

Funding Proposal

FP166: Light Rail Transit for the Greater Metropolitan Area (GAM)

Costa Rica | Central American Bank for Economic Integration (CABEI) | Decision B.29/02

1 July 2021



A. PROJECT/PROGRAMME SUMMARY			
A.1. Project or programme	Project	A.2. Public or private sector	Public
A.3. Request for Proposals (RFP)	Not applicable		
A.4. Result area(s)	<p><u>Mitigation:</u> Reduced emissions from:</p> <p><input type="checkbox"/> Energy access and power generation:</p> <p><input checked="" type="checkbox"/> Low-emission transport:</p> <p><input type="checkbox"/> Buildings, cities, industries and appliances:</p> <p><input type="checkbox"/> Forestry and land use:</p> <p><u>Adaptation:</u> Increased resilience of:</p> <p><input type="checkbox"/> Most vulnerable people, communities and regions:</p> <p><input type="checkbox"/> Health and well-being, and food and water security:</p> <p><input type="checkbox"/> Infrastructure and built environment:</p> <p><input type="checkbox"/> Ecosystem and ecosystem services:</p>		<p><u>GCF contribution:</u></p> <p><u>100%</u></p>
A.5. Expected mitigation impact	7,622,805 tCO ₂ e	A.6. Expected adaptation impact	<p>Indicate total number of direct and indirect beneficiaries</p> <p>Indicate % of population</p>
A.7. Total financing (GCF + co-finance)	1,873,300,000 USD	A.9. Project size	Large (Over USD 250 million)
A.8. Total GCF funding requested	271,300,000 USD		
A.10. Financial instrument(s) requested for the GCF funding	<p><input checked="" type="checkbox"/> Grant <u>21,300,000</u> <input type="checkbox"/> Equity <u>Enter number</u></p> <p><input checked="" type="checkbox"/> Loan <u>250,000,000</u> <input type="checkbox"/> Results-based payment <u>Enter number</u></p> <p><input type="checkbox"/> Guarantee <u>Enter number</u></p>		
A.11. Implementation period	6 years	A.12. Total lifespan	44 years
A.13. Expected date of AE internal approval	10/30/2019	A.14. ESS category	A
A.15. Has this FP been submitted as a CN before?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has Readiness or PPF support been used to prepare this FP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.17. Is this FP included in the entity work programme?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	A.18. Is this FP included in the country programme?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

<p>A.19. Complementarity and coherence</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>A.20. Executing Entity information</p>	<p>The executing entity is the “Instituto Costarricense de Ferrocarriles” (INCOFER) created by the law N° 7001, dated September 19th of 1985 in Costa Rica. Costa Rica's state-owned rail authority INCOFER is an independent statutory corporation established to operate the country's railway network.</p> <p>The Ministry of Finance (MOF) is the loan recipient and thus the Government of Costa Rica, represented by the MOF is also executing entity.</p>
<p>A.21. Executive summary (max. 750 words, approximately 1.5 pages)</p>	
<p>In 2015 Costa Rica had total GHG emissions of 10.9 MtCO_{2e} of which the transport sector contributed 51%. Emissions of the transport sector are projected to increase until 2050 by 44% without mitigation measures. The public transport share has declined in the last decade from 64% to 41% whilst private car and ride-hailing services have increased. This is also linked to an inefficient public transport system. Consequences are increasing air pollution, congestion and accidentality. Alone congestion costs are estimated at 4% of the GDP in 2018. Non-Motorized Transport (NMT) only plays a marginal role with the lack of cycling infrastructure and the associated safety concerns being cited as main reason. Barriers towards a new transport system are primarily of financial nature plus limited experience with NMT and measures to improve last-mile connectivity and accessibility of stations. Costa Rica is in a critical situation of public finances and requires support to stem a significant long-term investment to structurally change its transportation system.</p> <p>The project is a modern, fast, convenient, safe, and environmentally sound electric Light Rail Transit (LRT) along the central East-West axle of the larger urban zone of San José with 85 km of double tracks on 5 lines transporting annually 63 million passengers and benefitting around 2.7 million inhabitants or 52% of Costa Rica's population. Bus passengers could save 66% of trip time. The LRT will use the existing right-of-way of the old, low capacity single track diesel train and replace it with an environmentally friendly, high capacity LRT. Its design incorporates best practices for a climate resilient infrastructure. Modern principles of urban development are applied including integration with the existing bus-based public transport system, NMT and improved LRT connectivity and accessibility. The LRT is integrated with 16 km of new segregated cycle lanes resulting in 36,000 additional cycling and micro-mobility trips per day linked together with improved pedestrian walkways. In the vicinity of 6 stations components to increase last-mile connectivity and accessibility are included as well as revitalization of urban spaces and connection of residents living area with workplaces, commerce and services thereby reducing the dependence on passenger cars and providing for a better quality of life and environmentally sustainable neighbourhoods. The project is an urban development project transforming urban mobility into an ultra-low emission system. The LRT is the backbone that integrates all types of public transport with NMT and functions as a trigger to a paradigm shift in urban transportation. Fostering of public transport and electrifying the transport sector are the main strategies to achieve the ambitious target of Costa Rica of decarbonization. The LRT also contributes significantly to multiple SDG targets, especially “good health and well being”, “sustainable cities and communities” and “climate action” whilst also providing for new jobs during construction and operations.</p> <p>The total investment cost is 1.8733 billion USD (of which the LRT 1.852 billion, NMT/connectivity interventions 20 MUSD and capacity building, gender and monitoring 1.3 MUSD) with an EIRR of 26% resultant of time savings, lower vehicle operating costs, less accidentality and nearly 700 MUSD worth of emission reductions. The LRT recovers 40% of its total cost with fare-box revenues whilst the remaining part is based on public funding, which is common for urban public transport and which is justified due to the large societal benefits reflected in the EIRR. Implementation shall be through a Public Private Partnership (PPP) under a 35-year concession (design, build, operate, maintain and transfer contract). The government uses the CABEL and GCF loan of together 550 MUSD as anchor payment for the PPP. The Government of Costa Rica is the beneficiary of the grant and the concessional loan of the GCF. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against delivery the LRT lines. The Special Purpose Vehicle (SPV) created by the concessionaire does not receive a loan or an equity investment from the Government of Costa Rica but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment</p>	

of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire. GCF involvement is 250 MUSD of loans for the LRT, and 21.3 MUSD grants for investments in NMT and connectivity components as well as capacity building, monitoring and gender specific action measures. The total leverage ratio is 5.9 and the private sector leverage ratio 4.8 i.e. the project successfully pulls-in private capital.

The project reduces directly through mode shift and more efficient transportation 7.62 million tons of CO₂ during its lifespan with a GCF cost per ton of CO₂ removed of 36 USD. Costa Rica produces more than 98% of electricity by renewable sources and has surplus capacity. The carbon grid factor is 0.015 kgCO_{2e}/kWh. The project additionally improves significantly urban air quality, reduces accidentality, reduces by 30-60% trip time, reduces gender inequality and has positive societal and economic benefits.

The project allows for a paradigm shift towards a sustainable low carbon urban transport system going beyond a stand-alone train by including measures of NMT and connectivity/accessibility measures with long-term behavioural change impacts. In absence of the GCF financing these components would not have been included in the project. The LRT is a key component to reduce urban transport emissions and is a core element of Costa Rica's national decarbonization plan with the goal of net zero emissions in 2050. It is a core component of the Post-COVID19 Green recovery Plan of Costa Rica which focuses on profitable resilient public transport infrastructure with short-term jobs and long-term social and economic benefits achieving a transformational change to a greener economy.

Abbreviations

AE	Accredited Entity
AMA	Accreditation Master Agreement
BAU	Business as Usual
BRT	Bus Rapid Transit
BUR	Biennial Update Report
CABEI	Central American Bank for Economic Integration
CAPEX	Capital Expenditure
CDM	Clean Development Mechanism
CNC	National Concessions Council
EE	Executing Entity
EIRR	Economic Internal Rate of Return
GAM	Gran Area Metropolitana (larger urban zone of San Jose)
GCF	Green Climate Fund
GHG	Greenhouse Gases
GIZ	German Cooperation
IADB	Inter-American Development Bank
INCOFER	Instituto Costarricense de Ferrocarriles
LRT	Light Rail Transit
MINAE	Ministry of Environment and Energy
MOF	Ministry of Finance
MOPT	Ministry of Public Works and Transport
NDC	Nationally Determined Contributions
NMT	Non-Motorized Transport
OPEX	Operational Expenditures
PF	Public Financing
PPF	Project Preparation Facility
PPP	Public Private Partnership
PRI	Involuntary Resettlement Plan
SD	Sustainable Development
SDG	Sustainable Development Goals
SETENA	National Environmental Technical Secretariat
SPV	Special Purpose Vehicle
TOD	Transit Oriented Development
USOC	Credit Operations Supervision Area
VfM	Value for Money
WHO	World Health Organization

PROJECT/PROGRAMME INFORMATION

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

Context Climate Change

In 2015 Costa Rica had emissions of 10.9 MtCO_{2e} of which the transport sector contributed 51%. Emissions of the transport sector will increase under the BAU scenario by 44% whilst under a mitigation scenario they are projected to drop by 65% by 2050, compared to 2015 (MINAE, 2019). Fostering of public transport and electrifying the transport sector are the main strategies to achieve this ambitious target. The Light Rail Transit (LRT) is a key component to reduce urban transport emissions and is prominently listed in relevant climate change publications of Costa Rica including the 2nd BUR (MINAE, 2019) or the National Decarbonization Plan (Government of Costa Rica, 2019).

Costa Rica has a long tradition in being on the forefront of combating climate change. In its Nationally Determined Contribution, Costa Rica reaffirmed its aspiration of becoming a Carbon Neutral economy and aims for a decarbonized economy with net-zero emissions in 2050 (Government of Costa Rica, 2019). Costa Rica has received from UNEP the 2019 Champions of the Earth award for its commitment to ambitious policies to combat climate change¹.

The Costa Rican electricity system is one of the few decarbonized systems in the world: Since 2015, Costa Rica has always had >98% of renewable energy production². Planned energy expansions will diversify renewable energy sources even more (ICE, 2019). The train will consume annually less than 1% of energy generation. Electrification of the transport sector is a strategy to reduce drastically the carbon footprint of the country.

Context Urban Transport in San Jose

Costa Rica is one of the countries with the highest vehicle shares per 1,000 inhabitants in Latin America (PEN-CONARE, 2018). The larger urban zone of San Jose called GAM ("Gran Area Metropolitana") has 3% of the national territory and 52% of the country's population - an estimated 2.7 million people live 2020 in this area (INEC, 2011). The mode share of motorized trips is 42% cars, 41% buses, 9% taxis, 7% motorcycles and less than 1% by a very old and partially rehabilitated diesel train (MINAE, 2017). The public transport share has decreased dramatically from 64% in 2007 to 41% in 2017 whilst private car usage increased in the same period from 31% to 42% (L.C.R. Logistica S.A., 2007). The GDP per capita of Costa Rica nearly doubled in this period (average annual increase of close to 7%)³. The GDP per capita in that period nearly doubled with a CAGR of 7% and the passenger car fleet grew by annually 4% (PEN-CONARE, 2018). The bus-based public transport system lacks convenience and attractiveness and is thus used as last resort in absence of finance to purchase a private car or use taxi/ride hailing services. Non-Motorized Transport (NMT) has increased in importance but is still marginal. Lack of cycling infrastructure and safety issues have been identified as the main causes for the low NMT share (PEN-CONARE, 2018, p. 238). Congestion in the city has increased significantly and vehicle operating speeds have dropped to 14-15 km/h. Congestion costs for the GAM in the year 2018 were estimated at 3.8% of GDP (PEN-CONARE, 2018, p. 229). Public transport is dominated by a large number of privately-operated bus operators. A bus trip has on average a 70% longer duration than a car trip (Government of Costa Rica, 2019), also due to route structuring which requires for over 40% of bus users at least one transfer (PEN-CONARE, 2018, p. 238).

The National University of Costa Rica, engaged in air quality monitoring since more than 2 decades, estimates that vehicles are responsible for 65% of air pollution. PM_{2.5} levels monitored in the GAM surpass widely the air quality guideline value of the WHO (PEN-CONARE, 2018, p. 243). PM_{2.5} and NO_x are today the air pollutants which cause the most health problems. The GHG emissions of the transport sector of the GAM are estimated at 1.9 million tCO₂ for 2014 (equivalent to 35% of total transport emissions of Costa Rica) and are projected to increase 60% under a BAU scenario by 2030 (Grutter Consulting, 2016).

¹ <https://www.unenvironment.org/news-and-stories/press-release/costa-rica-named-un-champion-earth-pioneering-role-fighting-climate>

² See annual SEN reports of ICE

³ [GDP per capita \(current US\\$\) - Costa Rica | Data \(worldbank.org\)](#)

Baseline

The baseline scenario is a continuation of the current bus-based public transport, a marginal share of rail passengers (<1% of trips) and basically private means of transit. The observed trend is towards usage of private means of mobility plus ride-hailing services. This results in higher transport emissions, increased congestion levels, more time spent on trips and a reduced quality of life of city dwellers. The bus-based transit network lacks convenience for users. Multiple bus re-organization and bus re-structuring projects have been designed in the last decades without being implemented. Private bus operators are locked in a competitive position, cannot agree on common approaches and resist changes in their modus of operations. Under a BAU Scenario GHG emissions from the transport sector will continue to increase strongly in the GAM (Grutter Consulting, 2016) as well as at the national level (MINAE, 2019).

Mass Public Transport in the GAM

Costa Rica has made numerous studies over the last 3 decades on new mass public transport systems (see for a review e.g. (MINAE, 2017b)). This sustainable urban transport plan financed by the IDB and the GEF came to the conclusion that an integrated transport system with a LRT combined with a bus-based system based on re-organized routes and a sectorization of routes is the most effective option. In contrast to other cities the GAM already has a train, which is completely outdated whilst still having the right of way and the space (which is not sufficient for a BRT or bus based system). This allows that the CAPEX is 50% lower than the average of other comparable LRTs (see table 1) and an investment at par with a high-quality BRT (based on ITDP data) whilst being more convenient, faster, more sustainable and with far less follow-up investments.

Related Projects and Proposals

Related transport projects and initiatives are:

- Modernization of the bus system focusing on route re-structuring, improved access, transfer stations, integrated electronic ticketing and the promotion of inter-modality. The IDB supported project forms together with the LRT the backbone of an integrated urban public transport system for the GAM.
- National plan for electrification of transport (MINAE, 2019) with financial incentives for the import of electric vehicles, focusing on private cars.
- Various municipalities are developing project ideas for Transit Oriented Development (TOD) and for NMT supported with technical assistance by the GIZ. The GEF 7 project "Transition to an Urban Green Economy and Delivery of Global Environmental Benefits" starting in 2021 and administered by the UNDP is complimentary to the GCF project and will work on improvements to the legal framework and on infrastructure investments for zero emission mobility. The synergy generated between the two projects will enable the investment in the infrastructure proposed under the GCF to be made more expeditiously, as legal and institutional barriers will be removed with the GEF project. GCF interventions proposed in this project are thus strongly complimentary to existing initiatives in TOD and NMT and complement them with investive measures.
- Costa Rica is at the moment involved in the following projects with the GCF: FP097 (Multiple Countries: Productive Investment Initiative for Adaptation to Climate Change (CAMBIO II)), FP144 (Costa Rica REDD-plus Results-Based Payments for 2014 and 2015), FP151 (Multiple Countries: Global Subnational Climate Fund (SnCF-Global) – Technical Assistance (TA) Facility), FP152 (Multiple Countries: Global Subnational Climate Fund (SnCF-Global) – Equity) The present project received PPF support from the GCF.

B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Climate Problem

Costa Rica wants to achieve net-zero emissions in 2050. The transport sector is the largest source of GHG emissions in the country. Implementing a low-carbon sustainable urban transport system is a condition for achieving the climate targets as expressed in the NDC. The climate problem can be summarized in: (i) A fossil-based public transport system based on diesel buses with high emissions (ii) lack of a convenient public transport offer in accordance with client's demands resulting in a mode-shift towards private means of transport and ride-hailing services with high emissions.

Paradigm Shift

The major barrier towards achieving a modern, multi-modal low-carbon public transport system is that this requires a comprehensive and systemic change. The traditional public transport system is locked into offering low-cost, low quality services which result in decreasing passenger numbers. Singular interventions will not be sufficient to get out of this negative spiral. The experience of other countries in Latin America, e.g. Colombia, which had comparable problems of public transit in the past, is that new transport systems and comprehensive changes are required to get out of this lock-in. A paradigm shift is required towards offering the passenger a more convenient system which is fast, safe, reliable, comfortable, of universal access, green, modern and at a reasonable cost. Such a paradigm change requires a significant and visible shift towards a new public transport system. Without this no mode shift from private means of transport to public transport will occur. Rail-based mass transit is targeted by the project due to offering a systemic change, its high-mitigation potential, and a high Economic Internal Rate of Return (EIRR). NMT and connectivity measures are targeted due to their high-mitigation impact and the long-term behavioural change potential which allows to shift towards a low-carbon sustainable transportation system.

The transportation sector is transformed to a sustainable low-carbon system with a dominance of public transportation and NMT. The investment in infrastructure is a core element of the Green Recovery Plan of Costa Rica established 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. It allows Costa Rica to achieve its target of decarbonization and net zero emissions by 2050 and contributes significantly to multiple SDG targets.

Goal Statement

If a low-carbon sustainable transport system is implemented then Costa Rica can aspire to fulfil its target of net-zero emissions in 2050 because mobility emissions of the country are reduced significantly.

The sustainable transport system reduces GHG emissions and contributes towards sustainable development through reduced local pollutants, green job creation, reduced accidentality and reduced economic costs created by congestion and long trip times, air pollution and accidentality. Direct impacts are a CO₂ emission reductions of 7.6 MtCO_{2e} and a reduction of 295 tPM_{2.5}, 12,000 tNO_x and 56 tSO₂.

Project Outcomes

The project outcomes are (i) increased usage of a sustainable low-emission urban transport system; (ii) an increased capacity of stakeholders to replicate successfully NMT and connectivity interventions; (iii) reduced economic costs of mobility and air pollution and (iv) reduced dependency on fossil fuel imports.

Project Results

Project results are (i) mode shift towards LRT; (ii) mode shift towards cycling; (iii) mode shift towards low-carbon transport at intervention stations; (iv) trip time savings; (v) reduced transport accidentality. Mode shift occurs due to the convenience of the LRT and the NMT. The LRT reduces trip times for car and conventional bus users by 30-60% and offers safe as well as inter-connected services. The current bus system will be integrated in the rail system and allows for seamless connections and avoidance of duplicated routes. Improved pedestrian and cycling facilities increase the safety and convenience of using bicycles and other micro-mobility means. This combined with NMT promotion activities result in increased usage on NMT. Measures at selected LRT stations improve connectivity, accessibility and attractiveness of stations resulting in overall reduced GHG transport emissions of residents living in the catchment area. LRT also results in reduced transport accidentality.

