

Preparing for the Next Stage of
**Corporate Renewable
Purchasing**



Constellation®

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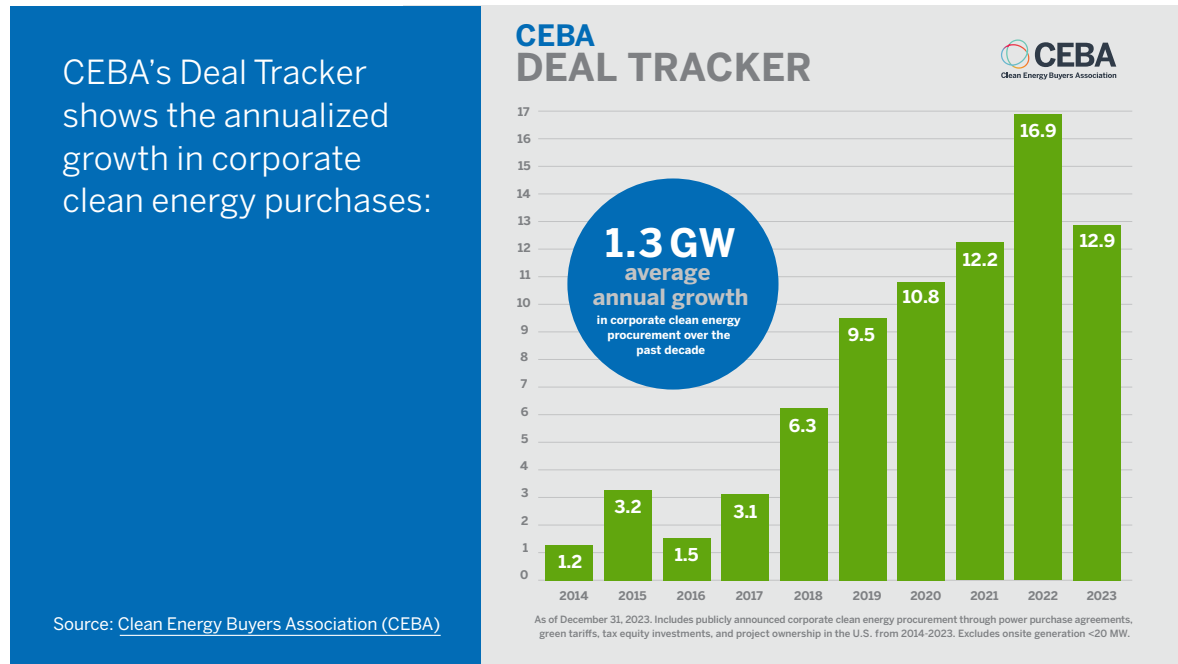
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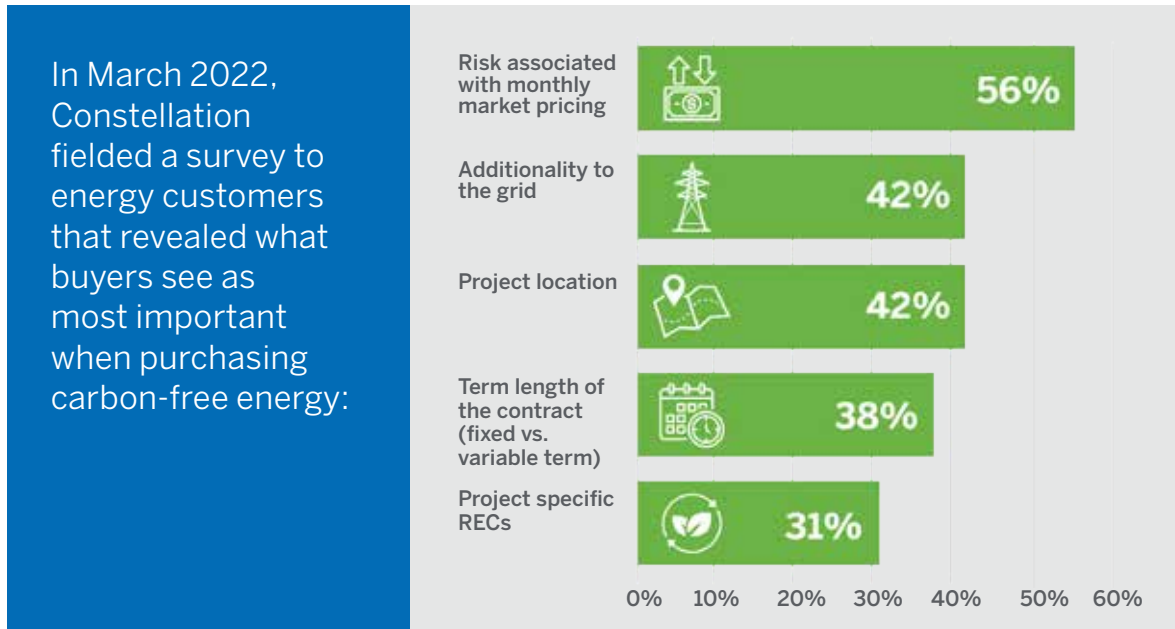
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There has been tremendous growth in corporate and institutional procurement of renewable energy in the past few years. According to the [Clean Energy Buyers Association](#), which tracks publicly announced clean energy purchases by commercial and industrial (C&I) customers, renewable energy purchases surged to nearly 17 GW in 2022 – a growth of 27% from 2021 and 172% since 2018, when Constellation first started offering customers an off-site renewable product. Following this remarkable surge, the energy market resumed its steady year-over-year growth over the past decade, proving its resilience and commitment to sustainability.



