



CHAPTER

6

Contracting for Green Power

To view the full Guide, visit <https://www.epa.gov/greenpower/guide-purchasing-green-power>



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ER INDUSTRY

SOLAR P



To select a green power supplier and product, purchasers should start by developing specific criteria for assessing their options. These criteria can be ranked based on the goals identified early in the process (see Chapter 5).

Developing Criteria for Screening Green Power Suppliers and Products

Criteria for Screening Suppliers

- **Reputation.** A supplier's reputation is built on how well it honors its commitments, how easy it is to work with, who its customers are and how well it is viewed by the industry. Assessing a supplier's reputation should entail obtaining references and conducting a review of energy industry literature. It may be also helpful to connect with environmental groups who might have information about the supplier.
- **Certification.** Certification provides important assurances related to the credibility of the seller and the sale of green power products. Retail green power suppliers, renewable energy certificate marketers, and projects selling directly to consumers may sell certified green power products.
- **Financial strength and credit.** To research the financial health of a power supplier, purchasers should look at its annual reports, Securities and Exchange Commission filings and bond ratings.¹
- **Location.** If buying green power from a local supplier, purchasers should ask where the supplier sources its renewable generation. Public utility commissions' websites often have contact information for registered retail suppliers.
- **Product choice.** Some suppliers offer several green power products that vary in the percentage of renewable power and mix of resources. In such cases, buyers may be able to change their product options in the future without having to search for a new supplier and negotiate a new contract.
- **Environmental performance.** Assessing a supplier's environmental performance can be useful. Review the supplier's annual financial, environmental, or corporate social responsibility reports; its other electricity product offerings; and other business activities.

These criteria may apply to all types of purchase options, including direct purchase options from generators. In direct purchase cases, organizations may want to consider the generating company's experience in building new projects of similar size and financial arrangement and its history of operation and maintenance. The next chapter discusses other criteria that may apply to self-generation projects.

Criteria for Renewable Electricity Products

- **Price.** When considering price, organizations should make sure they are comparing apples to apples. Differing prices might reflect different types of products. For example, renewable electricity products might quote total price per kilowatt-hour for electricity that includes the green attributes (e.g., RECs), which can be compared to the standard electricity price, but other product options, such as unbundled RECs and many utility green pricing products, quote only the incremental cost of green power, which must be added to standard electricity rates. Furthermore, prices for long-term contracts might be fixed or escalate over time, or they can be tied to a variable price index such as the wholesale price of electricity. Finally, the purchase of some utility green power

¹ SEC filings may be found at: <https://www.sec.gov/edgar/searchedgar/companysearch.html>.
Moody's bond ratings may be found at: <https://www.moodys.com/page/lookuprating.aspx>

products might offer an exemption from variable fuel charges or environmental taxes, which should be factored into the ultimate price.

