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ICAT

INITIATIVE FOR  
Climate Action  
Transparency

# CONTRIBUTIONS OF SUBNATIONAL AND NON- STATE ACTORS IN THE REDUCTION OF GREENHOUSE GAS EMISSIONS IN COLOMBIA

## IMPLEMENTATION OF THE ICAT NSA GUIDE





IMPLEMENTATION OF THE ICAT NSA GUIDE

Application of the **ICAT** Non-State and Subnational Action (NSA) Guide and Climate Action Aggregation Tool (**CAAT**) in Colombia.

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To learn more about the results presented in this document, see the full report **Implementation of the ICAT guide for non-state and subnational actions** at [www.wwf.org.co](http://www.wwf.org.co)

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//

For the country’s environmental transition towards a sustainable and resilient economy, environment and society, it is essential to link the private sector and the territories, due to their ability to develop projects with high potential for mitigation and adaptation of climate change, which are essential for the construction of Nationally Determined Contributions (NDC). Thus, the synergy between these actors and the National Government is key to guarantee the environmental integrity of the country through the NDC.”

//

Cities and the private sector represent a great opportunity to meet Colombia’s GHG emissions reduction commitments to the international community. It is worth noting that many of the actions they can take are not only important for reducing emissions generated, but additionally for the positive transformation in the quality of life of city dwellers. For example, changes in transportation systems directly benefit mobility conditions and air quality. We need cities to commit to policies and actions that invest in real changes: transportation systems that include electric vehicles, cycling infrastructure and rail systems, and other measures that are not only low carbon but generate high-impact social benefits. Likewise, cities and the private sector can make decisions and lead transformations, generating changes in consumer behavior and offering products with a low carbon footprint.”

//

Solving the climate crisis requires an all-hands-on deck approach in order to ensure that policies are well integrated, inclusive of all sectors of society, and reflective of a country’s full potential. Evaluating actions from non-state and subnational actors and their contribution to emissions reductions is an invaluable step in ensuring that we can deliver ambitious and lasting progress toward decarbonization and do it in a way that also delivers the employment and development opportunities needed across Colombia.”



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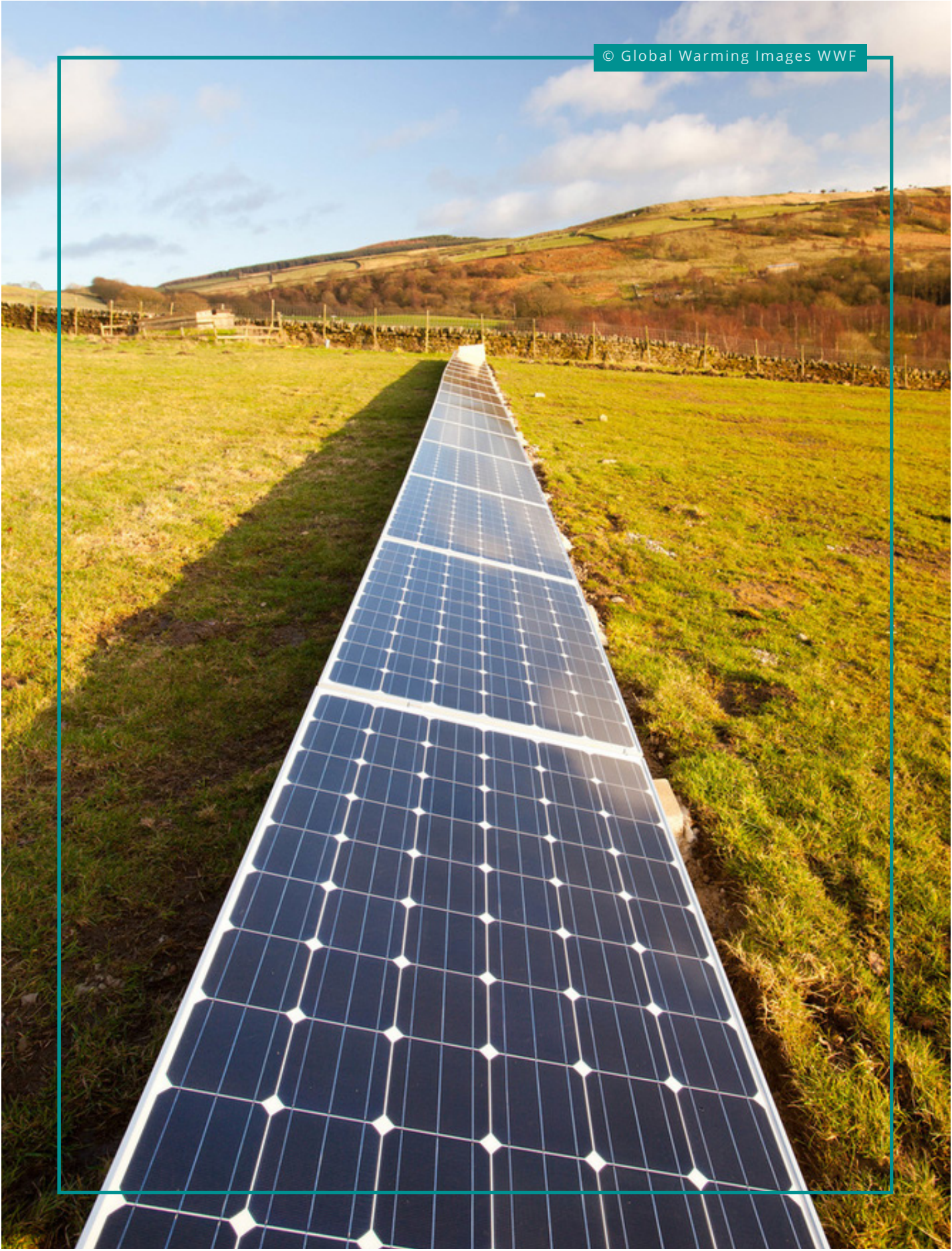
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# CLARIFICATIONS

Some concepts used in this report are defined below.

- Identified actors:**  
these are actors from the private sector and the subnational governments (cities and departments) that are currently implementing mitigation or energy efficiency/renewable energy actions.
- Actions with confirmed information:**  
those actions whose information was corroborated by the responsible actors (companies and cities) through a questionnaire sent by WWF.
- Actions with unconfirmed information:**  
those actions whose information could not be corroborated by the responsible actors (companies and cities). The information on these actions is public or was provided by the Ministry of the Environment and Sustainable Development.
- Evaluated actions:**  
actions being implemented by the identified actors and analyzed with the ICAT CAAT tool. Confirmed and unconfirmed actions were included in the various analyses.
- Actions with overlap:**  
actions that overlap with programs or policies by the National Government and implemented by cities or the private sector.
- Actions without overlap:**  
actions implemented by cities and the private sector that do not overlap with programs or policies promoted by the National Government.



# INTRODUCTION

**THE INITIATIVE FOR CLIMATE ACTION TRANSPARENCY (ICAT) WAS CREATED TO RESPOND TO THE CRITICAL NEED TO SUPPORT IMPROVED TRANSPARENCY AND CAPACITY BUILDING UNDER THE PARIS AGREEMENT.**

The 2015 Paris agreement marked a historic moment in international efforts to keep global temperature rise below 2° C, preventing a climate crisis of catastrophic proportions. Signatory countries to the United Nations Framework Convention on Climate Change reported their own Nationally Determined Contributions (NDCs) to reduce their greenhouse gas (GHG) emissions by 2030.

In Colombia, Law 1844 of 2017 ratified the Paris agreement, and in 2018, the country established an initial NDC which would be the national commitment to reduce GHG emissions. This first goal was a 20% reduction in estimated 2030 emissions. In 2020, the country updated its goal, increasing its ambition to a 51% reduction in emissions by 2030. To achieve this goal, Colombia has defined a series of policies, plans and programs, including the sectorial and territorial Comprehensive Climate Change Plans (PIGCC) and the Nationally Appropriate Mitigation Actions (NAMA), which guide emission reduction policies and lay the groundwork for implementation at the local context.