There are several key factors driving this growth in corporate renewable energy procurement.

- ✔
 New techniques for arranging transactions have allowed companies to directly support the development of clean energy projects, reduce their greenhouse gas emissions, and support their sustainability strategies.
- ✔
 Declining costs of renewable energy have made it more financially competitive with traditional sources of energy, enabling more companies to purchase renewable energy at scale.
- ✔
 Increasing stakeholder pressure from customers, investors, and employees encourages companies to act on climate change.
- ✔
 Locking in long-term contracts for renewable energy can mitigate future energy pricing risk.



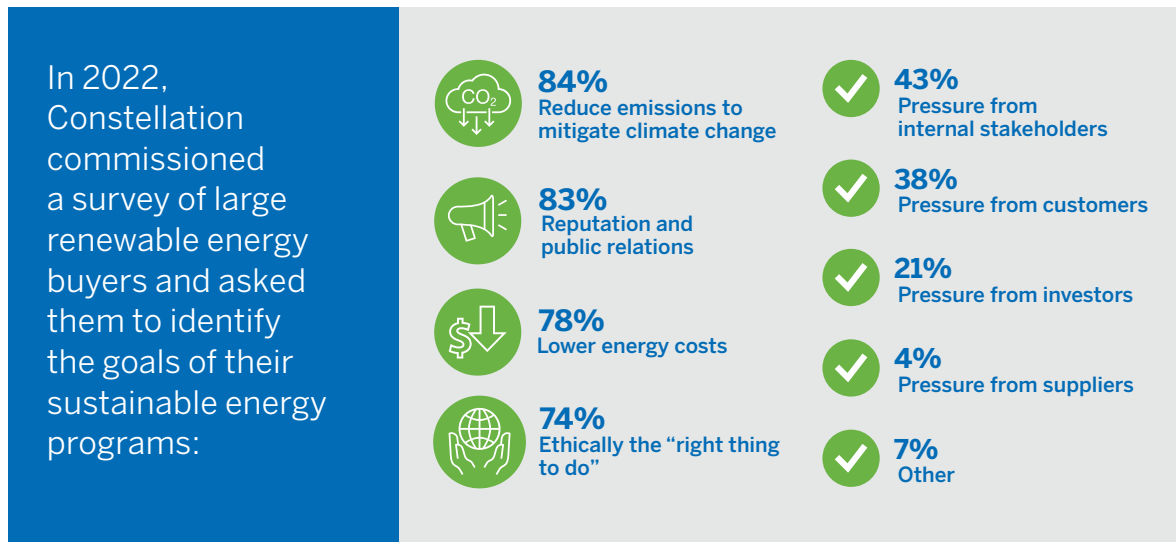
In 2018, after recognizing a growing trend of early adopters contracting for renewable energy from new utility-scale renewable projects, Constellation began offering customers access to offsite renewable projects through its suite of **Constellation Offsite Renewables (CORe)** retail electric supply products. Our view at that time, which still holds true today, is that renewable energy procurement and traditional energy purchasing ultimately need to converge.

