



## Addressing Challenges to Scaling Off-site Renewable Energy Power Purchase Agreements across Colombia's Commercial and Industrial Sector

### Background

Segments of Colombia's renewable energy (RE) market are beginning to emerge. More than 32 megawatts (MW) of on-site commercial and industrial (C&I) solar generation have been installed on corporate facilities since 2017. Utility-scale RE is also growing, with over 180 MW installed over the past four years, and a third major auction planned for October 2021, enabling both public and private electricity retailers to procure RE. However, in contrast to other markets in Latin America and the United States, Colombia's off-site C&I RE power purchase agreement (PPA) sector is virtually non-existent. As of July 2021, only one such project had been brought online in Colombia: a [12 MW solar system in Planeta Rica](#), from which the generation company (genco)/retailer GreenYellow will supply electricity for the air conditioning systems of 27 warehouses owned by the retail supermarket, Grupo Éxito.

### Stakeholder Engagement

Primary missions of the [Clean Energy Investment Accelerator \(CEIA\)](#), jointly led by Allotrope Partners, World Resources Institute (WRI), and the National Renewable Energy Laboratory (NREL), include bringing together C&I energy users to demonstrate innovative RE purchasing models and to strengthen policy frameworks in key emerging markets.

CEIA has been supporting on-site C&I RE solutions in Colombia for more than three years, and has been eager to expand support for local stakeholders to scale off-site PPAs. CEIA has engaged key market actors in a series of targeted interviews and a July 29, 2021 virtual dialogue to gather insights on barriers to scaling off-site RE. For this virtual dialogue, CEIA assembled stakeholders from across the electricity consumption, retail, generation, and RE project development sectors to discuss challenges and potential solutions for catalyzing Colombia's market for off-site C&I RE PPAs. Participants also included representatives of *La Asociación de Energías Renovables Colombia* (SER Colombia), the country's RE association, and the *Asociación Nacional de Empresarios de Colombia* (ANDI), the country's largest industry association.

### Lessons Learned

Based on prior interviews and the virtual dialogue, CEIA has identified and validated a number of key **barriers to scaling off-site C&I RE PPAs** that are limiting the prospects of unlocking the hundreds of millions of dollars in potential investment:

- Traditionally C&I contracts with power retailers in Colombia have tenors of no longer than 3-5 years, but gencos interested in building an RE project for a PPA need guaranteed contracts of a minimum of 7-10 years to ensure project financing. **Greater analysis could be helpful in understanding the trade-offs to customers between: 1) locking into a stable, long-term contract, versus 2) maintaining flexibility in a volatile energy market.**
- Short-term C&I contracts are common and typically preferred in Colombia, given concerns about electricity price volatility. Hydropower has generated over 62% of Colombia's power every year since 2010, and large fluctuations in electricity prices can be prompted by varying levels of rainfall each year. A new 2,400 MW hydropower dam, Hidroituango, that would equal more than 10% of Colombia's generation capacity, was initially expected to reduce electricity costs, but this project has been under construction since 2012 and has suffered significant setbacks and issues. Thus, customers often are reluctant to sign long-term contracts because of uncertainty and expectations that standard grid prices will plummet sometime soon. **Identifying mechanisms to address concerns related to price volatility risks and demonstrating the financial benefits of off-site RE procurement is important to expanding this procurement option's adoption.**
- An additional challenge is the common misperception that RE is expensive and that companies will have to pay a premium to shift to renewable solutions. There is also an assumption that Colombia's grid is already "clean" due to significant hydropower generation, even though this does not account for substantial fossil fuel generation, which comprises an even higher portion of Colombia's electricity mix during droughts. These perceptions often leave all but the largest C&I consumers with an exclusive focus on their per kilowatt-hour price, which is presumed to be more expensive for RE. As such, there is very little exploration as to whether off-site RE can be more economical and can result in cost savings for the C&I energy user. **Off-site RE PPAs often can be significantly less expensive to the consumer than grid electricity, but for this procurement model to grow, awareness raising and capacity building among a large segment of potential C&I customers is essential.**
- Local stakeholders have also reiterated the need for training and capacity building on the existence, functions, and/or potential benefits of off-site C&I RE PPAs. One retailer stated they have never heard of off-site PPAs as a business model. Others expressed confusion over associated accounting processes. Stakeholders have requested **the desire to learn about comparative case studies (including PPA prices) to understand the economics of parallel models in other markets, such as similar PPAs in the United States or Chile.**
- Financial regulations have been cited as posing significant challenges, particularly for "Virtual" PPAs (VPPAs), sometimes referred to as "Contracts for Differences". Stakeholders have noted that current legal and regulatory regimes around accounting

and contracting limit or prohibit VPPAs, as PPAs must go through XM and be physically located in Colombia. There is also stakeholder interest in learning about and pursuing policy and regulatory frameworks that could better facilitate the use of off-site PPAs, incentivize more competition and new players, and spark more innovation. **Additional financial regulatory and policy analysis could hone in on specific impediments to VPPAs and support collaboration with stakeholders from both the public and private sectors to develop consensus solutions to these impediments.**

- Another issue emphasized by market stakeholders is the view that Colombia's government has not sufficiently prioritized the development and scaling of innovative procurement mechanisms like PPAs. Historically, Colombia has focused on energy scarcity and reliability concerns. Such concerns have underlied Colombia's government policies and auctions that support the "*pague lo generado*" model, which does not incentivize new players to enter the market and innovate. **Building mechanisms to assist stakeholders in communicating such concerns to government agencies and collectively collaborating to develop more comprehensive and diverse tools for RE adoption could help address these challenges.**
- Lastly, Colombian energy regulations dictate that only one retailer may represent any given customer in the electric wholesale market. This rule creates the perception that C&I customers are prohibited from signing PPAs with gencos. Such regulations do not make offsite PPAs impossible, but they do make them more complex. **Overcoming real and perceived challenges presented by these policy constraints will require both legal analysis and stakeholder capacity building on the ways in which off-site C&I RE PPAs can be structured and legally implemented.**

### **Conclusion and Next Steps**

Off-site RE C&I PPAs can be a powerful and implementable pathway to scaling clean energy procurement for market participants across Latin America and the globe. Identifying the above-cited challenges is a first step in expanding access to off-site RE in Colombia as well. Addressing these challenges will require expanded and deepened collaboration with key stakeholders to develop and proliferate optimal solutions. **CEIA seeks to work with diverse partners to overcome these barriers, catalyze Colombia's off-site RE market, unlock hundreds of millions of dollars in investment, and provide benefits to customers, utilities, and project developers alike.**