



GEF-7 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: GEF TRUST FUND

PART I: PROJECT INFORMATION

Project Title: Accelerating the adoption of electric mobility in Chile			
Country(ies):	Chile	GEF Project ID:	10277
GEF Agency(ies):	UNEP	GEF Agency Project ID:	01671
Project Executing Entity(s):	Ministry of Energy, Agency of Sustainability Energy (ASE)	Submission Date:	6 November 2020
GEF Focal Area (s):	Climate Change Mitigation	Expected Implementation Start:	1 April 2021
		Expected Completion Date:	31 March 2024
Name of Parent Program	Global Programme to Support Countries with the Shift to Electric Mobility	Parent Program ID:	10114

A. FOCAL/NON-FOCAL AREA ELEMENTS

Programming Directions	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Confirmed Co-financing
CCM 1-2	Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technology and electric mobility	GEF TF	1,784,862	18,520,000
Total project costs			1,784,862	18,520,000

B. PROJECT DESCRIPTION SUMMARY

Project Objective: Accelerate and scale-up the adoption of low-carbon electric vehicles in Chilean regions.						
Project Components/Programs	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
Component 1. Institutionalization of low-carbon electric mobility	TA	1. The government demonstrates enhanced coordination, consultation and capacity for promoting the inclusive uptake of electric mobility in the Chilean regions	1.1. A national electric mobility coordination body is created for governmental stakeholders 1.2. A multi-stakeholder consultation strategy is implemented to engage all Chilean region stakeholders in the transition to electric mobility 1.3. Chilean region local governments and other regional stakeholders are trained on technical, financial, and regulatory aspects of electric mobility	GEF TF	214,740	1,860,000
Component 2. Short-term barrier	INV	2. Citizens of Chilean regions begin to use	2.1. The viability of 6 electric vehicles as part of the fixed-	GEF TF	579,745	7,100,000

removal through low-carbon e-mobility energy demonstrations		electric mobility for their public transport needs	route taxi fleet is demonstrated to local and national stakeholders in Antofagasta, Puerto Montt and Talca 2.2. Evidence of the viability of electric vehicles in Antofagasta, Puerto Montt and Talca is disseminated to national and Chilean region decision-makers			
Component 3. Preparing for scale-up and replication of low-carbon electric mobility	TA	3. The private sector purchases electric vehicles to use as fixed-route taxis in Chilean regions	3.1. Financial instruments are created to incentivize fixed-route taxi owners to purchase electric vehicles in Chilean regions 3.2. Business models for deploying electric fixed-route taxis in Chilean regions are presented to national and regional government entities and the private sector for implementation 3.3. Investment roadmaps for the long-term viability of Chilean electricity grids to support electric vehicle uptake are presented for implementation by national policy-makers and regional electricity utility companies	GEF TF	671,263	7,140,000
Component 4. Long-term environmental sustainability of low-carbon electric mobility	TA	4. The Chilean government takes action towards implementing standards for ensuring the environmental sustainability of electric mobility	4.1. Waste companies are trained in reusing, recycling and final disposal of vehicles (both conventional and electric) and electric vehicle batteries 4.2. Standards and a legal framework for regulating the waste management, extended responsibility of the producer and recycling of electric vehicles and electric vehicle components are drafted for adoption by the Ministry of Environment	GEF TF	90,054	1,950,000
Monitoring and evaluation				GEF TF	66,800	-
Subtotal				GEF TF	1,622,602	18,050,000
Project Management Cost (PMC)				GEF TF	162,260	470,000
Total project costs				GEF TF	1,784,862	18,520,000

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: **Not applicable.**

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Investment Mobilized	Amount (\$)
Private Sector	Enel X	Equity Inv.	Investment mobilized	8,200,000
Private Sector	Sociedad Austral de Electricidad Sociedad Anónima (SAESA)	Equity Inv.	Investment mobilized	160,000
Private Sector	Empresa Nacional de Energía S.A. (ENEX)	Equity Inv.	Investment mobilized	2,000,000
Recipient Country Gov.	Ministry of Energy	In-kind	Recurrent expenditures	410,000
Recipient Country Gov.	Ministry of Transport and Telecommunications	In-kind	Recurrent expenditures	200,000
Recipient Country Gov.	Ministry of Environment	In-kind	Recurrent expenditures	50,000
Recipient Country Gov.	Production Development Corporation (CORFO)	Other	Investment mobilized	7,000,000
CSO	Agency of Sustainability Energy (ASE)	In-kind	Recurrent expenditures	100,000
CSO	Agency of Sustainability Energy (ASE)	Public Inv.	Investment mobilized	400,000
Total Co-financing				18,520,000

Describe how any “Investment Mobilized” was identified:

The “investment mobilized” was identified through bilateral meetings with potential co-financiers within the government.

- Enel X, the electric mobility branch of Enel, is one of the biggest international electricity distribution companies in Chile. During the project, Enel X will invest USD 8.2 million in the deployment of approximately 1200 electric vehicle charging points for private and light duty vehicles through-out Chile.
- ENEX is a Chilean energy company investing in incorporating electric mobility assets and solutions as additions to its fossil fuel portfolio. During the project, the company plans to invest USD 2 million in electric vehicle charging infrastructure. Investments will include fast charging stations in their operational service station network and charging infrastructure in private and public areas across Chile. Furthermore, they will provide digital tools for customers to locate available charging stations and help clients transition their existing conventional fleets to electric solutions.
- As the main electricity distribution company in the south of Chile, the National Energy Company (SAESA) has developed a charging network for electric vehicles covering over 1,200 km. During the project, the company will continue growing its charging network in the Chilean regions, providing further opportunities for the uptake of electric mobility across the southern regions of the country.
- The investment mobilized through CORFO consists of funds provided through the private sector to a chosen recipient for advancing the scale-up of electric mobility in Chile, with the process administered by CORFO. CORFO is facilitating the awarding of a research and development contribution on behalf Rockwood Lithium Limited (today Albemarle Limited) to a selected entity (the recipient) for the creation of a center for the development of electromobility in Chile. CORFO is organizing the selection process and administering the transferring of funds between Rockwood Lithium Limited and the recipient. This recipient will undertake activities including to: develop and implement methodologies for the interoperability of electromobility at the national level; promote the development of local suppliers in technological solutions in electromobility; and promote the development of specialized human capital in the use of electromobility.
- The investment mobilized through the Agency of Sustainability Energy comes through financing received from the Ministry of Energy. It has the aim of: promoting electric mobility in fixed-route transport in local governments; promoting guidelines for local governments on incorporating public electric vehicle charging infrastructure; supporting the acquisition of electric vehicles for fixed-route taxis; supporting the acquisition of residential charging systems and their installation; and supporting vehicle monitoring during operation.

TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=(a)+(b)
UNEP	GEF TF	Chile	Climate Change	CCM 1-2	1,784,862	160,638	1,945,500

Total GEF Resources	1,784,862	160,638	1,945,500
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D. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? ☐ YES ☒ NO

If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund.

E. PROJECT’S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Update the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex F and aggregating them in the table below. Progress in programming against these targets is updated at mid-term evaluation and at terminal evaluation. Achieved targets will be aggregated and reported any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Core Indicators		Expected at CEO Endorsement
6	Greenhouse Gas Emissions Mitigated (metric tons of CO _{2e})	Direct: 225,779 tCO _{2e} In-direct: 219,531 tCO _{2e} Total: 445,310 tCO _{2e}
11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	Women: 2,880 Men: 2,650 Total: 5,530

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided.

The direct beneficiaries were calculated based on the expected participation in workshops and capacity-building activities, use of the deployed pilots in Antofagasta, Talca and Puerto Montt, and use of the financial instruments. For the workshops and capacity-building activities, a ratio of 35% participation of women was estimated. This is based on estimates of women participation in this industry (see the gender section). For the users of the pilots and financial instruments, calculations were based on the 6 pilot electric vehicles and 30 purchased electric vehicles with usage of one year. Nationally, women are 52.5% of users of public transport and this ratio was used to calculate the beneficiaries of these electric vehicle taxis. Disaggregation by gender was based on information provided by the Ministry of Energy Gender Officer, taking into consideration the gender distribution of the country’s population, workforce distribution and public transport usage (see section on gender equality). Explanation on the calculation of indicator 6 may be found in Annex M.

F. PROJECT TAXONOMY

Please update the table below for the taxonomic information provided at PIF stage. Use the GEF Taxonomy Worksheet provided in Annex G to find the most relevant keywords/topics/themes that best describe the project.

Level 1	Level 2	Level 3	Level 4
Influencing models	Transform policy and regulatory environments		
	Strengthen institutional capacity and decision-making		
	Convene multi-stakeholder alliances		
	Demonstrate innovative approaches		
	Deploy innovative financial instruments		
Stakeholders	Private Sector	Capital providers	
		Large corporations	
		SMEs	
		Non-Grant Pilot	
	Civil Society	Academia	

Level 1	Level 2	Level 3	Level 4
	Type of Engagement	Consultation	
		Participation	
	Communications	Awareness Raising	
		Education	
		Public Campaigns	
		Behavior Change	
Capacity, Knowledge and Research	Enabling Activities		
	Capacity Development		
	Knowledge Generation and Exchange		
	Innovation	Knowledge Management	
		Innovation	
		Capacity Development	
		Learning	
Gender Equality	Gender Mainstreaming	Sex disaggregated indicators	
Focal Areas/Theme	Climate Change	Climate Change Mitigation	Energy Efficiency
			Sustainable Urban Systems and Transport
			Technology Transfer
Rio Markers	Climate Change Mitigation 2		
	Climate Change Adaptation 0		

PART II: PROJECT JUSTIFICATION

1a. Changes in project design

Changes in project design compared with the original project concept note are captured in the following table. In general, wording of components and outputs have been adjusted to align with the global programme on electric mobility. Changes have also been made to adapt to the new local scenario induced by social changes and the COVID pandemic. Furthermore, the project has been adjusted to ensure complementarities, build synergies and avoid duplications with the approved GEF-6 project on sustainable transport (for further details refer to sections 2, 3 and 6).

TABLE 1. CHANGES BETWEEN THE CONCEPT NOTE AND CEO ENDORSEMENT DOCUMENT

Concept note	CEO endorsement document	Rationale
Component 1: Strengthen the enabling environment for electric mobility through capacity building, institutional readiness and awareness raising, to accelerate the uptake of electric mobility systems in Chile	<u>Component 1</u> Institutionalization of low-carbon electric mobility <u>Outcome 1</u> The government demonstrates enhanced coordination, consultation and capacity for promoting the inclusive uptake of electric mobility in the Chilean regions	Component 1 continues to focus on strengthening the capacity, institutional readiness (coordination) and awareness raising (consultation). Some aspects of awareness raising are covered by the GEF-6 project and thus have not been duplicated through GEF-7. Given recent events in Chile, the component has an increased focus on social consultation to ensure that project activities are inclusive and draw on different representative voices of local communities in the country's regional cities. A coordination platform will continue to be developed, however as the GEF-6 project will develop a knowledge platform on sustainable transport, the GEF-7 project will no longer focus on this, instead ensuring that knowledge from GEF-7 is included in the GEF-6 platform.
Component 2: Demonstrate electric vehicles and the related recharging equipment in public transport captive fleets in Chilean regions outside of Santiago de Chile.	<u>Component 2</u> Short term barrier removal through low-carbon e-mobility demonstrations <u>Outcome 2</u> Citizens of Chilean regions begin to use electric mobility for their public transport needs	<p>Component 2 is unchanged in focusing on demonstrating electric vehicles in public transport captive fleets in Chilean regions outside of Santiago de Chile.</p> <p>The project will focus primarily on fixed-route taxis as since the preparation of the concept note the Ministry of Transport and Telecommunications (MTT) has developed an electric bus deployment plan for regional Chile, which involves building exclusive corridors and equipping them with electric buses and charging infrastructure (see section 2 for further information). As part of this, it also aims to formalize the bus public transport system in the regions. This initiative already has significant public investment of approximately \$US 500 million destined supporting mass public transport in the regions, including for developing the regional bus system. Given the plans of the MTT, it was decided that the GEF-7 project would have greater impact by complementing this and focusing on demonstrating electric fixed route taxis, to facilitate the transition of this fleet of more than 50,000 vehicles (see subsequent sections for further information).</p> <p>The GEF-7 project will test six taxis: two taxis and the required charging infrastructure in each of Antofagasta, Puerto Montt and Talca. In addition, through component 3, financial instruments will provide funding to cover the existing capital gap between conventional and electric vehicles for between 30-50 fixed route taxis to be purchased during the project.</p> <p>This differs from the concept note, which noted that the knowledge platform would be informed by the demonstration of</p>

		<p>approximately 60 buses and 130 taxis. These changes are due to:</p> <ol style="list-style-type: none"> 1. Decision to allocate GEF funding to the development and seed funding of financial instruments in component 3, thus stimulating great private and non-governmental participation. 2. Detailed baseline analysis revealing significant barriers to the purchasing of electric vehicles in the regions, primarily due to a lack of infrastructure, technology confidence and absence of prior technological experiences by taxi drivers in the regions (see section 1). This meant that even with an existing Ministry subsidy (see section 2), regional taxi drivers are not yet willing to invest their own money in purchasing electric vehicle taxis. (None have been purchased to date (see section 1)). 3. The aforementioned MTT plans for the deployment of electric buses in regional cities of Chile, in which the purchasing of buses will no longer be through individual purchases (as envisioned in the concept note) but rather through bulk purchasing through a private-sector bidding process, similar to what currently occurs in Santiago. 4. Co-financing of private sector contributing to the development of charging infrastructure in the regions (see description under table C above), rather than focusing on purchasing of vehicles. This led to a change in scope on the financing of vehicles through the project.
<p>Component 3: Support actions that promote and facilitate the scale-up and replication of electric mobility, including by developing policies and other actions based on lessons learned from the demonstrations.</p>	<p><u>Component 3</u> Preparing for scale-up and replication of low-carbon electric mobility</p> <p><u>Outcome 3</u> The private sector purchases electric vehicles to use as fixed-route taxis in Chilean regions</p>	<p>Component 3 focuses on the sustainable scale-up of electric fixed-route taxis. It aims to scale up the pilots of component 2, which demonstrated the viability of electric vehicles, and component 1, which built the capacity of regional stakeholders, by supporting the development of financial instruments that provide low-cost financing to taxi owners for the purchasing of fixed-route electric taxis. It also supports the private sector to implement investment plans and business models for scaling-up electric vehicle adoption in the Chilean regions. Less focus was placed on policies as Chile has advanced significantly on these since the concept note was approved (see section 2).</p>
<p>Component 4: (didn't exist)</p>	<p><u>Component 4</u> Long-term environmental sustainability of low-carbon electric mobility</p> <p><u>Outcome 4</u> The Chilean government takes action towards implementing standards for ensuring the environmental</p>	<p>Component 4 didn't exist in the concept note. It has been added to ensure that the long-term environmental sustainability of low carbon electric mobility is assured. It focuses on generating capacity in both the public and private sectors in terms of reuse, recycling, and responsible end-of-life disposal of electric and conventional vehicles and vehicle batteries. It will also assist the Ministry of Environment in designing and establishing related standards and regulations.</p>

	sustainability of electric mobility	
<u>Indicator 6</u> Total estimated greenhouse gas emission reductions: 396,491 tCO ₂ e. Estimated direct and indirect emission mitigations of 307,573 tCO ₂ e and 88,918 tCO ₂ e respectively.	<u>Indicator 6</u> Total estimated greenhouse gas emission reductions: 445,310 tCO ₂ e. Estimated direct = 10,413 tCO ₂ e; and secondary direct = 215,366 tCO ₂ e. In-direct: 219,531 tCO ₂ e.	Total estimated emission reductions have been revised up due to an estimated greater impact of the financial instruments, business models and investment plans to be developed in component 3.
<u>Co-financing</u> Total: \$12,403,539	<u>Co-financing</u> Total: \$18,520,000	Co-financing has increased by more than US\$6 million. This occurred due to a strong push by CORFO to support private sector participation and increased national interest in electric mobility despite the national social context and COVID pandemic. See following table for further information.

TABLE 2. CHANGES TO CO-FINANCING COMMITMENTS

Co-finance partner	Estimated co-finance contribution as per the programme framework document (US\$)	Committed co-finance at CEO endorsement (US\$)	Explanation for the changes
Energy Companies (Enel, Engie, Saesa, etc.)	\$10,250,000	\$10,360,000	-
Ministry of Energy	\$1,853,539	\$410,000	Co-financing reduced in the context of social situation and COVID pandemic, and also due to co-financing administered through the ministry-aligned Agency of Sustainability Energy (see below).
Ministry of Transport and Telecommunications	\$200,000	\$200,000	-
Ministry of Environment	\$100,000	\$50,000	Co-financing reduced in the context of social situation and COVID pandemic.
Agency of Sustainability Energy (ASE)	0	\$500,000	New co-financing identified, as an in-kind contribution to support, inter alia, project management costs.
Production Development Corporation (CORFO)	0	\$7,000,000	New co-financing identified. Refer to table C for explanation.

1b. Project Description

a) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

A global transition to low- and zero- emission mobility is essential to meet international climate commitments, including the Paris Climate Agreement. The transport sector is currently responsible for approximately one quarter of the world's energy-related carbon dioxide emissions;¹ this is expected to grow by 2050. This is due to the fact that, based on business as usual projections, the global vehicle fleet is likely to double over the next 30 years. In addition, the transport sector is a leading contributor of short-lived climate pollution such as black carbon. The global vehicle fleet is set to double by 2050, and almost all this growth will take place in low- and middle-income countries. By 2050, three out of five cars will be found in developing countries.² This means that achieving global climate targets will require a shift to zero emissions mobility in all countries, including low- and middle-income ones.

Chile's total annual carbon dioxide (CO₂) emissions account for approximately 0.23% of the world's total greenhouse gas emissions.³ On CO₂ emissions per capita, Chile had 4.65 Mt of CO₂ per capita in 2018.⁴ The country's energy matrix is diverse, with coal and natural gas representing 54% of installed capacity, hydro power 31% and renewables, such as biomass, solar and wind power, representing 15%.⁵ The resulting carbon intensity of the national electricity matrix is 0.4056kg CO₂/kWh,⁶ and as such is lower than the global average. Emissions from the power generation sector are 31% of total national emissions.⁷ Although the power sector is currently the prime contributor of the country's emissions, Chile has already laid out an ambitious emission reduction scheme for its power sector (see section 2) and aims for it to be carbon neutral by 2050.

With the country working to clean its power sector, achieving its nationally determined contribution (NDC) will depend on addressing challenges related to transport. Overall, the transport fleet is almost entirely powered by petroleum derivatives such as bunker oil, jet fuel, diesel, and gasoline (98%). The transport sector is the second largest contributor to the country's greenhouse gas (GHG) emissions, accounting for 35% of the country's overall energy consumption⁸ and more than 21% of its GHG emissions.⁹ In addition to GHG emissions, toxic emissions from the vehicle fleet and energy generation, such as carbon monoxide, unburned hydrocarbons, nitrous oxide (NO_x), sulphur dioxide and particulate matter (PM), have a significant negative impact on the air quality of many urban areas. In 2018, 24 of the 38 measuring stations located in the most populated cities of the country registered PM 2.5 concentration higher than World Health Organization guideline of 10 ug/m³ as an annual mean value.¹⁰ Efforts to address air pollution may also reduce the impacts of the COVID pandemic and support the recovery process, with initial studies suggesting that poor air quality contributes to the impact of COVID-19.

Road vehicle fleet represents 88%⁷ of Chile's GHG transport emissions and is growing quickly: over the past decade the road fleet has grown at an annual rate per annum of 5.3%.¹¹ As expected, the GHG emissions of the sector have

¹ CO₂EMISSIONS FROM FUEL COMBUSTION Highlights (2019 edition), IEA 2019.

² IEA Mobility Model, 2017.

³ The World Bank Group, CO₂ emissions (kt) – Chile, World (2014)

⁴ Atlas Mundial de Datos, KNOEMA, Chile – Emisiones de CO₂: <https://knoema.es/atlas/Chile/Emisiones-de-CO2-toneladas-m%C3%A9tricas-per-c%C3%A1pita>

⁵ Comisión nacional de energía, Anuario CNE 2018

⁶ Energía abierta, Factor de emisión SEN, 2019: <http://energiaabierta.cl/visualizaciones/factor-de-emision-sic-sing/>

⁷ Tercer Informe Bial de Actualización de Chile Sobre Cambio Climático, 2018: <https://mma.gob.cl/wp-content/uploads/2018/12/3rd-BUR-Chile-SPANish.pdf>

⁸ Ruta Energética 2018-2022, Ministerio de Energía

⁹ Center for Climate and Resilience Research, (Ministry of Environment, 2018): <http://www.cr2.cl/cual-es-el-aporte-de-la-electromovilidad-a-la-reduccion-de-emisiones-contaminantes/>

¹⁰ Air quality guidelines – global update 2005, World Health Organization: <https://www.who.int/airpollution/publications/aqg2005/en/>

¹¹ Sistema Nacional de Información Ambiental - Indicadores y Cuentas Ambientales – Evolución del Parque Vehicular, Ministerio del Medio Ambiente, 2018: <http://sistemaintegrador.mma.gob.cl/mma-centralizador-publico/indicador/vistaIndicador.jsf?id=569d9cfe-3a1b-4230-8852-8bbb58e2911&subtema=1>

followed this trend. Therefore, to contain and eventually reduce transport sector GHG emissions it is imperative to promote a shift to zero-emission transport.

In recent years, Chile has made bold targets to transition to electric mobility to decrease GHG and other pollutant emissions from the transport sector. It aims to have 100% electrification of its public transport system by 2040 and 50% electrification of private cars by 2050. The country's capital city has made significant efforts towards these targets. Santiago de Chile already has a fleet of more than 400 electric buses operating as part of the city's public transport system, with more buses expected to become operational in the near future. Furthermore, there are almost 200 electric vehicle chargers across the country, with many in the main metropolitan area. However, outside of Santiago, the Chilean regions have not been able to transition to electric mobility. To date there are no electric buses and just four electric taxis operating outside of the capital city's metropolitan area and Valparaíso, the second largest city (see section 2 for details).

Barriers to the scale-up of the Chilean regions

The root causes and barriers which hold Chile back from transitioning to low-emission electric mobility in the Chilean regions are the following:

1. Weak coordination, consultation and capacity to promote electric mobility in the Chilean regions:

- a) There is weak governmental coordination in the development of the electric mobility agenda in the regions. The agenda involves several national ministries, including the Ministry of Transport and Telecommunications, the Ministry of Energy and the Ministry of Environment, and regional and local governments. Historically the ministries have had independent mandates; however these are now becoming ever more interconnected, especially on electric mobility. While the ministries have collaborated effectively at the national level, leading to the creation of a National Electromobility Strategy and other policies (see section 2), technical coordination between ministries at the regional level has been weak and requires support as focus shifts to the regions. In particular, there is a need to coordinate effectively with the Chilean regional governments (GOREs) on technical matters. The GOREs will play a key role in ensuring the effectiveness and sustainability of electric mobility interventions introduced in the regions. To date there has been weak coordination between the central government ministries, which are leading the development and implementation of actions to promote electric mobility in the regions, and the GOREs, which host the interventions and play a key role in ensuring their acceptance, scale-up and sustainability. This lack of coordination has led to a lack of coherence and coordination in the implementation of activities in the regions, hampering efforts to scale up electric mobility in the regions. Coordination will be key for ensuring an efficient, effective and sustainable transition to electric mobility, including on the GEF-6 sustainable transport and GEF-7 electric mobility projects which both focus on the regions.
- b) A second barrier is related to a lack of social acceptance of electric mobility in the regions, especially with regards to the electrification of public transport. Recent social disturbance across Chile has highlighted the challenges of effecting social-technological transitions which disrupt the state of play. While interest in electric mobility in the regions continues to be high, a current barrier is related to the social acceptability of such a technological transition in public transport, including as related to perceived costs, changes to services, and effects on local livelihoods. Such perceptions are increased by the COVID-19 pandemic, which has placed greater focus on the need for ensuring local economic and social well-being. Considering the significant economic and social differences between the regions and Santiago, there is a need to ensure that efforts to facilitate the transition to a low-carbon electric mobility system incorporate the views and participation of different representative groups of local civil society actors, thus ensuring that the transition is thus socially-inclusive.
- c) Thirdly, while in Santiago the capacity of stakeholders and general institutional preparedness for promoting electric mobility is high, there is a significant lack of institutional capacity in the regions for promoting electric vehicle adoption. Regional governments are yet to participate in capacity-building activities on electric mobility as these have focused on building the capacity of actors in Santiago.

Without capacity, local and regional governments are ill-equipped to plan and finance efforts to scale-up electric mobility adoption in their jurisdiction. For instance, while the private sector is moving forward on installing charging stations through-out the regions, regional actors are without capacity to inform such plans and ensure that the installation of charging networks responds to the needs of public transport networks (for instance, for fixed route-taxis) and the social considerations of the local community. By increasing their knowledge, such administrators will be able to better inform regional efforts on electric-mobility in their jurisdiction, ensuring that such efforts respond to the local needs of the private sector and civil society. Furthermore, local actors are hesitant to adopt electric vehicles in the regions as they believe emergency and safety management of electric vehicle accidents would have to come from the country's capital. While new capacity-building activities, including through the GEF-6 project (see sections 2 and 3) will focus on regional professionals and technicians on the operation and maintenance of electric vehicles, other key actors are yet to be attended to. In particular, regional administrators, safety professionals and fixed-route taxi stakeholders do not yet have capacity on electric mobility. To achieve Chile's national goal of achieving 100% electrified public transport by 2040 (see section 2), these actors need to play a key role.

2. Lack of confidence in the viability of electric mobility for the regions:

- a) There is a significant lack of confidence amongst regional and local stakeholders as to whether electric vehicles would be able to fulfil the needs and particularities of the Chilean regions. This applies to private car owners, who question the technical viability of electric vehicles for functioning effectively in the region's conditions, including as related to climate (hot and dry in the north, cold in the south) and the mountainous terrain. It also applies to public transport drivers and owners, who lack not only the confidence in the technical capability of the vehicles to satisfy the required operation, but also awareness and knowledge on how to harness the advantages of electric mobility for improving the quality of service through the use of such technologies. As noted previously, to date no electric buses and only four electric taxis have been tested outside of Santiago. Together, this lack of experience results in a hesitation on the part of local and regional authorities to support such a transition, knowing that failure in technology adoption would be politically and economically costly. Such hesitation trickles down to the private sector, which consequently waits on others to enter and test the market first (fear of first entry).
- b) Due to the lack of experience with electric vehicles in the Chilean regions, there is also a lack of data on the use of electric vehicles in such conditions. This results in a lack of information for supporting national and regional governments, the private sector, academia, and other key actors in developing, monitoring and evaluating policies, regulations and initiatives for promoting the uptake of electric mobility in the regions. With an absence of data through-out the regions, weaker regions are reluctant to adopt the technology until they have evidence from experiences in more wealthy regions.

3. Lack of finance and private sector participation in shifting the market to electric mobility in the Chilean regions:

- a) Chile has begun to implement a comprehensive policy and regulatory framework for incentivizing the uptake of electric vehicles, including to reduce the incremental upfront cost differential between conventional and electric vehicles (for instance, through regulations on energy efficiency of vehicles, see section 2). However, even with these incentives, the significant upfront cost difference between electric and conventional cars of otherwise similar attributes continues to be one of the central barriers to electric vehicle uptake in the regions. This barrier is accentuated by the economic and social conditions of the regions, which are fundamentally different to Santiago. The regions have lower GDP per capita which results in less purchasing power for individuals to cover the higher upfront costs of electric vehicles.¹²

¹² The gross domestic product (GDP) of Santiago and its metropolitan region is considerably higher than that of the rest of the country, accounting for 45% of the national GDP (see table below). Other regions, like mining regions, (Antofagasta or Atacama), have high GDP per capita but have small populations making markets less attractive. (Sources: GDP: Observatorio logístico, PIB Regional de Chile, 2018: <https://datos.observatoriologistico.cl/dataviews/236358/pib-regional-de-chile/>; Population: Instituto Nacional de Estadísticas, CENSO 2017: <http://resultados.censo2017.cl/>).

The government is now aiming to address this gap in the regions. On the bus sector, the Ministry of Transport and Telecommunications (MTT) is working to formalize the sector and electrify it (see section 2). This will lead to a purchasing mechanism for buses similar to that currently functioning in Santiago. On fixed-route taxis, MTT together with the regional governments has introduced a vehicle replacement subsidy with the aim of incentivizing the purchasing of electric vehicles for this sector. However, to date the fixed-route taxi industry of more than 50,000 vehicles continues with little sign of transition to electric vehicles. The subsidy has had no impact (no electric vehicles purchased to date) due to a lack of consumer confidence in the technology and the insufficient size of the subsidy. The key barrier for taxi owners is the up-front costs, as even with cheaper electricity prices they have too much uncertainty in the technology to take the plunge on possibly cheaper total cost of ownership.

Furthermore, while the private financial and banking sector need to play a key role in addressing this barrier, a lack of experiences with electric mobility in the regions (as aforementioned) have led to an absence of financial products focused on electric vehicles (see below and section 2 for more information). On taxis, existing financial institutions have a lack of understanding on how to create financial instruments that are catered to the needs of fixed-route taxi drivers and electric vehicles. Currently, fixed-route taxi drivers purchase vehicles through a combination of capital, loans from financial institutions and a subsidy of the Ministry of Transport and Telecommunications (see section 2). The Banco Estado is the primary financial institution working with fixed-route taxi operators, as it is the only institution which has developed a methodology for evaluating the credit-worthiness of fixed-route taxi drivers. Its model takes into account the total cost of ownership of the conventional vehicle and average income over a time-period for the driver. The current loan model is not effective for electric vehicles, as the higher up-front cost skews the monthly repayments by more than 100%.

- b) In addition to a lack of confidence and high up-front costs, another key significant barrier has been a lack of public charging infrastructure. Thankfully, both the public and private sector are addressing this barrier (see section on co-financing and section 2). However, to electrify public transport as a first step towards the electric mobility in the regions, a key barrier is a lack of knowledge of national and regional authorities on the public transport ecosystem in the regions, and in particular on fixed-route taxis. This translates into a lack of understanding as to the vehicle and infrastructure requirements for electrifying this sector, in particular as to the key locations of public chargers. While MTT has made progress in developing understanding and planning for electrifying buses in the regions, fixed-route taxis are yet to be attended to, even though they play a central public-transport function in most regional cities. While authorities have an overview of taxi numbers, there is no comprehensive mapping or listing of fixed-taxi routes.¹³ For national authorities, this results in a lack of understanding on how to develop and locate charging

Region	GDP ¹² [Million US\$]	GDP [%]	Population ¹²	Population [%]	GDP per capita [US\$]
Metropolitan region	116,379	45%	7,112,808	42%	16,362
Antofagasta	26,031	10%	607,534	4%	42,847
Valparaíso	22,811	9%	1,815,902	11%	12,562
Biobío	21,346	8%	1,556,805	9%	13,712
O'Higgins	12,504	5%	914,555	5%	13,672
Maule	9,589	4%	1,044,950	6%	9,176
Los Lagos	9,570	4%	828,708	5%	11,548
Coquimbo	7,780	3%	757,586	4%	10,269
Araucanía	7,398	3%	957,224	6%	7,729
Tarapacá	6,296	2%	330,558	2%	19,046
Atacama	5,929	2%	286,168	2%	20,717
Los Ríos	3,790	1%	384,837	2%	9,849
Magallanes	2,914	1%	166,533	1%	17,497
Arica y Parinacota	2,062	1%	226,068	1%	9,121
Aysén	1,535	1%	103,158	1%	14,882

¹³ http://www.subtrans.cl/subtrans/doc/taxis_colectivos_urbanos_ppales_ciudades_0211.pdf. The website <http://www.ubicatucollectivo.cl/> presents a mapping for a few Chilean cities.

infrastructure, and develop regulations and strategic plans for facilitating the transition of this sector. For regional and local authorities, this lack of knowledge results in a lack of identification of opportunities for public and private sector participation and as to how to address local barriers to market entry. Together, this lack of knowledge holds back the private sector from entering into electric mobility initiatives in the regions.

- c) Finally, another barrier related to charging infrastructure is that regional governments and local stakeholders lack confidence in the capacity of regional grid infrastructure to support charging infrastructure. They also lack understanding as to the required investment size and rollout timeframe to cover the increases in electricity demand due to electric vehicles. This again increases the uncertainty around the viability of an electrified transport system, which in turn slows down the uptake of infrastructure investment and thus adoption of the technology by primary users such as fixed-route taxi drivers. Furthermore, with the lack of a detailed analysis of the current and required regional level grid outlook,¹⁴ local governments fear that electric mobility uptake will lead to an over-demand for electricity, raising power costs and increasing the need for investment in electricity network infrastructure (with its associated political and economic implications). This leads to hesitation of these actors in promoting the uptake of electric mobility with its consequent demand on the electricity grid without firstly developing a plan for managing the impact together with private sector energy suppliers.

4. Lack of clarity on environmental management of electric mobility:

- a) Finally, there is a lack of capacity of regional actors to undertake the environmental management of electric vehicles and their batteries, leading to hesitation amongst regional decision-makers in promoting electric mobility. The absence of electric vehicles in the regions makes it difficult for local actors to gain experience on managing the recycling and disposal of electric vehicles and their batteries. Furthermore, such actors, and particular the private sector in the waste industry, have little knowledge of market opportunities and business models for the reuse and recycling of electric vehicle components and electric batteries. This absence of capacity combined with a lack of regulations leads to hesitancy on the part of regional authorities to promote electric mobility as they are unsure as to the environmental implications and associated costs.
- b) Chile is yet to introduce regulations for the waste management, extended producer responsibility and recycling of lithium car batteries and electric vehicles. In 2016, Chile established law 20.920 (known as the extended responsibility of the producer, REP) for waste management, extended producer responsibility and promotion of recycling. While the development of regulations has advanced on various workstreams under the law (such as on car tires), to date it has not established regulations for electric car batteries. Furthermore, although the development of the law considered its application to vehicles (conventional and electric), the final law did not include their consideration. The lack of a legal framework on the extended producer responsibility for electric vehicles and their batteries poses uncertainty about the long-term environmental impact and costs of vehicle disposal. These leads to policy hesitation amongst decision-makers on promoting electric mobility in the country's regions and hesitancy among vehicle manufacturers and importers. Furthermore, the lack of legal clarity on responsibility and cost of vehicle disposal hinders the development of circular economy business models for vehicles and their batteries.

2) Baseline scenario and any associated baseline projects

Energy sector

Chile's energy matrix is diverse, with coal and natural gas representing 54% of installed capacity, hydro power 31% and renewables such as biomass, solar and wind power 15%.¹⁵ The resulting carbon intensity of the national electricity matrix

¹⁴ *Electromovilidad. Proyección y propuestas para avanzar* (2018). Agency of Sustainability Energy (ASE) and Ernst Basler + Partner.

¹⁵ Comisión nacional de energía, Anuario CNE 2018

is 0.4056kg CO₂/kWh,¹⁶ and as such is lower than the global average. At the current carbon footprint of electricity, e-mobility applications will immediately result in CO₂ emission reductions in the order of 35% to 25%, depending on conventional benchmark vehicle and the technical specifications of the EV (i.e. range & battery size). Emissions from the power generation sector are 31% of total national emissions.¹⁷ Although the power sector is currently the prime contributor of the country's emissions, Chile has already laid out an ambitious emission reduction scheme for its power sector and aims for it to be carbon neutral by 2050 (see below). The price of electric is currently US\$0.087/kWh.¹⁸

Transport sector

Chile's transport sector contributes 21% of its GHG emissions, with road transport representing 18.5% of national emissions. Between 1990 and 2018, transport emissions increased 191.8 % due to the growth of the vehicle fleet caused by population growth, increased purchasing power and improvements in national infrastructure.¹⁹ The sector consumes 35% of all energy in Chile, with 82% of consumption coming from road transport. 98% of all transport is fuel from fossil-fuel derivatives.²⁰ Chile has more than 5.4 million registered vehicles, with more than 3.3 million in the Chilean regions.²¹ More than 60% of these are passenger vehicles. The number of vehicles is growing rapidly, primarily due to private consumption, with a growth rate of 4.7% a year between 1998 and 2016, and a rate of 5.5% a year between 2010 and 2016.²² Between 2004 and 2016 car sales grew at 4.3% a year, higher than the annual GDP growth rate of 3.2%.²³

In terms of the Chilean region public road transport systems, regional systems are fundamentally different to the capital city. While Santiago has a formal transport system concessioned to large operators, regional systems are atomized and informal, comprising of small companies and individual owners. The Metropolitan region road public transport system of Santiago is comprised mainly of buses, accounting for 7,218 of the 18,139 urban buses operating across the country (buses in the regions are generally smaller: 20-30 seaters). However, regional public transport systems rely heavily on fixed-route taxis. The fixed-route taxi (known as *taxi-colectivos* in Chile) is a mode of transport which falls between a traditional taxi and a bus. Fixed-route taxis in Chile have defined route, but generally don't have timetables, instead waiting for the vehicle to be full before departing, or departing on decision of the driver. The national fixed-route taxi fleet adds to 51,744 vehicles, out of which 41,608 operate outside of the Metropolitan Region of Santiago, and contributes an estimated 1,000,000 tonnes CO₂e emissions per year. In the regions, such taxis outnumber buses by a ratio of almost 6 to 1. Out of the almost 2000 fixed route taxi lines operating across the country, 1640 operate in regional cities and towns. Fixed-route taxis play a key role in the regions, enhancing low-cost mobility options for low-income families across the country. The taxis work extended hours beyond those of buses, and facilitate enhanced network connectivity,

Financing of fixed-route taxis

Currently, fixed-route taxi drivers purchase vehicles through a combination of capital, loans from financial institutions and a subsidy of the Ministry of Transport and Telecommunications (see below). A key challenge is that not all owners of fixed-route taxis are able to access loans from the local financial institutions due to the nature of their variable and informal income. The Banco Estado is the primary financial institution working with fixed-route taxi operators, as it is the only institution which has developed a methodology for evaluating the credit-worthiness of fixed-route taxi drivers. Its model takes into account the total cost of ownership of the conventional vehicle and average income over a time-period for the driver. Consequently, it currently holds more than 75% of the market for loans for the purchasing of conventional fixed-route taxis and typically finances between 80 and 100% of the required capital. The current loan model is not effective for electric vehicles, as the higher up-front cost skews the monthly repayments by more than 100%.

¹⁶ Energía abierta, Factor de emisión SEN, 2019: <http://energiaabierta.cl/visualizaciones/factor-de-emision-sic-sing/>

¹⁷ Tercer Informe Biental de Actualización de Chile Sobre Cambio Climático, 2018: <https://mma.gob.cl/wp-content/uploads/2018/12/3rd-BUR-Chile-SPANish.pdf>

¹⁸ <https://www.statista.com/statistics/1029737/chile-electricity-average-market-price/>.

¹⁹ Chile Biennial Update Report 2018. Government of Chile.

²⁰ Balance Nacional de Energía 2017, Ministerio de Energía.

²¹ <https://www.ine.cl/estadisticas/economia/transporte-y-comunicaciones/permiso-de-circulacion>

²² *Electromovilidad. Proyección y propuestas para avanzar* (2018). Agency of Sustainability Energy (ASE) and Ernst Basler + Partner.

²³ Ibid.

connecting primary bus routes with a multitude of areas in city-peripheries. The vehicles are generally 4-seaters, with the average vehicle age of the entire fleet 5.9 years, with the oldest operating vehicle being 11 years old.²⁴

On electric vehicles, Chile has an estimated 1265 in the country.²⁵ This represents less than 0.013% of the total vehicle fleet in the country. There are currently no electric buses and just four electric taxis running in the regions, in Coyhaique and Valparaíso. This is despite the government making available 120 licenses available for electric taxis in Viña del Mar, Valparaíso and San Antonio. In Santiago, at the end of 2018 the energy company Engie introduced 30 Hyundai Ioniq electric business taxis (not-fixed route taxis) into the public transport system. The taxis are operated by Transvip and utilize online vehicle payment systems. Experiences to date have been positive, with vehicle autonomy responding to client requirements. The GEF project will draw upon lessons learned from this initiative (see output 2.1). On charging infrastructure, there are currently 192 public chargers (38 fast, 154 slow) distributed along the twelve regions of the country.²⁶ Out of these, approximately two-thirds are located in the Santiago Metropolitan and Valparaíso regions, with one-third located across the rest of the country.²⁷ This focus on Santiago and Valparaíso reflects the rapid uptake of electric mobility in the country's capital and the slow (or absence of) progress in the country's regions.

On electric buses, Santiago contains the largest number of electric buses in one city outside of China.²⁸ In just three years it has gone from a demonstration of three buses (in 2017) to the operation of 435 regular buses (in 2020). In October 2017, a pilot project was initiated, with the support of Centro Mario Molina Chile and the Technical Research Centre of Finland (VTT), with three electric buses operating as a demonstration in the city centre. Following this experience, Transantiago operators MetBus, Vule and Servicio de Transporte de Personas (STP) together with the Transantiago administrators agreed to incorporate electric mobility into their services. In 2018, MetBus started operating 100 electric buses in the "Grecia" corridor, route 516. In the beginning of 2019, Vule started operating 75 electric buses on route "Avenida Bernardo O'Higgins". That same year STP started circulating 25 electric buses on "Avenida Vicuña Mackenna". Overall, the electric services have had high usage levels and positive service satisfaction feedback. As of early 2020, the electric bus fleet in Santiago amounts to 435 vehicles (approximately 6% of total fleet) and is expected to continue growing over the following years, with a new tendering process promoting the inclusion of electric vehicles expected to take place during 2020.²⁹ The Zero Emission Bus Rapid-Deployment Accelerator (ZEBRA), funded by the Partnering for Green Growth and the Global Goals 2030 (P4G), and supported by partner Centro Mario Molina Chile, is currently aiming to support the further scale up of electric buses in Santiago to 2000 units.

On overall electric vehicle market penetration, the baseline scenario estimates a slow uptake of plug-in and battery electric vehicles sales resulting in a fleet share of new sales of just over 10% of electric vehicles by 2040, and a total fleet share of less than 10% by 2040.³⁰ Based on the business as usual scenario, the transport sector will continue to predominate national GHG emissions until 2040 and beyond.

²⁴ Ministry of Transportations and Telecommunications, Public transport statistics:

<http://usuarios.subtrans.gob.cl/estadisticas/parques-vehiculares.html>

²⁵ Ministry of Energy. <https://energia.gob.cl/electromovilidad/orientaciones-de-politicas-publicas>.

²⁶ *Global EV Outlook 2020* (2020). International Energy Agency, Paris, France.

²⁷ Ministry of Energy. http://www.dirplan.cl/estudios/Documents/Tercera_Mision_BID/1-Electromovilidad_en_Chile_Energia.pdf.

²⁸ *Global EV Outlook 2020* (2020). International Energy Agency, Paris, France.

²⁹ Crece la flota de autobuses eléctricos en Chile, ENEL X, 2019: <https://www.gob.cl/noticias/red-alcanza-una-flota-de-1000-buses-que-beneficia-cerca-de-tres-millones-de-personas-en-30-comunas/>

³⁰ *Electromovilidad. Proyección y propuestas para avanzar* (2018). Agency of Sustainability Energy (ASE) and Ernst Basler + Partner.

