



Serious business:

Corporate procurement rivals policy in driving growth of renewable energy

Contents

Executive summary	3
Introduction	4
Companies demand simplified access to renewable energy	6
Small but mighty customers	9
Next-wave needs differ	10
Small and mid-cap top five list	12
Conclusion	13
Endnotes	15
Contacts	16

Executive summary

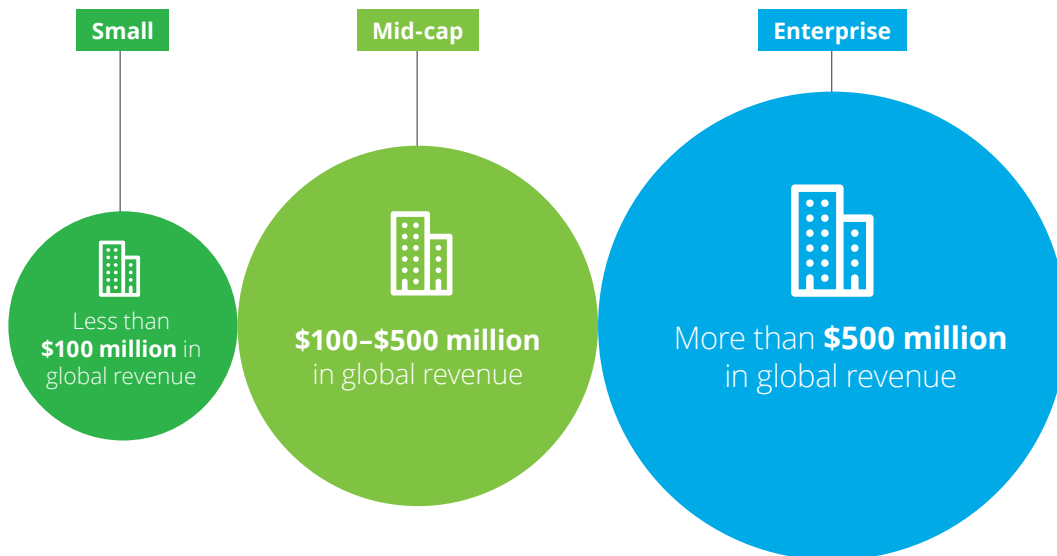
Large corporations have taken a leadership role in procuring renewable energy around the globe. Many have publicly pledged to reach 100 percent renewable energy in the next two decades or sooner through programs such as RE100 and the Renewable Energy Buyers' Alliance. Some of these organizations have already surpassed the halfway mark in achieving those goals. What's clear is that the train has left the station: Renewable energy is vital for corporations, and corporate procurement now rivals policy as a driver of growth in the sector.

These large enterprises have pioneered many means of procuring renewable energy, and their methods and goals have been documented in numerous publications and public forums. However, what has largely been missing from these discussions is how mid-cap and

small corporations are approaching the procurement of renewable energy. Do they have the same drive as their larger counterparts? What motivates or disincentivizes them? Do they require new contracts and structures and ways of purchasing electricity from renewable sources?

As suggested by the findings of the [Deloitte Resources 2017 Study](#) and other research, many mid-cap and small companies are already looking for ways to invest in wind, solar, energy storage, micro-grids, and other advanced energy technologies—and they are likely to ramp up these efforts in the foreseeable future. This represents an opportunity for utilities and renewable developers to get ahead of the curve in capturing the next generation of opportunities in the renewables space by beginning to work with this underserved population now.

Figure 1. Company size



Introduction

Large corporations around the world are demanding renewable energy on a scale that few anticipated. “After a record year in 2015, when corporate purchasers and other nonutility buyers signed contracts for more than 3.7 gigawatts (GW) of solar and wind power—surpassing utility purchases—corporate procurement maintained a steady clip in 2016, reaching 2.5 GW by the end of the year.”¹ And this momentum shows little sign of abating. The Rocky Mountain Institute (RMI) tracked 1.24 GW of corporate renewable energy procurements in the United States and Mexico from the beginning of January through June 15, 2017, putting the sector on pace to surpass 2016 figures.² These numbers do not even count on-site generation, which is another important way that corporations are pursuing their renewable energy goals.

While several large US multinational corporations—particularly those in the information technology sector—are at the forefront of the green power movement, corporate procurement of renewables is virtually a universal trend. Advanced Energy Economy reports that 215 Fortune 500 companies (43 percent) have a sustainability target, a renewable energy target, or both.³ And large, big-name corporations around the world are aggressively pursuing renewable energy goals, with some such as Unilever (UK-The Netherlands), Ikea (Sweden), Toyota (Japan), AkzoNobel (The Netherlands), AXA (France), and Barrick Gold (Canada) widely publicizing their efforts. However, corporate interest in green power isn't limited to large enterprises. Internationally, an array of small and mid-cap companies is also procuring renewable energy and setting ambitious carbon reduction goals. These companies range from cement maker Dalmia Bharat (India) to Alstria Real Estate Investment Trust (Germany), and Amalgamated Bank (US).

