

Delivering Value through Green Tariffs

Key Highlights

- Large commercial and industrial (C&I) consumers are looking for ways to meet their renewable energy and sustainability goals.
- Green Tariffs offer a full-service energy solution for consumers with up to 100% renewable energy goals.
- Co-ops are well-positioned to offer large members customized renewable energy solutions.

What has changed?

Over the past several years, many large commercial and industrial (C&I) energy consumers have become interested in procuring energy from renewable resources to satisfy up to 100% green energy and sustainability goals. As clean energy goals become more important, many large C&I customers have joined coalitions pledging to reach specific renewable energy goals, such as the Renewable Energy Buyers Alliance (REBA) and RE100¹. Beyond just sustainability goals, renewable energy is quickly becoming cheaper to buy, and can even be the lowest-cost resource for corporations that want to save money. To help reach these goals, there are several options and deal structures available to co-ops serving consumers with aggressive renewable energy targets. Larger C&I consumers (i.e. Google, Facebook, Target), working in conjunction with their local utilities, have pioneered green tariffs as an instrument to provide full-service renewable energy solutions. This advisory will explore the high-level factors and mechanics of how a utility designs and prices a green tariff.

What is the impact on cooperatives?

As more C&I accounts shift to green tariffs, co-ops need to be prepared to accommodate member needs and inquiries. Several questions arise in considering green tariffs and other renewable energy options. What are the customer drivers for renewable programs and specifically green tariffs? What are the utility motivations to offer green tariffs? How can these needs and values be aligned to create successful green tariff programs? What can co-ops offer that larger utilities cannot? Are there options to lock in green tariffs at shorter term commitments and/or smaller volumes? Will there ever be downside protections with shorter terms? While the Walmarts of the world can buy up green tariffs at any volume and rate,

¹ RE100 is a global corporate leadership initiative, led by [The Climate Group](#) in partnership with [CDP](#), bringing together influential businesses committed to 100% renewable electricity. <http://there100.org/>

smaller companies will need flexibility to take advantage of this instrument. Co-ops are also interested in how these programs, and pricing structures can be tailored to accommodate diverse member preferences (i.e. smaller volumes, shorter terms).

The Evolution of Green Pricing Programs

Renewable energy pricing programs have been around for several decades. A few utilities around the United States offered green pricing programs as early as 1999, giving consumers the option to buy green power and to support their utilities to develop more renewable energy. About 10 years ago, large corporations started looking at ways to reduce their carbon footprint and source all their energy needs from renewable resources. At the time, there were very few options available that provided a “pure” green solution. In restructured markets, customers could purchase renewable energy credits (RECs) to off-set their use of conventional power. Companies could also enter long-term agreements to purchase power from renewable energy developers. Ultimately, large customers do not want to be in the business of energy procurement and risk management, so they looked to their local utilities to help provide a better solution. Now, green power is offered through utilities in 47 states across the country, and several states require that utilities provide a green power option.

This relatively recent spike in demand for renewable energy among C&I customers is only the tip of the iceberg, with great potential for C&I customers to use renewable energy. Nationally, C&I leaders have contracted 6 GW of renewable energy (PPAs) in 2018 alone. There is potential for 85 GW of renewable energy contracted by corporate leaders through 2030.² This is likely due to an increasing trend for first-time corporate buyers to enter the market for procuring renewable energy, with 2018 setting a record for having the most first-time corporate buyers in one year. Many of the largest participating C&I consumers are also technology companies that require a large electricity load, and as their support continues, so will their renewable energy deals.³ As of 2017, 48 percent of the Fortune 500 companies have pledged at least one clean energy or climate goal.⁴

Table 1 on the following page shows the various options for renewable energy pricing programs.

² Wood Mackenzie. “Corporations usher in new wave of US wind and solar growth” August 2019. https://www.woodmac.com/our-expertise/focus/Power--Renewables/corporates-usher-in-new-wave-of-u.s.-wind-and-solar-growth/?utm_source=gtm&utm_medium=article&utm_campaign=wmpr_corporaterenewables19

³ Green Tech Media. “Corporate Renewable Energy Deals Smash Records in 2018” October 2018. <https://www.greentechmedia.com/articles/read/corporate-renewable-energy-deals-smash-record-2018#gs.8215xi>

⁴ World Wildlife Fund. “How the largest US companies are capturing business value while addressing climate change” April 2017. <https://www.worldwildlife.org/publications/power-forward-3-0-how-the-largest-us-companies-are-capturing-business-value-while-addressing-climate-change>