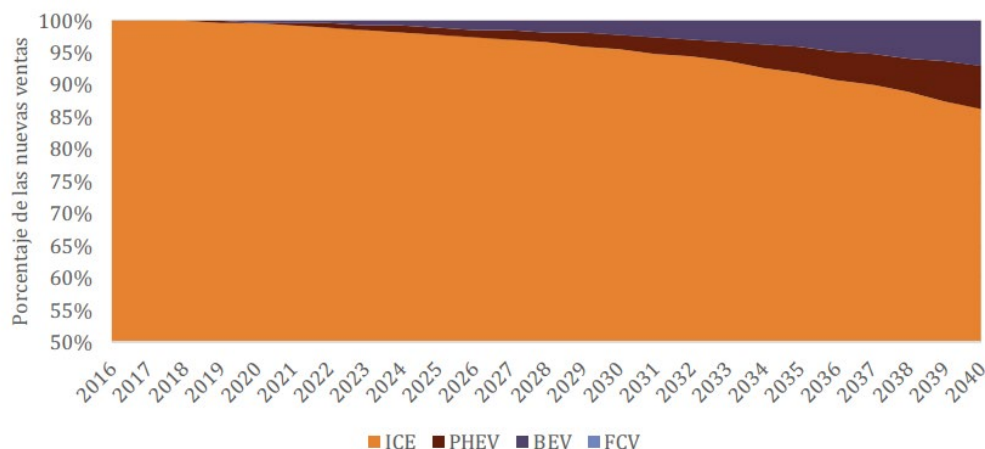


Figure 1: Share of electric vehicles as % of total new vehicle sales per year.
(ICE = internal combustion vehicle, PHEV = plug-in hybrid vehicle, BEV = battery electric vehicle, FCF = fuel-cell vehicle).

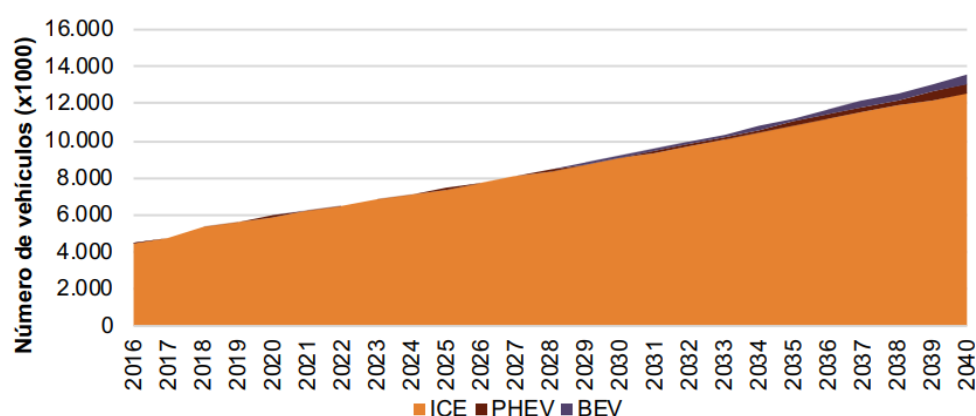


Figure 2: Number of vehicles in Chilean fleet by type.
(ICE = internal combustion vehicle, PHEV = plug-in hybrid vehicle, BEV = battery electric vehicle).

It is estimated that the fleet of fixed route taxis will grow from about 42,000 taxis today to about 51,000 by 2030 and more than 60,000 by 2050. Without any additional programmes and incentives other than those already envisaged in Chile today, it is projected that the electrification of the national fleet will take place at a slow pace. It is assumed that by 2030, only 3% of new taxis added to the fleet will be electric. Most new taxis will still be conventional internal combustion (ICE) diesel and gasoline vehicles. In the baseline scenario, a strong growth of hybrid vehicles is envisioned, with an estimated 30% of all new taxis being hybrid by 2030. On the growth of public buses in the regions, as the MTT is planning a significant restructuring of this sector (see below), estimates of growth have not been able to be made.

Policies and strategies

Chile has undertaken a series of measures to address the root causes and barriers mentioned in section 1 with the aim of facilitating a nation-wide transition to a low-emission transport sector. In terms of GHG emissions, as a signatory to the Paris Agreement Chile has set an ambitious nationally determined contribution (NDC).³¹ This includes the target of committing to a GHG emission budget not exceeding 1,100 MtCO₂eq between 2020 and 2030, with a GHG emissions maximum (peak) by 2025, and a GHG emissions level of 95 MtCO₂eq by 2030. Chile is also seeking to reach GHG neutrality by 2050, as established in the draft Framework Law on Climate Change that is currently under discussion in the National Congress.

³¹ https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Chile%20First/Chile%27s_NDC_2020_english.pdf

Chile is further currently preparing a long-term climate development strategy, in accordance with article 4.19 of the Paris Agreement.³² A participatory process for developing it is underway; it is estimated that the strategy will be finalized in 2021.

Chile has also set ambitious long-term targets through its Energy 2050 policy.³³ Through this, the country aims to produce 70% of its total energy demand from renewable sources by 2050. In line with this, in June 2019 the Ministry of Energy and Aes Gener, Colbún, Enel and Engie agreed to decommission the eight oldest thermoelectric power plants by 2024.³⁴ Furthermore, the government passed Law 20/25, which promotes the diversification of the country's energy mix. Also, a tax reform, passed in 2014, established a carbon tax of 5 USD per ton of CO₂ emitted for electricity power plants of 50MW and above. More recently, the Chile has committed to phasing out all coal electricity generation, equal to 40% of the matrix, before 2040.³⁵

On transport, the key guiding document is the National Electromobility Strategy, which was launched in 2017. Through this, the country aims to electrify 100% of all public transport by 2040 and 40% of the country's private car fleet by 2050. This is undertaken with the aim of contributing to the goals of energy efficiency and mitigation of GHG emissions and contributing to improving mobility and quality of individuals' life; along with other benefits such as reduction of emissions of local pollutants and the adverse effects on the population's health. The strategy sets forth an action plan with a series of action lines to achieve these targets:

- Establish the necessary regulations and standardization requirements of components that favor an efficient development of electromobility from the energy, environmental and mobility points of view;
- Promote the penetration of electric vehicles in public transport;
- Support the research and development of electromobility and enhance the formation of human capital at its different levels that allows its advance;
- Promote the development of electromobility, generating new balances that allow the market to support itself;
- Generate spaces for knowledge transfer and dissemination of information necessary for different actors to make decisions optimal with respect to electromobility.

Furthermore, through its Energy Roadmap 2018-2022, Chile has set a target of increasing the existing number of electric cars tenfold by 2022 compared to 2017 (2430 units by 2022). Key measures supporting the targets of the strategy and roadmap are the following:³⁶

TABLE 3. POLICIES AND REGULATIONS PROMOTING ELECTRIC MOBILITY

Name	Type	Year and status	Description	Objective
Labelling of energy consumption and CO ₂ emissions in light and medium vehicles	Regulatory	2016 Implemented and active	Supreme Decree N° 107, of 18 July 2016, the Ministry of Energy, extends the application of labelling to light, medium, electric and hybrid commercial vehicles and instructs on the regulation of labelling of energy consumption for motor vehicles.	Allow consumers to include in their decision to purchase information on vehicle fuel consumption and CO ₂ emissions, contributing to strive in making informed decisions to reduce energy consumption by the transportation sector and contribute to the mitigation of climate change and air pollution.
Renew your bus program	Economic incentive	2011 Implemented and active	Subsidy associated to the law of Subsidy to Public Transportation (Law 20,378), which provides access for funding the renovation of old buses for public	Modernize the existing fleet public transportation buses with less polluting vehicles, more efficient and safer. Replace old buses with newer and more efficient buses in

³² <https://cambioclimatico.mma.gob.cl/estrategia-climatica-de-largo-plazo-2050>.

³³ Energy 2050, Chile's Energy Policy, Ministry of Energy

³⁴ Plan de Descarbonización de la Matriz Eléctrica, Ministerio de Energía: <http://www.energia.gob.cl/iniciativas/plan-de-descarbonizacion-de-la-matriz-electrica>

³⁵ Clean Energy Ministerial, plenary intervention, Minister of Energy, H.E. Juan Carlos Jobet.

³⁶ Chile Biennial Update Report 2018. Government of Chile.

			transportation, either in regions and in the rural area of the Metropolitan Region, by new buses with better technology and less polluting.	different areas of the city of Santiago.
Renew your fixed-route taxi program	Economic incentive	2015 Implemented and active	The Law of National Subsidy to Public Transportation creates a subsidy delivered by Regional Governments (GORE) for the replacement of collective taxis with less polluting vehicles in regions, including electric and hybrid vehicles. Delivery of subsidies for replacement of light vehicles used as fixed-route taxis with more modern vehicles, considering scrapping of vehicles replaced in some cases.	Modernization of the existing fixed-route taxis fleet with less polluting vehicles, with standards of superior quality, more efficient and safer.
Green Tax for New Motor Vehicles	Regulatory	2015 Implemented and active	Article N°3 of Law 20,780, indicates that: "new motor vehicles, light and medium, with the exceptions in this article, shall pay, only once, an additional tax expressed in monthly tax units". The tax is applied based on vehicle usage rates, NOx emissions and vehicle purchase price. Electric vehicles are exempt from the tax. It began to govern all those who buy a new vehicle for private use starting December 29, 2014.	Encourage the entry of less polluting vehicles, allowing a cleaner and more efficient fleet of vehicles.
Electronic Procedure for Installation of Charging Points (TE-6)	Regulatory	2018 Implemented and active	Procedures for installation of charging infrastructure. Includes geolocalisation data of the charging infrastructure.	Provide clarity to private sector on technical specifications and provide civil society with mapping of charging points.
Vehicle fuel standards	Regulatory	Implemented and active	Euro V for all vehicles, except for urban buses in Santiago which are required to be Euro VI	Increase fuel quality, reducing GHG and PM emissions, and reducing cost differential between conventional and electric vehicles.

In addition to the above, a new energy efficiency law is currently in the approval process in the Senate. Part of the law will establish energy efficiency standards for new vehicles sold by car manufacturers or importers. To encourage more electric and hybrid vehicles, multipliers of up to three per vehicle (for electric and hybrid) may be applied in the calculation of the sales average car efficiency for manufacturers or importers.³⁷

On waste, in 2016, Chile established law 20.920 (known as the extended responsibility of the producer, REP) for waste management, extended producer responsibility and promotion of recycling. The law established six waste streams, called priority products, to which the extended producer responsibility applies: lubricating oils; electrical and electronic appliances; vehicle batteries; containers and packaging; and household small batteries. The REP legal framework establishes that the producer (manufacturers or importers) of a priority product is responsible for the end of life disposal of the product. While the development of regulations has advanced on various workstreams under the law (such as on car tires), to date it has not established specific regulations for electric car batteries. Furthermore, although the process to develop the law considered its application to vehicles (conventional and electric), the final law did not include this

³⁷ <https://energia.gob.cl/electromovilidad/reglamentacion>

consideration. Thus, Chile is yet to introduce regulations for the waste management, extended producer responsibility and recycling of lithium car batteries and electric vehicles.

Chile has also advanced the participation of the private sector in the transition to low-carbon electric mobility. In early 2020 the government and more than 50 public and private entities signed the Public and Private Commitment for Electromobility 2020,³⁸ which includes the following targets, activities and commitments to be completed in the near future:

- Increase the number of electric vehicle chargers;
- Expand the electric vehicle offer considering light vehicles, trucks, buses and vans;
- Develop two new specific financing instruments for investment in electromobility;
- Develop the second international electromobility fair;
- Train human resources, including through a new diploma in electromobility, training of technicians and development of skills associated with the maintenance of electric vehicles and installation of electric chargers.

While the private sector is increasing its engagement in this sector, to date no specific financing instruments exist for supporting consumers to purchase electric vehicles.

Key governmental actors on electric mobility

The promotion and management of electric mobility in Chile is an interministerial effort and responsibility, co-led by the Ministry of Energy and the Ministry of Transport and Telecommunications (MTT). The Ministry of Environment is responsible for issues related to waste and the extended producer responsibility. The ministries are represented in the regions by ministerial regional secretaries (SEREMI) (see further information on stakeholders in section 6).

Baseline projects

TABLE 4. BASELINE PROJECTS

Project Name	Implementing Agency	Description	Implementation Period	Available or Approved Budget, US\$
GEF-6: Supporting the Chilean Low Emissions Transport Strategy (CLETS)	Development Bank of Latin America (CAF)	The project aims at changing the public-transport market in Chile. It aims to achieve this by accelerating the adoption of integrated and sustainable mobility in Chile and supporting a policy commitment towards low-carbon sustainable development in the public-transport sector. (See further information in the text following this table and in section 3)	2020-2024	US\$ 40,479,821 GEF project financing: US\$ 2,900,000 Co-financing: US\$ 37,579,821
Call for strategic consortiums for electromobility	Production Development Corporation (CORFO)	A call for strategic consortiums for electromobility, designed by the Ministry of Energy and Ministry of Transport and Telecommunications (MTT) to encourage the deployment of electromobility in Chile, will be launched in 2020. The objective is to work as an enabling platform and focus on the requirements for the development and deployment of electromobility in Chile. CORFO will co-finance 70% of the program's total cost, up to USD 7,000,000.	2020-2025	US\$ 7,000,000

³⁸ Compromiso público y privado por la electromovilidad 2020, Ministerio de Energía, Ministerio de Transportes y Telecomunicaciones y Ministerio del Medio Ambiente, 2020.

Fixed-route taxi pilot in Coyhaique	Edelaysen/SAESA Group	<p>The energy utility SAESA piloted two electric fixed-route taxis (Hyundai Ioniq) for a period of 12 months in the city of Coyhaique. The vehicles travelled an average of 160 kilometres each day. SAESA financed the supporting charging network.</p> <p>The pilot provided important technical and administrative lessons learned for the GEF project. Technical information on selection of route, vehicle type, electricity usage, charging locations and vehicle usage performance will support the elaboration of the vehicle pilot specifications (see output 2.1, deliverables D2.1.2 - D2.1.4).</p> <p>On administrative questions, the utility is facing difficulties in transferring the used pilot vehicles to the local taxi union, due to Ministry of Transport and Telecommunication regulations. To avoid this challenge for this GEF project, the project will rent vehicles and work closely with the MTT in project execution, including in the obtaining of relevant approvals (e.g. see deliverable D2.1.1).</p>	2019-2020	Information not publicly available.
<i>(Not applicable)</i>	Compañía de Petróleos de Chile (COPEC)	During 2020 will construct an electric bus station that will include 57 x 150kW chargers that will allow the incorporation of 215 new electric buses to the Santiago bus fleet.	2020	Information not publicly available.
<i>(Not applicable)</i>	Blink Charging	Private firm will encourage the development of sustainable electromobility in Chile with the implementation of a 127 AC/DC charger grid and a software platform that will allow charger and vehicle fleet management.	2020	Information not publicly available.
ENEL X Plan	ENEL X	Will support the deployment of 1,200 charging stations across the country, allowing Chile to build the first national infrastructure network of public charging.	2019-2024	US\$ 8,200,000
Electric vehicle charging grid	Regional Government and COPEC	The government of the metropolitan region and COPEC agreed an electric vehicle charging grid will be deployed within the 52 communes of the Metropolitan region. The grid will consist of 104 x AC 44 kW chargers that will allow simultaneous charging through 2 connectors of 22 kW each.	2020 onwards	US\$ 1,200,000
Increase in fast charging stations availability	Enx	Enx will seek to deploy fast charging stations in at least 5% of its service stations.	2020-2021	US\$ 1,200,000 – US\$ 1,800,000

Increase electric mobility in own car fleet	Transvip	Transvip has committed to increase its electric vehicle fleet by 30 units, and to implement 3 electric charging stations.	2020	US\$850,000
Moving Chile	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Led by the Ministry of Transport and Telecommunications and the Ministry of the Environment, the project supports the creation of financing mechanisms for electric buses in the regions and the undertaking of an associated pilot.	2019-2021	EUR 2,000,000
Green Climate Fund Readiness: Advancing a regional approach to e-mobility in Latin America	Green Climate Fund <u>Implementer:</u> UNEP Regional Office for Latin America and the Caribbean, through its MOVE platform	Regional knowledge exchange, capacity building and development of proposals for climate finance through the Green Climate Fund. Work began in late 2020.	Mid 2022	US\$ 2,800,000 total US\$ 200,000 (for Chile)
Supporting the Government of Chile in the promotion of interoperability of electric vehicle charging in Latin America	European Union (EUROCLIMA+) <u>Implementer:</u> Agency of Sustainability Energy (ASE) and the UNEP Regional Office for Latin America and the Caribbean	Support the achievement of an intergovernmental agreement at the regional level to promote the development and scaling of networks and interoperable charging services for electric vehicles in the region.	2021	EUR 50,000
The Zero Emission Bus Rapid-Deployment Accelerator (ZEBRA)	Partnering for Green Growth and the Global Goals 2030 (P4G), C40, International Council on Clean Transportation <u>Implementer:</u> Centro Mario Molina Chile	Support the further the scale up of electric buses in Santiago to 2000 units as part of the new concession.	2021	(Not publicly disclosed)

GEF-6 project: Supporting the Chilean Low Emissions Transport Strategy

Included in Table is the approved GEF-6 “Supporting the Chilean Low Emissions Transport Strategy” (CLETS) project. The project’s objective is to support Chile in a transformational shift towards low-emission urban mobility systems. It focuses on public urban mobility as a common good and tackles regulated sectors which function through public-private partnerships and licensing systems. It will seek to develop high-level outcomes such as promoting policy, planning and regulatory frameworks that foster accelerated adoption of integrated low-emissions mobility systems. These include activities that increase the amount of information available for planning, designing, and implementing sustainable urban mobility systems at the national level. It will promote sustainable urban mobility by increasing the capacity for innovation and identifying and sharing best practices. Activities will promote accelerated transfer of knowledge and capacity to stakeholders, including climate change considerations in transport-related post-graduate curricula, and information dissemination via traditional means and social media. It will also develop financing mechanisms to support the integrated

adoption of low-emissions mobility systems. This will be achieved through investments in sustainable urban mobility and urban planning measures in representative urban areas.

In the design of this proposed GEF-7 project, effort has been made to ensure complementarity, establish synergies, and avoid duplication with the GEF-6 project. Section 3 describes alignment and synergies between the two projects. Section 6 describes coordination between the two.

Baseline activities in the regions

On buses, to shift regional public transport towards mass transport systems and promote electric mobility, the Ministry of Transport and Telecommunications (MTT) is working on the deployment of mass transport electric corridors in different regional cities. Announced by President Piñera, this project, called RED Regiones, plans to replicate the business model of electric buses in Santiago, formalizing the sector with the construction of bus rapid transport (BRT) lines operated with fully electric fleets. As in Santiago, the private sector would engage in bulk bidding for purchasing of electric buses on dedicated and formalized routes. The government intends to deploy 300 electric buses in the following years.³⁹ This effort is being accompanied by private sector financial mechanisms for supporting bulk bus purchases, such as a that recently launched by energy provider Enel X.⁴⁰ It is also being supported through a GIZ Moving Chile project (see table 4). In 2020, due to the national social conflict and the outbreak of the COVID pandemic, the MTT's plans for formalizing the regional bus systems have required readjustment, with this process on-going. Overall the mass transport public system requires around US 1 billion in subsidies out of which approximately US 500 million is destined to the RED system of the Metropolitan area and the rest to the regions. Given the ongoing plans of the MTT and the relatively small impact that could be attained with GEF fund in the promotion of electric buses in regions due to the size of the bus system in the country, it was decided by authorities that the GEF-7 project would have greater impact by complementing this and focusing on demonstrating electric fixed route taxis, to facilitate the transition of this fleet of more than 50,000 vehicles.

On fixed-route taxis, in 2011 the MTT, the Ministry of Economy, the Interior Ministry, and the Ministry of Public Health signed Decree 44, which instated the vehicle replacement programme “Programa Renueva tu Colectivo.” This consists of a fixed route taxi (taxi-colectivo) vehicle renewal programme by which regional governments provide a subsidy to vehicle owners willing to replace their current vehicle for a less-polluting, higher standard, safer and more efficient vehicle. As shown in Table 5, the amount of the subsidy varies between US\$360 – US\$8,300 depending on the replacing vehicle's fuel economy and technology, with electric vehicles receiving the highest subsidy. Whilst, the subsidy has been effective in promoting a renewal of the existing fleet, it has not been sufficient in promoting the uptake of electric vehicles, with no taxi drivers requesting a subsidy to acquire the latter. As a result, MTT is evaluating increasing the vehicle exchange subsidy for EVs to approximately US\$11,000. However, this still falls short of the current price gaps between an electric vehicle and a conventional one, which is estimated at US\$15,000 to US\$20,000, depending on the make and model. It can be observed that the current subsidy is less than half of the existing price gap between an EV and a conventional equivalent vehicle. In 2019, three-quarters of Chile's regions opened a call for submissions from taxi owners to benefit from the scheme (Antofagasta, Araucanía, Arica and Parícuta, Atacama, Aysén, Bío Bío, Los Lagos, Los Ríos, Magallanes, Maule, O'Higgins and Valparaíso). To date, the MTT has not considered the location of charging stations to promote the update of electric fixed-route taxis.

TABLE 5. SUBSIDY AMOUNT BY TECHNOLOGY. “RENUÉVA TU COLECTIVO” PROGRAMME

Vehicle technology	Subsidy amount, US\$
Gasoline	360 – 4300
Diesel	360 – 3600
Hybrid Electric	360 – 5350
Battery Electric	8300

³⁹ <https://www.cooperativa.cl/noticias/pais/transportes/sistema-de-transportes-red-llegara-a-regiones-con-buses-electricos/2019-05-29/154035.html>

⁴⁰ <https://www.enel.cl/es/conoce-enel/prensa/news/d202007-enel-x-se-asocia-a-fondo-de-inversion-y-apuesta-a-triplicar-flota-de-buses-electricos.html>

To date, little capacity-building activities have been undertaken to build the capacity of regional actors on electric mobility. The Ministry of Energy has undertaken a series of webinars in 2020 (originally planned as regional workshops, but changed to webinars due to COVID-19) focusing on building the capacity of managers of public fleets throughout Chile. In particular, this was aimed at educating heads of administration and finance on the benefits of electric mobility technology to optimize the use of vehicle fleets, improve their management and obtain greater energy efficiency. In 2019, the Ministry of Transport and Telecommunications travelled through-out the regions to hold meetings with regional officials and transport associations to inform of changes to regulations, especially as related to electric buses. Furthermore, in 2019 the Agency of Sustainability Energy (ASE) held a one-day event in Talca with 40 fixed-route taxi drivers in which the drivers could test-drive an electric vehicle and speak with experts. On charging infrastructure, in 2019 the Ministry of Energy together with the Energy Superintendence held a seminar in La Serena on distributed energy and electric mobility, which, amongst other topics, informed regional participants of the regulations related to the charging of electric vehicles. To date there has not been a focused and structured programme to support the building of capacity of regional stakeholders to support electric mobility adoption in the regions. While the GEF-6 project aims to build capacity of the professional/technical community, including professionals and technicians on electric fleet operations, maintenance and repairs (see section 3), there continues to be a lack of focus on regional decision-makers, safety personnel and taxi-drivers.

Baseline descriptions of the three pilot cities

As will be described in section 3, this project proposes to undertake activities in three regional cities: Antofagasta, Puerto Montt and Talca. The process for selection of these three cities is described in section 3. Here following is a baseline description of these:

- Situated in northern Chile, Antofagasta is the fifth largest city in Chile (approximately 350,000 residents). It has 3966 fixed-route taxis and 1100 buses. The average age of its fixed-route taxi fleet is 6.5 years. It has 46 fixed-taxi routes.⁴¹
- Puerto Montt is the ninth largest city in Chile (approximately 240,000 residents) and the largest in the south. It has 3693 fixed-route taxis and approximately 855 buses. The average age of its fixed-route taxi fleet is 6 years. It has 32 fixed-taxi routes.
- Situated in the centre of Chile, Talca is the tenth largest city in Chile (approximately 235,000 residents). It has 3024 fixed-route taxis and approximately 700 buses. The average age of its fixed-route taxi fleet is 5.7 years. It has 34 fixed-taxi routes.

Baseline activities currently being undertaken in the selected cities or their respective regions are described in Table 6.

TABLE 6. BASELINE PROJECTS IN ANTOFAGASTA, PUERTO MONTT AND TALCA

Talca	Antofagasta	Puerto Montt
<p><u>Renueva tu colectivo programme:</u> Together with the Energetic Sustainability Agency, the regional government will seek to strengthen the Renueva tu colectivo programme and encourage vehicle replacement with electric mobility.</p> <p><u>Vehicle reconversion policy:</u> create a public transport proposal, based on a vehicle reconversion concept as a technical and economic alternative, for the development of electric mobility in the sector.</p>	<p><u>Electric Bus Line Antofagasta – Calama:</u> This initiative consists of building depots, charging stations and exclusive lanes for electric buses in the corridor Antofagasta-Calama. It includes the planned acquisition of 70 x 9.5-meter electric buses to be deployed in within the electric corridor of Antofagasta-Calama.</p> <p>MTT electric vehicle chargers</p> <p><u>The Ministry of Transport and Telecommunications is currently seeking expressions of interest from the private sector for the installation of a network of charging stations in Antofagasta. It is estimated that the project will be implemented in the second half of 2021.</u></p> <p><u>Sustainable mobility plan for the city of Antofagasta:</u> The plan is framed within a EUROCLIMA programme and includes an</p>	<p>Development of an electric corridor in the city of Osorno, Aisen region, including 8-meter electric buses with a 56-passenger capacity.</p>

⁴¹ http://www.subtrans.cl/subtrans/doc/taxis_colectivos_urbanos_ppales_ciudades_0211.pdf.

<p><u>Micro electric mobility:</u> implementation of a micro electric mobility system through the deployment of a public electric bicycle system.</p>	<p>action plan for the monitoring of sustainable mobility in Antofagasta.</p> <p><u>Renueva tu taxi colectivo programme:</u> During 2019 the implementation of this programme resulted in the renewal of a total of 235 fixed-route taxis (234 cleaner conventional vehicles and 1 hybrid vehicle).</p> <p><u>Automatic payment systems for Public Transport:</u> The local government is working alongside the Ministry of Transport and Telecommunications in the development of a payment system to be implemented as a financial managing system of the public transport sector.</p>	
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3) Proposed alternative scenario with a description of project components, outcomes, outputs and deliverables

Overview

Sections 1 and 2 highlighted the gap between efforts and results obtained in Santiago and the rest of the country on facilitating the transformation to electric mobility, with the latter not experiencing a trickle down of the capital's success. There are significant social and economic differences between the capital and the regions, with measures applied in the capital for scaling up electric mobility not suitable to the rest of the country. There is thus a need for GEF funds to support the country to achieve a sustainable transition to electric mobility in the regions by addressing the root causes and barriers identified in section 1 and taking into consideration specific Chilean regional circumstances. Through its National Strategy on Electric Mobility, Chile is aiming for 100% electrification of its public transport system by 2040, a highly ambitious target. In this context, the MTT is working on the deployment of electric buses in regional cities.³⁹ However, efforts are not yet focused on transforming the more than 50,000 fixed route taxis in Chilean regions to electric vehicles. Fixed-route taxis play a key role in the daily lives of the populations of the Chilean regions. The demonstration of the viability of electric vehicles as fixed-route taxis will play a key role in creating local electric vehicle markets and consumer confidence in the technology's suitability for the regions.

This project aims to facilitate the transition to electric vehicles in the regions by supporting the demonstration and scale-up of fixed-route electric taxi fleets, ultimately supporting Chile to meet its national target of 100% electrification of public transport by 2040. It has four components. Component 1 will focus on strengthening coordination, consultation, and the capacity of key actors for effectuating the transition to electric mobility in the regions. Component 2 will focus on demonstrating the technological, economic and social viability of electric mobility for fixed-route taxi systems under local operating conditions, as well as its environmental benefits. This will primarily aim to address the central barrier of a lack of confidence in the technology to address local needs. Component 3 will focus on facilitating a sustained scale-up of the pilots by creating financial instruments that reduce capital requirements and incorporate consideration of life-cycle costs of electric taxis. This component will also support the development of private sector investment plans and business models for ensuring a long-term and sustainable transition to electric mobility. Finally, Component 4 will focus on the environmental sustainability of the transition to electric mobility by supporting the Ministry of Environment to develop regulations on extended producer responsibility and build local capacity on the reuse, recycle and end-of-life vehicle disposal of both electric and conventional vehicles.

The project directly supports the implementation of Chile's Nacional Strategy for Electric Mobility. The following table indicates alignment between 'action lines' of the strategy and project outputs.

TABLE 7A. GEF-7 IMPLEMENTATION OF THE NATIONAL STRATEGY FOR ELECTRIC MOBILITY

National Strategy for Electric Mobility	GEF-7 project
Action line 6: Explicit incorporation of vehicles and their components in the recycling law	Outputs 4.1 and 4.2
Action line 8: incentives for fixed-route taxis	Outputs 2.1, 2.2, 3.1, and 3.2

Action line 13: Electromobility training for emergency, rescue and injured care personnel	Output 1.3
Action line 15: Training of public officials and decision makers	Outputs 1.3 and 3.3
Action line 17: Development of commercial fleet pilot projects	Output 2.1
Action line 20: Diffusion of electromobility	Output 1.2
Action line 21: Definition of an institutional structure for the management of the electromobility strategy	Output 1.1
Action line 23: Participation of Chile in international instances	Participation of Chile in the Global Programme on Electric Mobility, through the child project

Coherence and complementarities with the GEF-6 project: “Supporting the Chilean Low Emissions Transport Strategy”

The GEF-7 project has been designed to complement and build synergies with the aforementioned GEF-6 project. This section describes complementarities and synergies between the two projects. Chapter 6 explains coordination between the two.

To summarize the overall differences between the two projects, the GEF-6 project has a broader approach, focusing on sustainable transport as a whole, while the GEF-7 project focuses specifically on electric mobility. Geographically, the GEF-6 project will provide technical assistance for investments related to mass transport in Santiago, Temuco and Concepcion, integrated mobility in Villarica and fixed-route taxis in La Serena. The GEF-7 project will focus on electric mobility pilots for fixed-route taxis in Antofagasta, Puerto Montt and Talca. On areas of work, the GEF-7 project has been designed to complement that of the GEF-6. GEF-7 results and relevant information will be channeled through the information and dissemination activities of the GEF-6 project. Data collected throughout the GEF-7 pilots will be made available through the open data strategy of the GEF-6 project. In limited areas both projects will explore common themes. For instance, both projects will focus on building capacity, however these will undertake a different focus, as noted in the table below. Furthermore, coordination (as described in section 6) will ensure that such efforts are complementary and build synergies. The GEF-7 pilots will also incorporate connectivity apps and digital payment platforms, consistent with activities in the GEF-6 project related to integrated urban mobility.

There are also areas in which the GEF-7 project has a different focus to that of the GEF-6. In the context of recent national developments, the GEF-7 project has adopted a strong social focus, establishing multi-stakeholder consultation strategies and social evaluations of the entire fixed-route taxi ecosystem. Furthermore, the GEF-7 project will focus directly on ensuring the scalability of electric mobility in the regions by creating financial instruments to help reduce the price gap between conventional and electric vehicles, and building investment plans and business models with the private sector. A further element of difference between the two projects is related to the environmental sustainability of vehicle electrification. The GEF-7 has a direct focus on building capacity and business models related to the reuse, recycle and responsible end-of-life disposal of electric vehicles. Table 77 summarizes the GEF-6 and GEF-7 outputs and highlights the identified coordination, complementarities, and synergies between the projects.

TABLE 7B. INTERACTION COORDINATION, COMPLEMENTARITIES AND SYNERGIES BETWEEN GEF6 AND GEF7 PROJECTS

GEF 6 Outputs ⁴²	Coordination, complementarities and synergies between the projects	GEF 7 Outputs
Output 1.1.1. Information campaigns: Through specification of audiences, followed by diffusion and informative activities, different target audiences get to discern contextualized costs, impacts and benefits of sustainable mobility	All information generated by GEF 7 activities will be disseminated through the GEF 6 platform.	N/A
Output 1.1.2. Training: Through specialized training, the professional/technical community within pilot initiatives and countrywide includes professionals and technicians knowledgeable of electric fleet (operation, maintenance, repairs).	All capacity building activities in both GEF 6 and GEF 7 projects will be complementary. While GEF 6 focuses on building the capacity of actors related to operations, maintenance, and repairs, GEF 7 will focus on capacity building of regional administrators, safety professionals	Output 1.3: Chilean region local governments and other stakeholders are trained on technical, financial, and regulatory aspects of electric mobility

⁴² As per information contained in the approved project document.

	and the stakeholders of the fixed route taxi ecosystem.	
Output 1.1.3. MRV system (Monitoring, Reporting and Verification) Through studies and thorough monitoring, reporting and verification, CLETS's effective costs, impacts and benefits will be demonstrated and disseminated.	MRV activities of each project will be separate and independent, however data will be shared through the GEF-6 platform (GEF 6, output 1.3.4).	Output 2.2: Evidence of the viability of electric vehicles in Antofagasta, Puerto Montt and Talca is disseminated to national and Chilean region decision-makers
Output 1.2.1. Support to the formalization and diffusion of the Chilean Low Emissions Transport Strategy	The GEF-7 national coordination body will support the diffusion and implementation of the GEF 6 strategy and facilitate coordination of all activities relevant to electric mobility.	Output 1.1: A national electric mobility coordination body is created for governmental stakeholders
Output 1.2.2. Experience exchange and dissemination, national level Through experience exchange and other knowledge-management interventions, the line of work will ensure that there are key professionals in regions knowledgeable of the effective costs, impacts, opportunities and benefits of sustainable mobility.	The multi-stakeholder consultation strategy will produce information related to uncertainties and concerns relevant to the fixed route taxi ecosystem and make this information available to the GEF6 team.	Output 1.2: A multi-stakeholder consultation strategy is implemented to engage all Chilean region stakeholders in the transition to electric mobility
Output 1.3.1. Support to the interoperability of methods of payment Through technical assistance, the project will support that more intermodal instruments are tested, and lessons are learnt and are widely available.	The GEF-7 pilot projects will enable the use of connectivity platforms and digital payment system. Where relevant these will build upon GEF-6 efforts on intermodal instruments.	Output 2.1: The viability of 6 electric vehicles as part of the fixed-route taxi fleet is demonstrated to local and national stakeholders in Antofagasta, Puerto Montt and Talca
Output 1.3.2. Energy certification of vehicles Through technical assistance, the line of work will contribute to a shared outcome that the certification process for vehicles does not contain fossil-fuel lock-ins. The project provides short-term support to 3CV to advance energy-consumption certification and labelling.	The GEF-6 output is independent of GEF-7 activities. Energy certifications promoting the use of low and zero emission vehicles is directly aligned with the GEF7 project objective.	N/A
Output 1.3.3. Collective-taxi information crowdsourcing The project will support innovation on processes for the useful digitization of colectivo routes, so that such processes are tested and systematized.	The GEF 7 project will draw on any mapping undertaken in GEF-6 for its analysis and recommendations for the electrification of this sector. Information generated throughout the GEF-7 project will be made available to the GEF6 management unit to support their analysis.	Output 3.2: Business models for deploying electric fixed-route taxis in Chilean regions are presented to national and regional government entities and the private sector for implementation
Output 1.3.4. Open Data strategy The project will support that a shared Open Data strategy is discussed and in implementation among all relevant actors, aiming at making all disclosable public data on mobility available and interoperable.	Data generated throughout the execution of GEF-7 pilot projects will be shared through the open data strategy developed throughout the GEF 6 activities.	Output 2.2: Evidence of the viability of electric vehicles in Antofagasta, Puerto Montt and Talca is disseminated to national and Chilean region decision-makers
Output 1.4.1. Dissemination (international level) The project supports exchange and policy-dialogue activities carried out by relevant initiatives under no geographical limitation but expected to focus primarily in Latin America. Activity will be carried out to ensure that links and channels exist for an enhanced co-learning between key professionals in like-minded initiatives worldwide.	The GEF-7 project is a child project of the GEF global programme on electric mobility. Through programme's regional platform, effort will be made to share also relevant experiences of the GEF-6 project.	GEF 7 Global Programme on Electric Mobility.
Output 1.4.2. Identification, systematization and promotion of best practices Hereby, it will be sought that CLETS implementation includes an effective mechanism for the identification, systematization and dissemination of best practice.	The GEF-7 project will draw on such best practices, where relevant, for its capacity building activities.	N/A
Output 2.1.1. ZLE (zero and low emission vehicles) Transantiago (knowledge source) Through the provision of capacity for Transantiago to act as knowledge source for replication and uptake, Transantiago's electrification strategy will account for gender, emissions and socioeconomic factors in its MRV system and count with established capacity for the identification, systematization and dissemination of lessons learnt.	This activity is independent of the GEF7 programme	N/A

Output 2.1.2. ZLE Bus in Concepción and Temuco Through its support to pilot initiatives in the cities of Concepción and Temuco, at least these two regional cities will have advanced (bus) elements of effective sustainable mobility strategies.	This activity is independent of the GEF7 programme	N/A
Output 2.1.3. ZLE Collective taxi in La Serena Through its support to a pilot initiative in the city of La Serena, at least this city will have advanced (collective taxi) elements of an effective sustainable mobility strategy	Together, the fixed route electric taxi pilots in La Serena (GEF 6) and Antofagasta, Puerto Montt and Talca (GEF 7) will produce evidence of the viability of electric taxis in different geographic and socio-economic conditions in the Chilean regions, for scale-up across the country. Through data sharing (see above) the pilots will ensure lessons learned and good practices from both GEF-6 and GEF-7 are cross-fertilized, to ensure good practices and lessons learned of each are incorporated into each project.	Output 2.1: The viability of 6 electric vehicles as part of the fixed-route taxi fleet is demonstrated to local and national stakeholders in Antofagasta, Puerto Montt and Talca
2.2.1. Integrated urban mobility intervention in Villarrica Through its support to a pilot initiative in the city of Villarrica, the project will contribute to enhanced attention to women and vulnerable population's needs within bicycle infrastructure standards, to the development of effective paternalization standards and to a contextualized analysis of barriers to intramodality.	This activity is independent of the GEF7 programme	N/A
N/A	This activity is independent of the GEF6 programme.	Output 3.1: Financial instruments are created to incentivize fixed-route taxi owners to purchase electric vehicles in Chilean regions
N/A	This activity is independent of the GEF6 programme	Output 3.3: Investment roadmaps for the long-term viability of Chilean electricity grids to support electric vehicle uptake are presented for implementation by national policy-makers and regional electricity utility companies
N/A	This activity is independent of the GEF6 programme	Output 4.1: Waste companies are trained in reusing, recycling and final disposal of vehicles (both conventional and electric) and electric batteries
N/A	This activity is independent of the GEF6 programme	Output 4.2: Standards and legal framework for regulating the waste management, extended responsibility of the producer and recycling of electric vehicles and electric vehicle components are drafted for adoption by the Ministry of Environment.

Component 1: Institutionalization of low-carbon electric mobility

This component aims to support the government in demonstrating enhanced coordination, consultation and increased capacity on promoting electric mobility in the Chilean regions. A national electric mobility coordination body will be established to facilitate coordination on the multitude of efforts being undertaken to promote electric mobility in the regions (including the GEF-6 project). A multi-stakeholder consultation strategy will ensure the social and economic viability of the scale-up of electric mobility in Chilean regions. Furthermore, activities will be undertaken to build the capacity of local and regional stakeholders on electric mobility, particularly those involved in fixed route taxi operation. The component builds on co-financing related to in-kind contributions provided by the Ministry of Energy and the Ministry of Transport and Telecommunications with regards to coordination and consultation. It is also leveraged by support deployed by CORFO to support the deployment of electric mobility across Chile. The component aims to directly support the implementation of the National Strategy on Electric Mobility, action line 13: Electromobility training for emergency, rescue and injured care personnel; action line 15: Training of public officials and decision makers; and action 21: Definition of an institutional structure for the management of the electromobility strategy.

Outcome 1: The government demonstrates enhanced coordination, consultation and capacity for promoting inclusive uptake of electric mobility in the Chilean regions.

Outputs:

- *Output 1.1: A national electric mobility coordination body is created for government stakeholders.*

Through this output, a national electric mobility coordination body will be created to coordinate and centralize information related to electric mobility activities on-going or in the pipeline across the country. This will consist of a working group which meets periodically, maintains a record of minutes and focuses on coordinating initiatives and keeping all relevant national and local government authorities informed and up-to-date on the progress of different electric mobility initiatives. The output aims to enhance the efficiency of human and financial resources and impact of interventions. The body will be constituted of government officials, including the Ministry of Energy (which will serve as the body's secretary), MTT, Ministry of Environment, Ministry of Finance and the Ministry of Interior. In addition, the coordination body will ensure close contact with the ministerial regional secretaries (SEREMI) in the Chilean regions, which act as ministerial representation in each Chilean region. They will enable contact with regional governments (GORE) authorities and help articulate activities with local stakeholders. Meetings will be held quarterly, with information stored on a document-sharing platform. Participants will be at the technical level, that are executing related activities (including the GEF-6 and GEF-7 mobility projects).

D1.1.1 – National electric mobility coordination body (including terms of reference, membership, and procedures).

D1.1.2 – Quarterly meetings (minimum 4 per year) and publicly available meeting minutes uploaded to the platform (D.1.1.3).

D1.1.3 – Document-sharing platform (drive, SharePoint or similar).

- *Output 1.2: A multi-stakeholder consultation strategy is implemented to engage all Chilean region stakeholders in the transition to electric mobility.*

Social issues in Chile have highlighted that broad and deep stakeholder consultation is needed to effective adoption of new technologies, including electric mobility. The scale-up of low-carbon electric mobility requires the involvement of local, regional and national governments, the private sector and civil society at the regional and local levels. In this context, a multi-stakeholder consultation strategy will be developed and implemented to engage all stakeholders involved in the deployment of the technology in the Chilean regions. The strategy will seek to consult key local stakeholders on the proposed interventions on electric mobility in the target cities (see component 2) and on other initiatives planned throughout the Chilean regions (for example, ENEL X's planned implementation of electric vehicle chargers throughout the country). It will seek to incorporate local stakeholder views, needs and priorities into electric mobility initiatives in the regions, to ensure their social and economic viability and sustainability. A focus will be placed on engaging economically vulnerable groups, such as single-parent women, rural communities, people with reduced mobility and independent fixed-route taxi drivers. The results of the consultations will be shared with the coordination body (Output 1.1), as a feedback loop to enhance the effectiveness of initiatives on electric mobility. This information will also serve as inputs into the design of the financial instruments (output 3.1) and policies and regulations (output 4.2). Recommendations for a long-term consultation mechanism will be developed and delivered to key government actors.

A single multi-stakeholder consultation strategy will be designed and implemented as an overarching strategy which will be applied to the three target cities (see component 2) and also nationally. The strategy will contain key elements including: consultation scope and objectives, identification of stakeholders, envisaged consultation activities, and their timing. While the overarching consultation scope and objectives will be national, the strategy will be tailored to each of the regions to ensure effective implementation in these jurisdictions. The strategy will be tailored by firstly analysing the different geographic, climatic and socio-economic conditions of each city (north, middle and south). Following this, key stakeholders in each region will be identified, building upon the consultations held during the project preparation grant phase (see PPG stakeholder engagement report). Based on this analysis and identification of stakeholders, consultation activities will be tailored to each of three target cities. The design of such activities will draw on inputs from the regional SEREMIs and GOREs. The activities will be implemented through various activities, including the consultation and capacity-building workshops and sessions held in the target cities through output 1.3.

The overarching national strategy will be refined and further tailored to other regions based on the experiences of implementing the consultation sub-strategies in each of the target cities. These experiences will be captured in recommendations (deliverable 1.2.3) that strengthen the national consultation strategy and identify a long-term consultation mechanism.

D1.2.1 – Stakeholder consultation strategy.

D1.2.2 – Stakeholder consultation strategy activities (to be defined by D1.2.1, including consultation sessions at the three regional workshops of output 1.3).