Project Activities

Project activities are (i) identify and engage the concessionaire; (ii) design, build and operate the LRT; (iii) design, build and operate cycling lanes; (iv) design and build connectivity measures at selected stations; (v) realize NMT promotion measures; (vi) monitor project outputs, results, outcomes and impacts; (vii) provide capacity building, training and outreach; (viii) implement the gender action plan. The NMT interventions result in 16km of new cycle lanes with nearly 36,000 daily trips and connectivity interventions along 6 LRT stations with a total impacted population of 140,000 persons. The investment in the LRT results in 5 new rail lanes, 85 km of tracks and 46 stations integrated into the public transport system of the GAM. This forms the base for the targeted mode shift towards the LRT and NMT and towards reducing trip times, emissions, and accidentality. The shift to LRT is expected to derive

from convenience of the system to users: (i) the LRT is faster than current public transport and faster than private means of transport; (ii) the LRT results in a lower transport trip cost for users (ticket plus time cost) than using private means of transport; (iii) the LRT is inter-connected and allows to reach the final destination based on NMT plus public transport without large complex connections. The shift to NMT and the resultant behavioural change is expected to derive from (i) improved safety with bike lanes thereby removing the current main barrier of cycling mentioned by stakeholders; (ii) inter-connection with LRT including facilities to park bikes thus providing ease of use; (iii) integration with bike and scooter sharing facilities at main LRT stations; (iv) improved accessibility of LRT stations for pedestrians and improved connectivity for entire trips. Capacity Building, training, outreach, gender actions and project monitoring are essential to ensure an effective and efficient technology transfer, design and implementation of the investment measures and to allow for a replication and outspreading of activities especially in the area of NMT and improved public transport connectivity and accessibility. Capacity building and outreach include (i) realize publications on project components with a focus on NMT/connectivity; (ii) outreach events including workshops, training materials, webinars, case studies. Gender actions include (i) social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations; (ii) train of INCOFER staff on the new sexual harassment law; (iii) implement a rapid reporting system for cases of violence against women; (iv) establish a complaint mechanism for cases of violence against women that acts automatically; (v) implement an adequate lighting system that protects the safety of users; (vi) conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure; (vii) LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure; (viii) improving women's accessibility to non-motorized mobility services; (ix) attract women to the INCOFER workforce and offer equal conditions to men; (x) promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires; (xi) establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT.

Core Project Barriers

1. Lack of funds for public transport and NMT investments: Costa Rica is in a critical situation of public finances. Public transport and NMT infrastructure, as well as investments in improved connectivity are long-term investments with a positive economic rate of return without being financially profitable. Private investments for a Public-Private Partnership can however only be attracted if sufficient, low-risk public monies are available which ensure private investors of the financial viability of the project.
2. Funding barriers: Whilst “financing” refers to the capital to deliver the infrastructure the “funding” is the long-term revenue stream required to cover payment obligations, including debt service. The LRT, like most public transport systems, can only partially cover its funding necessities from farebox and ancillary revenues and requires transfers from the government’s budget. Other modes of transport including the current bus system do not pay for the usage of infrastructure and do not pay external costs related to accidentality, congestion, and pollution. The visibility of LRT funding is high compared with the non-visibility of massive societal subsidies (due to external costs) to the currently operating transportation modes including buses creating a political barrier to approve public transport investments.
3. Limited experience, information and knowledge on successful NMT and last-mile connectivity interventions: Less than 20km of non-integrated cycle lanes exist in the GAM. Experience lacks with cycle lanes, their linking with public transport and their impact. The same is true concerning connectivity/accessibility interventions. The impact of realized interventions is not monitored in a systematic manner. This results in limited knowledge on the interactions between a mass transit system and such interventions and the potential economic and environmental benefits of such interventions. This lack of experience and information again effectively results in a barrier towards approving new investment projects.

Core Project Risks

1. COVID-19 has impacted in the short-term public transport demand and might have positive or negative long-term impacts on the demand for NMT and PT. The train takes 5 years to construct before being operational. It is not deemed as probable that a sustained impact on preference or not for PT will influence the train or NMT.
2. Ineffective efforts to achieve gender equality is considered a risk which is tackled with the GAP.
3. Preference for private modes of transport i.e. residents do not change to new modes of transport such as the LRT and NMT. The bus system is not convenient and results in very high trip times. People thus basically use the bus

system if they lack financial resources to pay for a taxi or own a car. However, if a modern, convenient, safe and fast public transport system is available the people will use it. This has also been the experience in multiple other countries when establishing a well linked and fast mass transit system, especially if rail-based with full right-of-way and accordingly high travel speeds.

Assumptions

1/2. It is assumed that finance is available for the investment part of the project and that funding is available to pay the recurrent deficits of the system. The GCF plays a critical role in this assumption.

3. An important assumption is that the mode-shift primarily from cars and traditional buses to the LRT and NMT occurs. The new system offers compelling advantages such as a reduced trip time of 30-60% (resulting in 1-2 hours of more free time per day for an average resident), modern, convenient, safe and integrated transport at an affordable cost. Private vehicles are not only constantly stuck in congestion with low operating speeds but also suffer from driving restrictions based on the licence plate endings (currently during 2 days per week each car cannot circulate).

4.. Another assumption is that the LRT has lower emissions than the baseline transport system. This can clearly shown to be the case due also to the virtually 0-carbon grid factor of Costa Rica and the much higher energy efficiency of the LRT compared to buses, cars, taxis or motorcycles.

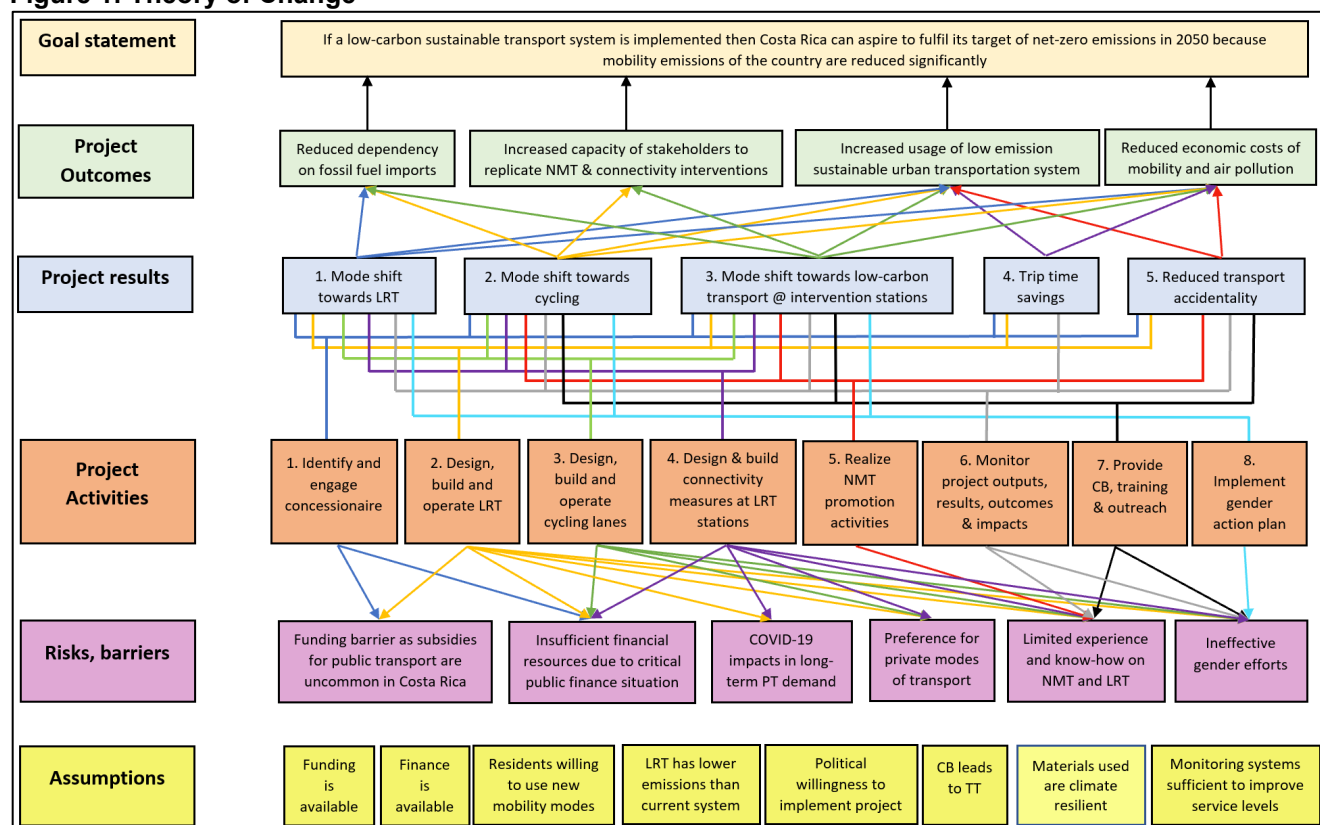
5. The project will only materialize if there is sufficient political willingness to finance and fund the project. Again the political willingness is linked to the finance conditions which are influenced decisively by the GCF contribution.

6. CB is effective and leads to successful technology transfer, a good design and implementation of investive measures

7. Monitoring systems are implemented well and are sufficient to identify service issues and facilitate the identification of solutions to remedy these.

8. Materials and construction methods used prove to be effective against climate impacts including high temperatures, thermal oscillations and hail damage and ensure protection against flooding.

Figure 1: Theory of Change



Note: Financing refers to capital availability for investment and funding to long-term availability of revenue streams to cover obligations incl. debt service

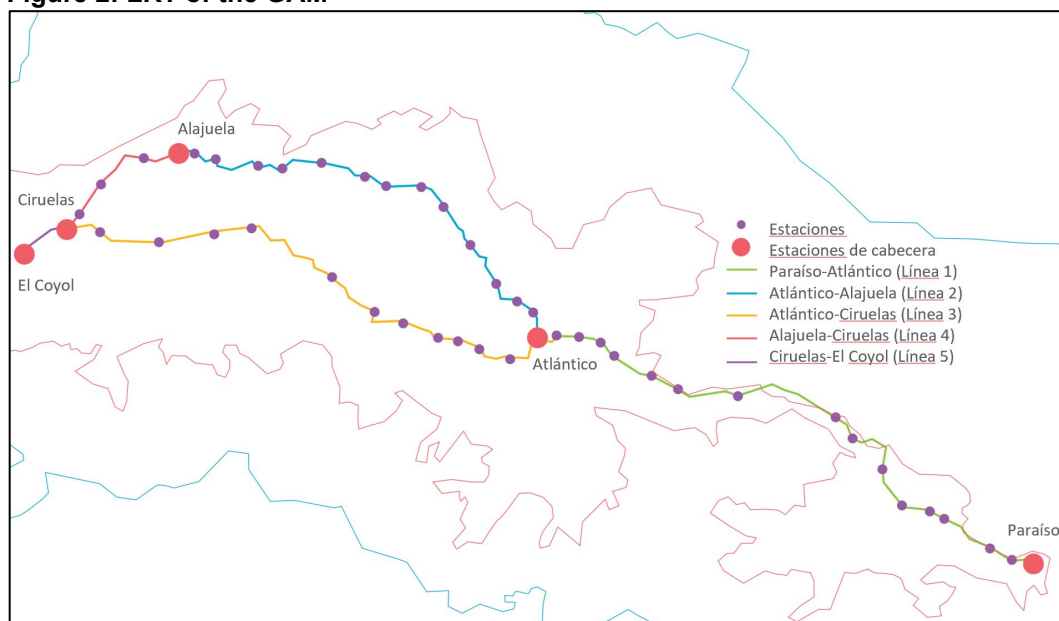
B.3. Project/programme description (max. 2000 words, approximately 4 pages)

Project Brief

The project is a modern, fast, convenient, safe, and environmentally sound LRT along the central East-West axle of the GAM⁴ including 15 cantons and 4 provinces of Costa Rica. The LRT will transport annually on average 63 million passengers benefitting around 2.7 million inhabitants living in the capture area of the train, representing 52% of the total population of Costa Rica. The LRT will use the existing right-of-way of the national rail system between the cities of San José, Cartago, Alajuela and Heredia (all of which form part of the GAM). It replaces the old low capacity single track diesel train with a modern, environmentally friendly, high capacity LRT. The LRT consists of 5 double-track lines built predominantly at grade with exception of some fly-overs. The total length of the system is 84.8 km with 46 stations and the following lines⁵:

1. Line 1: from Paraíso to Atlántico with 16 stations and a length of 27.4 km;
2. Line 2 from Atlántico to Alajuela with 15 stations and a length of 21.6 km;
3. Line 3 from Atlántico to Ciruelas with 13 stations and a length of 25.4 km;
4. Line 4 (Alajuela to Ciruelas, 7.8 km, 5 stations) and 5 (Ciruelas to El Coyoil, 2.7 km, 2 stations) are extensions of line 2 and 3.

Figure 2: LRT of the GAM



An old train operates partially on the proposed LRT route and the right-of-way exists on the entire tracks. The LRT is however an investment in a completely new LRT. It only uses the right of way of the existing rail track. New rail tracks are laid (double track instead of the prevailing single track), new bridges and fly overs are built (instead of at-level crossings), new trains, signalling systems and train control system are purchased, new stations are built and the LRT will be fully electrified whilst the current train runs on 1 track with outdated rails and old diesel engines. The system cannot be upgraded anymore besides what has already been done and requires a complete replacement. This results in a train with 20x carrying capacity, a higher speed, lower emissions and more convenience – in short a new rail system. The current rail system transported in 2019 i.e. prior COVID 9,800 passengers per day on average⁶. It realizes per track only between 5 and 12 services daily, with a 30 minute frequency between 5 and 9AM and 2 and 6PM due to infrastructure limitations. The current operating speed is on average below 20km/h. The project LRT will transport on average per working day over 200,000 passengers with 70 trains operating during peak hours at a 5-

⁴ Information for section B3 is based on the feasibility study realized by IDOM. For the overview of feasibility documents see (IDOM, 2020) and for a synopsis see (Incofer, 2020).

⁵ The sum of individual line length and number of stations is higher than the total as some tracks and stations are shared by different lines. See table 3 summary report (Incofer, 2020)

⁶ INCOFER, Informe de estadísticas operativas 2019, p.15

minute and during off-peaks at a 15-minute interval between 5AM and 11PM on a continuous base. The current rail is clearly not a mass rapid transit (MRT) system. GIZ defines MRT as “It is designed to move large numbers of people at one time”⁷ and “All forms of MRT operate with relatively high speed and passenger capacities, and the basic requirement of MRT in a developing city is that it carries large amounts of passengers, rapidly” (p.4) and “LRT and BRT systems typically operate at average speeds of between 20 and 30 km/h” (p.4.). ITDP defined rapid transit modes as “Rapid transit is a form of public transportation on a fixed route that includes features that dramatically improve the speed, capacity, reliability, and quality of the service.”⁸ The project LRT fully complies with this definition whilst the current rail system has low capacity, low speed, only operates during a few hours and has a low quality of service (convenience, reliability) and is thus not in line with a mass rapid transit system.

The LRT plans to transport initially more than 200,000 passengers daily with 70 trains operating during peak hours at a 5-minute and during off-peaks at a 15-minute interval⁹. The operating speed shall be 25 km/h in the urban centre, 50 km/h in peri-urban and 70 km/h in inter-urban areas. This is significantly higher than current bus and passenger car speeds. LRT passengers which in absence of the LRT would have used a bus save 66% of trip time (from currently more than 2 hours per average trip to 40 minutes) and baseline passenger car users save 24% of trip time. The expected mode shift from passenger cars, taxis including shared mobility (Uber is very large in the GAM), and the traditional bus system is basically due to time savings and having a safe and convenient transport system. The mode shift was modelled using a 4-stage travel demand modelling (IDOM, 2020). Private passenger car users not only face congestion resulting in slow average speeds and high trip times but also restrictions on car usage based on the licence plate ending (currently the vehicle cannot be used during 2 days per week). Buses are stuck in traffic just as cars so private car users currently have no incentive to switch to public transport – additionally the bus system is considered as unsafe, non-convenient and uncomfortable. The LRT with multiple connections offers a modern, convenient, safe, attractive and much quicker trip thus offering a very attractive option for car or taxi users to shift. For bus users the LRT not only offers a faster trip but also a more-connected trip as the bus lines as operating currently are non-connected and require transfers downtown with double or triple fare payment. The project contemplates direct integration with other transportation services: the feasibility studies have paid special attention to the generation of road-rail intermodal stations with the main intersection points of the rail corridor with the bus routes and future trunk lines located in the surroundings, thus promoting inter-modality with buses, cabs or non-motorized means such as bicycles, etc. The bus routes are currently being re-structured by the Ministry of Transport taking into account the LRT lines. No concessions will be given on routes which compete with LRT lines. The idea is to integrate the entire public transport system including the rail. This includes also in the medium-term fare integration. The current bus-based public transport system has no bus-only lanes and has for the GAM dozens of individual companies each of which operates a given route without fare integration, nor integration of routes or stops. This means that currently most passengers have to make 1-2 bus changes to reach their destination, thereby going mostly through central San Jose and losing lots of time for changes and for long trip distances due to non-connected routes. Due to the past experiences with bus restructuring programs, the project has made a conservative approach, and has modelled the demand, the costs and the impacts based on a scenario without integration beyond the current practice, limiting the project scope to the extent controllable within the single PPP transaction. Under this scenario modelled, the MOPT will, as mentioned, restructure the routes in the catchment area of the LRT to avoid competing services with the same origin and destination, thereby also avoiding that bus operators receive concessions which they cannot operate in a profitable manner. If a full integration and restructuring of the bus-system can be achieved, the the ridership of the LRT will be higher and also the emission reductions will be more than projected.

The project seeks to follow the principles of improved last-mile connectivity as well as Transit Oriented Development (TOD) by revitalization of urban spaces and connection of residents living area with workplaces, commerce and services thereby reducing the dependence on passenger cars and providing for a better quality of life and environmentally sustainable neighbourhoods. The LRT shall form an urban vertebral line within the GAM. Principles followed are (i) to create intermodal centres including NMT around stations, (ii) to densify and promote mixed land usage around stations, (iii) to ensure optimal and convenient pedestrian access, (iv) to prioritize NMT and public transport, and (v) to regenerate informal and precarious urban areas. The LRT shall attract new residential areas around its stations with the goal of doubling the current population density in urban areas and by increasing it by 20-25% in peripheral areas. NMT interventions include the construction of 16 km of segregated cycle lanes in the vicinity of LRT lines resulting in 36,000 additional cycling trips per day. These are used by bicycles as well as micro-mobility

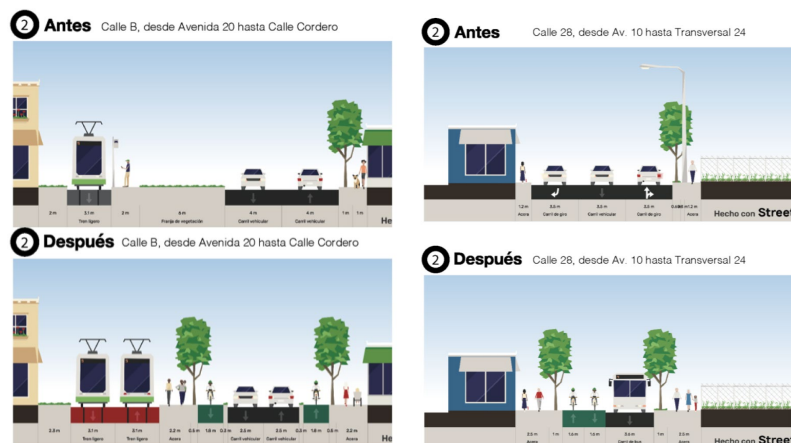
⁷ GIZ, 2005, Mass Transit Options, p.2

⁸ [2.1 Defining Rapid Transit Modes \(itdp.org\)](#)

⁹ 8 additional trains are a reserve

vehicles such as electric scooters and allow for improved safety cited as a major reason for not using bicycles (see figure below for examples of project cycle-lanes). Specific NMT and improved connectivity and accessibility infrastructure projects are executed by the project with interventions along 6 rail stations and an impacted population living in the vicinity of the intervention areas of 140,000¹⁰. Minimum 10 stations are planned to be intermodal stations with seamless transfer to buses. The project also contemplates large-scale TOD interventions with private developers. Initial planning for such interventions has been realized for various stations¹¹. These investments, made primarily by private developers, are not included in the project as they also still need to be detailed and agreed upon with the stakeholders.