Constellation developed the **CORe program** to address the evolving needs of businesses looking to meet their sustainability goals. Our offsite renewable energy products focus on transaction simplification and risk management. By positioning ourselves as a physical intermediary in these complicated PPA transactions, we offer simplified contracting and many of the same risk management services our customers have sought from us for decades.

In this white paper, we'll quickly describe how Constellation has structured its solutions to meet the need of this industry's tremendous growth in recent years. While we are a small part of a growing clean energy procurement ecosystem, we think our approach provides lessons that can be leveraged to support the growth that's still required to meet the needs of the clean energy grid of the future. We will then turn our focus to what's next – including our latest innovations to make sustainability solutions available to more businesses, to create more impactful renewable procurements that ensure a more just and equitable clean energy transition, and finally, to start moving towards the hourly carbon-free matching the clean energy grid will ultimately require.

Looking back: Simplifying and Scaling Access to Offsite Renewables

As more businesses started to make significant public commitments to greenhouse gas (GHG) reductions, offsite renewable energy purchasing emerged as an increasingly attractive option. Many organizations found their energy loads and Scope 2 GHG emissions footprint were too large to address through onsite generation projects alone, making offsite renewable energy purchases a way to access clean power at a scale that fit within their budgets.



Identifying the potential of offsite renewable PPAs to address corporate sustainability goals was an important first step, but successfully executing these complicated transactions can be challenging. Offsite renewable purchasing poses significant hurdles for prospective businesses, as the process of identifying projects, negotiating complex contracts, and structuring transactions requires specialized resources and expertise. Extended timeframes and customized legal agreements favor the most sophisticated energy buyers capable of transacting for full, utility-scale projects.

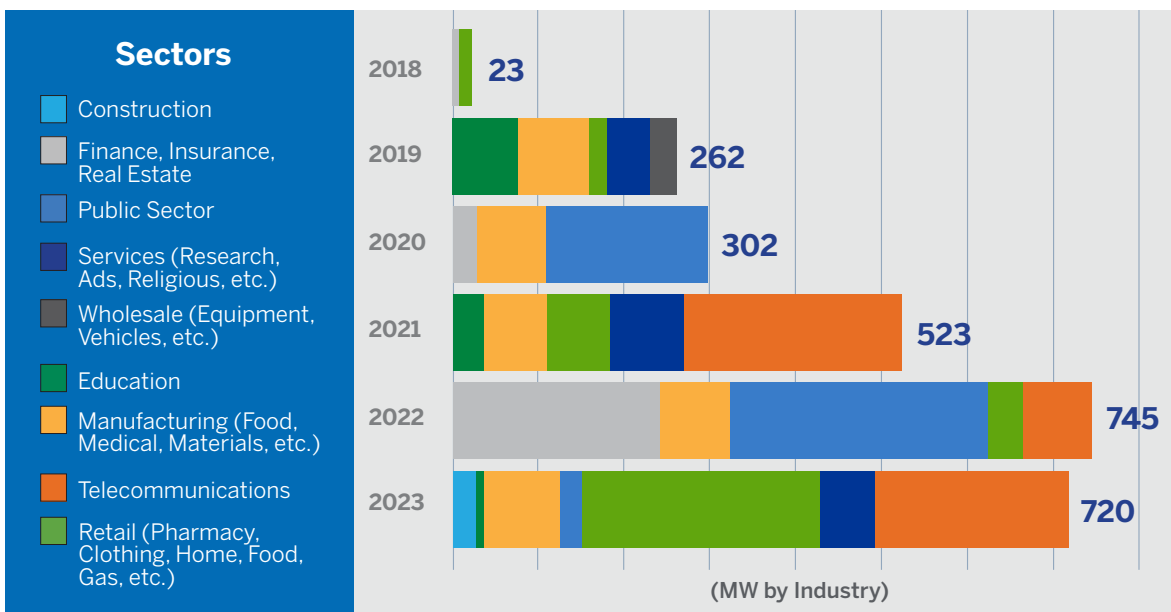
Simplifying Offsite Renewable Procurement

