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ACCELERATING COLOMBIA'S RENEWABLE ENERGY FUTURE THROUGH PRIVATE SECTOR ENGAGEMENT

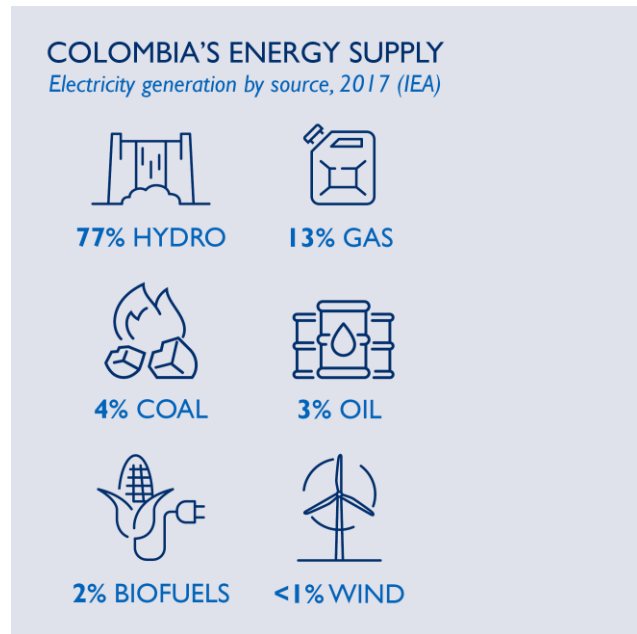
Renewable energy generation, competitively procured through auctions, will strengthen Colombia's energy security in a changing climate and boost economic growth in underdeveloped regions.

To ensure that the country realizes the full benefits of new solar and wind projects, the Government of Colombia and the private sector are engaging local communities, with support from the United States Agency for International Development (USAID).



With some of the greatest wind and solar power potential in Latin America, Colombia is rich in renewable energy resources. Despite these riches, roughly three-quarters of the country's energy supply is derived from one resource alone—water—leading to a heavy reliance on fossil fuel-based generation during droughts. Plus, while hydropower has long been a highly reliable form of renewable energy, changing weather patterns associated with El Niño are creating hot and dry conditions, **making Colombia's overreliance on hydropower a critical energy security issue.** Given Colombia's commitment to the Paris Accords, continued reliance on fossil generation during droughts would make compliance with the nationally determined contributions difficult.

To address these concerns, the Government of Colombia set out to establish a diversified, reliable, and resilient energy supply for the country. **Utilizing energy auctions as a cost-effective way to reduce dependence on hydropower and diversify its energy mix,** Colombia is incorporating variable renewable energy (VRE) through privately developed wind and solar power projects.



CONDUCTING COLOMBIA'S FIRST-EVER RENEWABLE ENERGY AUCTION

In 2019, USAID, through its Scaling Up Renewable Energy (SURE) project, partnered with the Government of Colombia's Ministry of Mines and Energy (MME) to conduct Colombia's first-ever energy auction. USAID helped MME develop the policy documents and corresponding regulations, educated the prospective buyers of electricity, and attracted potential private sector auction bidders. The auction was designed to balance Colombia's current hydro-dependent energy mix with new, diversified generation options—either by adding new sources of generation or by increasing the capacity of underutilized sources.

To ensure the auction process would entice businesses to participate, USAID and MME conducted two series of informational events. The first series of events in New York City and Bogotá, co-hosted with Bloomberg New Energy Finance, focused on attracting U.S. private sector developers to bid in the auction. The second series clarified the auction process and showcased risk management strategies for 40 Colombian utilities and government representatives.



Then-Vice Minister of Energy, now Minister of Energy, Diego Mesa presenting at the workshop in New York City, November 2018. Photo: BNEF

The first auction, held in February 2019, was Colombia's first competitive procurement process for the generation of renewable energy. While this first auction assigned bids between buyers and sellers, it did not award any contracts due to antitrust requirements designed to avoid any potential market power conditions. The lack of awards was not the desired outcome, but MME and USAID quickly regrouped to assess the shortcomings of the process, which provided valuable insights and set the course for future auctions.



REDESIGNING THE AUCTION

After interviewing six auction buyers and six bidders, USAID suggested changes for future auctions. MME utilized this input from power sector stakeholders to revise its renewable energy auction rules to limit participation to VRE and increase bid flexibility for buyers and sellers by introducing three time blocks for bidding.

Other changes aimed at increasing the number of sellers and buyers include waiving entry fees, providing longer power purchase agreement (PPA) terms, lowering thresholds for minimum project size, and mandating energy purchase requirements of 10 percent from renewable energy through competitive procurement. **These simplified competition criteria were designed to maximize contract awards while still ensuring diversification.**



Wind turbines on Colombia's Guajira Peninsula. Photo: b201735/stock.adobe.com



AWARDING COLOMBIA'S FIRST POWER PURCHASE AGREEMENTS THROUGH RENEWABLE ENERGY AUCTIONS

Using the revamped process, MME held its second renewable energy auction and awarded PPAs to nine solar and wind projects on October 22, 2019, with a total generation capacity of **1,374 MW**.