Table 1: Renewable Energy Purchasing Options for Corporate Customers

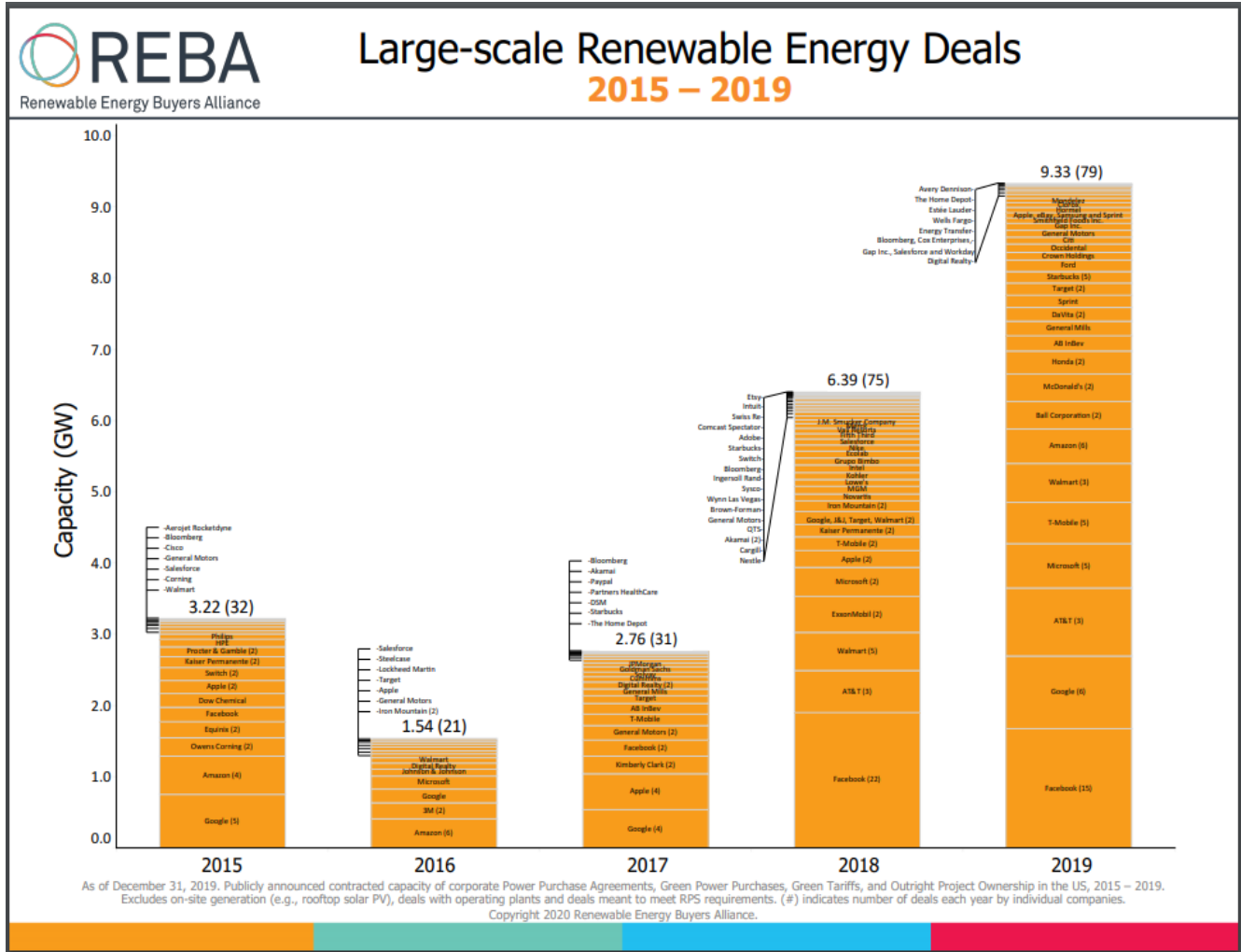
Purchasing Option	Description
Renewable Energy Certificate (REC) Purchase	A REC is an electronic certificate that represents the environmental attributes of one megawatt-hour (MWh) of electricity from a renewable energy facility. It is distinct from the actual electricity production and can be marketed and sold separately. Customers can purchase RECs from REC suppliers, through a utility REC purchasing program, or via a long-term contract with a specific facility.
Power Purchase Agreement (PPA)	A PPA is a contract for the delivery of renewable energy, typically with a fixed or escalating price over 10 or more years. PPAs, and most of the solutions that follow, are typically “bundled” renewable energy offerings that include both power and RECs; many C&I customers have a strong preference for bundled offerings over RECs alone.
Virtual (“Financial”) PPA (vPPA)	Under a virtual PPA, a customer signs a long-term fixed or escalating price contract (as under a standard PPA), but the electricity is sold on the wholesale market rather than contracted directly by the customer. If the selling price in the wholesale market is higher than the per-kWh rate of the virtual PPA, the customer receives the difference in credit; if the wholesale price received for the renewable energy is lower, the customer pays the difference.
Competitive Service Provider (CSP)	Some service providers in competitive (restructured) electricity markets offer products consisting of RECs bundled with electricity. Depending on the offering, RECs may come from a mix of renewable energy resources.
Utility Renewable Energy Program (“Green Tariff”)	Some utilities in vertically integrated markets have introduced renewable energy programs, sometimes called “green tariffs,” which allow customers to purchase bundled renewable energy through their utility at long-term, competitive prices.
Shared (“Community”) Renewable Energy	Shared renewable energy, commonly “community solar,” allows multiple customers to share the output of a single offsite project. Subscribers maintain their regular utility service, and the community renewable energy project feeds into the utility network. Depending on program design, residential, small business, and commercial energy users can all participate in a project. Note that not all community solar programs offer bundled renewable energy. In some cases, the utility retains the RECs.
Onsite distributed energy resources	Companies that have sufficient rooftop space or land at their facilities can install solar or other distributed energy resources. Depending on the policy landscape and customer preference, this can be done through direct ownership, an equipment lease, or a PPA.

