

Road To Carbon Neutral Project

PROCESS OF DEVELOPING OF A LONG-TERM VISION OF DECARBONIZATION IN TRANSPORT & ENERGY

Boyacá
Colombia 2050



Figure 1. Pathways and decarbonization vision cocreation with Boyacá's Secretariats

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 to empower local government officials, entrepreneurs, journalists, and communities to build a long-term decarbonization vision for the energy and transport sectors. The project will strengthen the capacity of departmental government officials to implement solutions that contribute to reduce GHG emission in line with Colombia's NDC and E2050 Long-Term Strategy for Climate Resilience.



Building on the [Pathways Framework](#) developed by Climate Group, the project supported the departmental governments of Antioquia, Atlántico, Boyacá, Cundinamarca, and Valle del Cauca to start planning their pathway to achieve their long-term emissions reduction goals.

Process of political and technical involvement

The technical assistance provided to the department included stakeholder engagement, desk research, field visits and theoretical and practical capacity building workshops. On a first phase, the organizations introduced the departments to the international framework on decarbonization policies and gave an overview of the national framework with the participation of the National Ministry of Environment who presented the [E2050, Colombia's national long term-strategy](#). On a second phase, the project focused on the energy and transport sectors in which international experts from the public and private sector presented case studies of how other governments in Latin America and the world are implementing decarbonization actions in these sectors. Following these theoretical workshops, Boyacá's key stakeholders from the Secretariats of planning, environment energy and mining, agriculture, and health, CRC, PGN, Swissaid, ANDEG among others developed a decarbonization vision based on the [Catalog of Decarbonization Actions in Energy and Transport](#). This catalogue is a manual that provides strategies, measures and actions that can be implemented by the public and private sector to reduce their emissions.



— CAMINO HACIA — CARBONO NEUTRAL

Visiones para Colombia 2050



Figure 2. Socialization of the Catalogue of Decarbonization Actions in Energy and Transport with Boyacá's Secretariats

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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 Boyacá to continue the development of its decarbonization pathway.

Moreover, the consultant prepared a **report with recommendations on the actions that Boyacá should prioritize** with a more detailed analysis of the department's emissions profile, socio-economic projections, data on energy demand, and current state of the transport infrastructure. Through this report, the department has a list of actions that could have a greater impact to reduce emissions and therefore were included in Boyacá's long-term vision. Note that this vision could guide Boyacá on the development of its decarbonization pathway.





Vision Development Process

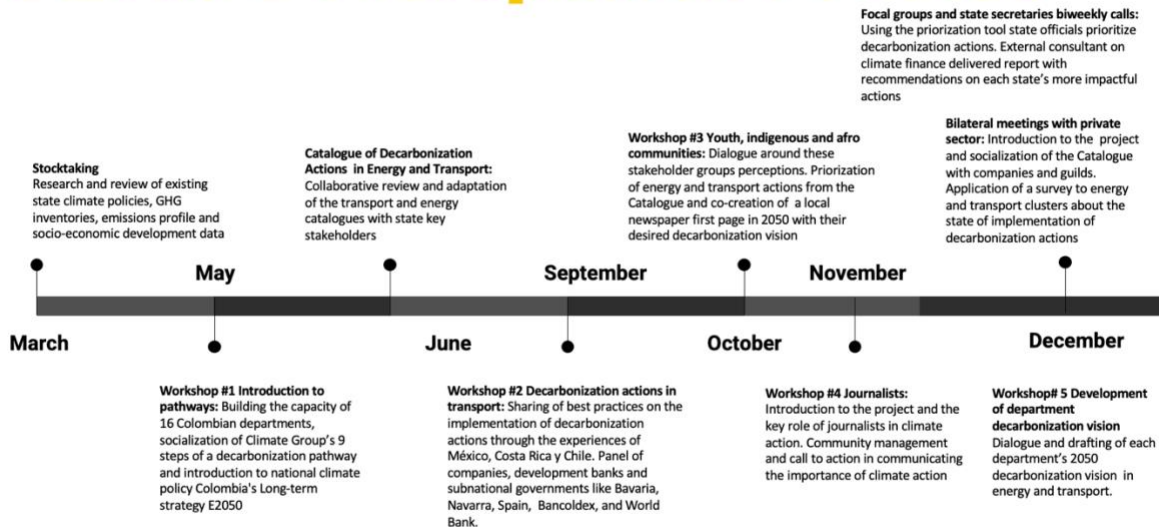


Figure 3. Timeline of the Process of Building the Decarbonization Visions with the 5 States during 2021

About the Stakeholder Engagement

In addition to capacity building sessions, Climate Group held biweekly calls with a focal team comprised of state officials, company representatives and academics, to socialize, edit and adapt the catalogue's decarbonization actions to the context of Boyacá. This effort resulted in the editable version of the Catalog of Actions in Energy and Transport of Boyacá, which compiles national and departmental mitigation actions based on existing public policies and private sector or civil society initiatives that the department could implement to reach carbon neutrality by 2050.