- *Output 1.3: Chilean region local governments and other regional stakeholders are trained on technical, financial, and regulatory aspects of electric mobility*

This output aims to build the capacity of regional and local governments, safety professionals and stakeholders of the fixed route taxi ecosystem. It will achieve this through the provision of workshops and other capacity-building activities held in the Chilean regions. Workshops will be held in the north, middle and south of the country on each of the following three topics (3 workshop sessions on each of the following three topics):

- Fixed-route taxi fleet electrification technical feasibility. The first workshop session will detail the results of the route selection process undertaken for each pilot city (see component 2) and the operating conditions encountered. The second will be undertaken six months after the start of the pilots and will discuss results, barriers and lessons learned. Also, it will present preliminary findings of work to develop business models for deploying electric fixed-route taxis (output 3.2) and investment roadmaps for ensuring viability of electric grids (output 3.3). The third workshop will be held at the end of the pilots and will provide an in-depth technical analysis of the pilot results. It will also present the final results of outputs 3.2 and 3.3.
- Electric mobility economic outlook for fixed-route taxi applications. The first workshop session will provide an overview of expected economic performance of the electric taxis under normal operating conditions for the selected routes of each regional city pilot. The second will be undertaken six months after the start of the pilots and will discuss economic results to date. Also, it will describe how fixed-route taxi drivers and owners can purchase electric vehicles through the project's financial instruments together with the MTT subsidy, by a reduction in the capital cost of electric vehicles (output 3.1). Finally, the third workshop will be held at the end of the pilots and will provide an in-depth economic analysis of the pilot results, taking into consideration the pilots. It will also highlight to drivers the available offer of the financial instruments (3.1) and provide details on how they can use these for purchasing an electric vehicle alongside the support of local financial institutions.
- First response emergency units on electric vehicle safety and accident intervention. The first workshop session will be held before the start of the pilots to train the regional cities first response units as to how approach an accident site in which an electric vehicle or electric vehicle charging infrastructure is involved (on all types of electric vehicles). The second will be undertaken six months after the pilots and will refresh the concepts presented in the first workshop and also discuss safety issues, lessons learned or any safety-related matters that have occurred during the first six months. It will also draw on experiences from other interventions in Chile (on all types of electric vehicles). Finally, a third workshop will summarize good practices, experiences and lessons learned on safety management of electric vehicles, drawing on the outcomes of the pilots, experiences in GEF-6 and other regional and national interventions.

The workshops will be held in the pilot cities (see component 2) to also highlight to a broad range of regional stakeholders the progress of the electric mobility pilots. The workshops will draw on good practices, experiences and lessons learned shared through the support and investment platform for Latin America and the Caribbean, hosted by Centro Mario Molina Chile. Selected stakeholders who participate in the platform activities will ensure information gathered is incorporated in the Chilean regional workshops. The workshops will be implemented with the support of Centro Mario Molina Chile, to build synergies and complementarities with the Global Programme. The support and investment platform will also provide a help desk which will support the identification of national and international experts for supporting the capacity-building exercises and undertaking of studies. The workshops will also draw on knowledge gained from the efforts to scale up the electric bus fleet in Santiago de Chile, including through the ZEBRA initiative. The workshops undertaken will be gender sensitive. Also, all workshops will be available online as a webinar, to facilitate participation by those unable to join due to distance or COVID-19 restrictions. Online workshops will also be coordinated with the UNEP MOVE platform, an electric mobility portal hosted by the UNEP Regional Office of Latin America and the Caribbean. The workshops will also share a report on good practices and lessons learned on enforcing regulations for electric vehicles and charging infrastructure in Chilean regions, to serve as a guide for regional and local governments on such regulation. This report will draw on the work of this project, the GEF-6 project and summarize in clear language related governmental regulations and policies. A third capacity-building activity will be focused on national stakeholders. While the Ministry of Energy has developed standards to regulate electric vehicle charging infrastructure, technical institutions have a lack of field experience on enforcing regulations. To address this and facilitate north-south technology transfer, national technicians

will build capacity by undertaking an international visit to a city that has already enforced such regulations and has similar characteristics to those of Chile.

D1.3.1: Three Chilean regional workshops on fixed-route taxi fleet electrification technical feasibility.

D1.3.2: Three Chilean regional workshops on electric mobility economic outlook under current policy framework for fixed route taxi applications.

D1.3.3: Three Chilean regional workshops for first response emergency units on electric vehicle safety and accident intervention.

D1.3.4: International mission on enforcing regulations for electric vehicle charging infrastructure.

D1.3.5: Report on good practices and lessons learned on enforcing regulations for electric vehicles and charging infrastructure in Chilean regions

Component 2: Short-term barrier removal through low-carbon e-mobility energy demonstrations

This component aims to demonstrate to local and regional stakeholders the technical, financial and environmental viability of electric mobility in the regions, paving the way for the broad scale-up of the technology through-out the country. It will aim to achieve this by addressing barriers related to a lack of confidence of local actors in the viability of electric vehicles in local conditions. Such barriers will be addressed by piloting electric vehicles in three diverse and representative Chilean region cities in the north, middle and south of the country. The aim is that through the pilots and financial instruments (output 3.1), taxi drivers will have the confidence and financial means, as well as the infrastructure (see co-financing below), to shift to electric vehicles. Through the component a data management system will be developed to compile information generated by the tested vehicles and chargers. The component builds upon co-financing of the MTT and the private sector (Enel-X, SAESA and Enx) which are investing in the construction of electric vehicle charging infrastructure through-out the country. It also builds upon in-kind contributions from the Ministry of Energy, the Agency of Sustainability Energy (ASE), and CORFO to stimulate electric vehicle uptake. The component aims to directly support the implementation of the National Strategy on Electric Mobility, action line 8: incentives for fixed-route taxis; and action line 17: development of commercial fleet pilot projects.

To choose the cities, a multi-criteria selection process was undertaken by the Ministry of Energy, the Ministry of Transport and Telecommunications (MTT), the Energy Sustainability Agency, Centro Mario Molina and UNEP. The 16 largest regional cities were identified and then subject to a multi-criteria analysis using criteria including population size, fixed-route taxi fleet size, average vehicle fleet age, local PM pollution and percentage of renewable energy in the local electric matrix. A key deciding criteria was on also on how cities were considered in the MTT's plans to formalize mass transport systems in regional cities. Under the MTT's guidance and in accordance with its long-term plan for mass transport, cities in which fixed-route taxis were no longer planned to play a major role were discarded. The cities were also filtered by:

- How representative they were of regional cities, as pilots for generating good practices, experiences and lessons-learned that could be replicated and scaled-up in other cities;
- How diverse they were from each other, to ensure that each chosen city would present unique geographical and socio-economic characteristics, to generate a diversity of good practices, experiences and lessons-learned for replication and scale-up;
- Their estimated potential global environmental impact (through reduction of GHGs) during the demonstration period and in the medium- to long-term.

Based on this process, the cities of Antofagasta, Puerto Montt and Talca were chosen. Following this, the cities were validated with the Ministry of Energy, the MTT, the private sector and civil society. Stakeholder consultations were then undertaken with local representatives of each city and local taxi associations to confirm the social, environmental and economic viability of demonstrating electric fixed-route taxis in the selected cities (see further information in the stakeholder consultation report).

Outcome 2: Citizens of Chilean regions begin to use electric mobility for their public transport needs.

Outputs:

- *Output 2.1: The viability of 6 electric vehicles as part of the fixed-route taxi fleet is demonstrated to local and national stakeholders in Antofagasta, Puerto Montt and Talca.*

The output aims is to address technological confidence and awareness barriers by demonstrating electric vehicles with fixed-route taxi drivers and the general public in Chilean regional cities. Through these demonstrations, a critical mass of taxi drivers, users and local decision-makers will develop an understanding of the economic, social, and environmental viability of electric fixed-route taxis in their jurisdiction and beyond. In addition, through output 1.3, interested taxi drivers and owners who have piloted the electric vehicles will be encouraged to purchase an electric fixed-route taxi through the support of the financial instruments created under output 3.1. Furthermore, the use of leasing to acquire the vehicles (as described following) aims to incentivize the private sector to participate in the regions and open up the exploration of new business opportunities for this sector (including through the expansion of EV availability through leasing and renting schemes). It will also support these companies to develop understanding on electric vehicle performance, operations and resale value.

This demonstration involves leasing two electric vehicles and purchasing the charging infrastructure in each of Antofagasta, Puerto Montt and Talca (six vehicles in total) and demonstrating their viability as fixed-route taxis over a period of at least one year. GEF project funds will cover the renting/leasing costs for the vehicles for the duration of the pilot. Local leasing companies will provide the vehicles, with such companies currently offering the leasing and renting of electric vehicles in Chile and expressing interest to participate in the project.⁴³ Drivers will be rotated periodically (every two to three weeks) to build up a large number of users who have experiences with the vehicles. The demonstrations in these three cities will develop experiences, good practices and lessons learned for other cities with similar characteristics. The output will also test digital payment systems, user connectivity apps, and other fleet optimization strategies to maximize economic performance. This will include the use of a fleet management connectivity platform that will not only provide the mentioned services but also generate the data relevant to vehicle operation. This last point will be central to Output 2.2. To ensure that all taxi drivers interested in testing the electric vehicles have the chance to do so, an operation schedule will be arranged with the local taxi association. Focal points will be identified in each city taxi association and supported to facilitate the pilot operations in each city. At the beginning and end of the test period each driver will answer questionnaires on their expectations before the test and their thoughts after it. The operation schedule will ensure that interested female taxi drivers are included in the demonstration.

Whilst the charging station will be placed in a fixed location, the route evaluation will identify all routes where vehicles could operate without the need for additional charging during the day. This will allow for the vehicles to be picked up in the morning and returned at night. At the end of demonstration, the leased vehicles will be returned to the leasing company or companies that provided them. The demonstration will draw on the experiences of the use of 30 electric taxis in Santiago through the support of Engie, and the pilot of two electric fixed route taxis in Coyhaique through the electricity provider SAESA. Information from these will support the technical design of this demonstration, including with regards to route selection, vehicle type, electricity usage, charging locations and vehicle usage performance. The experiences in Santiago with digital payment systems will also contribute to the design of such systems for this demonstration.

- D2.1.1: Provisional fixed-route taxi licenses and insurance acquired for the six pilot electric vehicles.
- D2.1.2: Identification of taxi routes on which the electric vehicles will operate for each of the three cities.
- D2.1.3: Technical requirements of vehicle charging infrastructure for each of the three cities.
- D2.1.4: Technical requirements of the electric vehicles for each of the three cities.
- D2.1.5: Leasing of two light-duty electric vehicles for each city, based on specifications established in D2.1.4.
- D2.1.6: Electric vehicle charging infrastructure and its installation in each city, based on specifications established in D2.1.3. This will include the purchase of a multi-standard light duty vehicle charging station capable of charging two vehicles at the same time.
- D2.1.7: Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps.
- D2.1.8: Driver test drive protocol, operation and safety training in consultation with the local fixed-route taxi association.
- D2.1.9: Start (2.1.9.a) and end (2.1.9.b) of pilots in Antofagasta, Talca and Puerto Montt.

- *Output 2.2. Evidence of the viability of electric vehicles in Antofagasta, Puerto Montt and Talca is disseminated to national and Chilean region decision-makers.*

As noted in section 1, due to the lack of experience with electric vehicles in the Chilean regions, there is also a lack of data on the use of electric vehicles in such conditions. This results in a lack of information for supporting the national and

⁴³ Correspondence with leasing/renting companies MITTA (www.mitta.cl) and Europcar/ Tattersall (<https://www.europcar.cl/>).

regional governments, the private sector, academia and other key actors in developing, monitoring and evaluating policies, regulations and initiatives for promoting the uptake of electric mobility in the regions. This output will focus on collecting operational data generated through the pilots, analyzing it, and communicating the results to national and local authorities, city fixed-route taxi associations and the general public. Through D2.1.7, the vehicles will be equipped with monitoring devices. The information generated by these will be uploaded to city data management platforms, where it will be post-processed. The results and information will then be made available online through the GEF-6 project open-data strategy for stakeholders to visualize and evaluate the performance of the demonstrated electric vehicles in their jurisdiction and those of the other two cities. The University of Talca (Maule Region), University Austral (Los Lagos) and University of Antofagasta (Antofagasta), will be invited to participate in efforts to monitor and collect data on the electric vehicle pilots and in comparison to internal combustion engine fixed-route taxis.⁴⁴ Furthermore, the data and information will permit the calculating of potential air quality and economic benefits, based on a comparison with business-as-usual scenarios. All information will be shared through the open data strategy developed as part of the GEF-6 project.

D2.2.1: Electric vehicle and charging infrastructure data acquisition methodology.

D2.2.2: Monitoring and evaluation methodology, including before and after drivers' questionnaires.

D2.2.3: Personnel in each city trained in access the vehicle monitoring data management system.

D2.2.4: Quarterly operation and performance reports (minimum 4).

D2.2.5: Final report on electric vehicle techno-economic and environmental performance in the pilots, differentiated by city.

D2.2.6: Postprocessed data is online on the city data management system (D2.1.7) and accessible for interested stakeholders through the GEF-6 open data strategy.

Component 3: Preparing for scale-up and replication of low-carbon electric mobility

This component aims to build upon current efforts of the Chilean government and scale-up the demonstrations in component 2. Firstly, it will develop financial instruments that build upon the existing vehicle renewal scheme to provide affordable financing to regional taxi drivers for purchasing electric vehicles. The instruments will address the higher upfront cost and build upon lower total costs of ownership of electric vehicles, to ensure a long-term and sustainable replication of the project's pilots through-out Chilean regions. Secondly, business models for deploying electric fixed-route taxis in Chilean regions will be developed. These will catalyse market development and participation of the private sector in electrifying the fixed-route taxi sector. Finally, the component will achieve long-term scale-up by supporting Chilean regions with developing long-term investment roadmaps for electricity grids, to ensure that local infrastructure accompanies the scale-up of electric vehicles.

This component builds on private sector co-financing of energy providers ENEL X, ENEX and SAESA, which are investing in the development of a broad network of charging station infrastructure through-out the regions. Such infrastructure, together with the building of confidence through the pilots, will be key factors in the success of the financial instruments, business models and roadmaps. The component also builds on the MTT vehicle renewable subsidy scheme, which will provide funds to help close the price gap between conventional and electric vehicles. The component also builds upon funds committed by the MTT as part of their mass transport electrification strategy for regional cities. Also, this component will receive co-financing in the form of in-kind contributions from the Ministry of Energy and the Agency of Sustainability Energy (ASE). The component aims to directly support the implementation of the National Strategy on Electric Mobility, action line 8: incentives for fixed-route taxis.

Outcome 3: The private sector purchases electric vehicles to use as fixed-route taxis in Chilean regions.

Outputs:

- *Output 3.1: Financial instruments are created to incentivize fixed-route taxi owners to purchase electric vehicles in Chilean regions.*

This output aims to scale-up the purchasing of electric fixed-route taxis in the Chilean regions through financial instruments and a grant fund. It aims to address the barrier of higher upfront costs of electric vehicles, as even with the existing MTT subsidy taxi drivers have not purchased electric fixed-route taxis.

⁴⁴ Universities that expressed interest during the project development phase. An invitation will be extended to all relevant academic institutions.

Firstly, the output will support the Banco Estado to develop financial products that meet the needs of fixed-route taxi drivers in Chilean regions who wish to purchase electric taxis. The bank currently provides loans to more than 75% of the fixed-route taxi market in Chilean regions. It has a methodology to calculate risks in lending to fixed-route taxi drivers who purchase conventional vehicles, based on factors including individual credit-worthiness, driver income, fuel costs and maintenance costs.⁴⁵ This output will support the bank to develop a methodology for assessing the risk of lending to fixed-route taxi drivers who wish to purchase electric vehicles. This will be based on a total cost of ownership assessment for electric vehicles versus conventional ones, and other factors such as credit worthiness, route-location, electricity prices, vehicle technology and estimated income. Based on this methodology and international good practices, the output will support the bank to develop financial products that offer interest rates and related monthly payments, as well as other features, that are attractive to fixed-route taxi drivers and encourage them to purchase electric vehicles.

Secondly, the output will pilot a dynamic subsidy that is applied in addition to the existing subsidy provided by MTT. This will be undertaken with the aim of support the MTT in increasing its existing subsidy to a level sufficient to incentivize fixed-route taxi drivers to purchase electric vehicles. The MTT has noted that it is currently exploring increasing its current subsidy available for fixed-route taxi drivers to purchase electric vehicles, as to date the actual subsidy has not been used for the purchasing of any electric vehicles. However, the MTT is unable to test different subsidy levels and dynamic subsidies, due to the slowness of governmental processes and the implications and possible market distortions that such testing at scale could induce.

To determine an effective subsidy in real conditions, through this output, the Agency for Sustainability Energy will create and manage a grant fund that will provide an additional subsidy to interested fixed-route taxi drivers in the regions.⁴⁶ GEF funds will also provide initial seed funding. The grant fund will provide an additional incentive to early technology adopters in the regions until market forces reduce the cost differential and total cost of ownership considerations to levels which are covered by a lower (or the existing) MTT subsidy and private sector financial offer. The grant fund will be dynamic to ensure that it does not create a market distortion. It will offer a dynamically-calculated additional subsidy which will be determined based on a series of factors that together estimate the 'real' difference in purchase costs of electric and conventional vehicles. Such factors will include an analysis of electric fixed-route taxi total system costs (i.e. total cost of ownership analysis and taxi driver cashflow⁴⁷), vehicle unit prices, MTT subsidy value, electricity costs, private sector financial offer and vehicle re-sell value. In time, the size of the grant offered will be reduced, depending on the aforementioned factors. The Agency will work with the MTT in the development of the additional subsidy, to ensure coherence with the ministry subsidy (including its operations and criteria). During the project, the grant fund will support taxi-drivers to purchase between 30-50 fixed-route taxis in the regions. To incentivize drivers that participate in the component 2 pilot to draw on the financial instruments, a series of information sessions will be held in the pilot cities through output 1.3, explaining how the mechanism works and how drivers can access finance through it.⁴⁸ The grant pilot will serve to generate evidence to the MTT of the benefits of a dynamic subsidy and to the level required to incentive large-scale adoption of fixed-route electric taxis. The results of the pilot will be presented to the MTT for its consideration and revision of its current subsidy, with a view to it incorporating the findings of the Agency pilot into a revised dynamic MTT subsidy.

The development of the grant fund will build upon the work undertaken through the GIZ Moving Chile project, which is supporting the development of financial mechanisms for electric buses in the regions. While the modalities and nature of vehicle purchasing will be distinct (in buses MTT is moving towards large-scale purchasing models similar to what is currently undertaken in Santiago), where possible the GEF project will build upon lessons-learned and good practices.

⁴⁵ The current loan model is not effective for electric vehicles, as the higher up-front cost skews the monthly repayments by more than 100%.

⁴⁶ The Banco Estado has informed that it would not be able to administer a fund of this size. The Agency was chosen to administer the grant fund as it is affiliated with the Ministry of Energy, is leading the Public and Private Commitment for Electromobility 2020, with close connections with the private sector, and is proposed executing agency of the GEF-7 project.

⁴⁷ Based on an potential reduction in income due to differences in electric vehicle and conventional vehicle performance.

⁴⁸ Further incentives to the drivers participating in the pilots will be avoided, to ensure that the mechanism is equally accessible to all fixed-route taxi drivers and owners in the regions, irrespective of whether or not they had the opportunity to participate in the pilot.

D3.1.1: Banco Estado financial instrument for fixed-route electric taxis, based on a credit methodology and international good practices.

D3.1.2: Design of ASE grant fund, including dynamic grant calculation methodology and fiduciary guidelines.

D3.1.3: Operation of ASE grant fund.

D3.1.4: Recommendations for revising the existing MTT subsidy presented to the MTT for adoption, based on an analysis of the ASE grant fund.

- *Output 3.2: Business models for deploying electric fixed-route taxis in Chilean regions are implemented by regional government entities and the private sector*

This output aims to support regional governments and private sector to identify and implement business models for electrifying the fixed-route taxi sector (of more than 50,000 vehicles) in the regions. Such business models will incorporate considerations of the specificities of the use of fixed-route taxis in the regions. These are often owned by the driver and support a myriad of functions beyond the creation of income. There is a strong social element involved, as the taxis generally support the undertaking of family roles. Such business plans will be developed to ensure coherence with MTT plans for formalizing mass public transport in Chilean regions (see section 2). This output will draw upon the consultation strategy (Output 1.2) and assess the ecosystem of fixed route taxis in Antofagasta, Puerto Montt and Talca, to identify barriers, develop roadmaps for achieving 100% electric public transport by 2040 consistent with the National Electromobility Strategy and propose recommendations for business models for accelerating the transformation to electric fixed-route taxis in these cities and the regions in general. In addition to the in-depth analysis undertaken in the three cities, a high-level national assessment of the fixed-route taxi fleets operating in regional Chile will be undertaken to understand the requirements for future fixed-route EV deployment across the country. This output will lead to the identification of business models for local and regional governments and the private sector to implement, leading to an economically sustainable transition to a low-carbon fixed-route taxi sector. Key private sector actors to be engaged include vehicle distributors, maintenance operators, leasing companies and taxi companies. The recommendations and business models will be presented to the cities through workshops under output 1.3.

D3.2.1: Report on the fixed-route taxi ecosystems of Antofagasta, Puerto Montt and Talca, detailing, inter alia, fleet structure, routes, operating hours and off-work requirements.

D3.2.2: Electric vehicle business model analysis, roadmap for achieving 100% electric public transport by 2040, and recommendations on public and private business models for each city.

D3.2.3: Analysis of fixed-route taxi ecosystem in all Chile regions, including fleet size, mapping of route, vehicle average age, average daily kilometres, and summary of international lessons-learned and good practices in electrifying taxis.

D3.2.4: Recommendations on public and private business models for deploying and scaling-up fixed route electric taxis in Chilean regions.

- *Output 3.3: Investment roadmaps for the long-term viability of Chilean electricity grids to support electric vehicle uptake are presented for implementation by national policy-makers and regional electricity utility companies.*

This output aims to determine the impact that different penetrations of electric vehicles would have on regional city electricity distribution grids. It will also establish the required investment to support different scenarios of electric mobility penetration for fixed-route taxi fleets as well as private vehicles. As test cases, the output will focus in detail on the electricity grids of the three pilot cities (Antofagasta, Puerto Montt and Talca). In addition, it will provide high level insight into the requirements and state of appropriateness of the grid in all regions of the country to absorb future demand generated by the electrification of fixed route taxi fleets and incorporation of electric vehicles across the country. It will build upon in-kind co-financing of the Agency of Sustainability Agency, including through its collaboration with UNEP ROLAC on an EUROCLIMA+ project to support the Government of Chile in the promotion of interoperability of electric vehicle charging in Latin America. The roadmaps will be presented to the cities through workshops under output 1.3.

D3.3.1: Report on current state and structure of the electricity distribution grid of each of the three pilot project cities: Antofagasta, Puerto Montt and Talca. The report will establish correlations between findings to determine if these are local, regional or national.

D3.3.2: Report on electricity demand for different scenarios of electro mobility in each city, considering fixed route taxi fleets and private vehicles.

D3.3.3: Investment roadmaps to satisfy additional electricity demand due to different scenarios of electric mobility penetration in Antofagasta, Puerto Montt and Talca.

D3.3.4: High-level investment roadmaps for achieving grid readiness of all Chilean regions for large scale electric mobility fleets (fixed route taxis, buses and private vehicles), including recommendations for increasing readiness.

Component 4: Long-term environmental sustainability of low-carbon electric mobility

This component aims to enhance the long-term environmental sustainability of electric mobility in Chile. It aims to develop local capacity on responsible end-of-life disposal of electric vehicle batteries and support the Ministry of Environment to develop the required regulations for electric vehicles and their batteries. The component builds upon in-kind co-financing contributions of the Ministry of Energy, the Agency of Sustainability Energy (ASE) and the Ministry of Environment. It aims to support the implementation of the National Strategy on Electric Mobility, action line 6: Explicit incorporation of vehicles and their components in the recycling law.

Outcome 4: The Chilean government takes action towards implementing standards for ensuring the environmental sustainability of electric mobility.

Outputs:

- *Output 4.1: Waste companies are trained in reusing, recycling and final disposal of vehicles (both conventional and electric) and electric vehicle batteries.*

Chilean regional actors have a lack of capacity to undertake the environmental management of electric vehicles and their batteries, leading to hesitation amongst regional decision-makers in promoting electric mobility. This output aims to train key stakeholders in regional cities on the reuse, recycling and final disposal of vehicle components (conventional and electric). Workshops will be held in-conjunction with the regional workshops of output 1.3, on topics including:

- General aspects of end-of-life vehicle disposal (conventional and electric).
- Vehicle used battery management and battery reuse.
- Hazardous waste management.
- Lithium ion recycling technology.

Key actors to participate will include private recycling companies, national importers, automobile-related companies, mining companies (for instance, lithium miners), government entities and civil society that are involved in such activities. In addition, the output will support the development of circular economy business models for the reuse, recycling, and final disposal of used electric vehicle components and batteries. This aims to extend the life duration of electric vehicle components and batteries to reduce the quantity of waste produced and improve their economic and environmental life-cycle performance. A workshop will also be held to support private companies to identify possible business models for such efforts adapted to the local context of the Chilean regions. The workshops will draw on good practices, experiences and lessons learned shared through the support and investment platform for Latin America and the Caribbean, hosted by Centro Mario Molina Chile. Selected stakeholders who participate in the platform activities will ensure information gathered is incorporated in the Chilean national workshops. The workshops will be implemented with the support of Centro Mario Molina Chile, to build synergies and complementarities with the Global Programme. The support and investment platform will provide a help desk which will support the identification of national and international experts for supporting the capacity-building exercises and undertaking of studies. The training workshops will be gender-sensitive, for instance, ensuring that the organizers consider when, where and how the workshop will be conducted so women can comfortably participate. All activities will be established in collaboration with Ministry of Environment and local governments

D4.1.1: Three regional training workshops on vehicle (conventional and electric) recycling, final disposal, and electric battery reuse.

D4.1.2: Three workshops on the development of circular economy business models for electric vehicles, including its batteries and components.

- *Output 4.2 Standards and a legal framework for regulating the waste management, extended responsibility of the producer and recycling of electric vehicles and electric vehicle components (including batteries) are developed and drafted for adoption by the Ministry of Environment.*

As noted in section 1, Chile does not have a legal framework for the recycling and extended producer responsibility (EPR) of vehicles, either conventional or electric. The law 20.920, the umbrella legal framework for waste management, EPR and recycling, includes six products waste streams, one of which is vehicle batteries. However, to date regulations have not been developed under this law for vehicle batteries. While Chile has advanced with

incorporating electric buses into Santiago, the life-time of buses means that the government has not yet considered vehicle battery disposal, as there will still be some years before this waste arises. However, this lack of regulation results in uncertainty among key stakeholders, including the private sector, about the long-term environmental impact and related costs of the reuse and disposal of electric vehicles, leading to hesitation to market entry. This output will support the development of standards by the Ministry of Environment, under the existing law, for the waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries. This output will also develop inputs for the establishment of a legal framework on the recycling and EPR for conventional and electric vehicles. Standards are required for all vehicles to ensure that there is a level playing field for electric vehicles with conventional ones, avoiding additional costs being added to the cost of electric vehicles to cover for end-of-life management. Development of the draft standards and inputs will draw upon consultations under output 1.2.

D4.2.1: Report on good practices, and social and economic impacts for standards on waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries.

D4.2.2: Draft of standards for waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries, is presented to the Ministry of Environment for adoption, and additional support on data and justification of the standards is provided to facilitate adoption.

D4.2.3: Report on good practices, and social and economic impacts for standards for legal frameworks for waste management, EPR and recycling of vehicles (conventional and electric) as input into the development of a legal framework on this area by the Ministry of Environment.

4) Alignment with GEF Focal Area and/or Impact Program strategies

This programme is aligned with Objective 1 of the Climate Change Focal Area to “Promote innovation and technology transfer for sustainable energy break-throughs”, through CCM 1-2 - Promote innovation and technology transfer for sustainable energy breakthroughs for electric drive technologies and electric mobility.

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTE, LDCF, SCCF, and co-financing

As noted in section 1, key barriers exist which impede Chile from transitioning to electric mobility in the Chilean regions. As noted in that section, in the regions there is, inter alia, a lack of technological confidence in electric vehicles, a lack of successful experiences, and a lack of effective financial instruments. Consequently, the baseline or business-as-usual scenario estimates a slow uptake in Chile of plug-in and battery electric vehicles sales, resulting in a fleet share of new sales of just over 10% of electric vehicles by 2040, and a total fleet share of less than 10% by 2040.⁴⁹ In this context, based on the business as usual scenario the transport sector will continue to predominate national GHG emissions until 2040 and beyond. The incremental cost reasoning of the GEF trust fund intervention contends that by addressing the aforementioned barriers, Chilean regions can accelerate the uptake of electric mobility significantly beyond the baseline of 10% by 2040. As the region’s electric grids are relatively clean, and the country is investing in renewable energy supplies and retiring coal power plants, the intervention is thus expected to have significant global environment benefits, through the mitigation of greenhouse gas emissions as quantified in section 6. The global environmental benefits will be tracked through the project results framework, in particular the core indicator A: *tons of direct GHG emissions avoided during project*. Co-financing plays a key role in the incremental cost reasoning. In particular, co-financing provided by the National Energy Company (ENEX) to build a national grid of electric vehicle chargers, to the value of US\$2,000,000, plays a key role in supporting GEF interventions in addressing barriers and providing an enabling environment for electric vehicle scale-up.

6) Global environmental benefits (GEFTE) and/or adaptation benefits (LDCF/SCCF)

⁴⁹ *Electromovilidad. Proyección y propuestas para avanzar* (2018). Agency of Sustainability Energy (ASE) and Ernst Basler + Partner.

Total top down emission reduction potential 2021 to 2036, tCO2	1,097,657
Thereof	
Total direct emission mitigation from demonstration, tCO2	10,413
Total secondary direct emission mitigation, tCO2	215,366
Total indirect impact emission mitigation, tCO2	219,531
Total project related emissions reductions, tCO2 (causality factor 40%)	445,310

Methodology for the estimation of GHG reductions and energy savings benefits (for further detail refer to Annex M)

A uniform methodology was applied to all GEF Global E-Mobility Child Projects for assessing the short, medium and long-term benefits in terms of GHG emission reductions and energy savings. The methodology compares two scenarios, the “benchmark scenario” and the “e-mobility scenario”. In the benchmark scenario, the transport sector evolves assuming a “business as usual” behavior with regards to vehicle fleet growth, vehicle use, technology and fuel use. It is based on the current policy framework with no or limited incentives to buy and use clean and efficient electric vehicles. The e-mobility scenario uses the same projections with regards to vehicle fleet growth but assumes a high penetration of electric vehicles within the new vehicle market, as a consequence of the project interventions including the adoption, where relevant, of EV policies, the use of business models and the existence of financial mechanisms. The scenarios use a “top-down approach” targeting the national vehicle market. The child projects tackle the introduction of electric vehicles for one or multiple modes. In the latter case, calculations are performed for several modes (e.g. passenger cars, buses and 2&3 wheelers).

Projections of fleet growth, energy use and GHG emissions are based on country specific data, and region-specific parameters. Projection of the vehicle fleet growth is based on the elastic relationship between per capita income and vehicle acquisition. Therefore, country specific scenarios for population growth (based on the UNDESA medium scenario) and projections for gross domestic product (GDP PPP) from the World Economic Outlook of the International Monetary Fund (IMF) are used. Vehicle fleet projections are based on vehicle sales and assumptions on technical lifetime of vehicles. A comprehensive set of parameters describing the technologic and economic parameters of various vehicle technologies are used. Country specific grid emission factors for the carbon footprint of electricity are used. For petroleum-based fuels, well-to-wheel emission factors are used. Historic development of the vehicle fleet is based on country specific vehicle stock and sales data. Emission reductions which accrued during and after the project timeframe are taken into account. GHG emission benefits are classified as direct and indirect GHG emission reductions. This categorization follows the methodology suggested by the GEF.

7) Innovativeness, sustainability, and potential for scaling up

Innovativeness:

The project deliverables provide the following innovations:

- Technical: Electric mobility is still incipient in Chilean Regions outside the metropolitan areas of Santiago, with only a handful of vehicles operating and limited knowledge and awareness among regional stakeholders and users. The project will not only introduce electric vehicles and their charging infrastructure for drivers and users of the fixed route taxi systems to use and test, but will also seek to understand, bottom-up, the entire operation ecosystem and propose recommendations for local scale-up. In line with this, the project will seek to understand the current state and future requirements of regional networks to support the expansion of the electric fleet.
- Business innovativeness. Through output 3.2, business models will be developed for electric fixed-route taxi fleets. Such models will be innovative in terms of introducing potential new business structures for this traditional public sector, including options such as leasing for public and private fleets, car-sharing based mobility services, and fleet management services or battery leasing. Furthermore, the pilots seek to enable the use of modern connectivity and digital payment platforms, all of which open new business development opportunities. Finally,

the development of circular economy business models for the reuse of vehicle components and battery systems will enable opportunities areas such as in energy storage and grid auxiliary services.

- Environmental. In terms of environmental innovativeness, the project provides a unique opportunity to modernize the waste management sector and incorporate a diverse part of the private sector, to be eventually expanded to other products, such as electronic appliances. If successful, it will provide guidance to other countries heavily dependent on imports of manufactured products and to integrate re-use and recycling chains associated to the expansion of e-mobility. Incorporating circular economy business models into the private sector will facilitate innovation in environmental management of this electric mobility.
- Social. The project will look to improve the public transport system of regional cities in Chile, by introducing electric vehicles into the system and also improving its quality, safety and coverage by introducing connectivity systems, which aim to improve the mobility conditions of vulnerable groups, women and people with reduced mobility. Essentially, such connectivity systems facilitate reduced waiting times and better monitoring of services, enhancing efficiency of transport usage and increasing safety of vulnerable groups (e.g. due to less waiting times in unlit and isolated taxi stops).

Environmental Sustainability:

From a greenhouse gas emission-mitigation perspective, the environmental sustainability of the project is strongly related to the ability of creating a growing market for electric vehicles and promoting sustainable passenger mobility options. As mentioned in section 2, Chile's energy system, whilst still highly dependent on fossil fuels, has a relatively low average carbon emission per MWh generated and therefore the replacement of a conventional vehicle with an electric one results in a direct reduction of GHG emissions. Furthermore, given the country's topography, several of its cities, including its capital, have considerable air pollution problems. The scaling of electric mobility will help reduce air pollution agents currently generated by fuel combustion in vehicles. The project also supports establishing more sustainable passenger mobility practices such as passenger connectivity apps to strengthen the public transport sector, so that it can provide higher quality services and entice citizens to use it rather than private cars. This would reduce the number of cars on the road and their associated GHG emissions.

From a waste management perspective, the project actively contributes to addressing the currently unsustainable patterns in end of life vehicle disposal management, so that the expansion of electric vehicles is undertaken within a context in which they do not become the source of additional environmental hazards. The project undertakes an integrated approach, targeting all vehicles and not only electric vehicles, as otherwise this would create an additional barrier to the latter compared to conventional vehicles. Accordingly, the project activities within component 4 are also effective in addressing these environmental risks, as discussed in the risk management section.

Sustainability of market development after the project:

Several project deliverables are expected to ensure the sustainability of project outcomes:

- The creation of a national coordination body will help coordinate and connect projects, determine synergies amongst them, identify unattended requirements and/or barriers and establish an overall comprehensive approach. This will help maximize the impact of both private and public investment and activities.
- Investment in electric mobility will be facilitated by the creation of financial instruments that will help close the current upfront cost gap between electric and conventional vehicles, the de-risking of the technology through capacity building and demonstrations, as well as the development of a comprehensive understanding the overall ecosystem around fixed route taxis.
- The multi-stakeholder consultation strategy established by the project will help steer the implementation of the electric mobility strategy, including identifying social aspects of the deployment guaranteeing that the expansion of EV in different regions does not have negative impacts on vulnerable groups in the community.
- Business models for the electrification of regional fixed-route taxis in Chilean regions will provide key regional stakeholders and the private sector with an identification of the means to develop long-term markets on electric mobility in the regions.

- Investment roadmaps for Chilean electricity grids will support the development of infrastructure that can support the growing demand for electric vehicles and its associated charging stations, thus ensuring that market development goes beyond vehicle development to also include its supporting ecosystem.

Potential for scaling-up:

The potential for scaling up of electric mobility after project completion will build upon the following project activities:

- Managers of public and private car and van fleets can be expected to become keenly interested in including electric vehicles into their fleets, due to barrier removal provided by the project (availability of electric vehicles in the country regions, incentives, technological de-risking, capacity building) and the availability of financing tools competitive with those of conventional cars. Considering the experience in other countries, the government exemplary role in the electrification of its fleet and the project activities, this potential is high.
- In addition to the pilot projects, which will help build confidence on the capabilities of the technology, the incorporation of car leasing companies for the purchase of fixed route taxis will help reduce the financial risk for taxi owners as this is shared with the leasing companies. This in addition to the financial instruments developed by the project will facilitate the implementation of sound financial incentives to targeted consumers, including less affluent ones. This should help eliminate the current price gap and reduce the financial risk of early adopters. This should promote the development of the electric vehicle market in regional Chile, which should in turn result in a faster technology scale-up.
- Complementary to this, analysis of the state of situation and future requirements of regional electricity distribution infrastructure will help direct investment already committed by the private sector in terms of deployment of charging infrastructure. This should further facilitate the adoption of electric vehicles by fixed route taxi drivers and the population in general.
- Furthermore, incorporating civil society and other pertinent stakeholders in the project and specially in the different capacity building activities will help forward the discussion towards a more inclusive transport system but also identify business opportunities that spin off the development of a new ecosystem. The growth of the latter will help consolidate investments and promote the scale-up of the entire sector.
- The data collected throughout the pilot projects will allow the development of business models to support existing companies (car dealers, maintenance workshops, waste management companies, public transport and taxi operators) and new entrepreneurs to competitively operate in this emerging market and benefit from its associated business opportunities.
- Ultimately, by piloting electric fixed route taxis and supporting their scale-up through financial instruments, the project aims to scale-up the adoption of electric mobility more broadly with private consumers, through the increased visibility of electric vehicles in the regions (increasing confidence in the technology), and the emergency of private sector actors in the regions on electric mobility (as leasers, car retailers, and financial retailers).

Finally, Chile will also explore how to scale up the GEF-7 project through a potential Green Climate Fund (GCF) project. The country is currently participating in a regional readiness programme on electric mobility, which started late 2020. As the GEF-7 project starts in 2021, effort will be made to ensure the development of a pipeline of GCF project proposals that builds upon the GEF project, for example, through the scaling up of the fixed-route electric taxi fleet based on GEF-7 project experiences.

1c. Project Map and Geo-Coordinates (Annex E)

Chile is a long country stretching over 5000 km from south to north, limited by the Andes mountain range to the east and the Pacific Ocean to the west. Demonstration projects will take place in Antofagasta, Talca and Puerto Montt.



FIGURE 1. MAP OF CHILE IDENTIFYING ANTOFAGASTA, TALCA, AND PUERTO MONTT.

TABLE 8. COORDINATES OF THE THREE PILOT CITIES

Demonstration sites	<i>Latitude</i>	<i>Longitude</i>
Antofagasta	-23,64	-70,40
Talca	-35,42	-71,66
Puerto Montt	-41,47	-72,94

1d. Child Project

The current project is hosted under the “Global Programme to Support Countries with the Shift to Electric Mobility”, led by UNEP.

The Global Programme to Support Countries with the Shift to Electric Mobility was submitted (June 2019 GEF Council) with child projects in Antigua and Barbuda, Armenia, Burundi, Chile, Costa Rica, India, Cote d’Ivoire, Jamaica, Madagascar, Maldives, Peru; Seychelles, Sierra Leone, Saint Lucia, Togo, Ukraine, Uzbekistan, as well as a global child project. For each child project, a concept note was prepared including national background, policy status, baseline scenario and description of individual national components.

The Global Programme is divided into 4 components:

- Component 1: Global thematic working groups and knowledge materials
- Component 2: Support and Investment Platforms
- Component 3: Country project implementation
- Component 4: Tracking progress, monitoring and dissemination

The Global Programme has put in place the monitoring framework below to track progress both globally and at the level of the country child projects. 10 indicators have been designed for this purpose: 4 relying on global level information (highlighted in blue) and 6 relying on country level information (highlighted in green).

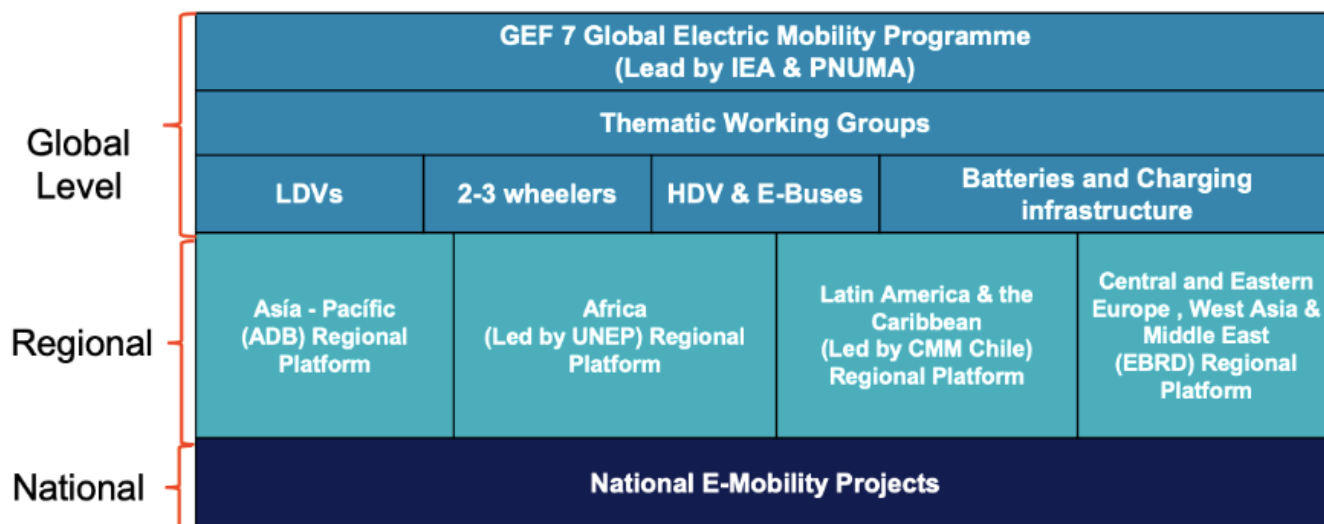
Global E-mobility Programme Monitoring Framework			
	Global level monitoring	Country level monitoring	
Component 1 Global thematic working groups and knowledge materials	Component 2 Support and Investment Platforms	Component 3 Country project implementation (Child Projects)	Component 4 Tracking progress, monitoring and dissemination
Outcome 1 Knowledge products are generated to support policy making and investment decision-making through four global thematic working groups	Outcome 2 Conditions are created for market expansion and investment in electric mobility through support and investment platforms	Outcome 3 Conditions are created at country and city level for the introduction of electric mobility demonstration projects, and wider up take of electric mobility	Outcome 4 Projects and electric mobility markets are tracked, and key developments, best practices and other lessons learned are shared to promote wider uptake of electric mobility
<u>Indicator 1.1</u> # of knowledge products developed by the four thematic working groups and used by the Support and Investment platforms in their training and outreach activities	<u>Indicator 2.1</u> # of countries using services and knowledge products offered by the Support and Investment Platform	<u>Indicator 3.1</u> # of countries with an improved institutional framework and a strategy to promote the uptake of low-carbon electric mobility	<u>Indicator 4.1</u> # of countries generating and sharing best practices and other lessons learned on low-carbon electric mobility with the global programme
	<u>Indicator 2.2</u> # of US\$ leveraged to scale-up low-carbon electric mobility through the support and investment platforms	<u>Indicator 3.2</u> # of countries with nationally generated evidence of the technical, financial and/or environmental benefits of low-carbon electric mobility	<u>Indicator 4.2</u> # of e-mobility knowledge products refined based on evidence coming from the country projects
		<u>Indicator 3.3</u> # of countries that have improved preparedness to accelerate market transformation towards low-carbon electric mobility	<u>Indicator 4.3</u> # of non-e-mobility programme countries committing to actively promote the uptake of low-carbon e-mobility
		<u>Indicator 3.4</u> # of countries with measures in place to ensure the long-term environmental sustainability of low-carbon electric mobility	

The global project will report against this framework on an annual basis, using (1) the global level data from the Global Thematic Working Groups and from the Support and Investment Platforms, and (2) country level data provided by each country project during their annual Project Implementation Review (PIR) process.