Constellation recognized the need for simplified solutions to help companies overcome these challenges and launched the Constellation Offsite Renewables (CORG) product suite in 2018. The CORG product provides a streamlined solution for contracting offsite renewables, allowing companies to support the development of new wind, solar or other renewable energy projects that feed power into the grid and match their usage through a simple retail renewable energy contract.

Customers define their desired energy quantity and contract term, while Constellation handles the most complicated aspects of the process. Leveraging decades of experience in the energy markets, Constellation sources viable projects, conducts analytics to optimize each contract’s

value, negotiates PPAs, and structures the transactions. As a result, the customer receives fixed-price renewable energy through a retail power contract in the same way they were already procuring electricity. This simplified procurement model opens offsite renewables to a whole new group of businesses.

Since the 2018 launch, the CORE product has grown each year, and Constellation has helped match customers to more than 2,575 MW in renewable energy projects.

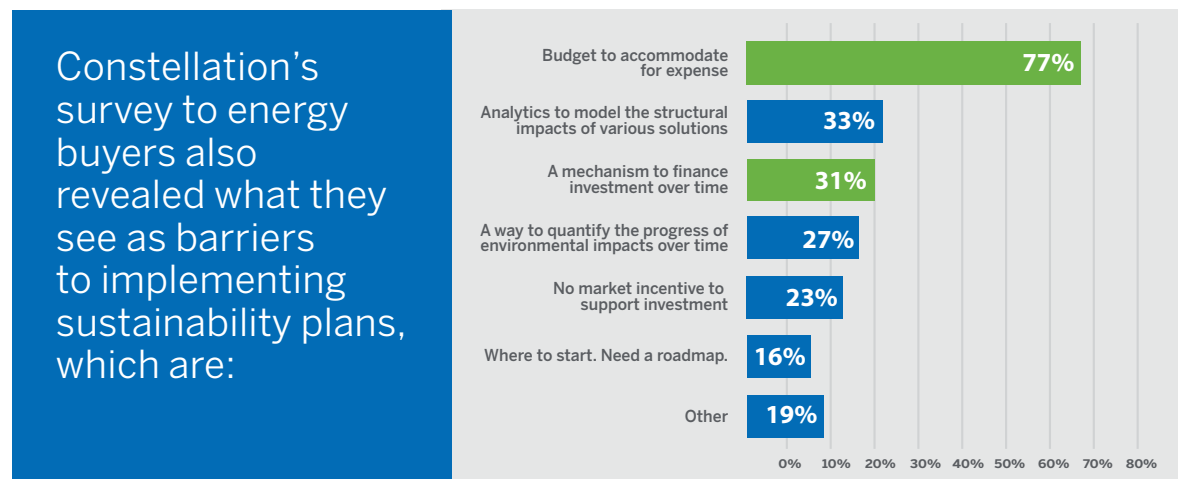


Expanding Access for Customers

With the marketplace for corporate renewable procurement maturing, Constellation recognized that most buyers were very large users, and other businesses faced barriers preventing them from buying into dedicated renewable energy projects. These barriers include:

- ✔ **High Credit Standards:** Offsite renewable contracts typically require an investment grade energy buyer for project developers to secure financing for new assets. Not all buyers may meet the investment grade threshold. Suppliers and utilities can leverage their strong credit position and ability to aggregate portfolios of end user demand to address these credit challenges.
- ✔ **Time and Resource Constraints:** Companies may have limited time and resources to structure, negotiate and manage long-term PPAs. Renewable project developers and market intermediaries can reduce these complexities and create new contracting approaches and product offerings to help businesses with this prolonged and complex contract process.
- ✔ **Market Access:** Many companies have the same, impactful renewable aspirations as the largest tech players dominating the renewable market. With capabilities to purchase large renewable projects, market participants should be committed to expanding access to renewable energy so businesses of all sizes can reach their sustainability goals.

