GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT
TYPE OF TRUST FUND:GEF TRUST FUND

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title:	Supporting the Chilean Low Emissions Transport Strategy (CLETS)		
Country(ies):	Chile	GEF Project ID:[1]	9742
GEF Agency(ies):	CAF	GEF Agency Project ID:	
Other Executing Partner(s):	Ministry of Environment (MMA), Ministry of Transport and Telecommunications (MTT), Ministry of Housing and Urbanism (MINVU)	Submission Date:	January 20, 2017
GEF Focal Area(s):	Climate Change	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐		Corporate Program: SGP ☐
Name of parent program:	none	Agency Fee ($)	**261 000**

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
CCM-2 Programme 3	GEFTF	2 900 000	37 579 821
Total Project Cost		**2 900 000**	**37 579 821**

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective:
To demonstrate systemic impacts of integrated zero- or low-emission urban public mobility systems (CCM-2 P3)

Project Components	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
1.- Promotion of policy, planning and regulatory frameworks that foster accelerated adoption of integrated low-emissions mobility systems through Participation, Knowledge Management and Capacity Development in the	TA	1.1.- Increased available information for planning, designing and implementing innovative sustainable urban mobility systems at national and subnational levels	1.1.1. Information campaigns 1.1.2. Training 1.1.3. MRV system	GEFTF	1 517 000	2 168 702

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.
[2] When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT guidelines.
[3] Financing type can be either investment or technical assistance.

framework of a Chilean Low Emissions Transport Strategy (CLETS)		1.2.- An enhanced policy, technical and regulatory environment to promote sustainable urban mobility 1.3.- Increased capacity for sustainable-transport innovation at national and subnational level 1.4.- Best practices shared nationally and internationally	1.2.1. Support to the formalisation of the Chilean Low Emissions Transport Strategy 1.2.2. Experience exchange and dissemination, national level 1.3.1. Support to the generalisation of multimodal methods of payment 1.3.2. Energy certification of vehicles 1.3.3. Collective-taxi information crowdsourcing 1.3.4. Open Data strategy 1.4.1. Dissemination (national level), public bycicle system 1.4.2. Identification, systematisation and promotion of best practices			
2.- Demonstrative and Catalytic Actions that demonstrate and operationalise financial mechanisms to support integrated low-emissions mobility systems (Outcome C)	TA	2.1.- Technically assisted investments in sustainable urban mobility measures in relevant urban areas 2.2.- Technically assisted investments in integrated urban planning measures in representative, replication-ready urban areas	2.1.1. ZLE Transantiago (demonstration) 2.1.2. ZLE Bus in other urban areas (pilot) 2.1.3. Collective taxi in Valparaíso (demonstration) 2.2.1. Pedestrianisation (pilot) 2.2.2. Intermodality (pilot) 2.2.3. Cycling infrastructure (pilot) 2.2.4. Public bicycle systems (replication)	GEFTF	992 905	1 697 273
	INV				150 000	32 929 821
3.- Monitoring and Evaluation	TA	3.1.- Adequate monitoring of all project indicators to ensure successful project implementation and evaluation	3.1.1.- Periodic reviews and independent terminal evaluation conducted	GEFTF	102 000	302 611

Subtotal		2 761 905	37 098 408
Project Management Cost (PMC)[4]		138 095	481 413
Total Project Cost		**2 900 000**	**37 579 821**

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

C. Indicative sources of Co-financing for the project by name and by type, if available

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
Recipient Government	Ministry of Transport and Telecommunications (MTT)	Cash	21 348 846
Recipient Government	Ministry of Transport and Telecommunications (MTT)	In-kind	2 000 000
Recipient Government	Ministry of Environment (MMA)	In-kind	500 000
Recipient Government	Ministry of Housing and Urbanism (MINVU)	In-kind	2 000 000
Private sector	Unknown at this stage	Cash	11 580 975
GEF Agency	CAF	Cash	150 000
Total Co-financing			**37 579 821**

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds[a]

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)[b]	Total (c)=a+b
CAF	GEFTF	Chile	Climate Change		2 900 000	261 000	3 161 000
Total GEF Resources					**2 900 000**	**261 000**	**3 161 000**

a) Refer to the Fee Policy for GEF Partner Agencies.

E. Project Preparation Grant (PPG)[5]

Is Project Preparation Grant requested? Yes ☑ No ☐. If no, skip item E.

PPG Amount Requested by Agency(ies), Trust Fund, Country(ies) and the Programming of Funds

Project Preparation Grant amount requested: $100 000 PPG Agency Fee: 9 000							
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in $)		
					PPG (a)	Agency Fee[6] (b)	Total c = a + b
CAF	GEFTF	Chile	Climate Change		100 000	9 000	109 000
Total PPG Amount					**100 000**	**9 000**	**109 000**

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

[5] PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to $50k for PF up to$2m (for MSP); up to $100k for PF up to $3m; $150k for PF up to $6m; $200k for PF up to $10m; and $300k for PF above $10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

[6] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

F. Project's Target Contributions to Global Environmental Benefits[7]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	719 936 tCO_2eq

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[8] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed

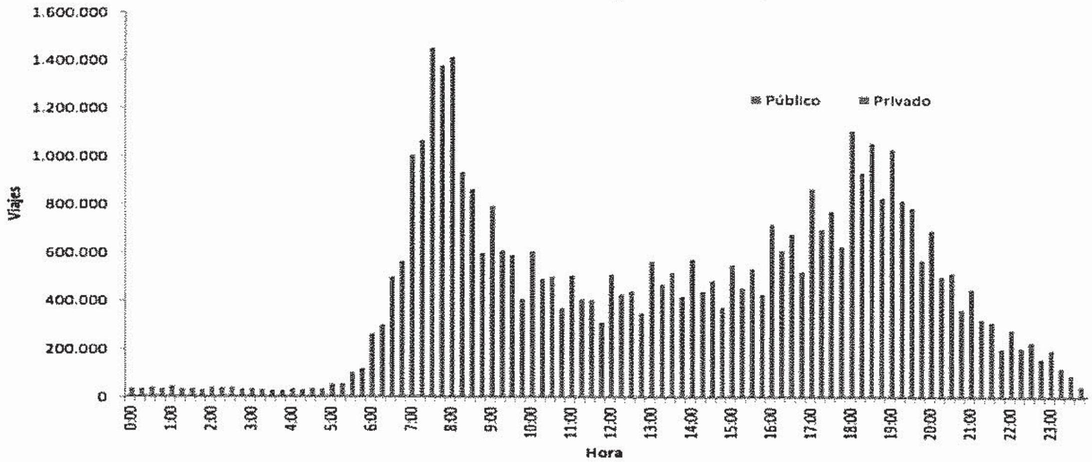
1. The transport sector currently produces some 11,5% of Chilean GHG emissions (INGEI 2016). Of that (almost 20 $MtCO_2eq$ in 2010, almost 25 in 2013), public urban mobility accounts for about a fifth (about 5.4 million $tCO_2eq \cdot yr^{-1}$ in 2016) while at the same time having a disproportionate impact on the perceived environmental (and general) quality of urban environments. Public urban mobility is currently at a crossroads, with emissions volumes and governance settings that provide an opportunity for globally-significant emissions reductions, but also with threats coming from the overwhelming reality of a system that is used (and scrutinised) daily by millions of persons and emerging mobility solutions that take for granted a future public transport in the lines of the current one, but undermine it through the privatisation of mobility data and mobility business models. Besides, a paradigm shift from the current to a new, cleaner mobility is not possible without the incorporation to that shift of public modes of transport, be they traditional (in this project, urban bus and collective taxi) or non-traditional (new pedestrianism, public bicycle systems).

2. Santiago metropolitan area counts some 6.7 million inhabitants. They make a mean 2.78 displacements per day, of which 1.71 are made in motorised modes, measuring around 6 km per displacement and taking 30 minutes each. 29.1% are made in public transport, 28% in private car, 34.5% are pedestrian and 4% on bicycle. 60% of all households do not count with a private car (EOD 2012) (see also Graphic 1), while public and pedestrian modes of transport have a disproportionate participation of poorer people and women (see Graphic 2).

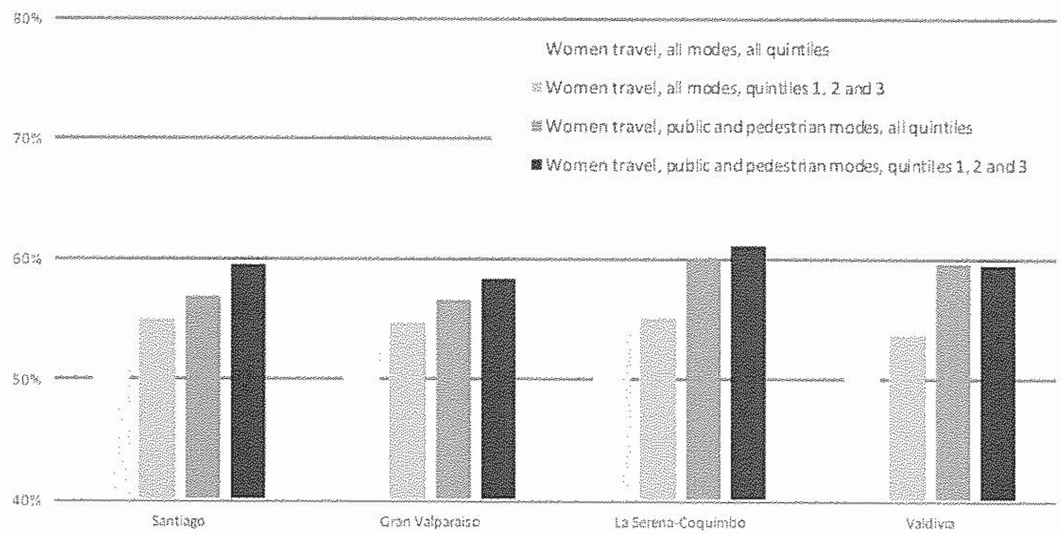
[7] Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF, SCCF or CBIT.

[8] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.

