

Road To Carbon Neutral Project

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

Antioquia
Colombia 2050



Figure 1. Pathways and Decarbonization Vision creation with Antioquia'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, Antioquia's key stakeholders from the Secretariats of Environment and Transport, Mobility observatory, Defencarga, Medellín's Mayor's office, Medellín Global Center, Medellín's Chamber of Commerce, Low Carbon Cities 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.





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

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 prioritisation of actions for further climate policy instruments. It could also enable Antioquia to continue the development of its decarbonisation pathway.

Moreover, the consultant prepared a **report with recommendations on the actions that Antioquia 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 Antioquia’s long-term vision. Note that this vision could guide Antioquia on the development of its decarbonization pathway.

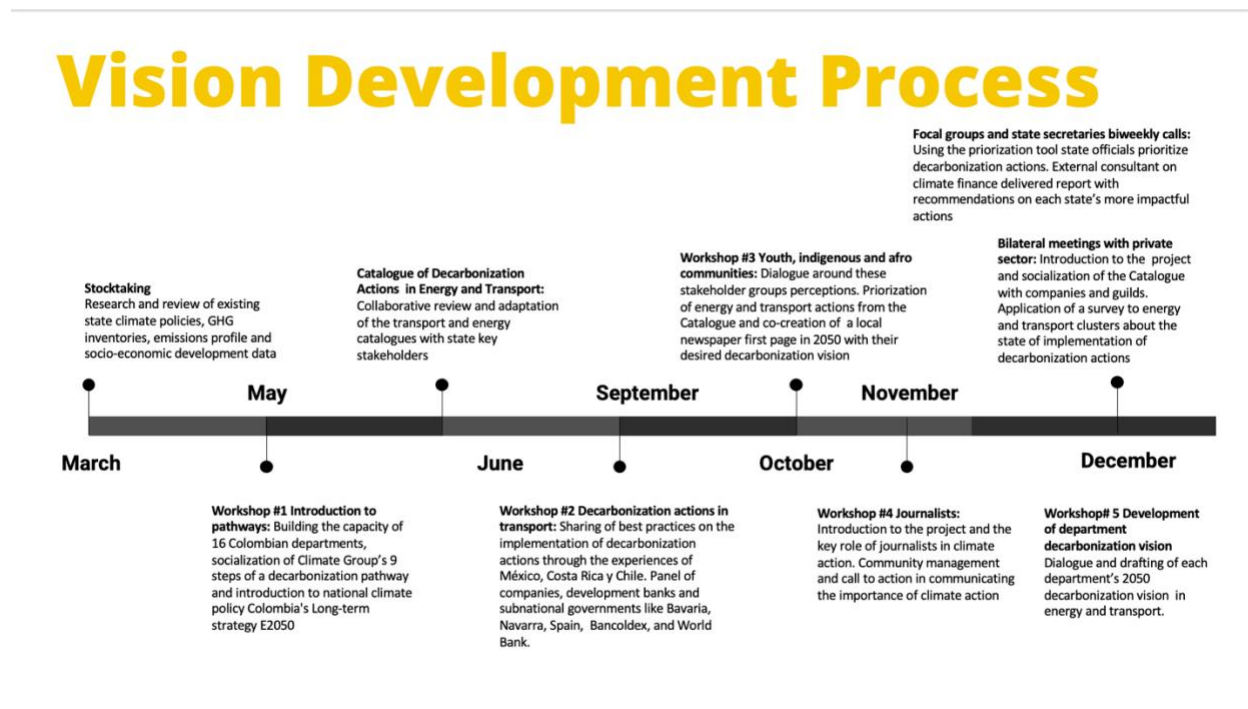


Figure 3. Timeline of the Process of Building the Decarbonization Visions with the 5 States during 2021



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 Antioquia. This effort resulted in the **editable version of the Catalog of Actions in Energy and Transport of Antioquia**, 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. 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 Antioquia'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 Antioquia'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 cobenefits that Antioquia will reap in the long-term.

Results

On December 15th, 2021, Climate Group held the practical virtual workshop to develop the decarbonization vision for Antioquia 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 Antioquia 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

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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 Antioquia en Transporte y Energía

Para el año 2050 Antioquia será un departamento carbono neutral, cuya matriz energética se basará en energías renovables como la solar, la eólica y la hidroeléctrica. En cuanto a la demanda de energía Antioquia incentivará la eficiencia energética en el sector construcción, y la eficiencia energética en sus hornos, calderas y suministro de vapor en su sector industrial y agrícola. Esta transformación del sector energético resultará en cobeneficios como disminución en el precio de la energía, reducción de la contaminación, incremento en empleos verdes y un futuro esperanzador para la juventud. Como parte de esta transformación, Antioquia realizará una transformación de su sistema de transporte e incentivará la implementación de medidas como el mejoramiento del transporte público, la recuperación y puesta en funcionamiento de transporte férreo eléctrico, la conversión a vehículos eléctricos de batería, la estandarización de combustibles para los vehículos urbanos e interurbanos y en desarrollo de infraestructura de transporte activo como la bicicleta y la caminata. Esto traerá importantes cobeneficios para el departamento como reducción en el tiempo de viaje, mejora en la calidad de aire, en la calidad de vida de las comunidades, y en la salud de los Antioqueños. La visión se integrará a la Estrategia Antioquia Carbono Neutro que se gestiona por medio de la alianza “Unidos por el Planeta” de la cual hacen parte los gremios, la gobernación, las autoridades ambientales, los municipios, la academia y la sociedad civil en respuesta a su estado de emergencia climática declarado en el 2020.

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 Antioquia

Antioquia Context

In Antioquia, the agricultural sector contributes the most emissions with 26.6% of the state’s emissions profile, followed by the manufacturing and forestry sectors with 23.2% and 22.8% and with a transport sector that emits 16.9%. The agricultural sector produces bananas and plantains 28.4%, transient crops tomatoes, (21.6%) potatoes and (10.1%) rice





Vision of decarbonization in transport and energy of Antioquia

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

By 2050, Antioquia aims to be a leader in energy efficiency – driving forward research, education, and innovative technologies to harness and protect natural resources. The department is working towards 100% renewable energy across areas where solar and hydroelectric power is viable and striving to be a leader in low-carbon transportation. It aims to do this by promoting active travel, converting private fleets to electric vehicles, advancing charging infrastructure, improving the quality of public transport, and developing multi-modal transport systems that allow users to switch between different methods of transport.

Transitioning to renewables will deliver multiple co-benefits, including energy security, improved quality of life, better air quality, and lower GHG emissions. Antioquia's Carbon Neutral Strategy will help to deliver this vision. It is managed through the United for the Planet Alliance, which includes representation from unions, the government, environmental authorities, municipalities, 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 Antioquia 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 decarbonisation 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.