Constellation is working to expand access to the CORE program to small- and medium-sized businesses. By customizing the program to overcome common challenges while meeting the needs of these companies, Constellation aims to empower a broader array of businesses to successfully power their operations through our offsite renewable procurement.



Constellation is actively developing new offerings to allow more commercial businesses to overcome these barriers by purchasing portions of CORE projects in smaller increments to fit within their budgets, significantly reducing the minimum energy commitment, and allowing more organizations to commit to their sustainability journey.

Going forward, Constellation will make additional efforts to utilize its wholesale market experience, financial strength and techniques for arranging transactions, allowing customers of all sizes to access the market in several ways, such as:

- ✓ Accessing the same utility-scale projects and pricing as the largest corporate buyers.
- ✓ Flexibility to participate in utility scale renewable projects by purchasing a customized portion of the overall project.
- ✓ Using Constellation's dedicated resources to simplify the contract negotiation process.
- ✓ Leveraging Constellation's experience to evaluate projects for customers based on developer details, project operation, project analytics and contracting.
- ✓ Allowing access to the market through the strength of the larger wholesale players so more businesses can purchase smaller shares of new build renewable projects to match usage.
- ✓ Simplifying procurement via retail supply agreements in familiar MW increments.

Offering offsite renewable energy in smaller increments not only benefits a broader scope of businesses but also makes the implementation of more renewable energy projects financially feasible. When Constellation combines purchases from multiple businesses purchasing smaller increments of energy, it provides the renewable developer with enough guaranteed revenue to secure financing and construct new projects. For example, a developer will not build a 100 MW solar facility for just one five-MW purchaser but combining 20 five-MW purchases from multiple customers can create the needed revenue certainty.

Constellation has proven its ability to aggregate customers to support larger PPAs, with our average CORE+ transactions including three customers per project, and some projects including as many as seven.

We're now ready to expand our approach to include even more customers and larger aggregations.

Through this pooled demand, Constellation is driving the growth of the overall market while opening access to businesses that could not previously participate. This approach benefits

developers through increased demand and retaining the single investment-grade PPA offtaker in Constellation, while also expanding access to clean energy purchasing for a wide range of organizations with smaller usage profiles.

As the addressable customer market for carbon-free energy expands, Constellation will work to further simplify the transaction and contracting models, creating a straightforward process for small- and medium-sized businesses. By handling all aspects of the projects, from project selection and diligence to PPA negotiation, credit support, ongoing development oversight, and contract management, Constellation will allow customers to pay a fixed rate for emissions-free power without all the complexity of purchasing renewable energy directly from a project developer themselves.

Investing in Communities through Renewable Purchases

Reaching a zero-carbon future will require unprecedented investments in renewable energy and other carbon-free resources. However, there is a real risk that vulnerable and disadvantaged communities could be left out of the energy transition, despite being most directly impacted by climate change.

Constellation believes that renewable energy projects can and should deliver broader community benefits on top of just clean power. That thinking led Constellation to develop an Impact Power Purchase Agreement (Impact PPA) model, which enables customers to ensure that the large offsite renewable energy projects they support also provide incremental benefits to the communities where their projects and businesses are located.

Under the Impact PPA model, Constellation and the project developer dedicate a portion of revenues to fund initiatives such as workforce training, education, and job placement assistance in underserved communities. These programs are tailored based on the project location, the company location, and the needs of residents. The goals are to:

- ✓ Expand renewable energy career pathways to underrepresented groups;
- ✓ Provide skills training needed for high-demand construction and operations roles;
- ✓ Strengthen local inclusion while enabling renewable energy expansion.

A successful example of the Impact PPA approach is shown in Constellation's collaboration with the City of Chicago. The City of Chicago signed an agreement with Constellation to transition all city operations to 100% renewable energy by 2025. This will make Chicago one of the largest cities to commit to clean energy.