Graphic 1: general distribution of all travel
Santiago metropolitan area, week day (in red: public transport modes) (EOD 2012)



Graphic 2: share of travels with data, week day, four cities (EOD 2010-14)



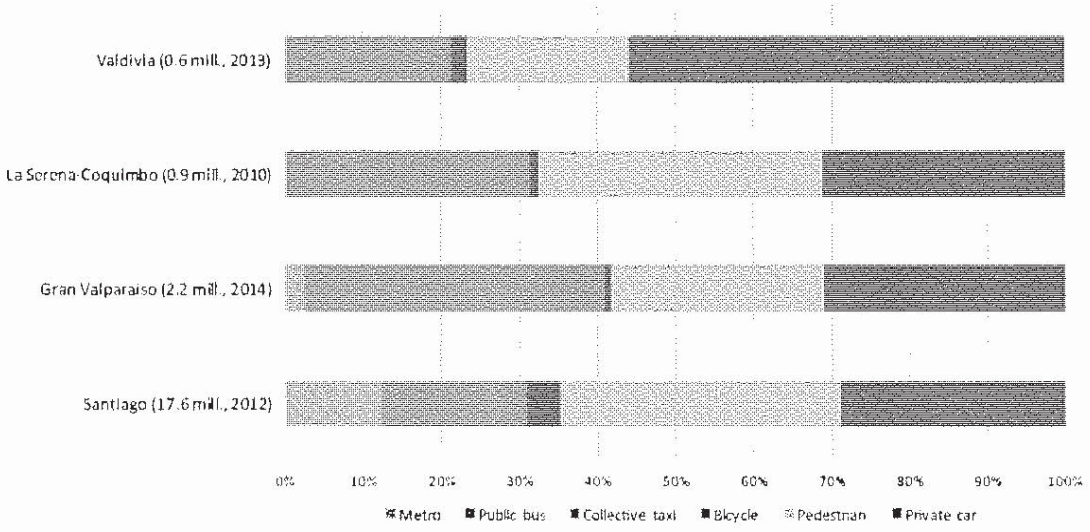
3. A total of 216 zero- or low- emission vehicles (less than 0.005% of the total fleet) occur in Chile (INE 2016), most of them concentrated in Santiago. The metropolis counts more than 1.2 million private vehicles, 6577 urban buses, more than 38 thousand taxis and 5 metro lines with more than 104 km of tracks (2016), as well as one of the better-developed bus rapid transit (BRT) systems in Latinamerica: 61.7 km of segregated lanes, 31 km of exclusive lanes and 119.3 km of bus-only tracks. Public transport in Santiago is also subsidised to the tune of 35-40% of operational costs, one of very few cases in which this is so in developing countries, and territorial-balance worries make that subsidy being mirrored with funds for the rest of the country's public transport ("*fondos espejo*", see below).

4. Data for other Chilean urban areas (see Table 1) are patchier, but bigger ones entertain transport dynamics as similar to Santiago's as its sizes. Graphic 3 shows results for in-depth studies of four cities for which it has been possible to gather sufficient data.

Table 1: Chile's cities

	Region	Urban area	Category (INE)	Total population (INE 2004)	GDP/inhab. (USD, based on INE 2004)
RM	**Region Metropolitana**	**Gran Santiago**	**ME**	**5.631.839**	**$4.540**
BIG URBAN AREAS					
5	Valparaiso	Valparaíso Metropolitano	GAU	824.006	$3.378
8	Bio Bio	Concepción Metropolitano	GAU	848.023	$3.074
MAJOR CITIES					
15	Arica Parinacota	Arica	CM	175.441	$4.689
1	Tarapacá	Iquique - Alto Hospicio	CM	214.586	$4.689
2	Antofagasta	Antofagasta	CM	285.255	$9.165
3	Atacama	Copiapó - Tierra Amarilla	CM	134.561	$4.125
4	Coquimbo	La Serena - Coquimbo	CM	296.253	$2.194
5	Valparaiso	Quillota - La Calera	CM	128.874	$3.378
5	Valparaiso	San Antonio - Cartagena - Sto. Domingo	CM	124.836	$3.378
6	O Higgins	Rancagua	CM	236.363	$3.282
7	Maule	Talca	CM	208.907	$2.409
7	Maule	Curicó	CM	104.124	$2.409
8	Bio Bio	Chillán - Chillán Viejo	CM	165.528	$3.074
8	Bio Bio	Los Angeles - Nacimiento	CM	138.856	$3.074
9	Araucanía	Temuco - Padre Las Casas	CM	268.437	$1.774
14	De Los Rios	Valdivia	CM	127.750	$1.774
10	De Los Lagos	Osorno	CM	132.245	$1.774
10	De Los Lagos	Puerto Montt - Puerto Varas	CM	175.140	$2.683
12	Magallanes	Punta Arenas	CM	116.005	$5.183

Graphic 3: modal share, all travel with data, week day, four cities (EOD 2010-14)



5. The project addresses the following barriers to the development of integrated zero or low-emission urban public (IZLEUP) mobility:

6. Non-financial barrier 1. Due to lack of information and reliable knowledge on available options, there is uncertainty over ZLE mobility's perceivable benefits. This shortcoming appears to be hindering investment in ZLE mobility across the board. Data and knowledge on different costs, access modalities and O&M increase the perceived risk of investment, as well as make it uncertain that current capacities (especially human resources) would serve the new systems. Similarly, there appears to be limited awareness of the fact that ZLE technologies' accelerated development in public transport would benefits mainly interest groups such as low-income population in general and low-income women in particular, at least in the case of Chile. This makes it a especially apt public policy to be supported, but it appears that awareness must be raised among the policy-making community.

7. Non-financial barrier 2. The regulatory framework contains fossil-fuel lock-ins and is not supportive of integrated solutions. While the Chilean legislation is open enough to sustain different technologies, the same is not true of regulation and technical specifications, which frequently contain exclusive references to fossil fuel that make it difficult or impossible to get out of fossil fuel technologies or even compare them with ZLE ones. Also, in the specific case of public transport, complex public-private arrangements involving significant investment at different scales require timeframes that lock technological options in for long periods of time.

8. Non-financial barrier 3. Existing systems contain remarkable innovation-sapping hurdles in the fields of access to data and interoperability. While barriers to the enhancement of existing systems are related to the previously identified barriers, the main barriers to innovation are placed in data management. Transparency, access to data and interoperability remain spaces where significant advances can be made to provide a supporting environment for innovation to take place.

9. Non-financial barrier 4. Policy makers are not aware of available options, or perceive their benefits as uncertain. Similar to Barrier 1 (which focuses on markets), but specific of the policy-making community, a barrier is identified in the field of knowledge about different policy options and its risks and feasible outcomes. National,

subnational and local authorities lack the means to be aware of state-of-the-art initiatives going on in places different to theirs.

10. Financial barrier 5. Technical and regulatory uncertainty and innovation-sapping hurdles raise the perceived risk of public-transport investment, thus lifting the perceived break-even return level. As a relevant proportion of the benefits to be perceived from IZLEUP mobility are not private, but public, and long-term (climate change benefits, reduced morbidity, reduced urban noise), they can not be included in a private operator's CBA.

11. Non-financial barrier 6. The existing regulatory and institutional frameworks make it difficult to integrate sectors and sector-specific measures in comprehensive, integrated urban planning frameworks. The same non-privatisable-benefits problem identified in Barrier 5 is addressed, but due to the very case-specific condition of this problem, it cannot be addressed through the same means as public-transport investment, but needs a specific, learning-by-doing approach.

2) the baseline scenario or any associated baseline projects

12. The baseline for motorised modes to be tackled by the Chilean Low Emissions Transport Strategy (CLETS) is provided by the National Transport Policy and the modification to the Law 20.378 (2013) and related general legislation. These, while providing the MTT with relevant regulatory and financial capabilities, focus the national public transport policy priorities through to 2020 and beyond on cross-cutting (efficiency, quality), social (access) and economic (capacity, continuity) aims.

13. The project idea focuses on urban mobility as a common (rivalrous but non-excludable) good: it tackles regulated sectors (urban public transport, see Table 2) which function through public-private partnerships (PPPs, for bus) and a licensing system (for collective taxi); and a complex common issue with multiple stakeholders (non-motorised, personal urban mobility); it does not, therefore, focus on private transport, but instead in regulated environments where a public-private, multi-stakeholder approach is mandatory.

Table 2: Bus and collective taxi, Chile, fleet size (SECTRA 2016)

REGION	TRANSANTIAGO		URBAN BUS (rest of the country)		URBAN COLLECTIVE TAXI	
	Fleet	Mean age (years)	Fleet	Mean age (years)	Fleet	Mean age (years)
Región de Arica y Parinacota			286	9	1.994	8
Región de Tarapacá			396	7	273	5
Región de Antofagasta			1.012	9	4.051	6
Región de Atacama			128	13	2.150	5
Región de Coquimbo			685	12	4.537	5
Región de Valparaíso			2.140	6	8.193	5
Región Metropolitana	6.577	7			10.440	5
Región del Libertador Bernardo O'Higgins			425	11	3.196	5
Región del Maule			695	14	2.968	6
Región del Bío Bío			2.544	9	4.698	6
Región de La Araucanía			908	12	2.424	6
Región de Los Ríos			303	11	1.116	6
Región de Los Lagos			889	11	3.620	6
Región de Aysén			16	12	432	5
Región de Magallanes			61	6	1.312	7
Total	**6.577**	**7**	**10.488**	**9**	**51.404**	**6**

14. The MTT enforces a policy of keeping every efficiency gain for the future. This policy is translated to the technical, detailed level in the three main instruments in consideration (see below), so it constitutes a major opportunity for the project to enact sustainable emissions reductions.

15. A key feature of the markets that the project seeks to address are public bidding processes for the concession/renovation of concession of regulated services. Terms of Reference and Technical Specifications for these concessions and the immediately-subsequent arrangements for the securing of assets provide the opportunity for the intended changes. Crucially, these bidding processes, which regularly renew Transantiago's PPPs, are planned to substitute more than 3100 buses (48% of total fleet, see Table 3) during the period 2017-2022. The contracts establish a fixed per-kilometre payment ("PPK") and a variable per-passenger one ("PPT"), with the former depending on different variables (established at the contract's onset) that are discretional to the regulator and that can be used, within the logical limits, to incentive efficiency, low emissions or other factors of interest.

Table 3: Transantiago foreseen renewal (DTPM 2016)

	Total (#)	
Year	Buses	Passenger seats
2018	1990	179.100
2019	667	60.030
2020	227	20.430
2021	1492	134.280

2022	201	18.090

16. Another key feature from this project's point of view are the support programmes for fleet renewal that mirror ("*fondos espejo*") the subsidy provided to Transantiago to compensate what would otherwise be a subsidy from the rest of the country to Santiago's public transport. These have a demonstrated capacity to boost market innovation trends, even to limited levels (see below). Both programmes ("*Renueva Tu Micro*", RTM, see Table 4, for bus; "*Renueva Tu Colectivo*", RTC, see Table 5, for collective taxi) are national (out of Santiago metropolitan area for bus, and not-limited for collective taxi) incentive programmes that support the renewal of fleets through demand subsidies applied to the asset purchase.