Colombia's new competitive procurement process helped achieve historically low average prices of approximately \$28 per megawatt hour (MWh).

This average price compares favorably with Mexico's third round of renewable energy auctions, held in 2017, which netted an average price of \$20.57/MWh. Moreover, Colombia's 22 power utilities will buy power at less than 70 percent of current bilateral contract prices. **This achievement will diversify Colombia's generation mix**, which MME announced will be roughly 11 percent VRE by 2022.

Combined with a February 2019 reliability auction, the results of the October renewable energy auction will **boost Colombia's renewable generation capacity by 2,528 MW, and will leverage more than \$2 billion of estimated private sector investment by 2023**. Nearly 150 projects have registered at the National Energy Planning Unit with a power capacity of 8,192 MW as of June 2020.

1,154 MW

Renewable generation capacity awarded

FEBRUARY 2019
RELIABILITY AUCTION

+ **1,374 MW**

Renewable generation capacity awarded

OCTOBER 2019
RENEWABLE ENERGY AUCTION



2,528 MW

Renewable generation capacity added

BY 2023
BENEFITS TO COLOMBIA

\$2 BILLION

Private sector investment leveraged



ENSURING COMPLETION OF RENEWABLE ENERGY PROJECTS

Auction results are expected to significantly contribute to subnational development, creating local jobs, increasing the number of local businesses and industries, and expanding energy supply services. MME strategically decided to incorporate private sector engagement to ensure that Colombia will reap all the benefits of the auction, which hinge on project completion.

Across Latin America and globally, **power projects have experienced delays, cost overruns, and sometimes cancellations due to insufficient engagement with the private sector, communities, and other stakeholders.** Communities often perceive

that the benefits of the power infrastructure do not reach the local population, and those most affected are not involved in the process, which can result in resistance to projects and unrest. This was the case in Mexico's Yucatán region, demographically and socio-economically comparable to Guajira, with projects awarded in the country's 2016 renewable energy auction.



Strategic private sector engagement will help ensure that Colombia fully benefits from their renewable energy auction.

Led by the vice president's office, the Colombian government set out to develop a comprehensive and multi-sector initiative to address a number of issues in Guajira, a state with great solar and wind potential and the planned location for the majority of awarded projects. As part of this initiative, **USAID is supporting MME, the labor ministry, and other stakeholders to develop a workforce plan** for the construction and operation of an expected first wave of renewable energy over the next three years, which can become a development engine for the region and catalyze long-lasting economic benefits for local populations.

Wind projects will provide 1,077 MW of power and will be located in the Guajira region, which has one of the highest wind speeds in the world. In total, this region has more than 8,000 MW of projects registered for renewable energy generation.



MME and USAID surveyed renewable energy project awardees to determine the skilled and unskilled local labor force needed to bring projects online. While Guajira is rich in some natural resources such as salt, coal, and gas, it is a desert region and one of the most underdeveloped and impoverished parts of Colombia. The region is home to a large number of nomadic, indigenous people living in rural villages, isolated and poorly connected to the rest of the country due to lack of formal infrastructure.

To implement the national government's local workforce plan, the governor of Guajira, with support from USAID, the National Renewable Energy Laboratory (NREL), the U.S. Energy Association (USEA), the regional technological training institute (SENA), two local universities, and MME, is creating a sustainable local workforce training program for Guajira that will meet the needs of both the community and the renewable energy companies that will be working in the state.

The creation of the program also formalizes a communication channel among stakeholders so they can **continue working together to complete projects while creating socioeconomic benefits** such as jobs and marketable skills for indigenous people.



With support from USAID and others, the Government of Colombia will provide sustainable local workforce training that will upskill community members and benefit the renewable energy companies working in Guajira.



A Guajira woman pumping water. Photo: Hanz Rippe

In May 2020, Colombia's president announced that the country jumped up nine spots in the World Economic Forum's Energy Transition Index, a comprehensive, global index that tracks the performance of energy systems at the country level.

Procuring energy using a competitive, transparent process increases Colombia's energy resiliency and the sector's ability to reliably meet electricity demand by incorporating more clean energy into the generation mix. In addition, all Colombians will enjoy the benefits of reduced greenhouse gas emissions and more affordable energy.

With these new private sector investments, Guajira will have the tools to revitalize its communities and contribute to Colombia's self-reliance, powered by renewable energy.



Renewable energy project development will improve access to electricity and create opportunities for economic growth for communities in Colombia's Guajira region. Photo: anamejia18/stock.adobe.com