Source: Advanced Energy Buyers Group. “Renewable Energy Offerings that Work for Companies” April 2019. <https://info.aee.net/hubfs/Renewable%20Energy%20Offerings%20that%20Work%20-%20FINAL%204-16-19.pdf>

What is a Green Tariff?

According to the World Resources Institute, “Green tariff programs offer the customer the ability to enter a contract with their *local utility* to procure *both* the power and renewable energy credits (RECs) from a renewable energy project for up to 100 percent of their electricity needs.”

Table 2: Corporate Renewable Energy Deals



Source: REBA. “Renewable Deals” 2019. <https://rebuyers.org/deal-tracker/>

Key Features of Green Tariffs

- Additionality
- Opportunity for cost savings
- Ability to transact in regulated or vertically integrated markets
- Choice of resource/developer

- **Additionality**

Green tariffs differ from traditional renewable pricing programs in that they include the energy and the RECs from a new renewable resource that would not have been built otherwise. Not only does the new project add renewable energy to the grid, it can also protect non-participating customers from potential price impacts. The project is built to serve a specific load, and the financial terms of the deal are negotiated for that particular customer, not spread across the utility's entire customer base.

- **Opportunity for cost savings**

Whereas purchasing RECs will always involve a premium over traditional supply costs, there is an opportunity to save on energy costs with green tariffs. According to a report by the International Renewable Energy Agency (IRENA), the costs for all forms of commercially available renewable energy technologies declined in 2018, and some resources are now less expensive than any fossil-fuel options.⁵ IRENA expects this trend to continue far into the future. In June 2018, NV Energy paid a record low solar-plus-storage price of 2.3 cents per kWh.⁶ For many large customers, especially retailers with thin margins, the opportunity to save on energy costs is compelling.

- **Ability to transact in regulated or vertically integrated markets**

Large customers want to do business with their local utility. While there are many options to purchase renewable energy in restructured markets where there are competitive suppliers, vertically-integrated markets have historically been limited in their offerings. Not all data centers or manufacturing facilities can be sited in competitive markets. In addition, local utilities can provide decades of experience in energy procurement and management. Companies like Google and Amazon recognized the value of working within their local communities and proactively engaged their local utilities.

- **Choice of resource/developer**

With REC programs, the utility typically chooses the project from which to source the energy. Green tariffs offer the customer the opportunity to choose the resource or even the specific renewable project. In many cases, the corporate customer is able to initiate contact with a renewable developer of choice before engaging the utility.

In 2014, more than a dozen corporate energy buyers established six principles for large scale purchases of renewable energy (see Table 3 on the following page), and since then, 65 large corporate buyers have signed on.