Table 4: RTM programme historic data (SECTRA 2016)

REGION	2011		2012		2013		2014		2015		2016	
	Renewed units (#)	Amount (USD)	Renewed units (#)	Amount (USD)	Renewed units (#)	Amount (USD)	Renewed units (#)	Amount (USD)	Renewed units (#)	Amount (USD)	Units (#) by 31 July 2016	Amount (USD)
Región de Arica y Parinacota	43	312.029	23	144.735	15	119.779	20	173.838	4	45.794	-	-
Región de Tarapacá	30	359.029	10	118.441	11	203.721	5	103.500	18	396.265	12	245.721
Región de Antofagasta	49	490.897	49	628.426	49	684.647	32	426.618	20	301.838	18	280.750
Región de Atacama	13	144.235	10	63.368	13	99.368	10	59.015	4	18.544	1	5.735
Región de Coquimbo	63	396.897	67	464.118	46	355.750	41	388.897	24	257.182	17	207.926
Región de Valparaíso	-	-	71	691.412	75	637.309	5	93.735	-	-	-	-
Región Metropolitana	4	21.838	16	107.485	20	136.559	15	179.632	-	-	-	-
Región del Libertador Bernardo O'Higgins	61	822.632	77	723.941	51	520.088	41	445.279	37	533.971	-	-
Región del Maule	77	448.103	148	1.174.529	86	846.368	60	574.147	63	679.471	24	285.676
Región del Bío Bío	133	897.044	184	2.234.618	222	3.010.426	82	1.079.088	20	337.412	-	-
Región de La Araucanía	-	-	155	1.169.721	85	1.114.221	48	489.221	78	1.201.118	-	-
Región de Los Ríos	88	620.676	87	790.500	41	404.029	62	778.132	35	613.824	-	-
Región de Los Lagos	86	837.632	105	958.382	144	1.719.882	40	438.471	63	740.559	41	562.412
Región de Aysén	-	-	4	48.882	3	24.441	2	17.382	4	46.882	2	21.824
Región de Magallanes	-	-	6	60.544	-	-	4	74.632	-	-	-	-
Total	**647**	**5.351.015**	**1.012**	**9.379.103**	**861**	**9.876.588**	**468**	**5.321.588**	**370**	**5.172.838**	**115**	**1.610.044**

Table 5: RTC programme historic data and forecast (SECTRA 2016)

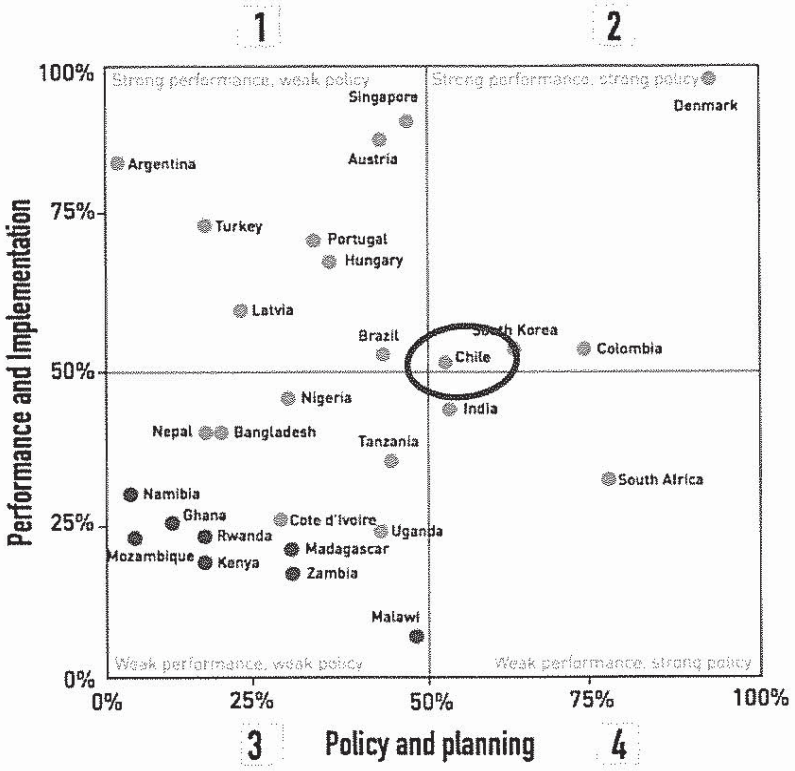
REGION	2015			2016			2017	2018
	Potential beneficiaries (#)	Renewed units (#)	Amount (USD)	Potential beneficiaries (#)	Units (#) by 31 July 2016	Amount (USD)	Potential beneficiaries (#)	Potential beneficiaries (#)
Región de Arica y Parinacota	209	15	77.353	192		-	170	139
Región de Tarapacá	21	4	16.324	23	10	48.529	24	26
Región de Antofagasta	326	127	371.176	326		-	326	306
Región de Atacama	171	87	263.088	177	226	672.794	184	177
Región de Coquimbo	381	169	521.765	384		-	391	378
Región de Valparaíso	744		-	750		-	752	715
Región Metropolitana	1.021		-	1.055		-	1.088	1.038
Región del Libertador Bernardo O'Higgins	324	195	606.471	338	483	1.432.353	348	333
Región del Maule	275	131	419.118	272	191	607.794	265	254
Región del Bío Bío	386		-	386		-	381	360
Región de La Araucanía	177		-	180		-	180	173
Región de Los Ríos	96		-	94	171	553.676	91	85
Región de Los Lagos	291	150	452.353	291		-	287	271
Región de Aysén	33	10	32.206	34	15	52.059	36	34
Región de Magallanes	115		-	119	65	199.853	115	100
Total	**4.570**	**888**	**2.759.853**	**4.623**	**1.161**	**3.567.059**	**4.638**	**4.389**

17. The issue of non-motorised, personal urban transportation is an urban-fabric issue in which the participating Ministries intervene with limited and sometimes overlapping degree of regulatory capacity along with private actors, subnational governments (in the Chilean case, regional and municipal governments) and other agents and forces. In Chile, efforts to improve cycling infrastructure and non-motorised and integrated mobility are well below in its development with respect to conventional public transport solutions. The baseline in this case is provided by the National Urban Development Policy (2014), which includes no environmental principle among its 12 guiding principles.

18. Under the heading of integrated urban planning measures, the project advances the other measures that have shown, according to studies including those recently conducted by CAF in the region at different readiness levels, to contribute to a shift in the mobility paradigm towards the advancement of integrated sustainable mobility. Thus, incremental support is provided to the replication out of Santiago of public bicycle systems that are already successful in the metropolis. A pilot pedestrianisation intervention would also be supported so its costs and benefits are fully systematised, and therefore provide knowledge for the involved stakeholders and policy-makers. And finally, a third intervention would support a pilot exercise on metro-bus-bicyle intermodality towards metro-bicycle and interurban-bicycle interchangeability and payment-systems integration.

19. Cycling infrastructure is the factor that most improves cyclers' safety according to studies, including those recently conducted by CAF in the region, which shows to be the main factor influencing bicycle usage. the design-funding cycle of high-standard cycling infrastructure is, during the next years, the critical step needed for cycling infrastructure to gain critical mass, and therefore upkeep the subsided demand for non-combustion personal transportation existing in the Chilean society, specially from women (SECTRA 2013). Comprehensive cycling infrastructure plans have only been developed at a demonstrative level (Quillota, 80990 inhab. - INE2004). The experience with that pilot showed that planning is far easier than coherent, integrated implementation. That notwithstanding, it also showed that the space for interinstitutional technical dialogue can be convened and used for effective work, as shown by Chile's standing in a recent UN Environment report (see Graphic 2). A methodology for the design and *ex-ante* evaluation (travel-time savings) of cycling infrastructure is available, and 900 km of cycling infrastructure have been prioritised at the feasibility level (some designs exist, but not to the required standard). Even in these conditions, budget allocations have been made for only 190 km of this infrastructure due to budgetary and procedural constrains. With respect to the availability of inexpensive, pay-as-you-go access to bicycles, two public bicycle systems exist in the Metropolitan region that would benefit from support measures designed to capitalise them in a way that improves capacity and interoperability. Also, these examples would be useful for replication-oriented systematisation and dissemination in the lines of recent studies (CAF 2015, CAF 2016).

Graphic 2: Policy and implementation, non-motorised transport (UN Environment 2016)



Key

Respondents were asked "does your city have a formal public transport implementation programme?"

● - % YES ● - % NO

3) the proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project

20. The project idea is fully consistent with the Climate Change Focal Area Objective 2 (CCM-2: Demonstrate Systemic Impacts of Mitigation Options), Programme 3: Promote integrated low-emission urban systems. The project tackles both Programme 3's Expected Outcomes:

- Outcome B. Policy, planning and regulatory frameworks foster accelerated low GHG development and emissions mitigation

  Indicator 5. Degree of support for low GHG development in the policy, planning and regulatory framework
- Outcome C. Financial mechanisms to support GHG reductions are demonstrated and operationalized

  Indicator 6. Degree of strength of financial and market mechanisms for low GHG development

21. The Ministries of Environment (MMA), Transport and Telecommunications (MTT) and Housing and Urbanism (MINVU) join forces around the idea of a Chilean Low Emissions Transport Strategy (CLETS) that provides a systemic boost to integrated zero- or low-emission urban public (IZLEUP) mobility systems in Chile. IZLEUP mobility refers to a vision of urban mobility as a common good that provides citizens with publicly-supported freedom of movement through different modes of transport, with the minimum environmental impact and under socially- and gender-sensitive logics. It is the addition of the regulatory capacities of MTT, MMA and MINVU

that provides the project partnership with the full policy, regulatory and technical capabilities needed. Within this arrangement, it is possible to undertake innovative, coordinated public interventions in regulated markets with the support of international climatic funding. In that framework, GEF co-financing is to be used to provide support to the development of policy dialogue (interinstitutional coordination and technical/regulatory streamlining) and innovation (knowledge management and capacity development) frameworks, as well as to the delivery of demonstrative actions, in critical issues for the Chilean Low-Emission Urban Transport Strategy (CLETS).

22. The project's General Objective is to support Chile in a transformational shift towards low-emission urban mobility systems.

23. The project's Specific Objective is to demonstrate systemic impacts of integrated low- emission urban mobility systems (CCM-2 P3).

24. Component 1.- Promotion of policy, planning and regulatory frameworks that foster accelerated adoption of integrated low-emissions mobility systems through Participation, Knowledge Management and Capacity Development in the framework of a Chilean Low Emissions Transport Strategy (CLETS) (Outcome B). Component 1 addresses identified Barriers 1 to 4, which are systemic (regulatory, institutional and other non-financial) barriers to the development of IZLEUP mobility.

25. Outcome 1.1.- Increased available information for planning, designing and implementing innovative sustainable urban mobility systems at national and subnational levels. In response to Barrier 1.

26. Output 1.1.1. Information campaigns. Under the guidance of MMA, MTT and MINVU, a participative diagnosis is carried out to identify information and knowledge gaps, and targeted information campaigns are carried out.

27. Output 1.1.2. Training. Based on the same previous framework, targeted training activities are carried out to fill critical, identified gaps.

