

Road To Carbon Neutral Project

PROCESS OF DEVELOPMENT OF THE VISION OF DECARBONIZATION IN TRANSPORT & ENERGY

Cundinamarca
Colombia 2050



Figure 1. Mission to Cundinamarca's State Government Office to socialize and develop the Decarbonization Vision for Cundinamarca.

Introduction

Between March and December 2021, Climate Group, The Climate Reality Project and OPEPA collaborated to implement Road to Carbon Neutral: Visions for Colombia 2050, a project funded by UKPACT with the objective of building capacity at the Colombian states of Antioquia, Atlántico, Boyacá, Cundinamarca, and Valle del Cauca to develop a decarbonization vision at the state level. The consortium engaged to of public servants, entrepreneurs, civil society, and academia to build the capacity of public servants, entrepreneurs, civil society, and academia The vision is the first step in the development of a decarbonization trajectory according to Climate Group's [pathways framework](#) to promote carbon neutrality and align with Colombia's national climate policy E2050.

Process of Political and Technical Involvement

The stakeholder engagement process and technical assistance included desk research, field visits and theoretical and practical capacity building workshops. During these online events, the organizations introduced the departments to international climate change policies such as NDCs and long-term strategies and the National Government

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presented the E2050, Colombia's national long term-strategy. Sustainable mobility and energy productivity international experts as well as other Latin American governments leading the energy and transport transitions highlighted how they have implemented transport and energy decarbonization actions in territory so that Cundinamarca's government officials could learn about trends and best practices. In a practical workshop, Cundinamarca developed a vision of decarbonization based on the [Catalog of Decarbonization Actions in Energy and Transport](#), a manual that provides strategies, measures and concrete actions that can be implemented by the public and private sector to reduce their emissions. Moreover, the consortium held biweekly calls with a Cundinamarca focal team comprised of state officials, company representatives and academics, to socialize, edit and adapt the catalogue's decarbonization measures to the context of Cundinamarca. This effort resulted in the [editable version of the Catalog of Actions in Energy and Transport of Cundinamarca](#), which contains both the existing policy and new actions that the department can introduce as policy or implement to reach carbon neutrality by 2050.



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Figure 2. Socializing with State Environmental Secretary the Catalogue of Decarbonization Actions in Energy and Transport

In addition, an external consultant, led a quality assurance process of the catalogue, and delivered a **prioritization tool** to identify the most relevant mitigation measures for each department. The tool uses two criteria, *the level of readiness* that determines the level of knowledge, tools, experience, and capacity that the department has to implement an action. To determine the level of readiness the tool uses the following indicators: 1) Availability of a policy and/or regulatory framework to support the measure both at national and at the subnational level, 2) Availability of funding sources or incentives to promote the measure and 3) Return of the investment which responds to the profitability of the projects associated with the measure. The second criteria determine the *capacity to promote a sustainable low-carbon economy*. To determine the measure's contribution to sustainable development, the tool uses the following indicators: 1) GHG mitigation potential; 2) Positive impacts on the environment and 3) Positive impacts on quality of life. The tool gives an important technical reinforcement to the elaboration of the visions. Moreover, departments have now a technical instrument that can guide them on the prioritization of actions for further climate policy instruments. It could also enable Cundinamarca to continue the development of its decarbonization pathway.

Moreover, the consultant prepared a [report with recommendations on the measures that Cundinamarca should prioritize](#) with a more detailed analysis of the department's emissions profile, population projections, data on energy demand and consumption of economic activities, and current state of the territory's mobility infrastructure to establish which decarbonization measures will have the greatest impact if the department was to develop a pathway to include them in their long-term vision.