- **Risk.** Different purchasing options allocate the risk of price volatility, equipment failure, non-performance and other potential issues in different ways. Risks can differ by geography and market. It is important to understand the risks associated with each purchasing option and how they might impact price over time.
- **Percentage of renewable energy.** Green power product resource mixes can range from 1 to 100 percent renewable power. Organizations can therefore calculate the percentage of their electricity use served by renewable power whether they are buying unbundled RECs or RECs bundled with electricity.
- **Incremental impact.** Voluntary buyers want their purchases to make a difference. To do so, their renewable electricity use must go beyond what otherwise would have been available through the standard electricity mix or beyond what is required or mandated by law, sometimes referred to as “regulatory surplus.” Voluntary buyers should ensure that the green power purchased voluntarily is not also used by the electricity supplier to meet a compliance obligation—thus ensuring that the voluntary purchase is incremental or surplus to any requirement imposed on renewable energy suppliers. Voluntary buyers demonstrate that their green power use is incremental or surplus to regulation by owning and retaining renewable energy certificates. By retaining ownership of renewable energy certificates, a voluntary consumer denies their use for compliance mandates or requirements by a regulated entity.
- **Percentage of “new” renewable sources.** Many organizations look for opportunities to support new generation. “New” renewable resources can be defined in different ways, however. Programs such as the U.S. Environmental Protection Agency’s (EPA’s) Green Power Partnership and Green-e define “new” as any renewable power generation that both meets specific environmental criteria and began operation within the last 15 years.² These purchases help create the aggregate demand necessary for constructing additional renewable resources while giving projects time to recover their capital costs. Some organizations want to have a more immediate, direct impact on supply by entering into long-term contracts with a project still under development. Their purchase contract may help the new project obtain financing and get built, however not all organizations are large or creditworthy enough to support project finance.
- **Renewable energy/resource type.** Purchasers may have different preferences for the kind of resource(s) used in green power products. Wind and solar are usually the most environmentally preferred energy sources, although even these are not without controversy. Some stakeholders are concerned that hydropower dams may alter river habitats and fish populations, but the impacts are site-specific. Biomass facilities may have air emissions impacts. Geothermal energy has limited environmental impacts, which can vary depending on the type of technology used. It is also important to check the environmental characteristics of any nonrenewable generation resources included in the product, as they will contribute to the overall environmental impact of the power purchased. Ultimately consumers should be concerned with whether their purchase of green power conveys the legal right to the environmental attributes of the resource, by way of owning and retiring the associated REC instruments.
- **Renewable energy resources also have different associated costs.** For instance, a green power product generated from a low-wind resource in one part of the country will generally be more expensive than a similar wind product generated in regions with higher wind speeds. See Chapter 3 for more on resource costs.
- **Length of contract.** Longer-term contracts, especially with new projects in development, are often attractive to buyers. Sellers may be willing to offer a discount in exchange for stable revenue that enables them to finance the project. The longer term of the contract offers greater price stability to the buyer and a greater leadership opportunity if it supports a new renewable energy project. Long-term contracts come with their own risks, however, if the buyer misjudges the future market price direction and ends up paying more than the actual market

² U.S. Environmental Protection Agency. (n.d.). Green power partnership: What is green power? Retrieved from <https://www.epa.gov/greenpower/what-green-power>

price. Technology costs could continue to fall, making shorter-term or smaller contracts attractive, as they leave future options open. Also, long-term contracts may be beyond the reach of buyers that represent a credit risk, or that are too small to justify the transaction and legal costs.

- **Third-party certification and verification.** A green power product can be certified and verified by an independent third party. A wide range of product options may be certified, including unbundled RECs, retail utility products, community choice aggregation programs, power purchase agreements with generators, and on-site generation. Such certification can provide credibility to the product and confirm the product's environmental value. By purchasing a product that has met specific environmental and consumer protection guidelines adopted by the certifying entity, organizations will be better positioned to address stakeholder questions about purchase quality and credibility. Regional REC tracking systems are not an equivalent replacement or substitute for third-party certification. Visit <http://www.green-e.org> for more information about certification and verification.
- **Location of generation.** Where the generation occurs may matter to purchasing organizations for several reasons. Some may prefer to buy locally (e.g., in-state) because the generating project is more visible, has a more direct economic influence, or creates a better story for local stakeholders. Others may prefer to buy in-state renewable generation to contribute local environmental benefits.

Location can also matter from the perspective of organizations preparing greenhouse gas (GHG) inventories. Although GHG emissions are global in impact, purchasing local non-emitting generation might lower the average emissions from the local electric grid. Long-term, this could be beneficial in an organization's Scope 2 location-based emissions calculation. If the organization intends to report avoided emissions (an option under Scope 2 accounting), it might choose to purchase from a region (not necessarily local) with high emissions because purchasing from this region could likely displace more emissions. For more information on GHG inventories please see Chapter 8.

- **Specific generation facility.** Some green power options are for power generation at a specific site, such as a nearby wind farm, rather than a mix of generation from different resources. These products, such as the annual output of one particular wind turbine, are sometimes preferred by customers because such products offer a closer sense of connection between a purchase and a specific environmentally beneficial facility. Some buyers will capitalize on this through naming or branding the facility, reserving the opportunity to provide tours, and other methods of reinforcing their connection to the project with their stakeholders.
- **Product complexity.** Different product and procurement options require different levels of effort and due diligence. For example, direct engagement with a project owner can involve lengthy negotiations and significant transaction costs relative to an off-the-shelf product from a retail electricity supplier. Financial PPAs or physical PPAs may require additional research on wholesale market prices, legal and accounting advice, and reporting if the contracts are regulated as a financial product.