Although international commitments and agreements have been led by national governments, the unprecedented challenge of reaching ambitious emission reduction goals also involves efforts from other par-

ties such as local governments, cities, and private actors. The ICAT Non-State and Subnational Action (NSA) Guide seeks to help public sector decisionmakers and analysts in determining the impact of such actions and their contribution to goals defined by national governments.

The Ministry of Environment and Sustainable Development (MADS) has led the process of quantifying contributions from different actors. Particularly through resolution 1447 of 2018 which regulates the country's Monitoring, Reporting and Verification (MRV) system, and the National Registry for the Reduction of Emissions (RENARE). This resolution lays the foundation for obtaining reliable emissions reduction data that can then be used to verify the achievement of established goals.

In this context, the ICAT project in Colombia has implemented the ICAT NSA Guide and quantified the aggregate impact of mitigation actions carried out by private sector and city-level actors in particular in order to support MADS in decision making at the regional and national level, help inform the updated NDC, and further the development of protocols for the monitoring, reporting, and verification of actions. The project was carried out in parallel with the update of the Colombian NDC and as a complement

to this process. It is also the first exercise of this type to be carried out in the country.

In response to MADS needs, the project focused its analysis on direct emissions and electricity consumption from companies in Colombia. For territories, the analysis was focused on the transport sector at the urban level. This resulted in the modeling of 25 private sector actions and 23 transport actions implemented in Colombian cities that achieve a reduction of 3.5

million tCO<sub>2</sub> in 2030. Additionally, some hypothetical cases were evaluated that quantified what would happen if 14 departmental capitals electrified 10% of their public transport fleet and if the 100 most populated cities in the country increased their cycle infrastructure. In these cases, reductions of an additional 231,000 tCO<sub>2</sub> would be achieved in 2030.

The project involved significant efforts in gathering information from different actors and har-

monizing information in order to present an aggregate result. These efforts resulted in some lessons and recommendations for future exercises that will improve protocols for registering mitigation actions in the country. Although the results presented here do not constitute the totality of the actions of non-state and subnational actors that are being carried out in Colombia, this exercise is an important step in the harmonization of quantification of measures aimed at reducing GHG emissions in Colombia.





# METHODOLOGY USED IN THE ICAT PROJECT IN COLOMBIA

The ICAT project evaluated the efforts of 19 companies and 23 transport projects in different Colombian cities which have a potential for reducing CO<sub>2</sub> emissions. How was this accomplished?





# REDUCTION OF GHG EMISSIONS IN THE PRIVATE SECTOR AND IN TRANSPORT PROJECTS IN CITIES

The ICAT project identified 48 actions with GHG emission reduction potential. Of these, 25 correspond to the private sector and 23 to transport actions in 16 cities. These are the results by 2030.



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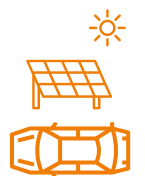


The 48 identified actions from the private sector and cities will provide a reduction of **3.5 million** tons of CO<sub>2</sub>. Of this reduction:

- **43 %** come from industrial processes actions (such as fuel substitution and more energy-efficient technologies).
- **30 %** come from transportation actions (such as electrification of the fleet in cities and companies).
- **21 %** come from electricity generation.
- **6 %** come from buildings (such as energy-efficiency lighting).



Actions without overlaps could reduce more than **1.1 million tCO<sub>2</sub>e**. Of these, **71 %** come from actions in the private sector.



Confirmed actions without overlap contribute to the avoidance of **456 000 tCO<sub>2</sub>e**



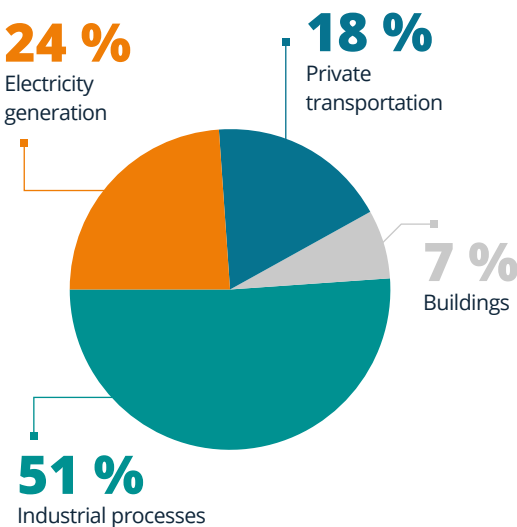
Planned actions associated with electric mobility from companies and cities, which are to be implemented between 2020 and 2030, add a reduction close to **180 000 tCO<sub>2</sub>e**. Representing a **4%** of the emission reduction target established in ENME.

The contribution of private sector actions to emissions reductions: **2030**

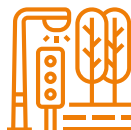


- **25 evaluated actions**, which represent a potential emissions reduction contribution of **3 million tCO<sub>2</sub>e**
- **7 Actions** without overlaps that could provide a reduction of **800 000 tCO<sub>2</sub>e**
- **15 Actions** were confirmed with companies and represent about **600 000 tCO<sub>2</sub>e**

How do companies actions contribute to emissions reductions? **2030**

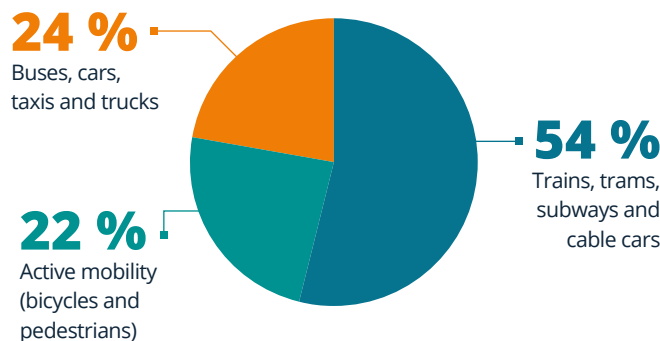


The contribution of city actions in the transportation sector to emissions reductions: **2030**



- The **23 transport actions** implemented in cities evaluated by the ICAT project contribute to a reduction of approximately **500 000 tCO<sub>2</sub>e**
- **13 actions** with confirmed information would avoid about **200 000 tCO<sub>2</sub>e**
- **7 actions** without overlap contribute to a reduction of about **307 000 tCO<sub>2</sub>e**

What is the distribution of the emissions reductions from the 23 transportation sector actions? **2030**



What would happen if by 2030 ...

- **15 departmental capitals** electrified **10 %** of their public transport fleet: Colombia would reduce **180 000 tCO<sub>2</sub>e**
  - the **100 most populated cities** built a combined **1580 kilometers** of cycling infrastructure: Colombia would reduce **51 000 tCO<sub>2</sub>e**
- These two scenarios would lead to a reduction of **0.5 %** of total transport sector emissions in the country.





# STORIES



**NON-STATE AND SUB-NATIONAL ACTORS PLAY A FUNDAMENTAL ROLE IN REDUCING GHG EMISSIONS IN COLOMBIA. WHAT ARE THE CHALLENGES THESE ACTORS FACE? WE TELL FOUR STORIES—BISINÚ (MONTERIA), MEGACABLE (PEREIRA), LADRILLERA MELÉNDEZ AND GRUPO ÉXITO—IN ORDER TO HIGHLIGHT THE CHALLENGES AND BENEFITS OF REDUCING GHG EMISSIONS IN DIFFERENT CONTEXTS.**



Case study: Bisinú, Monteria.

# BISINÚ: A SAFER AND MORE SUSTAINABLE WAY OF TRANSPORT FOR MONTERIA

**Carlos Ordosgoitia Sanín**  
Mayor of Monteria



**BISINÚ INCREASED ITS CAPACITY FROM 100 BICYCLES AND FOUR STATIONS IN 2015, TO A TOTAL OF 144 BICYCLES AND 12 STATIONS ACROSS THE CITY IN 2020.**

The Bisinú public bicycle system has positioned itself in the last five years as a means of transport without direct CO<sub>2</sub> emissions that is safe and easily accessible for Monterianos, Monterianas and visitors to our city. According to estimates by the operator Consorcio Bisinú, 11,000 users have participated in the system since it was created in 2015 and went from an average of 40,000 trips a year to 90,000 in 2020. This has represented a reduction of 68 tons of CO<sub>2</sub> per year.