For this purpose and whenever applicable, the global level indicators highlighted in green are translated into a country-level indicator in the Project Results Framework located in Annex A of the present CEO Endorsement Document. During

project implementation, the Project Executing Agency (National Ministry of Energy) will be requested to report against the indicators of the country Project Results Framework (Annex A) on an annual basis, during the PIR process.

At the global level, a steering committee integrated by the International Energy Agency (IEA) and the United Nations Environment Programme will coordinate and monitor the implementation and the outputs of the GEF 7 Electric Mobility Programme. On technical gaps, four thematic working groups at the global level will support the rapid introduction of electric mobility in GEF recipient countries. These working groups will generate universal knowledge products that contain best practices, factsheets, interactive tools and guidance, as well as experiences from countries that have advanced their e-mobility market. The working groups will be integrated by representatives from the global programme regional platforms, GEF-7 countries, IEA, vehicle manufacturers, utilities, researchers and the civil society. The governance structure is presented in the figure below. For Latin America and the Caribbean, the regional platform will be led by Centro Mario Molina Chile.



Governance structure between the global programme, the national e-mobility projects, and the regional platform

The coordination between the global program, the steering committee, the thematic working groups, and the national projects will be facilitated by the regional platform. The role of the regional platform is to provide customized technical assistance to ensure the success of the country projects. Moreover, knowledge products developed by the working groups will be adapted and disseminated by the regional platform according to the regional and national context, specific needs and languages.

The LAC regional support and investment platform, hosted by Centro Mario Molina Chile, will interact with and support participating countries in the region to link with each other through the following activities:

- The creation of a community of practice for the GEF 7 regional countries;
- Facilitation of knowledge transfer between countries, and regions, especially those with common characteristics like SIDS;
- The creation of thematic groups in light-duty vehicles (LDVs), 2-3 wheelers, and buses at regional level;
- A marketplace between countries, technology providers and financial institutions;
- Help desk for technical assistance to GEF 7 LAC countries;
- Personalized assistance from international experts in electric mobility;
- Generation of training sessions and workshops.

The national child projects will generate a learning curve on electric mobility that can be transferred to other countries within and outside of the region through the global programme. As a first contact point, the regional platform will facilitate the flow of learnt lessons from child projects, such as: data and demonstration results, working business models, operational know-how, working financial instruments, and working policies and regulations. At the global level, the

scenarios proposed to share country knowledge and experiences on electric mobility are the thematic working groups, while at the regional level the countries will participate in the community of practice, the thematic regional groups, the marketplace, trainings and workshops. Participating in the activities of the global programme will also support the country to implement the National Strategy on Electric Mobility, action line 23: Participation of Chile in international instances.

The project in Chile will benefit the Regional Support and Investment Platform and the Global Programme through its five key elements:

1. Platform. Information on the Chile project's experiences, good practices and lessons learned will be stored on the online toolbox that will act as repository of knowledge products, as key information for the consideration of other countries and actors in the region and beyond. Such information will be publicly available on the platform and also diffused through reports, flyers, presentations, webinars and social media content developed by the regional and international programme teams.
2. Community of practice and task teams. Task teams on LDVs, batteries, and charging infrastructure will draw on the experiences, good practices and lessons learned from Chile, supporting them in developing recommendations for other countries in the region and beyond.
3. E-mobility marketplace. Chile's experience in renting the electric vehicles, developing successful electric mobility business models, and engagement with electric vehicle companies, utilities, and financial institutions will support regional marketplace activities, by developing contacts with regional organizations and encouraging them to participate in the marketplace activities. Furthermore, such private sector experiences will be shared with other private sector actors in the region, as a way of encouraging them to also participate through learning from the experiences of others.
4. Regional E-mobility training. The development of training curriculum will draw upon and be updated based on the experiences, good practices and lessons learned from the Chile national project.
5. Help desk and onsite / virtual meetings. Similarly, the help desk will draw upon and continue to improve its support services based on a dynamic consideration of the experiences, good practices and lessons learned from the Chile national project.

Chile will concretely benefit from the global thematic and regional support and investment platforms in the following way:

1. Platform. The platform will serve a function for Chile in two ways. On the one hand, it will support Chile to have access to international best practice knowledge products, developed by the Global Thematic Working Groups, that it can draw upon in designing and executing project interventions. On the other hand, it will support Chile to disseminate to a broad regional and international audience its ambitious advances on electric mobility, creating a positive political feedback loop that will encourage it to further advance and accelerate efforts.
2. Community of practice and task teams. The community of practice will bring to the forefront the main barriers being faced to develop and scale e-mobility projects in the region as well as the main lessons learned for successful execution of these initiatives. The community of practice will create task teams on LDVs and batteries that will support Chile to identify best practices in the undertaking the detailed pilot design (component 2) and development of business models for scaling up electric fixed route taxis (output 3.2). They will also support in providing input on effective design of policies for waste management under output 4.2.
3. E-mobility marketplace. The marketplace will play a key role in supporting Chile to scale-up its interventions on fixed-route taxis. These events will serve as opportunities for Chile to share information on its interventions and connect with private sector actors interested in building upon the project pilot's to take it to the next level, including by drawing on the development of the financial mechanism under output 3.1.

4. **Regional E-mobility Training.** The platform will support Chile to develop capacity and strategies to plan the pilot project and the large-scale market introduction of e-mobility on electric fixed-route taxis. In the first training, experts from the electric light duty vehicle working group will be invited to train the country and city stakeholders on the requirements and considerations of developing demonstration projects, including as related to accompanying policies and standards. The second training will focus on the challenges and issues to be considered when operating and maintaining EV fleets including grid integration, state of health of batteries and their second-life use, disposal and or recycling.
5. **Help desk and onsite / virtual meetings.** At Chile's request, a help desk will support Chile with the development of any aspects of the project. Be they related to pilot design, policy analysis, identification of techniques on stakeholder consultation, or development of financial instruments. Moreover, at the Chilean project team's request, the platform staff will plan onsite or virtual meetings with the country and city project teams to take stock of progress, help with starting and planning the projects and providing technical support as required by local stakeholders.

2. Stakeholders

Please refer to the report: "Summary of stakeholder consultation meetings and validation workshop", for information on the engagement of stakeholders during the development of the CEO Endorsement document and associated annexes.

This stakeholder engagement plan builds upon the interviews and workshops conducted during project preparation. The project will aim at maintaining a fluid and two-way dialogue with the relevant national and local government institutions and agencies, the private sector, and civil society for national and Chilean region activities, as well as with local and international NGOs, the international community and other participating countries at the global programme level.

Public consultation will follow relevant national guidelines and the GEF Guidelines,⁵⁰ which require that all GEF-funded projects meet best international practice and specifically the requirements for stakeholder engagement and public consultations. In addition, consultation is the focus of a specific project output (output 1.2), with the output dedicated to the development and implementation of a stakeholder consultation strategy. The project stakeholder engagement activities will be robust, and disclosure on information will be made in order to promote better awareness and understanding of its strategies, policies and operations. During disclosure, the project will: (1) Identify people or communities that are or could be affected by the project as well as other interested parties; (2) ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them, through a process of information disclosure and meaningful consultation; and (3) maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation. The stakeholder consultations will be an on-going process taking place during the project life and will ensure that stakeholders are informed about environmental and social consequences of the project implementation and ensure the opportunity for feedback.

Given that the deployment of electric mobility throughout Chilean regions requires efforts from different government bodies, at both a regional and national level, ministries and the involvement of different private sectors, companies and community sectors, Output 1.2 focuses on the implementation of a multi-stakeholder consultation strategy, with strong focus on engaging economically vulnerable groups. The strategy will allow all actors to have an equal voice and express their concerns and uncertainties as well as engage in the different proposed activities throughout the project. It will seek to address barriers mentioned in section 1 especially with regards to raising awareness, creating buy-in, increasing coordination, and ensuring the development and implementation of socially acceptable solutions.

Identification of stakeholders for engagement and methods of communication

In order to ensure inclusive participation and consultation, the following stakeholders have been identified for consultation. The list includes the identified social groups that are associated with the project in different ways: those

⁵⁰ GEF (2014). Guidelines for the Implementation of the Public Involvement Policy. Accessed at http://www.thegef.org/sites/default/files/council-meeting-documents/39_EN_GEF.C.47.Inf_06_Guidelines_for_the_Implementation_of_the_Public_Involvement_Policy_4.pdf in December 2019.

directly or indirectly engaged in the outcomes of project implementation; those directly or indirectly participating in the project, and those with a capacity to influence and decide on project implementation and outcomes.

List of stakeholders

Key stakeholder groups have been identified and presented in the table below (Table 9).

TABLE 9. PROJECT STAKEHOLDERS

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
Government	Ministry of Energy (ME)	The Ministry of Energy is in charge of establishing and enforcing Chile's energy policy for all sector of the economy. In line with this the Ministry has established very ambitious carbon mitigation objectives and has developed several work lines to achieve the latter. The Ministry leads all national efforts on electric mobility.	As executing agency of the project, the ME has been involved in the development, detailed design of the project and will play a key role in the execution of the project. It will be in charge of approving, implementing, monitoring, and enforcing the related project activities. The ME will be a member of the project steering committee
Government	Ministry of Transportation and Telecommunications (MTT)	Amongst many other responsibilities the MTT is responsible for public transport systems across the country. It is also leading the execution of the GEF-6 project.	The MTT is a key partner in the project execution. It was consulted constantly through the project development and activities are aligned with the ministry transport master plan for Chilean regions. The MTT will lead the meetings and contacts involving taxi associations in the different cities, it will provide support in matters related to the implementation of the pilot projects and will be a member of the project steering committee. In particular the MTT will have a strong role in component 2. Amongst other activities it will assist in the deployment of pilot projects, and acquire the vehicle temporary taxi permits. It will participate in all outputs of the project.
Government	Ministry of Environment (MEnv)	In matters related to the project the Ministry of Environment is charge of establishing the policy framework for the management of different waste streams, amongst which are car batteries and vehicles. It led the development of the GEF-6 project.	The MEnv will have a central role in component 4. However, it will also participate in the project steering committee to ensure alignment with other ministry initiatives.
Private sector	Agency of Sustainability Energy (ASE)	The Agency of Sustainability Energy (ASE) is a non-profit private entity. Its mission is to promote, strengthen and consolidate the efficient and sustainable use of energy by coordinating relevant actors, at a national and international level, and by implementing public-private initiatives in the different sectors of energy consumption, contributing to the competitive and sustainable development of the country.	As designated executing agency of the project by the Ministry of Energy, the Agency of Sustainability Energy (ASE) will play a key role in project execution. In conjunction with the ME it will oversee, approve, implement, monitor, and enforce the related project activities. The Agency will be a member of the project steering committee.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
Government	Ministerial regional secretaries (SEREMI) of MTT, ME, MEnv for Antofagasta, Maule (Talca) and Los Lagos (Puerto Montt)	Regional Office of the national ministries of the three regions where pilot projects will be deployed	SEREMIs in the different regions will be the local support of the different national ministries in the country regions. They will enable contact with GORE authorities and help articulate project activities with local stakeholders. They will participate in project components 1, 2 and 3 under the guidance of the parent ministries.
Government	Regional governments (GORE) of the Chilean regions, particularly of Antofagasta, Maule (Talca) and Los Lagos (Puerto Montt)	Support to the existing vehicle replacement subsidy.	These entities will play a key role in ensuring the success of the component 1 regional workshops and the component 2 pilot activities. The GORE will also play different regions are a key player for component 3 as these are the institutions responsible for establishing and approving the budget destined to the “renueva tu colectivo” vehicle replacement program which the project will use as leverage to promote the adoption of EVs in the regions.
Government	Production Development Corporation (CORFO)	Government agency articulated as a non-profit corporation, dependent of the Ministry of Economy, Development and Tourism. CORFO supports entrepreneurship, innovation, and competitiveness in the country, along with strengthening human resources and technological capabilities. It is currently promoting the development of national electric mobility capacity and innovation.	CORFO is a key player in the support and development of electric mobility in Chile. It will play a key role in supporting project capacity-building and market development activities. It will also facilitate a strong connection to the private sector.
Government	Ministry of Women and Gender Equity	Government ministry responsible for gender equity.	To be consulted in the design of training activities and other activities where relevant to ensure activities are gender sensitive.
Private Sector	Enel-X, ENEX and SAESA (Energy providers)	Both utility companies leading the way in matters related to investment and deployment of electric vehicles and charging infrastructure in Chilean regions.	Both companies will participate in activities related to stakeholder consultation in component 1. May also serve as an electricity provider for the regional pilots of component 2. They will be a strong consultation source for grid related studies pertinent to component 3 and will be part of the capacity building activities related to battery waste management pertinent to component 4. Both companies have provided co-financing for the project materialized in recurrent investments in topics related to components 2 and 3, and in the case of SAESA also component 4.
Financial institutions	Banco del Estado	Banco del Estado de Chile is the only publicly owned commercial bank in Chile. It provides financial services to individuals and companies. Its main lines of business are savings, mortgage	Banco del Estado main role in the project will be support the development of context-specific financial instruments for

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
		loans, to small and medium companies and companies in general. It has a strong involvement in the public transport systems of the different regional cities as one of the most important providers of financing for vehicle owners.	fleet acquisition and operation developed in component 3.
Private Sector	Fixed-route taxi owners and fixed-route taxi associations	As mentioned in sections 1 and 2 of the current documents, transport systems in regional cities are mostly composed of individual bus and car owners. Therefore, these are a key player to enable the up uptake of electric mobility in cities outside Santiago de Chile.	Fixed route taxi owners and related taxi associations will: C1- Participate in capacity building workshops and in consultation studies. C2 - Operate the pilot electric taxis and charging infrastructure. C3 - Access funds to buy an electric taxi through the financial instruments.
Civil society organization	Centro Mario Molina Chile	R&D centre based in Chile that supports the development and undertaking of activities to promote electric mobility, sustainable transport and cleaner air. Host of the investment and support platform for the LAC region of the GEF-7 global programme on electric mobility.	C1 and C4 – Support capacity-building activities, building synergies and economies of scale with the activities of the global programme. C1, C2, C3, C4 – participate in technical working groups to provide inputs into the development of technical project activities, drawing on experience and expertise in supporting the implementation of related initiatives.
Academia	University of Talca (Maule Region), University Austral (Los Lagos) and University of Antofagasta (Antofagasta)	These universities provide undergraduate technical education to locals and will be an important part of the long-term transition to electric mobility	C1- Provide support for workshops and technical studies. C2 - Support electric vehicle monitoring and evaluation. C3 and C4 - Provide advice and support on the development of financial instruments and standards.
Private Sector	Car dealers	Car dealers are authorized vehicle importers and sales companies	C1 – Participate in capacity building workshops and in consultation studies. C2 – Provide vehicles to the leasing agencies for the pilot projects. C3 – Key stakeholders for electric mobility scale-up through the increase of electric vehicle markets.
Civil society groups	Talca Communal Union of Neighborhood Boards (Maule Region), Talca Senior Adult Communal Union (Maule Region), Social Security Mothers Centre (Antofagasta), Movement for Universal Public Transport (Antofagasta), Favorecedora neighbors union (Antofagasta), Communal Union of Parents and	Users of fixed-route taxis and other stakeholders relevant to the project development.	Support consumer survey, consultations and focus group discussions with women and social groups. Will have a strong participation in C1.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
	Representatives (Antofagasta), Communal Union of Neighborhood Boards (Antofagasta), Blind and Visually Diminished of Antofagasta (Antofagasta), COSOC (From Spanish “Consejo de la Sociedad Civil”) of energy (Maule Region)		
Private sector	Car leasing agencies: - MITTA - Tatersall	Agencies that have been identified to participate in the leasing of the electric vehicles for the pilot projects.	C2 – Provide the required vehicles for the pilot projects. C3 – Provide vehicle offer for purchasing through the financial instruments. C4 – Participate in discussions related to end of life vehicle and battery disposal will also involve car leasing agencies.

Finally, select what role civil society will play in the project:

- ☐ Consulted only;
☐ Member of Advisory Body; contractor;
☐ Co-financier;
☐ Member of project steering committee or equivalent decision-making body;
☐ Executor or co-executor;
☒ Other (Please explain)

Civil society will participate in the pilots, the workshops and the training programs undertaken in the project.

3. Gender Equality and Women's Empowerment

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women's empowerment?

- ☒ Yes
☐ No

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

- ☐ closing gender gaps in access to and control over natural resources;
☒ improving women's participation and decision making; and or
☐ generating socio-economic benefits or services for women.

Does the project's results framework or logical framework include gender-sensitive indicators?

- ☒ Yes
☐ No

Part 1. Gender Analysis (Context)

1.1. Barriers and Gender Gaps in Chile

In Chile 57.6% of households are led by women (about 3.3 million) and 9.2% of them are in a poverty situation (2017); There is 48.9% of female labor participation (2019), their income is 27% lower than that of men (2018), and there is evidence of 32.8% of women without their own income (2017). Regarding education, 52.5% of the total enrolled in higher education are women (2019), and (2017) those older than 15 years have 11.1 years of schooling, however, between 15 and 29 years there is 17.5% of women in the “NINIS” category (don’t study, don’t work, from Spanish “ni estudian ni trabajan”). (Women of Chile: Last Decade. Ministry of Women and Gender Equity, Chile, 2020). Pandemic Effect: UNHOLSTER (2020) reports that the National Employment Rate (18-59 years old) decreased in Men from 81% to 67% and in Women from 55% to 41% (Base: Mobile Quarter March-May 2019 v/s 2020, INE-Chile). According to the latest data (2018) of the UNDP Human Development Index, Chile has a gender inequality index of 0.288 and a gender development index of 0.962, with an overall human development index ranking of 42nd in the world.⁵¹ In the Global Gender Gap Index 2020 rankings, Chile is ranked 57th overall, with a score of 0.723.

1.2. City, Land Use, Mobility & Gender

General Patterns: having a child at school increases a woman's number of trips by 23%; women take their children to school 3 times more often than men; women with children under the age of 5 are 87% less likely to drive than a man; in Latin America and the Caribbean the participation of women in the construction and operation of transportation systems does not exceed 15% (Chile: 17%); Training women in non-traditional jobs is not effective if the possible bias in potential employers and / or clients is ignored (The reason for the relationship between gender and transport, IDB, 2016).

In Santiago, 68% of women use public transport (45% men) and 55.3% of them travel on foot (39.5% men). Travel for health purchases or picking up someone represents almost 50% of women's trips (while they are only 20% of men's transfers), and commuting trips to work reach 15% for them. (35% for men) (The reason for the relationship between gender and transport, IDB, 2016).

Chile concentrates 87% of its inhabitants in cities (increases are expected in the coming years) and its growth has been accompanied by an increasing socio-territorial segregation of its inhabitants (with a low number of sub-centers) and / or an increase in densified areas (Problems of Urban Mobility: Strategy and Measures for their Mitigation, Presidential Advisory Commission, URBAN PROMOVILITY, Chile, 2014). Some externalities:

- Quality of Life Cost: long travel times subtract times with family, study, rest, others.
- Productive Cost: stress and more aggressiveness within work (deteriorating productivity) and towards the outside (image of the service is affected).
- Environmental and Health Cost: more exposure to increased polluting gases, more noise, more accidents.
- Democratic Cost: loss of credibility in the quality and effectiveness of the service, or the expected results of a transportation system.

1.3. Barriers and Gender Gaps: Transport Sector

Considering the goal of Electric Mobilization of 40% in private vehicles and 100% in Urban Public Transport by 2050 (National Strategy for Electromobility, Ministry of Energy, Chile, 2017), at national level, five gender problems have been detected in this scope: mobility, accessibility, security, efficiency, and the labor market (Policy of Gender Equity in Transport, Ministry of Transport, Chile, 2018).

- ✓ Mobility: women (*assigned role*) have defined displacement times, travel times, modes of transport and travel reasons (unpaid work - "care mobility": shopping, escorting, walks, visits; in times of least congestion, and on shorter routes).

⁵¹ <http://www.hdr.undp.org/en/data>.

- ✓ Accessibility: “neutral” planning of the transport system makes it difficult for women to participate in the public context. They reach 52.5% of the users of public transport and suffer difficulties due to the frequency of journeys, their distances, and the lack of adequate infrastructure.
- ✓ Safety: this aspect becomes relevant for users to make mobility decisions (their perception is key for them to fully use, or not, a transport system). Up to 50% of assaults occur on public transport, 30% on the street, and 20% on the subway. Between 9 and 18 years old, they suffer more frequently harassment and / or intimidation on public transport (extent of overcrowding) and / or episodes of exhibitionism.
- ✓ Efficiency: women maximize their resources (economy and time) by surveying the frequency of journeys and the design of the infrastructure and operation of public transport (most demanded journeys; avoid exposing themselves to grievances in long waits; privilege the good travel experience).
- ✓ Labor Market: female drivers went from 0.83% (2013) to 33% (2017) with targeted measures to break entry barriers (granting of a driver's license, etc.) and stereotypes. The perception surveys have positively valued its insertion into this market (a more friendly, respectful, and safe transport system is configured).

1.4. Pilot Regions: some scopes regarding Gender

- **Antofagasta:** houses 60% of the population of its region (48% women; CENSUS 2017). The center groups highly demanded public spaces (commerce, malls, hotels, museums, port, stadium, historic center, 3 artificial beaches, old regional hospital, La Vega fair, Universidad Católica del Norte -47% registered women 2018); to the south end housing complexes and the University of Antofagasta - Coloso Campus (58% women enrolled 2018; public transport until 7:00 p.m.), and to the north end INACAP - La Chimba plus the urban extension to the airport. Urban Transport (without integrated fare, low-light areas) consists of small buses (30 passengers, high overcrowding at peak times) that go, in the summer, from the Juan López Spa (in the extreme north) to Caleta Coloso (in the extreme south), with transfers eventually (mode available until 11 p.m., except in summer). Its north-south length is such (1.5 hours by car approx.) that it has been thought to implement an Urban Train. There are groups (numbered, with deferred rates, they do not reach the entire city, with no stops) that, like the buses, reach the urban periphery (for example, the upper part of the city, with about 16,300 people in 63 Irregular camps -they grew by 500% in the last 8 years; 59% of these households are led by a Head of Household, and in 60% of them there are children under 18 years of age; National Camp Cadastre, Ministry of Housing, 2019) .
- **Talca:** it houses 22% of the population of its region (51% women; CENSUS, 2017). The center groups highly demanded public spaces (commerce, hotels, museums, the old town, regional hospital, Río Claro border, market) and to the east -crossing Route 5- new public spaces (mall-cinemas). Urban Transport (without unified fare) consists of intercity buses from Maule, San Clemente, San Javier, Molina, etc. (Maule Regional Public Transportation Plan, s / a), buses (small “hares”) circulate until 10 pm, and despite the existence of whereabouts, they stop anywhere at the request of users; after the 2010 earthquake the center was renovated with better lights) and buses (deferred fares, they operate by zone, they compete to get passengers on the same routes). It has a homogeneous distribution (checkerboard) with the old sector (to the south), growing real estate development to the north and east (“villas”) and profuse academic development: to the north, Universidad de Talca (53% of female enrolment in 2020), to the east - crossing Route 5- the Universidad Católica del Maule, to the center - western University Autónoma, Santo Tomás and AIEP Institute. Collective locomotion is almost nil towards Cerro La Virgen (new homes). Two camps (of 11 at the regional level) with 49 people are verified, and 36% of these households are led by a Head of Household. Since 2016 the Plan for Environmental Decontamination (PPDA) - Saturated Zone by PM 10 and PM 2.5 (Ministry of the Environment, s / a) has been in force.
- **Montt port:** 89.5% population is urban (50% women; CENSUS, 2017). The center groups highly demanded public spaces (commerce, malls, hotels, museums, port, old town) and contains mainly the Professional Universities and Institutes (except to the east, Austral University of Chile, and to the west, University of Los Lagos). New regional hospital (north access). The Urban Transport (without unified fare) consists of intercity bus lines (Llanquihue-Frutillar-Fresia with service until 10 pm; without Universities or Professional Institutes), micro

local (30 passengers, until 11 pm) that move to its terraces in height (due to the rainy weather, low lighting and vandalism, its whereabouts are not in optimal condition). Its extension has been developed with peripheral areas such as Larch (1 hour to the center), El Tepual and Chiquihue (30 min. To the center). There are groups (numbered, deferred rate, no stops) that reach its radial periphery (Los Lagos Regional Public Transportation Plan, s / a). There are 15 camps (of 43 at the regional level) with 1,600 people, and 61% of those households are led by a Head of Household. In 2019, studies began to declare a Saturated Zone by PM 2.5.

Part 2: Gender action plan

2.1. Conceptual framework

The following conceptual framework will be used to structure the proposed gender measures.

Barriers	Description
Informative	They may be due to the lack of information on the existing alternatives, on their benefits, or on the potential for a user and / or company. In addition, in certain cases there is no credibility of the information about its benefits.
Cultural	In many cases, even having the information and facilities, there is a reluctance to adopt for cultural or behavioral reasons. There is resistance to change, risk aversion, and little importance assigned to the topic (this point can slow down investment decisions).
Economic	In general, associated with investment costs. The selection of technologies is normally made based on the initial cost (usually higher than those with less efficiency). In many cases there is difficulty in accessing credit (they are insufficient; low interest is not transferred to users; financial institutions are not familiar with the evaluation of these projects; the productive agent may have its debt capacity already taken or is using it for different purposes). Sometimes the available resources prioritize the increase of production over the reduction of costs.
Technical	Often the alternatives that are presented do not correspond to the best technologies (because they do not exist in the market, or because there is no human capital with knowledge about it). Furthermore, there is a reduced ability to specify the required equipment and, particularly, to assess the direct and indirect benefits of the new technology. There is insufficient or no instrumentation in critical areas that limits the possibility of measuring consumption before and after, vital to assess the benefits of technology.
Institutional and Regulatory (I&R)	They can be of a regulatory and business type, such as: nonexistence of management units within the company, or when they exist, they do not have sufficient authority or are unrelated to the level of decision-making, for example, team selection ; absence of directives issued at the highest level that specifically define the incorporation of a certain technology or operating model; targeting investment and operating decisions (normally the production area does not have a strong enough voice in investment decisions and opts for equipment repair alternatives instead of buying more efficient new equipment). At the same production capacity and technology quality (input, product, etc.), equipment with lower investment cost is normally chosen

Adapted from World Energy Council (WEC) - World Energy Perspective, 2013.

2.2 Project risk analysis with respect to gender and gender action plan for the project

Output	Gender Objectives	Measurements (ICETI & R)	Indicators / Goals	Actions to achieve goals	Expected Results and Risks of not articulating gender measures.
	“07 Principles for the Empowerment of Women” UN Women, 2011				

Output 1.1	Promote gender equality from the top management	(I&R) The national electromobility coordination body will be mixed.	Indicator: percentage [%] of women in the national electro-mobility coordination body, national body Goal: at least 40% are women ⁵²	Encourage participating entities to nominate women members of the committee. Track gender balance of the committee and provide updates at each annual steering committee meeting.	Expected results: the inclusion of activities and measures of gender equality becomes a common factor within the electro-mobility agenda of the different national ministries. The results and advances in the area are shared within the coordination body. Risk to the gender issue by not executing this measure: Lack of legitimacy of the project (potential adverse communication effect) and diversity of views in its comprehensive implementation ⁵³
Output 1.2 ⁵⁴	Community Leadership and Commitment (guarantee sufficient representation of women in any public consultation mechanism)	(I) All consultations and activities carried out within the framework of the proposed consultation strategy should actively seek the inclusion of women within the different groups of civil society and the private sector.	Indicator: percentage [%] of women attending activities Goal: Given the diversity of the different stakeholders involved in the deployment of electro-mobility in the different regions of Chile, including drivers, their families, users, private companies, government offices, civil associations, etc. The contracted consultant will establish, together with the gender officer of the Ministry of Energy and its counterpart in the regional SEREMI	Ensure that the design of the consultation strategy (D1.2.1) is gender sensitive and establishes means to effectively consult women. Track gender balance of the consultations and provide update at each annual steering committee meeting.	Expected results: Guarantee and / or ensure that the project includes the gender dimension in the design, implementation, monitoring and evaluation phases. Gender risk by not executing this measure: Lack of legitimacy and adherence to the project, and weak sustainability over time ⁵⁵

⁵²The Public Companies System (SEP) reached (2017) the goal of 40% of female representation on Boards (Instrument: Presidential Mandate, Chile). UN proposes 30% in High Charges.

⁵³ It does not echo the ILO Centennial Global Declaration, The Future of Work, 2019: ensuring equal opportunities, equal participation and equal treatment.

⁵⁴ In March 2020, the Senate approved the Constitutional Reform Project by 28 votes, guaranteeing gender parity in the candidacies for the formation of the constituent body that, eventually, is created to formulate a New Constitution (Instrument: Draft Law, Chile)

⁵⁵ Ditto Footnote No. 2. Additionally, representative, and participatory democracy and inclusive societies are strengthened and consolidated (XIII LAC Regional Conference on Women, ECLAC, 2016)

			<p>offices, the goal of % of women who should participate in the different groups.</p> <p>Global Goal: 35% of women participate in the consultation strategy.</p>		
Output 1.3	Equal opportunities, integration and non-discrimination	(T) Women's training	<p>Indicator: percentage [%] of women directly trained.</p> <p>Goal: at least 35%⁵⁶ are women according to their qualification (potentialities are identified in local study centers with related careers).</p>	<p>Ensure that the design of the capacity-building activities is gender sensitive and establishes means to effectively capacitate women.</p> <p>Track gender balance of the capacity-building activities and provide update at each annual steering committee meeting.</p>	<p>Expected results: Technical Capacity. The female employment dimension is integrated throughout the value chain (both in managerial and operational positions, line and support)</p> <p>Gender risk by not executing this measure: Lack of participation of women in the labor force (perpetuating male stereotypes in an emerging area of the economy)⁵⁷</p>
Output 2.1	Business Development, Supply Chain and Marketing Practices	(T and C) The participation of female drivers in pilot tests is encouraged	<p>Indicator: percentage of registered female drivers participating in the pilot tests.</p> <p>Goal: 100% of the female drivers participate in the pilot tests, and at least 52.5% of passengers are women.</p>	<p>Ensure that the design of the pilots is gender sensitive and establishes means to effectively engage women.</p> <p>Track gender balance of the pilots and provide update at each annual steering committee meeting.</p>	<p>Expected results: Promote the participation of women in the deployment of electro mobility in the regions from the beginning.</p> <p>Risk to gender issues by not executing this measure: Lack of adherence to the project and poor adoption of an integrated management model (without stereotypes)⁵⁸</p>
Output 3.1	Business Development, Supply Chain	(E) Dissemination of Financial Opportunities at the local level.	Indicator: Incorporate into the financial instruments requirements	Ensure that the design of the financial instruments are gender sensitive	Expected results: Financial Capacity. Promotion of solutions that integrate the gender

⁵⁶The 1st Solar Thermal Plant in Latin America (Cerro Dominador, Maria Elena commune) used in the construction phase local female labor (35%). The contractor was required to train in the required skills for women and a% recruitment. This "Mirrors Program" was awarded in the "Best Practices Competition for a More Sustainable Electric Future" 2019.

⁵⁷ Potential violation of ILO Convention 111, 1958, on Discrimination in Employment and Occupation.

⁵⁸ Idem Footnote No. 6.

	and Marketing Practices		<p>and facilities that are specific to women, giving female drivers the same opportunity to access the available funds as male drivers.</p> <p>Goal: The percentage of women who access the financing mechanism is equivalent to at least the percentage of female drivers in the collective taxi fleet nationally (% is currently unknown and to be determined during the project).</p>	<p>and incorporate means to effectively engage women.</p> <p>Track gender balance of clients drawing on the financial instruments and provide update at each annual steering committee meeting.</p>	<p>dimension in terms of subsidies, loans and credits⁵⁹</p> <p>Risk to the gender issue by not executing this measure: Less economic autonomy of potential women subjects of these financial instruments (their informal work and job insecurity are perpetuated)⁶⁰</p>
Output 4.1	Business Development, Supply Chain and Marketing Practices	(E) Dissemination of Local Chain Opportunities	<p>Indicator: percentage [%] of women attending training</p> <p>Goal: at least 35% of women participate in the proposed workshops.</p>	<p>Ensure that the design of the capacity-building activities is gender sensitive and establishes means to effectively capacitate women.</p> <p>Track gender balance of the capacity-building activities and provide update at each annual steering committee meeting.</p>	<p>Expected results: The female employment dimension is integrated throughout the value chain (both in managerial and operational positions; line and support).</p> <p>Gender risk by not executing this measure: Lack of participation of women in the labor force (perpetuating male stereotypes in an emerging area of the economy)⁶¹</p>

⁵⁹ The Ministry of Transport has a “Collective Taxi Renewal Program” that does not distinguish sex (it does not offer affirmative actions for women).

⁶⁰ The Right to Development of Women is not protected as a fundamental Human Right, scope: Economic Rights (various binding ILO Conventions; ECLAC, 2016)

⁶¹ It does not echo the ILO Centennial Global Declaration, The Future of Work, 2019: ensuring equal opportunities, equal participation and equal treatment.

Figure 2 summarizes the relative weight of each type of gender measure adopted relative to the total number of measures to be implemented. The project Regional and Gender Officer will have the responsibility of implementing and monitoring the gender action plan, in consultation with the Gender Officer of the Ministry of Energy.

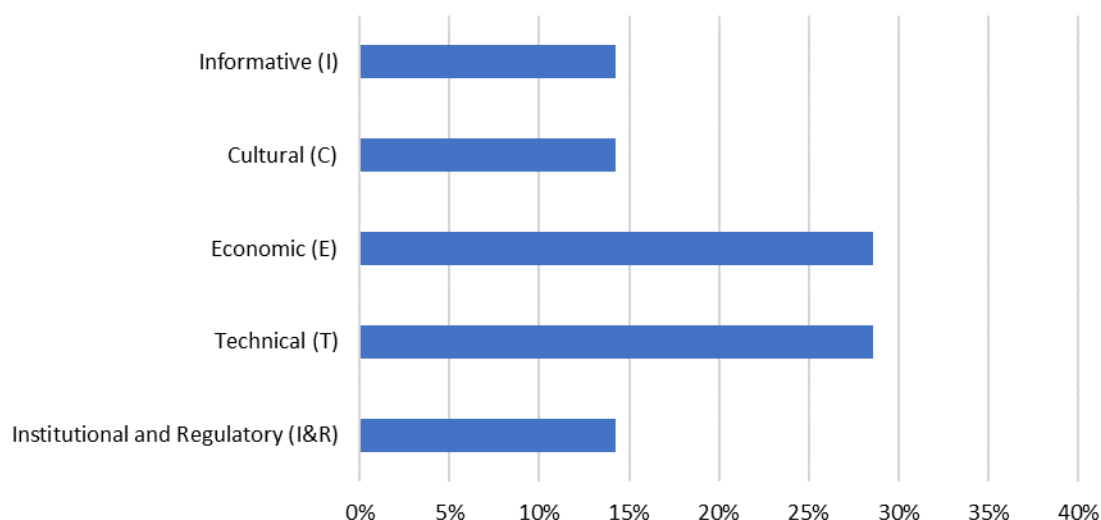


FIGURE 2. RELATIVE PERCENTAGE OF EACH TYPE OF GENDER MEASURE OVER THE TOTAL NUMBER OF MEASURES IMPLEMENTED

4. Private Sector Engagement

Private sector involvement is crucial for the success of the project, and a list of key private sector actors is contained in Table above. Utility companies are one of the main promoters of electric mobility in Chile and have shown strong interest in the project, with two companies providing co-financing. Car dealers will participate in components 2, 3 and 4. The private sector will also engage in the stakeholder consultation strategy implemented in Output 1.2. Overall, the project will engage the private sector in a variety of ways:

- As project beneficiary: project activities will increase demand for electric vehicles, vehicle charging infrastructure. Car leasing companies will be engaged to provide the electric vehicles for pilot projects as well as their maintenance services. This will increase the presence of this companies in regional Chile, but also provide a new business acquisition plan for fixed route taxi drivers. Furthermore, these stakeholders will benefit from additional supporting actions from the project, such as the development of financial schemes (Output 3.1), which will encourage them to develop their own market strategies.
- The fixed route taxi owners are direct beneficiaries of the project given that these will be able to test the technology under local operating conditions at no cost. These private sector actors will engage directly in the demonstrations to identify potential business opportunities without the risk of technical uncertainty. Furthermore, they will also benefit from project activities in order to gain access to the benefits provided by electric vehicles within a more favorable legal and financial framework.
- The incorporation and testing of digital payment systems along with user connectivity apps, amongst others, will allow for future business opportunity for platform developers but also for public transport users and providers.
- The banking sector will participate directly in the creation and use of financial instruments created through the project.

Some private stakeholders will be particularly active as their involvement in some of the project activities is crucial for the long-term sustainability of electric mobility across the country. As mentioned above CORFO is a key player in promoting the entrepreneurship and dynamism of the private sector with a long-standing relation with the sector. The private sector is also targeted by capacity-building activities included in the project:

- Capacity building activities within component 1 are targeting decision makers and professionals in the public and private sector, and will focus on technical, financial, and regulatory aspects of integrating electric mobility and their growth prospects.
- Capacity building activities within component 4 will facilitate the involvement of private companies in the management of EVs at their end of life, opening new business opportunities in this sector.

5. Risks

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.

Risk description	Main categories	Risk level rating - probability	Risk level rating - impact	Risk Mitigation Strategy and Safeguards	By Whom / When?
Difficulties to obtain provisional license plates for the pilot vehicles	Political, organizational	Low	High	The Ministry of Transport and Telecommunications is already working to obtain permissions for the license plates. Once the project starts, this activity will be given highest priority and will be initiated immediately. This provides for a period of one year to obtain the plates. Furthermore, if required higher level political support will be provided through the Ministry of Energy to ensure the plates are obtained.	MTT, Ministry of Energy, Project Management Unit.
Rental companies do not participate in the project.	Economic	Low	High	Three rental companies have confirmed they have fleets of electric vehicles and are interested to participate in the pilots. Maintain constant contact with potential rental companies from the beginning of the project, to inform them of progress and maintain interest Organize meetings between government officials and rental companies to build high-level political support with the companies.	Ministry of Energy, PMU
Reduced MTT subsidy due to changing priorities	Political	Low	High	While Chile is currently undergoing a reconsideration of its political priorities due in part to the recent social protests and COVID pandemic, decarbonizing its transport system continue to be a key priority. To mitigate this risk, the PMU will work closely with the Ministry of Energy and MTT to ensure that a political alignment is constantly maintained.	MTT, Ministry of Energy, Project Management Unit.
Lack of technical support on the	Capacity	Low	Medium	The maintenance costs of all vehicles purchased will be	ME, MTT, vehicle importers, contracted

Risk description	Main categories	Risk level rating - probability	Risk level rating - impact	Risk Mitigation Strategy and Safeguards	By Whom / When?
maintenance and deployment of vehicles and infrastructure in regional cities reduces pilot effectiveness				included in the procurement process of the vehicles in order to ensure the availability of specialized mechanics and spare parts. Furthermore, corrective maintenance expenses have been included in the budget in case of an incident. In addition, capacity building trainings will focus on supporting local actors to build technical capacity on vehicle usage	experts, rental companies.
Administrative obstacles due to lack of coordination between different government levels after execution of project activities	Organizational	Low	Low	Coordination is being specifically addressed through output 1.1, to ensure effective inter-ministerial collaboration.	Project management unit, led by Ministry of Energy
Lack of access to affordable credit by potential electric taxi purchasers may reduce scale-up potential of project	Financial	Medium	Medium	Through output 3.1 the project directly aims to address such risk.	Ministry of Energy, Project Management Unit, financial institutions
Social unrest leads to a change in national priorities, affecting political support for the project	Political	Medium	Medium	Civil society continues to place high-importance on citizen well-being, including as related to air quality and access to public transport. As the project aims to improve both, it is not envisaged that social unrest would lead to lessening political support for the project. To ensure this doesn't occur, the project has a dedicated output on stakeholder engagement and consultation (1.2). The PMU will ensure that outcomes from such consultations are fed back into the national electric mobility coordination body (output 1.1), to ensure that government stakeholders are aware of the project's importance for civil society.	PMC, Ministry of Energy, Ministry of Transport and Telecommunications.
High impact event such as an earthquake could disrupt power generation, damage electric vehicles, destroy infrastructure, etc.	Environmental	Medium	Low	High-priority routes will be chosen, ensuring local governments prioritize the returning to functionality of these routes. Also, given that vehicles will be leased in case of damage the insurance and replacement of these will be responsibility of the leasing company. Finally, given that the pilot project is of 1-year duration the project has sufficient time to reschedule the testing period if required.	ME, MTT and regional SEREMI and GORE /throughout the project

Risk description	Main categories	Risk level rating - probability	Risk level rating - impact	Risk Mitigation Strategy and Safeguards	By Whom / When?
In-effective disposal of electric vehicle batteries leads to soil or water contamination.	Environmental	Low	Moderate	Effective disposal of electric vehicle batteries to be addressed directly through component 4.	PMU

Climate risk assessment, climate risks and risk mitigation

(i) How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?

Studies rate Chile as a country which faces moderate potential impacts due to climate change. Germanwatch rates Chile as having the 87th highest climate risk index,⁶² while the Notre Dame Global Adaptation Initiative ranks it the 22nd least vulnerable country in the world to climate change impacts, and 36th in terms of climate readiness.⁶³

Climate risk assessment for Chile in the context of the electric mobility project is as follows:

1. Hazards

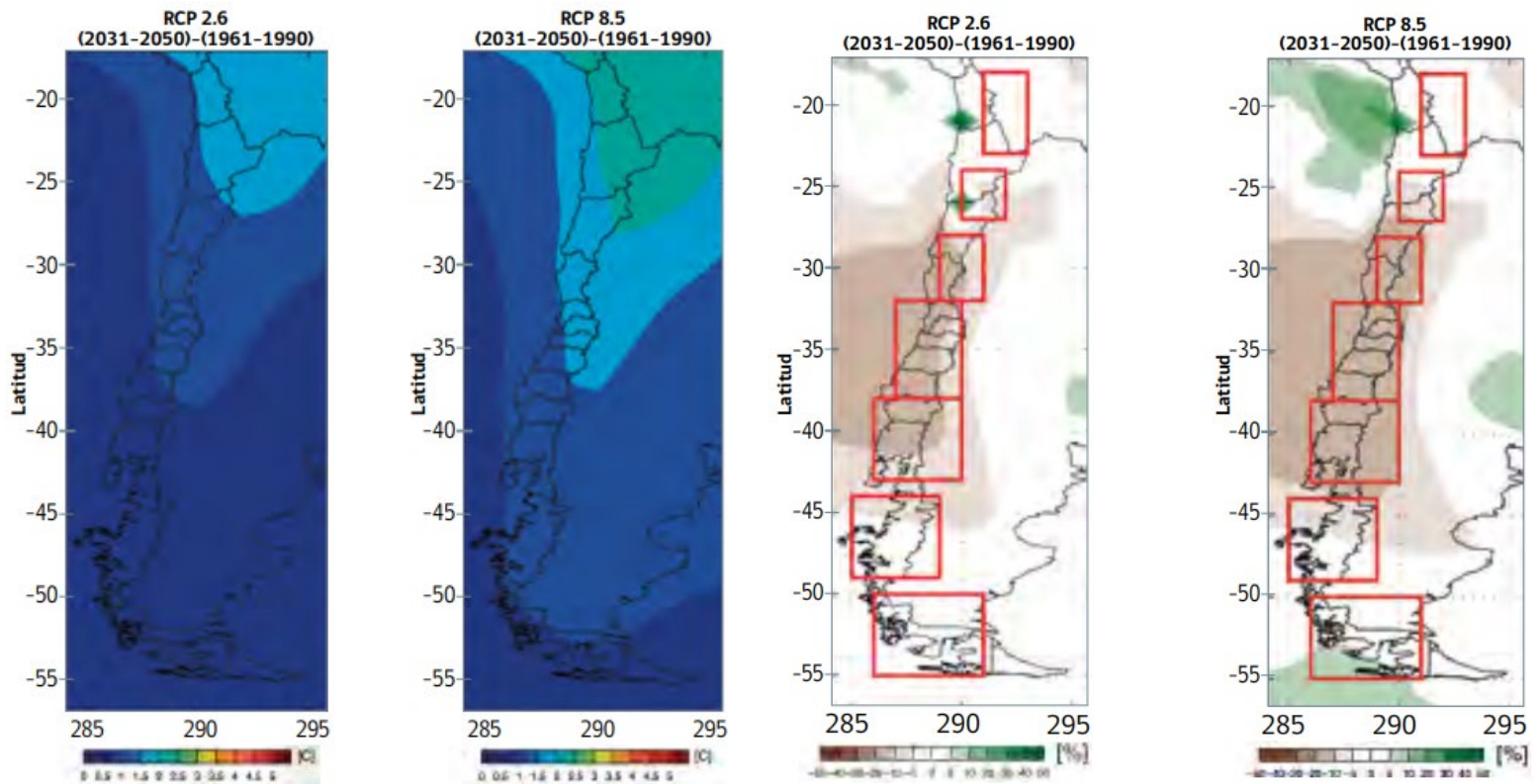
As identified in Chile's Third National Communication to the UNFCCC,⁶⁴ key climate hazards are increased warming and changes to rainfall precipitation. The figures below indicate this behavior. The warming pattern is similar in all IPCC cases: greater warming in the highlands and less in the southern region. In the case of rainfall, the trends in the figure below indicate that the period 2031-2050 would be drier compared to the historical average, and a decrease of between 5% and 15% is expected for the area between the basins of the Copiapó and Aysén rivers. These projections would be accentuated towards the southern part of the country, specifically between the Biobío river basin and the southern limit of the Los Lagos Region. Chile would also experience more extreme weather events, such as intensified rain storms and sea behavior, but not at the level of high category hurricanes.