⁵ International Renewable Energy Agency. "Renewable Power Generation Costs in 2018" May 2019. <https://www.irena.org/publications/2019/May/Renewable-power-generation-costs-in-2018>

⁶ Green Tech Media. "Nevada's 2.3-Cent Bid Beats Arizona's Record-Low Solar PPA Price" June 2018. <https://www.greentechmedia.com/articles/read/nevada-beat-arizona-record-low-solar-ppa-price>

Table 3: Corporate Renewable Energy Buyer’s Principles: Elements

PRINCIPLE	ELEMENTS THAT HELP ADDRESS THE PRINCIPLE
1 Greater choice in our options to procure renewable energy	<ul style="list-style-type: none"> Ability to go beyond the basic portfolio of utility resources in rate base and procure up to 100% of energy from a renewable energy resource of the customer’s choice
2 Cost-competitiveness between traditional and renewable energy rates	<ul style="list-style-type: none"> Cost reflects fair cost of service for the renewable energy resource Ability to retain the economic benefits if that resource costs less than the utility’s standard offer, particularly if the customer has paid the full cost of that resource
3 Access to longer-term, fixed-price renewable energy	<ul style="list-style-type: none"> Option to enter into a contract over various time periods—for example, 5 years, 10 years, 15 years Certainty of energy cost over that period
4 Access to projects that are new or help drive new projects to reduce energy emissions beyond business as usual	<ul style="list-style-type: none"> New renewable power generation that directly adds new capacity to the system Access to bundled renewable energy products—that is, energy and RECs Ability to claim the consumption of renewable energy through retired RECs Renewable energy delivered from sources that are within reasonable proximity to customer facilities, benefiting local economies and communities and enhancing the resilience and security of the local grid
5 Increased access to third-party financing vehicles, as well as standardized and simplified processes, contracts, and financing for renewable energy projects	<ul style="list-style-type: none"> Financing vehicles that include financing and/or procurement of renewable energy through PPAs and/or lease arrangements Ability to preserve the company’s capital for core businesses
6 Opportunities to work with utilities and regulators to expand choices for buying renewable energy	<ul style="list-style-type: none"> Continuing relationships between customers and their electric utilities while increasing options for renewable energy procurement Creation of products that reflect the net costs, taking into consideration the actual cost of procurement, and the benefits to the system, while avoiding shifting any cost to other ratepayers

Source: World Resources Institute. “U.S. Renewable Energy Map: A Guide for Corporate Buyers.” 2017. <http://www.wri.org/publication/technical-note-us-re-corporate-buyers-map>

Green Tariff Deal Structures

There are three types of green tariff deal structures: Power Purchase Agreement (PPA), Subscriber Programs, and Market-based rate Programs. PPAs or some sort of fixed cost supply component underlie all green tariff deal structures. Table 4 shows the basic components of a green tariff deal structure.

Table 4: Green Tariff Rate Components

Green Tariff Rate Components	
Charge:	Renewable Energy
Charge:	Retail Services (i.e. transmission, distribution, customer)
Charge:	Administrative Fee
Credit:	"Brown" Energy

- **Power Purchase Agreement – “Sleeved” PPA**

Under a PPA, the utility purchases the renewable energy from a project developer at an agreed upon price and term, usually 10, 15, or 20 years. The customer may choose or have some input in the selection of the renewable energy provider. The customer pays the fixed PPA price plus the standard tariff for retail services, such as transmission, delivery, and customer charges. There is usually also an administrative charge. The customer is credited for the supply portion of the energy not used or displaced by the renewable energy. The energy credit calculation may be based on avoided energy and capacity costs, average hourly costs to run a utility plant, or some rate negotiated between the utility and the customer at the signing of the agreement. Examples: NV Energy, Duke Energy.

- **Subscriber Programs**

Under subscriber programs, customers may participate in larger renewable energy projects. As the demand for green tariffs grows, many utilities are procuring the renewable resources at scale to prepare for customer inquiries. The renewable resources are carved out from the utilities existing supply mix, so that other customers are not impacted by the costs to serve these customers. This separation of supply also preserves that “additionality” component for the green tariff.