Given the exceptional circumstances of the COVID-19 pandemic, the public bicycle system became a popular alternative for locals. This is due to the possibility of traveling safely in the open air, with a lower risk of contagion of the virus and also being a transport mechanism that is used individually and complies with biosanitary protocols.

Encouraging the use of bicycles and the public transport system generates several benefits for the city: it reduces greenhouse gas emissions and local air pollutants; it is part of the traditional activities of Monterianos and Monterianas; it reduces travel costs; it is easily accessible; it promotes physical activity; and it is a safer alternative in the midst of the health crisis.

Therefore, our goal is to promote its use. Monteria has 43 kilometers of cycling infrastructure and between 2020 and 2023, we will build an additional 20 kilometers. Likewise, Bisinú went from having a capacity of 100 bicycles and four stations in 2015, to 144 bicycles and 12 stations located in different parts of the city in 2020.



Together with organizations like C40, we are working to expand Bisinú and connect the different sectors. Also, with resources from the Green Climate Fund, we will expand and modernize the system. These projects

are part of a process to make bicycles a powerful mean of transport in our city, with all its benefits, among which we highlight the reduction of emissions which would be generated from other modes of transport.

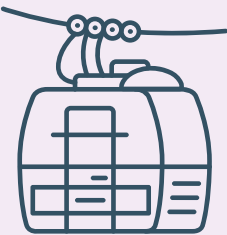
**TO ENCOURAGE THE USE OF BICYCLES AND PUBLIC TRANSPORT BRINGS MANY BENEFITS FOR THE SOCIETY.**



Case study: Megacable, Pereira.

# PEREIRA’S AERIAL CABLE: AN EMBLEMATIC CITY PROJECT

**Carlos Maya**  
Mayor of Pereira



**Megacable offers an additional transportation alternative for low-income people and prevents the emission of 756 tons of CO<sub>2</sub>e per year..**

Megacable is an overhead cable line powered by 100% electricity. The line has four stations located in different strategic sectors and 50 cabins, each with capacity for 10 people. It is part of Pereira’s commitment to improve the quality of life of its citizens, reduce environmental impact and facilitate movement between strategic sectors.

The 3.4-kilometer-long line will be inaugurated in February 2021. It will be integrated with the Megabús mass transport system and with other modalities such as Megabici the public bicycle system it will also connect the capital of Risaralda with transport systems in the municipalities of Dosquebradas and La Virginia.

It is a milestone for the city. Megacable is an efficient alternative technology in the middle of the Pereira mountainous relief. It reduces travel times by up to 50 minutes, offers an additional alternative to people with low incomes and avoids the emission of 756 tons of CO<sub>2</sub> per year, amongst other pollutants, that deteriorate local air quality and presents health risks.

Given the multiple challenges the world faces to mitigate climate change, our commitment to Megacable with zero direct emissions will be important for the country to advance in its international commitments and goals. For this reason, the project will report its contributions in reducing emissions in the National Registry for the Reduction of GHG Emissions: RENARE.

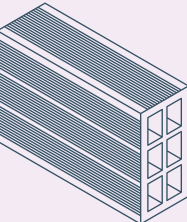




Case study: Ladrillera Meléndez

# TECHNOLOGICAL TRANSFORMATION AS A STRATEGY TO REDUCE GREENHOUSE GAS EMISSIONS

**Luis Felipe Aramburo**  
General Manager  
Ladrillera Meléndez S.A.S



**AUTOMATIC  
DRYING ALLOWED  
US TO EVOLVE  
FROM A 24-  
HOUR PROCESS  
INTO A TWO-  
HOUR PROCESS,  
REDUCING COAL  
CONSUMPTION  
PER TON OF DRY  
BRICK BY 40%.**

The country’s brick industry boosts the national economy, while at the same representing an environmental challenge with impacts on local air quality and climate change. According to the validated inventory of the brick industry in Colombia (2015), there are 1,378 companies dedicated to this work and these are responsible for 3 million tons of CO<sub>2</sub> emissions each year.

At Ladrillera Meléndez, we understand that our operations should aim to reduce greenhouse gas (GHG) emissions through the use of renewable energies and improve our energy efficiency. The drying and firing of the brick are the processes that generate the highest emissions of these gases because they use high amounts of fuels, such as mineral coal.

Since 2014, we have implemented a strategy to increase energy efficiency and thus reduce these emissions. We have innovated with technologies that allow us to use energy efficiently and reduce the consumption of coal and electricity in our operations:

1. We replaced the dryer feed system –manual operation and with charcoal- with an automatic, self-regulating “traveling grill.” This enables a uniform burning of the brick and takes advantage of process heat to reduce waste and overall coal consumption by 14% per ton of brick produced.



© Ladrillera Meléndez

2. We replaced the drying chambers with state-of-the-art technology. The previous process generated damage to the bricks, allowed hot air to escape and was manual. Automatic drying allows us to shift from a 24-hour process to a two-hour process and reduce coal consumption per ton of dry brick by 40%.
3. We installed a chain conduction system with two mills and a return system to dose the supply of coal in the ovens used to manufacture the brick. With the old system, the supply of coal

was done manually, and the mineral was wasted. The new technology reduces the consumption of this fuel by 13% per ton of fired brick.

4. With the installation of photovoltaic panels in a three-hectare area, we seek to generate 25% of the energy needed in our operations.

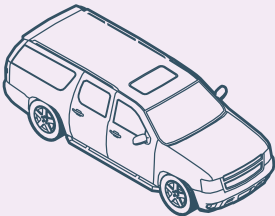
Thanks to these technological transformations, between 2015 and 2030 we will achieve a cumulative reduction of 121,267 tons of CO<sub>2</sub> emissions.



Case study: Grupo Éxito

# EFFICIENT USE OF ENERGY TO REDUCE CO<sub>2</sub>e EMISSIONS

**María Camila  
Yepes Peláez**  
Senior Sustainability Analyst  
Grupo Éxito



**IN 2020, WE  
COMMITTED TO  
REDUCING GHG  
EMISSIONS FROM  
OUR OPERATIONS  
BY 35% BY 2023.**

In 2015, the United Nations General Assembly expressed its commitment to sustainable development by defining the Sustainable Development Goals (SDG) agenda. In line with this aim, at Grupo Éxito we focused our efforts on *'Mi Planeta'*, a sustainability strategy based on SDG 13: Climate action, which seeks to measure, mitigate and offset the impact of climate change from our operations.

In 2020, we committed to reducing 35% of the greenhouse gas (GHG) emissions from our operations by 2023. The projects we lead for this goal are:

1. By 2030, refrigeration systems that use gases known as hydrofluorocarbons will be replaced in large areas by less polluting technologies. This will reduce emissions by approximately 50%.
2. We work to use energy efficiently in all our stores. This implies changes in lighting, installation of sensors and technology to ensure the closing of refrigerator doors.
3. Hand-in-hand with our partner Green Yellow, we installed the Pétalo de Córdoba solar park, which will supply the energy demand of air conditioning systems for 27 stores, avoiding 6,000 tons of CO<sub>2</sub> emissions. Additionally, we have seven solar PV installations in shopping centers and in the parking lots of two stores.
4. We have 30 electric vehicles for home deliveries. We promote discounts to our employees for the



© Grupo Éxito

purchase of electric cars, bicycles and scooters and we seek to increase the offer of these products for our customers.