The Role of Product Certification

One of the major concerns with buying green power is ensuring that organizations get what they pay for. It can be difficult to substantiate claims made about the quantity and characteristics of the product purchased. It is also important to ensure that two organizations are not claiming to have purchased the same green power (e.g., megawatt-hours) and are not double counting the same green power benefits (e.g., zero emissions electricity). Moreover, organizations may be unable to ensure public acceptance of their purchase and avoid criticism from external stakeholders without independently verified information about the product. Third-party certification addresses these concerns by setting standards for green power products in the following areas:

- Minimum levels of environmentally acceptable renewable resources
- Overall environmental impact
- Conduct for suppliers, including oversight of supplier advertising claims and regular reporting to the certifying entity

Third-party certification usually also requires independent verification by an auditor to document that green power sellers have generated or purchased enough renewable energy to match their sales commitments. Regional REC tracking systems are not an equivalent replacement or substitute for third-party certification.

Collecting Product Information

A good starting point for collecting information about specific green power options is the suppliers themselves. The Green-e list of certified products is another way to get started (see Chapter 10 under Finding Green Power Products). Purchasers should be sure to collect enough information to answer the decision criteria listed earlier, and to collect information consistently across suppliers and among products to facilitate comparison. A good way to find consistent information is through an exploratory letter or a request for information (RFI), listing individual criteria and addressed to specific suppliers.

In many states, competing electricity suppliers are required to provide an electricity label—analogueous to a list of food ingredients or nutrition label—that provides information in a standard format and makes product comparisons easier. This information is generally available directly from the supplier or from the state’s public utility commission (see Figure 6-1 for an example). Third-party certifiers, such as Green-e, also require standardized product content labels and provide product content information on their websites.

For direct purchase options, it can be challenging to find suitable new generation projects under development that fit the purchasing organization’s objectives. Each resource type has its own trade press (e.g., North American Windpower, Solar Industry Magazine³) that reports on new projects in the works, so following these media sources can be informative.

Self-generation options are discussed in more depth in Chapter 7, Planning a Self-Generation Renewable Project.

After collecting data from suppliers, the next step is estimating the full cost over time of the chosen green power option and calculating relevant financial metrics to present to decision-makers. As mentioned above, the organization should take care to compare apples to apples, as well as measure goals that are of value to the organization. For help finding cost data, contact the potential suppliers or do additional research using the sources listed in Chapter 10, Resources for Additional Information.

Figure 6-1. SAMPLE Environmental Disclosure Label

Energy Source (Fuel Mix)	Residual Mix - Year: 20XX		Fuel %
	Nuclear		35.22%
	Coal		31.00%
	Gas		26.01%
	Import Mix		5.89%
	Solar		1.22%
	Oil		0.60%
	Hydro		0.06%
Total		100.00%	
Air Emissions	Emission Type	Lbs. per MWH	Relative to State Average
	Nitrogen Oxides (NO _x)	0.123	98%
	Sulfur Dioxide (SO ₂)	1.2345	110%
	Carbon Dioxide (CO ₂)	987.6543	108%
<small>CO₂ is a greenhouse gas which may contribute to global climate change. SO₂ and NO_x released into the atmosphere react to form acid rain. NO_x also react to form ground level ozone, an unhealthful component of "smog."</small>			

³ North American Windpower: <http://nawindpower.com/>. Solar Industry Magazine: <http://solarindustrymag.com/>.

Creating a Procurement Plan

A procurement plan documents the purchaser's decisions and addresses possible challenges in buying green power. A procurement plan can also help convince others in the organization that purchasing green power fits the overall corporate strategy.

The main audience for the procurement plan is the managers who need to support the purchase decision. Their support should be secured as early in the process as possible. As soon as the green power project team can show the costs and benefits of purchasing green power to the organization, it should present the information to management. Managers may ask about the products the organization would buy, their cost and their benefits and the risks relative to different parties involved in the transaction. The procurement plan should compare the green power opportunity to what the organization is currently buying or using for power. The project team may also want to describe to what extent and how peer organizations are purchasing green power.