Construcción de las visiones

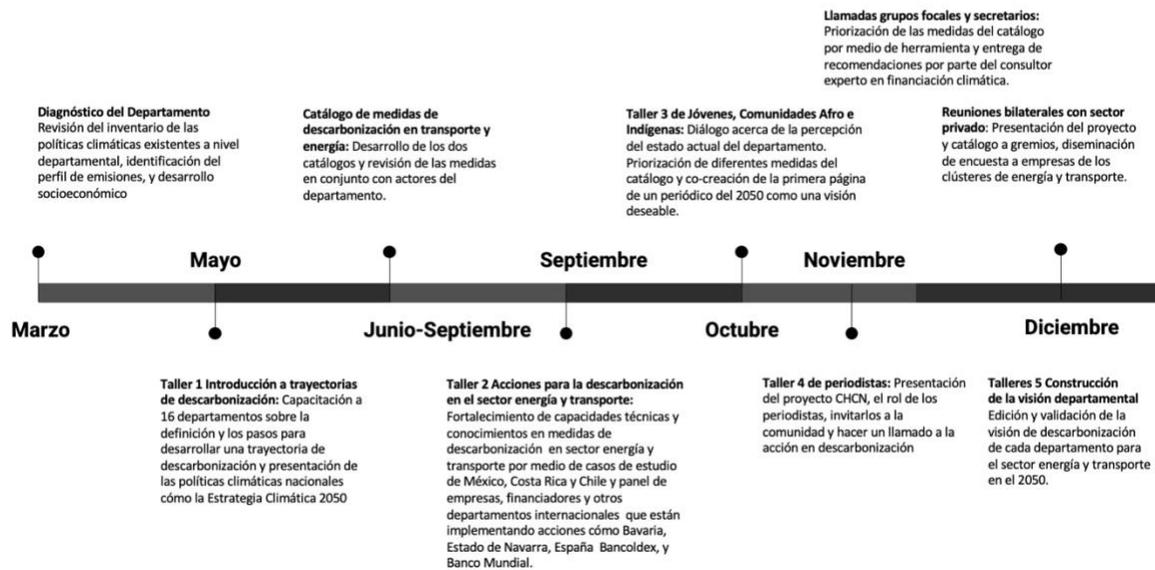


Figure 3. Timeline of the process of building decarbonization visions during 2021

About the Stakeholder Engagement

The consortium visited each department in person. In Cundinamarca, the team met with representatives of the Ministry of the Environment. Furthermore, the project team participated in the National Meeting of Regional Committees for Competitiveness & Innovation in Bogotá, where the team met with the technical secretary of Cundinamarca’s Commission for Competitiveness and Innovation, Marcela Corredor. This departmental entity is responsible for the coordination and articulation of public-private cooperation to promote spaces for dialogue with the most relevant industries in the department, thus involving the private sector. On December 14, 2021, Road to Carbon neutral held the practical virtual workshop to develop a decarbonization vision for Cundinamarca in transport and energy online with participants from the Secretaries of Environment and Health, the Chamber of Commerce of Bogotá, The regional environmental authority (CAR), the gas utility company Vanti, the National University and Sabana University. This workshop exercise included input from youth, ethnic



communities, state government officials and private sector representatives. These preferences were used to develop a preliminary Cundinamarca decarbonization vision that was validated and edited during these virtual hands-on sessions.

Results

Below is the vision of decarbonization in energy and transport developed and edited with representatives of the secretariats, civil society, academia and the private sector, a group that reviewed the four components of the vision: energy decarbonization actions, transport decarbonization actions, co-benefits, and key economic sectors. By identifying actions from the Catalogue, using the report on researched recommended actions for the state, and entering them into prioritization tool, the states used a tool to evaluate the actions according to their level of preparation (existing policy framework, availability of funds and return on investment) and their ability to reduce emissions, improve the quality of air and quality of life of its communities the states develop decarbonization visions with viable and customized to their context actions.

Visión de descarbonización de Cundinamarca en Transporte y Energía

Para el 2050 Cundinamarca será un departamento carbono neutral, cuya matriz energética estará conformada mayormente por energías limpias como hidroeléctrica y biogás. Reducirá su demanda por medio de medidas de descarbonización como la eficiencia energética en hornos en su sector residencial y sus industrias metalúrgicas, y ladrilleras. Especialmente en sus sectores agroindustrial, textil y comercial el departamento busca impulsar la eficiencia energética en calderas y suministro de vapor para reducir las emisiones de sus procesos. Sumado a esto Cundinamarca incentivará proyectos de eficiencia energética en nuevas construcciones y priorizará un desarrollo rural sostenible que incluya la reducción en el consumo de leña, la restauración y conservación de sus ecosistemas para frenar la pérdida de biodiversidad. Esto resultará en cobeneficios para Cundinamarca como mejoras en la calidad del aire, mejora en la calidad de vida de las comunidades, creación de empleos verdes y aumento de la productividad empresarial. Asimismo, el departamento de Cundinamarca será pionero en la implementación de un sistema ferroviario eléctrico que conectará a todos sus municipios impulsando su economía. Cundinamarca además contará con una gestión del sistema vial más eficiente, financiará mejoras al servicio de transporte público (a incluir aerocables) e incentivará la extensión de ciclo rutas y el fomento de la bicicleta como medio de transporte de última milla. Cundinamarca continuará la reducción tributaria para vehículos híbridos y eléctricos. Esto le permitirá obtener otros beneficios como la reducción de tiempo en los viajes, en la contaminación y en el número de enfermedades respiratorias. La visión se logrará en alianza con el sector privado, público y sociedad civil. Actualmente Cundinamarca por medio de su “Declaratoria de emergencia climática” se comprometió a reducir sus emisiones en un 50% para el 2030 y busca diseñar una transición justa y concordante con sus poblaciones más vulnerables.