5. We started our path towards carbon neutrality with the offsetting of emissions from the Fres-

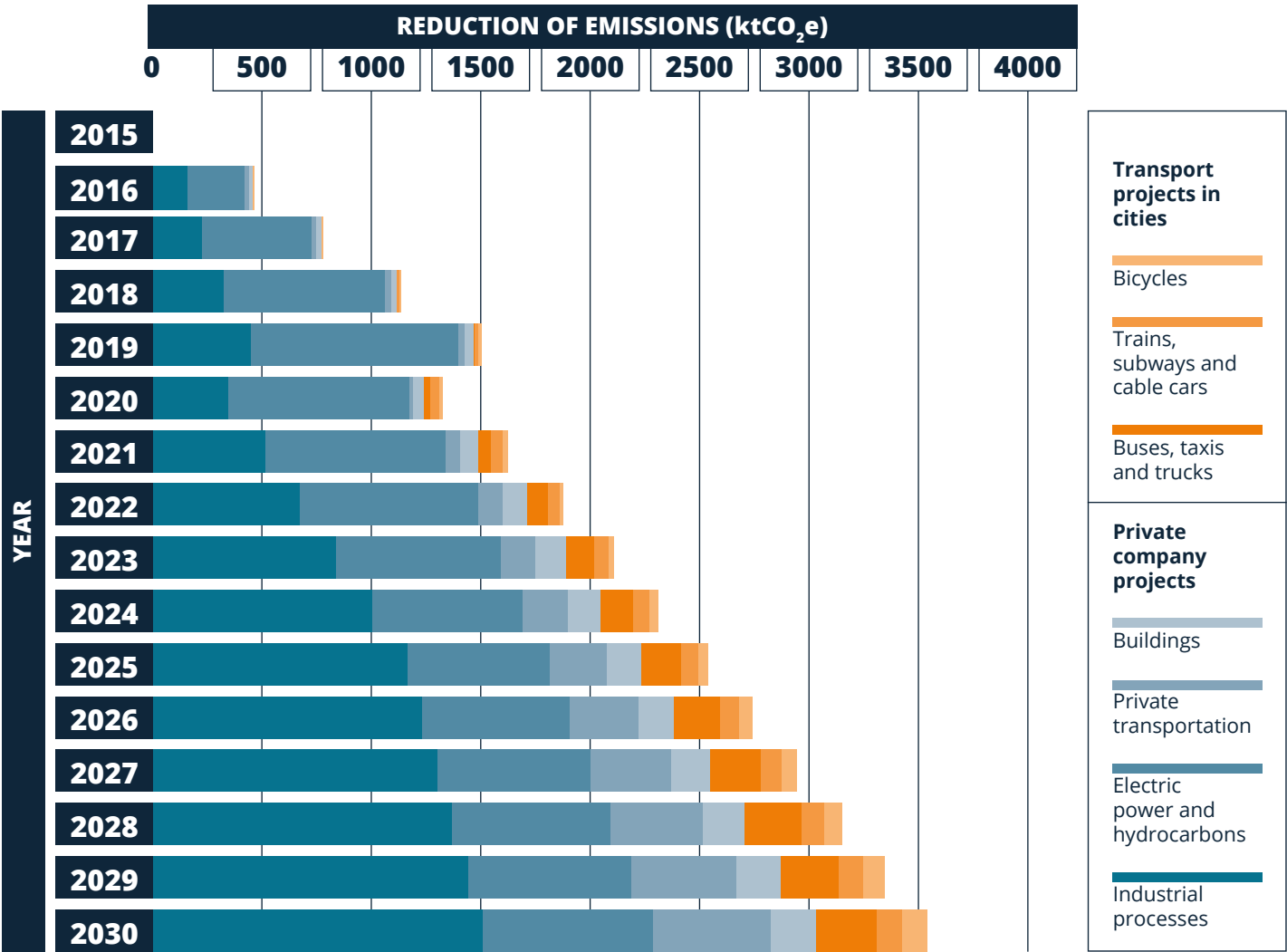
hMarket and Carulla brands. This is a milestone for Grupo Éxito, which will undoubtedly drive new markets and goals for our company.



# RESULTS

This section shows the results of the 48 actions evaluated in the Colombia ICAT for companies and transport projects in cities. For this process, the ICAT NSA Guide and accompanying ICAT CAAT tool were utilized.

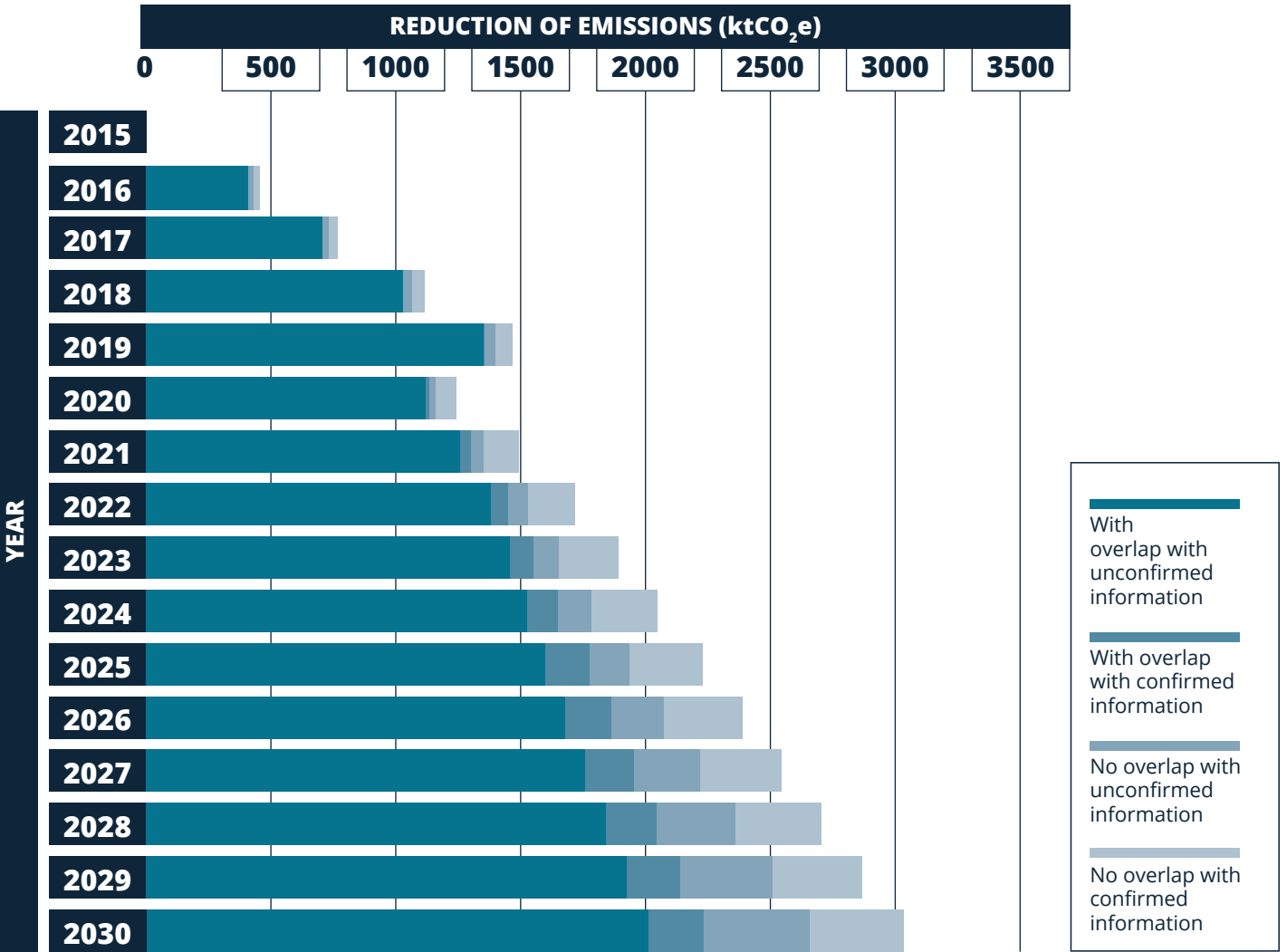
## 1 | Reduction in total emissions from all actions evaluated in the ICAT project, by actor type and action type



The total emissions reduction for all actions evaluated in the ICAT project in 2030 is 3.5 million tCO<sub>2</sub>, which represents a reduction of 0.8% from the national baseline in the same year. While this value may seem low, only a subset of non-state and subnational actions have been quantified.

Of the total emissions reduction (3.5 million tCO<sub>2</sub>e), 30% corresponds to reductions from transport sector actions of companies and cities. Industrial process reductions represent 8% of the total, and those from electricity consumption are responsible for 4%.