Besides providing the information management needs to make a decision, a procurement plan can also help overcome resistance to green power within the organization. Some organizations have outdated perceptions of the reliability of renewable energy technologies, misunderstandings about using a variable resource, worries about the cost, misperceptions of the role and importance of RECs, or different perspectives on certain product types. As part of the procurement process, the project team will need to educate others about these topics and the benefits of green power. The organizations that sponsored this guidebook can provide helpful information to overcome these misconceptions.

The scope and detail of the procurement plan will depend on the organization's needs and requirements, but it should address the following:

Scope of Procurement

The plan should list the facilities for which green power will be procured, because the quantity of electricity used in those facilities now and in the future will guide the size and timing of the purchase. Some organizations start out with a single facility and over time expand to cover their national footprint. The plan should propose the amount of power that to be purchased (as a fixed quantity, a fixed dollar amount, or a percentage of total power use). If this procurement is a trial that may lead to additional purchases in the future, the plan should spell out the criteria that will be used to judge the trial's success. The plan should describe whatever is known at this point about future procurement phases. For example, some organizations may start out with an unbundled REC purchase that is easy and straightforward and then, as they gain experience and learn more about available green power options, choose to pursue other supply options such as direct project engagement.

As described earlier, although long-term contracts offer price stability benefits and may help finance a new project, these benefits must also be weighed against the risk of changing market conditions. Therefore, some organizations consider a portfolio approach for their procurement. Much as a standard energy procurement strategy seeks to balance risk over time by considering a variety of suppliers, contract lengths and generation sources, a green power strategy can also benefit from a portfolio approach. Considering a range of purchasing styles and locking in smaller purchases or taking advantage of scaled larger purchases over time can be helpful in light of the rapid changes ongoing in the sector. Organizations operating in a range of geographies will also need to consider how to prioritize each market or how to aggregate purchases for these different facilities. For example, some organizations may prioritize facilities by cost-effectiveness or favorable policy climates, while others may prioritize by impact on greenhouse gas emissions reductions. Still others prioritize their iconic locations, such as the headquarters or customer-facing operations, first.

Expected Benefits

Keeping in mind the general benefits of purchasing green power, the plan should list the particular environmental, economic and stakeholder benefits expected from buying green power for the organization. Wherever possible, these benefits should be linked to the organization's goals, such as greenhouse gas reductions, electricity price hedging or enhanced branding.

Financial Considerations

The procurement plan should also discuss cost and risk. Cost has traditionally been the primary concern with green power, but there are an increasing number of emerging products and financing models for purchasing green power that can result in a net economic benefit or risk reduction over the long-term. Negotiating the right supply contract can have a big effect on the financial costs and benefits of buying green power.

Strategies to Manage the Cost of Green Power

- **Seek a fixed-price contract.** Because it requires no fuel (and hence its cost is predictable), renewable energy may be available at a fixed price without any future fuel-cost adjustments. Organizations should check with potential green power suppliers, particularly if the organization is considering a utility retail option, to see whether green power customers are exempted from fuel-cost adjustments.
- **Buy green power for only part of the organization's electricity use.** Green power does not have to be used for all electricity consumption. For example, an organization might buy green power for just 5 or 10 percent of its electricity use, or for certain production or a specific product line or part of operations. Buying 10 percent green power may add less than 1 percent to the organization's electricity costs and sometimes may cost less and save money. Alternatively, some lower-percentage renewable electricity products cost less because they contain less than 100 percent green power.
- **Make a longer-term purchase.** Organizations should consider the term of commitment alongside the quantity and cost of green power purchased. A short-term contract (typically less than three years) might offer greater flexibility in the future but might cost more. Direct project engagement options such as physical and financial PPAs, utility green tariffs, and self-generation involve longer-term commitments (e.g., 10+ years). The security of a long-term commitment can reduce risk to the supplier, allowing it to offer a lower price than under a shorter contract, and can offer price predictability to the purchasing organization. See Chapter 10 for more resources on PPAs, including contract price escalators and options for buyouts. Ultimately, the right contract length depends on the organization's goals and selection criteria.
- **Consider a financial PPA.** A financial PPA allows buyers to lock in stable green power prices and sellers to lock in stable revenues by agreeing to pay the difference between the actual power price and an agreed upon settle-