There are several reasons why companies of all sizes are taking a keen interest in procuring renewable energy. As one might expect, economics are a significant driver. Solar and wind power are now cost-competitive with electricity generated from fossil fuels in many areas of the world. Furthermore, the predictable, rather than fluctuating costs of renewables can provide a hedge against future fuel price volatility. But there are other forces at work as well. Businesses are setting sustainability goals to enhance their reputations and satisfy their investors and customers, who are increasingly demanding action on environmental stewardship and climate change. While this factor is harder to quantify, more and more companies around the world appear to be embracing the concept that being a good corporate citizen is good business, and helping to “green the grid” is an important part of that equation.

As in any wholesale movement, some sectors are ahead of others. Technology companies with large data centers and big-box retailers with hundreds of stores were the early movers in procuring renewable energy, followed by consumer-facing companies

whose brands were closely associated with sustainability. Today, participation is broadening across sectors, extending into industrials, chemicals, and automotive.⁴ Even traditional energy and resources companies are getting in the game. Glencore, the world's biggest shipper of seaborne coal, now gets 19 percent of its energy from renewable sources according to its 2017 sustainability report,⁵ and Royal Dutch Shell has announced plans to spend up to \$1 billion per year on its New Energies division by 2020.⁶

The broadening of the corporate procurement trend is further evidenced by the number of coalitions and alliances recently formed to help companies procure renewable energy. These include the [Renewable Energy Buyers' Alliance](#) (REBA), which “works across customers, suppliers, and policymakers to identify barriers to buying clean and renewable energy, and then develops solutions that meet rapidly growing corporate demand.”⁷ In the process, the organization claims to be “greening the grid for all.”⁸ There is also the [RE100](#) campaign, which supports companies that have publicly committed to 100 percent renewable electricity. Founded just three years ago in 2014, the RE100 recently surpassed the 100-member milestone, and its total demand for renewable electricity equals 146 terawatt hours (TWh) annually—enough to power Poland or New York State.⁹ Its membership is growing globally with initiatives underway in Europe, India, China, and the United States.¹⁰

Activity in support of corporate procurement of renewable energy has been particularly strong in the United States over the last few years. In addition to the coalitions described above, developments have included federal tax policies (e.g., the Investment Tax Credit for solar and the Production Tax Credit for wind), state renewable portfolio standards (RPS), and US commitments under the UN-led Paris Agreement on climate change. Now, with the US presidential administration curtailing action on climate change, some are naturally questioning whether this momentum will continue. However, far from being a roadblock, the US withdrawal from the Paris Agreement appears to be giving renewable energy an unexpected—and likely unintended—boost. Interest in the aforementioned initiatives and other efforts to support the growth of renewable energy has intensified since the announcement. Within days of the administration's decision, 1,219 governors, mayors, businesses, investors, and colleges and universities across the United States, or with significant operations therein, declared their intent to ensure the country remains a global leader in reducing carbon emissions.¹¹ Signatories of the declaration, known as *We Are Still In*, represent 120 million Americans and \$6.2 trillion of the US economy—not to mention the broadest cross-section of the American economy yet assembled in pursuit of climate action.¹²

This strongly suggests that regardless of politics, renewables growth will continue in the United States—and corporate demand is one of the key drivers.



Companies demand simplified access to renewable energy

As corporate procurement of renewable energy becomes more widespread across the United States, and companies set increasingly ambitious goals, uncertainties remain regarding whether or not current purchasing mechanisms can satisfy the growing demand for green power. At present, even larger, more experienced companies are running into procurement barriers, especially concerning power purchase agreements (PPAs). Though 71 percent of Fortune 100 companies have renewable energy goals, only 13 percent have signed PPAs.^{13,14} These agreements are difficult to negotiate for several reasons. They are inherently complex because they involve multiple parties and they invoke regulatory considerations, the extent of which depends on the location of the generation assets, the utility, and the electricity off-takers. (See sidebar, PPAs perplex some buyers: Here's why)

While PPAs are becoming more commonplace and several large corporations have been successful in negotiating them, some companies—especially small and mid-cap ones—do not have the buying clout, legal resources, or electricity market experience necessary to power through these barriers. Consequently, it is becoming increasingly clear that the PPA mechanism alone is not sufficient to meet the growing corporate demand for renewable energy. In response, stakeholders throughout the value chain (e.g., policymakers, utilities, developers, and the companies themselves) are exploring other ways to meet the needs of increasingly ambitious corporate buyers. In the United States thus far, these efforts have resulted in:

- **Green tariffs:** These are specific rates and transaction structures within regulated markets that a utility, the state regulatory body, and the corporate purchaser work out among themselves. If the basic framework of the agreement proves successful, regulators will sometimes allow it to be applied to additional deals within the territory.
- **Green-power programs:** These are typically utility-sponsored programs that permit households and businesses to purchase green electricity—often at a premium—from local renewable sources. In the case of large corporate purchases, the Renewable Energy Credits (RECs) may be bundled into the agreement. (See sidebar, Making sense of RECs)

- **RECs:** Companies in areas where green tariffs or green-power programs are not available may choose to buy RECs from a vendor. This is a way for companies to work toward their sustainability goals and support the renewable energy market without signing power contracts to obtain green power.