## 2 | Emissions reductions from actions implemented by the private sector analyzed in this project



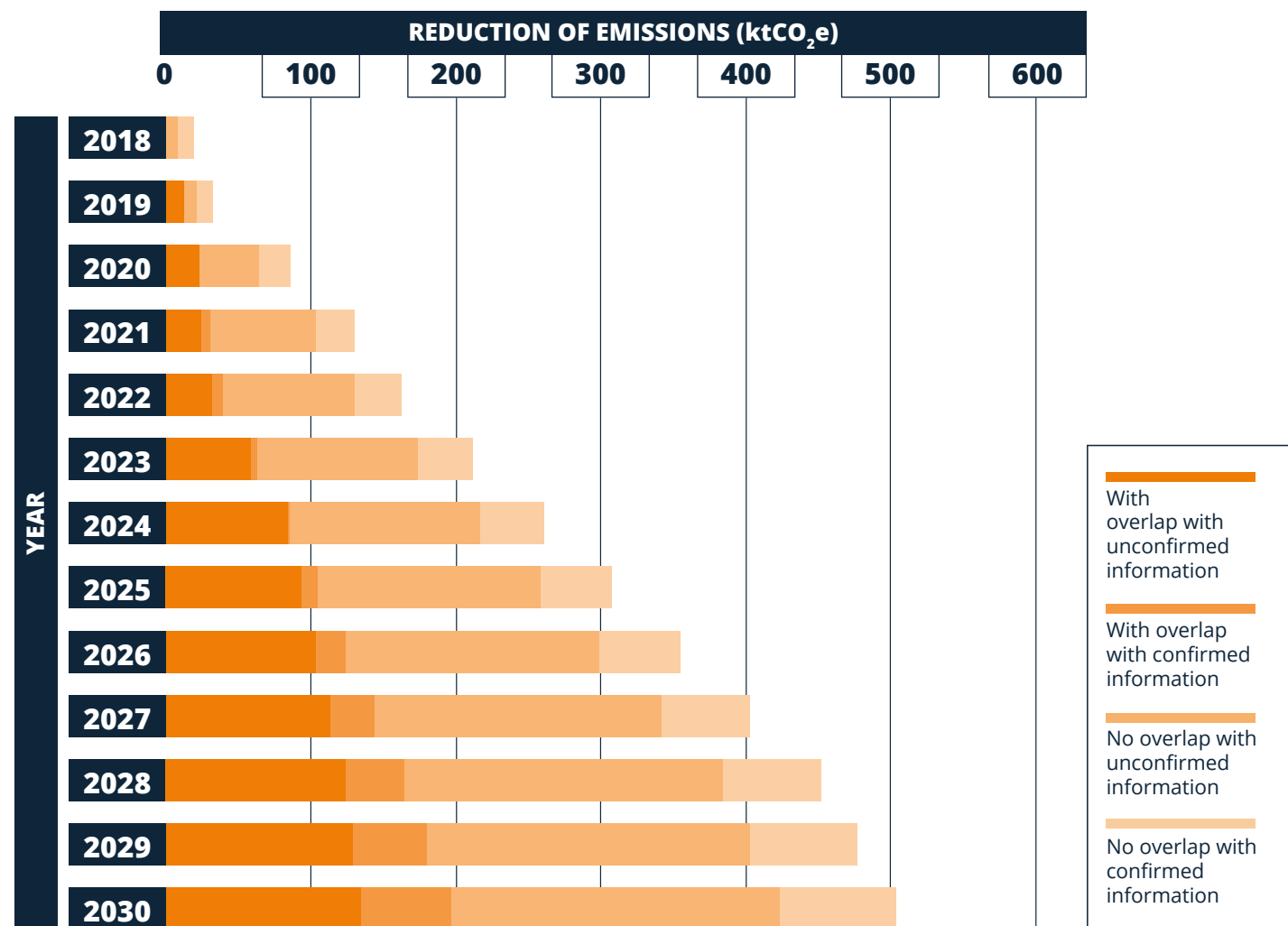
In total, the private sector actions identified in this project add reductions of about 3 million tCO<sub>2</sub> in 2030, the majority of which (2 million tCO<sub>2</sub>) comes from actions with overlap and with unconfirmed information. Of the total 800,000 tCO<sub>2</sub> without overlap, only 47% could be confirmed. Reductions from actions with overlapping and uncon-

firmed information grow noticeably between 2016 and 2019 due to the implementation of renewable energy projects from one of the main generators in the country. The benefits of this action extend until 2030 but at a lower annual rate. The 0.8% reduction is calculated relative to the updated 2020 NDC baseline scenario.

<sup>1</sup>The 0.8% reduction is calculated relative to the 2020 NDC update baseline scenario.



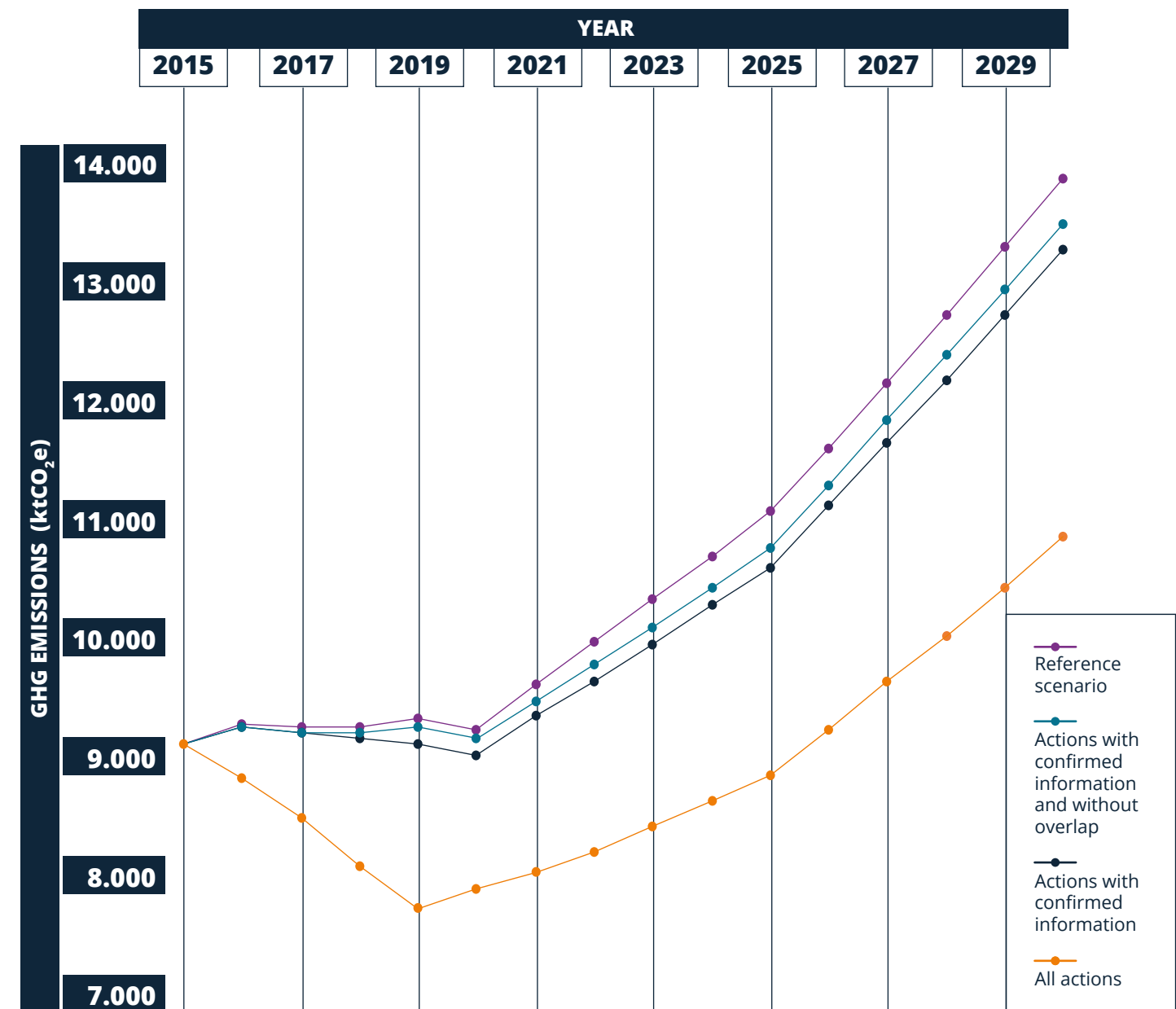
### 3 Emissions reductions from city transportation actions, by information status



The 23 measures in cities add up to reductions of 500,000 tCO<sub>2</sub> in 2030. 45% (227,000 tCO<sub>2</sub>) are from actions without overlap but with unconfirmed information. This highlights the importance of establishing better communication channels with cities to increase national ambition. The overlapping measures are a

combination of bicycle actions (NAMA Tandem) and electric vehicle (ENME) actions in Bogota, Medellin, La Guajira and Orinoquia. However, in the latter two the information could not be confirmed. These measures add up to a reduction of 160,000 tCO<sub>2</sub>, of which 50% comes from Bogota and Medellin.