La metodología usada para el desarrollo de las visiones de descarbonización a largo plazo del departamento se basa en las trayectorias de descarbonización "pathways framework" de Climate Group: <https://www.theclimategroup.org/pathways-framework>

Medidas de descarbonización prioritarias en energía **Medidas de descarbonización prioritarias en transporte** **Sectores económicos** **Cobeneficios**

Figure 4. Components of the decarbonization vision of Cundinamarca edited.





Cundinamarca Context

Agriculture (34.72%), manufacturing industries (21.29%) and transportation (16.58%) are the sectors responsible for the highest GHG emissions in Cundinamarca. In 2018, the industrial sector was the largest consumer of energy (50.9%) followed by the residential sector 30.4% and the commercial sector 12.5% (Universidad Distrital Francisco José de Caldas, 2020). The iron, steel, mining, ceramic, cement, and agribusiness (sugar cane) industries have high energy demand for furnaces which results in high levels of CO₂ emissions (Francisco José de Caldas District University, 2020). Cundinamarca produces more than 212 thousand tons of sugar cane per year, in 47 municipalities. The furnaces of the plantations are in a high percentage artisanal, without heat recovery systems or steam boilers and high levels of energy inefficiency (LEISA, 2016).

Vision of Decarbonization in Transport and Energy of Cundinamarca

Based on the department's emissions profile presented, the energy and transportation decarbonization vision for the department was established as:

Cundinamarca aims to pioneer the establishment of carbon markets and wants to be carbon neutral by 2050. The department is striving for a renewable energy sector – this will use clean energy sources, such as hydroelectric and biomass power. In its industry sector, Cundinamarca will implement energy efficiency measures across its agribusiness, metallurgy, textile, and brick kiln industries to reduce the demand on non-renewable sources. It will encourage industries to use cleaner fuels such as bioethanol and natural gas, which will also improve their economic competitiveness. The department is also looking to prioritize sustainable rural development. It will do this by promoting a gradual reduction in the use of firewood, and by restoring and conserving natural ecosystems to support biodiversity. Cundinamarca will deliver sustainable construction, using bioclimatic architecture to harness environmental resources and ensure buildings are constructed in harmony with their surroundings. This will help to deliver a clean energy transition across residential, commercial, and institutional buildings.





In its transport sector, the department aims to develop a pioneering mobility network, with an electric rail system, air trams, hybrid and electric vehicle fleets, and new charging infrastructure. Cundinamarca will also improve the quality of public transport services and use its clean transport transition as an opportunity to educate citizens on the benefits of sustainable mobility. With these measures, the department aims to improve travel times, reduce pollution, enhance people’s quality of life, and create new jobs.

This vision will be delivered through Cundinamarca’s “Declaration of Climate Emergency”, which commits the department to reduce emissions by 50% by 2030 and ensure an equitable transition for the most vulnerable populations. It will involve engagement with a variety of stakeholders from the public and private sectors and civil society.

Conclusions

The decarbonization vision contains a long-term GHG emissions reduction target, identifies key sectors, and reflects the department's level of ambition to plan its decarbonization trajectory. It is recommended that Cundinamarca follows the next steps of the [pathways framework](#), the Climate Group methodology which will allow the department to identify options that contribute to the quality of life of the population, create agreements regarding the sustainable development of the territory that contribute to the reduction of GHG and identify critical sectors that support a just energy transition for all Colombians.¹

¹ The methodology used to develop the department's long-term decarbonization visions is based on Climate Group's pathways framework: <https://www.theclimategroup.org/pathways-framework>



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About the leading environmental education and climate change organizations that carried out the project:



OpEPA is the Organization for Education and Environmental Protection, has more than 20 years of reconnecting young people with the Earth to act in an environmentally sustainable way. It has trained more than 100,000 children, 5,000 teachers and educators and 1,000 community leaders.



Climate Group is an NGO founded in 2003 with the aim of convening powerful networks of companies and governments that transform global markets and policies to ensure a world with net zero emissions by 2050 and greater prosperity for all. Climate Group is the Secretariat of the Under2 Coalition, the largest global network of states and regions committed to reducing emissions in line with the Paris Agreement.



Climate Reality Project is the project founded in 2006 by former U.S. Vice President and Nobel Peace Prize laureate Al Gore, who today leads a global movement of more than 31,000 climate leaders in 168 countries.



The Attorney General's Office is the entity in Colombia that represents citizens before the State and the highest organ of the Public Prosecutor's Office that is responsible for investigating, punishing, intervening, and preventing irregularities committed by public officials, government officials and individuals who exercise public functions.

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