⁶² https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf

⁶³ <https://gain.nd.edu/our-work/country-index/rankings/>

⁶⁴ https://unfccc.int/sites/default/files/resource/NC3%20Chile_19%20December%202016.pdf.

Maps of changing temperature and rainfall precipitation due to IPCC RCP 2.6 and 8.5 to 2050.



2. Vulnerability and exposure

Based on the above analysis, and according to the World Bank, Chile's key vulnerabilities to climate change are directly related to the changes in temperature and precipitation:⁶⁵

- "Chile has suffered many instances of drought, including a drought between 2008-2015 that affected much of the southern and central areas. Drought impacts human health by changing water availability and food production, agricultural production, energy, mining, among other important sectors. Rising temperatures and changing climatic patterns could impact the incidence of droughts in certain regions.
- The area between Santiago and Puerto Montt are most exposed to fire. Wild fire affects human health, urban populations, forests, agricultural lands, soil health, among other important sectors. Changes in precipitation and water management can leave forested areas vulnerable to wildfires during fire season. Chile was affected by extensive wildfires in 2017.
- Precipitation patterns, land use, wind, glacial and snow melt, and other climatic conditions affect river systems. Flooding can impact human population, energy production, critical infrastructure, agricultural production, and water quality. Most flooding occurs during the rainy season between April and September. However, Chile has recently experienced flash flooding in connection to temperature changes and snow melt.
- Flooding and wildfire events occur with higher frequency while earthquake, the third most frequent disaster represents a significant percentage of mortality and economic damages caused by natural disasters."⁶⁶

According to its Third National Communication to the UNFCCC, Chile identified the following sectors as most vulnerable: water resources, biodiversity, forestry, fisheries and aquaculture, energy, cities, health, infrastructure (including drainage, river works, bridges, ports and coastal infrastructure), tourism and coastal zones. The third national

⁶⁵ <https://climateknowledgeportal.worldbank.org/country/chile/vulnerability>.

⁶⁶ Ibid.

communication did not directly identify the transport sector as one of the most vulnerable sectors. However, it did identify that within the infrastructure sector various elements related to transport could be vulnerable (such as bridges).

3. Risks

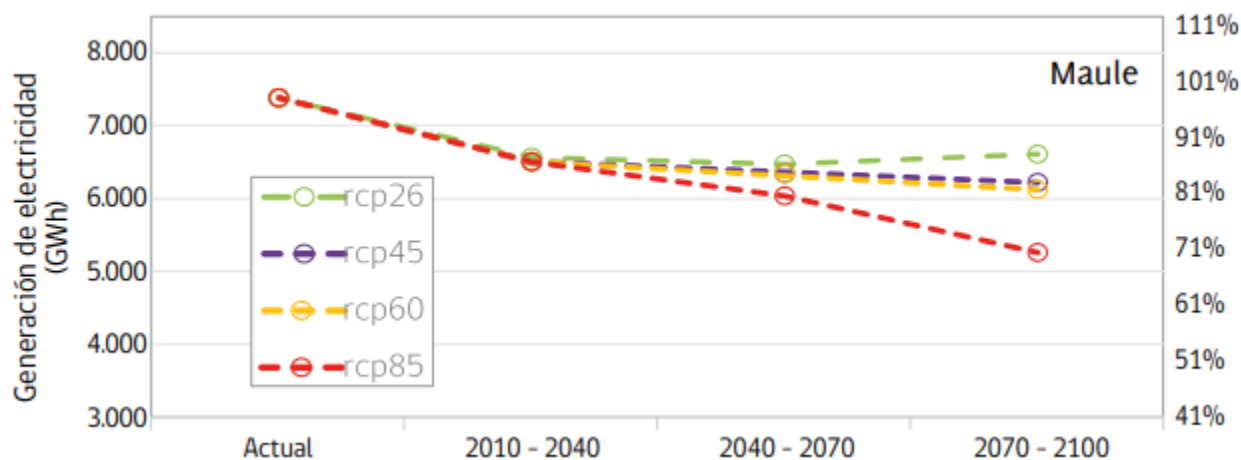
Based on analyses undertaken by the Ministry of Environment, Chile has estimated a level of risk for its cities due to climate change impacts, including temperature change and rainfall precipitation rates, until 2050, consistent with the IPCC RCP 8.5 scenario.⁶⁷ The risk of impact for the three target cities is noted in the table below. Regarding the risk of impact scale, the three cities are located in the middle of the scale with respect to other cities. With Valparaiso identified as having the most risk (0.89) and Coyhaique the lowest (0.41).

Summary of risks for the three target cities in Chile to the impacts of climate change, temperature change and precipitation rates until 2050, consistent with RCP 8.5

City	Risk of Impact	Potential threat to sea-rise	Temperature change to 2050				Change in precipitation to 2050	
			Summer		Winter			
			°C	%	°C	%	mm	%
Antofagasta	0.63	Yes	2.1	10	2.2	16	0	0
Talca	0.66	No	2.1	11	1.5	18	-132	-16
Puerto Montt	0.75	Yes	1.7	12	1.2	18	-229	-12

Source: Adaptation Area, Department of Climate Change, Ministry of Environment of Chile

In Chile, just under 50% of the electricity supply in the national grid comes from hydroelectric generation. Figure 11 shows the possible impacts of climate change on the generation of electricity in one of the basins most important in the country, the region which also supplies Talca.



In this context and in that of the project, the primary risks to the project are due to changes to precipitation, leading to extremely high rainfall and droughts. Both have a moderate potential to affect the project's objectives and outputs. Heavy rainfalls could cause flooding and landslides, damaging electric vehicle charging infrastructure, power grid infrastructure and general road infrastructure. At the same time, such rainfalls could potentially result in a steady supply of water for the country's multiple hydropower plants, ensuring a steady and potentially reduced price of electricity. Droughts could potentially have the opposite effect, reducing supply for the hydropower plants or increasing competition for water resources (for instance, for agriculture and drinking water). Such a drought could lead to the need to resort to gas and coal plants to supply the country's electricity needs. A secondary issue risk could relate to increased temperatures. These could cause greater fires, leading to damage to infrastructure, and increased use of electric vehicle air-conditioning units,

⁶⁷ Third National Communication to the UNFCCC, page 35.

reducing vehicle performance. Based on the above analysis, it is deemed that the project has a moderate risk to be negatively impacted by climate change in the long-term to 2050.

4. Measures to manage risks

These potential impacts have been addressed through project design. To mitigate the potential impact of flooding or fires, the project pilots have been chosen to occur in large urban areas which are less prone to such events and have organized safety protocols and systems in place. In addition, the pilot fixed-route taxi routes will be chosen on high priority routes which have a low probability of impact from climate change. The use of high-priority routes will also ensure that local governments prioritize these routes when undertaking efforts to mitigate or recover from flooding and fires. Routes will also be chosen to ensure that they are less likely to be affected by such extreme events. Furthermore, pilot drivers will be trained as part of the vehicle safety protocol (output 2.1) on responsible and safe usage of the electric pilots during such events.

Possible drought events, which could affect electricity prices, will be monitored carefully and incorporated into the business models and recommendations for accelerating electric taxi adoption in the regions (output 3.2). Unfortunately such changes to weather cannot be mitigated directly, so it will be important to incorporate such behavior into economic modelling for the development of the business models. Predictions of possible increased in electricity prices will be incorporated into the development of the financial instruments under output 3.1. For instance, such cost variations will be factored into total cost of ownership modelling under output 3.1, ensuring that Banco Estado takes into account conservative (high) electricity prices when creating a financial instrument for the uptake of electric taxis. Such elements will also be incorporated into the design of the investment roadmaps for the long-term viability of Chilean electricity grids to support electric vehicle uptake (output 3.3).

(ii) Has the sensitivity to climate change, and its impacts, been assessed?

Yes. The text above has considered the project's sensitivity to climate change at different IPCC representative concentration pathways (2.6 and 8.5). While the project will inadvertently be affected by climate change, it has a moderate risk and deemed low sensitivity to climate change in the long-term to 2050.

(iii) Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?

The overall focus of the project is on building resilience by reducing the country's dependence on fossil fuel imports through the uptake of electric vehicles. Such imports are susceptible to severe price fluctuations due to global shocks, including those caused by climate change. Thus, by reducing such imports, the country is directly increasing its overall resilience.

(iv) What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?

The operators of the fixed-route taxi pilots will need to have information on severe weather events and any changes in vehicle operation and routes during this time. Such information will be provided by the executing agency through its engagement with governmental actors participating in the national electric mobility coordination body (output 1.1). Similarly, such operators will require technical capacity to ensure effective operation, which will be provided through training on safety for vehicle pilot operation (outputs 1.3 and 2.1).

COVID risk and opportunity analysis

Risk analysis

The COVID-19 pandemic has the potential to affect the project in the following ways:

- Reduced fixed-route taxi operations. Whether due to mobility restrictions imposed by health authorities, the increased possibility of teleworking, the need for social distancing, or a significant economic contraction, the COVID-19 pandemic has the potential to reduce the levels of public transport travel in the Chilean regions. In such a situation, fixed-route taxi drivers could suffer losses in income and become less open to adopting new technologies, such as electric vehicles. This result would negatively impact on the effective execution of the project's outputs, potentially leading to a slower adoption of electric fixed-route taxis in the Chilean regions.

- Lockdown and movement restrictions. Mobility restrictions and the need for social distancing due to the pandemic could also lead to reduced possibility for activities that have traditionally required in-person participation, such as workshops, meetings, trainings and consultations.
- Government priorities. In the event of an extreme economic contraction, the pandemic could lead to a reduced focus by legislative powers on the adopting of policies, laws and standards related to electric mobility. It could also lead to a reconsideration of regional subsidies promoting electric mobility.

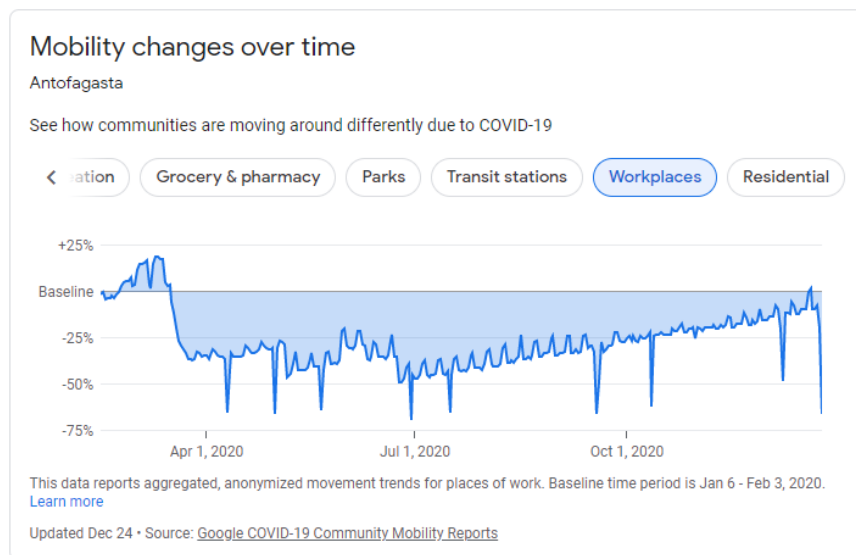
More specifically, the virus has affected the three target areas of the project as follows:

City	Total population	Cases to date	Active cases
Antofagasta	425,725	14,225	511
Talca	236,724	6,007	272
Puerto Montt	269,398	10,205	681

Within the pandemic control measures, the government created the Step by Step plan that has 5 steps

- Quarantine (step 1), where all people are confined to their houses.
- Transition (step 2), where it is defined that some sectors are released from quarantines from Monday to Friday, but remain confined on weekends.
- Preparation (step 3), where the quarantine is removed on weekends and people have more freedom to do physical activity.
- Initial Opening (step 4) and Advanced Opening (step 5), which allow more and more activities that were previously restricted to be carried out, all based on sanitary and epidemiological criteria, to avoid an increase in infections.

The previous steps do not apply to people who provide essential services, such as public transport, but in the case of fixed-route taxis the flow of contracted services has decreased. Currently, the three communes considered in the project are in stage 2, Transition, but this definition is evaluated weekly depending on the registered active cases of COVID-19. The following data, provided by Google COVID-19 Community Mobility Reports,⁶⁸ provides an indication of how mobility to the workplace has decreased during the COVID pandemic in Antofagasta. Observed behavior is similar in Talca and Puerto Montt:



⁶⁸ <https://www.google.com/covid19/mobility/>. This is unofficial data and not endorsed by the Chilean government. It is provided purely for illustration.

Regarding the economic impacts, no information was obtained disaggregated by region. However, at a general level, the Central Bank of Chile published the December 2020 Monetary Policy Report (IPoM), in which it highlights that the local and international economic scenario continues to be determined by the evolution of people's mobility and their relationship with the Covid-19 pandemic.

Mitigation measures:

- Reduced fixed-route taxi operations. The project pilots are planned to take place in 2022 and 2023, by which stage it is projected that the COVID pandemic will no longer impact the daily lives of citizens to the extent experienced today (2020). In the event that lockdowns and travel restrictions continue to impact communities, the project management unit will re-evaluate the project workplan to postpone field activities until the third year of project execution (2023). On the possibility of reduced use of public transport, the pilot routes will be chosen based on those of high-usage. This will ensure that even in reduced-usage scenarios there will continue to be demand for the pilot taxis. As noted in section 2, fixed-route taxis play an essential role in Chilean regional cities and the needs of civil society to commute will continue to exist.
- Lockdown and movement restrictions. In the event of mobility restrictions and the need for social distancing, alternative and innovate forms of meeting organization and communication will be implemented (i.e. using online platforms). The impacts of the pandemic in 2020 have meant that such technologies are already becoming commonplace and acceptable for usage by a broad range of stakeholders.
- Government priorities. The promotion of electric mobility continues to be a key priority for national government. In addition, civil society continues to highlight air pollution issues in Chilean cities, especially in the country's south. In this context, it is not perceived that the pandemic will result in a shift in governmental priorities away from low-carbon sustainable development.⁶⁹ Project activities requiring governmental consideration of laws and decrees is planned primarily for the project's second and third years, when it is estimated that action on the pandemic will be in place and less of a requirement for legislative authorities. In the event that the pandemic continues to requiring the attention of decision-makers, such project activities will be rescheduled for the project's third year. Furthermore, due to reduced demand for MTT fixed-route subsidies in 2020 (due to reduced demand), it is not envisioned that the MTT will descale the subsidy in the short- to medium-term (in fact, as noted in the baseline section, it is understood that the MTT is evaluating an increase in the subsidy).

Opportunity analysis

- With initial studies indicating that the effects of COVID-19 are intensified by poor air quality, the pandemic has led to an increased focus on this situation in Chile. Some cities in the Chilean regions, particularly in the south, have levels of air quality which are among the poorest in Latin America and the Caribbean, and thus efforts to improve the situation are embraced by civil society and health authorities. As the GEF project directly aims to improve air quality through a reduction in polluting internal combustion engine vehicles, there will be significant opportunities for synergies with other initiatives and increased interest in scaling up the project's outcomes.
- Another key opportunity is for the project to build upon and support national initiatives promoting a green recovery from the pandemic. Primarily, it will build upon the national plan 'Step by Step Chile Recovers' (*Plan Paso a Paso Chile se Recupera*),⁷⁰ announced by President Sebastián Pinera on 16 August 2020. This includes law 21256, published on 2 September, which establishes tax measures that form part of the *emergency plan for economic reactivation and employment in a framework of medium-term tax convergence*. In particular, the law's article 6 provides special payments in 2020 and 2021 to public transport micro-companies and drivers that are affected by COVID-19. More broadly, as part of the national recovery plan the Ministry of Transport and Telecommunications is implementing a series of national investments to promote a green recovery. While the investments focus primarily on infrastructure and electric buses, they signify a continued prioritization by the national government on electric mobility.⁷¹ The GEF-7 project is thus aligned with and will contribute directly to the national plan *Plan Paso a Paso Chile se Recupera*, by enhancing investment on electric mobility.

⁶⁹ Recently reinforced in the July 2020 Clean Energy Ministerial, plenary intervention, of the Minister of Energy, H.E. Juan Carlos Jobet.

⁷⁰ <https://www.gob.cl/chileserecupera/>.

⁷¹ <http://mtt.gob.cl/archivos/26135>.

6. Institutional Arrangement and Coordination

- Institutional arrangements:

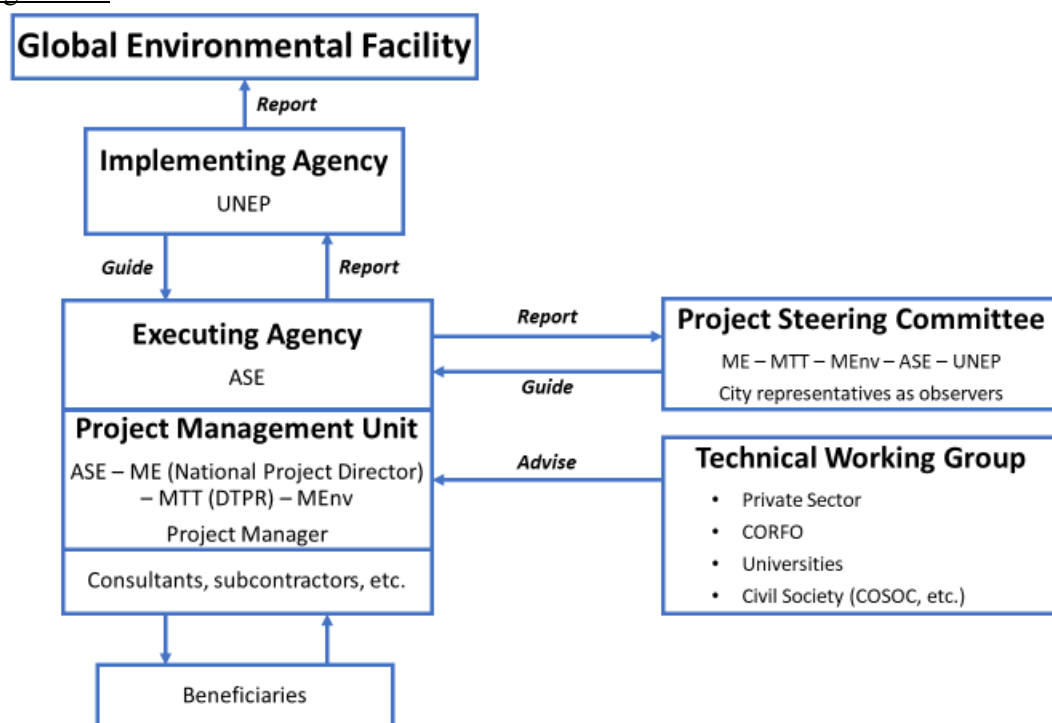


FIGURE 3. INSTITUTIONAL SETUP AND COORDINATION STRUCTURE

Institutional structure acronyms

ASE	Agency of Sustainability Energy
ME	Ministry of Energy
MEnv	Ministry of Environment
MTT	Ministry of Transports and Telecommunications
UNEP	United Nations Environment Programme
DTPR	Regional Public Transport Division, from Spanish “División de Transporte Público Regional”
CORFO	Production Development Corporation, from Spanish “Corporación de Fomento de la Producción”
COSOC	Civil Society Council, from Spanish “Consejo de la Sociedad Civil”

UNEP is the proposed GEF Implementing Agency, based on its significant experience in support electric mobility interventions globally and in the region. Globally, it is the implementing agency of the GEF Global Programme on Electric Mobility. It also leads work on, inter alia, the *Partnership for clean fuels and vehicles* and the *Global fuel economy initiative*. In the region, UNEP through its Regional Office for Latin America and the Caribbean (ROLAC) supports coherence and coordination on electric mobility through its platform [MOVE](#). Furthermore, it support the regional political agenda on electric mobility through its leadership to organize the annual Forum of Environmental Ministers. Amongst other activities, UNEP ROLAC is leading the implementation of GCF readiness proposal *Advancing a regional approach to e-mobility in Latin America* in Argentina, Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay and Uruguay.

The Agency of Sustainability Energy will be the project's Executing Agency, as nominated by and accountable to the Ministry of Energy. The Agency for Energy Sustainability (ASE) is a private non-profit foundation created in 2010 with the mission to promote, strengthen and consolidate the efficient and sustainable use of energy through the coordination of relevant actors at the national and international level, implementing public-private initiatives in different sectors and thus contributing to the competitive and sustainable development of Chile. The Sub-secretary of Energy, Ministry of Energy, is the President of the Board of Directors of the Agency. ASE is also serving as the executing entity for the GEF Project ID: 10087. Accelerating investment in efficient and renewable district energy systems in Chile.

Refer to Annex K for further details on the roles and responsibilities of the Implementing and Executing Agencies. The Agency of Sustainability Energy will be accountable to the Ministry of Energy and UNEP/GEF for ensuring the Executing Agency activities (see Annex K). The project will be managed by a Project Manager at the ASE that works in close cooperation with the Project Director at the Ministry of Energy. The project will be executed in line with the procedures established by the Ministry of Energy, and the Agency of Sustainability Energy will take overall responsibility for the execution and success of the project.

The project's organogram is shown in **Error! Reference source not found.** above. For more details on the roles and responsibilities of the Implementing and Executing Agencies refer to Annex K. The main project bodies are the following (refer to Annex K for more details):

The **Project Steering Committee (PSC)** is a high-level cross-sectorial committee comprising of lead policy makers and heads of departments. It consists of the Ministry of Energy, Ministry of Transport and Telecommunications, Ministry of Environment, UNEP, the Agency of Sustainability Energy and the Chile GEF Operational Focal Point. The PSC will be established to provide overall guidance and oversee the progress and performance of the project as well as to enhance and optimize the coordination and contribution with various project partners. It will focus mainly on procurement, institutional arrangements, and financial management of the project. The PSC will be chaired by the National Project Director (NPD), and will convene at least once per year. The selection of consultancies and companies is responsibility of the PSC. Representatives of the pilot cities will be invited to participate as observers to the PSC meetings at the invitation of the PSC.

The **Project Management Unit (PMU)** is composed by the Agency of Sustainability Energy, the Ministry of Energy, Ministry of Transport and Telecommunications and the Ministry of Environment and will manage day-to-day operation of the project. Its core structure consists of a Project Manager (PM) and component coordinators (such as consultants and subcontractors) with specialized expertise hired to work on specific components within the project. The PMU is designed to achieve efficiency and coordination in the management of funding, and of project activities that are similar and inter-dependent on each other for execution. The project Regional and Gender Officer will have the responsibility of implementing and monitoring the gender action plan, in consultation with the Gender Officer of the Ministry of Energy.

The **Technical Working Group (TWG)** is a mechanism that enhances coordination and communication between ministries and key stakeholders. It involves private sector entities, CORFO, Centro Mario Molina Chile (as host of the LAC support and investment programme of the GEF-7 global programme on electric mobility), universities and the civil society. The latter provide sustained technical guidance, policy recommendations, support for areas within their expertise, and enhance the involvement of the most vulnerable groups of society to achieve policy coherence among the country's objectives and maximize social benefits.

- Coordination with other initiatives:

To coordinate efforts and maximize the output of both the GEF-6 sustainable mobility and this GEF-7 electric mobility projects, the Ministry of Environment, focal point of the GEF-6 project, and the Ministry of Energy, focal point of the GEF-7 project, have already that both ministries as well as the Ministry of Transport and Telecommunication will be included in the steering committees of both the GEF-6 and GEF-7 projects. This will be undertaken to ensure effective coordination between the two projects and to ensure that the projects are complementary, avoid duplications and build synergies (as noted in section 3 above).

The key mechanism to ensure coordination between this GEF-7 project and other transport initiatives being undertaken nationally will be the inter-ministerial coordination group established under output 1.1. The body will be constituted of government officials, including the Ministry of Energy (which will serve as the body's secretary), the Ministry of Transport and Telecommunications, Ministry of Environment, Ministry of Finance and the Ministry of Interior. In addition, the coordination body will ensure close contact with the ministerial regional secretaries (SEREMI) in the Chilean regions, which act as ministerial representation in each Chilean region. They will enable contact with regional governments (GORE) authorities and help articulate activities with local stakeholders. Meetings will be held quarterly, with information stored on a document-sharing platform. Participants will be at the technical level, that are executing related activities (including the GEF-6 and GEF-7 transport projects).

The coordination group will also ensure coordination and the building of synergies with the GCF regional readiness programme on electric mobility. As work on the GCF programme advances in 2021 (it began in late-2020), the coordination group will ensure alignment and complementarity. In particular, as the GEF-7 project starts in 2021, effort will be made to ensure the development of a pipeline of GCF project proposals that builds upon the GEF project, for example, through the scaling up of the fixed-route electric taxi fleet based on GEF-7 project experiences.

The Ministry of Energy, together with the Ministry of Transport and Telecommunications and Ministry of Environment will also ensure coordination with other ongoing relevant GEF-financed projects in Chile in climate change focal area. The following table lists selected GEF project on climate change (GEF-5 to GEF-7).

TABLE 10. GEF-FINANCED PROJECTS IN CHILE IN CLIMATE CHANGE FOCAL AREA

ID	Title	Implementing Agencies	Executing Agencies	Period	Status	Relevance
9831	Third Biennial Update Report and Fourth National Communication under the UNFCCC	United Nations Development Programme	Ministry of Environment	GEF-6	Project Approved	Indirect. The results of the project will support UNFCCC reporting.
9742	Supporting the Chilean Low Emissions Transport Strategy CLETS	Development Bank of Latin America	Ministry of Environment (MMA), Ministry of Transport and Telecommunications (MTT), (Ministry of Energy will be on the project steering committee)	GEF-6	Project Approved	Direct
9496	Leapfrogging Chilean's markets to more efficient refrigerator and freezers	United Nations Environment Programme	Ministry of Energy	GEF-6	Project Approved	Indirect: supporting GHG reduction.
5598	First Biennial Update Report	GEF Secretariat	Agencia de Cooperación Internacional de Chile, AGCI (Chilean Agency for International Cooperation)	GEF-6	Project Approved	Indirect. The results of the project will support UNFCCC reporting.
5150	Delivering the Transition to Energy Efficient Lighting	United Nations Environment Programme	Energy and Environment Ministries	GEF-5	Project Approved	Indirect: supporting GHG reduction.

The project will coordinate with the global programme on electric mobility by engaging in the LAC regional platform's activities. In particular, country representatives will participate in the regional platform-led community of practice. This will include participating in LAC platform task teams on LDVs, 2&3 wheelers, buses, batteries and charging infrastructure, participating in meetings of the LAC platform and participating in marketplace meetings on technology and finance. The country will coordinate with other child projects in the region through the help desk and the community of practice, in particular the task teams and platform meetings. Engagement through the platform will ensure effective two-way coordination, with country representatives sharing project updates, raising challenges and sharing good practices

with platform representatives. Platform representatives will share good global practices, identify solutions to challenges raised, and ensure regional coordination and alignment. With the LAC regional platform hosted by Centro Mario Molina Chile, based in Santiago, Chile, this centre will play a key role in supporting coordination between the child project and the activities of the global programme. The Centre will participate actively in child project activities, as noted previously (see for instance outputs 1.3 and 4.1, as well as the stakeholder section). Participating in the activities of the global programme will also support the country to implement the National Strategy on Electric Mobility, action line 23: Participation of Chile in international instances.

7. Consistency with National Priorities

The project is consistent with national strategies and plans/reports and assessments under the following relevant conventions:

- National Electromobility Strategy
- National Energy Strategy 2012-2030
- Energy 2050 (Chile's Energy Policy)
- National Action Plan for Climate Change 2017-2022
- National Determined Contributions (NDC) Paris Agreement
- Long-term low greenhouse gas emission development strategies under UNFCCC (Article 4, paragraph 19, of the Paris Agreement)
- National Climate Change Adaptation Plan
- United Nations Development Assistance Framework (UNDAF)
- 4th National plan of equality between men and women 2018-2030 of the Ministry of Women and Gender Equity.

National Electromobility Strategy: As noted in section 2, the strategy was launched in 2017. Through this, the country aims to electrify 100% of all public transport by 2040 and 40% of the country's private car fleet by 2050. This is undertaken with the aim of contributing to the goals of energy efficiency and mitigation of GHG emissions and contributing to improving mobility and quality of individuals' life; along with other benefits such as reduction of emissions of local pollutants and the adverse effects on the population's health. The strategy sets forth an action plan with a series of key messages to achieve these targets:

National Energy Strategy 2012-2030: Chile's National Energy Commission (CNE) has adopted a policy document, "National Energy Strategy: 2012–2030," which outlines its commitment to expand the sector capacity by supporting the use of non-conventional renewable sources. The Strategy contains six main pillars, among which:

- Increase the use of non-conventional renewable sources,
- Promotion of energy efficiency.

Energy 2050 (Chile's Energy Policy): The Energy Policy defines a vision of Chile's energy sector by the year 2050 as reliable, inclusive, competitive and sustainable. The Energy Policy is based on four pillars: Quality and Security of Supply, Energy as a Driver of Development, Environmentally friendly Energy, and Energy Efficiency and Energy Education. The principle energy targets for 2050 are:

- The GHG emissions of Chile's energy sector are in line with the thresholds defined by international guidelines and with the corresponding national emissions reduction goal, making an important contribution to a low carbon economy,
- Regional and local territorial planning and land-use instruments are in line with the guidelines of the Energy Policy,
- At least 70% of the electricity generated in Chile will come from renewable energy sources (60% by 2035),

- 100% of new buildings meet OECD standards for efficient construction, and are fitted with intelligent energy control and management systems,
- Improvement of energy producers, distributors, consumers and users' behaviors.

National Action Plan for Climate Change 2017-2022: Chile's Plan of Action for Climate Change is a road map that integrates and systematizes future climate actions for the country. The action plan has 16 specific objectives and 30 action lines that are materialized in 96 measures, divided in four areas of action: adaptation, mitigation, means of implementation and management of climate change at regional and communal level.

National Determined Contributions: Chile has submitted its update 2020 NDC to the Secretary of the UNFCCC in 2020. The NDC has a social pillar and components on mitigation, adaptation, implementation measures and integration. In the case of mitigation, Chile has committed to a GHG emission budget not exceeding 1,100 MtCO₂eq between 2020 and 2030, with a GHG emissions maximum (peak) by 2025, and a GHG emissions level of 95 MtCO₂eq by 2030. This project aligns directly with Chile's commitment on mitigation.

Long-term low greenhouse gas emission development strategies under UNFCCC (Article 4, paragraph 19, of the Paris Agreement): The development of the long-term climate strategy to 2050 is currently underway through a participatory process. It is estimated that the strategy will be finalized in 2021. Once finalized, it will be ensured that the project is aligned with and builds upon this strategy.

National Climate Change Adaptation Plan: Chile's National Climate Change Adaptation Plan was adopted in 2015 and provides the overall framework for the coordination of adaptation activities of different sectors and different territorial administrative levels. Climate Change Adaptation Plan for Energy Sector is based on measures related to energy efficiency on demand side and use of non-conventional renewable energy on energy generation side. According to this Plan, in order to increase the energy efficiency it is necessary to introduce measures to popularize the development of energy efficiency projects and develop massive campaigns and educational programs in energy efficiency; while in order to increase the use of non-conventional sources it is necessary to encourage the integration of non-conventional sources of energy in line with Renewable Energy Law and the use of solar energy in residential sector.

United Nations Development Assistance Framework (UNDAF): Chile has signed the United Nations Development Assistance Framework (UNDAF) for the period 2019-2022 in August 2019. It identifies areas of joint cooperation on issues of institutional, social and economic development, gender equality and environmental sustainability. This project is aligned with strategic priority 4 – environmental development, direct effects 7 and 8.

4th National plan of equality between men and women 2018-2030 of the Ministry of Women and Gender Equity: is a planning and management instrument that makes it possible to ensure compliance with the gender commitments signed by the State and the approved legal and legislative frameworks that guarantee women's rights. It also allows monitoring compliance and alignment with the purposes of substantive equality and autonomy of women, the gender goals and objectives included in the policies, plans and strategies of the different ministries, framed in the Sustainable Development Goals and Agenda 2030, whose compliance by the State constitutes a global commitment and challenge. The project's gender action plan is aligned with this national plan, in particular with regards to areas on 2. Economic rights (promoting greater participation of women in the workforce) and 4. Right to a life free of violence and discrimination (safety in public transport).

8. Knowledge Management

The project will generate several streams of information which need to be managed. The national coordination body created as part of output 1.1, will have periodical meetings. Minutes and presented content in these meetings will be uploaded to a digital platform for all members to access. The project management unit implementing the consultation strategy (Output 1.2) will produce quarterly reports based on the interviews and meetings held with the different stakeholders as part of the implementation of the strategy. This information will also be uploaded to the digital platform. On the different capacity building activities, these will be available via webinar to all stakeholders interested. Furthermore,

content will have to be presented by consultants in a digital format for it to be easily transferred and disseminated. This information will be available on the digital platform, for governmental actors to draw upon in the design and implementation of future initiatives. Finally, the component 2 pilot projects will generate performance indicators, lessons learned and identify barriers, valuable information that will allow decision makers and the project steering committee to take action to maximize the project's impact. This information will be captured through data management platforms in each of the pilot cities and then disseminated more broadly through the open data strategy developed under GEF-6. As shown in the table below, the project will use the knowledge and information dissemination platform developed by the GEF6 initiative to communicate and disseminate the information generated by the different outputs. This table related only to knowledge management is an extract of the table in section 3 focused on interactions between the two projects.

TABLE 11A. INTERACTIONS ON KNOWLEDGE MANAGEMENT BETWEEN GEF 6 AND GEF 7 OUTPUTS

GEF 6 Outputs ⁷²	Coordination, complementarities and synergies between the projects	GEF 7 Outputs
Output 1.1.3. MRV system (Monitoring, Reporting and Verification) Through studies and thorough monitoring, reporting and verification, CLETS's effective costs, impacts and benefits will be demonstrated and disseminated.	MRV activities of each project will be kept separate and independent	Output 2.2: Data from the pilot programme in Antofagasta, Puerto Montt and Talca is collected, analyzed and disseminated
Output 1.2.1. Support to the formalization and diffusion of the Chilean Low Emissions Transport Strategy	The GEF-7 national coordination body will support the diffusion and implementation of the GEF 6 strategy and facilitate coordination of all activities relevant to electric mobility.	Output 1.1: A national electric mobility coordination body is created
Output 1.2.2. Experience exchange and dissemination, national level through experience exchange and other knowledge-management interventions, the line of work will ensure that there are key professionals in regions knowledgeable of the effective costs, impacts, opportunities and benefits of sustainable mobility.	The multi-stakeholder consultation strategy will produce information related to uncertainties and concerns relevant to the fixed route taxi ecosystem and make this information available to the GEF6 team.	Output 1.2: A multi-stakeholder consultation strategy is implemented to identify the social (including gender) and economic viability of the scale-up of electric mobility in Chilean regions.
Output 1.3.3. Collective-taxi information crowdsourcing The project will support innovation on processes for the useful digitization of colectivo routes, so that such processes are tested and systematized.	The GEF 7 project has various outputs that focus on fixed route (colectivo) taxis. Information generated throughout the GEF-7 project will be made available to the GEF6 management unit to support their analysis.	Output 3.3: The fixed-route taxi ecosystem in Chilean regions is analyzed and recommendations for deploying electric fixed-route taxis in Chilean regions are presented for adoption.
Output 1.3.4. Open Data strategy The project will support that a shared Open Data strategy is discussed and in implementation among all relevant actors, aiming at making all disclosable public data on mobility available and interoperable.	Data generated throughout the execution of GEF-7 pilot projects will be shared through the open data strategy developed throughout the GEF 6 activities.	Output 2.2: Data from the pilot programme in Antofagasta, Puerto Montt and Talca is collected, analyzed and disseminated
Output 1.4.1. Dissemination (international level) The project supports exchange and policy-dialogue activities carried out by relevant initiatives under no geographical limitation but expected to focus primarily in Latin America. Activity will be carried out to ensure that links and channels exist for an enhanced co-learning between key professionals in like-minded initiatives worldwide.	The GEF 7 project is a child project of the GEF global programme on electric mobility. The global programme has regional support and investment platforms, which will facilitate the diffusion of international experiences and globally adopted best practices. It will also provide a common platform for all child projects to interact and share knowledge and experiences. Efforts will be made to ensure	GEF 7 Global Programme on Electric Mobility.

⁷² As per information contained in the approved project document.

	coordination with the GEF-6 international dissemination activities.	
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TABLE 11B. KNOWLEDGE MANAGEMENT PRODUCTS OF THE GEF-7 PROJECT

Deliverable code	Knowledge management products	Budget USD
1.1.3	Document-sharing platform (drive, SharePoint or similar)	1,500
1.3.5	Report on good practices and lessons learned on enforcing regulations for electric vehicle charging infrastructure	6,250
2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.	60,500
2.2.4	Quarterly operation and performance reports (minimum 4)	8,000
2.2.6	Postprocessed data is online on the city data management system (D2.1.7) and accessible for interested stakeholders through the GEF-6 open data strategy.	(Through the GEF-6 project)
3.2.1	Report on fixed-route taxi ecosystem for Antofagasta, Puerto Montt and Talca, detailing, inter alia, fleet structure, routes, operating hours, and off-work requirements	15,000
3.3.1	Report on current state and structure of the electricity distribution grid of each of the three pilot project cities: Antofagasta, Puerto Montt and Talca. The report will establish correlations between findings to determine if these are local, regional or national.	30,000
3.3.2	Report on national electricity demand for different scenarios of electro mobility in each city, considering fixed route taxi fleets and private vehicles.	30,000
Total budget		151,250

The project is part of the global GEF-UNEP Programme on Electric Vehicles. It will actively participate in the global programme's global and regional activities through its component 1, for example by participating and contributing to the knowledge exchange in the regional knowledge and investment platforms and the relevant global working groups, as well as by providing insights and knowledge.

9. Monitoring and Evaluation

Monitoring and Evaluation (M&E) activities and related costs are presented in the costed M&E Plan (Annex J) and are fully integrated in the project budget. The project will comply with UNEP standard monitoring, reporting and evaluation procedures. Reporting requirements and templates are an integral part of the legal instrument to be signed by the Executing Agency and the Implementing Agency

The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework presented in Annex A includes SMART indicators for each expected outcome as well as end-of-project targets. These indicators along with the key deliverables and benchmarks included in Annex L will be the main tools for assessing project implementation progress and whether project results are being achieved. The means of verification to track the indicators are summarized in Annex A.

The M&E plan will be reviewed and revised as necessary during the project Inception Workshop (IW) to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. General project monitoring is the responsibility

of the Project Management Unit (PMU) but other project partners could have responsibilities in collecting specific information to track the indicators. It is the responsibility of the Project Manager to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

The project Steering Committee (PSC) will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E Plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility of the UNEP Task Manager. The Task Manager will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The UNEP Task Manager will develop a project Supervision Plan at the inception of the project, which will be communicated to the Project Management Unit and the project partners during the Inception Workshop. The emphasis of the Task Manager's supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring.

Progress vis-à-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by the Project Management Unit, the project partners and UNEP. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The PIR will be completed by the Project Manager and ratings will be provided by the Task Manager. The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. The Task Manager will have the responsibility of verifying the PIR and submitting it to the GEF. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

Since this is a Medium-Size Project (MSP) of less than 4 years of duration, no Mid-Term Evaluation (MTE) will be undertaken. However, if the project is rated as being at risk or if deemed needed by the Task Manager, he/she may decide to conduct a Mid-Term Review (MTR). This review will include all parameters recommended by the GEF Evaluation Office for Terminal Evaluations (TE) and will verify information gathered through the GEF tracking tools, as relevant. The review will be carried out using a participatory approach whereby parties that may benefit or be affected by the project will be consulted. Such parties were identified during the stakeholder analysis (see section 2 above). Members of the project Steering Committee could be interviewed as part of the MTR process and the Project Manager will develop a management response to the review recommendations along with an implementation plan. Results of the MTR will be presented to the Project Steering Committee. It is the responsibility of the Task Manager to monitor whether the agreed recommendations are being implemented.

In-line with UNEP Evaluation Policy and the GEF's Monitoring and Evaluation Policy the project will be subject to a Terminal Evaluation (TE) commissioned by the UNEP Evaluation Office at the end of project implementation. The EOU will be responsible for the Terminal Evaluation and will liaise with the Task Manager and Executing Agency's Project Management Unit throughout the process. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UN Environment, the GEF, executing partners and other stakeholders.

The TE will be initiated no earlier than 6 months prior to the operational completion of project activities and, if a follow-on phase of the project is envisaged, should be completed prior to completion of the project and the submission of the follow-on proposal. TE must be initiated no later than 6 months after operational completion.

The draft TE report will be sent by the UN Environment Evaluation Office (EOU) to project stakeholders for comments. Formal comments on the report will be shared by the EOU in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. The final determination of project ratings will be made by the EOU when the report is finalized and further reviewed by the GEF Independent Evaluation Office upon submission. The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. A review of the quality of the evaluation report will be done by EOU and submitted along with the report to the GEF Evaluation Office not later than 6 months after the completion of the evaluation.

The GEF Core Indicator Worksheet is attached as Annex F. It will be updated at mid-term and at the end of the project and will be made available to the GEF Secretariat along with the project PIR report. As mentioned above, the MTR/MTE and TE will verify the information of the tracking tool. The direct costs of reviews and evaluations will be charged against the project evaluation budget. A summary of M&E activities envisaged is provided in Annex J. The GEF contribution for this project's M&E activities (including evaluations) is US\$ 66,800.

10. Benefits

In terms of direct benefits for the local population, incorporating electric vehicles into the public transport fleet, in particular fixed route taxis, will help reduce local pollution through a reduction of NO_x, carbon monoxide and particulate matter emission, improving quality of air in regional urban areas and thus reducing the impact on human health. This is a significant benefit as some of the Chilean regions have some of the lowest air qualities in Latin America. This will further have a positive benefit on human health given that preliminary studies suggest that the COVID pandemic has a more significant impact on regions of poor air quality. Thus, by improving air quality the project may contribute indirectly to reducing the impact of the COVID pandemic. Estimates of the reduction in air pollution will be calculated based on data obtained through output 2.2. By tracking vehicle odometers and other performance indicators, the emissions of the electric vehicle pilots will be compared with a calculation of those of existing old fixed-route taxis. The potential for a positive through-out the regions will then be extrapolated based on a controlled scale-up of fixed-route taxis.