Case Study: Financial PPA with Renewables

Yahoo has stabilized its energy budget while helping a new wind farm get built. In 2015, the digital information company entered into a financial PPA with a wind farm that was under development in Kansas. The wind farm sells the electricity into the regional wholesale market at spot market prices, while Yahoo's nationally scattered data centers continue to purchase electricity from their local suppliers. The contract is structured as a contract for differences under which the parties agreed to a guaranteed settlement price for the sale of the project's electricity into the market over the duration of the contract. If the electricity sales income received by the wind farm is greater than the agreed settlement price, the wind farm pays Yahoo the difference between the income and the guaranteed price. Conversely, if the electricity sales income is less than the guaranteed price, then Yahoo pays the wind farm the difference. In the event of higher wholesale electricity market prices, the long-term fixed price provides savings to Yahoo and a guaranteed revenue stream for the wind farm. If electricity market prices are lower than the agreed-upon price, however, Yahoo may miss the opportunity for savings. For more understanding of the risks and benefits of financial PPAs, see Chapter 4, Green Power Product Options.

ment or “strike price.” It is an effective way for both parties to manage price risk, but financial PPAs are relatively complex procurements, generally only available to the largest, most creditworthy organizations, and may have accounting implications that some organizations consider onerous. For example, financial PPAs can be viewed as a type of financial derivative or swap transaction that may be regulated by the U.S. Commodity Futures Trading Commission. Such transactions require specialized knowledge about Financial Accounting Standards Board rules. See Chapter 4 for a fuller discussion of financial PPAs. Some additional resources are referenced in Chapter 10, but organizations should seek legal and accounting advice for the most current information.

- **Offset the cost with savings from energy efficiency.** Energy efficiency is often the first step in managing energy costs. Reducing the total amount of electricity purchased helps make green power more affordable. When reviewing green power providers, organizations may find that some providers also offer energy efficiency services, with the goal of no net increase in their customers’ power bills. The savings may work the other way, too. Some green power supply options can save on electricity costs, which can then be used to fund energy efficiency activities.
- **Use savings from competitive choices.** In states with restructured electricity markets, competitive choices of either green power or commodity electricity can lead to savings on energy costs, which can be used to buy green power. Alternatively, the extra cost of green power can be limited to the amount of savings resulting from competition. Switching to less expensive conventional power can also mean dirtier power, so organizations should ask the electricity supplier for information about the emissions from its product and make sure those emissions do not erode the benefits of the green power bought with the savings.
- **Specify a price cap.** For example, an organization might say in its request to suppliers, “We want our cost of energy to be at or below 5 cents per kilowatt-hour.” A drawback of this approach is that suppliers are likely to bid at or near the specified price cap. But if the organization is interested mainly in other aspects of green power, such as environmental benefits or hedge value, this can be a good approach. Even if a price cap is not the most important consideration, it is a good idea to decide on the highest price the organization is willing to pay for green power, as part of its internal procurement planning.

Procurement Methods

Organizations can purchase green power in several different ways, depending on the product options available and the organization’s procurement rules. Generally, the greater the load the buyer can bundle together in one purchase, the more attractive it will be to a supplier. Simply put, a large purchase can result in a lower price per unit and transactional efficiencies for both buyer and supplier.

The following explains typical ways to buy green power. Federal agencies must work within the procurement rules applicable to the federal government, which are explained further in Appendix A, Green Power Considerations for Federal Agencies.

- **Call several sellers.** A buyer can keep the procurement process simple by calling a few green power providers—either REC marketers, utilities, or other electricity providers available to them. An off-the-shelf product may meet its needs. If the organization wants something different, it can ask for an informal proposal. After a discussion, the organization may be ready to negotiate directly with one of the suppliers about product definition, certification, price and terms. If the organization is planning a large purchase, the suppliers might be willing to tailor something to the buyer’s needs.
- **Negotiate with the utility.** Buying power is simple, though the choices may be limited if the organization is served by a single utility in a regulated market. If the local utility offers green power, the organization can collect information by visiting the utility’s website and calling to discuss its interest. If the utility does not offer green power and the organization is a large, highly visible customer, it may be able to encourage the utility to offer a green tariff or an integrated energy efficiency and renewable energy package tailored to the organization’s green power goals.