Climate Group participated in an in-person mission to meet with the focal points at the Secretariat of Environment, Secretariat of Planning, Secretariat of Energy and Mining, Secretariat of Agriculture, and Secretariat of Health. Furthermore, Climate Group participated in the National Meeting of Regional Committees for Competitiveness &



Innovation in Bogotá, where the team met with the Technical Secretary of Boyacá's Commission for Competitiveness and Innovation, Claudia Ochoa. She linked Climate Group to the Chambers of Commerce and convened private sector representatives to the practical workshop to develop Boyacá's decarbonization vision. As a result, government officials, academics, citizens, and some industries in the department dialogued and reached consensus on a net zero target by 2050, priority energy and transport decarbonization actions for both sectors and the co-benefits that Boyacá will reap in the long-term.

Results

On December 14th, 2021, Climate Group held the practical virtual workshop to develop the decarbonization vision for Boyacá in transport and energy with key stakeholders. This workshop exercise included input collected in prior meetings from youth, ethnic communities, state government officials and private sector representatives. These preferences were used to develop a preliminary decarbonization vision in transport and energy for Boyacá that was validated and edited during these virtual hands-on sessions.

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 external consultant's report on recommended actions for the state, and using the prioritization tool, the states integrated in their decarbonization visions in transport and energy priority actions with medium to high levels of preparation (existing policy framework, availability of funds and return on investment) and high contribution to sustainable development (highest reductions in emissions, quality of air and quality of life for their communities).



Visión de descarbonización de Boyacá en Transporte y Energía

Para el año 2050 Boyacá será un departamento productivo, carbono neutral, referente nacional en la autogeneración de energías renovables como la fotovoltaica, así como en la reducción de la demanda de energía a través de actividades de eficiencia energética en iluminación, construcción y en su industria pesada y agrícola. En el sector transporte, Boyacá tendrá un sistema de transporte público sostenible, de calidad y cero emisiones a través de la conversión a vehículos y trenes eléctricos, la adopción de estándares de combustible EURO VI para sus vehículos particulares y de carga, y con una gestión vial eficiente y segura que fomente el uso de la bicicleta y el bienestar del peatón. Estas medidas traerán beneficios a Boyacá como ahorros en las facturas energéticas, mayor productividad empresarial, mejor calidad del aire, mejoras en la calidad de vida de los habitantes, reducción de la contaminación y de enfermedades, y generación de nuevos empleos. La visión se logrará en alianza con el sector privado, público y sociedad civil que se consolidará con la formulación del Plan Integral de Cambio Climático de Boyacá para que el departamento este preparado para afrontar los efectos de la variabilidad climática.

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 Boyacá edited.

Boyacá Context

The sectors responsible for the largest CO₂ emissions in Boyacá are the manufacturing industries with 28.72% of the total emissions at state level, the mining and energy sector with 24.19%, and the agricultural sector with 19.82%. In Boyacá, the manufacturing industry reports the greatest demand for electricity (Gobernación de Boyacá, 2020) due to the operation of brick kilns, steel mills and iron industries (Min Comercio, 2021). The heavy industry sector contributes the most emissions, due to its high dependence on natural gas (63.5% of total energy demand).

Vision of decarbonization in transport and energy of Boyacá

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





Boyacá has a target to be carbon neutral by 2050. It aims to use regenerative agriculture practices and innovation within its business sector to achieve this. The department wants to invest in renewable energy so it can become self-sufficient and reduce the demand for non-renewables through energy efficiency savings in lighting and construction (across residential, commercial, institutional, and industrial sectors). Within its transport sector, Boyacá aims to establish a zero-emission transport system. Along with the promotion of active travel, the department will enforce Euro 6 emission standards across its fleets of private and cargo vehicles. Adopting this standard will improve fuel economy and lower CO2 emissions.

These measures will bring multiple benefits including new jobs, energy bill savings, improved business productivity, and environmental savings. The latter will increase the resilience of Boyacá's ecosystems and food production systems, as well as boosting quality of life. This vision will be delivered as part of Boyacá's Comprehensive Climate Change Management Territorial Plan and will involve a variety of stakeholders from the public and private sectors, academia, and civil society.

Conclusions

A 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 Boyacá follows the next steps of the [pathways framework](#), as a tool to make informed decision-making about the best way to reduce GHG emissions while supporting economic and social development. This approach focuses on collaboration and transformation, responding to the need for decisive action by governments, businesses and communities putting equity, sustainability, and decarbonization at the heart of the economic recovery from COVID-19.¹

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>



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.