28. Output 1.1.3. MRV system. The MMA leads the development of a high-standard Monitoring, Reporting and Verification (MRV) system for the project and beyond, taking into account the previous, valuable experience stemming from the NAMA proposing a preliminary implementation plan for the Transport Green Zone in Santiago (STGZ) through CAF coordination (see below), including the identification of multiple benefits and their incorporation into relevant national evaluation frameworks (for example, improving the Ministry of Social Development's evaluation of cycling infrastructure).

29. Outcome 1.2.- An enhanced policy, technical and regulatory environment to promote sustainable urban mobility. In response to Barrier 2. GEF investment in this area benefits from the co-financing project "Technological consortium for defining and implementing a strategy for the viability of electric mobility in Transantiago", awarded in 2016 by the national economic promotion entity CORFO to the MTT, the Mario Molina Centre and the companies METRO and Chilectra with the external technical assistance of Finland's VTT.

30. Output 1.2.1. Support to the formalisation of the Chilean Low Emissions Transport Strategy. With the participation of MMA, MTT, MINVU and other relevant stakeholders, the CLETS is participatorily formalised.

31. Output 1.2.2. Experience exchange and dissemination, national level. Experience exchange and dissemination activities are planned and carried out by MMA, MTT, MINVU, regional and municipal authorities and other relevant stakeholders.

32. Outcome 1.3.- Increased capacity for sustainable-transport innovation at national and subnational level. In response to Barrier 3.

33. Output 1.3.1. Support to the generalisation of multimodal methods of payment. The MTT's UCI leads the identification and development of measures that widen Transantiago's BIP payment card to other modes and other urban areas.

34. Output 1.3.2. Energy certification of vehicles. Lead by MTT's 3CV, activity is carried out to produce technical base for an across-technologies energetic certification of vehicles.

35. Output 1.3.3. Collective-taxi information crowdsourcing. UCI leads the collaborative development of a crowdsourcing application for collective-taxi information.

36. Output 1.3.4. Open Data strategy. UCI formalises and boosts its open data strategy. The proposed measures include calls for proposals, open data regulation, an online calorimeter and others.

37. Outcome 1.4.- Best practices shared nationally and internationally. In response to Barrier 4.

38. Output 1.4.1. Dissemination (national level), public bicycle system. MMA and MTT promote the dissemination of good practices in public bicycle systems.

39. Output 1.4.2. Identification, systematisation and promotion of best practices. Throughout the project, MMA, MTT and MINVU jointly identify good practices and contribute to its systematisation and dissemination.

40. Component 2.- Demonstrative and Catalytic Actions that validate and operationalise financial mechanisms to support integrated low-emissions mobility systems (Outcome C). Component 2 addresses non-financial and financial Barriers (5 and 6) to the development of adequate financial mechanisms for integrated mobility.

41. Outcome 2.1.- Technically assisted investments in sustainable urban mobility measures in representative, upscale-supportive urban areas. In response to Barrier 5.

42. Outoput 2.1.1. ZLE Transantiago. DTPM is technically assisted in the design and rolling out of bidding processes and contracts so as to ensure that it allows for ZLE technologies to be introduced. This includes supporting the development of enabling conditions for new funding and upscaling projects in Concepción, Coyhaique and Tocopilla.

43. Output 2.1.2. ZLE Bus in other cities. DTPR is technically assisted in the design and rolling out of bidding processes and contracts so as to ensure that it allows for ZLE technologies to be introduced. This includes supporting the development of enabling conditions for new funding and upscaling projects.

44. Output 2.1.3. Collective taxi in Valparaíso. MTT Regulation is technically assisted in the design and rolling out of regulations and licensing schemes that allows for ZLE technologies to be introduced. This includes supporting the development of enabling conditions for new funding and upscaling projects in Valparaíso.

45. Outcome 2.2.- Technically assisted investments in integrated urban planning measures in representative, upscale-supportive urban areas. In response to Barrier 6.

46. Output 2.2.1. Pedestrianisation pilot. MINVU and MTT develop pedestrianisation standards on the basis of a pilot project in Santiago.

47. Output 2.2.2. Intermodality pilot. MTT develops a pilot intervention on intermodality.

48. Output 2.2.3. Cycling infrastructure. MTT and MINVU support and promote cycling infrastructure at the national level, including the raising of new international funding.

49. Output 2.2.4. Public bicycle systems. MMA and MTT support the replication and scaling-up of public bicycle systems, including the raising of new international funding and a pilot project in La Serena.

50. Component 3.- Monitoring and Evaluation.

51. Outcome 3.1.- Adequate monitoring of all project indicators to ensure successful project implementation and evaluation.

52. Output 3.1.1.- Periodic reviews and independent terminal evaluation conducted.

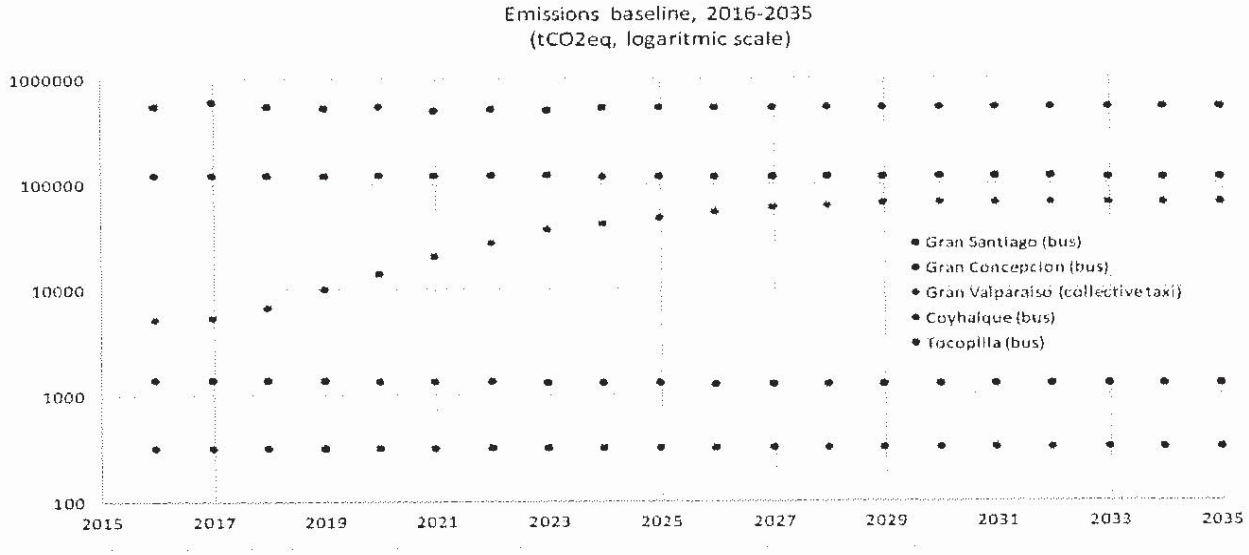
53. UNFCCC's Decision 1/CP.21 Adoption of the Paris Agreement (para. 64) "[u]rges the institutions serving the Agreement to enhance the coordination and delivery of resources to support country-driven strategies through simplified and efficient application and approval procedures, ...". In fulfilment of that mandate, the project idea is designed to remove barriers and provide foundations for IZLEUP investment and capacities to be deployed in the Chilean public transport sector. Therefore, the project provides a framework and enabling environment for technically assisted investments in IZLEUP mobility measures in representative, upscale-supportive urban areas.

54. Such investments could be foreseen to come from different sources, among them national budget, private investment and the Green Climate Fund (GCF). As part of the works for the preparation of this project idea, a scoping exercise has been realised to provide estimated scope and dimensions for international funding along these lines.

4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF and co-financing

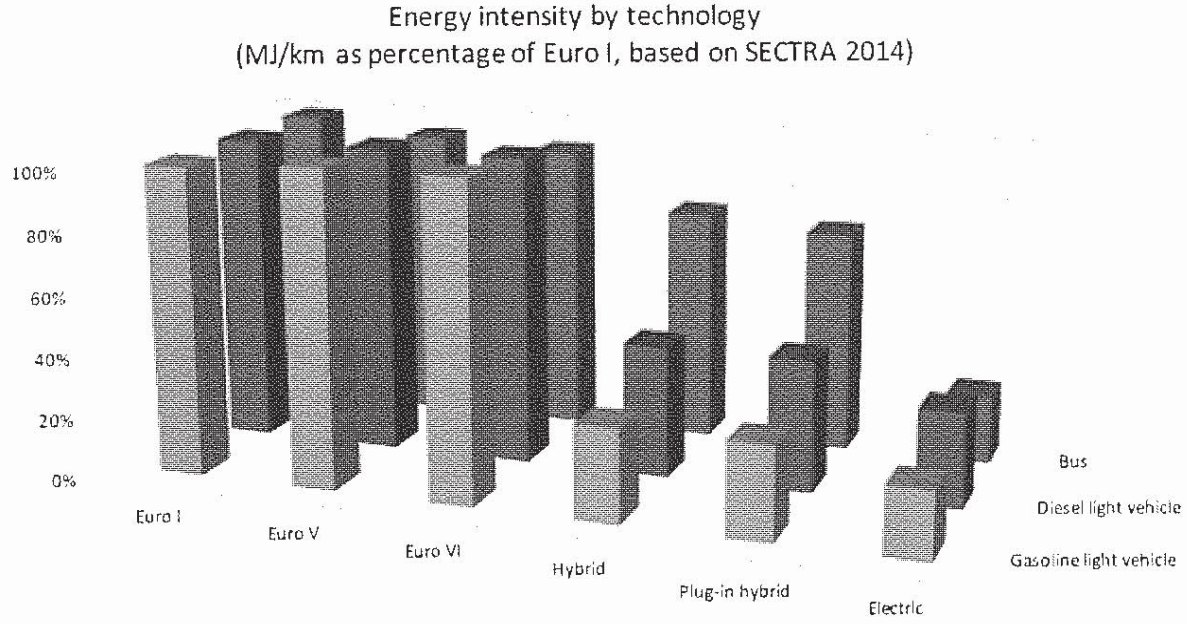
55. As previously mentioned, public urban mobility accounts for some 5.4 million tCO_2eq. Urban public transport systems to be directly tackled by the project (those of Santiago, Concepción, Valparaíso, Coyhaique and Tocopilla) account for 648130 tCO_2eq by 2016. In the BAU scenario, total emissions from these public transport systems are expected to diminish very slightly in the case of bus sytems, and to keep growing, although at a diminishing rate, in the case of collective taxi (see Graphic 3).

Graphic 3: Emissions baseline



56. The project aims at changing the public-transport market in Chile by accelerating the adoption of IZLEUP mobility in Chile, while supporting a resolute policy commitment towards low-carbon sustainable development in the public-transport sector. This is to be done by diminishing non-financial barriers (see above) and raising the incentives for all manner of cleaner technologies, proportionally to their cleanness. In modelling terms, this is done by assigning the cost of Euro V technology (current) to baseline, while considering the cost of cleaner technologies incremental. For bidding and licensing processes to take place during the project (see above), the MTT is willing to introduce the required regulatory changes with incremental technical assistance.

