP will be implemented by the IDB gender experts in the transportation, energy, and climate change divisions (one expert per division, in total 3 experts). The consultants will: (i) support the implementation of the Sectoral Actions by identifying firms or consultants to conduct them and supervising their work; and (ii) support the EE during the project design and implementation phases. Depending on the EE competency the IDB gender experts will have different roles during project design. Their role could be more supervisory (review documents and TORs) or it could be more hands on. However, no matter the EA competency, the IDB gender experts will be involved in the project to make sure that the project complies with the Bank’s requirements for gender alignment.

Gender Action Plan

E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

Data availability is a challenge shared by the nine countries. The Gender Assessments by country were built with available data. Some of the data currently missing include employment data, by position levels in the transport sector per country; mobility data; violence against women in the public transportation; sex-disaggregated data in electromobility. The opportunity identified is to fill the data gaps and produce new and gender-aware data as a new resource for policy and decision-makers.

All projects (concessional loans and grants for pilot projects) financed by the Program will conduct a detailed and context specific gender gap analysis. This gender analysis will be more detailed than the country assessment as it will include qualitative (interviews, focus groups) and quantitative elements (census data, demographics, income, etc.). Additionally, these analyses will be conducted in the project interest areas. The gender gaps might vary depending on the type of project and will expand on the preliminary information from the country assessments. Based on that analysis each project will define actions to close the gender gaps identified and project indicators to measure the progress.

The IDB has gender experts in the transportation, energy and climate change divisions (one expert per division, in total 3 experts) who will support the EE during the project design and implementation phases. Depending on the EE competency the IDB gender experts will have different roles during project design. Their role could be more supervisory (review documents and TORs) or it could be more hands on. However, no matter the EA competency, the IDB gender expert will be involved in the project to make sure that the project complies with the Bank's requirements for gender alignment.

E-Mobility Program for Sustainable Cities in Latin America and the Caribbean

ACTIVITIES	INDICATORS AND TARGETS	BASELINE	TIMELINE	RESPONSABILITIES	COST
<p>1.1 Develop a training program for women that allow them to acquire the necessary technical skills to work in the electromobility sector.</p>	<ul style="list-style-type: none"> • # Of technical training programs for women developed Target: 1 • % Of women trained in the Regional Sectorial Council of Skills for Electromobility Target: 30% • # Of women trained that are employed in the sector after 6 months¹ 	<ul style="list-style-type: none"> • Baseline: 0 • Baseline: 0 • Baseline: TBD 	<p>Y1: A training program for women is developed Y2: 30% of women are trained Y3: At least 30% of women trained are employed in the sector after 6 months Y3: 30% of women are trained Y4: At least 30% of women trained are employed in</p>	<ul style="list-style-type: none"> • IDB • Executing Agency 	<p>\$450,000 (Part of these activities will be financed within the Regional Sectorial Council of Skills for Electromobility)</p>

¹ It is recommended to track the job levels of trained women employed in the sector.

			the sector after 6 months.		
	•	•			
<p>1.2 Include gender specific procurement requirements in the project eligibility criteria:</p> <ul style="list-style-type: none"> • Women-owned or led companies. • Companies that support gender equality and 	<ul style="list-style-type: none"> • % Of project that access the program have a gender lens. Target: 100% 	<ul style="list-style-type: none"> • Baseline: 0 	Y1-Y5: Gender specific procurement requirements included in the program	<ul style="list-style-type: none"> • IDB • Executing Agency 	\$30,000

<p>diversity inclusion in the workplace and are gender certified</p> <p>The production of goods and services that respond to the needs of women and people with disabilities.</p>					
<p>2.1 Develop and implement a gender module to include in any capacity building activity in the Regional Sectorial Council of Skills for Electromobility or any activity training in the program</p>	<ul style="list-style-type: none"> • % Of capacity building activities that include a gender training module Target: 100% • # Of gender training modules developed Target: 3 (jtransport patterns, prevention and mitigation of GBV and gender biases sensibilizations.) 	<ul style="list-style-type: none"> • Baseline: 0 • Baseline: 0 	<p>Y1: Capacity building activity is developed</p> <p>Y1-Y5: Capacity building activity implemented</p>	<ul style="list-style-type: none"> • IDB • Executing Agency 	<p>\$150,000</p>

