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Summary

Many businesses and institutions are setting environmental sustainability and climate change goals. While some of these goals may relate directly to the primary business or institutional goals, many times a major component of the overall strategy is public relations value. As these actors look for the best way to achieve these goals, entering into a Power Reduction Agreement can be a powerful and efficient tool by enabling corporations and institutions to take advantage of off site energy efficiency opportunities in the same way companies use investment in off site renewable resources today. This paper describes Power Reduction Agreements and the ways they may be able to speed, reduce cost, and de-risk attempts to meet corporate and institutional sustainability goals.

Abstract

When meeting environmental sustainability and climate change goals, reducing energy waste or energy efficiency is usually the lowest-cost and fastest-deploying tool available. When meeting their green energy goals, many businesses, universities, and other large entities combine energy upgrades at their own facilities with power purchase agreements (PPAs) with renewable power installations. When these installations cannot be part of their facilities' electricity supply for legal or technical reasons, a "virtual" form of these agreements has been utilized in which only the green attributes are purchased. While widely used and generally successful tools, there are two common downsides to PPAs: a long lead time in siting new generation projects, and the potential for negative publicity if those facilities are not welcomed by the rural communities in which they are usually sited. There is an alternative tool that can deliver the same environmental results at a lower price point while avoiding these downsides: virtual Power Reduction Agreements (PRAs). Under a PRA, green energy buyers pay for energy efficient upgrades of schools, low- income housing, or other buildings. As reducing waste is both more environmentally friendly and cheaper on average than building new renewables, PRAs likely offer a lower price point than a PPA. There is minimal permitting required, a wide range of contractors can accomplish the projects, and there is virtually no public opposition to these projects, so deployment can be much speedier and the potential for negative media coverage is also eliminated. In addition, the location and type of building can be selected by the buyer, since opportunities for efficiency upgrades abound, especially in the non-profit or low to

moderate income sectors. This creates the option for a buyer to link their environmental sustainability goals with direct community impact and their primary mission. For instance, universities can support local public schools, or grocery stores can help lower-income customers bring down their utility bills. If preferred, there is also an ability to address socioeconomic inequality or areas with a higher pollution burden in a targeted way. The net effect is an opportunity for improving sustainability while at the same time having a positive effect on the nearby community. This paper describes what a Power Reduction Agreement is including sample terms, gives examples of potential applications, discusses possible methods for certification of benefits and interaction with state credit programs or goals, and notes various ways existing supporting programs such as utility energy efficiency programs.

Institutional and Commercial Sector Sustainability Goals

In the United States, electricity production accounts for just under 40% of greenhouse gas emissions; direct fuel use in the residential and commercial sectors (mainly for heating) and the use of fuels to produce process heat in the industrial sector together accounted for just over a quarter of such emissions.[1]

There are increasing efforts on largely voluntary efforts from the commercial and industrial sector to reduce their usage. There are at least 900 companies in the United States that have set climate or sustainability goals.[2] Additionally, 93% of companies in the Global Fortune 500, the vast majority of which do business in the United States, report sustainability or climate data.[3] These goals typically include a reporting on reduction of greenhouse gases; energy use by the company's operations is usually a major driver of such figures.

Current Methods for Meeting Goals

When meeting their green energy goals, many businesses, universities, and other large entities begin by reducing the energy-intensity of their own operations. This makes sense, as reducing energy waste (also called deploying energy efficiency) is usually the lowest-cost and fastest-deploying tool available to meet goals to reduce the environmental impact of their operations. After reductions in energy usage are examined, many companies then turn to power purchase agreements (PPAs) with

[1] https://www.eia.gov/environment/emissions/ghg_report/ghg_overview.php
[2] https://climateactiontracker.org/countries/usa/
[3] https://www.theguardian.com/sustainable-business/blog/ceres-us-corporations-climate-change-sustainability

renewable power installations. When these installations cannot be part of their facilities' electricity supply for legal or technical reasons, there are two basic approaches institutions and companies turn to in order to meet these goals: participation in "green energy" programs from utilities that function similarly to PPAs, or "virtual" power purchase agreements (in which only the green attributes are purchased). All these methods are discussed more fully below.