Graphic 4: Technologies



57. A preliminary financial (see Table 6) and emissions (see Table 7) model has been developed, based on detailed financial rationale for bus and taxi. Assumptions have been made of the adoption of technologies in the systems to be intervened by the project, and model sensitivity analysis carried out for different variables, including incremental funding above this project idea (although central assumptions do not include any such funding). In general, more unfavourable conditions are considered in the central analysis. The complete model includes the period 2015-2034, throughout which equipment (buses and collective taxis for calculation herein) incorporated to service during the foreseen project period (2018-2022 as a modelling assumption) will be in operation. During project formulation, it will be taken care of that the project document includes clear requirements for such contributions to be mobilized during project implementation through concession contracts (Transantiago) and renovation support programmes linked to licensing (bus in other cities and collective taxi) signed/issued during project period. In the case of cycling infrastructure, the project rationale relays on the accelerated provision of it to accelerate the adoption of non-motorised transport, for which subsided demand exists, specially from women (SECTRA 2013).

Table 6: Funding flows 2015-2034
(USD 2016)

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Baseline	Private	14185882	21135000	21165000	26551500	35970555	19442925	45152295	18135480	42123000	16815000	25422000	10716000	14905500	63070500	10545000	10545000	0	0	0	0
	Public	25790406	23419382	19495114	18726202	8407095	42257871	11950020	23288232	9788420	9788420	15317054	9788420	9788420	9788420	9788420	9788420	4615450	4615450	4615450	4615450
Co-funding	Private	0	0	0	893475	3710700	1162800	4950450	863550	0	0	0	0	0	0	0	0	0	0	0	0
	Public	0	0	0	0	1132628	1566795	1802500	1442500	1522500	1242500	1242500	1242500	1242500	1242500	1242500	1242500	1242500	1242500	1566795	1132628
GEF funding		0	0	163500	621300	1087275	621300	465975	310650	0	0	0	0	0	0	0	0	0	0	0	0

Table 7: Emissions reduction 2015-2034
(tCO_2eq)

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Co-funding		0	0	0	321	1655	2073	3853	4164	5866	6205	7007	7016	7251	10084	10084	10084	10084	10084	10084	10084
GEF funding	Direct	0	0	0	51	4450	8889	12443	12732	13146	13121	13121	13104	13087	13079	13079	13078	13078	13078	13078	13078
	Indirect	0	0	0	0	0	0	0	0	3214	7024	12475	17311	22027	33450	40015	46939	52120	55432	57727	60510

5) global environmental benefits (GEFTF)

58. The model provides the following estimations of global environmental benefits to be obtained (see Table 8): a) Total emission reductions of 756519 tCO_2eq are achieved b) through GEF contribution of 3.27 million USD and co-financing of 37.58 million USD; c) this results in 4.5 USD/tCO_2eq (GEF funding/project total emissions reduction).

Table 8: Project idea's Global Environment Benefits

	Co-financing		GEF	Project Total
	Public	Private		
Investment (USD million)	26.00	11.58	3.27	40.85
Emissions reduction (tCO_2eq)		115 998	603 939	719 936
Cost-efficiency (USD/tCO_2eq)		324	5	

6) innovation, sustainability and potential for scaling up

59. Innovation: The project is one of its kind in Latin America, building upon the region's experience in transport reform. Since Santiago urban transport system (Transantiago) has been developed in constant conversation with other major urban transport systems in the region (Bogotá, México DF, Curitiba), these systems have already overcome the barriers for mutual learning and knowledge exchange. Dedicated budget is planned in the GEF project for thorough monitoring and evaluation, MRV system and knowledge management activities including systematisation and dissemination. The project uses its own size and expected impact to provide an enabling environment for market uptake, scaling-up and replication and innovation; it does so through the already-mentioned focus on monitoring and systematisation; through the removal of fossil-fuel lock-ins and policy-open dialogues and interinstitutional coordination; through the adoption and promotion of platforms for innovation; and through its continuous provision of monitored and systematized experiences. All activities in the project are designed to provide catalytic effects far beyond its direct impact. Bus fleets in Santiago and major Chilean cities are expected to shift to ZLE at accelerated rates with the project with respect to BAU. Since the project is designed to get the markets in which it acts to critical-mass with respect to electric mobility, it has not been possible to estimate conversion-rate enhancements without further, detailed modelling. This should be possible during the design phase.

60. Sustainability of the project is ensured, at a general yet robust level, by the MTT's policy of keeping every efficiency gain for the future. This policy is translated to the technical, detailed level in the three main instruments in consideration by the project (Transantiago contracts, RTM and RTC programmes), so all fleet-level efficiency gains achieved by the project are to remain in the future. In the case of cycling infrastructure, the existence of subsided demand (in the comparison of detailed travel statistics available -2001-2012-, bicycle is the only mode that grows out of private car) and the removal of a critical barrier such as the needed technical planning provides grounds for project results in this field to be estimated as sufficient for the acquisition of critical mass in the local environments where it takes place (Santiago, La Serena). Of those polled (CEHU 2015), 18% of non-cyclists cite safety and lack of infrastructure as their motive for not using the bicyle, while 71% of male cyclists and 78% of female cyclists cite safety as their main criterion for itinerary selection. Similarly, all

project outcomes with respect to policy, regulation and technical enhancement are supported by the existence of the CLETS and should keep as minimum standard for further rounds of policy-making.

61. Potential for scaling-up: at the national level, the project tackles urban mobility in cities all along the size scale for Chile as defined by MINVU (preliminary list to be confirmed during the design phase):

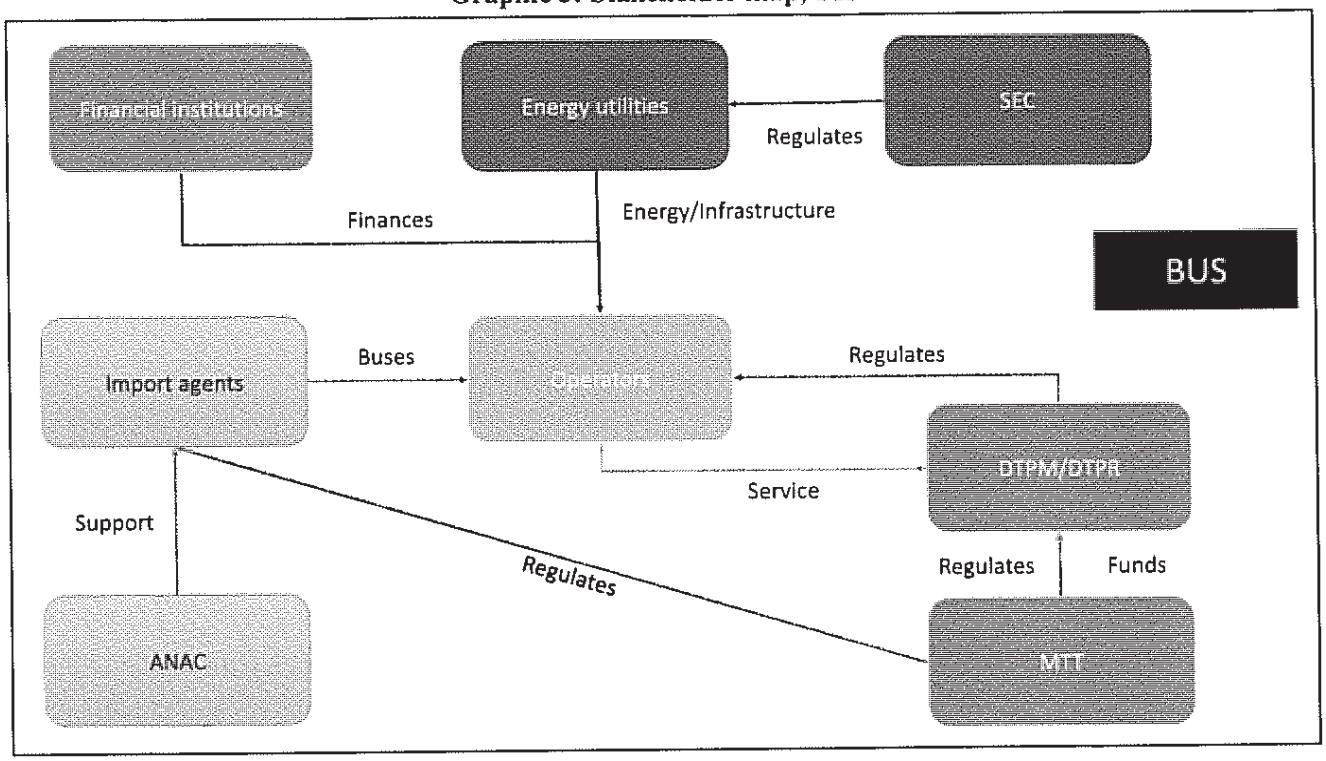
- the metropolis Santiago (6+ million inhab.),
- the big urban areas (GAU, see B.3) of Gran Valparaiso (830 thousand inhab.) and Gran Concepción (900 thousand inhab.),
- the major city (CM, see B.3) of La Serena-Coquimbo (300 thousand inhab.) and
- the minor cities Coyhaique (64 thousand inhab.) and Tocopilla (20 thousand inhab.).

At the international level, Santiago is in the list of 10-biggest cities in Latin America alongside others adding some 70 million inhabitants, so full replication in like-driven environments potentially reaches several times its initial size. The city has very high rates of public-transport and cycling-infrastructure usage among its vulnerable population.