Furthermore, introducing electric vehicles into the public transport system will improve the quality of the service in terms of comfort by reducing noise and vibrations. Furthermore, the use of connectivity apps to connect operators with passengers will promote a modal shift from the use of private transport to the public transport system, as it will facilitate the development of a more enhanced service, which could in turn result in an improvement of traffic conditions in the different cities.

As is expected when incorporating a new technology into a given system, this will result in a new ecosystem for business which enables opportunities but could also affect current employment areas. The project will put in place activities to ensure that the work force transition (Output 1.2, and 3.3), and does not result in the loss of employment of current workers of transport sector. Also, given the strong gender focus of the project and the experience of the Ministry of Energy personnel in the area, the project aims to result in new employment opportunities for women. This will be done by ensuring that companies involved in the procurement, installation or sale of systems, infrastructure and equipment related to low carbon electric mobility include gender diverse initiatives into their operating structure, in accordance with the gender action plan.

In terms of economic benefits, the project will help promote investment in the Chilean regions, where market pull, and push have not been strong enough to consolidate business opportunities related to electric mobility. Although the incorporation of electric mobility will also require importation, thus capital expenditures, the transition will make the country less dependent of global oil prices. This should reduce investment uncertainties, which should in turn result in a more favorable investment environment reducing interest rates and short term expected returns, making long term

investments more attractive. Furthermore, the transition to electric mobility will create a new market for the power generation and electricity distribution sectors making such investments more attractive, thus, improving the reliability and reliance of the Chilean regional power systems.

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO endorsement under GEF-7.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Kelly West, Senior Programme Manager & Global Environment Facility Coordinator Corporate Services Division UN Environment		July 2020	Asher Lessels, Task Manager	+5561991529864	asher.lessels@un.org

PART IV: ANNEXES

The CEO Endorsement Document annexes may be found in the following pages.

ANNEX A: PROJECT RESULTS FRAMEWORK

Project Objective	Objective level Indicators	Baseline	Mid-Point Target (if applicable)	End of project Target	Means of Verification	Assumptions & Risks	UN Environment MTS reference
Accelerate and scale-up the adoption of electric vehicles in Chilean regions.	Indicator A: Tons of direct GHG emissions avoided during project.	Baseline A: 0 tons avoided	Mid-point target A: 20 tons avoided	End-of-project target A: 200 tons avoided	Monitoring of mileage and energy consumption of electric vehicles deployed in demonstration projects	Vehicles are effectively inserted into the city fixed-route taxi ecosystem and work effectively under local conditions. Local political support for the pilots.	UNEP MTS 2018-2021 Climate Change Objective: Countries increasingly transition to low-emission economic development and enhance their adaptation and resilience to climate change
	Indicator B: Number of direct project beneficiaries (women and men)	Baseline B: 0	Mid-point target B: 0	End-of-project target B: Women: 2,880 Men: 2,650	Taxi trip records and workshop and consultation strategy records	Vehicles are effectively inserted into the city fixed-route taxi ecosystem and work effectively under local conditions. Local political support for the pilots.	

Project Outcomes	Outcome level Indicators	Baseline	Mid-Point Target(if applicable)	End of projectTarget	Means of Verification	Assumptions & Risks	MTS Expected Accomplishment
Outcome 1: The government demonstrates enhanced coordination, consultation and capacity for promoting inclusive uptake of electric mobility in the Chilean regions	Indicator 1A: Number of e-mobility initiatives undertaken involving participation of multiple governmental agencies or ministries	0	2	6	Meeting reports.	Sustained political support by ministries to coordinate	Expected Accomplishment (b): Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
	Indicator 1B: Number of reports on experiences and lessons learned from the Chile child project shared with the Global Programme on Electric Mobility	0	0	2	Confirmation by global programme team of receipt of best practices	Project management unit produces deliverables D1.3.5 and D2.2.5 and shares them with the global programme	

Outcome 2: Citizens of Chilean regions begin to use electric mobility for their public transport needs	Indicator 2: Number of Chilean region citizens using electric mobility for their public transport needs	0	0	Women: 2,835 Men: 2,565	Electric taxi usage records	Vehicles are effectively inserted into the city fixed-route taxi ecosystem and work effectively under local conditions. Local political support for the pilots.	
Outcome 3: The private sector purchases electric vehicles to use as fixed-route taxis in Chilean regions	Indicator 3: Number of vehicles purchased with support of financial instruments for use as fixed-route taxis	Existing vehicle replacement scheme	0	30	Financial instruments financial records	Mechanism is effectively meeting needs of consumers; electric vehicles are available on the market	
Outcome 4: The Chilean government takes action towards implementing standards for ensuring the environmental sustainability of electric mobility.	Indicator 4: Proposal for standards for waste management, extended producer responsibility and recycling of vehicle batteries, including electric vehicle batteries, is considered formally by the Ministry of Environment for adoption	0	0	Proposal is considered formally on at least one occasion by the Ministry of Environment	Government records	Political support to consider standards	

ANNEX B: RESPONSE TO PROJECT REVIEWS

Please refer to the separate pdf files uploaded to the GEF portal:

- Annex B.1 – Responses to GEF secretariat reviews on the PFD;
- Annex B.2 – Responses to GEF secretariat reviews on the PFD addendum;
- Annex B.3 – Responses to STAP comments;
- Annex B.4 – Responses to GEF Council comments.

ANNEX C: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: US\$			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (US\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent to date</i>	<i>Amount Committed</i>
GEF Consultant	33,547	33,547	0
UNEP Air Quality and Mobility Unit	11,000	11,000	0
GEF Consultant travel	5,453	5,453	0
Total	50,000	50,000	0

If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake exclusively preparation activities up to one year of CEO Endorsement/approval date. No later than one year from CEO endorsement/approval date. Agencies should report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (IF NON-GRANT INSTRUMENT IS USED)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up) – if applicable.

Not applicable.

ANNEX E: PROJECT MAP(S) AND COORDINATES



FIGURE 4. MAP OF CHILE IDENTIFYING ANTOFAGASTA, TALCA AND PUERTO MONTT.

TABLE 3. COORDINATES OF THE THREE PILOT CITIES

Demonstration sites	<i>Latitude</i>	<i>Longitude</i>
Antofagasta	-23,64	-70,40
Talca	-35,42	-71,66
Puerto Montt	-41,47	-72,94

ANNEX F: GEF 7 CORE INDICATOR WORKSHEET

Core Indicator 6	Greenhouse gas emission mitigated				
		Tons (6.2) (6.1 emissions from AFOLU do not apply)			
		Entered		Entered	
		PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)	307,573	225,779		
	Expected CO2e (indirect)	88,918	219,531		
Indicator 6.2	Emissions avoided				
		Tons			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)	307,573	225,779		
	Expected CO2e (indirect)	88,918	219,531		
	Anticipated Year	2036	2036		
Indicator 6.3	Energy saved				
		MJ			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Expected direct	608,134,607,822	2,610,573,890		
	Expected indirect	365,673,636,048	2,538,333,408		
Core Indicator 11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment				
		Number			
		Expected		Achieved	
		PIF stage	Endorsement	MTR	TE
	Female	N/A	2,880		
	Male	N/A	2,650		
	<i>Total</i>	N/A	5,530		

ANNEX G: GEF PROJECT TAXONOMY WORKSHEET

Include the GEF 7 Taxonomy Worksheet to list down the taxonomic information required under Part I, item G by ticking the most relevant keywords/topics/themes that best describe this project.

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Influencing models			
	<input checked="" type="checkbox"/> Transform policy and regulatory environments		
	<input checked="" type="checkbox"/> Strengthen institutional capacity and decision-making		
	<input checked="" type="checkbox"/> Convene multi-stakeholder alliances		
	<input checked="" type="checkbox"/> Demonstrate innovative approaches		
	<input checked="" type="checkbox"/> Deploy innovative financial instruments		
<input checked="" type="checkbox"/> Stakeholders			
	<input type="checkbox"/> Indigenous Peoples		
	<input checked="" type="checkbox"/> Private Sector		
		<input checked="" type="checkbox"/> Capital providers	
		<input checked="" type="checkbox"/> Financial intermediaries and market facilitators	
		<input checked="" type="checkbox"/> Large corporations	
		<input checked="" type="checkbox"/> SMEs	
		<input checked="" type="checkbox"/> Individuals/Entrepreneurs	
		<input type="checkbox"/> Non-Grant Pilot	
		<input type="checkbox"/> Project Reflow	
	<input type="checkbox"/> Beneficiaries		
	<input type="checkbox"/> Local Communities		
	<input checked="" type="checkbox"/> Civil Society		
		<input type="checkbox"/> Community Based Organization	
		<input checked="" type="checkbox"/> Non-Governmental Organization	
		<input checked="" type="checkbox"/> Academia	
		<input type="checkbox"/> Trade Unions and Workers Unions	
	<input checked="" type="checkbox"/> Type of Engagement		
		<input checked="" type="checkbox"/> Information Dissemination	
		<input checked="" type="checkbox"/> Partnership	
		<input checked="" type="checkbox"/> Consultation	
		<input checked="" type="checkbox"/> Participation	
	<input checked="" type="checkbox"/> Communications		
		<input checked="" type="checkbox"/> Awareness Raising	
		<input checked="" type="checkbox"/> Education	
		<input checked="" type="checkbox"/> Public Campaigns	
		<input checked="" type="checkbox"/> Behavior Change	
<input checked="" type="checkbox"/> Capacity, Knowledge and Research			
	<input type="checkbox"/> Enabling Activities		
	<input checked="" type="checkbox"/> Capacity Development		
	<input checked="" type="checkbox"/> Knowledge Generation and Exchange		
	<input type="checkbox"/> Targeted Research		
	<input type="checkbox"/> Learning		
		<input type="checkbox"/> Theory of Change	
		<input type="checkbox"/> Adaptive Management	
		<input type="checkbox"/> Indicators to Measure Change	
	<input checked="" type="checkbox"/> Innovation		
	<input checked="" type="checkbox"/> Knowledge and Learning		
		<input checked="" type="checkbox"/> Knowledge Management	
		<input checked="" type="checkbox"/> Innovation	
		<input checked="" type="checkbox"/> Capacity Development	
		<input checked="" type="checkbox"/> Learning	
	<input type="checkbox"/> Stakeholder Engagement Plan		

Level 1	Level 2	Level 3	Level 4
<input checked="" type="checkbox"/> Gender Equality			
	<input checked="" type="checkbox"/> Gender Mainstreaming		
		<input checked="" type="checkbox"/> Beneficiaries	
		<input checked="" type="checkbox"/> Women groups	
		<input type="checkbox"/> Sex-disaggregated indicators	
		<input type="checkbox"/> Gender-sensitive indicators	
	<input checked="" type="checkbox"/> Gender results areas		
		<input type="checkbox"/> Access and control over natural resources	
		<input type="checkbox"/> Participation and leadership	
		<input checked="" type="checkbox"/> Access to benefits and services	
		<input type="checkbox"/> Capacity development	
		<input type="checkbox"/> Awareness raising	
		<input type="checkbox"/> Knowledge generation	
<input checked="" type="checkbox"/> Focal Areas/Theme			
	<input type="checkbox"/> Integrated Programs		
		<input type="checkbox"/> Commodity Supply Chains (Good Growth Partnership)	
			<input type="checkbox"/> Sustainable Commodities Production
			<input type="checkbox"/> Deforestation-free Sourcing
			<input type="checkbox"/> Financial Screening Tools
			<input type="checkbox"/> High Conservation Value Forests
			<input type="checkbox"/> High Carbon Stocks Forests
			<input type="checkbox"/> Soybean Supply Chain
			<input type="checkbox"/> Oil Palm Supply Chain
			<input type="checkbox"/> Beef Supply Chain
			<input type="checkbox"/> Smallholder Farmers
			<input type="checkbox"/> Adaptive Management
		<input type="checkbox"/> Food Security in Sub-Saharan Africa	
			<input type="checkbox"/> Resilience (climate and shocks)
			<input type="checkbox"/> Sustainable Production Systems
			<input type="checkbox"/> Agroecosystems
			<input type="checkbox"/> Land and Soil Health
			<input type="checkbox"/> Diversified Farming
			<input type="checkbox"/> Integrated Land and Water Management
			<input type="checkbox"/> Smallholder Farming
			<input type="checkbox"/> Small and Medium Enterprises
			<input type="checkbox"/> Crop Genetic Diversity
			<input type="checkbox"/> Food Value Chains
			<input type="checkbox"/> Gender Dimensions
			<input type="checkbox"/> Multi-stakeholder Platforms
		<input type="checkbox"/> Food Systems, Land Use and Restoration	
			<input type="checkbox"/> Sustainable Food Systems
			<input type="checkbox"/> Landscape Restoration
			<input type="checkbox"/> Sustainable Commodity Production
			<input type="checkbox"/> Comprehensive Land Use Planning
			<input type="checkbox"/> Integrated Landscapes
			<input type="checkbox"/> Food Value Chains
			<input type="checkbox"/> Deforestation-free Sourcing
			<input type="checkbox"/> Smallholder Farmers
		<input type="checkbox"/> Sustainable Cities	
			<input type="checkbox"/> Integrated urban planning
			<input type="checkbox"/> Urban sustainability framework
			<input type="checkbox"/> Transport and Mobility
			<input type="checkbox"/> Buildings
			<input type="checkbox"/> Municipal waste management
			<input type="checkbox"/> Green space
			<input type="checkbox"/> Urban Biodiversity
			<input type="checkbox"/> Urban Food Systems
			<input type="checkbox"/> Energy efficiency
			<input type="checkbox"/> Municipal Financing
			<input type="checkbox"/> Global Platform for Sustainable Cities
			<input type="checkbox"/> Urban Resilience
	<input type="checkbox"/> Biodiversity		
		<input type="checkbox"/> Protected Areas and Landscapes	
			<input type="checkbox"/> Terrestrial Protected Areas
			<input type="checkbox"/> Coastal and Marine Protected Areas
			<input type="checkbox"/> Productive Landscapes

Level 1	Level 2	Level 3	Level 4
			<input type="checkbox"/> Productive Seascapes
			<input type="checkbox"/> Community Based Natural Resource Management
		<input type="checkbox"/> Mainstreaming	
			<input type="checkbox"/> Extractive Industries (oil, gas, mining)
			<input type="checkbox"/> Forestry (Including HCVF and REDD+)
			<input type="checkbox"/> Tourism
			<input type="checkbox"/> Agriculture & agrobiodiversity
			<input type="checkbox"/> Fisheries
			<input type="checkbox"/> Infrastructure
			<input type="checkbox"/> Certification (National Standards)
			<input type="checkbox"/> Certification (International Standards)
		<input type="checkbox"/> Species	
			<input type="checkbox"/> Illegal Wildlife Trade
			<input type="checkbox"/> Threatened Species
			<input type="checkbox"/> Wildlife for Sustainable Development
			<input type="checkbox"/> Crop Wild Relatives
			<input type="checkbox"/> Plant Genetic Resources
			<input type="checkbox"/> Animal Genetic Resources
			<input type="checkbox"/> Livestock Wild Relatives
			<input type="checkbox"/> Invasive Alien Species (IAS)
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangroves
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Sea Grasses
			<input type="checkbox"/> Wetlands
			<input type="checkbox"/> Rivers
			<input type="checkbox"/> Lakes
			<input type="checkbox"/> Tropical Rain Forests
			<input type="checkbox"/> Tropical Dry Forests
			<input type="checkbox"/> Temperate Forests
			<input type="checkbox"/> Grasslands
			<input type="checkbox"/> Paramo
			<input type="checkbox"/> Desert
		<input type="checkbox"/> Financial and Accounting	
			<input type="checkbox"/> Payment for Ecosystem Services
			<input type="checkbox"/> Natural Capital Assessment and Accounting
			<input type="checkbox"/> Conservation Trust Funds
			<input type="checkbox"/> Conservation Finance
		<input type="checkbox"/> Supplementary Protocol to the CBD	
			<input type="checkbox"/> Biosafety
			<input type="checkbox"/> Access to Genetic Resources Benefit Sharing
	<input type="checkbox"/> Forests		
		<input type="checkbox"/> Forest and Landscape Restoration	
			<input type="checkbox"/> REDD/REDD+
		<input type="checkbox"/> Forest	
			<input type="checkbox"/> Amazon
			<input type="checkbox"/> Congo
			<input type="checkbox"/> Drylands
	<input type="checkbox"/> Land Degradation		
		<input type="checkbox"/> Sustainable Land Management	
			<input type="checkbox"/> Restoration and Rehabilitation of Degraded Lands
			<input type="checkbox"/> Ecosystem Approach
			<input type="checkbox"/> Integrated and Cross-sectoral approach
			<input type="checkbox"/> Community-Based NRM
			<input type="checkbox"/> Sustainable Livelihoods
			<input type="checkbox"/> Income Generating Activities
			<input type="checkbox"/> Sustainable Agriculture
			<input type="checkbox"/> Sustainable Pasture Management
			<input type="checkbox"/> Sustainable Forest/Woodland Management
			<input type="checkbox"/> Improved Soil and Water Management Techniques

Level 1	Level 2	Level 3	Level 4
			<input type="checkbox"/> Sustainable Fire Management
			<input type="checkbox"/> Drought Mitigation/Early Warning
		<input type="checkbox"/> Land Degradation Neutrality	
			<input type="checkbox"/> Land Productivity
			<input type="checkbox"/> Land Cover and Land cover change
			<input type="checkbox"/> Carbon stocks above or below ground
		<input type="checkbox"/> Food Security	
	<input type="checkbox"/> International Waters		
		<input type="checkbox"/> Ship	
		<input type="checkbox"/> Coastal	
		<input type="checkbox"/> Freshwater	
			<input type="checkbox"/> Aquifer
			<input type="checkbox"/> River Basin
			<input type="checkbox"/> Lake Basin
		<input type="checkbox"/> Learning	
		<input type="checkbox"/> Fisheries	
		<input type="checkbox"/> Persistent toxic substances	
		<input type="checkbox"/> SIDS : Small Island Dev States	
		<input type="checkbox"/> Targeted Research	
		<input type="checkbox"/> Pollution	
			<input type="checkbox"/> Persistent toxic substances
			<input type="checkbox"/> Plastics
			<input type="checkbox"/> Nutrient pollution from all sectors except wastewater
			<input type="checkbox"/> Nutrient pollution from Wastewater
		<input type="checkbox"/> Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		<input type="checkbox"/> Strategic Action Plan Implementation	
		<input type="checkbox"/> Areas Beyond National Jurisdiction	
		<input type="checkbox"/> Large Marine Ecosystems	
		<input type="checkbox"/> Private Sector	
		<input type="checkbox"/> Aquaculture	
		<input type="checkbox"/> Marine Protected Area	
		<input type="checkbox"/> Biomes	
			<input type="checkbox"/> Mangrove
			<input type="checkbox"/> Coral Reefs
			<input type="checkbox"/> Seagrasses
			<input type="checkbox"/> Polar Ecosystems
			<input type="checkbox"/> Constructed Wetlands
	<input type="checkbox"/> Chemicals and Waste		
		<input type="checkbox"/> Mercury	
		<input type="checkbox"/> Artisanal and Scale Gold Mining	
		<input type="checkbox"/> Coal Fired Power Plants	
		<input type="checkbox"/> Coal Fired Industrial Boilers	
		<input type="checkbox"/> Cement	
		<input type="checkbox"/> Non-Ferrous Metals Production	
		<input type="checkbox"/> Ozone	
		<input type="checkbox"/> Persistent Organic Pollutants	
		<input type="checkbox"/> Unintentional Persistent Organic Pollutants	
		<input type="checkbox"/> Sound Management of chemicals and Waste	
		<input type="checkbox"/> Waste Management	
			<input type="checkbox"/> Hazardous Waste Management
			<input type="checkbox"/> Industrial Waste
			<input type="checkbox"/> e-Waste
		<input type="checkbox"/> Emissions	
		<input type="checkbox"/> Disposal	
		<input type="checkbox"/> New Persistent Organic Pollutants	
		<input type="checkbox"/> Polychlorinated Biphenyls	
		<input type="checkbox"/> Plastics	
		<input type="checkbox"/> Eco-Efficiency	
		<input type="checkbox"/> Pesticides	
		<input type="checkbox"/> DDT - Vector Management	
		<input type="checkbox"/> DDT - Other	
		<input type="checkbox"/> Industrial Emissions	
		<input type="checkbox"/> Open Burning	

Level 1	Level 2	Level 3	Level 4
		<input type="checkbox"/> Best Available Technology / Best Environmental Practices	
		<input type="checkbox"/> Green Chemistry	
	<input checked="" type="checkbox"/> Climate Change		
		<input type="checkbox"/> Climate Change Adaptation	
			<input type="checkbox"/> Climate Finance
			<input type="checkbox"/> Least Developed Countries
			<input type="checkbox"/> Small Island Developing States
			<input type="checkbox"/> Disaster Risk Management
			<input type="checkbox"/> Sea-level rise
			<input type="checkbox"/> Climate Resilience
			<input type="checkbox"/> Climate information
			<input type="checkbox"/> Ecosystem-based Adaptation
			<input type="checkbox"/> Adaptation Tech Transfer
			<input type="checkbox"/> National Adaptation Programme of Action
			<input type="checkbox"/> National Adaptation Plan
			<input type="checkbox"/> Mainstreaming Adaptation
			<input type="checkbox"/> Private Sector
			<input type="checkbox"/> Innovation
			<input type="checkbox"/> Complementarity
			<input type="checkbox"/> Community-based Adaptation
			<input type="checkbox"/> Livelihoods
		<input checked="" type="checkbox"/> Climate Change Mitigation	
			<input type="checkbox"/> Agriculture, Forestry, and other Land Use
			<input type="checkbox"/> Energy Efficiency
			<input checked="" type="checkbox"/> Sustainable Urban Systems and Transport
			<input type="checkbox"/> Technology Transfer
			<input type="checkbox"/> Renewable Energy
			<input type="checkbox"/> Financing
			<input type="checkbox"/> Enabling Activities
		<input type="checkbox"/> Technology Transfer	
			<input type="checkbox"/> Poznan Strategic Programme on Technology Transfer
			<input type="checkbox"/> Climate Technology Centre & Network (CTCN)
			<input type="checkbox"/> Endogenous technology
			<input type="checkbox"/> Technology Needs Assessment
			<input type="checkbox"/> Adaptation Tech Transfer
		<input type="checkbox"/> United Nations Framework on Climate Change	
			<input type="checkbox"/> Nationally Determined Contribution
		<input type="checkbox"/> Climate Finance (Rio Markers)	<input type="checkbox"/> Paris Agreement <input type="checkbox"/> Sustainable Development Goals <input type="checkbox"/> Climate Change Mitigation 1 <input checked="" type="checkbox"/> Climate Change Mitigation 2 <input type="checkbox"/> Climate Change Adaptation 1 <input type="checkbox"/> Climate Change Adaptation 2

ANNEX H: INDICATIVE TERMS OF REFERENCE FOR PROJECT PERSONNEL, CONSULTANTS AND SUBCONTRACTS

ANNEX H - INDICATIVE TERMS OF REFERENCES

010 - Staff & Personnel (Including Consultants)

Position title:	Project Manager	
Budget line number:	0101	
Duration:	30	months
Date required:	M-6	
Duty station:	Santiago, Chile	
Reporting structure:	The Project Manager will report to the National Project Director.	
Description of duties:	<p>Main project management duties:</p> <ul style="list-style-type: none">- Ensure that project implementation is carried out according to the project design and the outputs are delivered and outcomes achieved to the required standard of quality within the approved timeframe and budget;- Regular communication with relevant ministries, governmental agencies, co-finance partners, PSC members, members of ad-hoc technical working groups and all other key stakeholders;- Organize and facilitate the inception workshop, project steering committee meetings and other project meetings;- Undertake timely reporting to the NPD and the IA as per the M&E Plan and the project cooperation agreement requirements;- Prepare annual workplan and budget revisions and update the project Procurement Plan, as required;- Supervision of the staff, experts, subcontractors, and implementing partners working on the project;- Identification of risks, preparing of mitigation strategies and implementation of mitigations measures;	

- Track project achievements against the Results Framework, Core Indicator worksheet and Gender Action Plan;

Main technical duties:

- Capture lessons learned during project implementation;
- Ensure that the indicators included in the project results framework are monitored annually;
- Assess major and minor amendments to the project within the parameters set by UNEP-GEF;
- Support the Terminal Evaluation process;
- Oversees the preparation and submission of proposals on waste management standards reforms to the government;
- Oversees the preparation of training materials and the organization of capacity building activities;
- Manages project knowledge, including dissemination of materials through project website and other channels;
- Oversees the preparation of technical terms of reference;
- Manages the procurement of vehicle monitoring, digital payment systems and user connectivity apps.

Main specific technical duties: To oversee and direct the technical contents in all project outputs, and specifically in the following ones:

- Component 1: developing public meeting minutes and uploading them to the document-sharing platform, overseeing the mission on the enforcement of regulations for electric vehicle charging infrastructure and reporting on good practices and lessons learned;
- Component 2: requesting and acquiring provisional fixed-route taxi licenses and insurances for the pilot project, leasing of electric vehicles for the pilot project, overseeing the installation of the electric vehicle charging infrastructure in each city, overseeing the procurement of vehicle monitoring and digital payment systems, and user connectivity apps, overseeing the start of the pilot projects in Antofagasta, Talca and Puerto Montt.

Expected deliverables:

1.1.2	Quarterly meetings are held (minimum 4 per year) and public meeting minutes developed for each meeting and uploaded to the platform (D.1.1.3).
1.1.3	Document-sharing platform (drive, SharePoint or similar)
1.3.4	International mission on enforcing regulations for electric vehicle charging infrastructure.
1.3.5	Report on good practices and lessons learned on enforcing regulations for electric vehicle charging infrastructure
2.1.1	Provisional fixed-route taxi licenses and insurance are requested (2.1.1.a) and acquired (2.1.1.b) for the 6 vehicles participating in the pilot project.
2.1.5	Leasing of two light-duty electric vehicles for each city, based on specifications established in D2.1.4.
2.1.6	Electric vehicle charging infrastructure and its installation in each city, based on specifications established in D2.1.3. This will include the purchase of a multi-standard light duty vehicle charging station capable of charging two vehicles at the same time.

2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.
2.1.9	Start (2.1.9.a) and end (2.1.9.b) of Pilot projects in Antofagasta, Talca and Puerto Montt

Qualifications:

- A university degree in a subject related to transport, civil or energy engineering;
- At least 10 years of demonstrable project/programme management experience. Experience with electric mobility, transport or energy is an asset;
- At least 5 years of experience working with ministries, national or provincial institutions that are concerned with environmental management and related to electric mobility.
- Experience with engaging with international donors, particularly the United Nations, is an asset

Languages:

English and Spanish

Position title:

Technical/Financial Officer

Budget line number:

0102

Duration:

30

months

Date required:

M-6

Duty station:

Santiago, Chile

Reporting structure:

The Technical/Financial Officer will report to the Project Manager

Description of duties:

- Main duties:
- Request and acquire provisional fixed-route taxi licenses for the 6 vehicles that will participate in the pilot project;
 - Hire a leasing service for each of the 6 electric vehicles, based on the required specifications;
 - Manage the installation of electric vehicle charging infrastructure in each city, based on the required specifications;
 - Manage the procurement of vehicle monitoring and digital payment systems, and user connectivity apps;
 - Oversee the start of the pilot projects in Antofagasta, Talca and Puerto Montt;
 - Manage postprocessed data and make it available online to be accessed by interested stakeholders;
 - Design and create financial instruments and related operational structure together with the private sector;
 - Oversee the implementation of financial instruments to facilitate the purchase of

electric vehicles;
- Prepare a long-term financial plan for the scale-up of electric fixed route taxis in regional Chile.

Expected deliverables:

2.1.1	Provisional fixed-route taxi licenses and insurance are requested (2.1.1.a) and acquired (2.1.1.b) for the 6 vehicles participating in the pilot project.
2.1.5	Leasing of two light-duty electric vehicles for each city, based on specifications established in D2.1.4.
2.1.6	Electric vehicle charging infrastructure and its installation in each city, based on specifications established in D2.1.3. This will include the purchase of a multi-standard light duty vehicle charging station capable of charging two vehicles at the same time.
2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.
2.1.9	Start (2.1.9.a) and end (2.1.9.b) of Pilot projects in Antofagasta, Talca and Puerto Montt
2.2.6	Postprocessed data is online on the city data management system (D2.1.7) and accessible for interested stakeholders through the GEF-6 open data strategy.
3.1.1	Banco Estado financial instrument for fixed-route electric taxis, based on a credit methodology and international good practices.
3.1.2	Design of ASE grant fund, including dynamic grant calculation methodology and fiduciary guidelines
3.1.3	Operation of ASE grant fund
3.1.4	Recommendations for revising the existing MTT subsidy presented to the MTT for adoption, based on an analysis of the ASE grant fund.

Qualifications:

- A university degree in a subject related to engineering and finance;
- At least 10 years of relevant work experience related to financial models for transport. Experience with financial instruments for electric mobility is an asset;
- At least 5 years of experience working with ministries, national or provincial institutions that are concerned with environmental management and are involved in electric mobility subjects.

Languages:

English and Spanish

Position title:	Regional and Gender Officer	
Budget line number:	0103	
Duration:	30	months
Date required:	M-6	
Duty station:	Santiago, Chile	
Reporting structure:	Reports to the Project Manager.	
Description of duties:	<p>Main duties:</p> <ul style="list-style-type: none"> - Will be in charge of gender-related subjects; - Assist to follow-up meetings over gender-related subjects with regional governments; - Follow-up the regional agenda; - Take part in workshops and regional demonstrations, addressing gender-related subjects; - Lead gender-related activities and ensure implementation and monitoring of the gender action plan <p>Main duties will also consist on assisting over the following:</p> <ul style="list-style-type: none"> - Requesting and acquiring electric vehicles for the pilot project; - Leasing of two light-duty electric vehicles for each city; - Overseeing the installation of electric vehicle charging infrastructure in the regional cities; - Procurement of vehicle monitoring and digital payment systems, and user connectivity apps; - Start and end of the pilot projects carried out in Antofagasta, Talca and Puerto Montt. 	
Expected deliverables:	2.1.1	Provisional fixed-route taxi licenses and insurance are requested (2.1.1.a) and acquired (2.1.1.b) for the 6 vehicles participating in the pilot project.
	2.1.5	Leasing of two light-duty electric vehicles for each city, based on specifications established in D2.1.4.
	2.1.6	Electric vehicle charging infrastructure and its installation in each city, based on specifications established in D2.1.3. This will include the purchase of a multi-standard light duty vehicle charging station capable of charging two vehicles at the same time.
	2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.
	2.1.9	Start (2.1.9.a) and end (2.1.9.b) of Pilot projects in Antofagasta, Talca and Puerto Montt

Qualifications:

- At least 5 years of experience on gender-related subjects;
- Demonstrated experience in engaging with Chilean regional governments and other regional stakeholders;
- At least 5 years of experience in project and programme management. Experience with electric mobility, transport and energy is an asset;
- Availability to travel within Chile;
- At least 5 years of experience working on administrative-related subjects.

Languages: English and Spanish

Position title: **Pilot taxi association focal points (x3)**

Budget line number: 0104

Duration: 18 months

Date required: M-12

Duty station: Antofagasta, Puerto Montt, Talca

Reporting structure: Reports to the Project Manager.

Description of duties:

Main duties:

- Serve as focal point for the pilot in the city, on behalf of the local taxi association, ensuring the effective adoption and operation of the pilots in the city

Main duties will also consist on assisting over the following:

- Provide inputs into the identification of taxi routes, facilitating consultation with the taxi association and other local actors
- Undertake vehicle monitoring
- Provide inputs into driver test protocol, operation (including identification of driver roster)
- Monitor and ensure the overall smooth operation of the pilots in each city

Expected deliverables:

2.1.2	Identification of taxi routes on which the electric vehicles will operate for each of the three cities.
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2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.
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2.1.8	Driver test drive protocol, operation and safety training in consultation with the local fixed-route taxi association.
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2.1.9

Start (2.1.9.a) and end (2.1.9.b) of Pilot projects in Antofagasta, Talca and Puerto Montt

Qualifications:

- Lives in Antofagasta, Puerto Montt or Talca
- Is part of the local taxi association
- As minimum 5 years experience in driving fixed-route taxis in one of the aforementioned cities
- Has well developed network of local contacts

Languages:

Spanish

Position title:

Administrative Personnel

Budget line number:

0105

Duration:

36

months

Date required:

M-1

Duty station:

Santiago, Chile

Reporting structure:

Reports to the Project Manager.

Description of duties:

In charge of all procurement, finance and administrative tasks of the project. Including contracting and paying for goods and services, preparation of UNEP financial reports, obtaining co-financing commitments, contracting the audits, etc.

Expected deliverables:

#N/A

	#N/A
	#N/A
	#N/A
	#N/A

Qualifications:

- At least 10 years of experience working on finance, procurement and administration.
- Experience in managing funds of international donors is an asset

Languages:

English and Spanish (fluent in both)

120 - Contract Services

Subcontract title:

Consultancy on transport and vehicle electrification

Budget line number:

1201

Duration:

27

months

Date required:

M-9

Location:

Santiago, Chile

Reporting structure:

The consulting firm will report to the Project Manager.

Description of duties:

Main duties:

- Develop workshops on fixed route taxi fleet electrification technical feasibility, and economic outlook under current policy framework;
- Identify taxi routes on which electric vehicles will operate during pilot projects on the three regional cities;
- Establish the technical requirements for the electric vehicle charging infrastructure to be deployed in the three regional cities;

- Establish the technical requirements of the electric vehicles to be leased for the three regional cities;
- Develop a test drive protocol, and operation and safety training for drivers;
- Develop a data acquisition methodology for electric vehicle charging infrastructure;
- Develop a monitoring and evaluation methodology;
- Develop quarterly operation and performance reports, and a final report on electric vehicle techno-economic and environmental performance during the pilots;
- Develop a report on the fixed-route taxi ecosystem for the cities of Antofagasta, Puerto Montt, and Talca;
- Analyse electric vehicle business models and provide recommendations over these for each city;
- Analyse the fixed-route taxi ecosystem of all the Chilean regions;
- Provide recommendations on business models for deploying and scaling-up fixed route electric taxis in Chilean regions;
- Carry out gender-sensitive regional training workshops on vehicle recycling, final disposal, and electric battery reuse;
- Develop a workshop on development of circular economy business models for electric vehicles;
- Develop a report on good practices, and social and economic impacts for standards on waste management, EPR and recycling of vehicle (and electric vehicle) batteries;
- Draft the standards for waste management, EPR and recycling of vehicle (and electric vehicle) batteries to be presented for adoption;
- Develop a report on good practices, and social and economic impacts for standards for legal frameworks for waste management, EPR and recycling of vehicles.

Expected deliverables:

1.3.1	Three Chilean regional workshops on fixed route taxi fleet electrification technical feasibility
1.3.2	Three Chilean regional workshops on electric mobility economic outlook under current policy framework for fixed route taxi applications
2.1.2	Identification of taxi routes on which the electric vehicles will operate for each of the three cities.
2.1.3	Technical requirements of vehicle charging infrastructure for each of the three cities.
2.1.4	Technical requirements of the electric vehicles to be leased for each of the three cities.
2.1.8	Driver test drive protocol, operation and safety training in consultation with the local fixed-route taxi association.
2.2.1	Electric vehicle and charging infrastructure data acquisition methodology.
2.2.2	Monitoring and evaluation methodology, including before and after drivers' and passengers questionnaires.
2.2.4	Quarterly operation and performance reports (minimum 4)
2.2.5	Final report on electric vehicle techno-economic and environmental performance in the pilots, differentiated by city.
3.2.1	Report on fixed-route taxi ecosystem for Antofagasta, Puerto Montt and Talca, detailing, inter alia, fleet structure, routes, operating hours, and off-work requirements

3.2.2	Electric vehicle business model analysis and recommendations on public and private business models for each city
3.2.3	Analysis of fixed-route taxi ecosystem in all Chile regions, including fleet size, vehicle average age, average daily kilometres, and summary of international lessons-learned and good practices in electrifying taxis
3.2.4	Recommendations on public and private business models for deploying and scaling-up fixed route electric taxis in Chilean regions
4.1.1	Three regional training workshops on vehicle (conventional and electric) recycling, final disposal, and electric battery reuse.
4.1.2	Three workshops on the development of circular economy business models for electric vehicles, including its batteries and components.
4.2.1	Report on good practices, and social and economic impacts for standards on waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries.
4.2.2	Draft of standards for waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries, is presented to the Ministry of Environment for adoption, and additional support on data and justification of the standards is provided to facilitate adoption.
4.2.3	Report on good practices, and social and economic impacts for standards for legal frameworks for waste management, EPR and recycling of vehicles (conventional and electric) as input into the development of a legal framework by the Ministry of Environment.

Qualifications:

- Proven experience in at least 5 projects related to multi-lateral/international funding agencies and electric mobility;
- Work experience on projects related to fleet electrification feasibility analysis;
- Experience on electric bus routes identification and analysis;
- Knowledge on technical requirements of charging infrastructure and electric vehicles;
- Experience on electric vehicle operation monitoring;
- Experience on techno-economic and environmental performance analysis of electric mobility;
- Proven experience in the development of training courses on reusing, recycling and disposing of vehicles.

Languages:

English and Spanish

Subcontract title:

Consultancy on electricity distribution grid stabilization

Budget line number:	1202	
Duration:	24	months
Date required:	M-12	
Location:	Santiago, Chile	
Reporting structure:	The consulting firm will report to the Project Manager.	
Description of duties:	<p>Main duties:</p> <ul style="list-style-type: none"> - Develop a report on the current state and structure of the electricity distribution grid of each of the three pilot project cities; - Develop a report on national electricity demand for different scenarios of electric mobility in each of the three pilot project cities; - Develop investment roadmaps to satisfy additional electricity demand due to different scenarios of electric mobility penetration in the three pilot project cities; - Develop high-level investment roadmaps for achieving grid readiness of all Chilean regions for the scale up of electric mobility fleets. 	
Expected deliverables:	3.3.1	Report on current state and structure of the electricity distribution grid of each of the three pilot project cities: Antofagasta, Puerto Montt and Talca. The report will establish correlations between findings to determine if these are local, regional or national.
	3.3.2	Report on national electricity demand for different scenarios of electro mobility in each city, considering fixed route taxi fleets and private vehicles.
	3.3.3	Investment roadmaps to satisfy additional electricity demand due to different scenarios of electric mobility penetration in Antofagasta, Puerto Montt and Talca.
	3.3.4	High-level investment roadmaps for achieving grid readiness of all Chilean regions for large scale electric mobility fleets (fixed route taxis, buses and private vehicles), including recommendations for increasing readiness.
Qualifications:	<ul style="list-style-type: none"> - Proven experience in at least 5 projects on the evaluation of electricity distribution grids; - Proven experience working with electricity distribution grids in the region; - Proven experience in at least 5 projects related to multi-lateral/international funding agencies and electric mobility; - Technical expertise on electricity distribution grids; - Experience on the evaluation of business models and investment roadmaps to satisfy electric mobility penetration and for achieving grid readiness for large scale-up of electric mobility. 	
Languages:	English and Spanish	

Subcontract title:	Consultancy on socio-economic impact and safety of electromobility	
Budget line number:	1203	
Duration:	26	months
Date required:	M-10	
Location:	Santiago, Chile	
Reporting structure:	The consulting firm will report to the Project Manager.	
Description of duties:	Main duties: - Develop a stakeholder consultation strategy, together with the implementation of activities; - Provide recommendations over long-term consultation mechanisms; - Carry out workshops for first response emergency units related to electric vehicle safety and accident intervention.	
Expected deliverables:	1.2.1	Stakeholder consultation strategy
	1.2.2	Stakeholder consultation strategy activities (based on that identified in D1.2.1)
	1.2.3	Report with recommendations for a long-term consultation mechanism
	1.3.3	Three Chilean regional workshops for first response emergency units on electric vehicle safety and accident intervention
Qualifications:	- Experience in projects related to multi-lateral/international funding agencies and electric mobility; - Experience in the development of socio-economic analysis related to impacts of electric mobility; - Technical expertise on electric vehicle safety; - Experience in the development of workshops on electric vehicle safety and accident intervention.	
Languages:	English and Spanish	

Subcontract title:	Consultancy on financial instruments	
Budget line number:	1211	
Duration:	24	months
Date required:	M-13	
Location:	Santiago, Chile	
Reporting structure:	The consulting firm will report to the Project Manager.	
Description of duties:	<p>Main duties are to, together with the technical/financial officer:</p> <ul style="list-style-type: none"> - Develop financial instrument with Banco Estado for fixed-route electric taxis - Design ASE grant fund - Facilitate the operation of the ASE grant fund - Prepare recommendations on revising the existing MTT subsidy for fixed-route taxis, based on the an analysis of the ASE grant fund. 	
Expected deliverables:	3.1.1	Banco Estado financial instrument for fixed-route electric taxis, based on a credit methodology and international good practices.
	3.1.2	Design of ASE grant fund, including dynamic grant calculation methodology and fiduciary guidelines
	3.1.3	Operation of ASE grant fund
	3.1.4	Recommendations for revising the existing MTT subsidy presented to the MTT for adoption, based on an analysis of the ASE grant fund.
Qualifications:	<ul style="list-style-type: none"> - Experience in the development of public and private financial instruments for electric vehicles - Experience with the development of bank financial instruments for vehicle purchasing - Experience with the design and implementation of funds and subsidies 	
Languages:	English and Spanish	