Figure 3: Designed Project Cycle Lanes



Antes = current situation ; despues = with project situation; Source: (Grutter Consulting, 2020c)

Costa Rica has focused on the institutional and regulatory framework in order to improve the conditions of women, with the aim of having accelerated returns at social and economic levels. In the last issue of the Global Gender Gap Report, Costa Rica was ranked 13th out of 153 countries. Data on urban mobility in Costa Rica show that nearly 60% of public transport users are women. The public transportation system must guarantee safe spaces and participation of women. Violence against women is present in public spaces and the train does not escape from this reality. In order to avoid costs and economic losses, the project has designed activities that promote the training of the personnel that will allow them to identify the violence events and provide tools to facilitate the approach of the women to the specific services in case of an attack. The project will also implement communication tools and campaigns directed to men and women in order to prevent and attend to violence against women, establish a complaint mechanism and rapid reporting system for cases of violence against women, and implement adequate infrastructure elements such as good lighting at stations or panic buttons. To improve accessibility of women it is necessary to ensure that women can access different types of services, not only when using the train or waiting inside the stations, but also the connection with other types of multimodal transport and other public spaces. The infrastructure will include the necessary spaces to ensure women's comfort and take into account their mobility patterns (accompanied, with shopping carts, or multiple bags or packages, or strollers for children). To improve women participation the LRT will serve as a potential employer of women, not only within institutions such as the Incofer or the MOPT, but also by connecting women to employment or entrepreneurial opportunities, whether they serve as providers to the institution or are independent. On the other hand, it shall be ensured that women are involved in decision making and policy dialogue in order to ensure implementation of programs and policies that take into account their perspectives and views. Specific targets for women participation in workforce, board members and training programs have been designed for this purpose.

The LRT shall strengthen the resilience of the city's transport system to impacts of climate change, especially heat waves, hailstorms, downpours, floods, and changes in temperature and precipitation. The effects of climate parameters on various project components were considered at the structural, operational and functional level. The structural analysis refers to all physical components of the project, the operational analysis corresponds to all

¹⁰ For a detailed assessment of the current NMT and TOD situation of Costa Rica see (Grutter Consulting, 2020b); For an assessment of best practices and international benchmarking in NMT and TOD see (Grutter Consulting, 2020a); The project interventions are detailed in (Grutter Consulting, 2020c).

¹¹ See for details (IDOM, 2020) (Annex 2)

processes that allow the generation of service and functional analysis is the ability of the system to provide service consistently. In order to achieve a disaggregated risk analysis, the risk analysis was carried out by sections of the LRT route. The risk evaluations done in the Climate Risk and Vulnerability Assessment (Grutter Consulting, 2020d) and (Grutter Consulting, 2020e) find that many of the risks in the LRT project area fall in low and medium risk categories with a few subset of risks that may give rise to potential high vulnerability if the effects of future climate change are more significant than anticipated (or modeled). The risks posed by these medium and low risk interactions can generally be considered within the design and normal operating conditions of a project. The risks to main LRT project components that warrant adaptation considerations are identified for the following LRT infrastructures: (a) drainages, longitudinal and transverse, (b) bridges, (c) slope instabilities and landslides, and (d) rail tracks. The Feasibility Study for the LRT project has carried out numerous investigations and notably the following reports were valuable for decisions on climate change adaptation measures for LRT infrastructural assets: (a) Volume 4 - Geology and Geotechnical, (b) Volume 5 – Hydrology and Drainage, (c) Volume 14 – Structures and (d) Volume 13 - Track Superstructures (all part of IDOM, 2020, Technical Feasibility Report). The construction and operation of the LRT will integrate adaptation measures for the protection of users and infrastructure such as usage of materials resistant to maximum temperatures, thermal oscillations and hail damage, protection against flooding of depots and the design of urban storm drainage systems that guarantee a storage and retention capacity of water in the rain peaks and its subsequent safe evacuation. As examples sizing of bridge structures will be based on a design return period of 500 years instead of the standard 100-200 years decreasing the flood risk from 39% (200-year period) to 18% (500-year period), usage of concrete plate or slab tracks instead of the ballast system improving also its useful life or realization of a geo-technical “slope stability” study during the design phase. An independent in-depth Climate Risk and Vulnerability Assessment showed that the LRT design is climate proof and incorporates all best practices for a climate resilient infrastructure¹². The proposed NMT and connectivity interventions also include an increase in green areas and improved resilience of urban infrastructure.

The implementation planning foresees the issuance of the tender for the concession contract and detailed engineering design studies for 2021. The lines shall be constructed simultaneously resulting in a total construction time of 4 years. All lines shall be operational by end 2025.

Implementation shall be through a Public Private Partnership (PPP) with a special purpose vehicle (SPV) created by the Concessionaire for this effect. Compared to other LRT systems recently constructed the cost per km of the project is 45% lower (see table below), due inter alia to the existing right of way. The project will be able to recover through tariffs 65% of operational costs or 40% of total costs (IDOM, 2020). The remaining part is covered by governmental subsidies. Most urban rail systems worldwide are unable to cover their operating costs with farebox revenues, let alone capital expenditures (see e.g. (EY, 2014), (SYSTRA, 2016) or (World Bank, 2018)).

Table 1: Cost Comparison LRTs

LRT	Cost MUSD per km
Bursa Light Rail System, Turkey (8.9 km)	34
Average 5 LRTs in the USA	39
LRT Tunis, Tunisia (19.5 km)	34
LRT Sfax, Tunisia (49.8 km)	21
LRT Mexico City, Mexico (25 km)	28
Ayacucho, Colombia (4.2 km)	38
Avenida 80, Bogota, Colombia (13.5 km)	43
Cuenca, Ecuador (10.2 km)	30
Guatemala City, Guatemala (20.5 km)	31
Median value (average value)	34 (33)
LRT Costa Rica (84.9 km); excludes financing costs	18

Source: Annex 22: GHG and SD Impacts of LRT, sheet “cost LRTs other countries”

PPP Structure

The PPP is implemented through a SPV established and fully owned by the concessionaire. The government does not participate with equity or loans to the SPV but uses a forfeiting model and pays upon completed construction a fixed sum of 550 MUSD and with operations annual availability payments linked to performance criteria. This system

¹² See report 1 on climate risks and vulnerability (Grutter Consulting, 2020d) and the second report on climate adaptation options for the LRT (Grutter Consulting, 2020e).

is more attractive for investors and makes the system less prone to government interference. There has been a large increase in the number of urban rail projects worldwide with private participation since the early 2000s. The structuring as a public service concession has various advantages for the project such as:

- It provides security to potential concessionaires and investors as a concession contract has an existing legislation in Costa Rica (the legislation also allows concessions of already existing infrastructure), and processing the concession is a standard procedure.
- INCOFER realizes the bidding procedure directly without the participation or intervention of the National Council on Concessions (CNC).¹³

Factors driving countries towards PPP models include project implementing experience of the private partner for this type of project, Value for Money and the possibility to mobilize private financing to complement constrained public resources (World Bank, 2018).

The PPP is for a time period of 35 years fixed construction plus operations i.e. if the construction period takes longer than previewed the concessionary will have a shorter operational period to recover its investment. After this time period INCOFER decides if they want to manage the LRT and the SPV is dissolved or if a new contract is arranged. The SPV income is based on a fixed, regular availability payment realized by the government covering all expenses and costs with potential adjustments or deductions in case of non-compliance with agreed-upon service quality levels (condition criteria) and physical infrastructure availability (effective asset usability). Eventually, income derived from other commercial activities such as publicity and real-estate lease will be considered as complementary income. This means that the government assumes most of the demand and fare risk, with a final decision to be taken during the tender process. To achieve interest of private investors in such projects the government needs to either provide a fixed availability payment or guarantee a minimum ridership.

For the development of the project, **two transaction structures or business models** were analysed:

- **Model PPDi - Payment by Availability and Transfer of Income:** In this model the concessionaire's revenues are pre-determined in the concession contract as a fixed amount that covers the investment, operation and maintenance, and profitability. This value is covered by the tariff system revenues and the payment made by the State covering the differential between the defined fixed amount and the tariff revenues received (user tariff). In case of a surplus in the fare revenues from the system (user fee) these are for the State. The concessionaire's revenues are subject to possible deductions only in the case of service failures or lack of availability of infrastructure. One of the main advantages of this model is that, as it has no demand risk and is guaranteed by the National Government for the payment of the fixed amount established in the concession contract. It is attractive to financiers and concessionaires and is easy to bank and place in the market.
- **PPDD Model - Pay per Availability with Demand Transfer:** This model transfers part of the demand risk to the concessionaire. The concessionaire's revenues are determined by a fixed payment from the State and the system revenues (user tariff) that take into account a Minimum Revenue Guarantee (MGR) as defined in the concession contract. The payments made by the State as in the PPDi model will be subject to deductions or discounts for compliance with availability, quality and service levels. The Minimum Revenue Guarantee (MGR) seeks to mitigate the demand risk assumed by the private party and to cover the costs of investment, operation, maintenance and a minimum profitability that are considered below the market. One of the main advantages of this model is that the State's payments are stable since the demand risk is shared, which means a conservative fiscal scenario and less risk for the State in case the demand projections move away from the projections of the structuring (base scenario). So by assuming a higher risk the concessionaire has a higher rate of return.

The following table summarizes the main characteristics of the two transaction models.

¹³ However, INCOFER will apply the same procedures as used by CNC i.e. contracting external persons for administration, monitoring etc.

Table 2: Summary Transaction Models

Parameter	Business model	
	PPDi	PPDD
Assumed expected IRR from private investor	10%	13.5%
Assigned demand risk	100% Public	Shared Public and Private
Guaranteed Minimum Income (GMI) demand	No	Yes
Surplus system tariff revenues	100% State	Shared Public and Private
Compliance with quality and operational performance indices	Yes	Yes
Projected annual payment government	96 MUSD	123 MUSD

Source: (IDOM, 2020)

In the PPDi model the government takes 100% of the demand risk. If demand falls by more than 37.5% with respect to the baseline scenario, the PPDi model is more costly for the government and reverse. Under the PPDi model, the payments made by the State are fixed for the concessionaire, regardless of fluctuations in demand. The PPDi model is a very attractive alternative for financiers and concessionaires, as it is easy to bank and place in the market, taking into account that the demand is not a risk attributed to the private party but 100% to the State and the resources to remunerate the concessionaire are fixed and guaranteed. The bidding process will potentially allow for the comparison of proposals under the two models proposed.

The **technical fare** is understood as the fare that allows the concessionaire to recover its investment, pay operation and maintenance costs and obtain profitability. This fare is calculated on the basis of revenues (CAPEX fare, OPEX fare and trip revenues) and passenger demand.

Under the PPDD model, the concessionaire receives three sources of income over the operation and maintenance period:

- Revenue per passenger carried: pay-as-you-go, there is a transfer of demand risk since fewer passengers carried means a lower demand payment to the concessionaire; however, a minimum value of demand revenue is guaranteed, i.e. the MGR demand.
- OPEX Tariff Revenue: revenue from the provision of the transport service, which is an availability payment calculated on the basis of annual OPEX costs. This revenue is affected by the optimal performance of the service.
- CAPEX Tariff revenues: revenues associated with the availability of the project covering investment and interest.

Under the PPDi model, the concessionaire receives two sources of revenue throughout the operation and maintenance period i) OPEX Fare Revenue and ii) CAPEX Fare Revenue; the demand risk under this model is assumed in its entirety by the State.

Once the total revenue is estimated for each model, during the operation and maintenance period of the project, it is divided into the total estimated demand for the base scenario and the Technical Tariff is obtained.

Which model to choose has not yet been finally decided as this is also discussed with the interested parties for the PPP.

PPP Advantages

Including the private sector makes the project less risky and reduces investment of the government. It also reduces the complexity for the government and puts this into hands of experienced private investors. Contacts with potentially interested investors have already been made e.g. from Korea or PR China and from more than 10 potential investors interest in participation has been signalled. Negotiations with possible investors with the tender document will allow to adjust the project also to the requirements of the private investor. Whilst the investment of 1.87 billion USD is large one also needs to take into account that Costa Rica is investing 4.6 billion USD in roads between 2019 and 2022 many of which also with PPPs¹⁴.

¹⁴ [5d6555428faa5_209 - MOPT.pdf \(hacienda.go.cr\)](#)

Alternatives Assessed

Other mass transit options such as a Bus Rapid Transit (BRT) or exclusive bus lanes have been extensively studied for two decades¹⁵, without any implementation success basically due to the complex legal and operational structure of the existing bus system and resistance to change of the more than 40 private operators. The currently followed public transport option is based on the LRT linked with a re-structuring of the bus-system (Grupo de Analisis sobre Sistemas de Transporte y Movilidad, 2018). This sustainable urban transport plan financed by the IDB and the GEF came to the conclusion that an integrated transport system with a LRT combined with a bus-based system based on re-organized routes and a sectorization of routes is the most effective option.

In contrast to other cities the GAM already has a train. The rails are still used over a large part of the system. The right of way and the space are available. This space is not sufficient for a BRT or bus based system. Whilst the current system is outdated and needs to be fully replaced it is based on the existing track and rights of way which drastically reduces investment costs as (i) land purchases are limited; (ii) earth movement is reduced; (iii) existing stations can be partially used and (iv) required services are in the immediate vicinity. It would not be possible to establish on the existing track a BRT due to lack of space.

Costa Rica therefore made various analysis (e.g. (IDB, 2015)) to assess how the existing system could be changed to a modern mass Rapid Transit System. The existing right of way and space allows that the CAPEX is 50% lower than the average of other comparable systems (see table 1). The average CAPEX of a gold standard BRT in developing countries is, based on ITDP¹⁶, 18 MUSD per km (USD of 2020; 16.3 MUSD of 2013) equivalent to the LRT investment of Costa Rica. BRT investments have however a shorter lifespan: buses 10-12 years and roads 20 years whilst the LRT lifespan of rolling stock is 35 years and average infrastructure excl. rolling stock is of 50 years (IDOM, 2020). Thus with the same CAPEX you get a system with much lower future investments, higher speed, more convenience, lower accidentality, lower emissions and more attractive for customers. The decision for a LRT is thus clear as you can get with the same initial investment a better system with less follow-up investments.

Previous to the feasibility study realized by IDOM a study focusing on evaluating various construction options for the LRT including a system at grade, elevated and underground was realized (IDOM, 2018). The evaluation came to the conclusion that a construction at grade is the most appropriate solution taking into account financial and technical criteria.

For the operational implementation the alternatives of a PPP and of Public Financing (PF) were assessed, performing a value for money (VfM) analysis (IDOM, 2020). The VfM examined quantitative (project-level monetary) and qualitative (external monetary and non-monetary) factors. The values of the different risks were quantified based on the risk consequences (risk probability * risk event). A PPP results in a lower total net present cost than realizing the project through PF. The core advantages for Costa Rica in realizing the project as a PPP are more rigorous budget management, reduced government capital requirement freeing up resources which can be allocated for other vital investments, reduced risks and improved public sector efficiency.

Project Components

The project has the following components:

1. LRT system with a CAPEX of 1,852 MUSD including (IDOM, 2020):

- Infrastructure and systems worth 834 MUSD with the main elements being rail track, rail stations, electrification, signalling, train depot and workshops, communication systems and rehabilitation of affected services. This sub-component also includes 25 MUSD for urban integration, 13 MUSD for rehabilitation of historic patrimony and 4 MUSD for waste management;
- Rolling stock worth 452 MUSD for 78 trains @ 5.8 MUSD per unit;
- Financing charges during implementation estimated at 298 MUSD;

¹⁵ Examples of non-implemented initiatives include: 1999 the Ministry of Transport made a bus route sectorization program which included trunk and feeder routes (Decree MOPT 28337 of 1999); the regional urban development program for the GAM (PRUGAM) realized in 2007 included a BRT; The national transport plan of Costa Rica 2011-2035 had a public transport restructuring plan with trunk and feeder routes (MOPT, 2011); 2013 a study financed by the IADB (EPYPSA-SIGMA GP, 2015) for urban public transport structuring again proposed a BRT.

¹⁶ [2.2 Costs \(itdp.org\)](https://www.itdp.org/)

- Other costs of 268 MUS\$ including acquisition of land and buildings, design and implementation and indirect costs (administration, profit, contingency). This sub-component also includes 10 MUS\$ for environmental and social measures.

The GCF involvement in this component is 250 MUS\$ of loans.

Component 1 has the following activities and sub-activities:

- Identification and engagement of the private concessionaire which will then constitute a Special Purpose Vehicle (SPV) (i) tender for PPP launched; (ii) concession award
- LRT design build and ready to operate including as sub-activities (i) detailed engineering design of all LRT components; (ii) tendering and construction incl. equipment of LRT tracks, stations, depots and ancillary components; (iii) tendering, procurement and reception of rolling stock; (iv) EIA for LRT; (v) negotiation and approval of all permits required to build and operate the LRT; (vi) LRT constructed; (vii) stations constructed; (viii) depots constructed; (ix) trains purchased; (x) construction approved by INCOFER; (xi) operation permit issued by INCOFER

2. Urban integration with NMT and connectivity/accessibility components¹⁷: Cycle lanes are integrated in some areas to gain experience with such measures. Cycle lanes are based on segregated lanes following best international practices. The connectivity/accessibility measures include improvements in the surroundings of stations generating better quality of life for users and include pedestrianization, greening of spaces, multi-modal access, improved safety etc. GCF grants worth 20 MUS\$ are used for this component including:

- Cycle lanes: 16 km of segregated cycle lanes connecting LRT stations. At stations parking facilities for cyclists are established including mass parking stations for bikes with optimal lighting and safety measures. Along critical cycle lanes cameras are installed for improved safety (important e.g. to ensure higher female usage);
- Connectivity components at 6 LRT stations including improved walkways, pedestrianization, multi-modal integration with other modes of transport, improved accessibility including e.g. the construction of various access bridges for pedestrians and bicycles to avoid dangerous crossings or to reduce walking distances, and greening of spaces including arborization measures.

Component 2 has the following activities and sub-activities:

- Design, build and ready to operate cycling lanes including (i) detailed engineering design of cycle lanes; (ii) tendering of construction of cycle lanes; (iii) cycling lanes constructed and operational
- Integrate, design, and build connectivity interventions at 6 LRT stations including (i) detailed engineering design of interventions; (ii) tendering of construction activities (iii) delivery of integrated stations
- NMT promotion activities including (i) detailed design of activities; (ii) identification and contracting of delivery institution; (iii) delivery of planned activities

3. Capacity building and gender measures: Improved data collection to generate sources of information on how to improve service quality, inclusive measures for all, safety and how to encourage people to use environmentally friendly transport. Monitoring is realized for the LRT, last-mile connectivity and NMT components and also includes tracking of mode-shift, the impact of activities on the trip structure of people, the identification of triggers of change in transport behaviour and the monitoring of GHG and sustainable development impacts¹⁸. Data collection is based on surveys and automated systems. The results shall be synthesized in guidelines for NMT and last-mile connectivity, best practice reports and other knowledge products which shall be published and discussed at workshops. The cost of this sub-component is 1 MUS\$. For gender intervention as detailed in the gender action plan 0.3 MUS\$ are reserved (various gender specific investments are already included in the LRT as well as the NMT components)¹⁹. The GCF involvement in this component is 1.3 MUS\$ of grants.

¹⁷ See for details (Grutter Consulting, 2020c)

¹⁸ See for details of the monitoring approaches and surveys (Grutter Consulting, 2020f)

¹⁹ See (Grutter Consulting, 2020g)

Component 3 has the following activities and sub-activities:

- Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT intervention including (i) design institutional set-up within INCOFER for monitoring of impact; (ii) sub-contract surveys and other components of monitoring; (iii) realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components
- Deliver capacity building and outreach including (i) realize publications on project components with a focus on NMT/connectivity; (ii) realize outreach events
- Implement gender action plan including (i) establish social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations; (ii) train INCOFER staff on the new sexual harassment law; (iii) implement a rapid reporting system for cases of violence against women; (iv) establish a complaint mechanism for cases of violence against women that acts automatically; (v) implement an adequate lighting system that protects the safety of users; (vi) conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure; (vii) LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure; (viii) improving women's accessibility to non-motorized mobility services; (ix) attract women to the INCOFER workforce and offer equal conditions to men; (x) promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires; (xi) establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT; (xii) documentation of activities and outreach.