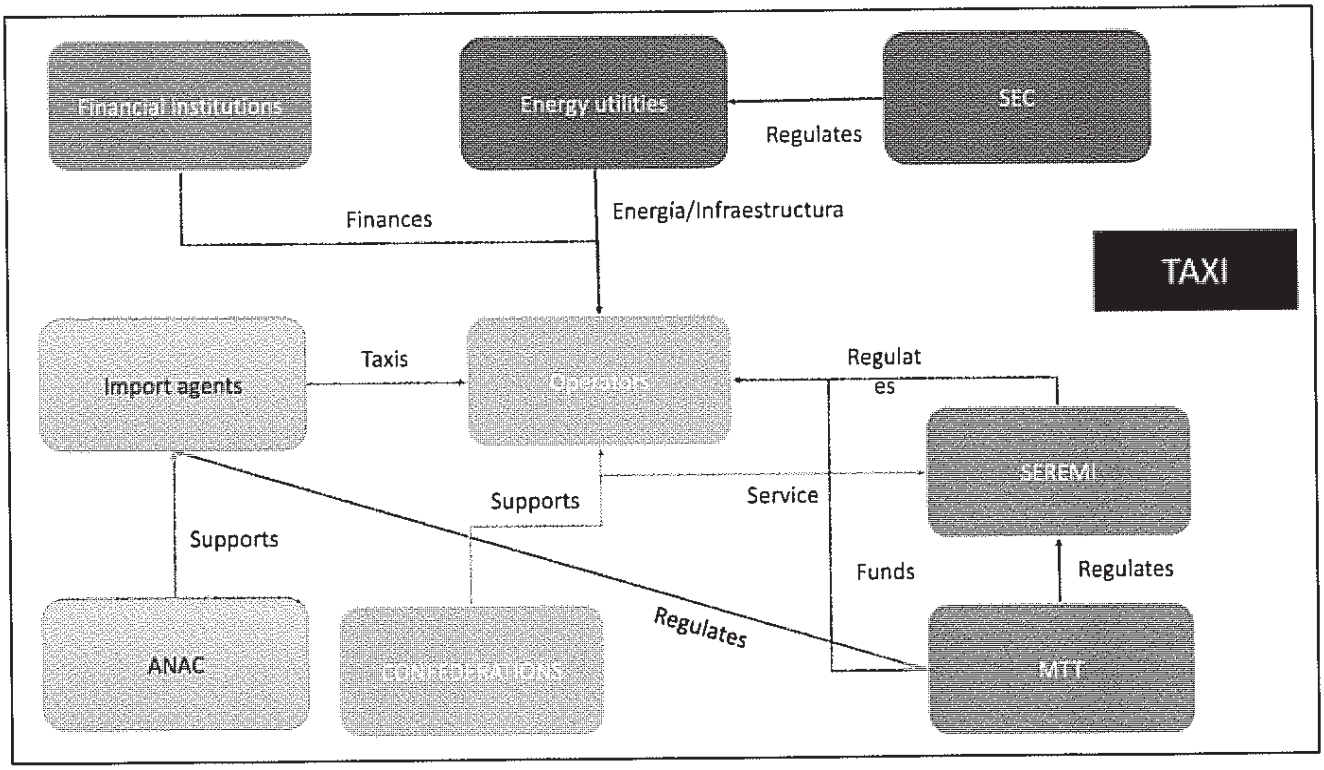
2. *Stakeholders.* Will project design include the participation of relevant stakeholders from civil society organizations (yes ☑ /no☐) and indigenous peoples (yes ☐ /no☑)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

62. MTT is the national authority in charge of transport. MMA is the regulating body for atmospheric pollution and issues Atmospheric Prevention and Decontamination Plans (PPDA, 2016) for Santiago and other cities. Finally, MINVU is in charge of the regulatory framework for urban planning and urbanism, later applied by Municipalities, including technical standards for urban infrastructure. Preliminary key-stakeholder maps have been drafted for the main fields of intervention (see Graphic 5 for bus and Graphic 6 for collective taxi).

Graphic 5: Stakeholder map, bus



Graphic 6: Stakeholder map, collective taxi



63. An interinstitutional agreement is in place between the MTT, MMA and the Municipality of Santiago in support of the STGZ NAMA, in place for 2 years from 10 April 2015.

64. Stakeholder-involvement work is already ongoing through the co-financing project "Technological consortium for defining and implementing a strategy for the viability of electric mobility in Transantiago", awarded in 2016 by the national economic promotion entity CORFO to the MTT, the Mario Molina Centre and the companies METRO and Chilectra with the external technical assistance of Finland's VTT. The project focuses on establishing a dialogue platform among Transantiago operators, technologic and energy suppliers and public authorities in charge of Transantiago.

65. A summary of project stakeholders, their role and competencies, and their intended responsibilities in the project lays out as follows:

Institution	Role	Responsibilities in the project
Ministry of Transport and Telecommunications (MTT) through the National Coordination of Planning and Development	National Transport Authority	Project and co-funding coordination
MTT's Directory of Metropolitan Public Transport (DTPM)	The Directory regulates Transantiago, the public-transport system for Santiago metropolitan area	Executing Agency, bus
MTT's Division of Regional Public Transport (DTPR)	The Division manages the RTM and RTC programmes, key to the project's intervention strategy out of Transantiago	Executing Agency, collective taxi
MTT's Regulation Division	The Division establishes legal, technical and methodological standards for public transport	Executing Agency
MTT's Smart Cities Unit (UCI)	The Unit promotes the adoption of innovative mobility solutions in urban public transport	Executing Agency, innovation
MTT's Centre for Vehicle Control and Certification (3CV)	The Centre provides evaluation, control and certification services for several technological issues in vehicles (model standardisation, safety, emissions and others)	Executing Agency, innovation
Ministry of Environment (MMA) through the Clean Technologies Department	National Environment Authority	Project and co-funding coordination. Monitoring, reporting, verification and evaluation
Ministry of Housing and Urbanism, MINVU through the Urban Development Division	National Urban Planning Authority	Project and co-funding coordination. Integrated planning
Market participants	Operators, importers, commercial financial institutions, electricity utilities	Rational agency

Institution	Role	Responsibilities in the project
Interest-based groupings	Taxi-owner and bycicle-user associations, unions	Provide channels for efficient interaction with the corresponding groups
Users	Beneficiaries	Provide feddback and social monitoring
CAF	GEF Implementing Agency	Provides technical and financial assistance on sustainable transport strategies LAC-wide. Assures work methodologies are up to international standards. Supports project implementation and monitoring

66. A relevant number of experts (34 by 11 November 2016, see Table 6) have contributed to the drafting of this project idea, allowing for it to receive insights from all stakeholders albeit in an indirect, mediated way. Nonetheless, it is acknowledged that thorough participation of multiple stakeholders is required during the design stage of the project. The project should run through multi-level participative consultations during the design phase and a multi-stakeholder engagement plan should be designed and implemented.

Table 6: experts who have contributed to this document (by 11 November 2016)

	Name	Institution	Function
PROPONENT AND ACCREDITED ENTITY			
1	Cristian Bowen Garfias	Ministry of Transport, MTT	Undersecretary of Transport
2	Carlos Urriola Cuevas	Ministry of Transport, MTT	National Coordinator, Planning and Development, SECTRA
3	Javier Ignacio Boncompte Guarda	Ministry of Transport, MTT	Advisor, Undersecretary of Transport
4	Carlos Melo Riquelme	Ministry of Transport, MTT	Head, Strategy and Planning, DTPM
5	Celia Iturra Molina	Ministry of Transport, MTT	Strategy and Planning, DTPM
6	Roberto Santana Muñoz	Ministry of Transport, MTT	Division Head, Regulation
7	Cristian López Ugalde	Ministry of Transport, MTT	Division Head, DTPR
8	Héctor Fuentealba Gonzalez	Ministry of Transport, MTT	DTPR
9	Raúl Fernández	Ministry of Transport, MTT	DTPR
10	Pedro Vidal Matamala	Ministry of Transport, MTT	Coordinator, Smart Cities Unit
11	Lucie Billaud	Ministry of Transport, MTT	Smart Cities Unit
12	Victor Cruz Torres	Ministry of Transport, MTT	Smart Cities Unit
13	Gisèle Labarthe Bordagorry	Ministry of Transport, MTT	SECTRA, Transport
14	Rodrigo Henriquez Izquierdo	Ministry of Transport, MTT	SECTRA, Mobility
15	Rubén Triviño Escobar	Ministry of Transport, MTT	SECTRA, Methodology and Data
16	Nicolás Borchers Arriagada	Independent consultant	Project Consultant
17	Sebastián Tolvett	Independent consultant	Independent consultant in transport
18	Miguel Segur Pelayo	Independent consultant	Main Project Consultant
PROJECT PARTNERS			
19	Marcelo Mena Carrasco	Ministry of Environment, MMA	Undersecretary of Environment
20	Andrés Pica Tellez	Ministry of Environment, MMA	Head, Clean Technologies Department
21	Diego Pérez Avendaño	Ministry of Environment, MMA	Clean Technologies Department
22	Rodrigo Dittborn	Ministry of Environment, MMA	Clean Technologies Department

	Name	Institution	Function
23	Miguel Ernesto Stutzin Schottlander	Ministry of Environment, MMA	GEF Operative Focal Point
24	Fernando Farías Ellies	Ministry of Environment, MMA	Head, Climate Change Department
25	Manuel González Jiménez	Ministry of Housing and Urbanism, MINVU	Urban Development Division
26	Iván Lopez Castro	Ministry of Housing and Urbanism, MINVU	Urban Development Division
27	Pablo Contrucci	Ministry of Housing and Urbanism, MINVU	Head, Urban Development Division
OTHER STAKEHOLDERS			
28	Donatella Fuccaro Tellechea	Municipality of Santiago	Head, Environment Direction
29	Miguel Olivares	Municipality of Santiago	Environment Direction
30	Pilar Henriquez	Sistemas Sustentables (NAMA STGZ Consulting)	Manager, Environment
31	Sebastián Herrera Cruz	Sistemas Sustentables (NAMA STGZ Consulting)	Managing Partner
32	David Carrasco Manríquez	Sistemas Sustentables (NAMA STGZ Consulting)	Managing Partner
33	Tamara Berríos Montoya	BYD Chile	Business Development Director
34	José Antonio Margalet Inglés	Volvo Buses Chile	Bus Division Manager

3. Gender Equality and Women's Empowerment. Are issues on gender equality and women's empowerment taken into account? (yes ☑ /no☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

67. Women suffer disproportionately from low-quality transport. Commuting time and quality have impact on constrained daily schedules, which are prevalent among working women that still need to also take a majority share in home- and child-care. Therefore, women are to benefit disproportionately from measures that imply breakthrough enhancements in public transport and mobility quality.