Notwithstanding the many ways US commercial and industrial customers can presently buy renewable electricity, some corporations, particularly larger ones, believe they are not moving fast enough toward their renewable energy goals, which are often pegged to an aggressive timeline of approximately five years.¹⁵ In addition, some corporate buyers are motivated by the concept of “additionality,” or using their influence and purchasing power to make a difference on a grander scale by adding new renewable assets to the grid. This could partially explain why only 6 percent of business respondents in the Deloitte Resources 2017 Study indicated they purchase RECs instead of directly procuring renewable energy. While the transaction is simpler, purchasing RECs from a secondary market does not necessarily contribute to building new renewable assets.

Despite the challenges in purchasing green power, corporations are not backing off. On the contrary, they are becoming more creative in attaining their goals. How? Some companies are opting to “do it themselves” through self-generation. According to the Deloitte Resources 2017 Study, about six in 10 businesses now have some form of on-site electricity generation, and of those that self-generate, 21 percent of their electricity supply comes from renewables.

Others in regulated markets have demonstrated their willingness to pay high fees in order to “exit” their utilities and procure renewable energy directly from developers. Two casinos in Las Vegas offer a case in point. MGM Resorts International and Wynn Resorts petitioned the Nevada Public Utilities Commission for permission to purchase power from alternative providers who could supply them with more renewable energy.¹⁶ After a year-long debate, they received permission, and on October 1, 2016, the companies started parting ways with the state’s vertically integrated utility.¹⁷ Since the companies represent about 6 percent of the utility’s business, utility regulators required them to pay a

collective \$100 million in impact fees to ensure that ratepayers would not shoulder the cost of their exits.¹⁸ Despite these fees, the companies believe the shift will be good for business in the long run as they gain the opportunity to control their power supplies directly, cut costs by purchasing power in wholesale electricity markets, and take advantage of innovation and technological advancements—all without a third-party intermediary.¹⁹

Other companies are still refusing to do business in states where utilities or local regulatory commissions are unable to accommodate their desires to purchase renewable energy. Partly due to regulatory constraints, utility executives in the heart of America's coal country found themselves at odds with a coalition of large corporations that demanded access to low-carbon energy as a requirement for expanding their operations in the region.²⁰ In response, some utilities and regulators in these areas are working to provide greater access to green power in an effort to attract and retain

corporate customers and, by proxy, strengthen their local economies.²¹

As these examples demonstrate, renewable energy has become serious business for corporate buyers, and many of them are uniting under REBA to devise the Renewable Energy Buyers' Principles. The principles outline six criteria that would simplify access to renewable energy:

- Greater choice in procurement options
- More access to cost-competitive options
- Longer and variable-term contracts
- Access to new projects that reduce emissions beyond business as usual
- Streamlined third-party financing
- Increased purchasing options with utilities²²

Making sense of RECs

RECs, sometimes referred to as “green tags,” “green certificates,” or “renewable energy certificates,” are tradable instruments that can be used to meet voluntary renewable energy goals and comply with mandatory renewable energy policies such as state-level renewable energy portfolio standards. Each REC represents one megawatt hour (MWh) of electricity generated from an eligible source of renewable power. Put another way, it represents a quantifiable claim to the environmental attributes associated with renewable energy generation. To ensure that only one party gets to claim these attributes at any given time, each REC details the underlying generation source, its location, and when the power was produced.

Compliance or mandatory markets for RECs have been created in markets that require industry participants to incorporate a specified level of renewable energy into their electricity supplies. In other places, voluntary REC markets have formed in response to electricity customers' preferences for green power. As one might expect, RECs are generally more expensive in mandatory markets and less so in voluntary ones. RECs are often bundled into power purchase agreements for renewable electricity, since corporate and utility buyers typically value the power's clean attributes as well as its financial characteristics.

While RECs offer a convenient way to support the development of renewable energy, purchasing RECs in a secondary market does not necessarily deliver “additionality,” or putting new renewable assets on the grid. RECs represent the time-stamped output of renewable assets, and, like stock certificates, they can be traded multiple times. The output a given REC represents may not be recent, and the asset could have been built some time ago.