Reducing Energy Waste As a Strategy for Meeting Corporate Goals

Energy efficiency is typically the lowest-cost resource for reducing energy use and the related emissions -- it typically costs substantially less than new supply resources.[4] Therefore, it is not a surprise that when corporations set sustainability goals, they typically begin by reducing energy use in their own operations. Some companies achieve their goals entirely through these measures; others add procurement of renewable energy to their toolbox, often to achieve more ambitious goals. Below are two examples of international companies that illustrate the primacy of energy waste reduction in meeting corporate sustainability goals, one that uses it exclusively and another that uses energy efficiency as a first step paired with investment in renewable energy resources.

Sole Efficiency Approach Example: Visteon Corporation

Visteon Corporation is a worldwide auto supplier with approximately 10,000 employees worldwide. It participates in the Carbon Disclosure Project, which involves

[4] *Energy Efficiency as a Low-Cost Resource for Achieving Carbon Emissions Reductions,* Environmental Protection Agency p. ES-4. Available at: https://www.epa.gov/sites/production/files/2015-08/documents/ee_and_carbon.pdf.

the voluntary disclosure of greenhouse gas information and carbon-emission reduction strategies.[5] Visteon Corporation has a corporate goal of reducing their energy use, emissions, waste, and water use by 5% in 2020 (with a 2016 baseline).[6] It reports its reductions in greenhouse gas emissions, and has achieved an 11.1% improvement in that time period, and against revenue, a 4.8% improvement.[7] As the framing of the corporate goal indicates, those reductions have been achieved predominantly by reducing waste in their own operations. The company has won awards in India[8] and in Michigan for reducing energy use. For instance, by making programming and setpoint changes, adjusting air handling schedules, resetting duct static pressures, and slowing down fan speeds during unoccupied hours, Visteon reduced electric use by approximately 2 million kWh/yr (2,000 MWh/year) at its Grace Lake Corporate Center.[9]

Combined Approach Example: Kimberly-Clark

Kimberly-Clark (NYSE: KMB) is a worldwide supplier of consumer supplies with approximately 41,000 employees worldwide.[10] It has a goal of reducing its greenhouse gas emissions by 20% by 2020 (from a 2005 baseline).[11] It has been recognized by US EPA for leadership in this area.[12] Kimberly Clark's policy statement titled "Energy Efficiency and Greenhouse Gas Reduction" explicitly notes a role for energy waste

[5] *Visteon 2017 Corporate Sustainability Report*. Available at https://www.visteon.com/wp-content/uploads/2018/10/2017_CSR.pdf

[6] Id.

[7] Id.

[8] Id.

[9] https://mienergyexcellence.org/award-finalists-and-winners-2016/.

[10] https://kimberlyclark.gcs-web.com/static-files/aa10468d-38e6-4f59-b38c-515dc7821ab1

[11] https://www.sustainability2022.com/strategy; https://www.kimberly-clark.com/en/sustainability2022/energyclimate.

[12] https://www.sustainability2022.com/our-stories/smart-growth.

reduction combined with energy procurement as strategies to reduce greenhouse gases: "In furtherance of its sustainability principles and to achieve its greenhouse gas reduction targets, Kimberly-Clark will continuously improve its energy management practices to conserve energy and reduce greenhouse gas emissions while securing competitive, reliable energy supplies to manufacture and distribute our products and conduct our business."[13] It focuses first on "reducing our [greenhouse gas] emissions from our direct emissions from operations" and second on "indirect emissions from utility suppliers."[14] On the energy waste reduction front, Kimberly Clark is implementing co-generation (waste heat recovery) at two manufacturing sites and has implemented a LEAN Energy Management system at more than 30 manufacturing facilities.[15] Kimberly Clark has also signed power purchase agreements for approximately 1 million MW from two renewable wind projects.[16]

Renewable Energy Investment As a Strategy for Meeting Corporate Goals

When companies are looking beyond reducing energy usage in their own operations in order to meet sustainability and climate-change goals, they usually turn to reducing the impact of the energy they do use by investing in renewable energy. Sometimes this occurs on the customer's own site,[17] but it is more common to invest

[13] "Energy Efficiency and Greenhouse Gas Reduction," update to "Use and Conservation of Energy" dated November 1, 2011.

[14] https://www.kimberly-clark.com/en/sustainability2022/energyclimate.

[15] https://www.sustainability2022.com/our-stories/smart-growth.

[16] https://www.kimberly-clark.com/en/sustainability2022/energyclimate.