### 4 Emissions trajectory of private companies, by information status

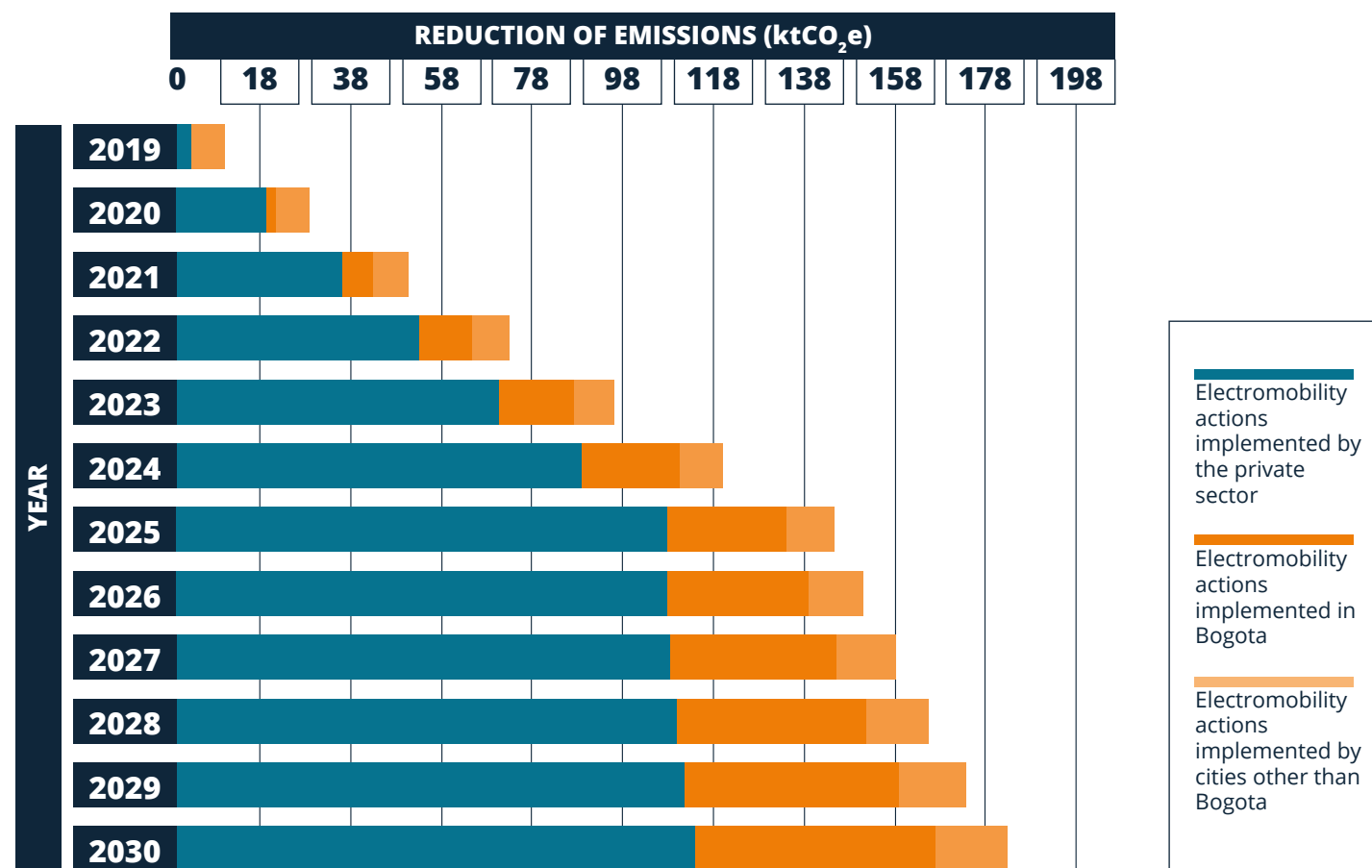


If the actions evaluated here by private sector actors were not carried out, in 2030 their emissions would total an estimated 13,900 tCO<sub>2</sub>. In contrast, if they implement the 25 modeled actions, their emissions will be close to 10,800 tCO<sub>2</sub>,

which represents a reduction of more than 2,000 tCO<sub>2</sub>, or 22%. This is in line with the goal of 20% presented by the country in its NDC in 2015; however, the share with confirmed information reach only 4% of its total emissions in the baseline.