In making sense of RECs, it is also important to distinguish them from carbon offsets, as the two are frequently confused. Carbon offsets are not tied directly to green-power generation. Instead, they allow companies to reduce their greenhouse gas emissions liability by buying the emission reductions made by another organization.¹ Each carbon offset represents the equivalent of one ton of carbon dioxide emissions avoided.²

Sources: 1. Chris Lau and Jaineel Aga, “The bottom-line on renewable energy certificates,” World Resources Institute, November 2008, <http://www.wri.org/publication/bottom-line-renewable-energy-certificates>, accessed August 16, 2017.

2. Ibid.

PPAs perplex some buyers: Here's why

Because they come in many varieties and are regulated differently in each state or territory, PPAs can be hard to understand and even harder to negotiate. In about one-third of the United States, regulatory barriers make it impossible for corporations to source wind and solar energy directly from developers via a PPA. Even when it is legally possible to procure renewable electricity directly from developers, the location still has to be right— meaning that the company's load has to be in close physical proximity to the solar or wind installation so a direct connection to the generation asset can be made. The demands of close physical proximity are hard to fulfill, even when a utility assists in making the connection and distributing the power. If the generation asset is on the same grid as the company's load, the corporate buyer can sometimes enter into a physical or "sleeved" PPA. In this type of arrangement, the corporate buyer appoints a licensed utility to physically deliver power on its behalf—in other words "sleeving" the electricity from the generation asset to the off-take point(s). In this type of arrangement, the corporate buyer will generally want to ensure that the terms of the PPA, including the transfer of RECs, match the terms of a separate distribution agreement with the utility in order to avoid introducing more risk.

The limitation of having to connect corporate load and renewable supply through the same grid largely explains why the vast majority of megawatts contracted to date have been signed through "virtual" or "synthetic" PPAs, which essentially are financial, not physical, arrangements. While these agreements free corporate buyers from such restrictions, they are more complicated to negotiate since they often require external counsel and are subject to market and basis risks.

Although the details vary, a virtual PPA is essentially an arrangement through which a corporation contracts to buy a certain amount of solar or wind power at a fixed price from a distant developer. In exchange, it receives the associated RECs and a portion of the revenue generated from selling that energy into the wholesale markets. Meanwhile, the utility gets paid to handle transmission and distribution as a middleman. In this type of arrangement, it is likely that the corporation will not actually use the electricity generated from the wind or solar installation, but instead will receive an equivalent amount of electricity from its utility. Nonetheless, it will still get credit for the clean energy produced—and presumably for supporting wind and solar development—by purchasing the RECs as part of the deal.

PPAs of any variety have limitations

Consumer and industrial customers must take into account many factors related to contract length, the location of the renewables project, and the dynamics of regional electricity markets when negotiating either physical or virtual PPAs. For instance, companies may not receive the return on investment

that they expect because it is often based on the assumption that wholesale electricity prices will be higher than the PPA price or that they will rise over time, which is not always the case.

In some regions, mismatches between the value of the electricity being produced (i.e., the wholesale market price) and the cost of production are starting to occur. In these situations, a company could find itself paying a premium for a particular source of renewable electricity rather than saving money as it anticipated. And while selling the RECs in a secondary market may put the deal "in the black" from the corporate buyer's perspective, this activity would detract from the company's original goal of being able to claim the renewable attributes of the project.

Because PPAs have these limitations and do not entirely eliminate energy price risk for the corporate buyer, some companies choose to use them in conjunction with other hedging arrangements, which adds to the overall complexity of each deal. Furthermore, since these deals sometimes cross regulatory jurisdictions, they can require a cadre of lawyers, renewable energy experts, and commercial negotiators with power market experience, which increases both the cost and time required to complete them.

Complexity is a global challenge

The United States is not alone in struggling with the complexities of PPAs. Global growth in corporate PPAs has been limited to date, with the UK being the primary "hot spot" outside of the United States.¹

The UK, which is largely deregulated, has been successful in developing markets for corporate PPAs. This has been mainly due to policy and market conditions such as the competitive price of renewable power, volatile spot electricity prices, an active project finance market for large renewable projects, and a Renewable Obligation Certificate policy, which provided a steady source of revenue to developers. The fact that the UK power market is connected via one centralized transmission grid has also aided market development since physical or sleeved PPAs are possible in many instances.

Despite the challenges associated with PPAs, a number of companies have been successful in securing them for renewable electricity in diverse markets. Unilever, for instance, has established PPAs in India, Mexico, the United States, and Germany.² The World Business Council for Sustainable Development has identified several future growth markets for corporate PPAs including, but not limited to, Mexico, Chile, Brazil, China, India, South Africa, and Sweden.³ This supports the assertion that corporate procurement of renewable energy is an irreversible global phenomenon—one that will likely get stronger as industry participants work together to streamline and standardize PPA contracts throughout the world.