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

Overview

CABEI is the Accredited Entity (AE) of this project and is a lending agency. In accordance with the Accreditation Master Agreement (dated 06/09/2017), the GCF and the AE will enter into a funded activity agreement whereby the AE shall administer the GCF proceeds to be disbursed by the GCF for the implementation of the Project.

The executing entity are the Costa Rican Institute of Railways (INCOFER)²⁰ and the Government of Costa Rica acting through the Ministry of Finance (MOF) for the purposes of channelling GCF proceeds.. Costa Rica's state-owned rail authority INCOFER is an independent statutory corporation established to operate the country's railway network. INCOFER has administrative autonomy, legal personality and own assets.

The project implementation will be the responsibility of the Special Purpose Vehicle (SPV) established by the concessionary of the train with supervision by INCOFER. The concession contract is regulated by the Law No. 7762 of Public Works with Public Services Concession. The application of this model implies the granting by INCOFER (the Grantor) to a Private Developer (the Concessionaire) of a contract which includes the right to design, build, operate, maintain and commercially exploit the project and transfer it at the end of the 35-year concession period to INCOFER (DBOMT contract). INCOFER identifies and engages the concessionaire and supervises the execution of the contract thereafter. The concession contract includes the details of what the concessionaire needs to deliver in terms of the LRT (routes, train technology, capacity, construction principles) as well as NMT and integrated connectivity stations. INCOFER approves all detailed engineering designs, supervises implementation and issues the construction acceptance certificate and operation permit. Thereafter it supervises and controls implementation and defines if all concession conditions are met for the annual availability payments.

INCOFER has a preliminary list of interested concessionaires, which exceed 10 companies. Likewise, IDOM corroborated with these companies that the amount to be tendered and the size of the works is feasible.

²⁰ See loan contract Section 2.03 (CABEI, 2020)

CABEI

CABEI is a supranational development bank focused on Central America, founded in 1960. The Bank's objective is to promote the economic integration and the balanced economic and social development of the Central American region. Costa Rica is one of the founder members of CABEI. 2010 to 2018 CABEI approved in total projects worth 13 billion USD of which 3.3 billion USD in Costa Rica. CABEI holds the best credit rating in Latin America²¹. It has a total authorized capital of 7 billion USD, 11.6 billion of assets and a Return on Equity of 6.9% as of end 2019²². CABEI requires that its operations comply with environmental and social standards, based on the best international practices, aligned with CABEI's Environmental and Social Policy. In the transport sector, CABEI has realized financing of road infrastructure and has focused recently on improving urban mobility, as well as regional integration through support for railroad projects, among others. Within this framework, it is developing a regional plan for sustainable urban mobility, along with funding for various public transportation initiatives.

CABEI has realized various PPPs in Costa Rica including Ruta 27, Windfarm Valle Central, Altos de Magdalena or with ICE. CABEI will also have two supervising entities for the loan, one contracted by the government of Costa Rica and one directly contracted by CABEI through an international tender to have sufficient external technical know how during the entire process of PP structuring and implementation.

MINISTRY OF FINANCE

The Ministry of Finance (MOF) is as the loan recipient on behalf of the Government of Costa Rica an executing entity.

INCOFER

The executing entity of the CABEI loan is INCOFER (Art. 2.03²³). Within INCOFER there is an entity to support and assist the institution in all activities related to the concession, the monitoring of the feasibility studies, the bidding stage of the concession, compliance with conditions precedent, design stage and the construction stage. INCOFER will submit to CABEI quarterly reports on the physical execution of the project, compliance with the environmental management plans and in general the compliance with the obligations of the concessionaire contained in the respective Contract. CABEI will realize bi-annual supervision missions and will also contract an external supervision entity.

INCOFER is an autonomous institution of the Costa Rican State, in charge of managing the national railway system. It was created on September 9th, 1985, through Law No. 7001, which has had several reforms, the most important being Law No. 9366 of 2016 which gives INCOFER the mandate to build an electric train in the GAM. It also authorizes the institution to conduct Public-Private Partnerships. INCOFER has extensive experience in railway operations, since it has been in charge of the administration of the railway network in the country since 1985. Currently, INCOFER's passenger rail transport system has three lines, 32 stations and a workshop, which in total extends over approximately 60 km, and mobilizes more than 3.2 million passengers annually. However, it does not have experience in handling concession projects, therefore INCOFER already hired with TA funds of CABEI an operating unit with members with extensive experience in the management of concession contracts. This unit shall also be expanded to include professionals with a strong background in the financial, legal, and railway sectors. An international bidding process to determine the private party entering the PPP will be organized by INCOFER following the regulations of the General Law on the Concession of Public Works with Public Services²⁴.

Most of INCOFER's current employees worked at the National Concessions Council (the government entity in charge of PPP management in Costa Rica's Central Government) and practically all of them are involved in the LRT project. The staff thus has proven experience in PPPs even of this magnitude, having participated directly in the concession process of the Moín Container Terminal, a public works concession project that exceeds US\$1,000 million. INCOFER has also been carrying out a training process for its officials through technical cooperation with the IDB. 20 officials

²¹ As of 09/2019: Standard & poor's AA/Stable/A-1+; Moody's Aa3/Stable/P-1; see <https://www.bcie.org/en/investor-relations/credit-rating>

²² https://www.bcie.org/fileadmin/bcie/english/files/news-and-media/publications/institutionales/CABEI_Institutional_PPT_ENG_APR2020.pdf

²³ Loan Agreement 2241 between BCIE and Government of Costa Rica, 2020

²⁴ Law No. 7762; see

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=30464&nValor3=75110&strTipM=TC

received a specialization course in PPP projects. With TA funds from CABI, INCOFER hired three specialist advisors with extensive experience in concession contract management, who are part of the project's Executive Unit. This Unit will also be expanded to include professionals with a solid background in the financial, legal and railroad sectors. Two additional cooperation agreements with CABI are in process, aimed at supporting INCOFER during the bidding stage.

A capacity assessment of INCOFER was conducted by CABI. The assessment concluded that the institution is in full capacity to oversee the concession contract for the LRT and NMT. The institution carries out internal audits periodically and is subject to audits by the Auditor General and the Ministry of Planning and Economic Policy. Its financial management is in accordance with national regulations and audited financial statements have been provided. INCOFER complies with all national laws regarding procurement and no inconsistencies over the past 6 years have been found. Over the past 6-10 years, the institution has carried out several projects to modernize both, cargo and passenger train service. For this project, the executing unit was enforced with three external consultants with a very high profile. The LRT Executing Unit will support and assist INCOFER in all activities related to the follow-up of the LRT feasibility studies, from the analysis of the technical and legal studies, as well as the progress in the delivery of partial and final reports. The consultants will provide technical advice to INCOFER in all matters related to the structuring of the financing of the LRT and subsequently provide the necessary technical support as required by INCOFER.

Implementation Structure

It is estimated that the Government of Costa Rica will have to destinate a net sum of around 110 MUSD per annum²⁵ for payment of services to the concessionary (apart from the 550 MUSD as partial recognition of the investments) (IDOM, 2020, pp. 8-9). This represents 0.6% of the total government budget in the year 2020 (0.8% of current expenditures)²⁶.

The concession contract will be signed between the Ministry of Public Works and Transportation, INCOFER, the Ministry of Finance, the successful bidder and the concessionaire company (SPV). The MoF, as is the case with all sovereign loans, is responsible to handle the national accounts and to transfer the funds to the private concessionaire. From the awarding of the concession, by law the government has to budget for the availability payment.

The Government of Costa Rica is the beneficiary of the grant for component 2 and the concessional loan of the GCF. The grant for component 3 goes to INCOFER. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against terminated LRT construction and lines ready for operations. This is not a loan nor an investment in the SPV but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire.

The following figure shows the project structure. The same structure is used for NMT investments as for LRT ones i.e. these investments are included within the tender document and the PPP.

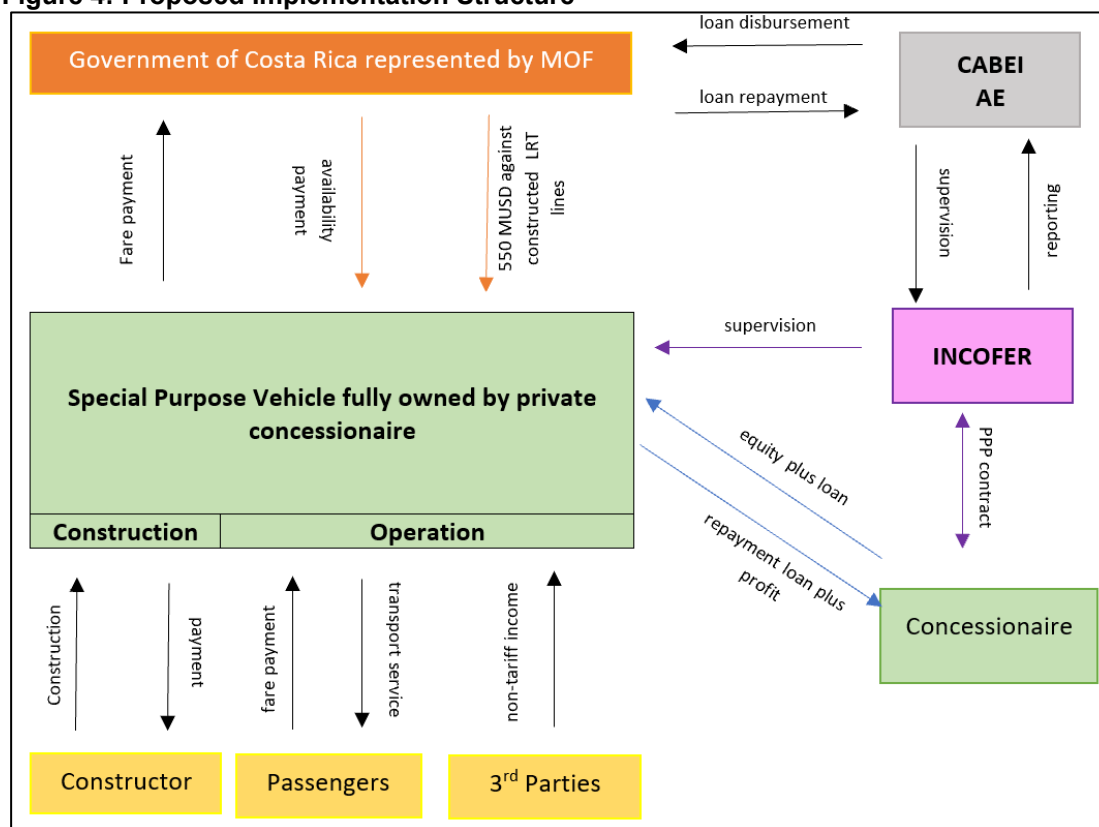
²⁵ Total around 150 million USD per annum minus income 40 MUSD received from fare box.

²⁶ 10,510 billion CRC @ 550 CRC per USD end 2019 equals 19.1 billion USD

(<https://www1.oanda.com/currency/converter/>) based on MOF:

https://www.hacienda.go.cr/docs/5de7b0492ea2c_Resumen_Egresos_2020_Web.pdf

Figure 4: Proposed Implementation Structure



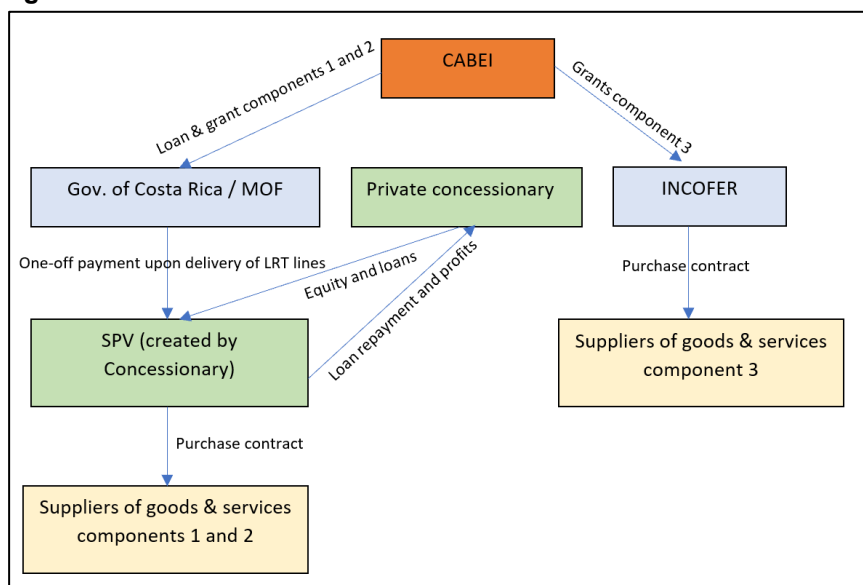
The SPV will be responsible for implementing components 1 and 2 based on the concession contract and the approval of detailed engineering designs of INCOFER with exception of sub-activity 1.1. which is launching and awarding the PPP tender for which INCOFER is responsible. INCOFER will be responsible for implementing Component 3.

The CABI loan for the project is as of early 2021 under discussion in the Congress of Costa Rica. Only after approval can the tender process for the PPP be started. According to the schedule, the bidding process for the PPP is expected to begin in 2021. It starts with the publication of the bidding notice, followed by a stage of reception and evaluation of the bidder's proposals, an appeal process, if needed, and a stage of PPP contract negotiations. There is no deadline and no congressional approval as INCOFER has these legal attributions.

Implementation Arrangements

CABI issues a sovereign loan to the Government of Costa Rica. As such it does not manage, supervise or audit the concession execution. The sovereign loan given by CABI to the Government of Costa Rica is used as counterpart fund of the government for the concession contract. The loan recipient is the Ministry of Finance (MOF). MOF is therefore also an executing entity. INCOFER does not administer any funds of component 1 and 2. MOF will administer these funds and make payments to the SPV at INCOFER's instructions. INCOFER is however responsible to CABI as executing entity. INCOFER as implementing agency supervises and approves all detailed engineering designs for components 1 and 2, supervises implementation of the construction activities and issues the construction acceptance certificate and operation permit. Thereafter it supervises and controls implementation and defines if all concession conditions are met for the annual availability payments. CABI will have two supervising entities for the loan: In the first one, to be contracted by the Government of Costa Rica, CABI prepares the TORs of the supervising company and the minimum activities to be performed, and the second company is contracted directly by CABI with an international bidding process for a company with experience in the transport sector to validate the social, environmental, infrastructure and economic commitments assumed by the State for the project. CABI disbursements and MOF payments to the concessionaire are made after provisional entry of operations of each line (Art. 6.02). GCF funds shall be used in the identical manner. The figure below shows the fund flows for loans.

Figure 5: Fund Flows for Loans and Grants



The Executing Entities for the GCF are MOF and INCOFER. The executing entity of the CABEL loan is INCOFER (Art. 2.03²⁷). The loan agreement stipulates inter alia that the borrower (i) must carry out the project in accordance with the plan (Art. 9.01); (ii) must comply with all applicable environmental regulations and the environmental and social policies as defined in the Environmental and Social Action Plan of the project (Art. 9.02 and 9.03); (iii) establishes a unique traceable account to verify expenses are realized in accordance to the project plan (Art. 9.04); (iv) acquires goods and services for which CABEL resources shall be used in accordance with CABEL's policies and national procurement laws (Art. 9.09); (v) complies with CABEL's anti-fraud, anti-corruption and other prohibited practices policy (art. 9.11). See for loan supervision and information procedures section G3.

Table 3: Implementation and Procurement Responsibilities per Component and Activity

Component	Activity	Sub Activity	Responsibilities
1. LRT System	1. Identification and engagement of concessionaire	1.1. Launch tender for concession contract	INCOFER
		1.2. Award concession contract	
	2. Design, build and ready to operate LRT	2.1. Detailed engineering	SPV; approval of detailed engineering, acceptance of construction and issuance of operation permit by INCOFER
		2.2. Tendering & construction LRT tracks, stations etc	
		2.3. Tendering and procurement RS	
		2.4. EIA for LRT	
		2.5. Negotiation and getting approval of all permits	
		2.6. LRT constructed	
		2.7. Stations constructed	
		2.8. Depots constructed	
		2.9. Trains purchased	
		2.10. Construction of LRT approved	
		2.11. Operation permit received	

²⁷ Loan Agreement 2241 between BCIE and Government of Costa Rica, 2020

2. Urban integration with NMT and connectivity/accessibility	3. Design, build and ready to operate cycling lanes	3.1. Detailed engineering of cycling lanes	SPV; approval of detailed engineering and acceptance of construction by INCOFER
		3.2. Tendering of construction of cycling lanes	
		3.3. Construction of cycle lanes delivered	
	4. Integrate, design, and build connectivity interventions at 6 LRT stations	4.1. Detailed engineering design of interventions	SPV; approval of detailed engineering and acceptance of construction by INCOFER
		4.2. Tendering of construction activities	
		4.3. Delivery of stations with connectivity components	
	5. Multiple promotion activities to foster cycle and micro-mobility usage	5.1. Detailed design of activities	SPV; approval of detailed promotion plan by INCOFER
		5.2. Identification and contracting of delivery institution	
		5.3. Delivery of planned activities	
3. CB and gender measures	6. Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT interventions	6.1. Design institutional set-up within INCOFER for monitoring of impacts	INCOFER
		6.2. Sub-contract surveys and other components of monitoring	
		6.3. Realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components	
	7. Deliver capacity building and outreach	7.1. Realize publications on project components with a focus on NMT/connectivity	INCOFER
		7.2. Realize outreach events	
	8. Implement GAP	8.1.a communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations	INCOFER
		8.1b. Train INCOFER staff on the new sexual harassment law	
		8.1c. Implement a rapid reporting system for cases of violence against women	
		8.1d. Establish a complaint mechanism for cases of violence against	

		women that acts automatically	
		8.1e. Implement an adequate lighting system that protects the safety of users	
		8.2.a Design, implement and analyse a comprehensive multimodal transport pilot survey	
		8.2.b Conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure	
		8.3a LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure	
		8.3b. Improving women's accessibility to non-motorized mobility services	
		8.4a. Attract women to the INCOFER workforce and offer equal conditions to men	
		8.4b. Promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires	
		8.5. Establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT	
		8.6. Create knowledge product on lessons learned and disseminate these	

The grants for NMT and last-mile connectivity investment measures will be managed identical to the LRT loan. Funds for capacity building, monitoring, gender and NMT promotion shall be managed by INCOFER.

Steps and Timeline

1. The Congress of Costa Rica approves the loan of CABEL. As of March 2021 the credit for financing the state

- contribution to the concession, financed by CABEL, is being discussed in Congress.
2. Prior to the bidding process, INCOFER sends CABEL the tender document.
 3. CABEL reviews that the payment mechanism included in the document is in accordance with what has been approved by CABEL's. If CABEL has an objection, it reports it. If it has no comments, it informs and allows the bidding to proceed.
 4. INCOFER carries out the bidding process.
 5. INCOFER, together with the Ministry of Finance and the Ministry of Public Works, awards the concessionaire. The concessionaire proceeds to form the SPV.
 6. Prior to signing the concession contract, INCOFER sends CABEL the final version of the concession contract, so that CABEL can verify the terms of the award, including that the concessionaire is not part of the list of prohibited parties in terms of money laundering.
 7. With CABEL's non-objection, the concession contract between the SPV, the concessionaire, MOF, MOPT and INCOFER is signed.
 8. The deadline for the fulfillment of preconditions and financial closing begins. Estimated time: 12 months
 9. During this period, INCOFER must carry out the tender to select the project supervisor, and CABEL must carry out the tender to select the supervisor who will represent CABEL in the supervision of the project.
 10. The preconditions for initiating the project construction are fulfilled (approval by INCOFER).
 11. The concessionaire completes the construction of each of the LRT lines.
 12. INCOFER issues the provisional acceptance certificate and operation permit.
 13. The concessionaire requests the payment of 495 MUSD
 14. MOF together with INCOFER requests CABEL to disburse the 495 MUSD to the concessionaire. CABEL disburses the funds after verifying that all legal milestones have been met.
 15. The concessionaire makes the adjustments to the pending construction aspects.
 16. The project's final acceptance certificate is issued by INCOFER.
 17. MOF together with INCOFER request CABEL to disburse the remaining 55 MUSD to the concessionaire. CABEL disburses the funds after verifying that all legal milestones have been met.