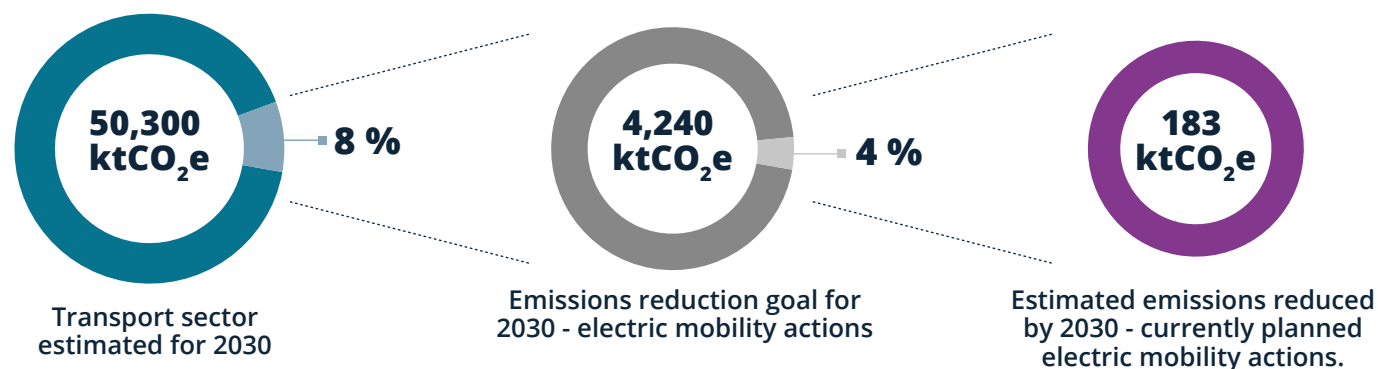


## 5 Emissions reductions from city transportation actions and private companies within the framework of the ENME

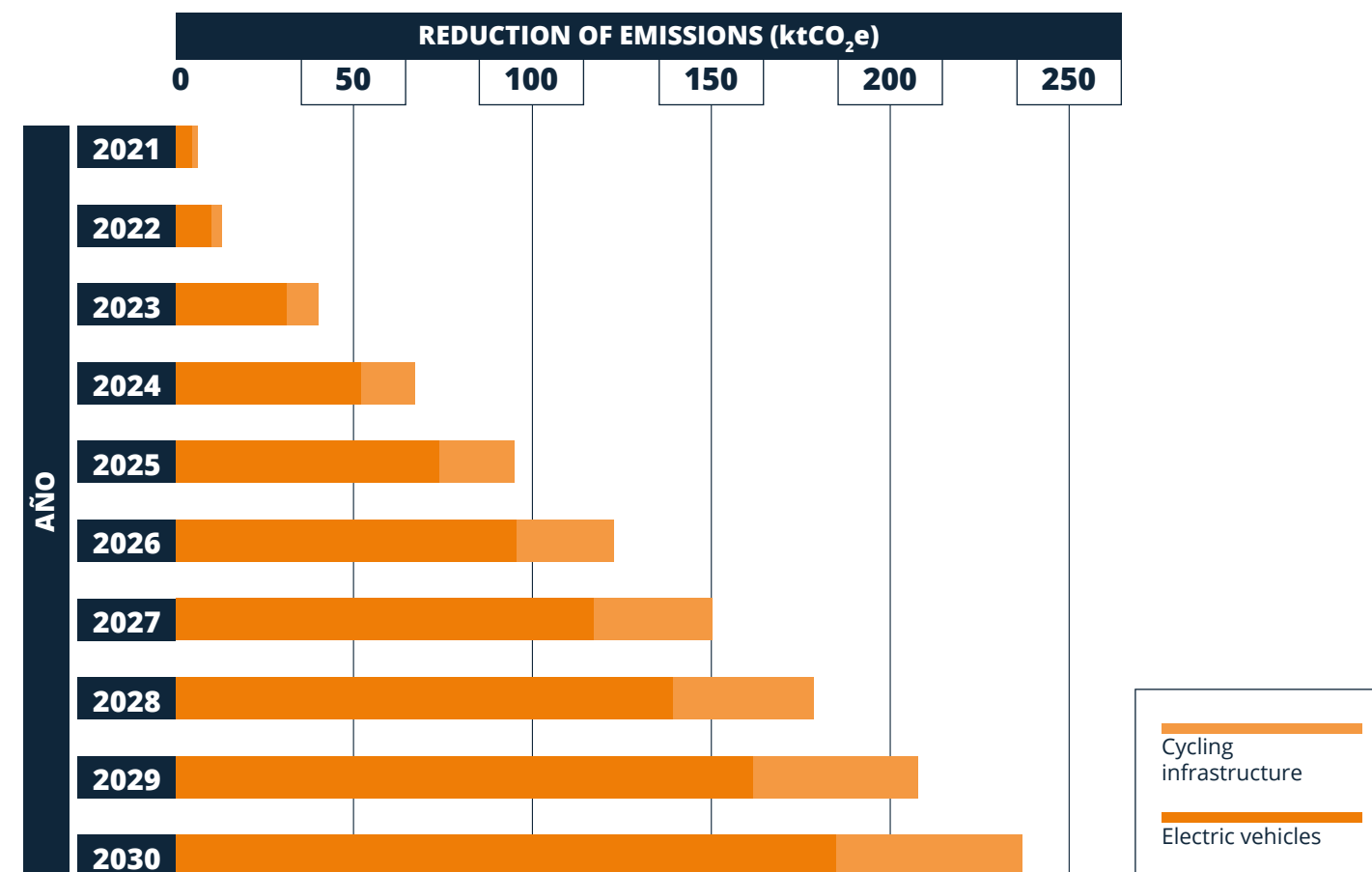


According to the reference scenario of the last update of the NDC, emissions from the entire transport sector in Colombia in 2030 will be 50.3 million tCO<sub>2</sub>. If the ENME goal is reached, 4.2 million tCO<sub>2</sub> (8%) will be avoided. The actions identified in this analysis represent 4% of this goal. Actions aimed at electrification of private company fleets evaluated in this

analysis represent a reduction of 29% from the estimated baseline, which implies more ambitious goals than the ENME. By contrast, in cities the opposite case occurs. In Bogota, for example, the city with the most ambitious goals, electrification of the fleet according to its current target would represent a 1% reduction (53,000 tCO<sub>2</sub>) in its transport emissions.



## 6 Emission reduction in the replicability scenario



Based on the analysis carried out for the city transport sector, two actions with a high potential for replication in other regions of the country were identified: electrification of public transport fleets (buses) and increases in bicycle infrastructure. As part of this exercise, the consulting team estimated potential emissions impacts if these two actions were carried out on a larger scale.

The results show that by electrifying 10% of the fleet of the 15 cities evaluated, 180,000 tCO<sub>2</sub> would be avoided in 2030, which represents 4% of the ENME's goal. This demonstrates that in order to achieve the defined goal, it will be essential to set more ambitious goals.