Sources: 1. "Corporate renewable power purchase agreements scaling up globally," World Business Council for Sustainable Development, October 2016, http://www.wbcsd.org/Clusters/Climate-Energy/Resources/Corporate_Renewable_PPAs_Scaling_up_globally, accessed August 16, 2017.

2. Ibid.

3. Ibid.

Small but mighty customers

Although large corporations have dominated the public discussion thus far, small and mid-cap companies also have ambitious renewable energy procurement goals, and these companies represent a largely underserved market. The Deloitte Resources 2017 Study, which surveyed US businesses of all sizes, found that 50 percent of mid-caps and 55 percent of small companies have put formal goals in place with respect to electricity and other resource management practices. The study findings further revealed that about half (48 percent) of US businesses are working to procure more renewable energy. But when examined in terms of company size, small companies are more likely (56 percent) to report they are working to procure more renewable electricity. This compares to 41 percent of mid-caps and 47 percent of enterprises.

Some industry organizations, such as the Rocky Mountain Institute (RMI), are starting to acknowledge that diversification beyond large companies in the commercial and industrial (C&I) market is a growing trend as small and mid-cap companies increasingly seek to procure renewable energy.²³ RMI points out that this trend could accelerate quickly as large corporations start to impose sustainability standards on their supply chain participants.²⁴ Other factors that could bolster the small and mid-cap market include the proliferation of new deal options ranging from green tariffs and more flexible PPAs to new rate structures and aggregation. But perhaps most compelling is the declining cost of solar and wind power, which is increasingly putting renewables on par with conventional forms of electricity generation.

In an effort to reduce risk and make renewables even more financially attractive to potential buyers, RMI has launched its Business Renewables Center, a membership platform that streamlines and accelerates corporate purchasing of off-site, large-scale wind and solar energy.²⁵ The center's stated objective is to help corporations procure 60 GW of renewable energy by 2030.²⁶ To that end, it has devised a new market analysis platform to identify regions where wind and solar projects are more likely to be economically attractive.

The improving financial equation for solar and wind power is making some sector participants wonder: If companies of any size have the option of paying less for renewables than for other forms of generation, then why wouldn't they seize this opportunity?

Driven by these converging forces, small and mid-cap companies represent the next wave of opportunity for utilities, renewable developers, and service providers. The recent movement in this segment raises the genuine possibility that the current trickle of small and mid-cap C&I customers seeking green power could soon turn into a deluge. If the floodgates open, the question is: Will developers and utilities be ready?



Next-wave needs differ

Our field experience, the findings of the Deloitte Resources 2017 Study, and the insight we have gleaned in recent interviews with corporate buyers all suggest that the market is largely unprepared to meet this demand. Simply put: The trend toward corporate procurement of renewables is expanding faster than many expected. Furthermore, as developers and utilities scramble to meet the renewable energy demands of their largest customers, they have not had the resources to look downstream to small and mid-cap businesses. These companies are either growing impatient and blazing their own trails or following close behind their larger counterparts, sometimes as part of enterprise supply chains.

Few thought that business goals could surpass policy (i.e., state RPS and the availability of federal tax credits) in driving renewable development, but that appears to be happening.

Amid this swirl of activity, the market has yet to fully address the distinct challenges that small and mid-cap companies face when procuring renewable energy. For instance, small and mid-cap companies are generally seeking smaller PPAs with shorter and/or variable terms. They also tend to have smaller tax-equity appetites as well as less in-house expertise in analyzing the tax and accounting implications of entering into a PPA or tax equity arrangement. Intense competition for capital also poses a frequent hurdle. The business case for sustainability initiatives must often go head-to-head with other projects, some of which may be mission critical. A current lack of suitable off-the-shelf software systems for tracking the return on investment (ROI) for energy management projects does not help the situation, and neither do entrenched attitudes in certain sectors that “we’re not in the energy business.” Collectively, these challenges paint a complex picture for small and mid-cap companies trying to find ways to fulfill the renewable energy components of their sustainability goals.

In addition, small and mid-cap companies have not received as much press attention as their larger counterparts, which leaves sector participants with less visibility into how these companies are going about, or expect to go about, procuring renewable energy as part of their business strategies. Once again, the Deloitte Resources 2017

Study provides some insight. Of the US business respondents that are already procuring electricity from renewables, most are doing so through traditional or virtual PPAs, regardless of company size. Mid-caps, however, are most likely (56 percent) to procure renewable energy through a virtual PPA, while enterprises (38 percent) are the least likely. Mid-caps are also the most likely (39 percent) to procure renewable electricity through an on-site renewable resource, with small companies being the least likely (23 percent) to pursue that option. And mid-caps are the most likely (35 percent) to participate in green-power programs, while enterprises are the least likely (20 percent). These findings suggest that the mid-caps that are already in the game are open to procuring renewable energy in a variety of ways, whether by purchasing provider offerings or negotiating their own deals.