CABEL already approved the project with an Annex that CABEL submits the project to the GCF. The Congress wants to discuss and approve the project once the GCF has decided if it will co-finance the LRT or not.

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

Climate Vulnerability

Costa Rica has the 8th highest economic risk exposure to three or more climate change related hazards. 6.8% of its total area is exposed to multiple adverse natural events, 78% of the population and 80% of the country's GDP reside in areas at high risk of climate hazards (GFDRR, 2011). The proposed project is a climate resilient urban transport infrastructure and reduces the vulnerability to climate change impacts whilst mitigating GHG emissions in the transport sector.

Fiscal Situation

Two pressing development challenges stand out in Costa Rica: the fiscal situation and persistent inequality. These challenges affect the basic pillars of the Costa Rican development model: inclusion, growth, and sustainability.

Successful implementation of the fiscal reform and the fiscal rule that came into effect with the 2020 budget remain key to preserving macroeconomic stability. The central government debt reached 2019 59% of GDP, up from 53% in 2018, and double its level a decade ago. The large fiscal deficit is the main risk to macroeconomic stability. Costa Rica has been hit hard by the COVID-19 pandemic, notwithstanding the government's proactive response and the country's sound universal healthcare system. The economy is estimated to grow by 2.6% in 2021, following a strong contraction in 2020 (IMF, January 2021). The important and immediate medical, social, and economic needs prompted by the crisis will require higher fiscal spending and consequently a deterioration in the fiscal position in 2020²⁸. January 2021 the country has reached a technical agreement with the IMF for a program of reforms and policies to reduce the fiscal deficit and to promote reforms which allow for lasting and inclusive growth. This serves as

²⁸ <https://www.imf.org/en/Countries/CRI>

policy anchor to support fiscal consolidation and free additional multilateral funding at lower borrowing costs. The country has launched as response a Green Recovery Plan with a focus on investing in profitable infrastructure like the LRT with social benefits and which create short-term jobs and a long-term greening of the economy. The financial structure of the project, executed through a PPP and with the government contribution based on a multilateral loan with a 5-year grace period allows to create much-needed short-term jobs without increasing the short and medium-term fiscal deficit whilst investing resources in long-term sustainable and profitable transport infrastructure. Also the IMF acknowledges that Costa Rica's efforts to decarbonize its economy helps to generate sustainable growth opportunities for the country²⁹. Concessional finance is crucial for the country to undertake this transformational change. Concessional finance of the GCF reduces the fiscal burden for the country and for reducing the fiscal burden whilst enabling to implement the Green Recovery Plan.

Project Finance

The project is a PPP. The total investment of 1.852 billion USD for the LRT (including finance costs of 298 MUSD) shall be borne with a government contribution of 30% (550 MUSD equivalent to the loan received from CABEL) and 1,302 MUSD from the private sector (of which 250 MUSD as equity). The SPV receives a one-off payment against constructed LRT liens ready for operations of 550 MUSD. This is not a loan or equity, but a payment against having complied with the construction of the LRT lines. Thereafter the concessionaire receives annual availability payments. The SPV/private concessionaire does not receive a loan directly or indirectly from the GCF. The 550 MUSD paid by the Government of Costa Rica are a one-off payment to make the PPP viable. The only beneficiary of the GCF finance is the Government of Costa Rica which has lower financial costs and can fund the project better.

The GCF finance will not have an impact on the equity return for the PPP. The financial structuring of the project is based on a profitability assumption (FIRR) required by the potential concessionaire. For the PPDD, where the concessionaire takes more risk (part of the demand risk is transferred), a 13.5% FIRR was assumed to be expected by a investors, while for the PPD_i, where the demand risk remains on the state's side a 10% FIRR was estimated. In both structures the government contribution of 550 MUSD to which the GCF contributes is fixed. The impact of GCF finance is linked to the balance sheet of Costa Rica and reduces the financial burden for the country. Due to the loan concessionality it has an important contribution to the financing part which is very important especially in light of the fiscal situation of the country.

The projected impact of the 550 MUSD loan of CABEL on the central government debt level is by 2026 an increase of 0.65%. Whilst this is not a huge increase concessional loans from the GCF are critical for the country to implement the LRT, due to the fiscal situation of the country aggravated with the coronavirus pandemic. The interest rate of the GCF is more concessional than the CABEL rate of 6-month Libor + 2.9%³⁰. CABEL does not charge commitment fee and the same is requested from the GCF thereby reducing immediate cash-flow pressure on the government.

GCF Finance Instruments

GCF finance is separated in a loan of 250 MUSD and a grant of 21.3 MUSD. The loan is used by the Government of Costa Rica as part of the one-off payment to the private concessionary. The GCF grant is 1.3 MUSD for capacity building, monitoring and gender measures and 20 MUSD for NMT/connectivity measures.

Last-mile connectivity and NMT investments such as cycling lanes do not generate a direct income. Improved pedestrianization, accessibility, and NMT facilities such as cycle lanes are to a large extent public goods in having non-rivalry in consumption and non-excludability³¹. Increasing levels of cycling means improving accessibility, livability and overall attractiveness of the city for citizen plus improved air quality and reduced congestion. These benefits cannot be recovered by the investor of measures thereby calling for government intervention. One of the problems associated with investments in NMT and last-mile connectivity which results in limited government involvement is that benefits are perceived in the short term in increased attractiveness of the city whilst the significant and transformational impacts of cycle lanes are clearly in the medium and long-term with more people getting accustomed to using this mode of transport, by increasing the number of LRT passengers through improved

²⁹ [IMF Reaches Staff-Level Agreement with Costa Rica on a Three-Year Extended Fund Facility and Completes 2021 Article IV Discussions](#)

³⁰ July 2020 equivalent to 0.34% + 2.9% = 3.24%

³¹ Cycle lanes could theoretically be made to exclude non-payers; in practice this is however from an infrastructure viewpoint not feasible.

accessibility and attractiveness of the LRT, and by creating a behavioral change. To quantify ex-ante the economic benefits of such interventions is complex.

Cycling projects are more successful if they are undertaken in combination with high quality public transport projects, as a single cycling project often has only a small effect, but in combination it can bring about a bigger change (Civitas, 2016). The LRT is thus a big opportunity to promote NMT and last-mile connectivity measures. The LRT is linked with urban development and can create a paradigm shift towards sustained low-carbon urban transport. These elements are critical to take the project beyond a standard LRT and result in an innovative and transformative urban development project. Without grants these important activities will not be established, although having a positive societal impact, as they do not form part of the core investment program of the LRT, and the government needs to focus its limited available resources on areas with a visible and short-term impact such as the train infrastructure.

The grant finance components have a direct connection to the requested loan. They focus on NMT, last-mile connectivity and urban development, shifting the metropolitan area towards low carbon urban transport. The grant is therefore an important component to ensure the impact of GCF investment and a crucial aspect for the desired paradigm shift.

GCF Added Value

The GCF involvement reduces the fiscal burden of the government. GCF grant components create added value on (i) more inclusive design of the LRT linking the mass transit system with aspects of last-mile connectivity, NMT and multi-modal integration; (ii) increased social and environmental impact through last-mile connectivity and NMT measures; (iii) transformational impact and paradigm shift towards a sustainable low carbon urban transport system; (iv) replication potential for low carbon transport – other investments in mass transit systems in the region do not include aspects of last-mile connectivity or NMT with Costa Rica having the option of creating a landmark project.

Concessional finance from the GCF is basically critical and a game-changer due:

- a). Funding availability: The IMF states the Costa Rica is facing severely constrained availability of external financing (tourism receipts which represent 19% of exports have collapsed due to COVID-19 in 2020) and tighter global financial conditions make market borrowing costs prohibitive for Costa Rica with EMBI spreads 500bp higher compared to 2019. Costa Rica is facing lower than expected external loan disbursement and limited borrowing room from a small, satiated domestic market ([IMF Country report no 20/145 Costa Rica](#))³²
- b). The long tenure of 40 years of GCF finance distributes payments over a longer period and gives Costa Rica an important breathing space and more budgetary flexibility for other investments and financing demands.
- c). The GCF concessional interest rate reduces the finance burden for servicing external debt. Fitch has forecasted that interest payments reach 38% of central government revenues in 2020 or 5.4% of GDP being the 3rd highest in Latin America³³. The effective interest rate of Costa Rica in 2020 is 8.4% ([IMF Country report no 20/145 Costa Rica](#), Figure All.1) i.e. Costa Rica can save 621 MUSD in interest payment. This is equivalent to 14% of the annual estimated required availability payment for the LRT.
- d). The GCF 10 year grace period cannot be obtained from private finance and is very important in the current tight fiscal situation of Costa Rica as it gives urgently required breathing space to fix the fiscal situation and get on a growth path whilst implementing fiscal reform.

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

³² [IMF 05.2020.pdf](#)

³³ [fitchratings.com](#)

The concession contract is for 35 years (estimated at 5 years construction and 30 years operations³⁴) after which the facilities will be turned over to INCOFER or a new contract is established with the same or another private entity. The concession contract is also a period of know-how and technology transfer enabling national institutions to continue the project after ending the concession period. During the concession contract the subsidies of the Government are defined so as to enable the private party to recover its investment and the operational expenses. Once the concession has terminated various parts of the LRT still have a remaining life-span e.g. structural parts of the tracks are estimated to have a lifespan of 80 years or structural parts of the electrification system are estimated at 60 years (IDOM, 2020, p. 72).

If the public transport system will require in 35 years subsidies or not is an open question. However, a low carbon mass transport system as backbone of public transport combined with NMT or 0-emission last-mile connectivity vehicles and services is as of today considered to be the transport system which covers mobility demands of the people with a low overall environmental impact, low economic costs and a high quality of life. The LRT has a highly positive economic internal rate of return justifying also in the future potential financial subsidies (if required or desired³⁵) due to the positive externalities or public goods created by the project (less air pollution, less noise, less congestion, less accidents and less GHG emissions). Already today from an economic perspective the LRT is not subsidized but profitable for the country and society.

The NMT and last-mile connectivity investments are expected to result in a transformational change towards shorter trips realized increasingly by walking, cycling including electric bicycles and micro-mobility forms such as electric scooters. Once citizens feel how this improves the quality of life of the city the pressure will mount to expand these investments i.e. not roll them back but expand them.

³⁴ The concession period remains at 35 years even if construction takes more time

³⁵ More than 100 cities worldwide have even come to the conclusion that free public transport is economically more profitable than charging a transport tariff as additional ridership and costs as well as the subsidy of the full financial costs are outweighed by the additional health, environmental and infrastructure benefits as well as increased productivity and city livability due to reduced congestion (<https://www.nytimes.com/2020/01/14/us/free-public-transit.html>). Luxembourg is the first country in the world to offer countrywide since March 1st 2020 free public transport countrywide on trains, trams or buses (<https://www.mobiliteit.lu/de/fahrscheine/kostenloser-transport/#:~:text=Luxemburg%20ist%20stolz%20darauf%2C%20das,oder%20Tram%20und%20los%20geht%27s!>)

B. FINANCING INFORMATION							
C.1. Total financing							
(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount		Currency			
		271.3		million USD (\$)			
GCF financial instrument		Amount	Tenor	Grace period	Pricing		
(i)	Senior loans	250	40 years	10 years	0.00 %		
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %		
(iii)	Equity	Enter amount	Enter years		Enter % equity return		
(iv)	Guarantees	Enter amount					
(v)	Reimbursable grants	Enter amount					
(vi)	Grants	21.3					
(vii)	Results-based payments	Enter amount					
(b) Co-financing information ³⁶		Total amount		Currency			
		Enter amount		Options			
Name of institution		Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
CABEI		Senior Loans	300	million USD (\$)	25 years 5 years	6-month LIBOR + 2.9%%	pari passu
tbd ³⁷		Equity	250	million USD (\$)	Enter years Enter years	Enter%	Options
tbd ³⁸		Senior Loans	1,052	million USD (\$)	Enter years Enter years	Enter%	Options
Click here to enter text.		Options	Enter amount	Options	Enter years Enter years	Enter%	Options
(c) Total financing (c) = (a)+(b)		Amount		Currency			
		1,873.3		million USD (\$)			
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)		<p>High concessionality conditions are requested for the loan from the GCF based on the high climate risk vulnerability of Costa Rica.</p> <p>The private concessionary will be defined through the tender. The private concessionary invests an estimated 1,302 MUSD. The total investment amount is estimated by the feasibility study but might vary depending on the assessment of the concessionaire and the detailed engineering design. Based on the assessment realized by the private concessionaire at the tender stage they will require a higher or lower annual contribution. The one-off payment of the government to the SPV (550 MUSD) is however fixed. The final financial structure of the SPV is defined once the project has been awarded to the private concessionary. The end-use of GCF proceeds is for refinancing the bridge loan. CABEI and GCF resources are disbursed based on constructed LRT lines of the concessionary. Latter will use these funds on his discretion.</p>					
C.2. Financing by component							

³⁶ Financing instruments as well as amount per each instrument for the private investment are indicative and subject to the final financial resources structuration to be mobilized by the concessionaire to be selected at a later stage.

³⁷ Private concessionary

³⁸ Private concessionary

Component	Output	Indicative cost million USD (\$)	GCF financing		Co-financing		
			Amount million USD (\$)	Financial Instrument	Amount million USD (\$)	Financial Instrument	Name of Institutions
1. LRT system	Infrastructure	834.2	163.0	Senior Loans	671.2	Senior and subordinated loans, equity	CABEI & private investor
	Rolling stock	452.4	87	Choose an item.	365.4	Senior and subordinated loans, equity	CABEI and private investor
	Others	267.3	0	Choose an item.	267.3	Senior and subordinated loans, equity	CABEI and private investor
	Financing Charges	298.1	0	Choose an item.	298.1	Senior and subordinated loans, equity	CABEI and private investor
2. Urban integration with NMT & connectivity/acce ssibility components	Infrastructure investments	20	20	Grants	0	Choose an item.	Click here to enter text.
3. Capacity building and gender measures	CB, training, outreach	1.3	1.3	Grants	0	Choose an item.	Click here to enter text.
Indicative total cost (USD)		1,873.3	271.3		1,602.0		

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 ☒ No ☐

C.3.2. Does GCF funding finance technology development/transfer?

Yes ☐ No ☒

Capacity Building

NMT and last-mile connectivity monitoring of activities allows to gain insight and experience on the impacts of different measures in the area of last-mile connectivity and NMT and how they interact with ridership and passenger satisfaction of the LRT system. This will be based on different monitoring instruments using e.g. surveys. The improved data collection generates information on how to improve the quality of service, how to establish inclusive measures for all, how to improve safety and how to encourage people to use environmentally friendly transport. This includes tracking of mode-shift and the impact of activities on the trip structure of people, the identification of triggers of change in transport behaviour and the monitoring of GHG and sustainable development impacts. Improved monitoring and knowledge on successful interventions and their impacts are an important element to facilitate future funding of expansion of last-mile connectivity and NMT activities and services. The results of the monitoring will be made accessible to stakeholders through knowledge products such as guidelines and impact reports on NMT and last-mile connectivity interventions, and outreach activities such as webinars and workshops. The investment of the GCF in this area is 1 MUSD.

Technology Transfer

Costa Rica has to the moment no modern, electric LRT. It has experience with rail systems but these are based on outdated diesel locomotives. The GCF investment in the LRT enables a technology transfer of environmentally sound mass urban transit technology. Technology transfer is made through the concession contract.

C. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

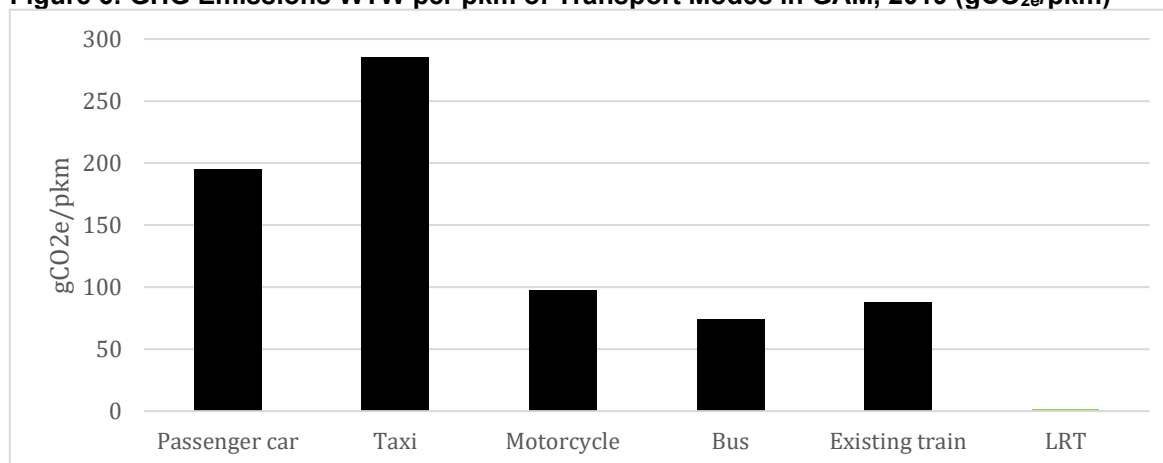
D.1. Impact potential (max. 500 words, approximately 1 page)

The project reduces GHG emission through the LRT itself, the NMT and last-mile connectivity activities³⁹.

1. LRT

Emissions are reduced due to mode-switch. The LRT is powered by electricity produced to >98% by renewables. The following graph compares the well-to-wheel (WTW) emissions per pkm of different modes of transport.

Figure 6: GHG Emissions WTW per pkm of Transport Modes in GAM, 2019 (gCO_{2e}/pkm)



Note: WTW = well-to-wheel; pkm = passenger-kilometer

Source: (Grutter Consulting, 2020h); all emission factors based on localized data

The methodological approach to determine LRT emission reductions is based on an approved Clean Development Mechanism methodology.⁴⁰ The project complies with all applicability conditions of the methodology (see for details Annex 22, table 6) including, but not limited to:

- The LRT is a new rail-based infrastructure. The existing right-of-way of the old train is taken. However, the complete track is built new: the old system is often 1-way, is extremely old and cannot take trains with a higher speed. The investment is in a 100% new rail track, new bridges and overpasses (the current system has lots of crossings with cars), new stations, new signalling, new information system and new trains. Nothing will be used from the old system. The only part of the old train is the right-of-way which of course reduces costs considerably as no land purchase needs to be realized. This is thus clearly a brand-new LRT with new infrastructure and completely different passenger capacity (20x higher passenger capacity), speeds and convenience. The project is thus fully compliant with this condition as it “builds a new rail line”.
- The LRT replaces existing mixed-traffic bus routes. The Ministry of Transport is currently re-structuring the entire bus-transport system of the GAM based on the Decree No 40186-MOPT which gives the Ministry the authority to re-structure bus routes and concessions. Bus routes parallel to and in the catchment area of the LRT will be closed and re-structured. This within a larger Program of restructuring and modernizing the bus system. Private operators are also not interested in operating routes without or with far less passengers as the public bus system in Costa Rica operates without subsidies to the bus operators i.e. if passenger numbers drop the private concessionaires either reduce frequencies or give back the concession (this has happened) as they cannot operate the route in a profitable manner.