ANNEX I-1 DETAILED GEF BUDGET

Outcome	Output	GEF expenditure category	Umoja budget class	Budget line number	Budget line description	Year 1	Year 2	Year 3	Total	Responsible entity
Outcome 1	1.1	15. Other operating costs	1107 - General operating and other costs	1251	Coordination body operating costs	1,500	1,500	1,500	4,500	ASE
Outcome 1	1.2	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,563	3,125	3,125	7,813	ASE
Outcome 1	1.2	09. International Consultants	1104 - Contractual services	1203	Consultancy on socio-economic impact and safety of electromobility	15,000	15,000	15,000	45,000	ASE
Outcome 1	1.2	13. Travel	1102 - Travel	1601	Travel expenses of the Regional and Gender Officer	2,000	2,000	2,000	6,000	ASE
Outcome 1	1.3	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0102	Technical/Financial Officer	1,923	3,846	3,846	9,615	ASE
Outcome 1	1.3	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,563	3,125	3,125	7,813	ASE
Outcome 1	1.3	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	6,250	6,250	12,500	25,000	ASE
Outcome 1	1.3	09. International Consultants	1104 - Contractual services	1202	Consultancy on electricity distribution grid stabilization	-	-	10,000	10,000	ASE
Outcome 1	1.3	09. International Consultants	1104 - Contractual services	1203	Consultancy on socio-economic impact and safety of electromobility	-	10,000	20,000	30,000	ASE
Outcome 1	1.3	12. Training, Workshops, Meetings	1104 - Contractual services	1206	Workshops	-	7,500	7,500	15,000	ASE
Outcome 1	1.3	13. Travel	1102 - Travel	1601	Travel expenses of the Regional and Gender Officer	-	2,000	2,000	4,000	ASE
Outcome 1	1.3	13. Travel	1102 - Travel	1603	Travel expenses for charging infrastructure policy and regulation enforcement mission	-	20,000	-	20,000	ASE
Outcome 1	1.3	13. Travel	1102 - Travel	1604	Travel expenses for public authorities	2,000	2,000	2,000	6,000	ASE
Outcome 1	1.3	13. Travel	1102 - Travel	1605	Travel expenses for participation in the global and regional programmes on electric mobility	8,000	8,000	8,000	24,000	ASE
Outcome 2	2.1	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0102	Technical/Financial Officer	1,538	3,077	3,077	7,692	ASE
Outcome 2	2.1	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	4,063	8,125	8,125	20,313	ASE
Outcome 2	2.1	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0104	Pilot taxi association focal points (x3)	-	7,500	7,500	15,000	ASE
Outcome 2	2.1	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	35,000	-	-	35,000	ASE
Outcome 2	2.1	07. Contractual services (company)	1104 - Contractual services	1205	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps	-	60,500	-	60,500	ASE
Outcome 2	2.1	03. Vehicles	1103 - Equipment, Vehicles & Furniture	1210	Leasing of electric vehicles	-	72,000	72,000	144,000	ASE
Outcome 2	2.1	15. Other operating costs	1107 - General operating and other costs	1252	Taxi pilot project running costs and operation and maintenance expenditures (insurance, data collection, connectivity, power and vehicle maintenance)	-	36,000	36,000	72,000	ASE
Outcome 2	2.1	01. Works	1103 - Equipment, Vehicles & Furniture	1351	Procurement of electric vehicle charging infrastructure and its installation	-	135,000	-	135,000	ASE
Outcome 2	2.1	13. Travel	1102 - Travel	1601	Travel expenses of the Regional and Gender Officer	4,000	4,000	4,000	12,000	ASE
Outcome 2	2.1	13. Travel	1102 - Travel	1604	Travel expenses for public authorities	2,000	2,000	2,000	6,000	ASE
Outcome 2	2.2	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0102	Technical/Financial Officer	1,923	3,846	3,846	9,615	ASE
Outcome 2	2.2	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	3,125	6,250	6,250	15,625	ASE
Outcome 2	2.2	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	-	17,500	17,500	35,000	ASE
Outcome 2	2.2	13. Travel	1102 - Travel	1601	Travel expenses of the Regional and Gender Officer	2,000	2,000	2,000	6,000	ASE
Outcome 2	2.2	13. Travel	1102 - Travel	1604	Travel expenses for public authorities	2,000	2,000	2,000	6,000	ASE
Outcome 3	3.1	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0102	Technical/Financial Officer	12,578	25,157	25,157	62,892	ASE
Outcome 3	3.1	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	-	20,000	-	20,000	ASE
Outcome 3	3.1	05. Revolving Funds/Seed funds/Equity	1104 - Contractual services	1207	Grant fund seed funding and operating costs	-	200,000	200,000	400,000	ASE
Outcome 3	3.1	09. International Consultants	1104 - Contractual services	1211	Consultancy on financial instruments	-	22,154	22,154	44,308	ASE
Outcome 3	3.2	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,250	2,500	2,500	6,250	ASE
Outcome 3	3.2	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	-	25,000	25,000	50,000	ASE
Outcome 3	3.3	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,563	3,125	3,125	7,813	ASE
Outcome 3	3.3	09. International Consultants	1104 - Contractual services	1202	Consultancy on electricity distribution grid stabilization	-	40,000	40,000	80,000	ASE
Outcome 4	4.1	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,250	2,500	2,500	6,250	ASE
Outcome 4	4.1	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	-	12,465	12,465	24,929	ASE
Outcome 4	4.1	12. Training, Workshops, Meetings	1104 - Contractual services	1206	Workshops	-	3,500	7,000	10,500	ASE
Outcome 4	4.2	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0103	Regional and Gender Officer	1,875	3,750	3,750	9,375	ASE
Outcome 4	4.2	09. International Consultants	1104 - Contractual services	1201	Consultancy on transport and vehicle electrification	-	19,500	19,500	39,000	ASE
M&E	M&E	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0101	Project Manager	5,040	5,040	6,720	16,800	ASE
M&E	M&E	09. International Consultants	1104 - Contractual services	1291	Terminal Evaluation	-	-	50,000	50,000	UNEP Evaluation Office
PMC	PMC	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0101	Project Manager	25,803	38,705	38,705	103,212	ASE
PMC	PMC	13. Travel	1102 - Travel	1602	Project Manager travel	3,500	7,000	3,500	14,000	ASE
PMC	PMC	11. Salary and benefits/Staff Costs	1101 - Staff & Personnel (Including Consultants)	0105	Administrative Personnel	7,000	7,000	7,000	21,000	ASE
PMC	PMC	07. Contractual services (company)	1104 - Contractual services	1209	Independent financial audits	7,000	7,000	7,000	21,000	ASE
PMC	PMC	14. Office supplies	1105 - Supplies, Commodities & Materials	1301	IT and office supplies	3,048	-	-	3,048	ASE
Project Grand Total						165,354	888,539	730,969	1,784,862	

Budget summary by Umoja Class	Year 1	Year 2	Year 3	Total
1101 - Staff & Personnel (Including Consultants)	72,056	126,671	128,351	327,077
1102 - Travel	25,500	51,000	27,500	104,000
1103 - Equipment, Vehicles & Furniture	-	207,000	72,000	279,000
1104 - Contractual services	63,250	466,369	465,619	995,237
1105 - Supplies, Commodities & Materials	3,048	-	-	3,048
1106 - Transfers & Grants to Other Implementing Partners	-	-	-	-
1107 - General operating and other costs	1,500	37,500	37,500	76,500
1108 - Indirect support costs	-	-	-	-
Total	165,354	888,539	730,969	1,784,862

Budget summary by Project Component	Year 1	Year 2	Year 3	Total
Component 1: Institutionalization of low-carbon electric mobility	39,798	84,346	90,596	214,740
Component 2: Short term barrier removal through low-carbon e-mobility energy demonstrations	55,649	359,798	164,298	579,745
Component 3: Preparing for scale-up and replication of low-carbon electric mobility	15,391	337,936	317,936	671,263
Component 4: Long-term environmental sustainability of low-carbon electric mobility	3,125	41,715	45,215	90,054
Monitoring and Evaluation	5,040	5,040	56,720	66,800
Project Management Costs	46,351	59,705	56,205	162,260
Total	162,834	886,019	702,609	1,784,862

Budget in GEF format

GEF budget category & detailed description	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Subtotal	M&E	PMC	Total	Responsible entity
01. Works		135,000			135,000			135,000	
Procurement of electric vehicle charging infrastructure and its installation		135,000			135,000			135,000	ASE
03. Vehicles		144,000			144,000			144,000	
Leasing of electric vehicles		144,000			144,000			144,000	ASE
05. Revolving Funds/Seed funds/Equity			400,000		400,000			400,000	
Grant fund seed funding and operating costs			400,000		400,000			400,000	ASE. Note: this is a contractual service that will be operated by ASE. There is no overlap of roles with respect to UNEP as implementing agency and ASE as executing agency. Furthermore, there is no overlap in the execution activities (to be covered by the PMC) and project activities (to be covered by the project budget).
07. Contractual services (company)		60,500			60,500		21,000	81,500	
Independent financial audits					0		21,000	21,000	ASE
Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps		60,500			60,500			60,500	ASE
09. International Consultants	110,000	70,000	194,308	63,929	438,237	50,000		488,237	
Consultancy on electricity distribution grid stabilization	10,000		80,000		90,000			90,000	ASE
Consultancy on financial instruments			44,308		44,308			44,308	ASE
Consultancy on socio-economic impact and safety of electromobility	75,000				75,000			75,000	ASE
Consultancy on transport and vehicle electrification	25,000	70,000	70,000	63,929	228,929			228,929	ASE
Terminal Evaluation					0	50,000		50,000	UNEP Evaluation Office
11. Salary and benefits/Staff Costs	25,240	68,245	76,955	15,625	186,065	16,800	124,212	327,077	
Administrative Personnel					0		21,000	21,000	ASE
Pilot taxi association focal points (x3)		15,000			15,000			15,000	ASE
Project Manager					0	16,800	103,212	120,012	ASE
Regional and Gender Officer	15,625	35,938	14,063	15,625	81,250			81,250	ASE
Technical/Financial Officer	9,615	17,308	62,892		89,815			89,815	ASE
12. Training, Workshops, Meetings	15,000			10,500	25,500			25,500	
Workshops	15,000			10,500	25,500			25,500	ASE
13. Travel	60,000	30,000			90,000		14,000	104,000	
Project Manager travel					0		14,000	14,000	ASE
Travel expenses for charging infrastructure policy and regulation enforcement mission	20,000				20,000			20,000	ASE
Travel expenses for participation in the global and regional programmes on electric mobility	24,000				24,000			24,000	ASE
Travel expenses for public authorities	6,000	12,000			18,000			18,000	ASE
Travel expenses of the Regional and Gender Officer	10,000	18,000			28,000			28,000	ASE
14. Office supplies					0		3,048	3,048	
IT and office supplies					0		3,048	3,048	ASE
15. Other operating costs	4,500	72,000			76,500			76,500	
Coordination body operating costs	4,500				4,500			4,500	ASE
Taxi pilot project running costs and operation and maintenance expenditures (insurance, data collection, connectivity, power and vehicle maintenance)		72,000			72,000			72,000	ASE
Total general	214,740	579,745	671,263	90,054	1,555,802	66,800	162,260	1,784,862	

ANNEX I-2 DETAILED CO-FINANCE BUDGET

No.	Co-finance partner		Nature of co-finance		Co-finance contribution per project Component in US\$					Total in US\$	Description of co-finance contributions
	Name	Source	Type	Investment Mobilized	C1	C2	C3	C4	PMC		
1	Enel-x	Private Sector	Equity Investment	Investment mobilized	-	4,100,000	4,100,000	-	-	8,200,000	During the project, Enel X will invest USD 8.2 million in the deployment of approximately 1200 electric vehicle charging points for private and light duty vehicles through-out Chile.
2	SAESA	Private Sector	Equity Investment	Investment mobilized	-	40,000	80,000	40,000	-	160,000	As the main electricity distribution company in the South of Chile, the National Energy Company (SAESA) has developed a charging network for electric vehicles covering over 1,200 km. During the project, the company will continue growing its charging network providing further opportunities for the uptake of electric mobility across the southern regions of the country.
3	National Energy Company (Empresa Nacional de Energía S.A.) (ENEX)	Private Sector	Equity Investment	Investment mobilized	-	1,000,000	1,000,000	-	-	2,000,000	ENEX is a Chilean energy company currently investing in incorporating electric mobility assets and solutions as additions to its fossil fuel portfolio. During the project, the company plans to invest USD 2 million in electric vehicle charging infrastructure. Investments will include fast charging stations in their operational service station network and deploying charging infrastructure in private and public areas across Chile. Furthermore, they will provide digital tools for customers to locate available charging stations and help clients transition their existing conventional fleets to electric solutions.
4	Ministry of Transport and Telecommunications	Recipient Country Government	Public Investment	Recurrent expenditures	-	100,000	100,000	-	-	200,000	In-kind contribution related to ministry activities to promote electric mobility.
5	Ministry of Energy	Recipient Country Government	In-Kind	Recurrent expenditures	10,000	10,000	10,000	10,000	370,000	410,000	In-kind contribution related to ministry activities to promote electric mobility.
6	Ministry of Environment	Recipient Country Government	In-Kind	Recurrent expenditures	-	-	-	50,000	-	50,000	In-kind contribution related to ministry activities to promote the environmental sustainability of electric mobility.
7	CORFO	Recipient Country Government	Grant	Investment mobilized	1,750,000	1,750,000	1,750,000	1,750,000	-	7,000,000	The investment mobilized through CORFO consists of funds provided through the private sector to a chosen recipient for advancing the scale-up of electric mobility in Chile, with the process administered by CORFO. This recipient will undertake activities including to: develop and implement methodologies for the interoperability of electromobility at the national level; promote the development of local suppliers in technological solutions in electromobility; and promote the development of specialized human capital in the use of electromobility.
8	Agency of Sustainability Energy	Private Sector	In-Kind	Investment mobilized	100,000	100,000	100,000	100,000	100,000	500,000	In-kind contribution and investment mobilized. The investment mobilized through the Agency of Sustainability Energy comes through financing received from the Ministry of Energy with the aim of promoting electric mobility in fixed-route transport in local governments; promotign guidelines for local governments on how to incorporate public electric vehicle charging infrastructure; supporting the acquisition of electric vehicles for fixed-route taxis; supporting the acquisition of residential charging systems and their installation; and supporting vehicle monitoring during operation.
Total					1,860,000	7,100,000	7,140,000	1,950,000	470,000	18,520,000	

ANNEX J: M&E BUDGET AND WORKPLAN

M&E Activity	Description	Responsible Parties	Timeframe	Indicative budget (USD)
Inception Workshop (IW)	Report prepared following the IW; which includes: - A detailed workplan and budget for the first year of project implementation, - An overview of the workplan for subsequent years, divided per component, output and activities. - A detailed description of the roles and responsibilities of all project partners - A detailed description of the PMU and PSC, including an organization chart - Updated Procurement Plan and a M&E Plan, Gender Action Plan - Minutes of the Inception Workshop	Execution: Project Manager (PM) Support: PMU	1 report to be prepared following the IW, to be shared with participants 4 weeks after the IW (latest)	GEF: PM budget and Regional and Gender Officer (for gender action plan)
Steering Committee Meeting	Prepare minutes for every Steering Committee Meeting.	Execution: PM Support: PMU	At least 1 per year Minutes to be submitted 1 week following each PSC meeting	GEF: PM budget
Half-yearly progress report	Part of UN Environment requirements for project monitoring. - Narrative of the activities undertaken during the considered semester - Analyzes project implementation progress over the reporting period; - Describes constraints experienced in the progress towards results and the reasons.	Execution: PM Support: PMU	Two (2) half-yearly progress reports for any given year, submitted by July 31 and January 31 (latest)	GEF: PM budget
Quarterly expenditure reports	Detailed expenditure reports (in excel) broken down per project component and budget line, with explanations and justification of any change	Execution: PM Support: PMU	Four (4) quarterly expenditure reports for any given year, submitted by January 31, April 30, July 31 and October 31 (latest)	GEF: PM budget
Project Implementation Review (PIR)	Analyzes project performance over the reporting period. Describes constraints experienced in the progress towards results and the reasons. Draws lessons and makes clear recommendations for future orientation in addressing the key problems in the lack of progress. The PIRs shall be documented with the evidence of the achievement of end-of-project targets (as appendices).	Execution: PM and TM Support: PMU	1 report to be prepared on an annual basis, to be submitted by 15 July latest	GEF: PM budget

M&E Activity	Description	Responsible Parties	Timeframe	Indicative budget (USD)
Annual Inventory of Non-expendable equipment	Report with the complete and accurate records of non-expendable equipment purchased with GEF project funds	Execution: PM Support: PMU	1 report per year as at 31 December, to be submitted by 31 January latest	GEF: PM budget
Co-financing Report	Report on co-financing (cash and/or in-kind) fulfilled contributions from all project partners that provided co-finance letters.	Execution: PM Support: PMU and co-finance partners	1 annual report from each co-finance partner, and 1 consolidated report, to be submitted by 31 July latest	GEF: PM budget
Medium-Term Evaluation (MTE) / Medium-Term Review (MTR)	The purpose of the MTE or MTR is to provide an independent assessment of project performance at mid-term, to analyze whether the project is on track, what problems and challenges the project is encountering, and which corrective actions are required so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. It will verify information gathered through the GEF tracking tools.	Execution: Independent Evaluator / TM Support: PM, PMU	At mid-point of project implementation if deemed needed by the Task Manager	GEF: Not applicable, but US\$ 10,000 reserved.
Final Report	The project team will draft and submit a Project Final Report, with other docs (such as the evidence to document the achievement of end-of-project targets). Comprehensive report summarizing all outputs, achievements, lessons learned, objectives met or not achieved structures and systems implemented, etc. Lays out recommendations for any further steps to be taken to ensure the sustainability and replication of project outcomes.	Execution: PM Support: PMU	Final report to be submitted no later than three (3) months after the technical completion date	GEF: PM budget
Terminal Evaluation (TE)	Further review the topics covered in the mid-term evaluation. Looks at the impacts and sustainability of the results, including the contribution to capacity development and the achievement of global environmental goals.	Execution: Independent Evaluator / TM Support: PM, PMU	Can be initiated within six (6) months prior to the project's technical completion date	GEF: US\$ 40,000
TOTAL M&E Budget			GEF: US\$ 66,800 (= \$10,000 for possible MTR/MTE, \$40,000 for TE and \$16,800 for Project Manager work on M&E as identified in the table above)	

ANNEX K: PROJECT IMPLEMENTATION ARRANGEMENTS

The project is funded by the Global Environment Facility (GEF) with UNEP the GEF Implementing Agency and the Agency of Sustainability Energy the Executing Agency. The implementation structure is illustrated in the organogram below:

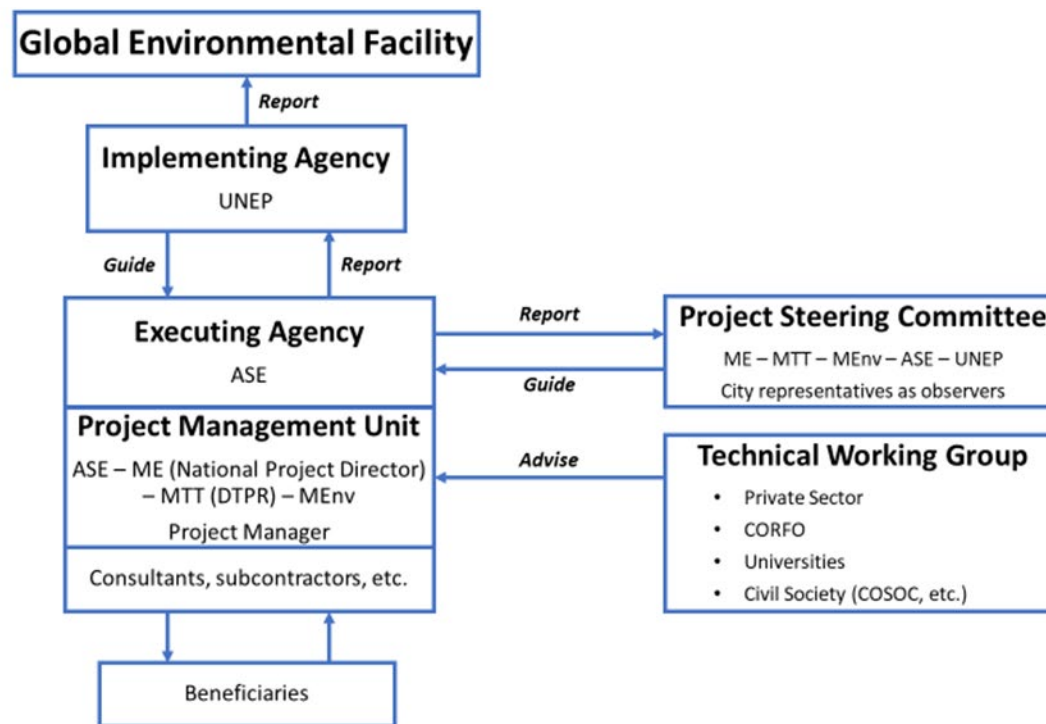


FIGURE 5. PROJECT ORGANOGRAM

Institutional structure acronyms

ASE	Agency of Sustainability Energy
ME	Ministry of Energy
MEnv	Ministry of Environment
MTT	Ministry of Transports and Telecommunications
UNEP	United Nations Environment Programme
DTPR	Regional Public Transport Division, from Spanish “División de Transporte Público Regional”
CORFO	Production Development Corporation, from Spanish “Corporación de Fomento de la Producción”
COSOC	Civil Society Council, from Spanish “Consejo de la Sociedad Civil”

Roles and responsibilities of each body are detailed in the following table:

Body	Composition	Role and description	Frequency of meetings
Project Steering Committee (PSC)	<ul style="list-style-type: none"> - Agency of Sustainability Energy (EA) - UN Environment (IA) - Ministry of Energy - Ministry of Transport and Telecommunications - Ministry of Environment - Chile GEF Operational Focal Point - City representatives (as observers) 	<ul style="list-style-type: none"> • Oversight of the project progress and implementation of Outputs; • Approve workplans and budget revisions; • Approve management decisions to ensure timely delivery of quality outputs; • Provide overall guidance and strategic direction; • Enhance and optimize the contributions of various partner organizations through coordination of all activities and inputs • The Agency of Sustainability Energy will appoint a National Project Director (NPD) that will act as the PSC Chairperson • The Project Manager (PM) will act as the PSC Secretary 	Once a year

Implementing GEF Agency (IA)	UNEP	<ul style="list-style-type: none"> • Ensure timely disbursement/sub-allotment to executing agency based on agreed legal document and in accordance with UN Environment and GEF fiduciary standards; • Follow-up with Executing agency for progress, equipment, financial and audit reports; • Provide consistent and regular oversight on project execution and conduct project supervisory missions as per Supervision Plans and in doing so ensures that all UN Environment and GEF criteria, rules and regulations are adhered to by project partners; • Technically assess and oversee quality of project outputs, products and deliverables – including formal publications; • Provide no-objection to main TORs and subcontracts issued by the project, including selection of the Project Manager; • Attend and facilitate inception workshops, field visits where relevant, and selected steering committee meetings; • Assess project risks, and monitor and enforce a risk management plan; • Regularly monitor project progress and performance and rate progress towards meeting project objectives, project execution progress, quality of project monitoring and evaluation, and risk; • Monitor reporting by project executing partners and provide prompt feedback on the contents of the report; • Promptly inform the management of any significant risks or project problems and take action and follow up on decisions made; • Apply adaptive management principles to the supervision of the project; • Review of reporting, checking for consistency between execution activities and expenditures, ensuring that it respects GEF rules; • Clear cash requests, and authorization of disbursements once reporting found to be complete; • Approve budget revision, certify fund availability and transfer funds; • Ensure that GEF and UN Environment quality standards are applied consistently to all projects, including branding and safeguards; • Certify project operational completion; • Link the project partners to any events organized by GEF and UN Environment to disseminate information on project results and lessons; • Manage relations with GEF. 	Periodic meetings (calls) with the EA's Project Management Unit (PMU), at least once per month
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Executing Agency (EA)	Agency of Sustainability Energy	<ul style="list-style-type: none"> • Ensure that the project meets its objectives and achieves expected outcomes; • Ensure technical execution according to the execution plan laid out in the project document; • Ensure technical quality of products, outputs and deliverables; • Ensure compilation and submission of progress, financial and audit reporting to IA; • Submit budget revisions to IA for approval; • Address and propose solutions to any problem or inconsistency raised by the IA; • Bring issues raised by or associated with clients to the IA for resolution; • Facilitate meetings of Steering Committees and other oversight bodies of the project; • Day to day oversight of project execution; • Submit all technical reports and completion reports to IA (realized outputs, inventories, verification of co-finance, terminal reporting, etc.); • Monitoring and evaluation of the project outputs and outcomes; • Effective use of both international and national resources • Timely availability of financing to support project execution; • Proper coordination among all project stakeholders; in particular national parties; • Timely submission of all project reports, including work plans and financial reports, • Follow-up with, or progress, procurement, financial and audit reports. • Establish a project grievance mechanism to handle any complaints swiftly. This mechanism will also share UNEP's grievance mechanism where needed when any grievance issues are not unresolved at the project level. 	Periodic meetings (calls) with the IA's Task Manager, at least once per month
Project Management Unit (PMU)	National Project Director (NPD) – Ministry of Energy	<ul style="list-style-type: none"> • Will be a national/governmental officer appointed by the Ministry of Energy; • Act as the PSC's Chairperson; • Report to and receive advice from the PSC; • Identify and secure partner support for the implementation of project activities; • Advise on hiring process. • Act as the project's entry point within the Government of Chile 	Regular meetings with the PM, at least twice per month

	Project Manager (PM)	<p>The PM will be recruited externally, paid with GEF funds, hosted within the Agency of Sustainability Energy premises and have the following duties:</p> <ul style="list-style-type: none"> • Take responsibility for day-to-day project operations; • Take responsibility for the execution of the project in accordance with the project objectives, activities and budget; • Deliver the outputs and demonstrate its best efforts in achieving the project outcomes; • Coordinate project execution and liaison with national counterparts (relevant ministries, national agencies, private sector, NGOs etc.); • Manage financial resources and processing all financial transaction relating to sub-allotments; • Prepare all annual/year-end project revisions; • Attend and facilitate inception workshops and national project steering committee meetings; • Assess project risks in the field, monitor risk management plan; • Ensure technical quality of products, outputs and deliverables; • Coordinate the project team of consultants and subcontractors; • Coordinate with strategic taskforces (i.e. thematic or technical working groups); • Act as Secretary of the PSC; • Plan and organize the PSC annual meetings; • Periodic reporting to UN Environment and the PSC for allocation of the GEF grant according to the approved workplan and budget, in coordination with UN Environment and NPD; • Notify UN Environment and the PSC in writing if there is need for modification to the agreed implementation plan and budget, and to seek approval; • Address and rectify any issues or inconsistencies raised by the Implementing Agency; • Support compilation and submission of progress, financial and audit reporting to the Implementing Agency; • Prepare, at the end of the project, the project Final Report. 	<p>Regular meetings with the NPD, at least twice per month</p> <p>Quarterly meeting with the project's Financial Officer</p> <p>Ad-hoc meetings with project team members (consultants, subcontractors, etc.)</p>
Technical Working Group	<ul style="list-style-type: none"> - Private sector - CORFO - Universities - Civil Society 	<p>Will be a mechanism that enhances coordination and communication between ministries and key stakeholders. It will involve private sector entities, CORFO, Centro Mario Molina Chile (as host of the LAC support and investment programme of the GEF-7 global programme on electric mobility), universities and the civil society. The group will provide inputs, when consulted, on technical and policy issues, and provide specific support for areas within their expertise.</p>	

ANNEX L: PROJECT WORKPLAN AND DELIVERABLES

Outputs		Deliverables (*)	Project Year 1												Project Year 2												Project Year 3												Consultant, subcontractor or stakeholder responsible for producing the deliverable	Other stakeholders supporting deliverable production
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36		
Component 1: Institutionalization of low-carbon electric mobility																																								
Hiring of Project Manager, Regional Officer, Technical/Financial Officer	0	Hiring of Project Manager, Regional Officer, Technical/Financial Officer. Purchase of PMC IT equipment and office supplies.	TOR are published			Personnel is hired																														Agency of Sustainability Energy (ASE)	Ministry of Energy			
Output 1.1: A national electric mobility coordination body is created for governmental stakeholders	1.1.1	National electric mobility coordination body (including terms of reference, membership, and procedures).				1.1.1																														Project Manager	Ministry of Energy, Ministry of transport and telecommunications, Ministry of Environment.			
	1.1.2	Quarterly meetings are held (minimum 4 per year) and public meeting minutes developed for each meeting and uploaded to the platform (D.1.1.3).					1.1.2.a		1.1.2.b		1.1.2.c		1.1.2.d		1.1.2.e		1.1.2.f		1.1.2.g		1.1.2.h								1.1.2.i		1.1.2.j				Project Manager	Ministry of Energy, Ministry of transport and telecommunications, Ministry of Environment.				
	1.1.3	Document-sharing platform (drive, SharePoint or similar)					1.1.3																													Project Manager	Ministry of Energy, Ministry of transport and telecommunications, Ministry of Environment.			
Output 1.2: A multi-stakeholder consultation strategy is implemented to engage all Chilean region stakeholders in the transition to electric mobility.	1.2.1	Stakeholder consultation strategy					TOR Published			Consulting		1.2.1																								Consultancy on socio-economic impact and safety of electromobility	Regional Officer and Ministry of Energy Gender officer and SEREMI counterpart, all relevant stakeholders			
	1.2.2	Stakeholder consultation strategy activities (based on that identified in D1.2.1)											1.2.2	Consultation strategy is implemented										1.2.2								1.2.2					Consultancy on socio-economic impact and safety of electromobility	Regional Officer and Ministry of Energy Gender officer and SEREMI counterpart, all relevant stakeholders		
	1.2.3	Report with recommendations for a long-term consultation mechanism																																	1.1.3	Consultancy on socio-economic impact and safety of electromobility	Regional Officer Ministry of Energy Gender officer and SEREMI counterpart, all relevant stakeholders			
Output 1.3: Chilean region local governments and other stakeholders are trained on technical, financial, and regulatory aspects of electric mobility	1.3.1	Three Chilean regional workshops on fixed route taxi fleet electrification technical feasibility																																	1.3.1.a	Consultancy on transport and vehicle electrification.	Project Manager and Regional Officer, Local Authorities, Agency of Sustainability Energy (ASE)			
	1.3.2	Three Chilean regional workshops on electric mobility economic outlook under current policy framework for fixed route taxi applications																																	1.3.2.a	Consultancy on transport and vehicle electrification	Project Manager and Regional Officer, Local Authorities, Agency of Sustainability Energy (ASE)			
	1.3.3	Three Chilean regional workshops for first response emergency units on electric vehicle safety and accident intervention																																	1.3.3.a	Consultancy on socio-economic impact and safety of electromobility	Project Manager and Regional Officer, Local Authorities, Agency of Sustainability Energy (ASE)			
	1.3.4	International mission on enforcing regulations for electric vehicle charging infrastructure.										1.3.4																								Project Manager and Ministry of Energy Technical team	Agency of Sustainability Energy (ASE)			
	1.3.5	Report on good practices and lessons learned on enforcing regulations for electric vehicle charging infrastructure													1.3.5																					Project Manager and Ministry of Energy Technical team	Consultancy on transport and vehicle electrification, Agency of Sustainability Energy (ASE)			
Component 2: Short term barrier removal through low-carbon e-mobility energy demonstrations																																								
Output 2.1: The viability of 6 electric vehicles as part of the fixed-route taxi fleet is demonstrated to local and national stakeholders in Antofagasta, Puerto Montt and Talca	2.1.1	(2.1.1.a) and acquired (2.1.1.b) for the 6 vehicles participating in the pilot project.				2.1.1.a								2.1.1.b																						Project Manager and Technical/Financial Officer and Regional officer	Ministry of Energy and Ministry of Transport and Telecommunication and counterpart SEREMI office			
	2.1.2	Identification of taxi routes on which the electric vehicles will operate for each of the three cities.																																	2.1.2	Consultancy on transport and vehicle electrification	Regional officer and Ministry of Transport and Telecommunication and counterpart SEREMI office, Fixed route taxi drivers, Local Authorities			
	2.1.3	Technical requirements of vehicle charging infrastructure for each of the three cities.																																	2.1.3	Consultancy on transport and vehicle electrification	Regional officer, Agency of Sustainability Energy (ASE) and Ministry of Energy, Fixed route taxi drivers, Local Authorities			
	2.1.4	Technical requirements of the electric vehicles to be leased for each of the three cities.																																	2.1.4	Consultancy on transport and vehicle electrification	Regional officer, Agency of Sustainability Energy (ASE) and Ministry of Energy and Ministry of Transport and Telecommunication and counterpart SEREMI office, Fixed route taxi drivers, Local Authorities			
	2.1.5	Leasing of two light-duty electric vehicles for each city, based on specifications established in D2.1.4.									Leasing process					2.1.5																			Project Manager and Technical/Financial Officer and Regional officer	Agency of Sustainability Energy (ASE), leasing car companies				
	2.1.6	Electric vehicle charging infrastructure and its installation in each city, based on specifications established in D2.1.3. This will include the acquisition of the necessary equipment, materials, and services for the installation of the charging infrastructure.																																		2.1.6	Project Manager and Technical/Financial Officer and Regional officer	Agency of Sustainability Energy (ASE), Ministry of Energy, Ministry of Transport and Telecommunication and counterpart SEREMI office, Local Utility companies		
	2.1.7	Vehicle monitoring (including data management system in each city), digital payment systems and user connectivity apps procured.																																			2.1.7	Project Manager and Technical/Financial Officer and Regional Officer	Agency of Sustainability Energy (ASE), Ministry of Energy, Ministry of Transport and Telecommunication and counterpart SEREMI office	
	2.1.8	Driver test drive protocol, operation and safety training in consultation with the local fixed-route taxi association.																																			2.1.8	Consultancy on transport and vehicle electrification	Regional officer, Agency of Sustainability Energy (ASE) and Ministry of Energy, Fixed route taxi drivers, Local Authorities, Ministry of Transport and Telecommunication and counterpart SEREMI office	
	2.1.9	Start (2.1.9.a) and end (2.1.9.b) of Pilot projects in Antofagasta, Talca and Puerto Montt																																			2.1.9	Project Manager and Technical/Financial Officer and Regional officer	Agency of Sustainability Energy (ASE) and Ministry of Energy, Fixed route taxi drivers, Local Authorities, Ministry of Transport and Telecommunication and counterpart SEREMI office	
Output 2.2: Evidence of the viability of electric vehicles in Antofagasta, Puerto Montt and Talca is disseminated to national and Chilean region decision-makers.	2.2.1	Electric vehicle and charging infrastructure data acquisition methodology.																																		2.2.1	Consultancy on transport and vehicle electrification	Fixed route taxi drivers, Local Authorities, Technical/Financial Officer		
	2.2.2	Monitoring and evaluation methodology, including before and after drivers' and passengers questionnaires.																																		2.2.2	Consultancy on transport and vehicle electrification	Project Manager and Technical/Financial Officer and Regional Officer		
	2.2.3	Personnel in each city trained in access the vehicle monitoring data management system.																																		2.2.3	Company providing the vehicle monitoring platform	Technical/Financial Officer and regional Officer, Fixed route taxi drivers		
	2.2.4	Quarterly operation and performance reports (minimum 4)																																		2.2.4.a	Consultancy on transport and vehicle electrification	Project Manager and Technical/Financial Officer		
	2.2.5	Final report on electric vehicle techno-economic and environmental performance in the pilots, differentiated by city.																																		2.2.5	Consultancy on transport and vehicle electrification	Project Manager and Technical/Financial Officer		
	2.2.6	Postprocessed data is online on the city data management system (D2.1.7) and accessible for interested stakeholders through the GEF-6 open data strategy.																																			2.2.6	Technical/Financial Officer	GEF 6 working group	

Component 3: Preparing for scale-up and replication of low-carbon electric mobility																																			
Output 3.1: Financial instruments are created to incentivize fixed-route taxi owners to purchase electric vehicles in Chilean regions	3.1.1	Banco Estado financial instrument for fixed-route electric taxis, based on a credit methodology and international good practices.																															Technical/Financial Officer, Consultancy on transport and vehicle electrification	Financial institutions (Banco Estado), Fixed route taxi drivers, Agency of Sustainability Energy (ASE), leasing car companies, Ministry of Transport and Telecommunications	
	3.1.2	Design of ASE grant fund, including dynamic grant calculation methodology and fiduciary guidelines																																Technical/Financial Officer, Consultancy on transport and vehicle electrification	Financial institutions (Banco Estado), Fixed route taxi drivers, Agency of Sustainability Energy (ASE), leasing car companies, Ministry of Transport and Telecommunications
	3.1.3	Operation of ASE grant fund																																Technical/Financial Officer	Financial institutions (Banco Estado), Fixed route taxi drivers, Agency of Sustainability Energy (ASE), leasing car companies, Ministry of Transport and Telecommunications
	3.1.4	Recommendations for revising the existing MTT subsidy presented to the MTT for adoption, based on an analysis of the ASE grant fund.																																Technical/Financial Officer	Financial institutions (Banco Estado), Fixed route taxi drivers, Agency of Sustainability Energy (ASE), leasing car companies, Ministry of Transport and Telecommunications
Output 3.2: Business models for deploying electric fixed-route taxis in Chilean regions are presented to national and regional government entities and the private sector for implementation	3.2.1	Report on fixed-route taxi ecosystem for Antofagasta, Puerto Montt and Talca, detailing, inter alia, fleet structure, routes, operating hours, and off-work requirements																																Consultancy on transport and vehicle electrification	Regional Officer and Agency of Sustainability Energy
	3.2.2	Electric vehicle business model analysis, roadmap for achieving 100% electric public transport by 2040, and recommendations on public and private business models for each city.																																Consultancy on transport and vehicle electrification	Regional Officer and Agency of Sustainability Energy
	3.2.3	Analysis of fixed-route taxi ecosystem in all Chile regions, including fleet size, vehicle average age, average daily kilometres, and summary of international lessons-learned and good practices in electrifying taxis																																Consultancy on transport and vehicle electrification	Regional Officer and Agency of Sustainability Energy
	3.2.4	Recommendations on public and private business models for deploying and scaling-up fixed route electric taxis in Chilean regions																																Consultancy on transport and vehicle electrification	Project Manager and Regional Officer
Output 3.3: Investment roadmaps for the long-term viability of Chilean electricity grids to support electric vehicle uptake are presented for implementation by national policy-makers and regional electricity utility companies	3.3.1	Report on current state and structure of the electricity distribution grid of each of the three pilot project cities: Antofagasta, Puerto Montt and Talca. The report will establish correlations between findings to determine if these are local, regional or national.																																Consultancy on electricity distribution grid stabilization	Regional Officer, Ministry of Energy and local SEREMI office, Utility companies
	3.3.2	Report on national electricity demand for different scenarios of electro mobility in each city, considering fixed route taxi fleets and private vehicles.																																Consultancy on electricity distribution grid stabilization	Regional Officer, Ministry of Energy and local SEREMI office, Utility companies
	3.3.3	Investment roadmaps to satisfy additional electricity demand due to different scenarios of electric mobility penetration in Antofagasta, Puerto Montt and Talca.																																Consultancy on electricity distribution grid stabilization	Regional Officer, Ministry of Energy and local SEREMI office, Utility companies
	3.3.4	High-level investment roadmaps for achieving grid readiness of all Chilean regions for large scale electric mobility fleets (fixed route taxis, buses and private vehicles), including recommendations for increasing readiness.																																Consultancy on electricity distribution grid stabilization	Regional Officer, Ministry of Energy and local SEREMI office, Utility companies
Component 4: Long-term environmental sustainability of low-carbon electric mobility																																			
Output 4.1: Waste companies are trained in reusing, recycling and final disposal of vehicles (both conventional and electric) and electric vehicle batteries	4.1.1	Three regional training workshops on vehicle (conventional and electric) recycling, final disposal, and electric battery reuse.																																Consultancy on transport and vehicle electrification	Regional Officer, Ministry of Environment, Ministry of Energy, Ministry of transport and Telecommunications, private stakeholders. Counterpart Local SEREMI offices, local Authorities
	4.1.2	Three workshops on the development of circular economy business models for electric vehicles, including its batteries and components.																																Consultancy on transport and vehicle electrification	Regional Officer, Ministry of Environment, Ministry of Energy, Ministry of transport and Telecommunications, private stakeholders. Counterpart Local SEREMI offices, local Authorities
Output 4.2: Standards and a legal framework for regulating the waste management, extended responsibility of the producer and recycling of electric vehicles and electric vehicle components are drafted for adoption by the Ministry of Environment	4.2.1	Report on good practices, and social and economic impacts for standards on waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries.																																Consultancy on transport and vehicle electrification	Regional Officer, Ministry of Environment, Ministry of Energy, Ministry of transport and Telecommunications, private stakeholders. Counterpart Local SEREMI offices, local Authorities
	4.2.2	Draft of standards for waste management, EPR and recycling of vehicle batteries, including electric vehicle batteries, is presented to the Ministry of Environment for adoption, and additional support on data and justification of the standards is provided to facilitate adoption.																																Consultancy on transport and vehicle electrification	Regional Officer, Ministry of Environment, Ministry of Energy, Ministry of transport and Telecommunications, private stakeholders. Counterpart Local SEREMI offices, local Authorities
	4.2.3	Report on good practices, and social and economic impacts for standards for legal frameworks for waste management, EPR and recycling of vehicles (conventional and electric) as input into the development of a legal framework by the Ministry of Environment.																																Consultancy on transport and vehicle electrification	Regional Officer, Ministry of Environment, Ministry of Energy, Ministry of transport and Telecommunications, private stakeholders. Counterpart Local SEREMI offices, local Authorities
(*) Important notice: for every workshop or training undertaken as part of the above workplan, the project staff or consultant in charge of it needs to prepare a report (or minutes of meeting), including an attendance sheet disaggregated by gender.																																			

ANNEX M: ESTIMATES OF DIRECT AND CONSEQUENTIAL GREENHOUSE GAS EMISSION REDUCTIONS

Total top down emission reduction potential 2021 to 2036, tCO₂	1,097,657
Thereof	
Total direct emission mitigation from demonstration, tCO ₂	10,413
Total secondary direct emission mitigation, tCO ₂	215,366
Total indirect impact emission mitigation, tCO ₂	219,531
Total project related emissions reductions, tCO₂ (causality factor 40%)	445,310

Methodology for the estimation of GHG reductions and energy savings benefits

A uniform methodology was applied in all GEF Global E-Mobility Child Projects for assessing the short, medium and long-term benefits in terms of GHG emission reductions and energy savings. The methodology compares two scenarios, the “benchmark scenario” and the “e-mobility scenario”. In the benchmark scenario, the transport sector evolves assuming a “business as usual” behavior with regards to vehicle fleet growth, vehicle use, technology and fuel use. It is based on the current policy framework with no or limited incentives to buy and use clean and efficient electric vehicles. The e-mobility scenario uses the same projections with regards to vehicle fleet growth but assumes a high penetration of electric vehicles within the new vehicle market, as a consequence of the project interventions including the adoption of EV policies, the use of business models and the existence of financial mechanisms. The scenarios are use a “top-down approach” targeting the national vehicle market. The Child Projects tackle the introduction of electric vehicles for one or multiple modes. In the latter case, calculations are performed for several modes (e.g. passenger cars, buses and 2&3 wheelers).

Projections of fleet growth, energy use and GHG emissions are based on country specific data, and region-specific parameters. Projection of the vehicle fleet growth is based on the elastic relationship between per capita income and vehicle acquisition. Therefore, country specific scenarios for population growth (based on the UNDESA medium scenario) and projections for gross domestic product (GDP PPP) from the World Economic Outlook of the International Monetary Fund (IMF) are used. Vehicle fleet projections are based on vehicle sales and assumptions on technical lifetime of vehicles. A comprehensive set of parameters describing the technologic and economic parameters of various vehicle technologies are used. Country specific grid emission factors for the carbon footprint of electricity are used. For petroleum-based fuels, well-to-wheel emission factors are used. Historic development of the vehicle fleet is based on country specific vehicle stock and sales data. Emission reductions which accrued during and after the project timeframe are taken into account. GHG emission benefits are classified as direct and indirect GHG emission reductions. This categorization follows the methodology suggested by the GEF.

Direct benefits correspond to the GHG emission reductions and energy savings obtained from 1.) The investments that are planned and executed during the project lifetime, i.e. the emission and energy use savings stemming from the demonstration of electric vehicles and EV supply equipment such as chargers purchased as part of the project⁷³; and 2.) emission reductions and energy savings as a result of investment in replication and upscaling (secondary direct benefits).

Indirect benefits correspond to the GHG reductions and energy savings obtained during and beyond the project as the result of outputs and outcomes of the project. This includes in particular the adoption of policies, business models and financial mechanisms, which incentivize the uptake of electric mobility. Total emission reductions attributable to the project are based on the cumulative sum of annual emission reductions compared to the baseline scenario over a time

⁷³ These benefits are calculated over the lifetime of the purchased assets (e.g. 15 years for cars and buses, 5 years for 2&3 wheelers and 20 years for EV supply equipment).

frame equivalent to the lifetime of the demonstration assets purchased as part of the project or for a period of ten years after the end of the project⁷⁴.

Quantification of secondary direct and indirect benefits is based on an e-mobility scenario considering the maximum realizable electric mobility market (both in terms of size and pace of technology introduction). Causality factors are used to estimate the contribution of the GEF funded project to the projected large-scale and nation-wide introduction of electric vehicles. Guidelines issued by the GEF for the selection of the causality factor level are as following:

- Level 5 = “The project contribution is critical, and nothing would have happened in the benchmark scenario,” causality factor = 100%
- Level 4 = “The project contribution is dominant, but some of this reduction can be attributed to the benchmark scenario,” causality factor = 80%
- Level 3 = “The project contribution is substantial, but modest indirect emission reductions can be attributed to the benchmark scenario,” causality factor = 60%
- Level 2 = “The project contribution is modest, and substantial indirect emission reductions can be attributed to the benchmark,” causality factor = 40%
- Level 1 = “The project contribution is weak, and most indirect emission reductions can be attributed to the benchmark scenario,” GEF causality = 20%

Secondary direct and indirect emission reductions are based on a 50:50 split of the top-down emission reductions attributable to the project via the application of the causality factor.