But what about the companies that indicated they are not working to procure more renewable energy? What would move them off the dime? A solid majority (58 percent) of those not working to procure more renewable electricity from renewables said combining renewables with battery storage would motivate them to do more. This concept particularly appealed to small companies (63 percent). This could potentially be due to the desire of small companies, which are presumably on tight budgets, to avoid demand charges. Battery storage could help by giving more operational flexibility.

To obtain greater context and potential clarity around these findings—and to learn more about the small and mid-cap segments—Deloitte interviewed subject matter specialists and providers of energy management products and services. What we found was that a dearth of feasible options and the challenges of procuring electricity across different jurisdictions are driving companies of all sizes to innovate in their efforts to meet their social and environmental responsibility goals.

Outdoor apparel maker Patagonia is a good example of this type of creativity. The company aims not only to reach 100 percent renewable energy, but also to inspire its stakeholders, as well as other companies, to reduce their environmental footprints—all while enhancing its own financial performance. In pursuit of these objectives, the company has gone well beyond typical procurement methods to source green power and to further the development of clean energy. For instance, Patagonia has formed its own corporate venture capital fund, Tin Shed Ventures™, to invest in environmentally and socially responsible start-up companies. Recently, the fund has financed rooftop solar development. In an interview with Deloitte, Tin Shed Ventures™ Managing Director Phil Graves explained that by leveraging federal investment tax credits for solar, the company has been able to generate a positive return for the fund while successfully putting thousands of solar panels on

people's rooftops. Tin Shed Ventures™ is also exploring community solar opportunities that would provide green power to Patagonia's customers while allowing them to participate in developing clean energy infrastructure.

Intuit, a provider of small business and personal financial and tax software, is also pushing the envelope in its efforts to procure renewable energy. In a recent interview, Intuit executives Scott Beth, vice president of finance and workplace real estate, and Sean Kinghorn, senior program manager of global sustainability, explained that the company uses a variety of models for structuring its renewable energy investments—from PPAs to operating leases to buying systems outright. They also stressed that Intuit seeks to improve the sustainability of its overall operations through data center strategies, travel programs, and other measures.

To extend the reach of its efforts, Intuit recently partnered with a distributed solar provider to create an attractive, cost-competitive rooftop solar offering for its employees. Mr. Beth and Mr. Kinghorn observed that this program has been successful both in terms of employee adoption and the learnings it has produced, which can now be used to refine future offerings. They note the criteria for success is not only to improve the sustainability of the organization and its stakeholders, but also to do it in a way that makes financial sense.



Small and mid-cap top five list

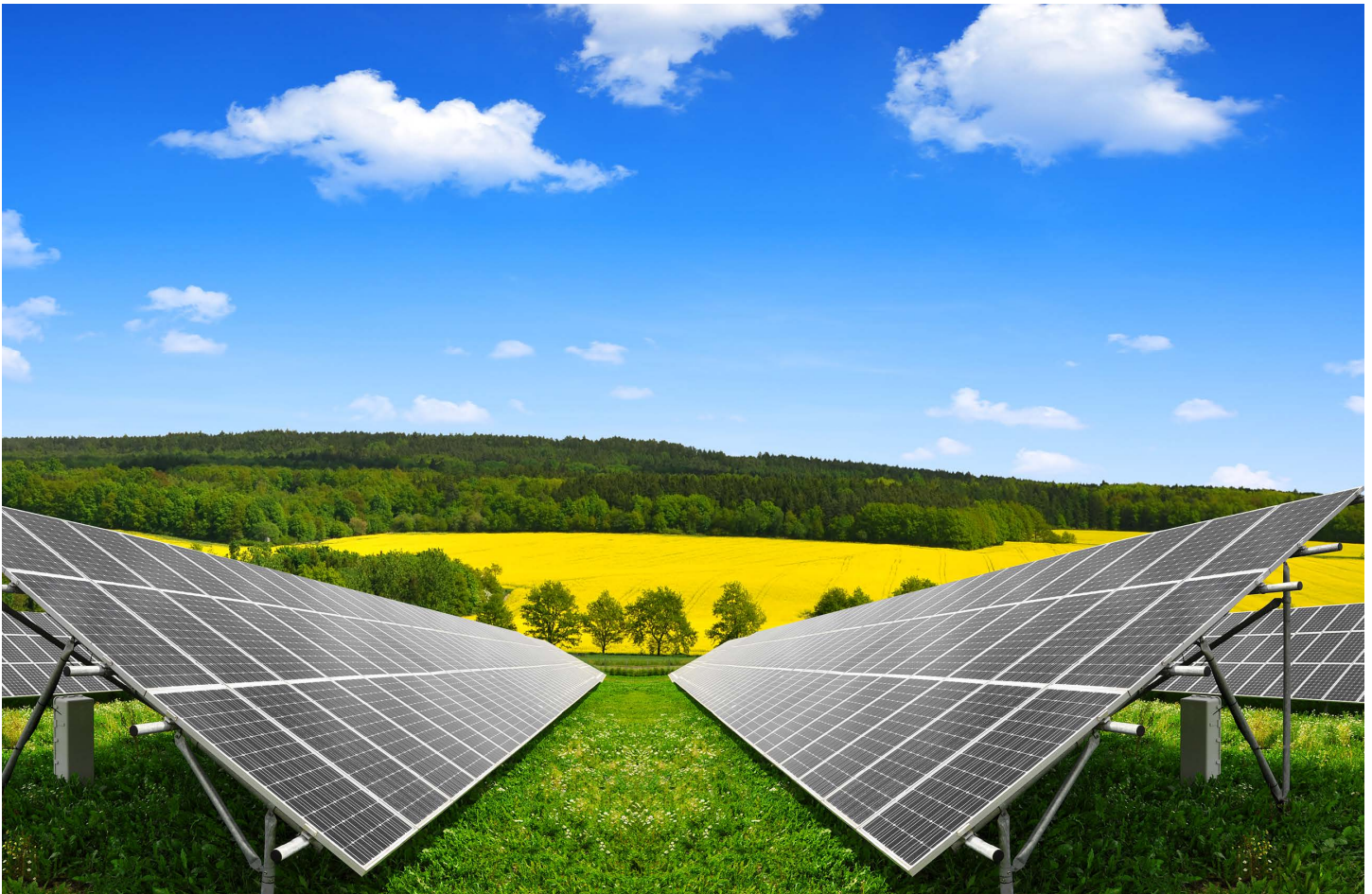
While innovations like these are welcome, small and mid-cap companies—many of which are in the early stages of implementing sustainability programs—are generally looking for an easier path to procuring renewable energy. Therefore, both utilities and renewable developers have an opportunity to be problem solvers for this segment, helping them to accelerate their progress by simplifying the renewable procurement process. From our perspective, here are the top five things to consider when targeting the small and mid-cap segment.