68. This project identification process benefits from an analysis of disaggregated data that may be unique for transport projects. It has been carried out for four representative cities that span most of Chile's city-size range (from half-million-daily-travel Valdivia to 18-million Santiago). This analysis shows that:

- The lower a woman's income, the bigger the possibility of that woman traveling by foot or public transport.
    - In Santiago, for income quintiles 1 and 2 (being 1 the lowest), roughly double of women walk than men.
- The addition of public-transport and pedestrian travel by women of lower income is comparable in size to all travel in private vehicle.
    - In La Serena-Coquimbo, more women walk than men travel in private car, being these two the bigger subtotals of all disaggregated modes.
- Since women assign more importance to physical risk than men, women's usage of bicycle and bicycle infrastructure is supressed if bicycle travel is deemed insecure. Use of bicycle infrastructure by women surges when infrastructure perceived as secure is provided.
    - Within the four cities for which detailed analysis has been carried out, Santiago, with a comparatively better bicycle infrastructure, has ten percentage points more participation of women in bicycle-infrastructure usage (30%) with respect to the other three, less-developed, cities (mean 18%). If this is measured in the upper quintile, where will instead of necessity

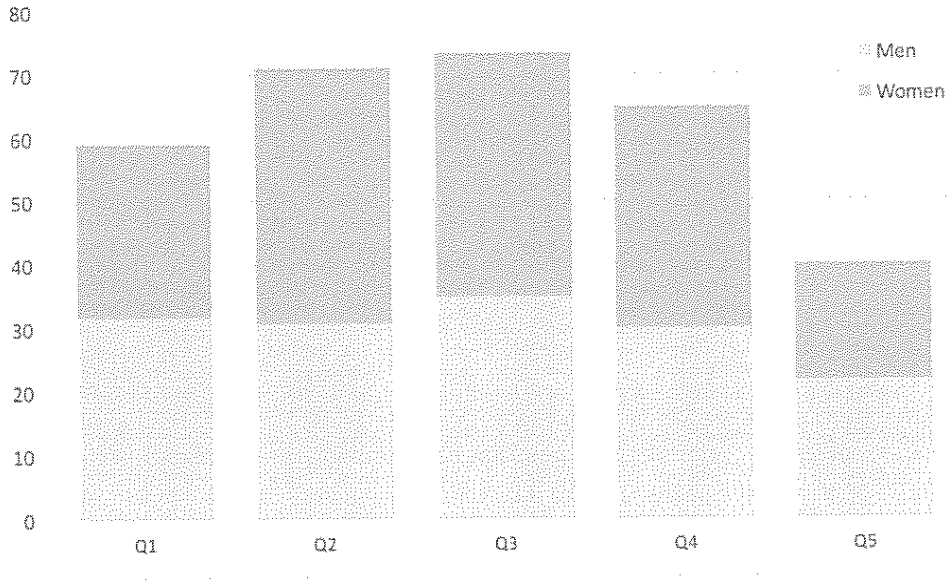
would be better expressed, that difference increases (36% to mean 17% for Gran Valparaíso and La Serena-Coquimbo –Valdivia's numbers are not significant in this regard-).

These disaggregated data should be measured in project's monitoring and MRV system, and used for its evaluation.

69. The project contributes to the development of work categories that are new to the Chilean job market. This presents an opportunity for this job categories to develop in women-inclusive ways, so this aspect is to be taken care of in the preparation of training activities through positive-discrimination measures.

70. The project's socio-economic benefits (travel time, public health and noise reduction) reach directly at least twenty-five thousand people and directly and indirectly avoid 710 premature deaths (see Graphic 7 for the breakdown of direct death-avoidance). Women can benefit particularly from the project in the form of direct employment (they can be positively discriminated in training for the new fleet). Vulnerable population and women also can be expected to benefit in positively-discriminated proportion from the project in travel quality, health benefits and noise reduction.

Graphic 7: Direct health benefits (avoided premature deaths) per income quintile, disaggregated by gender



71. These aspects are to influence project preparation. The monitoring and reporting to be included in the project's MRV system will then include gender-disaggregated measurements of all possible relevant variables as follows:

Quantitatively tracked:

- GHG emission reduction
- Number of beneficiaries (gender-wise)
- Health benefits (gender-wise)
- Noise reduction
- Total, gender-wise number of jobs created

Qualitatively tracked:

- Remotion of fossil-fuel lock-ins in regulation
- Quality of public transport for women

4 Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

72. The following risks have been identified and should be further analysed during project preparation:

Risk	Discussion	Proposed measure
Implementation Risk: at different levels (policy-making process, private participants, finance) information is not actionable due to other barriers not being removed. (Medium)	Coordination between the different measures in this project is key to its success. Knowledge-related actions, financial measures and regulatory and technical measures must phase in in a user-friendly form.	A project detailed-design phase should establish the necessary implementation arrangements and a robust chronogram.
Political Risk: political will is not maintained through administrations. (Low)	Municipal elections are due in October 2016 and October 2020. Presidential elections are due in December 2017 and December 2021. The project should assure adequate policy, technical and user-friendly diffusion in coordination with these dates.	A policy-dialogue plan should be participatorily designed during the design phase.
Commercial Risk: it is not possible to align commercial incentives with the sharing of data and other innovation mechanisms. (Medium)	An important number of experts (34 by 29 September 2016) have contributed to or peer-reviewed the outlining of this scoping draft, allowing for it to receive insights from all stakeholders albeit in an indirect, mediated way.	The project should run through multi-level participative consultations during the design phase. A multi-stakeholder engagement plan should be designed and implemented.
Cultural Risk: situations are not comparable across countries and cities. (Low)	At least at the regional level, the problems this project overcomes are common to major cities' public transport systems. Dedicated capacities and budget are earmarked for monitoring, systematisation, exchange and learning along the project's first five years.	A detailed integrated knowledge management and capacity development plan should be participatorily designed during the design phase.
Uncertainty Risk: actual fossil fuel and renewably-sourced electricity prizes differ substantially from those modelled along the project. (Low)	The project's models have been prepared through a thorough expert review process, submitted to sensitivity analysis and results from it are incorporated, thus rendering	These analyses should be further refined and tested during the design phase. A project feasibility and investment plan should be prepared.

	the model and key variables risk-explicit.	

73. The proposed project is classified under the category of LOW risk. The project has no or minimal negative environmental or social potential negative impact, and it will not be controversial in terms of stakeholder interests. The project will not adversely affect ecosystems or environmental quality, moreover, it has a positive impact by eliminating causes of its degradation.

5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.

74. GEFID 5598 First Biennial Update Report Enabling Activity. The present project idea scales up the Transport Green Zone in Santiago (STGZ) NAMA to national level. The NAMA is reported in Chile's first BUR (2014) and a detailed evaluation report commissioned by CAF is due during 2016.

75. GEFID 9496 Leapfrogging Chilean's Markets to more Efficient Refrigerator and Freezers (MSP, United Nations Environment Programme, in PPG stage by November 2016).

76. GEFID 4176 Encouraging the Establishment and Consolidation of an Energy Service Market in Chile (FSP, Inter-American Development Bank, completed 2010). The project contributed to the creation of an energy efficiency market in Chile by promoting the active participation of engineering firms (EF) and energy services companies (ESCOs) as intermediaries in the development of energy savings and efficiency projects.

77. GEFID 1349 Sustainable Transport and Air Quality for Santiago (FSP, The World Bank, completed 2009). The project helped reduce GHGs from ground transport in Santiago through a promotion of a long-term modal shift to more efficient and less polluting forms of transport. To that end, the project supported the implementation of the 2000-2010 Urban Transport Plan for Santiago, which was consistent with the overall objectives of the GEF operational program on sustainable transport. The project had the following components: (i) Promotion of bicycle use; (ii) Modernizing the bus system; (iii) Assessment of land-use incentives and policies to reduce motorized travel; (iv) Improving Traffic Flows; (v) Strategic environmental assessment; (vi) Travel Harmonization, and (vii) Decontamination Bonds.

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessements under relevant conventions? (yes ☐ /no☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

78. As already mentioned, transport is one of the main components of GHG emissions in Chile. The Chilean Low-Emission Transport Strategy deals with this in a comprehensive manner, advancing all aspects related with IZLEUP mobility nationally through a strategy that contemplates different technologic options (bus, collective taxi and non-motorised modes), different existing urban layouts (from metropolitan, 6-million Santiago to smalltown-ish, 20-thousand Tocopilla) and different institutional settings (as occurring in Santiago and the rest of the country).

79. The Strategy is consistent with the following:

- Chile's INDC (2015), which includes the commitment to reduce its tCO2eq emissions per GDP unit by 30% below their 2007 levels by 2030.
- A presidential commitment (made in June 2014, http://www.gob.cl/2014/06/02/ciclovias/) to increase cycling infrastructure in 100 km. during the present legislature, which is being expanded to 190 km due to the detection of subsided demand.
- The Atmospheric Prevention and Decontamination Plan (PPDA, 2016) for Santiago, which establishes a) the will to gradually internalise emissions in Transantiago's operator renewal process, including the regulatory and technical changes to allow and provide incentives for at least one all-electric business unit within the system; and b) the will to support the accelerated transition of collective taxi fleets to ZLE through regulatory changes.
- The NAMA proposing a preliminary implementation plan for the Transport Green Zone in Santiago (STGZ). The NAMA includes 4 initiatives: 1) Promotion of Zero and Low Emission Vehicles (ZLEV) in (private) taxi fleets, municipality fleet and charging stations; 2) Incorporation of low carbon buses into the public transportation system in Santiago (refers to systems under Santiago Municipality's jurisdiction); 3) Promotion of non-motorised vehicle use, including the implementation of 6 km of new bicycle lanes, a pilot program for a bicycle sharing system, 1 connectivity solution for two existing bicycle lanes and bike signs in two areas within the STGZ; and 4) Traffic re-design and traffic management with new pedestrian and semi-pedestrian streets, exclusive lanes for ZLE buses and bicycle parking.

80. The STGZ NAMA is reported in Chile's first BUR (2014) and a detailed evaluation report commissioned by CAF is due during 2016. The NAMA's reported to-do measures deal with institutional fleets and transit measures in Santiago. These transit measures are to be furthered within an IZLEUP mobility pilot involving pedestrianisation and intermodality (Output 2.2.3, see above). All assumptions on which the current proposal is based are coherent with the NAMA's results (technical parameters, sources of funding, challenges) and no overlapping exists between the two. Measures in the NAMA are to be executed within systems under Santiago Municipality's jurisdiction, while measures in this project are executed under ministries' jurisdictions and have much wider scope (Santiago metropolitan area fully includes 26 municipalities, one of them that of Santiago proper, and public transport in it is of MTT's competency). Both interventions are to be in constant coordination to ensure feedback, no-overlapping and synergies.

81. This proposal is also consistent with the following Sustainable Development Goals:

- Goal 3: Ensure healthy lives and promote well-being for all at all ages
    - By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all
    - Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
- Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation
    - By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies

and industrial processes, with all countries taking action in accordance with their respective capabilities

- Goal 11: Make cities inclusive, safe, resilient and sustainable
    - By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
    - By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- Goal 12: Ensure sustainable consumption and production patterns
    - Promote public procurement practices that are sustainable, in accordance with national policies and priorities
    - Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
    - Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities
- Goal 13: Take urgent action to combat climate change and its impacts
    - Integrate climate change measures into national policies, strategies and planning
    - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

7. Knowledge Management. Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

82. Knowledge management is incorporated to all project activity. Participatorily-designed knowledge-management tools are to be explicitly used for national and international exchanges of good practices and dissemination among relevant stakeholders. Permanent systematisation and results-based guidance is to be provided through a project website and specific activities. The project also includes measures to enhance data access and interoperability in the Chilean public-transport sector, thus overcoming its own generation of knowledge and allowing for innovation to take place beyond the direct incremental knowledge set.

83. At the national level, the project tackles urban mobility in cities all along the size scale for Chile as defined by MINVU (preliminary list to be confirmed during the design phase):

- the metropolis Santiago (6+ million inhab.),

- the big urban areas (GAU, see B.3) of Gran Valparaiso (830 thousand inhab.) and Gran Concepción (900 thousand inhab.),
- the major city (CM, see B.3) of La Serena-Coquimbo (300 thousand inhab.) and
- the minor cities Coyhaique (64 thousand inhab.) and Tocopilla (20 thousand inhab.).