- **Request proposals.** Large companies and especially public institutions often issue a formal solicitation or request for proposals (RFP). This practice is also recommended for direct project engagement options such as PPAs and self-generation. An RFP requires more time and effort for preparation, evaluation and negotiation but might be more suitable for a large purchase and when many green power options are available. With an RFP, it is important to understand the organization's own objectives and communicate them clearly in the solicitation. Third-party certification and verification can be specified in the RFP evaluation criteria.

RFPs can be as simple as a letter sent to selected suppliers describing the organization's objectives and asking for a bid. RFPs can also be more formal, casting a wider net through a broadly advertised solicitation. The latter requires more effort to prepare and evaluate responses.

A two-step process is possible, in which the organization first issues an RFI and, based on the responses, sends a more detailed RFP to those suppliers that meet its general requirements. The RFI would be broadcast to a larger audience, not only to find out who meets the buyer's qualifications, but also to gauge the amount of interest. Screening qualifications would emphasize experience and would vary according to the type of product option under consideration. For example, an RFI for a green electricity supplier might ask for the total load served, number of similar customers served, how long the supplier has been in the green power market and how many complaints have been made about the supplier to the public utilities commission. A buyer considering a PPA might want to know the number and size of projects developed previously, how long each project was in development, the developer's financial strength, and experience obtaining financing for similar projects.

For large purchases, RFPs may be addressed to renewable power generators (wholesale) as well as retail suppliers. Buying directly from generators might lower the cost but will likely require a longer-term purchase commitment. Organizations will still need to work with a retail supplier to integrate the wholesale contracts, so active engagement with a preferred retail supplier will be important.

EPA's Green Power Partnership offers assistance to partners putting together a green power purchase RFP. For example, the Partnership can provide examples of publicly available RFIs or RFPs.

Contract Considerations

There are many issues that must be covered in green power contracts; those mentioned here are just a few. See Chapter 10 for more resources on power purchase agreements.

- **Environmental attribute ownership.** RECs embody the environmental attributes of generation. They are essential to verifying ownership and the right to claim environmental attributes. It cannot be overemphasized that RECs, as a tracking instrument, must be conveyed to the buyer who claims to consume green power, regardless of the product option chosen or how green power is procured, including in the case of on-site self-generation and physical PPAs. If the RECs are owned by the project owner and not conveyed to the electricity consumer, the consuming organization must purchase replacement RECs, and the green power claim must be based on the replacement RECs. See the text box on REC Arbitrage in Chapter 4.

Organizations should make sure that the green power they purchase is not also counted by utilities for compliance with regulatory requirements such as renewable portfolio standards, and RECs used for regulatory compliance claims should also not be sold to voluntary consumers. Utilizing tracking systems and third-party

Using an RFP versus an RFI

An RFI may be a productive way to engage suppliers about innovative, new purchasing strategies. Suppliers might not want to respond to an RFP if the request is not "cookie cutter," as they know significant negotiations would be required once the winner is selected that could require changes to their costs while locking them into a pricing commitment. Organizations can ensure broad participation and validate interest from the market about new purchasing ideas with an RFI. Based on the results of the RFI, organizations can either proceed directly to negotiating with a particular vendor or refine their procurement goals in order to issue a detailed RFP that will have a better chance of multiple qualified bidders.

certified products can help ensure that RECs are not claimed by more than one party. To avoid potential double claims on environmental benefits, contracts should be explicit about what environmental attributes are included with the sale, that the purchase conveys exclusive rights to the attributes, and that they are not being used for any mandate or regulatory requirement. For more information, see Chapter 2 on renewable energy certificates and tracking systems.