- 1) Offer services and options to companies that cater to various risk appetites and maturity levels.** Some companies are just beginning to launch their energy management programs and to explore the value proposition of renewables. Simply put: They are neither willing nor able to adopt complex solutions that require them to alter their operations or make significant capital investments. Helping them pick the low-hanging fruit first can lay the groundwork for a lasting relationship. As they become more mature—and presumably more confident—providers can move from the basics, such as green-power programs, to more sophisticated solutions like demand response, complete building automation systems, or on-site renewable generation combined with battery storage.
- 2) Frame solutions from a financial perspective, as well as from an engineering standpoint.** Cited by 54 percent of business respondents in the Deloitte Resources 2017 Study, cost cutting is still one of the big reasons companies implement resource management programs. But the solutions are not often framed that way. While engineers and sustainability officers will likely have input into green-power decisions, the office of the CFO frequently has the final say. That is why it is so important to present potential solutions in terms of their impact on the bottom line in addition to other benefits.
- 3) Remember that small and mid-cap companies also care about “additionality.”** This means they want assurance that their renewable energy purchases contribute to expanding renewable energy assets or “greening the grid.” Some small and mid-cap companies seek to participate in green-power or similar programs for convenience, favorable economics, and because regulations or resource constraints prohibit them from directly procuring renewable electricity. While these programs have appealing attributes, it is conceivable that they would be even more attractive if utilities articulated how they drive the overall growth of renewables—either directly by building new installations, or indirectly by supporting smart-grid upgrades and integration of distributed generation. For instance, Puget Sound Energy is addressing the growing desire for additionality through its Green Direct program, a subscriber-style green tariff that targets commercial and municipal customers.²⁷ Recently approved by the Washington Utilities and Transportation Commission, this program allows customers to contract for a modest portion of a new local, utility-scale renewable energy project with which the utility has signed a long-term contract.²⁸ Green Direct subscribers receive a monthly bill and do not have to invest capital or alter their operations in order to participate.
- 4) Offer aggregated supply options or help customers to aggregate their demand.** Aggregation is emerging as an important means of providing access to large-scale renewable energy projects for the small- and mid-cap segment, as well as for the public sector and nonprofits. Community solar is one form of aggregation that presents a supply-side opportunity for residential or commercial utility customers to invest in a solar array or receive credits on their electricity bills for solar power not located at their homes or businesses. Community solar is growing in popularity and importance. However, another form of aggregation is now happening on the demand side where customers are banding together to strengthen their purchasing power in renewable energy deals. For instance, a university, hospital, and parking facility in Boston recently joined together to purchase 60 MW of solar power from a solar installation in North Carolina.²⁹ Making the aggregation process easier from either side of the supply-and-demand equation could be instrumental to better serving the C&I market.
- 5) Explore turnkey solutions.** The appeal of turnkey solutions is likely to grow in lockstep with the rise of the small- and mid-cap segment, with early movers exploring how to bundle renewable energy procurement, energy efficiency services, and distributed renewable generation combined with battery energy storage. Some early movers are already taking this route. Edison Energy, an unregulated arm of Edison International, pooled several acquisitions to offer a combination of renewable energy procurement, energy efficiency services, and distributed renewable generation paired with battery energy storage.³⁰ Similarly, Schneider Electric acquired an advisory firm so it could add renewable procurement to its energy management and automation offerings.³¹ As these examples suggest, utilities and developers may wish to consider what types of bundled services they could offer on their own or through acquisitions, alliances, and partnerships.