2.2 Include a gender perspective during the design of sectoral roadmaps and the support of national enabling policies	<ul style="list-style-type: none"> • % Of frameworks or policies that include a gender perspective • Target: 100% 	<ul style="list-style-type: none"> • Baseline: 0 	On rolling basis as policies and frameworks are reviewed.	<ul style="list-style-type: none"> • IDB • Executing Agency 	180,000
2.3 Develop a electromobility chapter within the Transport Gender Lab (TGL) that serves as a network of women in electromobility in LAC to educate, connect, empower and inspire women	<ul style="list-style-type: none"> • # Of chapters created Target: 1 (EVs) 	<ul style="list-style-type: none"> • Baseline: 0 	Y2: 1 women chapter within the TGL are created	<ul style="list-style-type: none"> • IDB • Executing Agency 	\$100,000
2.4 Support countries or cities to join the TGL	<ul style="list-style-type: none"> • # of cities or countries that joined the TGL Target: 2 cities or countries² 	<ul style="list-style-type: none"> • Baseline: 12 	Y2: 1 city or country joined the TGL Y3: 1 city or country joined the TGL	<ul style="list-style-type: none"> • IDB • Executing Agency 	\$100,000

² Chile, Colombia, and Dominican Republic are already members of Transport Gender Lab. Ideally all the countries included in the proposal would become members by the end of the implementation of the Program, but it depends on the alignment of several institutions and their willingness to become members. A target of two new cities or countries respond to the TGL's experience on the time it takes for new members to join.

2.5 Organize a regional EV Online Summit for women in LAC	<ul style="list-style-type: none"> # Of summits organized Target: 1 	<ul style="list-style-type: none"> Baseline: 0 	Y3: A gender summit is developed	<ul style="list-style-type: none"> IDB Executing Agency 	\$70,000
2.6 Carry out a survey among the sector companies to identify women in the e-mobility and hydrogen sectors, gender gaps, skills required for women, female role models, etc. in the 9 program countries	<ul style="list-style-type: none"> # Of surveys carried out. Target: 1 % Of companies that answer the survey Target: 30% 	<ul style="list-style-type: none"> Baseline: 0 Baseline: 0 	Year 1: A survey is carried out.	<ul style="list-style-type: none"> IDB Executing entities 	\$120,000
3.1 Develop a toolkit to mainstream gender in electromobility projects that can be used by entities applying to the program. ³	<ul style="list-style-type: none"> # Of toolkits to mainstream gender in electromobility projects Target: 1 Target: 1 person per project. 	<ul style="list-style-type: none"> Baseline: 0 Baseline: 0 	Y1: One toolkit is created	IDB Executing Agency	\$40,000
3.2 Design and implement behavioral	<ul style="list-style-type: none"> # Of behavioral approaches to address violence 	<ul style="list-style-type: none"> Baseline: 0 	Y2: 1 behavioral approach to	IDB Project owners	\$360,000

³ The toolkit should have examples from different countries and should be prepared with information relevant for the 9 countries

<p>approaches to address violence against women in public transportation and develop gender case studies</p>	<p>against women in public transportation designed and implemented Target: 3</p> <p># Of gender case studies developed Target: 3</p>	<ul style="list-style-type: none"> • Baseline: 0 • Baseline: 0 	<p>address violence against women in public transportation designed and implemented Y3: 1 behavioral approach to address violence against women in public transportation designed and implemented Y4: 1 behavioral approach to address violence against women in public transportation designed and implemented Y4: 3 gender cases are developed</p>		
--	--	--	--	--	--

3.3 Promote gender equality through gender assessment and gender-specific activities in the projects financed by the program ⁴	<ul style="list-style-type: none"> % Of projects financed that include include the IDB's gender alignment requirements Target: 100% 	<ul style="list-style-type: none"> Baseline: 0 	On rolling basis as projects are approved by the program.	Project owners with support from gender consultant finance by the Program's GAP	\$400,000
					\$2,000,000

⁴ As stated in the Project Eligibility Criteria: All projects financed by the Program, including pilot projects, must include the IDB's gender alignment requirements, which are: (i) an analysis identifying relevant gender gaps, (ii) gender actions to narrow the gaps, (iii) at least one indicator to measure the progress of the gender actions (sex-disaggregated indicators do not qualify as gender related indicators), and (iv) allocated resources for the implementation of the actions.