³⁹ For methodological details, calculation procedures as well as full datasets see (Grutter Consulting, 2020h) and excel sheet “LRT Project Costa Rica”

⁴⁰ The methodology was developed by Grutter Consulting

<https://cdm.unfccc.int/methodologies/DB/FXQBDV16UML49NUN03U1QQTEY9J90E>

Lifespan emission reductions are estimated at 6,544,000 tCO_{2e}. Upstream leakage emissions due to infrastructure and vehicle manufacturing are 818,000 tCO_{2e} higher for the baseline than for the LRT project i.e. their non-inclusion is conservative⁴¹.

The GHG reduction is due to mode shift. The expected mode shift from passenger cars, taxis including shared mobility (Uber is very large in the GAM), and the traditional bus system is basically due to time savings and having a safe and convenient transport system. The mode shift was modelled using a 4-stage travel demand modelling (IDOM, 2020). Rail systems have shown to have a larger mode shift from private car users than bus-based public transport systems such as BRTs due to being more convenient and having shorter trip times. This can be observed for example when comparing the results of rail-based CDM mass transit projects registered at the UNFCCC with BRT systems.

2. NMT Component

The methodological approach to determine the GHG impact is based on a GEF approach (GEF, 2015) based on (i) km of cycle-lanes (ii) number of additional cycling trips (iii) trip length (iv) baseline mode (iv) emission factors of baseline modes. GEF default values and monitored local data is used. Lifetime reductions of 296,000 tCO_{2e} are expected due to this component. The project has lower upstream emissions (road respectively cycling infrastructure and vehicle manufacturing emissions) than the baseline i.e. not considering upstream emissions is conservative.

3. Last-mile Connectivity Component

Last-mile connectivity and improved accessibility as well as initial TOD measures reduce GHG emissions through short-term travel behavioural change and long-term lifestyle change. In the short-term measures including mixed land use, urban development along the LRT line, and NMT priority in infrastructure affects GHG emissions through shorter trips due to substitution of destinations and trip chaining, mode shift towards public transport and NMT due to increased convenience and attractiveness of latter, and increased load factor of public transport. In the long run, lifestyle changes – including attitudes toward different modes and slower growth of car ownership (as driving becomes relatively less attractive) will influence further travel behaviour and reinforce patterns (Zegras, 2009). Measures taken by the project are combined efforts to increase attractiveness and connectivity of involved stations e.g. through improved pedestrianization, infrastructure for direct access (e.g. bridge to overpass roads), bus connection stations, cycling lanes and cycling park facilities, 0-emission connectivity sharing vehicles (scooters, cycles) rest areas, greening of spaces etc. All of these measures contribute to ease access for residents, improve connectivity with NMT and bus-based transport and increase attractiveness of the area. The methodological approach used was developed by Grutter Consulting and the MIT/USA for the World Bank and was applied in a project in Nanchang/China (Zegras, 2009). It is based on a control-group approach comparing transportation GHG emissions per resident under BAU and in the project area. Important parameters are the number of residents in the influence zone, mode switch, trip distances and emission factors. Lifetime reductions of 783,000 tCO_{2e} are expected due to this component.

4. Summary Mitigation Impact

The project has a cumulative average annual GHG reduction of 173,246 tCO_{2e} and a lifespan impact of reducing 7,622,805 tCO_{2e}. This is a conservative calculation as it does not include indirect trip effects of the measures, synergy effects of an improved public transport system and improved links creating additional passengers also on bus routes, nor upstream emission effects which would increase the emission reductions claimed.

The program will lock-in long-lived low emission infrastructure including a climate resilient LRT, NMT and last-mile connectivity measures. It will benefit directly 2.7 million inhabitants or 52% of the population of Costa Rica living within the catchment area of the project. Impacts will be monitored to establish a solid methodological base to determine the cause-impact relationship and to estimate better the GHG impact of measures (Grutter Consulting, 2020f).

⁴¹ In the baseline more vehicles utilize road space resulting in additional road construction and vehicle manufacturing emissions.

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

The project results in a paradigm shift towards low carbon transport due to following features:

- The project is integrated with plans to decarbonize further transport through usage of electric vehicles as well as a re-organization of public transport. The metropolitan area of San Jose has started to construct a network of cycle ways and wants to achieve a shift towards public and NMT plus electrified transport. The project is therefore not a stand-alone investment but part of a strategy to achieve a low-carbon transport system and has with the integrated NMT measures a large **potential for scaling up and replication** throughout the city and in other urban areas of Latin America.
- The project is closely integrated with 0-emission last-mile connectivity activities making the LRT a showcase on low carbon urban transport. The integration of LRT with a private sector managed bus-based public transport system and with comprehensive last-mile connectivity and NMT interventions can serve as model case for a modern approach to public transport interventions, important for the region which lacks such models.
- The project is a step towards electrification of transport. This results in a massive decrease of emissions per passenger-km due to the nearly fully fossil free electricity generation of Costa Rica. Transport emissions are the major source of GHG emissions of the country and reducing transport emissions is the core factor for achieving the target of carbon neutrality. The project can reduce transport emissions of the GAM by around 10%⁴². The LRT represents a fundamental shift towards reducing the carbon transport footprint of the metropolitan area. It has a **significant contribution to a climate-resilient development pathway and to achieve the national climate change target**.
- The project includes the collection and reporting of standardized data on the impact of last-mile connectivity and NMT measures and thus serves to improve the planning and the impact assessment of such measures. Results will be published, knowledge products are prepared, and outreach activities are included in the budget for **knowledge sharing and learning**. This is important to ensure that replication is based on learning from experiences and to justify investments based on the expected impacts.
- The major barrier towards achieving a modern, attractive, multi-modal low-carbon public transport system is that this requires a comprehensive and systemic change. A paradigm shift is made towards offering the passenger a more convenient system which is fast, safe, reliable, comfortable, modern, green, accessible and at a reasonable cost. The transportation sector is transformed to a sustainable low-carbon system with a dominance of public transportation and NMT. The LRT has also been climate proofed.
- The project is line with the post COVID Green Recovery plan of Costa Rica with a focus on resilient infrastructure to transform the country into a green economy and allows Costa Rica to achieve its target of decarbonization and net zero emissions by 2050.

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

Sustainable Development Goals (SDGs)⁴³

The project contributes significantly to sustainable development goals (SDG) 3 ("good health and well-being"), SDG goal 9 ("industry, innovation and infrastructure"), SDG goal 11 ("sustainable cities and communities"), and SDG goal 13 ("climate action").

Environmental Co-Benefits

Environmental benefits are basically reduced air and noise pollution. For air pollution benefits the same methodological approach is used as for GHG benefits (Grutter Consulting, 2020h). The following table shows the projected environmental benefits.

⁴² GAM transport emissions were estimated to be in 2014 1.87 MtCO_{2e} (Grutter Consulting, 2016)

⁴³ <https://sdgs.un.org/goals>

Table 4: Projected Reduction of Pollutants due to the Project

Parameter	Average Annual Reduction	Cumulative lifetime reduction
PM _{2.5} reduction	7 tons	295 tons
NO _x reduction	266 tons	11,670 tons
SO ₂ reduction	1 ton	56 tons

Source: (Grutter Consulting, 2020h)

Around 90% of the impact is due to the LRT and the rest due to NMT and last-mile connectivity measures.

Social Co-Benefits

The project will benefit the GAM with 2.7 million inhabitants through access to safe, reliable, and affordable public transport. In accordance with the World Health Organization's guidelines, the air quality in Costa Rica is considered moderately unsafe. The most recent data indicates the country's annual mean concentration of PM_{2.5} is 16 µg/m³ which exceeds the recommended maximum of 10 µg/m³⁴⁴. Improving air quality through zero-combustion emission technologies like the electric train and NMT, reduces emissions from the transport sector which is the main source of air pollutants in the GAM. The LRT has significant health benefits due to improved air quality, less noise pollution and reduced accidentality. NMT and last-mile connectivity components also have a positive impact on these aspects and cycling ways improve the safety of cyclists whilst allowing for a healthy lifestyle.

Economic Co-Benefits

Following economic benefits have been identified by the project:

- Time savings valued at 3,354 MUSD (IDOM, 2020);
- Vehicle operating cost savings estimated at 520 MUSD (IDOM, 2020);
- Reduced accidentality costs estimated at 53 MUSD (IDOM, 2020);
- Reduced emissions of air pollutants calculated by assigning a monetary value to emissions of PM_{2.5}, NO_x, and SO₂ estimated at 79 MUSD (Grutter Consulting, 2020h);
- Reduced GHG emissions valued based on the social cost of carbon valued at 550 MUSD (Grutter Consulting, 2020h);
- Reduced noise emissions valued at 6 MUSD (IDOM, 2020);
- Overall, the project is expected to generate 1,200 temporary jobs during construction and 1,460 direct jobs during operations (IDOM, 2020, p. 227/228).

The project has 3.3x more economic benefits than economic costs or an EIRR of 26% (IDOM, 2020).

Gender-Sensitive Development Impact

A gender analysis and a gender action plan have been developed by the project (Grutter Consulting, 2020g). The intervention areas include aspects are related to (i) mobility and security to ensure infrastructure takes into account mobility patterns of women and minimizes the risk of violence; (ii) accessibility ensuring that new infrastructure is in line with requirements of women; (iii) participation of women in the transport sector at all stages and decision levels. This refers to LRT as well as NMT infrastructure with the goal of ensuring safe, accessible services catering to the demands and needs of women.

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

As with other Mesoamerican Countries, Costa Rica is considered a primary "hot spot" for climate change in the tropics. An analysis of temperature and precipitation reveals many changes in the extreme values of these variables during the period between 1961 and 2003. Extreme precipitation has increased significantly and is strongly correlated with the temperature of the tropical Atlantic Ocean. The trend over the last 40 years suggests a strengthening of the hydrological cycle, with more intense rain occurring during shorter periods of time that produce greater average precipitation per episode. This trend is expected to continue in the future due to climate change, possibly resulting in

⁴⁴ <https://www.iamat.org/country/costa-rica/risk/air-pollution>

a greater frequency or intensity of extreme events such as floods and droughts. It can be stated on the basis of numerous studies that the intensification of extreme weather events increases the hydrological vulnerability of the country. Estimates indicate that costs due to hydrometeorological events and climatic extremes will absorb by 2025 under a conservative scenario between 0.68% and 1.05% of GDP and in a scenario of higher risk between 1.64% and 2.50% of GDP (MINAE, 2019). Costa Rica has the 8th highest economic risk exposure to three or more climate change related hazards. 6.8% of its total area is exposed to multiple adverse natural events, 78% of the population and 80% of the country's GDP reside in areas at high risk of climate hazards (GFDRR, 2011). The proposed project is a climate resilient urban transport infrastructure and reduces the vulnerability to climate change impacts whilst mitigating GHG emissions in the transport sector. The LRT investment has been extensively checked for climate proofing (see Grutter Consulting, 2020, reports d and e).

2018, after many years of discussion and after increasing debt, the country passed a tax reform giving increasing confidence and reassurance to national financial markets and an improved medium- and long-term fiscal outlook. The large fiscal deficit is the main risk to macroeconomic stability, with debt projected to exceed 60% of GDP in 2020. The containment measures for the coronavirus pandemic, coupled with the global economic downturn, are expected to take a major toll on the economy in the short term and cause a temporary deterioration in the country's fiscal and external positions. The country has deployed a post-COVID19 plan based on a Green Recovery of Costa Rica with investment in transport infrastructure being a core element. This shall create short-term jobs and a long-term greening through investing in profitable and climate-resilient public transport infrastructure. Concessional finance is crucial for the country to undertake in this situation long-term investment projects.

The Government of Costa Rica is the beneficiary of the grant and the concessional loan of the GCF. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against delivery the LRT lines. This is not a loan nor an investment in the SPV but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire.

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

Country Ownership

Costa Rica has a long tradition in being on the forefront of combating climate change. During the nineties, Costa Rica contributed to the global awareness on climate change, becoming part of the first joint implementation projects. In 2007, Costa Rica's National Climate Change Strategy was launched, supported by the creation of a Climate Change Department at the MINAE (Ministry of Environment and Energy). Costa Rica launched in 2019 the National Decarbonization Plan 2018-2050 which aims for a decarbonized economy with net-zero emissions in 2050 (Government of Costa Rica, 2019). The project is linked to the National Development and Investment Plan 2019-2022 (Mideplan, 2018), the NDC (MINAE, 2015), the National Decarbonization Plan (Government of Costa Rica, 2019), the National Transport Plan for Costa Rica 2011-2035 (MOPT, 2011), the National Plan for Electric Transport (MINAE, 2019), and the National Energy Plan 2015-2030 (MINAE, 2015). The LRT is also a core component of the post COVID19 Green Recovery Plan of Costa Rica.

The transport sector is responsible for 51% of the country's GHG emissions and 76% of total energy emissions in 2015 (MINAE, 2019). Fostering of public transport and electrifying the transport sector are key strategies to achieve this ambitious target. The LRT is explicitly highlighted in the national decarbonization plan, the 2nd BUR as well as the NDC of Costa Rica. The NDC includes the train as a mitigation measure and specifically mentions that its construction will require both fiscal resources as well as external financial resources.

The commitment to decarbonization is also reflected in the Costa Rican electricity system: In 2019 99.2% of produced electricity was from renewable resources (ICE, 2020). Electrification of the transport sector is a strategy which will reduce drastically the carbon footprint of the country⁴⁵.

⁴⁵ See annual SEN reports of ICE and for the grid factor (Grutter Consulting, 2020h)

Engagement with Civil Society Organizations and other Relevant Stakeholders

Since the planning stage, the Government of Costa Rica has joined forces with the different municipalities that are part of the area of influence of the LRT. December 4th, 2018 the Mayors of the fifteen affected municipalities signed a Framework Agreement for Inter-municipal Cooperation with the aim of developing guidelines for territorial planning and urban development, and the development of urban equipment and infrastructure complementary to the LRT. Numerous consultations were made through this and other instruments⁴⁶. The planned interventions in the area of NMT and last-mile connectivity measures were discussed in multiple roundtables with all stakeholders.

During the construction phase a continuous involvement will be sought. INCOFER as executing entity will have to design and deliver to CABEL a citizen participation and consultations plan with quarterly follow-up report of the actions carried out with evidence. For operations INCOFER must design and implement a citizen participation plan and consultations with bi-annual monitoring reports by INCOFER or the Concessionaire to CABEL.

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

The LRT component is co-financed with a GCF loan. 86% is co-finance basically through private sector capital (around 70%) and through a loan from CABEL. The GCF loan has a lower interest rate than the CABEL loan which is important for the Government of Costa Rica as it reduces fiscal spending. GCF financing ensures the project viability and assists in crowding-in of private capital through the PPP.

For the concessionary the LRT is financially profitable – overall, however a subsidy rate of 60% will be required. Subsidies of mass transit means are common worldwide (World Bank, 2018). The external benefits of the project due to time savings, positive health and environmental impacts, vehicle operating costs savings and reduced accidentality result in an Economic Internal Rate of Return of 26%⁴⁷ (IDOM, 2020). This refers to the LRT only which represents 99% of the CAPEX and 99% of the economic benefits. The main parameters included for the EIRR calculation are the CAPEX of the LRT and the operational costs versus as benefits time savings (91% of benefits), environmental benefits (7%) and reduced accidentality plus producer surplus. The results are robust against a sensitivity analysis as is shown in the following table. The switching point for passenger demand from where the project is economically not feasible anymore is for example a 69% lower passenger demand than projected.

Table 5: Sensitivity of EIRR to Parameter Changes

Parameter Change	EIRR
Basic Model	26%
Social discount rate Costa Rica	8.3%
30% increase CAPEX	22%
50% increase OPEX	25%
30% reduction of time savings	21%
30% reduction of all benefits (idem to 30% demand reduction)	20%

Calculated with IDOM FSR Economic Model, sheet “Flujos Econ”

NMT, last-mile connectivity and capacity building investments are grant financed by the GCF. This is justified as all these investments do not result in financial returns. Benefits of these initiatives are largely public goods. The magnitude of the benefits can thereby be far less precisely estimated and is predominantly in the medium and long term (due to behavioral long-term changes). Using scarce public resources to finance these activities is extremely difficult, especially under the adverse fiscal situation of Costa Rica, where already the core investment in the LRT results in long and difficult political negotiations. The EIRR of the NMT and last-mile connectivity measures is 34% based on the economic benefits of reduced emissions and reduced vehicle operating costs i.e. for the society these are highly profitable investments⁴⁸. The EIRR is calculated separately for the 2 measures due to the weight of the CAPEX LRT relative to the NMT (99% to 1%) and the weight of economic benefits of the LRT (99% of economic

⁴⁶ For a summary see (Grutter Consulting, 2020i)

⁴⁷ The economic benefits are the justification for realizing subsidies as without these the LRT would not be established.

⁴⁸ See Annex 22 GHG and SD Impacts of LRT, sheet “CB NMT & TOD”

benefits are LRT and 1% NMT). The NMT and connect measures in their own are justified with their stand-alone EIRR.

The total capital investment is 1.8733 billion USD with a requested GCF finance of 271.3 MUSD and a GHG reduction of 7.62 MtCO₂ resulting in an effectiveness of the GCF investment of 36 USD/tCO₂. 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 but to enable a safe, affordable, efficient, convenient and sustainable public transport system.

The co-financing rate of the GCF is 5.9 i.e. 86% of the total investment is co-financed. This is a very high rate compared to other mitigation projects co-financed by the GCF⁴⁹.

Technology-wise the project is based on a state-of-the art LRT. The currently used diesel rail system is completely re-vamped and replaced with a modern electric LRT system. Modern principles of urban development are applied including integration with the existing bus-based public transport system, NMT and last-mile connectivity measures. In absence of the GCF financing NMT as well as last-mile connectivity components would not have been included in the project as can be seen from the investment plans of the feasibility reports.

⁴⁹ See Grutter Consulting, 2020, GCF statistics

D. LOGICAL FRAMEWORK

E.1. Paradigm shift objectives

- ☒ Shift to low-emission sustainable development pathways
- ☐ Increased climate resilient sustainable development

E.2. Core indicator targets

E.2.1. Expected tons of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	173,246 t CO ₂ eq
	Lifetime	7,622,805 t CO ₂ eq
E.2.2. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project financing	<u>1,873.3 million</u> USD
	(b) Requested GCF amount	<u>271.3 million</u> USD
	(c) Expected lifetime emission reductions	<u>7,622,805</u> t CO ₂ eq
	(d) Estimated cost per t CO₂eq (d = a / c)	<u>246</u> USD / t CO ₂ eq
	(e) Estimated GCF cost per t CO₂eq removed (e = b / c)	<u>36</u> USD / t CO ₂ eq
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged	<u>1,602 million</u> USD
	(g) Public source co-financed	<u>300 million</u> USD
	(h) Private source finance leveraged	<u>1,302 million</u> USD
	(i) Total Leverage ratio (i = f / b)	<u>5.9</u>
	(j) Public source co-financing ratio (j = g / b)	<u>1.1</u>
	(k) Private source leverage ratio (k = h / b)	<u>4.8</u>
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex) ⁵⁰	Direct	
	Indirect	
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	
	Indirect	

⁵⁰ On average 60 million passengers per year; direct beneficiaries might have used the LRT for 1 trip or for multiple trips per year. There is no control which passengers will use the LRT. The direct beneficiaries are the people living in the catchment area of the LRT; the gender distribution is based on the urban share of women (<https://www.inec.go.cr/>). Direct population numbers are based on the projected 2020 population by Inec.