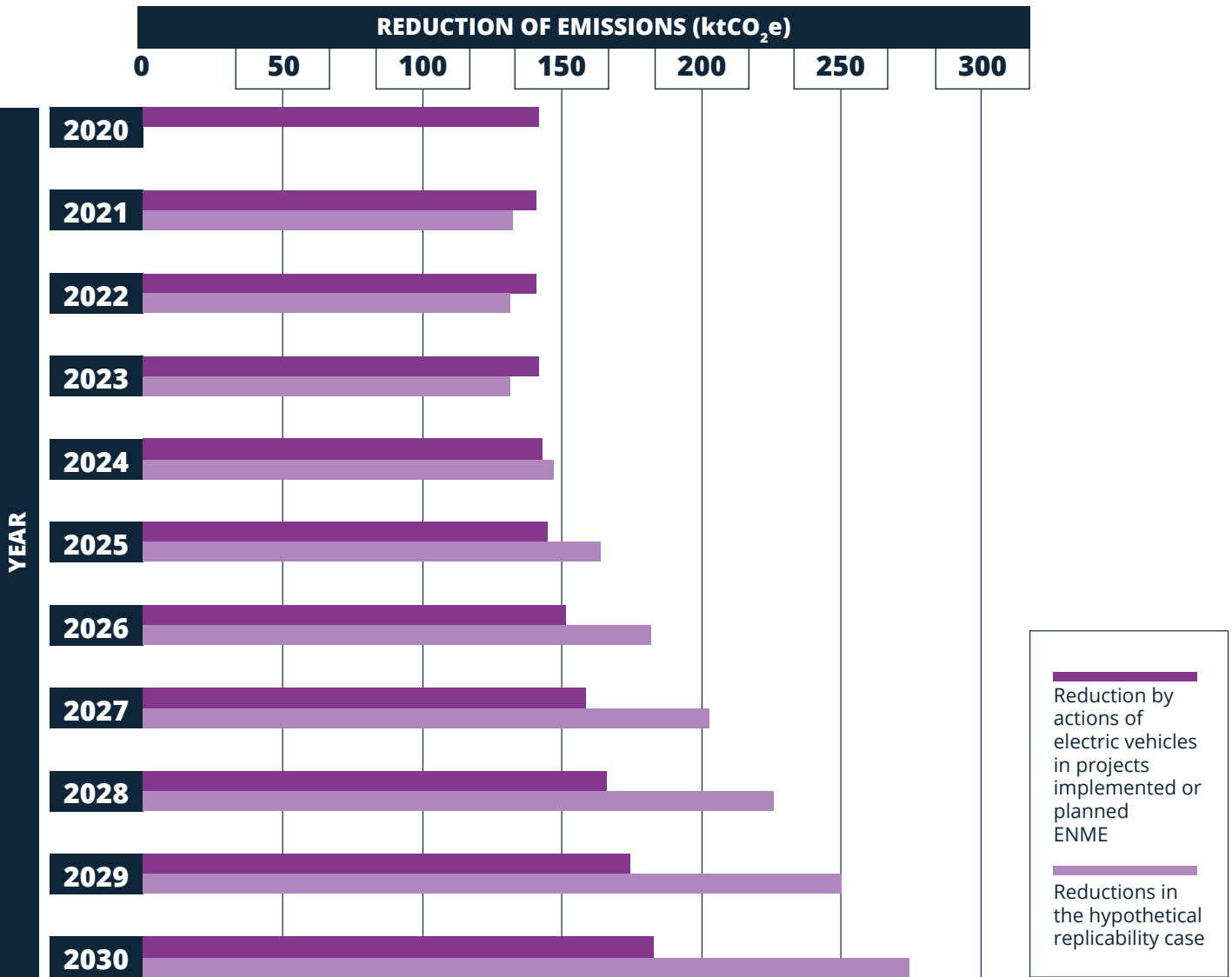
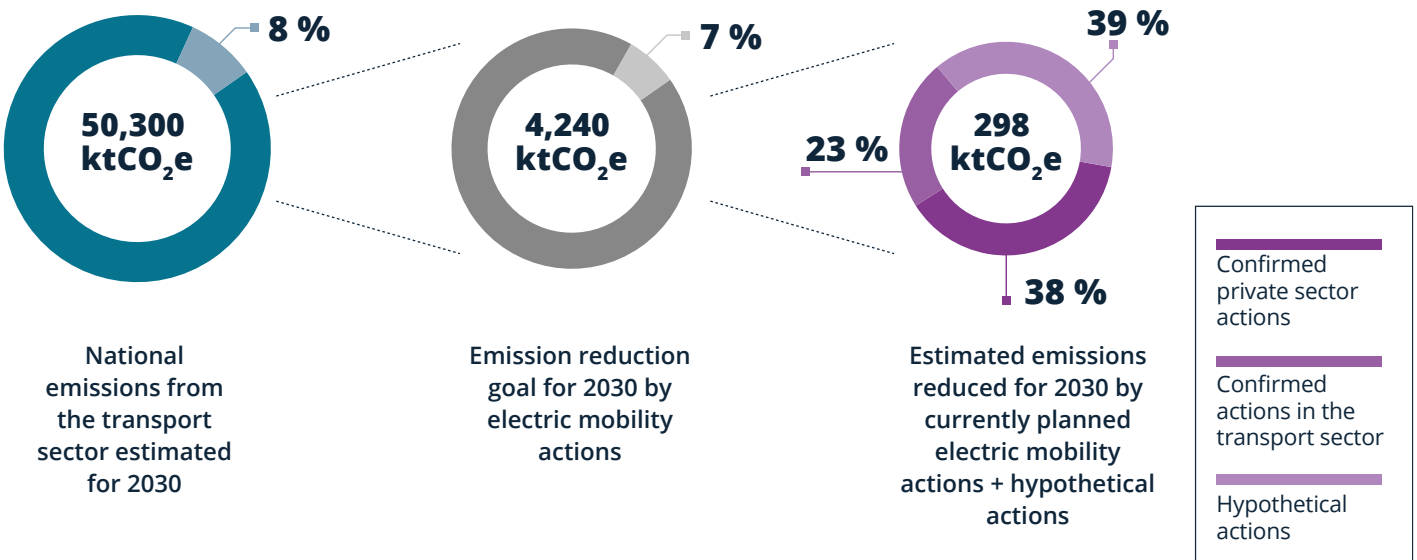
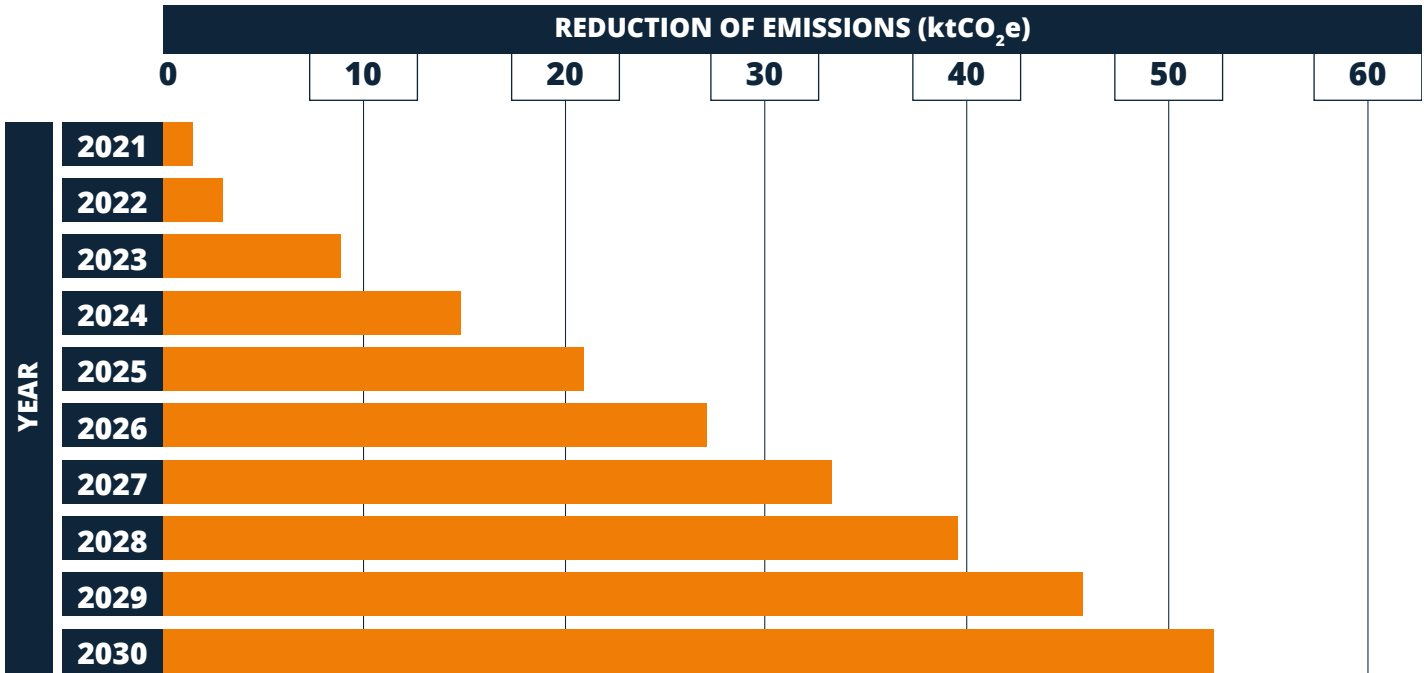
The potential for avoided emissions through increased cycling infrastructure in the 100 Colombian cities with the largest populations corresponds to an estimated 51,000 tCO<sub>2</sub> in 2030.

If these new actions from the hypothetical case are added to those already identified in this analysis (actions planned for the transport sector and private sector), we find that together they represent only 7% (298 ktCO<sub>2</sub>) of the total national ENME goal for electric mobility.



6

Emissions reduced in the replicability scenario for increased cycling infrastructure





# RECOMMENDATIONS

The ICAT Colombia project is part of an effort by the National Government to make visible and improve the transparency of GHG emissions reduction reporting from non-state actors such as private companies as well as sub-national actors such as cities. The

results presented and the following recommendations are expected to help inform decision-making and identify challenges and opportunities to achieve the goals set by the country in the implementation phase of the NDC.

1. **It is necessary strengthen private sector and city-level capacity in the adequate reporting of climate actions and corresponding emissions reductions.** The Ministry of Environment and Sustainable Development requires that emission reductions be reported and registered in RENARE so that they become part of the NDC. To achieve this, it is necessary to have an MRV (monitoring, reporting and verification) scheme designed for each project, which in most cases does not yet exist. Increased technical capacity is required to overcome this barrier and thus contribute to the fulfillment of the country's emission reduction goals. It is recommended that MADS include in the implementation phase of the NDC a strategy to strengthen the technical capacity of non-state actors and city governments in this regard.
2. **The National Government could enable a mechanism for companies and cities to request support in developing MRV systems and registering actions in RENARE.** A field could be included for this purpose within the RENARE platform in its feasibility phase or, alternatively, the support procedure could be communicated through the regional nodes. Regional organizations could disclose the information to private sector actors as well as development banks that finance projects with GHG mitigation potential.
3. **The National Government should fully include subnational and non-state actors in the next update of the NDC.** Subsequent NDC updates can quantify emissions reductions from non-state and subnational actors from the beginning of the modeling process. This can lead to improved understanding of actions are

scalable and have high mitigation potential and better documentation of obstacles and opportunities. Documentation accompanying the NDC can further raise the profile and visibility of the collaborative efforts of these actors and the requirements for successful implementation.

4. **The application of the methodology of the Initiative for Transparency in Climate Action (ICAT) can facilitate NDC implementation.** The methodology used in this project allows setting ambitious goals to reduce GHG emissions; recognize the progress of sub-national and non-state actors in complying with the NDC; and identify the potential for accelerating the fulfillment of the established goals.
5. **Partnerships with trade associations trade associations can be leveraged to ensure broad-based participation from private sector actors in exercises that evaluate contributions to emissions reductions.** The involvement of unions and associations will be key to ensuring a broad sample of private sector actions and opportunities for their contribution to the NDC can be identified. Inclusion of these groups will also help with identification of challenges and opportunities to support public sector needs that are relevant to businesses. In this exercise, it will be important to highlight and include not just companies that have made the greatest progress in reducing emissions, but also productive sectors that generate the most emissions and which are less frequently represented. Taking an inclusive approach and expanding the space for dialogue will be key to increasing the private sector's collective commitment to reducing emissions.



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