- **Evaluate contract price escalators.** Some contract prices for delivered power are flat for the life of the contract, but they may start off higher than the utility rate at the beginning with the expectation that the utility rate will rise. Other contracts may escalate the price annually by a fixed percentage, leveling off after a specific year. Still others may index the contract price, offering power at a fixed discount to the local utility rate. Organizations need to figure out what is best for them.
- **Consider options for PPA buyouts.** Some contracts, particularly for electricity from solar projects, may allow the purchasing organization to buy the generator after the original developer/owner has obtained any tax benefits that may be available (e.g., the federal investment tax credit). This approach reduces the investment capital required and removes the hassle of build-to-own in the first place. If interested in this approach, and if it is available, the organization should agree on the basis for determining the buyout price.
- **Termination clauses.** Some contracts will define early termination fees and penalties. Fully understanding how these might constrain future decisions for the company is an important part of risk evaluation.
- **Transfer of ownership.** Generation assets may be sold to a third party, in which case the buyer of the asset will be responsible for fulfilling the terms of the PPA. The contract should specify under what circumstances such transfers will be allowed and whether the PPA off-taker has a say in the transfer.
- **Date of operation.** If the organization is counting on a new generator being operational by a certain date, it should negotiate and specify in the contract when the power must become available and describe penalties or remedies if full operation does not occur by the specified date.
- **Interruptions in operation.** The generator should be required to notify the purchasing organization of any malfunction or interruption in supply and be required to make timely, routine and necessary repairs to resume service.
- **Default, remedies and damages.** The contract should specify what constitutes default and how default may be remedied.

Special Considerations for Procuring Green Power

- **Green power initiatives.** Organizations should be aware of purchasing groups, campaigns and initiatives supporting green power, along with opportunities to capitalize on their environmental commitment. These include the U.S. Environmental Protection Agency's Green Power Partnership, RE100, Sustainable Purchasing Leadership Council, the World Wildlife Fund and World Resources Institute's Corporate Renewable Energy Buyers' Principles, and others. By joining forces with other like-minded organizations, green power purchasers can leverage their influence on the market and potentially on public policy. More information can be found in Chapter 10.
- **GHG Protocol Scope 2 Guidance.** Any organization that wishes to report its emissions to its stakeholders or to a GHG

Case Study: Procuring On-site Generation through a Solar PPA

Amphitheater Public Schools, the school district serving Tucson, Arizona, entered into a solar PPA for a 9.3-MW solar generation project located across 25 school sites and support facilities. The project was completed in 2016 and is expected to generate more than 60 percent of the district's electricity needs in the first year of operation. The project required no upfront capital investment from the school district. Instead the developer owns and operates the solar power system, and the district will purchase the electricity generated by the solar panels under a 25-year solar services agreement. The project will result in an expected savings of \$11 million to \$23 million in energy cost savings over the term of the agreement.

emissions registry should know about the Corporate Standard for emissions accounting, specifically the Scope 2 Guidance on how organizations should measure emissions from purchased or acquired electricity, steam, heat and cooling (called “Scope 2 emissions”). The guidance includes requirements for accounting for emissions from energy contracts and RECs in greenhouse gas inventories, how to calculate emissions using the location-based method and the market-based method (using tradable instruments such as RECs), quality criteria that all tradable instruments must meet to be considered a reliable data source for the market-based method; and recommendations for transparently disclosing information about energy purchases and use.

Evaluating the Purchase

Once the green power purchase has been implemented, it is important to collect information and evaluate how well the purchase achieved the organization’s goals. Areas of evaluation could include:

- How well the procurement process worked.
- Whether the vendors delivered what was expected.
- Whether the green power purchase is meeting the metrics described in the procurement plan, producing savings or providing an economic hedge against rising electricity prices.
- How well the organization promoted its green power commitment.
- How well the organization educated employees about the green power commitment and actions.

Whether the green power purchase is helping the organization meet its corporate or institutional goals related to environmental improvement and sustainability.

REC Tracking Systems

A tracking system is an electronic database that is used to track the ownership of RECs or megawatt-hours of electricity, much like an online bank account. A tracking system issues a uniquely numbered certificate for each megawatt-hour of electricity generated by a generation facility registered in the system, tracks the ownership of certificates as they are traded between tracking system account holders, and retires the certificates once they are used or claims are made based on their attributes or characteristics. Because each REC has a unique identification number and can only be in one owner’s account at any time, a tracking system reduces ownership disputes and the potential for double counting.

RECs in a tracking system can be used to verify compliance with a renewable portfolio standard, to help create environmental disclosure labels, and to substantiate voluntary green power or environmental claims. Tracking systems are not substitutes for product certification and verification, as tracking systems only monitor wholesale transactions and do not provide assurances related to sales, supply, claims, and state policies affecting benefits; individual retail green power customers do not generally hold accounts in tracking systems unless they make very large purchases. See Chapter 10 for details.