The mechanics of the subscriber deal structure work much the same as a sleeved PPA. The customer pays the fixed price for the renewable energy for a specified contract duration and retains the retail services under the standard utility tariff. The customer then receives a credit for the energy not used or displaced by the renewable energy. There can be a risk premium charge, if the term of the contract is less than the signed PPA. Examples: Puget Sound Energy, Georgia Power

- **Market-Based Rate Programs**

Market-based programs may appeal to customers who wish to contract with a developer within a regional transmission organization or independent system operator (RTO/ISO) territory, though they can work in non-organized balancing authorities as well. In this case, the utility contracts with a renewable energy provider for a fixed price. The customer is charged the fixed price for the renewable energy, and sells the energy and RECs into the market where the renewable project is located, receiving the market value for the sale at that location. The customer then purchases the wholesale energy and other components (i.e. ancillary services, transmission) from the same power pool and is charged the market price. The idea is that there is a high price correlation between the energy purchased to serve the load and the energy and RECs sold into that same market. Examples: Dominion, Omaha Public Power District (OPPD).⁷

In all these deal structures, there is a purchase of renewable energy, a credit for “brown” energy⁸ and some sort of underlying tariff to provide other retail services, and the customer is left with the renewable supply attributes. One may ask, “Why not just buy the RECs?” This is why the notion of additionality is

⁷ World Resources Institute. “Emerging Green Tariffs in U.S. Regulated Electricity Markets” September 2017. For details of specific state approved green tariffs see: <https://www.wri.org/publication/emerging-green-tariffs-us-regulated-electricity-markets>

⁸ Brown energy is a term used for energy that comes from conventional fossil fuels.

a key component of green tariffs. In most cases, simply purchasing the RECs is not enough to fund a new project. A renewable developer needs to demonstrate a reliable stream of revenues, including RECs and energy, to secure financing to build a new power plant.

What do cooperatives need to know or do about it?

Many cooperatives already have renewable energy options for C&I consumers in place, with most offering REC programs. REC options available to residential consumers are more common than REC options available to businesses, although more cooperatives are beginning to offer both, especially for smaller businesses.

Great River Energy's Wellspring Renewable Energy Program

To highlight one cooperative, Great River Energy expanded their Wellspring Renewable Energy program, which offers RECs to members, to include large businesses in their distribution cooperative's territories in 2017. Businesses can decide how much of their energy they want to dedicate to renewable energy and can choose a commitment length anywhere from 5 to 10 years. For C&I consumers to participate, they must purchase at least 1,500 RECs, or 5,000 RECs in aggregation annually, which is not to exceed 100 percent of their energy usage. This program was requested by their member distribution cooperative, Dakota Electric Association, which is also the first participant in the program.

A key component for green tariff programs work properly is clear communication between the cooperative and the C&I consumer. To initiate any program, there needs to be a discussion of the goals for each party, and how to form a partnership that addresses all goals. Not only should cooperatives be aware of their C&I consumer goals, but also should be aware of the method to achieve those goals. A specific method for a C&I consumer to reach a renewable energy goal may sound appealing to the cooperative, while in practice, the C&I consumer wants a very different route to reach the same renewable energy goal.

Co-ops are well-positioned to capitalize on the growing interest in green tariffs. For many co-ops, the electricity demand from their C&I consumers may represent a significant or large portion of their overall electric load. A few have already procured resources to set aside for green tariff subscriber programs. Green tariff programs are complex, involve the cooperation of varied resources across multiple organizations, and require transparency and flexibility. With renewable energy goals becoming more prevalent among businesses, co-ops should be well-prepared to answer the renewable energy questions of their C&I members. Due to their simplified structure, focus on customer service, and commitment to community co-ops are able to provide value to large customers with aggressive sustainability goals.

Additional Resources

Google. “Expanding Renewable Energy Options for Companies Through Utility-Offered ‘Renewable Energy Tariffs’” April 2013.

<http://static.googleusercontent.com/media/www.google.com/en/us/green/pdf/renewable-energy-options.pdf>

Advanced Energy Buyers Group. “Renewable Energy Offerings that Work for Companies” April 2019.

<https://info.aee.net/hubfs/Renewable%20Energy%20Offerings%20that%20Work%20-%20FINAL%204-16-19.pdf>

World Resources Institute. “Implementation Guide for Utilities: Designing Renewable Energy Products to Meet Large Energy Customer Needs” June 2017.

https://wriorg.s3.amazonaws.com/s3fs-public/Implementation_RenewableEnergy_final.pdf

World Resources Institute. “Emerging Green Tariffs in U.S. Regulated Electricity Markets” September 2017.

<https://www.wri.org/publication/emerging-green-tariffs-us-regulated-electricity-markets>

National Renewable Energy Laboratory. “Utility Green Tariff Programs in the U.S.: Overview and Opportunities for Cost Savings” June 2019.

<https://www.nrel.gov/docs/fy19osti/74211.pdf>

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