Conclusion

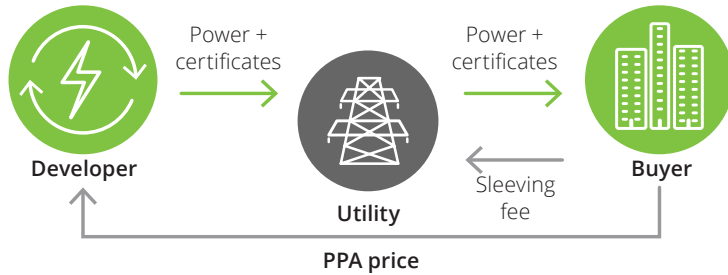
Large corporate buyers have made it clear they are committed to moving forward with their renewable energy goals—with or without the overt support of utility companies or public policy. While small and mid-cap companies do not have this kind of clout on their own, collectively they do. This implies it is in utilities' and renewable developers' best interests to help these companies resolve their renewable energy challenges. Creating easily digestible local roadmaps for new buyers of green power—describing what issues must be tackled and when—may be a good place to start. They could offer resources to help buyers navigate areas like performing due diligence, engaging advisory services, and obtaining financial approval from internal stakeholders. They could also provide assistance and information on the services that industry associations and not-for-profits offer in this space and how to join a syndicate of buyers.

While large companies are paving the way to successful corporate procurement of renewable energy, the next wave of smaller C&I customers is following close behind. Utilities that do not address this segment could cede a tremendous growth opportunity to their competitors or possibly risk disintermediation. Developers and independent power producers (IPPs) that do not address this segment could miss an opportunity to shore up their profitability by going direct to corporations in addition to, or instead of, competing in organized markets. And for some, the prospect of a new source of steady cash could not come at a more opportune time, since IPPs generally have been under pressure from depressed wholesale electricity prices. Now is the time to jump on board the departing train of C&I customers as corporate procurement rivals policy as a driver for renewable energy growth.



Contract structures for PPAs
(Example with renewable certificates)

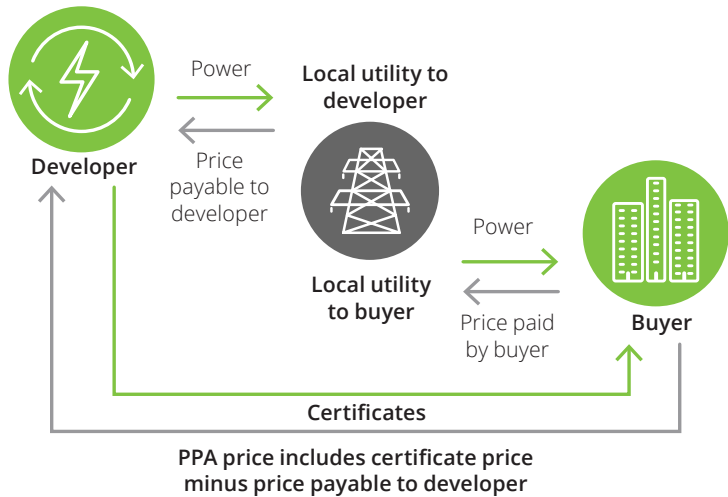
Sleeved PPA structure



1. Buyer agrees to a PPA (fixed* or discount-to-market) price with the developer to purchase the electricity it will generate. It will also agree to the renewable certificates
2. Buyer enters into a back-to-back PPA to sell the electricity to the utility
3. Generator will transfer the electricity to the utility, which will sleeve it through the grid to buyer consumption sites

* Fixed prices are typically index-linked to factor in inflation

Synthetic PPA structure



1. The corporate buyer agrees to a PPA price with the developer and a price for renewable certificates
2. The developer delivers renewable energy to the grid and is paid by a utility a variable spot price
3. The developer and corporate buyer settle the difference between the variable market price and the strike price, and the developer delivers renewable certificates to the buyer
4. The buyer continues to buy its power from the utility at the variable market price, which is now hedged by the synthetic PPA

Source: "Corporate renewable power purchase agreements scaling up globally," World Business Council for Sustainable Development, October 2016, pg. 13.

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