At the international level, Santiago is in the list of 10-biggest cities in Latin America alongside others adding some 70 million inhabitants, so the project is one of its kind in Latin America, building upon the region's experience in transport reform. Since Transantiago has been developed in constant conversation with other major urban transport systems in the region (Bogotá, México DF, Curitiba), these systems have already overcome the barriers for mutual learning and knowledge exchange. Dedicated budget is planned in the GEF project for thorough monitoring and evaluation, MRV system and knowledge management activities including systematisation and dissemination.

84. The project uses its own size and expected impact to provide an enabling environment for market uptake, scaling-up and replication and innovation; it does so through the already-mentioned focus on monitoring and systematisation; through the removal of fossil-fuel lock-ins and policy-open dialogues and interinstitutional coordination; through the adoption and promotion of an open data policy; and through its continuous provision of monitored and systematized experiences.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. Record of Endorsement[9] of GEF Operational Focal Point (s) on Behalf of the Government(s):

(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
MIGUEL STUTZIN S.	GEF OFP	MINISTRY OF ENVIRONMENT, CHILE	JANUARY 20, 2017
MIGUEL STUTZIN S.	GEF OFP	MINISTRY OF ENVIRONMENT, CHILE	APRIL 4, 2017

B. GEF Agency(ies) Certification

This request has been prepared in accordance with GEF policies[10] and procedures and meets the GEF criteria for project identification and preparation under GEF-6.					
Agency Coordinator, Agency name	**Signature**	**Date** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email**
René Gómez-García , CAF – Development Bank of Latin America		06/04/2017	Federico Vignati	+51 710 8530	rgomez@caf.com

C. Additional GEF Project Agency Certification (Applicable Only to newly accredited GEF Project Agencies)

For newly accredited GEF Project Agencies, please download and fill up the required GEF Project Agency Certification of Ceiling Information Template to be attached as an annex to the PIF.

[9] For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

[10] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT

LIST OF ACRONYMS

3CV	MTT's Centre for Vehicle Control and Certification
BAU	Business as usual
CAF	Development Bank of Latin America
CORFO	Chile's national economic promotion entity
CLETS	Chilean Low Emission Transport Strategy
INGEI	National GHG inventory
IZLEUP(M)	Integrated Zero- or Low-Emission Urban Public Mobility
MINVU	Ministry of Housing and Urbanism of Chile
MMA	Ministry of Environment of Chile
MRV	Monitoring, Reporting and Verification
MTT	Ministry of Transport and Telecommunications of Chile
STGZ	Santiago Transit Green Zone
UCI	MTT's Smart Cities Unit
WRI	World Resources Institute
ZLE	Zero or Low Emissions
ZLEV	Zero or Low Emissions Vehicle/s

Annex 1. Certification of Ceiling Information

PIF ANNEX ON GEF FINANCING CEILINGS FOR GEF PROJECT AGENCIES [1]

Date: 22/07/2016

To: The GEF Secretariat
Washington, DC 20433

Subject: ***GEF Project Agency Certification of Ceiling Information***

Per Council requirement for GEF Project Agencies, I am pleased to inform you that

(a) the value of the largest project implemented (or executed) by CAF to date is USD$ 600 million[2]; and

(b) the total value of all projects under implementation by CAF as of the end of FY are approximately USD$ 24,155 million awarded in active sovereign loans under 248 agreements as of December 31st, 2014.[3]

I certify that the GEF financing currently being requested by CAF for the project, Panama: Ecosystem based climate-smart production framework for the Darien Region Panama", in the amount of USD$ 4 million, is lower than the largest project that CAF has implemented (or executed) to date.

I further certify that the total amount of GEF financing currently under implementation by CAF plus the requested GEF financing for the above mentioned project does not exceed 20 percent of the total amount of all projects that CAF had under implementation as of the end of FY 2015.

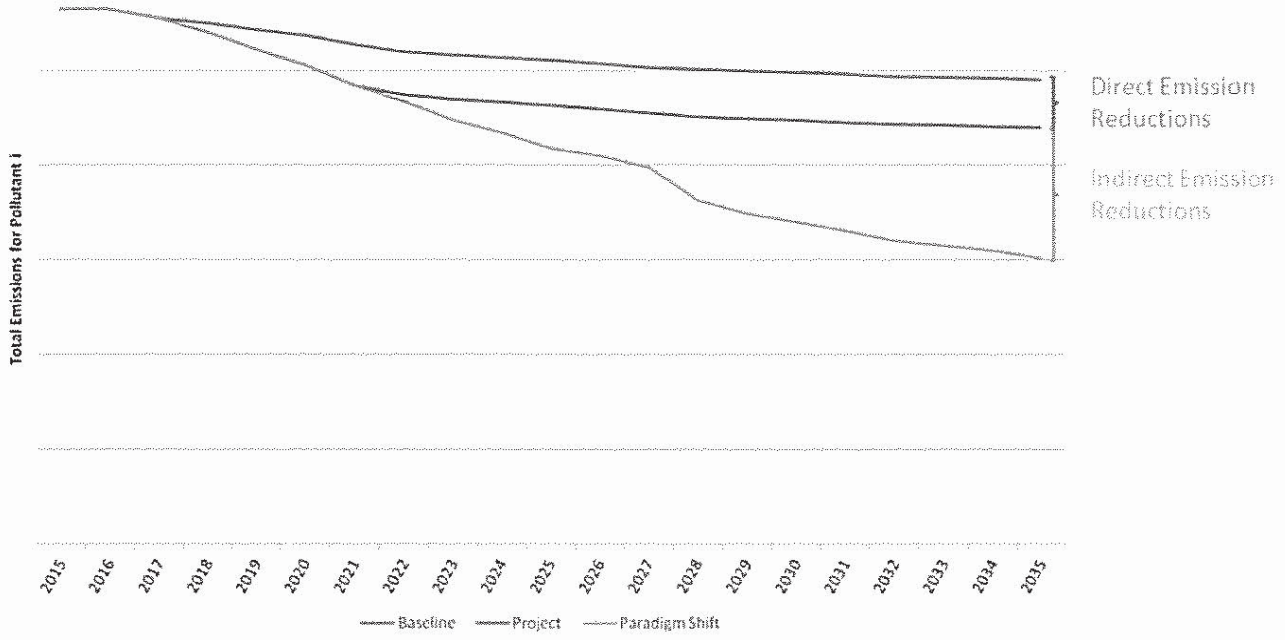
Sincerely,

René Gómez-García
GEF Coordinator
Latin American Development Bank
(Corporación Andina de Formento)

[1] This annex needs to be submitted together with the PIF.
[2] This amount excludes co-financing.
[3] In support of these statements, a copy of (a) the signed loan/grant agreement for the largest project implemented (or executed), and (b) a list of all projects (together with their amounts in US dollars) need to be sent via email, under a separate cover, to the GEF Secretariat at Project_Agency@theGEF.org. These supporting documents will be treated as confidential and will not be shared with any parties external to the Secretariat. The PIF will not be approved in the absence of these supporting documents.

Annex 2. Executive Summary of the Emission Reductions Modelling Methodology

Direct Global (GHG) and local pollutants emission reductions were estimated as the difference between modelled project and baseline scenarios based on actual fleet sizes (official data[11] for 2016 unless otherwise stated) and internationally-recognised factors. Indirect emission reductions were estimated as the difference between conservative or very conservative modelled paradigm-shift and project scenarios.



Emissions for a given transport mode or technology were obtained using the following formula:

$$Emission_{i,j,k,m} = Fleet_{j,k,m} * AL_{j,k,m} * EF_{i,j,k}$$

where

- $Emission_{i,j,k,m}$: Total emissions of pollutant i in transport mode j (e.g. buses) for technology k (e.g. diesel Euro V, petrol euro VI, electric, etc.) for city m.
- $Fleet_{j,k,m}$: Number of vehicles per mode j and technology k for city m.
- $AL_{j,k,m}$: Average activity level (kms/year, trips/year or energy unit/año) for vehicles in mode j, of technology k for city m.
- $EF_{i,j,k}$: Emission factor (g/km-veh, g/trip-veh or g/energy unit) for pollutant I for mode j and technology k.

Data for fleet composition was obtained from official government sources (public buses, collective taxis, etc.). Average activity level was obtained from official sources when possible (e.g. public buses in Santiago, Concepción, Coyhaique and Tocopilla). In the case of collective taxis, an estimate of 210 km per day was

[11] Anonymised data from MTT's fleet and programme registries.

assumed. Emission factors were obtained from IPCC GHG Emissions Guidelines[12] in the case of global pollutants and Copert IV methodology[13] in the case of local pollutants.

The following pollutants were considered: CO_2, CH_4, N_2O, $PM_{2.5}$, NO_X and SO_2.

In the case of GHG emissions, global warming potential for each gas was obtained from IPCC GHG Emissions Guidelines, to estimate total CO_{2eq} emissions. The following interventions were modelled for the estimation of emissions in with-project scenario:

- Santiago: introduction of 150 electric buses until 2021. Displaced technology would be diesel Euro V.
- Concepción, Tocopilla and Coyaique: introduction of 71 electric buses until 2022. Displaced technology would be diesel Euro V buses.
- Valparaíso: introduction of 200 electric light-duty vehicles (as collective taxis) until 2020. Displaced technology would be diesel Euro V and petrol Euro IV light-duty buses.

For the estimation of indirect emission reductions, the share (%) of electric vehicles was estimated for each transport mode and city, and it was assumed that all new vehicles after 2022 preserve this same share.

[12] http://www.ipcc-nggip.iges.or.jp/public/2006gl/
[13] http://emisia.com/products/copert

Modelling assumptions 2015-2034
(number of electric vehicles in fleet as direct/indirect project effect)

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gran Santiago - Bus	Direct	0	0	0	0	50	100	150	150	150	150	150	150	150	150	150	150	150	150	150	150
	Indirect	0	0	0	0	0	0	0	0	36	44	66	67	75	181	181	181	181	181	181	181
Gran Concepcion - Bus	Direct	0	0	0	0	7	15	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	Indirect	0	0	0	0	0	0	0	0	4	17	25	31	37	40	43	52	63	88	90	94
Coyhaique - Bus	Direct	0	0	0	0	2	4	17	34	34	34	34	34	34	34	34	34	34	34	34	34
	Indirect	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tocopilla - Bus	Direct	0	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7	7	7
	Indirect	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gran Valparaiso - Collective taxi	Direct	0	0	0	0	100	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	Indirect	0	0	0	0	0	0	0	0	15	27	41	56	68	78	87	87	87	87	87	87
Other regions - Bus	Direct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Indirect	0	0	0	0	0	0	0	0	5	16	31	51	78	118	168	208	254	289	319	348
Other regions - Collective taxi	Direct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Indirect	0	0	0	0	0	0	0	0	60	121	186	186	186	186	252	252	252	252	252	252