E.3. Fund-level impacts						
Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
M2.0 Reduced emissions through increased access to low-emission transportation	M2.1 Tonnes of carbon dioxide equivalent (t CO ₂ eq) reduced or avoided - low emission gender-sensitive transport	Reports MINAE (DCC) based on surveys and measurements ⁵¹	0	0 tCO _{2e}	157,012 tCO _{2e} ⁵²	1. CDM Methodology ACM0016 applied for LRT (86% of ERs); GEF methodology for NMT and MIT methodology for connectivity.
Social, environmental, economic co-benefit indicators at the impact level	Number of green jobs created for construction and operations (gender disaggregated)	INCOFER annual reports	0	1,200 (30% women)	1,460 (40% women)	2. Lifespan: 44 years; based on average commercial lifespan of LRT 3. Total GHG reduction lifespan: 7,622,805 tCO _{2e} 4. Average annual GHG reduction: 173,246 tCO _{2e} 5. Construction of all lines is in parallel with lines entering into operations within one year at the end of the implementation period i.e. there will be no mid-term impact. 6. The final year reflects cumulative reductions by end implementation period 7. Assumes timely construction and implementation of all lines. 8. Jobs created mid-term are temporary construction jobs and final are

⁵¹ see section E7 for details

⁵² source of this figure: Annex 22a- Sheet "total PJ", Box C2, marked in yellow (rounded value)

						operational permanent jobs
						9. Methodology for GHG determination follows report (Annex 22)
						10. LRT has lower emissions than current transport system
						11. Political willingness to implement the project
	Tons of PM _{2.5} reduced	Reports MINAE (DCC) based on surveys and measurements	0 tons	0 tons	5.6 tons	Residents are willing to use new mobility modes
	Tons of NO _x reduced		0 tons	0 tons	226 tons	
	Tons of SO ₂ reduced		0 tons	0 tons	1.1 tons	

E.4. Fund-level outcomes

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
M8.0 Increased use of low-carbon transport	M8.1 Number of additional female and male passengers using low-carbon transport as a result of Fund support	Reports INCOFER based on ticketing and surveys (for gender split) ⁵³	0 43% female current PT ⁵⁴	0	45 million 50% female ⁵⁵	1. residents are willing to use new mobility modes 2. Monitoring systems are sufficient to improve service levels Passenger projections based on 4-step transport model ⁵⁶ . The average number of users stated in the FP (64 million) is the average number of users per annum over the project lifetime.

⁵³ see section E7 for details

⁵⁴ Gender report figure 14 (Grutter Consulting, 2020g)

⁵⁵ Target based on current female share of population in the GAM

⁵⁶ IDOM, 2020, FSR 3rd Report; Memoria 10: Modelo de Demanda (Demand Model)

						The final figure here is the cumulative number of passengers at the end of the implementation period.
Number of technologies and innovative solutions transferred or licensed to support low-emission development as a result of GCF support	Number of technologies and innovative solutions transferred or licensed to support low-emission development as a result of GCF support	Reports INCOFER	0	1 new technology: LRT	1 new technology: LRT	1. Funding is available 2. Finance is available 3. CB leads to effective technology transfer

E.5. Project/programme performance indicators

Expected Results	Indicator	Means of Verification (MoV) ⁵⁷	Baseline	Target		Assumptions
				Mid-term ⁵⁸	Final ⁵⁹	
1. Inhabitants shift from baseline modes of transport to LRT	1.1. LRT passengers baseline mode share	Reports INCOFER based on gender disaggregated surveys with trip distance per mode baseline and project	0 (no mode-shift)	0	49% car 9% taxi 33% bus 9% old train	Residents are willing to use new mobility modes
	1.2. LRT passenger trip distance		0 km (no LRT)	0	16km	
	1.3. Rail based mode share in % of all trips	Reports by MOPT, MINAE, 3rd parties	0.0% in 2017 ⁶⁰	0.0% ⁶¹	0.9% ⁶²	
2. Inhabitants shift from baseline modes of transport to cycling due to increased convenience and safety	2.1. passenger-km of cycle way users	Reports INCOFER based on gender-disaggregated surveys	0	0	156 million pkm	The final figure is the cumulative number at the end of the implementation period
	2.2. cycle way user baseline mode share		0 (no mode-shift)	0	90% bus 10% car	
	2.3. Cycling mode share in % of all trips	Reports by MOPT, MINAE, 3rd parties	1.0% in 2017 (MINAE, 2017)	1.0%	1.3% ⁶³	
3. Mode-shift towards low-carbon transport at intervention	3.1. number of residents in catchment area of intervened stations	Reports INCOFER based on updated inec statistics	0	0	139,000 residents	

⁵⁷ See section E7 for details

⁵⁸ Construction stage

⁵⁹ Cumulative

⁶⁰ Currently operating urban train based on (MINAE, 2017)

⁶¹ Lower level as LRT under construction stopping operations of existing train

⁶² Source: Excel File 22a - sheet "Impact LRT"

⁶³ Excel File 22a - sheet "NMT Impact"

stations due to increased connectivity, accessibility, attractiveness and convenience of stations and improved pedestrian and cycling facilities	3.2. GHG emissions per resident per year intervened area for transport	Report INCOFER based on control-group survey	0.74 tCO _{2e}	0.74 tCO _{2e}	0.61 tCO _{2e}	
4. Reduced trip times of passengers using LRT	Average trip time of LRT passengers compared to trip time prior LRT relative to mode used in absence of the LRT	Report INCOFER based on passenger survey and comparison with baseline	Bus users: 2.1 hours Car/train users: 0.9 hours; LRT users ⁶⁴ : 0 hours	LRT users: 0 ⁶⁵	LRT users: 0.7 hours	LRT has lower emissions than current transport system
5. Reduced accidentality rates	5.1. Reduced number of accidents	Report INCOFER based on passenger survey and comparison with BAU accidentality	0	0	5.1. 74 accidents less	Residents are willing to use new mobility modes Average annual figures are higher than the figure for end of implementation period due to increasing passenger numbers
	5.2. Reduced number of injured persons		0	0	5.2. 13 less injured persons	
	5.3. Reduced number of deaths		0	0	5.3. 1 less deaths	

E.6. Activities

Activity	Description	Sub-activities	Deliverables
1. Component 1 LRT System: Identify and engage concessionaire	The private concessionaire is identified and engaged through a tender by INCOFER	1.1. Tender for PPP launched 1.2. Concession contract awarded	1.1. Tender launching 1.2. Concession award
2. Component 1 LRT System: Design, build and ready to operate LRT	LRT is fully operational after this activity	2.1. Detailed engineering design of all LRT components 2.2. Tendering and construction incl. equipment of LRT tracks, stations, depots and ancillary components 2.3. Tendering, procurement and reception of rolling stock 2.4. Environmental Impact Assessment for LRT 2.5. Negotiation and approval of all permits required to build and operate the LRT 2.6. LRT constructed	2.1. Detailed engineering design report approved by INCOFER 2.2.a Procurement document construction LRT 2.2.b LRT fully constructed and turned-over to SPV 2.3.a Procurement document rolling stock 2.3.b Rolling stock delivered to SPV 2.4. EIA approved by SETENA 2.5.a Documentation of all construction permits

⁶⁴ No LRT in baseline

⁶⁵ LRT under construction

		<p>2.7. Stations constructed</p> <p>2.8. Depots constructed</p> <p>2.9. Trains purchased</p> <p>2.10. Approval of construction</p> <p>2.11. Operation permit</p>	<p>2.5.b Documentation of all operational permits</p> <p>2.6. 85km of LRT tracks operational</p> <p>2.7. 46 stations operational</p> <p>2.8. 4 depots operational</p> <p>2.9. 78 trains operational</p> <p>2.10. INCOFER issues the construction acceptance certificate</p> <p>2.11. INCOFER issues the operation permit</p>
<p>3. Component 2 Urban integration with NMT and connectivity/accessibility component: Design, build and ready to operate cycling lanes (combined with activity 4)</p>	<p>Cycling lanes fully operational</p>	<p>3.1. Detailed engineering design of cycle lanes</p> <p>3.2. Tendering of construction of cycle lanes</p> <p>3.3. Delivery of cycling lanes</p>	<p>3.1. Detailed engineering design report approved by INCOFER</p> <p>3.2. Tender document construction cycle lanes</p> <p>3.3. INCOFER issues the construction acceptance certificate</p>
<p>4. Component 2 Urban integration with NMT and connectivity/accessibility component: Integrate, design, and build connectivity interventions at 6 LRT stations (combined with activity 3)</p>	<p>6 stations with connectivity completed</p>	<p>4.1. Detailed engineering design of interventions</p> <p>4.2. Tendering of construction activities</p> <p>4.3. Delivery of stations with connectivity components</p>	<p>4.1. Detailed engineering design report for interventions</p> <p>4.2. Tender document for construction activities</p> <p>4.3. INCOFER issues the construction acceptance certificate</p>
<p>5. Component 2 Urban integration with NMT and connectivity/accessibility component: NMT promotion activities</p>	<p>Multiple promotion activities to foster cycle and micro-mobility usage</p>	<p>5.1. Detailed design of activities</p> <p>5.2. Identification and contracting of delivery institution</p> <p>5.3. Delivery of planned activities</p>	<p>5.1. Detailed implementation plan</p> <p>5.2. Implementation contract</p> <p>5.3. Report on activities implemented</p>
<p>6. Component 3 capacity building and gender measures: Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT interventions</p>	<p>Fully operational monitoring and reporting system on LRT, NMT and last-mile connectivity components incl. institutional structure</p>	<p>6.1. Design institutional set-up within INCOFER for monitoring of impacts</p> <p>6.2. Sub-contract surveys and other components of monitoring</p> <p>6.3. Realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components</p>	<p>6.1. Institutional set-up of monitoring system within INCOFER defined incl. department / staff responsibilities and tasks</p> <p>6.2.a TORs for and procurement of sub-contracting services</p> <p>6.2.b Contracts for sub-contracting services signed</p> <p>6.3. Annual consolidated monitoring report on LRT,</p>

			connectivity, NMT impact based on established monitoring methodology (see Section E7)
7. Component 3 capacity building and gender measures: Deliver capacity building and outreach	Knowledge products are developed and results disseminated	<p>7.1. Realize publications on project components with a focus on NMT/connectivity</p> <p>7.2. Realize outreach events</p>	<p>7.1.a. Publication of LRT/NMT/connectivity initial impact and consolidated impacts and lessons learnt year 2 and year 5 after full implementation</p> <p>7.1.b. Publication of guidelines for NMT/connectivity and their integration with mass transit systems</p> <p>7.2.a. Realize at least 1 webinar for each publication</p> <p>7.2.b. Realize 5 workshops on results and lessons learnt</p>
8. Component 3 capacity building and gender measures: Implement gender action plan	The activities of the gender action plan are implemented	<p>8.1a. Establish social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations</p> <p>8.1b. Train INCOFER staff on the new sexual harassment law</p> <p>8.1c. Implement a rapid reporting system for cases of violence against women</p> <p>8.1d. Establish a complaint mechanism for cases of violence against women that acts automatically</p> <p>8.1e. Implement an adequate lighting system that protects the safety of users</p> <p>8.2.a. Design, implement and analyse a comprehensive multimodal transport pilot survey</p> <p>8.2.b. Conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure</p> <p>8.3a LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure</p> <p>8.3b. Improving women's accessibility to non-motorized mobility services</p>	<p>8.1a. 4 campaigns realized</p> <p>8.1b. 80% of staff trained</p> <p>8.1c. System implemented with 80% of staff trained for attending cases and with 75% of cases being attended</p> <p>8.1d. In all LRT stations with interventions a panic button is implemented</p> <p>8.1e. 100% of LRT stations and surrounding facilities have adequate illumination</p> <p>8.2.a 1 survey conducted with results presented at 2 workshops</p> <p>8.2.b 2 surveys or evaluations realized with results presented at an 2 workshops</p> <p>8.3a. At least 90% of LRT stations have been designed with a gender focus and 80% of services offered by the LRT include actions to improve access of women</p> <p>8.3b1. At least 1 program to foster the usage of cycling for mothers and kids</p> <p>8.3b2. At least 50% of cycling parking spaces have areas dedicated exclusively for women</p> <p>8.4a1. Women participation in technical workforce of INCOFER in year 2 15%, in year 4 25% and in year 10 40% (minimum rates)</p> <p>8.4a2. At least 1 women mentoring program</p>

		<p>8.4a. Attract women to the INCOFER workforce and offer equal conditions to men</p> <p>8.4b. Promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires</p> <p>8.5. Establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT</p> <p>8.6. Create knowledge product on lessons learned and disseminate</p>	<p>8.4a3. Women participation as LRT drivers in year 2 10%, in year 4 20% and in year 10 40% (minimum rates)</p> <p>8.4b1. 1 program to facilitate women entrepreneurship for services to the LRT</p> <p>8.4b2. 1 protocol designed to prevent sexual harassment at work</p> <p>8.4b3. At least 1 training to prevent sexual harassment for INCOFER staff</p> <p>8.4b4. 80% of staff exposed to courses on sexual harassment in INCOFER</p> <p>8.4b5. At least 45% of services provided by 3rd parties to INCOFER are managed by women</p> <p>8.5a. 1 program for the promotion of women to management positions</p> <p>8.5b. 50% of INCOFER directors are women</p> <p>8.6. Report on lessons learnt published online</p>
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E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

In accordance with the AMA the AE will realize an Inception Report, a Mid-Term Evaluation and a Terminal Evaluation plus annual performance reports. INCOFER will provide CABEL project reporting prior to the scheduling of reports to be delivered to the GCF, which as AE CABEL will aggregate and report to the GCF through Annual Progress Reports (APRs). After the loan is declared effective, CABEL will field an inception mission to discuss the project implementation in detail, orient INCOFER on its roles and responsibilities, discuss implementation arrangements, procurement processes, disbursement arrangements, audit, and reporting requirements for the project. CABEL will field review missions during the duration of project implementation to review the project progress and address issues, if needed, to ensure that the project is completed as planned. An independent midterm evaluation will be conducted by CABEL between the second and third year of implementation to assess whether attainment of the project's objectives are still likely to be achieved and if changes in the project may be needed. An independent final evaluation will be conducted by CABEL within 6 months of physical completion of the project. INCOFER will submit the draft completion report to CABEL and CABEL will finalize the GCF project completion report.

INCOFER will provide CABEL project reporting prior to the scheduling of reports to be delivered to the GCF, which CABEL will aggregate and report to the GCF through Annual Progress Reports. After the loan is declared effective, CABEL will field an inception mission to orient the SPV and INCOFER on its roles and responsibilities, discuss implementation arrangements, procurement processes, disbursement arrangements, audit, and reporting requirements for the project. CABEL will field review missions during the duration of project implementation to review the project progress and address issues, if needed, to ensure that the project is completed as planned. All performance indicator as listed in the project agreement will be monitored annually. For impact monitoring and reporting INCOFER will be supported by specialized international support to monitor and report results. GHG monitoring and reporting of impacts is only possible once the LRT is constructed and operational i.e. year 5 onwards. GHG impact monitoring will then be performed on an annual base with year 2 and year 5 of operations including major surveys to assess the impact of the different components. The impact monitoring and reporting includes:

a). Performance of the LRT system including GHG reduction, impact on air pollutants, and mode shift. The monitoring approach will follow basically the CDM approved methodology for Mass Transit Systems ACM0016 which requires as main monitoring parameters passenger numbers, energy consumption of the LRT and passenger surveys to determine the passenger origin-trip mode structure and distances and the baseline mode structure used in absence of the LRT.

b). Impact of the NMT component. The methodological approach to determine the impacts and the monitoring is based on a GEF methodology for cycling ways.

c). Impact of the last-mile connectivity component on GHG and local air pollutants. The monitoring methodology is based on control-group approach monitoring the trip emissions per resident of the project area and a control-group area. The monitoring methodological and statistical approach are based on a methodology developed by Grutter Consulting the MIT/USA for the World Bank for a project in Nanchang/China.

Reports on the impacts of the LRT, NMT and last-mile connectivity activities will be produced and will be accessible to interested parties online. The monitoring is an important component to improve design of future NMT and connectivity measures for an efficient and effective replication of these components. The monitoring methodologies including details on surveys to be used and statistical analysis have been compiled in a report (Grutter Consulting, 2020f).

The cost of the impact monitoring including the specialized surveys and statistical analysis as well as international assistance in this process has been included in the capacity building and monitoring budget financed under a GCF grant. The monitoring not only allows retrospectively to determine the GHG and sustainable development impact of the different project components but also allows to determine better the impact of different intervention measures and to plan and design with a better-quality intervention in the NMT and connectivity areas.

3 evaluations are carried out in accordance with Annex 11:

1. Mid-term summative evaluation. This is realized with funds provided under Component 3 by the company contracted for this purpose. It summarizes the development of the different components of the GCF project as of year 3. In year 3 no infrastructure is yet operational. As such this will represent a progress report and will assess the implementation accomplishment in line with the timeline as well as highlighting any potential issues.
2. Impact evaluation: This is realized with funds provided under Component 3 by the company contracted for this purpose. It is realized after one full year of operations and is based on the different surveys realized to assess the impact of the project relative to all defined indicators. The impact monitoring approach is detailed in Annex 11.
3. Self-assessment: this evaluation refers to the implementation of the GCF project in terms of financing, disbursements, and implementation status, not however to the impact of the project.

E. RISK ASSESSMENT AND MANAGEMENT

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

Selected Risk Factor 1: Right of Way

Category	Probability	Impact
Technical and operational	Low	Low
Description		
Impossibility of completely regularizing the right of way of all lines. This risk concerns mainly the lines 4 and 5, since for the lines 1-3 the line is currently operational with the old train. The impact of this risk would be a delay in project implementation and in the worst-case scenario the respective line could not be realized.		
Mitigation Measure(s)		
Study and, where appropriate, regularization of the rights that make up the right of way. The right of way is based on the Decree 22483-MOPT (MOPT, 1993). This mitigation measure eliminates the risk. Expropriations will be carried out under the national expropriation regulations (law 7495) and considering the mitigation measures established in the environmental and social action plan ⁶⁶ .		

Selected Risk Factor 2: Design Failures

Category	Probability	Impact
Technical and operational	Low	Low
Description		
Risk that the design fails to achieve the required output specifications, with the result that the project has more or less capacity than necessary to meet the needs of the demand. The impact would be that the infrastructure would be built suboptimal resulting potentially in cost overruns for rectifications and potential delays.		
Mitigation Measure(s)		
The SPV will realize the detailed engineering design. The selection of the private company for the PPP is thus critical. A selection of a high-quality private company with sufficient experience in the design of LRTs will mitigate this risk and make its occurrence highly improbable. There are sufficient private companies with experience in designing comparable LRTs worldwide. The LRT proposed for the GAM is not a complex project and similar LRTs have been designed and implemented successfully in multiple countries worldwide in recent years.		

Selected Risk Factor 3: Construction Sur-Cost / Construction Delays

Category	Probability	Impact
Technical and operational	High	Low
Description		
Risk that during the design and construction phase the actual project cost exceeds the budgeted costs, due e.g. to an increase in the cost of inputs or construction complexity. In the PPP contract this risk is fully with the private investor as he agrees to build the LRT infrastructure at an agreed upon CAPEX i.e. any cost overruns not provoked through changes of the design requested by the government need to be borne by the private investor. Also construction delays and resultant costs are fully born by the private investor. In traditional government financed projects in Costa Rica cost-overruns have been in the order of 20% i.e. the potential impact is estimated at low.		
Mitigation Measure(s)		
The PPP contract transfers this risk to the private investor. The contract establishes the procedures and penalties in case of implementation delays. This results in PPP contracts in general delivering the product on-time.		