As selection of the parameters and variables to describe the benchmark and the e-mobility scenario are shown in TABLE 4, a flow diagram of the e-mob calculator is shown in FIGURE 6.

TABLE 4 VARIABLES AND PARAMETERS OF THE BENCHMARK AND EMOBILITY SCENARIO

	Variable	Unit
Socio – economic data	GDP PPP (2000-2018)	Billion USD PPP
	Population	Million habitants
	Annual growth of GDP	% of 2023-2030, and % 2031-2050
Vehicle fleet data	Vehicles stock (2000-2015)	Thousand vehicles
	Vehicles sales (2000-2015)	Thousand vehicles
	Technology share of stock	% share gasoline, diesel, hybrid, PHEV, BEV
Vehicle operating information	Annual Mileage	km
	Load factor	Passenger in a vehicle
	Technical lifetime	years
	Share of electric driving for PHEV	%
	Fuel economy (FE) by technology	Lge / 100 km, kWh / 100 km
	Annual FE improvement by technology	%
	FE gap (Real vs Type Approval)	%

⁷⁴ Whichever time frame is longer is applied. E.g. if the project demonstrates e-buses with an assumed lifetime of 15 years (which are introduced in year 2 of the project) then the timeframe for the calculation of indirect emission reductions is the year 2036 (2021 plus 15 years). If electric motorcycles with a lifetime of only 5 years are demonstrated, the timeframe is 2034 (end of project 2024 plus ten years).

Variable	Benchmark scenario	E-mobility scenario
Technology share of vehicle sales	%	%
Well to tank CO2 footprint Tank to wheel CO2 footprint	kg CO2/ Lge kgCO2 / kWh	kg CO2/ Lge kgCO2 / kWh
Vehicle fleet emission standards	Euro 1 to Euro 6	Euro 1 to Euro 6
Fuel quality standards	Euro 1 to Euro 6	Euro 1 to Euro 6
Vehicle price, maintenance and fuel price	USD	USD

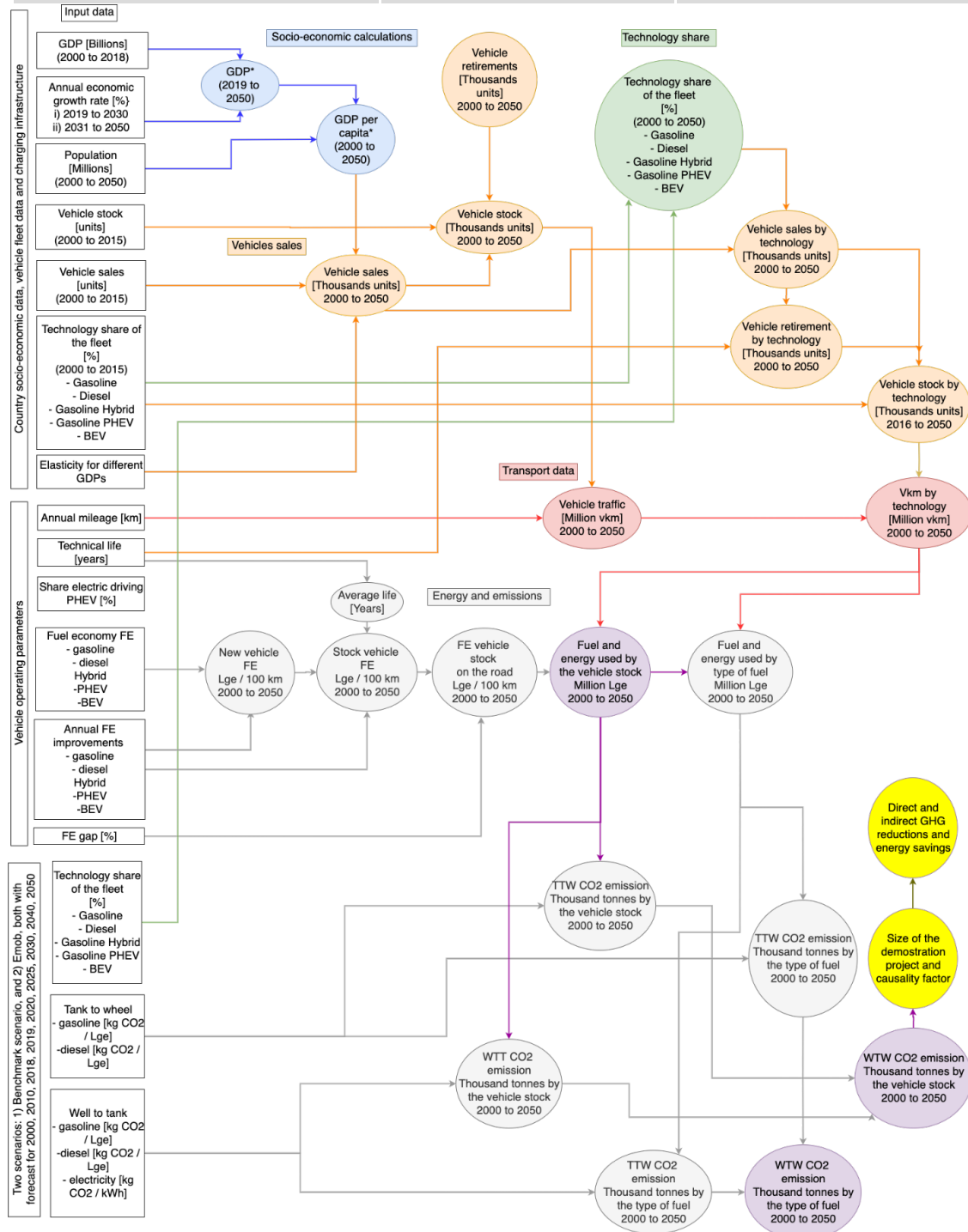


FIGURE 6 FLOW DIAGRAMME OF THE EMOB CALCULATOR

ANNEX N: OFP ENDORSEMENT LETTER



CARTA N° 184083

SANTIAGO, 12 SEP 2018

To: Kelly West
UN Environment
P.O Box 30552
Nairobi 00100
Kenya

Subject: Endorsement for Accelerating the adoption of electric mobility in Chile

In my capacity as GEF Operational Focal Point for Chile, I confirm that the above project proposal (a) is in accordance with my government's national priorities, such as Chile's Energetic Roadmap for 2018-2022 which includes a strong commitment on increasing electric vehicles, and our commitment to the relevant global environmental conventions; and (b) was discussed with relevant stakeholders, including the global environmental convention focal points.

I am pleased to endorse the preparation of the above project proposal with the support of the GEF Agency listed below. If approved, the proposal will be prepared and implemented by the Ministry of Energy, Ministry of Transportation and Communications and Ministry of the Environment. I request the GEF Agency to provide a copy of the project document before it is submitted to the GEF Secretariat for CEO endorsement.

The total financing (from GEFTF) being requested for this project is US\$ 2,000,000, inclusive of project preparation grant (PPG), if any, and Agency fees for project cycle management services associated with the total GEF grant. The financing requested for Chile is detailed in the table below.

Source of Funds	GEF Agency	Focal Area	Amount (in US\$)			
			Project Preparation	Project	Fee	Total
GEFTF	UNEP	Climate Chang	50,000	1,784,862	165,138	2,000,000
Total GEF Resources			50,000	1,784,862	165,138	2,000,000

I consent to the utilization of Chile's allocations in GEF-7 as defined in the System for Transparent Allocation of Resources (STAR). The total amount of the allocation is composed by US\$ 0,590 from Climate Change and US\$ 1,410 from Biodiversity focal areas utilizing the marginal adjustment policy.

Sincerely,


MLP/agd
Copy to:


Miguel Stutzin Schottlander
GEF Operational Focal Point

William Ehlers, GEFSEC
Ignacio Santelices, MINENERGIA
Marcelo Fernández, MMA
Lorena Araya, MTT
OAI, MMA

www.mma.gob.cl

GEF Operational Focal Point Endorsement Template, July 2018

ANNEX O: CO-FINANCING COMMITMENT LETTERS FROM PROJECT PARTNERS



Ministerio de
Energía

CARTA N° 310 / 2020

SANTIAGO, 24 de Agosto de 2020

MAT: Ministry of Energy of Chile Co-financing
towards the Accelerating the adoption of
electric mobility in Chile project (GEF ID
10277)

Mrs. Kelly WEST
GEF Coordinator
UN Environment
Nairobi, Kenya

Dear Mrs. WEST,

As the Project Executing Entity and Cofinancer of the project "**Accelerating the adoption of electric mobility in Chile**", the Chilean Ministry of Energy is pleased to confirm its support and commitment to the project, which we believe will catalyze actions to improve energy efficiency in fixed route taxis. In addition, it will promote the transition to a low-emission transportation system in the regions of Chile, improve air quality and reduce greenhouse gas emissions.

This project is in line with the public policies currently implemented by the Ministry, these being the Energy Route 2018-2020 - which includes its axis number five: "Efficient Transport: Energy in Motion" - and the National Electromobility Strategy. Through this, Chile aims to electrify 40% of the country's private car fleet and 100% of all public transport by 2050. In addition, the Energy Route defines that by 2022 the number of electric vehicles on the streets will be increase by 10 times compared to the end of 2017.

Considering this commitment, the Ministry will make a co-financing in kind contribution valued at US\$ 410.000 over the 3 years of the project, starting early 2021.

Our contribution will provide the following project activities:

- Chair of the project Steering Committee.
- Designation of a project director to supervise and provide guidance to the project execution.
- Project manager counterpart
- Under Component 1: Institutionalization of low-carbon electric mobility.
 - Designation of a counterpart to strengthen the coordination body.
 - Management of the gender agenda in the project.
- Under Component 2: Short term barrier removal through low-carbon e-mobility energy demonstrations.
 - Professional technical and administrative support in each city
- Under Component 3. Preparing for scale-up and replication of low-carbon electric mobility
 - Support with a fund for fixed-route taxis to reduce the cost gap between electric and conventional vehicles.

- Organize a tender and publish tender documents for electric vehicles and fixed route taxi charging systems.
- Identify and review other mechanisms to leverage co-finance from the Sustainable Energy Division.
- Develop a proposal for the Charging Infrastructure interoperability regulatory framework for Chile.
- Implement and monitoring regulations for public charging infrastructure for electric vehicles.
- Under Component 4. Long-term environmental sustainability of low-carbon electric mobility
 - Support and promote the regulation for the recycling of electric vehicles and batteries.

The contribution will take the form of staff time for leading the Project Steering Committee, support the work of the Technical Assistance Group and the designation of a Project Director within the Ministry of Energy. Furthermore, our contribution will include the analysis and implementation of policies that promote electric mobility. Finally, the Ministry will support and follow up on all the activities of the project.

The Ministry of Energy of Chile welcomes this important initiative of the GEF, and is pleased to be a part of it

Yours sincerely,

GABRIEL PRUDENCIO FLAÑO
Head of Sustainable Energy Division
Ministry of Energy of Chile



DSL/APPI/cpm

Código: 1598312099528 validar en <http://esigner.servisign.cl/EsignerValidar/verificar.jsp>

Este Documento ha sido firmado electrónicamente de acuerdo a la ley N° 19.799

Ministry of Transportation and Telecommunications

11 August 2020

N° 38

To: **Ms. Kelly WEST**
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Ministry of Transportation and Telecommunications co-financing towards the project 'Accelerating the adoption of electric mobility in Chile' (GEF ID 10277)

Dear Ms. WEST,

I have the pleasure of writing to you to inform you of the **Ministry of Transportation and Telecommunications** support to the **Accelerating the adoption of electric mobility in Chile** project (GEF ID 10277). The **Ministry of Transport and Telecommunications** will make a co-financing contribution of US\$ 200.000 in the form of in-kind support over the 3 years of the project's implementation, starting early 2021.

Under this co-finance contribution, the **Ministry of Transport and Telecommunications** intends to support the following project components:

- Component 1. Institutionalization of low-carbon electric mobility
- Component 2. Short term barrier removal through low-carbon e-mobility energy demonstrations
- Component 3. Preparing for scale-up and replication of low-carbon electric mobility

The contributions of the **Ministry of Transportation and Telecommunications** will take several forms, focusing on managing contact with transport union associations and supporting the whole process to implement project activities in the regions. This will be supported through the hours of work of:

- Two mid-level engineers
- A mid-level lawyer
- Two professionals in each of the following cities: Antofagasta, Puerto Montt and Talca

The **Ministry of Transportation and Telecommunications** strongly supports this important GEF project and is pleased to be part of it. We look forward to continue working with UNEP to accelerate the global transition to electric mobility successfully.

Yours sincerely,

Firmado
electrónicamente
Dominguez Covarrubias según Ley 19799

Por José Luis
Dominguez Covarrubias



José Luis Domínguez Covarrubias
Ministry of Transportation and Telecommunications (surrogate)

Código: 1597180482799 validar en <https://www.esigner.cl/EsignerValidar/verificar.jsp>



Santiago (Chile), 10 August 2020

To: **Mrs. Kelly WEST**
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Agency of Sustainability Energy co-financing towards the Accelerating the adoption of electric mobility in Chile project (GEF ID 10277)

Dear Mrs. WEST,

I have the pleasure of writing to you to confirm the Agency of Sustainability Energy's support to the **Accelerating the adoption of electric mobility in Chile** project (GEF ID 10277) which we believe will have a substantial impact on the sustainable development of mobility in our country, improving air quality and reducing greenhouse gas emissions.

This project is in line with the mission of the Agency of Sustainability Energy, of promoting, strengthening, and consolidating the use of efficient and sustainable energy. Under this framework the Agency is implementing since 2010 different programs to improve the energy efficiency of transport, industry, housing, and public buildings.

Considering this commitment, the Agency of Sustainability Energy affirms its desire to be a project partner to the "Accelerating the adoption of electric mobility in Chile" and support its activities. The Agency will make a co-financing contribution worth US\$ 500.000 in the form of in-kind contribution (US\$ 100.000) and in the form of public investment (US\$400.000) over the 3 years of the project's implementation, starting early 2021.

Our in-kind contribution will provide the following project activities:

- Designation of project director to supervise and provide guidance to the project execution.
- Being part of Project Steering Committee.
- Being part of the Technical Working Group.
- Support the component 1 of the project: Institutionalization of low-carbon electric mobility.
- Support the component 2 of the project: Short term barrier removal through low-carbon e-mobility energy demonstrations.
- Support the component 3 of the project: Preparing for scale-up and replication of low-carbon electric mobility.
- Support the component 4 of the project: Long-term environmental sustainability of low-carbon electric mobility.

It is worth mentioning that the public investment resources come from the Ministry of Energy and will be used mainly to co-finance the components 2 and 3 of the project. This contribution will take several forms, such as:

- Promoting electric mobility in fixed route transport in local governments.
- Providing guidelines for local governments on how to incorporate public electric vehicle charging infrastructure.
- Support for the acquisition of electric vehicles for fixed-route taxis and taxis.
- Support for the acquisition of residential charging systems and its installation.
- Support for vehicle monitoring during operation

The Agency of Sustainability Energy welcomes this important initiative of the GEF. Our team looks forward to working together with UNEP and Ministry of Energy to accelerate the global transition to electric mobility and making it a success.

Yours sincerely,



Ignacio Santelices Ruiz
Executive Director
Sustainable Energy Agency

Date: 18 May 2020

To: Mrs. Kelly WEST
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Enel X Chile SpA co-financing towards the GEF project 'Accelerating the adoption of electric mobility in Chile' (GEF ID 10277).

Dear Ms. WEST,

I have the pleasure to inform you of Enel X Chile SpA's support to the GEF project: **'Accelerating the adoption of electric mobility in Chile'** (GEF ID 10277). Enel X Chile SpA will make a contribution worth of US\$ 8,200,000 in the form of an equity investment over the three [3] years of the project's implementation, starting early 2021.

Under this co-finance contribution, Enel X Chile SpA intends to support the following project components:

- Component 2: Short-term barrier removal through low-carbon e-mobility energy demonstrations;
- Component 3: Preparing for scale-up and replication of low-carbon electric mobility.

The contribution of Enel X Chile SpA will take the following form:

- Development of a National Infrastructure Plan for electric vehicle chargers throughout the country (including the target regions in GEF project). The project consists of the installation and commissioning of approximately 1200 chargers for users of electric vehicles through a platform. In January 2020, the project was publicly presented, as can be seen at the following link: <https://www.enel.cl/es/conoce-enel/prensa/press-enel-x/d202001-1200-puntos-de-carga-para-autos-electricos.html>

Enel X Chile SpA strongly supports this important GEF project and is pleased to be part of it. We look forward to continue working with UNEP to accelerate the global transition to electric mobility, and making it a success.

Yours sincerely,



Karla Zapata Oballe
Gerente General
Enel X Chile SpA



LETTER N° 202520

SANTIAGO, 02 JUL 2020

Mrs. Kelly WEST
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Ministry of Environment co-financing towards the Accelerating the adoption of electric mobility in Chile project (GEF ID 10277)

Dear Mrs. West,

I have the pleasure of writing to you to inform you of the Ministry of Environment's support to the **Accelerating the adoption of electric mobility in Chile** project (GEF ID 10277). The Ministry of Environment will make a co-financing contribution worth of US\$ 50.000 in the form of an in kind over the 3 years of the project's implementation, starting early 2021.

Under this co-finance contribution, the Ministry of Environment intends to support the following project components:

- Long-term environmental sustainability of low-carbon electric mobility.

The contributions of the Ministry of Environment will take several forms, such as:

- Studying the current waste management of cars and batteries
- Developing legislation on the management of end-of-life batteries and vehicles.

The Ministry of Environment supports this important GEF project and is pleased to be part of it, from our national as well as our regional offices. We look forward to continue working with UNEP to accelerate the global transition to electric mobility, and making it a success.

Yours sincerely,



JAVIER NARANJO SOLANO
Vice-minister
Ministry of Environment

KOV/GGC/JM/kvv



Santiago-Chile, June 10th, 2020

To: Mrs. Kelly West
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Empresa Nacional de Energía S.A. (ENEX) co-financing towards the Accelerating the Adoption of Electric Mobility in Chile Project (GEF ID 10277)

Dear Mrs. West,

I have the pleasure of writing to you to inform you of ENEX's support to the **Accelerating the adoption of electric mobility in Chile project (GEF ID 10277)**. ENEX will make a co-financing contribution worth of US\$ 2,000,000. The indicated amount will be provided in the form of a capital investment of Enex's property during the 3 years of project implementation, beginning in early 2021.

Under this co-finance contribution, ENEX intends to support the following project outputs:

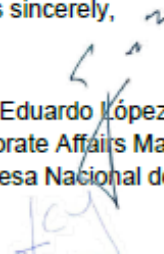
- Fast Charging facilities across the country in our Service Stations network.
- Charging infrastructure on public areas and private client areas.

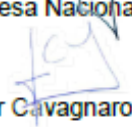
The contributions of the ENEX will take several forms, such as:

- We will be adding to our Service Stations network fast charging infrastructure. We will also provide a safe digital environment where EV users will be able to know where these places are located and to use them. Finally, give to the EV users a place where they can wait for their vehicle to be charged in our Convenience Stores.
- We will also be helping and guiding our actual clients to start the renewing of their fleets to an EV solution. Mainly trying to be useful for them in financing and adopt this new concept.

ENEX strongly supports this important GEF project and is pleased to be part of it. We look forward to continue working with UNEP to accelerate the global transition to electric mobility, and making it a success.

Yours sincerely,


Juan Eduardo López
Corporate Affairs Manager
Empresa Nacional de Energía Enex S.A.


Javier Cavagnaro
Chief Financial Officer
Empresa Nacional de Energía Enex S.A.

Date: May 6, 2020

To: **Mrs. Kelly WEST**
GEF Coordinator
UN Environment
Nairobi, Kenya

Subject: Sociedad Austral de Electricidad S.A. (SAESA) co-financing towards the Accelerating the adoption of electric mobility in Chile project (GEF ID 10277)

Dear Mrs. WEST,

SAESA is the main distribution system operator in the southern region of Chile and serves more than 900 thousand customers in our concession zone. Our company has a strong commitment to our communities and cities in our region and we truly believe that electric conversion through e-mobility will help to reduce the pollutions of our cities and contribute to reducing global warming.

Saesa is already committed to bringing e-mobility closer to our communities. In 2017 we launched our first EV-fleet that has been increasing over time. We actively engage in projects of innovation and programs related to e-mobility. Since 2019 we have developed a shared taxi pilot program in the isolated Aysén Region with outstanding results. In addition to the latter, we have contributed with 1.200 km of a public charging network for electric cars in our concession zone. This network is expected to continue to grow in the next years.

I have the pleasure to inform you of the SAESA's support to the **Accelerating the adoption pilot of electric mobility in Chile** project (GEF ID 10277). SAESA will make a co-financing contribution worth of US\$ 160,000 in the form of an equity investment over the 3 years of the project's implementation, starting early 2021.

Under this co-finance contribution, SAESA intends to support the following projects in our concession zone:

- Component 2: Short term barrier removal through low-carbon e-mobility energy demonstrations
- Component 3: Preparing for scale-up and replication of low-carbon electric mobility
- Component 4: Long-term environmental sustainability of low-carbon electric mobility

The contributions of SAESA will take several forms, such as:

- Support associated with **Component 2**:
 - Provide free of charge energy at Saesa's public charging stations for the drivers selected for the pilot program.
 - If needed, provide up to 2 private charging solutions at the driver's residents (or where is needed) with dedicated reduced tariffs for electromobility
- Support associated with **Component 3**:
 - Provide up to 20 private charging solutions for driver related to the pilot program with the correspondent reduced conversion tariff
 - Provide up to 5 additional public charging stations in the city of Puerto Montt.
- Support associated with **Component 4**:
 - Commitment to developing a second life pilot program to reuse old EV batteries in our distribution grid to enhance and improve the reliability of our network.

- Provide specialized human resources to collaborate with the investigation, development, and study for all the components described above.

SAESA strongly supports this important GEF project and is pleased to be part of it. We look forward to continuing to work with UNEP to accelerate the global transition to electric mobility and making it a success.

Yours sincerely,



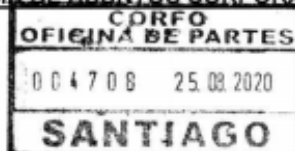
Matias Vogel Alonso
Subgerente de Negocios
Grupo Saesa



CVV/AAB/amc
Nº 93



GERENCIA DE ASUNTOS CORPORATIVOS



Subject: Chilean Economic Development Agency (CORFO) 's support to the project 'Accelerating the adoption of electric mobility in Chile project' (GEF ID 10277).

To: **Ms. Kelly WEST**
GEF Coordinator
UNEP
Nairobi, Kenya

Dear Ms. WEST,

I have the pleasure of writing to you to inform of the **Chilean Economic Development Agency (CORFO)**'s support to the **Accelerating the adoption of electric mobility in Chile** project (GEF ID 10277). For this, Corfo is promoting the Electromobility Center, which will have financing of approximately US\$7.000.000.¹

Furthermore, it should be noted that said R&D Contribution originates from the Annex to the Basic Agreement signed on November 25, 2016, between Corfo and the company "Rockwood Lithium Limited" (today "Albemarle Limited"), and the only partners of the latter, "Rockwood Lithium Inc." (Currently "Albemarle Lithium Inc.") and "Foote Minera e Inversiones Limitada", which incorporated a unilateral and irrevocable obligation of Albemarle Limitada, to make annual contributions to one or more technological research and development entities, ("R&D Contribution"), *non-profit, "whose purpose is i) the development of technology that focuses on a) use and / or application of solar energy, lithium salts or the salts and products of the Salar de Atacama, or b) non-metallic mining and metallic or c) use of solar energy; or, ii) studies and applied research in the areas indicated in the previous Roman numeral"*.

In this context, Corfo is in the process of selecting a receiving entity (the "Recipient") of the R&D Contribution, referred to in the previous paragraph, which is the one that presents the best proposal for the creation of a Center for the Development of the Electromobility in Chile, which would be aimed at contributing to the acceleration of electromobility adoption processes, by

¹ It is noted that the amount of US \$ 7.000.000 corresponds to the maximum R&D contribution that the receiving entity may access for the execution of the proposal.

focusing on the particular problems, requirements and solutions for its development and implementation.

Background information:

Within the framework of the National Electromobility Strategy, promoted by the Government of Chile, it is expected to spread electromobility in a safe and sustainable way in the coming years. This, with a view to being a Carbon Neutral country by 2050, particularly from the transport sector, which contributes 24% of our country's GHG emissions.

To achieve these goals, Corfo has adhered to the "Public-Private Commitment to Electromobility 2020", with the aim of promoting actions aimed at reinforcing different areas of work related to electromobility. This will allow, on the one hand, to fulfill the commitments in terms of policies climate change and energy saving goals, and, on the other, increase the competitiveness of the country's transportation sector.

By executing the selected proposal, by virtue of the call for the establishment of the Center for the Development of Electromobility in Chile, the following project could be supported components:

- Component 1 Institutionalization of low carbon electric mobility.
- Component 2 Elimination of the barrier in the short term through energy demonstrations of low carbon electric mobility.
- Component 3 Preparation for the expansion and replication of low carbon electric mobility.
- Component 4 Long-term environmental sustainability of low-carbon electric mobility.

The contribution of the Center that would be formed by reason of the call made by Corfo will take several forms, such as:

- Develop and implement methodologies for the interoperability of electromobility at the national level, as well as its integration at the regional level (Latin America), promoting standardized and interoperable solutions.
- Promote the technological development of special applications for electromobility, mostly focused on the service chain of public transport vehicles and intensive use fleets, such as cargo vehicles.
- Promote the development of local suppliers in technological solutions in electromobility.
- Promote the development of specialized human capital in the use of electromobility at the national level.
- Develop and implement an associative management model that ensures adequate governance, intellectual property requirements, risk management, quality management of the innovation generated and measurement of the economic, social and environmental impact of the products and services developed.
- Design and implement a technology transfer strategy for the developments generated to users, in addition to the dissemination and permanent communication of projects and results



It should be noted that the duration of the Center for the Development of Electromobility in Chile may be up to five years, extendable for up to two more years, upon decision of the Corfo Council upon founded request.

Finally, it is noted that Corfo through other multisectoral programs, open or recurring calls, such as the law of tax incentive to R&D, Innova High Technology and Public Goods, among others, also receives initiatives in the field of electromobility.

Yours sincerely,

MARIA CECILIA VALDES VIAL
Firmado digitalmente
por MARIA CECILIA
VALDES VIAL

CECILIA VALDÉS VIAL
CEO

Chilean Economic Development Agency CORFO

C/C: Subgerente de Programas y Desarrollo Estratégico, Gerencia General Corfo.



ANNEX P: ENVIRONMENTAL, SOCIAL AND ECONOMIC REVIEW NOTE (ESERN)

An assessment of the environmental, social and economic impact of the project was undertaken by an independent team with the United Nations Environment Programme (UNEP). In its analysis, the team interviewed the project consultants and UNEP Task Manager on the project and reviewed the project against a series of environmental, social and economic indicators (contained in annex P of the CEO endorsement document). The assessment determined that this is a moderate risk project, based on UNEP's Environment, Social and Economic Sustainability (ESES) guidelines. In providing this rating, the UNEP Safeguard Advisor noted that:

- Potential long-term environmental and health impact need to be considered although the scope and budget of the project is limited to piloting of small number of taxi fleets. These will be considered as part of the project's component 4.
- The project also includes financing instruments that ease financial burden to the taxi owners. Terms and conditions of such loan should be done through extensive analysis on potential economic feasibility to the borrowers. These will be considered as part of outputs 1.2 and 3.1.
- The project also aims to support Chilean government to take action towards implementing policy frameworks for ensuring the environmental sustainability of electric mobility. Would there be possibility of having insufficient interest for recycling Lithium considering Chile has large Lithium mining and industry? This will be considered through outputs 1.2 and component 4.
- If COVID-19 pandemic continues during the project implementation phase, attention should be given to occupational safety and health (OSH) issues of the partners, subcontractors and anyone who may participate in the stakeholder consultations. This will be considered through outputs 1.2 and the risk section.
- UNEP ESSF guiding principles-- resilience and sustainability; human rights, gender equality and women empowerment, accountability and leave no one behind--are also applicable for all UNEP projects. Detailed attention should be given to potentially affected marginalized and vulnerable population in terms of project's proposed policy and strategies for them. This will be considered directly through output 2.1.
- Project level grievance mechanism should be stated clearly in the project document and established to handle any complaints swiftly. Share UNEP's grievance mechanism with the affected population for any grievance issues that are not unresolved at the project level. This will be achieved through output 1.2 and the institutional arrangements (see section 6 and annex k).

In conclusion, the Advisor noted that this project can take the "good practice" approach" on safeguards (a separate Environmental and Social Assessment or Management Plan is not necessary). But requested to track the baseline data (mentioned above) and monitor safeguard issues closely during the project implementation.

• Project Overview

Identification	UN Environment ID: 10277
Project Title	Accelerating the adoption of electric mobility in Chile
Managing Division	Economy Division
Type/Location	National

Region	Latin America and the Caribbean
List Countries	Chile
Project Description	<p>This project aims to promote innovation and technology transfer for sustainable energy breakthroughs in electric mobility in Chile. The GEF grant funds and co-financing will play a key role in promoting investment in electric mobility in regions outside of Santiago. To date these regions have received little private investment in these technologies. Thus, GEF financing will serve to kickstart investment in these areas, building upon the success stories prevalent in the country's capital.</p> <p>Specifically, GEF7 grant funds will be employed to:</p> <p>Component 1 - Institutionalization of electric mobility: The government strengthens its coordination, consultation and capacity for promoting electric mobility.</p> <p>Component 2 - Electric vehicle demonstration: demonstrations provide evidence of technical, financial and environmental sustainability to plan for scale-up of electric mobility in Chilean regions.</p> <p>Component 3 - Preparation of scale-up and replication of electric mobility: Conditions are created to accelerate the shift towards electric mobility in Chilean regions, including through the creation of financial instruments.</p> <p>Component 4 - Promotion of long-term sustainability of electric mobility: Measures are developed to ensure the long-term sustainability of electric mobility.</p>
Estimated duration of project:	36 months
Estimated cost of the project:	USD 1,784,862

II. Environmental Social and Economic Screening Determination

A. Summary of the Safeguard Risks Triggered

Safeguard Standard Triggered by the Project	Impact of Risk ⁷⁵ (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H)
SS 1: Biodiversity, natural habitat and Sustainable Management of Living Resources	1	1	L
SS 2: Resource Efficiency, Pollution Prevention and Management of Chemicals and Wastes	3	2	M

⁷⁵ Refer to UNEP Environment, Social and Economic Sustainability (ESES): Implementation Guidance Note to assign values to the Impact of Risk and the Probability of Risk to determine the overall significance of Risk (Low, Moderate or High).

SS 3: Safety of Infrastructure	2	1	L
SS 4: Involuntary resettlement	1	1	L
SS 5: Indigenous peoples	1	1	L
SS 6: Labor and working conditions	2	2	L
SS 7: Cultural Heritage	1	1	L
SS 8: Gender equity	1	1	L
SS 9: Economic Sustainability	2	2	L
Additional Safeguard questions for projects seeking GCF-funding (Section IV)			

B. ESE Screening Decision⁷⁶ (Refer to the UNEP ESES Framework (Chapter 2) and the UNEP's ESES Guidelines.)

Low risk ☐ Moderate risk ☒ High risk ☐ Additional information required ☐

C. Development of ESE Review Note and Screening Decision:

Prepared by: Name: Asher Lessels. Date: 20 March 2020

Safeguard Advisor: Name: Yuna Yi Date: 3 July 2020

Project Manager: Name: Asher Lessels Date: 8 July 2020

D. Recommended further action from the Safeguard Advisor:

This is a moderate risk project. The project describes the lack of legal framework on electric vehicles and battery productions. Potential long-term environmental and health impact need to be considered although the scope and budget of the project is limited to piloting of small number of taxi fleets.

The project also includes financing mechanism that ease financial burden to the taxi owners. Terms and conditions of such loan should be done through extensive analysis on potential economic feasibility to the borrowers.

The project also aims to support Chilean government to take action towards implementing policy frameworks for ensuring the environmental sustainability of electric mobility. Circular economy capacity is not sufficiently developed. Would there be possibility of having insufficient interest for recycling Lithium considering Chile has large Lithium mining and industry?

⁷⁶ **Low risk:** Negative impacts negligible: no further study or impact management required.

Moderate risk: Potential negative impacts, but less significant; few if any impacts irreversible; impact amenable to management using standard mitigation measures; limited environmental or social analysis may be required to develop a ESEMP. Straightforward application of good practice may be sufficient without additional study.

High risk: Potential for significant negative impacts, possibly irreversible, ESEA including a full impact assessment may be required, followed by an effective safeguard management plan.

If COVID-19 pandemic continues during the project implementation phase, attention should be given to occupational safety and health (OSH) issues of the partners, subcontractors and anyone who may participate in the stakeholder consultations.

UNEP ESSF guiding principles-- resilience and sustainability; human rights, gender equality and women empowerment, accountability and leave no one behind--are also applicable for all UNEP projects. Detailed attention should be given to potentially affected marginalized and vulnerable population in terms of project's proposed policy and strategies for them.

Project level grievance mechanism should be stated clearly in the project document and established to handle any complaints swiftly. Share UNEP's grievance mechanism with the affected population for any grievance issues that are not unresolved at the project level.

III. ESES Principle and Safeguard checklist

(Section III and IV should be retained in UNEP)

Precautionary Approach
The project will take precautionary measures even if some cause and effect relationships are not fully established scientifically and there is risk of causing harm to the people or to the environment.
Human Rights Principle
The project will make an effort to include any potentially affected stakeholders, in particular vulnerable and marginalized groups; from the decision making process that may affect them.
The project will respond to any significant concerns or disputes raised during the stakeholder engagement process.
The project will make an effort to avoid inequitable or discriminatory negative impacts on the quality of and access to resources or basic services, on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups. ⁷⁷

Screening checklist	Y/N/ Maybe	Comment
Safeguard Standard 1: Biodiversity, natural habitat and Sustainable Management of Living Resources		
Will the proposed project support directly or indirectly any activities that significantly convert or degrade biodiversity and habitat including modified habitat, natural habitat and critical natural habitat?	N	
Will the proposed project likely convert or degrade habitats that are legally protected?	N	
Will the proposed project likely convert or degrade habitats that are officially proposed for protection? (e.g.; National Park, Nature Conservancy, Indigenous Community Conserved Area, (ICCA); etc.)	N	
Will the proposed project likely convert or degrade habitats that are identified by authoritative sources for their high conservation and biodiversity value?	N	
Will the proposed project likely convert or degrade habitats that are recognized- including by authoritative sources and /or the national and local government entity, as protected and conserved by traditional local communities?	N	
Will the proposed project approach possibly not be legally permitted or inconsistent with any officially recognized management plans for the area?	N	
Will the proposed project activities result in soils deterioration and land degradation?	N	
Will the proposed project interventions cause any changes to the quality or quantity of water in rivers, ponds, lakes or other wetlands?	N	
Will the proposed project possibly introduce or utilize any invasive alien species of flora and fauna, whether accidental or intentional?	N	
Safeguard Standard 2: Resource Efficiency, Pollution Prevention and Management of Chemicals and Wastes		

⁷⁷ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to “women and men” or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

Will the proposed project likely result in the significant release of pollutants to air, water or soil?	Y	The project supports the demonstration and uptake of electric vehicles. The disposal of electric vehicle batteries, if undertaken incorrectly, can lead to possible water and soil pollution. The Ministry of Environment and the Ministry of Energy have already implemented measures to address this issue. In addition, this project will also finance interventions to ensure that this impact does not occur. If the Lithium waste treatment is not handled properly, yes, there is possible release of pollutants to water and soil.
Will the proposed project likely consume or cause significant consumption of water, energy or other resources through its own footprint or through the boundary of influence of the activity?	N	The project may lead to consumption of electricity, through the uptake of electric vehicles. In counterbalance, it will lead to a reduction in the use of petroleum used for cars.
Will the proposed project likely cause significant generation of Green House Gas (GHG) emissions during and/or after the project?	N	The project aims to reduce GHG emissions by facilitating a transition to electric cars. See above comment.
Will the proposed project likely generate wastes, including hazardous waste that cannot be reused, recycled or disposed in an environmentally sound and safe manner ?	N	See comment above on water and soil contamination.
Will the proposed project use, cause the use of, or manage the use of, storage and disposal of hazardous chemicals, including pesticides?	Y	See comment above on water and soil contamination.
Will the proposed project involve the manufacturing, trade, release and/or use of hazardous materials subject to international action bans or phase-outs, such as DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants or the Montreal Protocol?	N	
Will the proposed project require the procurement of chemical pesticides that is not a component of integrated pest management (IPM) ⁷⁸ or integrated vector management (IVM) ⁷⁹ approaches?	N	
Will the proposed project require inclusion of chemical pesticides that are included in IPM or IVM but high in human toxicity?	N	
Will the proposed project have difficulty in abiding to FAO's International Code of Conduct ⁸⁰ in terms of handling, storage, application and disposal of pesticides?	N	

⁷⁸ "Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agricultural ecosystems and encourages natural pest control mechanisms <http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/>

⁷⁹ "IVM is a rational decision-making process for the optimal use of resources for vector control. The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control. The ultimate goal is to prevent the transmission of vector-borne diseases such as malaria, dengue, Japanese encephalitis, leishmaniasis, schistosomiasis and Chagas disease." (http://www.who.int/neglected_diseases/vector_ecology/ivm_concept/en/)

⁸⁰ Find more information from http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/CODE_2014Sep_ENG.pdf

Will the proposed project potentially expose the public to hazardous materials and substances and pose potentially serious risk to human health and the environment?	Y	See comment above on water and soil contamination.
Safeguard Standard 3: Safety of Dams		
Will the proposed project involve constructing a new dam(s)?	N	
Will the proposed project involve rehabilitating an existing dam(s)?	N	
Will the proposed project activities involve dam safety operations?	N	
Safeguard Standard 4: Involuntary resettlement		
Will the proposed project likely involve full or partial physical displacement or relocation of people?	N	
Will the proposed project involve involuntary restrictions on land use that deny a community the use of resources to which they have traditional or recognizable use rights?	N	
Will the proposed project likely cause restrictions on access to land or use of resources that are sources of livelihood?	N	
Will the proposed project likely cause or involve temporary/permanent loss of land?	N	
Will the proposed project likely cause or involve economic displacements affecting their crops, businesses, income generation sources and assets?	N	
Will the proposed project likely cause or involve forced eviction?	N	
Will the proposed project likely affect land tenure arrangements, including communal and/or customary/traditional land tenure patterns negatively?	N	
Safeguard Standard 5: Indigenous peoples⁸¹		
Will indigenous peoples be present in the proposed project area or area of influence?	N	
Will the proposed project be located on lands and territories claimed by indigenous peoples?	N	
Will the proposed project likely affect livelihoods of indigenous peoples negatively through affecting the rights, lands and territories claimed by them?	N	
Will the proposed project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	N	
Will the project negatively affect the development priorities of indigenous peoples defined by them?	N	
Will the project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	N	
Will the project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	N	
Safeguard Standard 6: Labor and working conditions		
Will the proposed project involve the use of forced labor and child labor?	N	
Will the proposed project cause the increase of local or regional un-employment?	N	
Safeguard Standard 7: Cultural Heritage		
Will the proposed project potentially have negative impact on objects with historical, cultural, artistic, traditional or religious values and archaeological sites that are internationally recognized or legally protected?	N	
Will the proposed project rely on or profit from tangible cultural heritage (e.g., tourism)?	N	

⁸¹ Refer to the Toolkit for the application of the UNEP Indigenous Peoples Policy Guidance for further information.

Will the proposed project involve land clearing or excavation with the possibility of encountering previously undetected tangible cultural heritage?	N	
Will the proposed project involve in land clearing or excavation?	N	
Safeguard Standard 8: Gender equity		
Will the proposed project likely have inequitable negative impacts on gender equality and/or the situation of women and girls?	N	The project will incorporate gender considerations into all project outcomes and outputs. In addition, a gender action plan will be included in the project.
Will the proposed project potentially discriminate against women or other groups based on gender, especially regarding participation in the design and implementation or access to opportunities and benefits?	N	
Will the proposed project have impacts that could negatively affect women's and men's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	N	
Safeguard Standard 9: Economic Sustainability		
Will the proposed project likely bring immediate or short-term net gain to the local communities or countries at the risk of generating long-term economic burden (e.g., agriculture for food vs. biofuel; mangrove vs. commercial shrimp farm in terms of fishing, forest products and protection, etc.)?	N	
Will the proposed project likely bring unequal economic benefits to a limited subset of the target group?	N	

IV. Additional Safeguard Questions for Projects seeking GCF-funding

Community Health, Safety, and Security			
Will there be potential risks and negative impacts to the health and safety of the Affected Communities during the project life-cycle?			
Will the proposed project involve design, construction, operation and decommissioning of the structural elements such as new buildings or structures?			
Will the proposed project involve constructing new buildings or structures that will be accessed by public?			
Will the proposed project possibly cause direct or indirect health-related risks and impacts to the Affected Communities due to the diminution or degradation of natural resources, and ecosystem services?			
Will the proposed project activities potentially cause community exposure to health issues such as water-born, water-based, water-related, vector-borne diseases, and communicable diseases?			
In case of an emergency event, will the project team, including partners, have the capacity to respond together with relevant local and national authorities?			
Will the proposed project need to retain workers to provide security to safeguard its personnel and property?			
Labor and Supply Chain			
Will UNEP or the implementing/executing partner(s) involve suppliers of goods and services who may have high risk of significant safety issues related to their own workers?			

ANNEX Q: ACRONYMS AND ABBREVIATIONS

AC/DC	Altern Current/Direct Current
AGCI	Chilean Agency for International Cooperation
ASE	Agency of Sustainability Energy
BEV	Battery Electric Vehicle
BRT	Bus Rapid Transport
CAF	Development Bank of Latin America
CCM	Climate Change Mitigation
CLETS	Chilean Low Emissions Transport Strategy
CNE	National Energy Commission
COPEC	Compañía de Petróleos de Chile
CORFO	Production Development Corporation
COSOC	Consejo de la Sociedad Civil
CTA	Chief Technical Advisor
EA	Executing Agency
ENEX	Empresa Nacional de Energía S.A.
EOU	UN Environment Evaluation Office
ESES	Environment, Social and Economic Sustainability
EV	Electric vehicle
FCV	Fuel-cell Vehicle
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Greenhouse Gas Emissions
GORE	Regional Governments
IA	Implementing Agency
ICCA	Indigenous Community Conserved Area
ICE	Internal Combustion Engine
IDB	Interamerican Development Bank
IMF	International Monetary Fund
INDC	Intended Nationally Determined Contributions
INV	Investments
IPM	Integrated Pest Management
IVM	Integrated Vector Management
IW	Inception Workshop
LULUCF	Land use, land-use change and forestry
M&E	Monitoring and Evaluation
ME	Ministry of Energy
MEnv	Ministry of Environment
MSP	Medium-Size Project
MTE	Mid-Term Evaluation
MTR	Mid-Term Review
MTT	Ministry of Transport and Telecommunications
NDC	Nationally Determined Contribution
NGOs	Non-governmental Organizations
NOx	Nitrous Oxide
NPD	National Project Director
OECD	Organization for Economic Cooperation and Development
OSH	Occupational Safety and Health
PHEV	Plug-in Hybrid Electric Vehicle
PIF	Project Identification Form

PIR	Project Implementation Review
PM	Particulate Matter
PMC	Project Management Cost
PMU	Project Management Unit
PPG	Project Preparation Grant
PSC	Project Steering Committee
REP	Responsibility of the Producer
SAESA	Sociedad Austral de Electricidad Sociedad Anónima
SCCF	Special Climate Change Fund
SDGs	Sustainable Development Goals
SEREMI	Ministerial Regional Secretaries
STP	Servicio de Transporte de Personas
TA	Technical Assistance
TE	Terminal Evaluation
TF	Trust Fund
TWG	Technical Working Group
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEC	World Energy Council

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