Responding to the demands of a forward-thinking customer like the City of Chicago, Constellation worked closely to adapt an Impact PPA structure for this project so that underserved and under-resourced communities can benefit from the transition to a

carbon-free future. Constellation and the project developer, Swift Current Energy, made financial commitments under the agreement to dedicate \$400,000 per year to help fund solar job training, apprenticeships, education programs and more for underserved communities in Chicago. The goal is to prioritize workforce development by providing career opportunities in renewable energy construction and operations that empower underserved communities in the City of Chicago and prepare them for in-demand renewable energy jobs. This Impact PPA model was designed so it can be replicated across different industries and projects to deliver community benefits in any market. Constellation is committed to integrating the Impact PPA structure wherever possible in its CORE offerings going forward. Ultimately, we want this to move from a unique feature of some transactions to an integral part of all long-term PPAs we support for our customers.

Hourly Carbon-Free Energy Matching

In addition to expanding access to offsite renewable energy, Constellation has created new products to match customer usage to renewable sources in real-time. Today, most U.S. electricity grids are made up of a diverse set of generation resources to match supply with consumption 24/7, with fossil fuel resources supplying much of the firm and dispatchable power when renewable generation is not available. For years, grid operators have expertly balanced the electricity system, ensuring power is available where and when consumers need it. However, that balance is typically done with reliability and affordability in mind. Carbon-free electricity users who do not consider time- or location-matching principles in their procurement rely on others, many of whom may be indifferent to sustainability, to help balance the grid – often with the cheapest generation available.

Many corporations have outlined sustainability goals that include purchasing clean power annually and supplementing with Renewable Energy Certificates (RECs) or carbon-free Energy Attribute Certificates (EACs). While these actions may help drive growth in clean electricity, these tools do not address an organization's real-time, hourly carbon footprint from power consumption. Some of the challenges businesses face when trying to operate carbon-free on an hourly basis include:

- ✓ Difficulty tracking and matching specific hourly load to clean generation assets,
- ✓ Driving grid reliability and supply availability in low-carbon environments.
- ✓ Hourly matched CFE supply agreements are pushing GHG accounting to evolve and recognize the added benefits of real-time matching with consumption.
- ✓ Ongoing dependence on carbon-emitting sources during certain hours.

To help businesses overcome these barriers, Constellation has worked with Microsoft to develop an innovative Hourly Carbon-Free Energy (CFE) matching solution. The Hourly CFE matching

product combines Constellation's capabilities in generation and supply management with Microsoft's advanced data analytics expertise to provide:

- ✓ Visibility into hourly energy supply and emissions on the local grid,
- ✓ Recommendations on supply actions and investments to reduce carbon impact,
- ✓ Independent verification of progress towards hourly carbon-free energy matching.

These capabilities are powered by advanced and reliable data tracking and analytics that map a customer's real-time energy load to the grid's generation mix, enabling businesses to understand their performance and emissions rates and identify the most impactful steps for improvement. The grid's generation mix and emissions rates can vary drastically hour-by-hour. By matching electricity usage to carbon-free sources, customers can proactively match their electricity from a carbon-free source generating clean electrons exactly when their operations need them. Whether actions are taken to shift usage or invest in new carbon-free supply, each change will help businesses make measurable strides toward zero-emissions operations on an hourly basis.

Constellation's CORE customers have a unique opportunity to lead the way towards a fully carbon-free grid. Making a long-term commitment to a new or existing renewable generator supports the critical development and operation of carbon-free resources that match their usage on a net, annual basis. To ensure their transformational commitment to renewable energy provides the ultimate impact required for the clean energy grid of the future, Constellation can help these customers incorporate time and location-matching into their strategy – by blending other sources of carbon-free energy (CFE) into their supply to better match their hourly usage profile in real-time.

Hourly CFE Matching represents the leading edge in Constellation's sustainable energy solutions. It equips customers with unparalleled insight into their real-time energy usage and carbon impact, arming them with data-driven recommendations to achieve ambitious decarbonization goals.

The energy industry has seen tremendous growth in corporate and institutional procurement of renewable energy. New techniques for arranging transactions, increasing stakeholder pressure, and the ability to mitigate energy pricing risk through long-term contracts have been key drivers in this growth. Constellation has been at the forefront of this transition, starting with simplifying and scaling offsite renewables through the CORE program.

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