Selected Risk Factor 4: Late Delivery of Rolling Stock

Category	Probability	Impact
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⁶⁶ See Annex 6.5 (CABEI, 2019)

Technical and operational	Low	Medium
Description		
Risk that the rolling stock selected is not available upon time due to the manufacturer of the rolling stock. This results in an implementation delay of the project with the resultant costs. The risk is born within a PPP by the private investor as he is responsible for timely delivery of the project and its implementation. The probability of the risk is estimated as low as multiple manufacturers are available worldwide and therefore delivery time of rolling stock can be negotiated.		
Mitigation Measure(s)		
Careful time-planning and early procurement contracts of rolling stock. The PPP shifts this risk to the private investor as the concession period is fixed 35 years and annual availability payments are only made in accordance with rolling stock and total service availability. The construction time of the project also provides for sufficient leeway to plan and procure the rolling stock in a timely manner.		
Selected Risk Factor 5: Lower than Expected Demand		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Risk that the passenger demand is lower than estimated. This may be due to factors external to the private partner if actions are taken by the Government or the Municipality which affect demand, may be due to actions or failing actions of the private partner e.g. non-adequate service conditions or might be due to factors external to all parties such as the a pandemic. The risk is with the government as farebox revenues come to the government whilst the private concessionary has a fixed availability payment. The magnitude of the risk impact on the government and the SPV depend on the transaction structure model chosen and are higher in the PPD _i than in the PPDD model. The impact on government finance is relatively low as the financial and economic profitability is related largely to CAPEX expenditures and not that sensitive to changes in the number of passengers (IDOM, 2020, p. 57). This risk also has an impact on emission reductions and potentially on traffic impacts (the impact of reduced demand is not 1 to 1 on emission reductions as latter is relative to passenger*trip distance*mode used in absence i.e. as example less passengers coming from short-trip bus users affect marginally calculations and less passengers with long trip distance affect more; the same holds true for traffic conditions as it depends if latter is due to less trips than expected in the GAM as total (e.g. due to decreasing trip intensity or less residents than projected for the future), and from which baseline mode we have less passengers). The influence of 1 parameter alone on emission reductions and on traffic mitigation is thus limited. As example the CDM project of Delhi Metro had in its last monitoring period 2016-2018 35% less passengers than projected but still 14% higher emission reductions than projected as the emission reductions per transported passenger where higher than projected due to longer than expected trip distance and higher than expected mode share from high emitting modes.		
Mitigation Measure(s)		
Measures to increase demand are being planned and include: (i) adequate tariff structure which makes the usage of the LRT attractive (ii) Integration measures with the bus-based public transport system including tariff integration and electronic ticketing which result in increased attractiveness and convenience of the public transport system. (iii) Attractive NMT systems including cycling ways and shared mobility services which allow for safe, convenient and seamless trips from origin to destination thus attracting additional passenger demand.		
Selected Risk Factor 6: Lower than Expected Quality of Service		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Risk that the service provider does not reach the quality specifications for the service as demanded. This can result in penalties and/or lower than expected demand of passengers and therefore lower revenues.		
Mitigation Measure(s)		
Selection of private partner with experience and good quality track record. The PPP contract establishes penalties and guarantees for quality service deliveries to ensure that service targets are met.		
Selected Risk Factor 7: Higher than Expected Operational Costs		

Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Higher than expected operational costs resulting in lower than expected profitability and less capacity to repay debts. The higher costs can be a result of cost increases (e.g. salaries), underperformance of technologies (e.g. higher electricity usage than expected of trains) or disputes (e.g. labor disputes) resulting in lower than expected quality of services and/or higher than expected OPEX.		
Mitigation Measure(s)		
The risk is born by the private investor under a PPP contract. Selection of a high-quality private partner is thus key to reducing this risk. Insurance or contractual guarantees can also be realized for some of the operational cost risks (e.g. technology performance risks).		
Selected Risk Factor 8: Exchange Rate Risk		
Category	Probability	Impact
Forex	High	Low
Description		
This can be related to the payments of the government to the concessionary, in the CAPEX or OPEX of the concessionary or to the revenues related with the tariff. Exchange rate risks affect the potential revenue in foreign exchange of the concessionary, the OPEX, the CAPEX and also the transfers from government. Dependent on the type of PPP contract the risks are either with the private party, with the government or with both. Results are always a lower profitability of operations.		
Mitigation Measure(s)		
Currency swap contract, as long as the terms and conditions of such contracts are approved by the contracting institution, so that aggressive positions that go beyond a hedge are not taken and that imply an additional risk to the development of the Project. The currency risk is partly mitigated by the combination of income and expenditure in local currency and USD.		
Selected Risk Factor 9: Insufficient Experience Executing Entity		
Category	Probability	Impact
Technical and operational	Medium	Medium
Description		
INCOFER is in charge of realizing the concession agreement but lacks experience in that. INCOFER is also responsible for supervision of the concessionary during the construction and operational phase. While INCOFER has experience in running its rail system, the experience in constructing a new electric LRT is limited. This can lead to an imbalance of know-how between the private concessionary and the supervising institution which could result in non-fulfilment of contractual obligations, non-adequate construction, and construction delays.		
Mitigation Measure(s)		
INCOFER receives technical support from CABEL to carry out its tasks. For the concession phase INCOFER will work with the same procedures and approach as used by the National Concessions Council (CNC) and will also strengthen the SPV during the implementation of the concession, with the resources established for this purpose. For the construction and delivery phase CABEL will contract directly a 3 rd party verification company paid with resources of the borrower (0.4% of the loan amount), with field presence. The verifier will be present during the project execution and verify the design products, the global budget, monthly estimates of work, will carry out evaluations of the variations between the real and the programmed physical and financial execution, and the respective analysis of the effect on the time of contractual completion, technical constructive audits, opportune monitoring of change orders, extensions of contracts, and follow-up of possible claims or controversies; likewise it will issue monthly reports to CABEL.		
Selected Risk Factor 10: Money laundering, terrorist financing and prohibited practices risks		
Category	Probability	Impact
Prohibited practices	Low	Low
Description		

Risk of the concessionary being involved in illicit practices.		
Mitigation Measure(s)		
CABEI has its internal system of control. The tender process is an open process with results presented to the public. CABEI realizes a first level due diligence of the concessionary to ensure that this risk is mitigated.		
Selected Risk Factor 11: Construction Permits		
Category	Probability	Impact
Technical and operational	Low	Medium
Description		
Risk of not obtaining by the concessionary on time all required permits for construction and operation. The basic risk impact is a delay in construction and operations. With long delays the impacts can be high.		
Mitigation Measure(s)		
The project is a national priority and its construction and environmental impacts are very limited as it is basically realized on an existing rail track. The experience of INCOFER is useful for the concessionary to identify on time potential problem areas for construction areas and permits		
Selected Risk Factor 12: Identification of High Quality Concessionaire		
Category	Probability	Impact
Other	Low	High
Description		
Lack of offers / offers with a very high cost for acting as concessionaire.		
Mitigation Measure(s)		
<p>INCOFER has a preliminary list of interested concessionaires, which exceed 10 companies. Likewise, IDOM corroborated with these companies that the amount to be tendered and the size of the works is feasible, therefore the risk of bankability is low and lack of offers is considered to be very low.</p> <p>Mitigation measures to reduce this risk are:</p> <p>(i) Increase of capacity of contracting parties:</p> <ul style="list-style-type: none"> CABEI will have two supervising entities for the loan: (i) the first company, to be contracted by the Gov. of Costa Rica, for which CABEI is preparing the TORs for this project's supervision company activities, and the minimum activities to be performed by it, and (ii) the second company will be contracted directly by CABEI, through an international bidding process, calling for a company with experience in the transport sector with the objective to validate the social, environmental, infrastructure and economic commitments assumed by the State for the project. With TA funds from CABEI, INCOFER hired three specialists as advisors, with extensive experience in concession contract management, who are part of the project's PIU. This Unit will also be expanded to include professionals with a solid background in the financial, legal and railroad sectors. Two additional TA cooperation agreements with CABEI are in process, aimed at supporting INCOFER during the international public bidding process of this LRT Project <p>(ii) Supervision with 3rd party: CABEI will contract directly, on behalf of INCOFER, a specialized 3rd party company, to be paid with resources of the borrower, which will assist in the PPP project design and in structuring the PPP transaction.</p> <p>(iii) Clearly defined parameters in the draft concession tender and contract which ensure high quality and experienced bidders: There are already a series of technical and financial parameters and requirements that will be requested from potential concessionaires, which mitigate this risk. All potential offerer's must prove significant experience with comparable LRTs and financial strength (see Annex 19 Summary of Tender and Concession Contract Document" especially Chapter 2 Technical Minimum Requirements and chapter 3 Financial Requirements).</p> <p>Also the contracting parties have a broad experience in structuring large-scale PPPs: The Government of Costa Rica as well as CABEI all have structured and managed large-scale PPPs. Staff involved in these transaction is now at INCOFER. This experience will be used for the LRT.</p>		

Selected Risk Factor 13: Funding gap (availability payment) due to the tight fiscal situation of Costa Rica		
Category	Probability	Impact
Other	Low	High
Description		
The risk is that the government is not capable to finance the availability gap payment to the Cocenssionaire.		
Mitigation measure(s)		
<p>The risk is related to the current fiscal situation of Costa Rica. The risk is mitigated by:</p> <ul style="list-style-type: none"> • The availability payment of around US\$100 million needs to be paid annually once the LRT is operational i.e. 6 years from now. The measures to reduce the fiscal deficit have already been taken since December 2018 with the approval of the fiscal reform (but have been temporarily suspended due to COVID-19; however, they have again been taken up end 2020) and will have an impact in a much shorter period. Therefore the future risk is considered to be significantly lower than the current risk. • With the closure of the Concession contract the Costa Rican government assumes the legal obligation of the availability payment i.e. this then forms part automatically of the annual budget. For the year 2020 the availability payment would have meant 0.6% of the Costa Rican budget i.e. whilst significant this is not a huge part of the budget. • Investing in profitable infrastructure will alleviate future fiscal problems. The reduced health costs due to reduced accidentality and reduced air pollution are worth on average annually US\$54 million (FSR Annex 2 economic spreadsheet). A large part of these health costs are paid directly by the government through the public health care system i.e. the LRT results in direct reduced fiscal health costs. Time savings result in increased productivity of the economy which again results in increased tax revenues. Overall the fiscal effect is thus considered either positive or close to nil. <p>The GCF financing enables to reduce this risk strongly by having a long loan tenure allowing to spread out payments and by having a long grace period i.e. both allow that the fiscal situation is not aggravated of Costa Rica whilst enabling the investment in green infrastructure.</p>		

F. GCF POLICIES AND STANDARDS

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

Environmental Impacts

A separation of potential environmental impacts during the construction and the operational phase is made. Major anticipated negative environmental impacts of the project during construction are related to traffic disruptions and access to properties, relocation of utilities, cutting trees, noise and air quality impacts, as well as community health and safety. During operation, it is anticipated that the project will have mostly positive environmental impacts—specifically, on urban air quality and acoustic environment. Adequate mitigation measures are incorporated into project design and will be implemented through an environmental management plan. Public consultations with various stakeholders were conducted⁶⁷. The preliminary EIA was disclosed on INCOFER's website June 2020 (IDOM, 2020) and on the website of CABEL for 120 days starting July 25th 2019 and ending October 24th 2019, with approval of the loan through the Board of CABEL on October 30th 2019⁶⁸.

The final EIA will be realized by the concessionary. The train requires an environmental permit and authorization granted by the National Environmental Technical Secretariat (SETENA), which involves compliance with all relevant regulations and the corresponding permits e.g. concerning water, air, noise pollution, social aspects etc. (IDOM, 2020, p. 191 to 216). For construction the concessionary will require permits from the Ministry of Public Works and Transport (MOPT) and the corresponding municipalities. The operational permit is given by MOPT.

Social Impacts

The project will affect and potentially displace around 215 persons which have invaded the right of way of the train system in the last years (IDOM, 2020, p. 143). The negotiation mechanisms for the process of expropriation and relocation of owners are based on the Law 7495 (Expropriation Law), which clearly indicates the administrative processes to be followed to compensate the persons or companies that own property where some new sections of the current route of the LRT will have to be traced, as well as the relocation of the persons who will be affected. The total expropriation area is estimated at 420,000m² of land and 26,000m² of buildings (IDOM, 2020). INCOFER must deliver to CABEL prior to the 1st loan disbursement a copy of the Involuntary Resettlement Plan (PRI), including land acquisition and expropriations, and corresponding protocols. At least five months after the last resettlement INCOFER must deliver to CABEL a final report on the scope and achievements of the PRI considering the reestablishment or improvement of socioeconomic indicators and conditions of affected families.

The project is located in the urban area of San Jose, where no indigenous peoples reside. The project will not affect any indigenous communities and, accordingly, no indigenous peoples planning documents are required (IDOM, 2020, p. 149)⁶⁹.

The project will benefit GAMs estimated population of 2.7 million through increased access to safe, reliable, and affordable public transport. Overall, the project is expected to generate 1,200 temporary jobs during construction and 1,460 direct jobs during operations (700 in operations, 700 in maintenance and 60 in administration) (IDOM, 2020, p. 227/228). The affordability of the services is analysed closely. The new fare schedule will largely follow the existing levels (IDOM, 2020). The project during its operations also improves the health of people and reduces mortality and morbidity rates through improved air quality, reduced noise emissions and reduced accidentality.

⁶⁷ See for details (Grutter Consulting, 2020i)

⁶⁸ <https://www.bcie.org/fileadmin/bcie/projects/Estudio%20Ambiental%20Preliminar%20TRP%2015%20julio.pdf>

⁶⁹ The definition of indigenous communities is based on Art 1 of the Indigenous Law 6172:

<http://www.dinadeco.go.cr/sitio/ms/3%20Tem%C3%A1tica/3.1%20Asuntos%20ind%C3%ADgenas/3.1.3%20Normativa/3.1.3.1%20Ley%20Ind%C3%ADgena%20N%C2%B0%206172/Ley%206172%20LEY%20INDIGENA%20Y%20SU%20REGLAMENTO.pdf>

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

Gender Assessment⁷⁰

Costa Rica has been committed to closing gender gaps for almost half a century. Sectors that are less traditional for women, such as transportation, still present significant gender gaps. In Costa Rica, nearly 60% of public transport users are women, yet there are very few women in decision-making positions or as employees in the sector, and only 10% of bus drivers are women. Women have less access to driver's licenses (only 30% of licenses have been issued to women). This shows a greater dependence on the public transportation system

The 2004 specialized survey on violence against women shows that 58% of the women surveyed reported having been the victim of at least one incident of physical or sexual violence at some point in their lives since the age of 16. The public transportation sector also concentrates high levels of violence. The presence of acts of violence against women inhibits them from accessing public transport services and other services provided by the use of buses, trains or cabs. Costa Rican women constantly experience sexual harassment, sexual violence and other types of violence while they are users.

Based on the analysis of available information, the transport sector in Costa Rica continues to be dominated by men in all spheres of decision-making and the provision of transport services, including the train network. Currently, INCOFER has a woman as its executive president. Within the institution's board of directors, 42% (3 of 7 positions, including the executive president) of the positions were awarded to women and 58% to men (4 of 7 positions).

Gender Action Plan

The gender action plan seeks to incorporate activities that will improve women's participation as users and providers of train transportation services. Dimensions included in the gender action plan are (i) mobility and safety; (ii) accessibility and (iii) participation. Within mobility and safety it is proposed to design activities that promote the training of staff to prevent violent events or the implementation of communication tools and campaigns directed to men and women in order to prevent and attend to violence against women. Also, information shall be generated on women's mobility patterns, as well as their specific needs when using the train's transportation system and the different intermodal connections to optimize the LRT for the specific needs of women. In terms of accessibility it is necessary to ensure that women can access different types of services, not only when using the train or waiting inside the stations, but also the connection with other types of multimodal transport and other public spaces. The improved infrastructure should include the necessary spaces to ensure women's comfort and take into account their mobility patterns (accompanied, with shopping carts, or multiple bags or packages, or strollers for children). In terms of participations an increased participation of women in technical, managerial and at decision taking level shall be achieved through capacity building, mentoring and gender targets.

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

CABEI can realize monitoring supervision of the works and can request the administrative, technical, legal, financial and accounting documentation related to the project for its eventual evaluation (Art. 9.05)⁷¹. CABEI will receive periodic reports of the project status from the project executing unit. CABEI plans to realize a medium term and ex-post evaluation in the terms set forth in Annex E of the Loan Contract⁷².

INCOFER will submit to CABEI quarterly reports on the physical execution of the project, compliance with the environmental management plans and in general the compliance with the obligations of the concessionaire contained in the respective Contract. INCOFER will realize an external supervision of the concession contract including final design and supervision of works (includes environmental aspects).

⁷⁰ See for more details on this section (Grutter Consulting, 2020g)

⁷¹ See for details (CABEI, 2019), section 2.2.4

⁷² The medium term evaluation is planned for maximum 3 months after 50% of disbursement of the loan and the final ex-post evaluation minimum 1 year and maximum 2 years after the last disbursement of CABEI.

CABEI will contract directly a 3rd party verification company paid with resources of the borrower (0.4% of the loan amount), with field presence. The verifier will be present during the project execution and verifies inter alia the design products, the global budget, and will carry out evaluations of the variations between the real and the programmed physical and financial execution, and the respective analysis of the effect on the time of contractual completion, technical constructive audits, etc.; likewise it will issue monthly reports to CABEI.

CABEI's supervision function will be carried out by the Credit Operations Supervision Area (USOC). The follow-up will be carried out through the reports issued by the verifying firm, and through review and field visits, according to the annual plan of supervision visits. CABEI will make at least two supervision visits per year. The follow-up of environmental and social aspects will be carried out by the Bank's Office of Environmental and Social Sustainability (OFAS), who will accompany the USOC, according to the frequency established in the annual supervision plan.

Table 5: Disbursement per Line (USD)

Line	Loan disbursement
Line 1: Paraiso to Atlántico (27.4 km)	159 MUSD
Line 2: Atlántico to Alajuela (21.6 km)	127 MUSD
Line 3: Atlántico to Ciruelas (25.4 km)	148 MUSD
Line 4 Alajuela to Ciruelas (7.8 km) & Line 5 Ciruelas to El Coyol (2.7 km)	61 MUSD
Definitive reception of all lines and operational start	55 MUSD
Total	550 MUSD

Source: (CABEI, 2019), Table II-5

Procurement

A tender for a concession agreement is made. All procurements are the sole responsibility of the concessionary and not realized by CABEI or INCOFER. CABEI has to review the PPP bidding poster before the bidding starts and grant it's no objection, and subsequently, CABEI must review the award to the winning concessionaire and grant it's no objection as well. Project contracts and procurement for construction of the LRT are the sole responsibility of the concessionaire given that the design, construction, operation and maintenance risk is transferred to the private concessionaire. CABEI and the Government of Costa Rica have no interference in this process.

G.4. Disclosure of funding proposal

☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, 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.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information. Annexures 12 to 15 are confidential information.

G. ANNEXES

H.1. Mandatory annexes

- ☒ Annex 1 NDA no-objection letter(s)
- ☒ Annex 2 Feasibility study - and a market study, if applicable (CONFIDENTIAL)
- ☒ Annex 3 Economic and/or financial analyses in spreadsheet format (CONFIDENTIAL)
- ☒ Annex 4 Detailed budget plan
- ☒ Annex 5 Implementation timetable including key project/programme milestones
- ☒ Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
 - ☒ Environmental and Social Impact Assessment (ESIA) or
 - ☐ Environmental and Social Management Plan (ESMP) or
 - ☐ Environmental and Social Management System (ESMS)
 - ☒ Others (please specify) – Environmental and Social Management Framework (ESMF)
- ☒ Annex 7 Summary of consultations and stakeholder engagement plan
- ☒ Annex 8 Gender assessment and project/programme-level action plan
- ☒ Annex 9 Legal due diligence (regulation, taxation and insurance)
- ☒ Annex 10 Procurement plan Component 3
- ☒ Annex 11 Monitoring and evaluation plan
- ☒ Annex 12 AE fee request ([CONFIDENTIAL](#))
- ☒ Annex 13 Co-financing commitment letter, if applicable ([template provided](#))
- ☒ Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule (CONFIDENTIAL)

H.2. Other annexes as applicable

- ☒ Annex 15 Evidence of internal approval ([template provided](#))
- ☒ Annex 16 Map indicating the location of proposed interventions
- ☒ Annex 17 CRVA Reports (CONFIDENTIAL)
- ☒ Annex 18 NMT and TOD Reports (CONFIDENTIAL)
- ☒ Annex 19 Summary Tender Document (CONFIDENTIAL)
- ☐ Annex 22 GHG emission reduction (22a) and spreadsheet (22) and Monitoring Manual (22b) (CONFIDENTIAL)