[17] For a discussion of onsite solar PPAs, see https://www.epa.gov/greenpower/solar-power-purchase-agreements.

in a utility-scale installation, because typically these offer both larger costs and emission reductions.[18]

The most typical way investment occurs is through a Power Purchase Agreement ("PPA") from a renewable energy project. A PPA is an arrangement by which a purchaser of electricity selects a wholesale supplier and agrees to purchase energy (as well as potential other attributes) from a developer/operator of an electric generating facility. However, most US states do not permit users of electricity to contract directly with wholesalers. In areas where a traditional PPA cannot be used, institutions and corporations have typically turned to either "virtual" PPAs or utility-run green energy programs in order to meet sustainability goals. Each of these approaches is discussed with an example below.

Power Purchase Agreements

A PPA is essentially a long-term agreement to purchase a certain amount of wholesale electric power from a particular company or power-producing facility. A PPA typically requires either that the customer pays a certain amount regardless of

[18] Wind power, which was much cheaper than solar through much of the last decade, is rarely suited to on-site or distributed models. Generally speaking, for solar, a 2015 study found that the cost of generating energy from 300 MW of utility-scale PV solar is roughly one-half the cost per kWh of electricity produced from an equivalent 300 MW of 5kW residential-scale systems when deployed on the Xcel Energy Colorado grid; the same study estimated that emission reductions would be 1.5 times greater from utility-scale installations.. Conca, James, "Which is Cheaper -- Rooftop Solar or Utility-Scale Solar" Forbes Magazine, July 30, 2015. Available online at: https://www.forbes.com/sites/jamesconca/2015/07/30/which-is-cheaper-rooftop-solar-or-utility-scale-solar/#677ad5421e5d; for the original reports and summaries, see https://brattlefiles.blob.core.windows.net/files/7626_comparing_the_costs_of_utility-scale_and_residential-scale_pv_-_factsheet.pdf and https://brattlefiles.blob.core.windows.net/files/7626_comparative_generation_costs_of_utility-scale_and_residential-scale_pv_in_xcel_energy_colorado's_service_area.pdf.

how much the plant actually runs, plus a certain amount paid per kWh or MWh that the facility actually generates.[19]

Standard PPA Example: Nestlè

In February 2018, Nestlè signed a PPA to be the wholesale supplier of 50 MW of electricity from the Meadow Lake VI wind farm owned by EDP Renewables to five Nestlè facilities in southeastern Pennsylvania. The PPA calls for a 15- year power supply and was entered into as part of the strategy for fulfilling Nestlè's goal of procuring 100% of its electricity from renewable sources. As the company noted, "because the wind farm and the recipient facilities are located on the same regional grid" and Pennsylvania allows customers to choose their wholesale electric supplier, the company was directly purchasing power from these facilities (much as a utility could do).[20]

Utility Green Energy Programs

In those states in which end use customers cannot select their wholesale power provider, there are still cases in which the facility itself can be under a contract to supply a certain quantity of power for its facilities. Some utilities offer programs where customers can "opt in" to paying a rate (typically a higher rate) to have an increased percentage of energy from renewables. These programs, which are often overseen by

[19] See, e.g. Overseas Private Investment Corporation, Important Features of Bankable Power Purchase Agreements for Renewable Energy Power Projects. https://www.opic.gov/sites/default/files/files/10%20Elements%20of%20a%20Bankable%20PPA.pdf.

[20] https://www.nestleusa.com/media/pressreleases/nestle-clean-renewable-energy-pennsylvania.

regulators, will often be tied to the costs and outputs of an additional new renewable energy facility.

Utility Program Example: Ford Motor Company

In February 2019, Ford Motor Company announced that it was entering into an agreement for approximately 500,000 MWh of wind power to supply electricity for truck and SUV assembly plants as well as its Research and Engineering campus in Dearborn, Michigan by participating in a voluntary green energy program offered by its utility provider, DTE Energy. (Ford would not be eligible to purchase this power from any other supplier under Michigan law.) Under the program, the customer pays a set rate (currently set above that for standard service) to buy energy from particular wind or solar facilities, which are not counted toward compliance with the state's mandatory renewable portfolio standard. "Ford supports the implementation of renewable energy where the project can be tied to the customer's facility, either directly or through the local distribution utility, and we believe that supports local jobs, improves the local environment and adds resiliency to the local grid," George Andraos, Ford global director of energy and technology, said in a statement.[21]

Virtual Power Purchase Agreements

In states in which customers cannot choose their wholesale electric provider, some institutional and corporate companies with sustainability goals continue to enter into contracts that are called Power Purchase Agreements with developers of offsite

[21] Greene, Jay, "DTE, Ford link up for wind farm green energy project." Crain's Detroit Business, "February 21, 2019, available at:
https://www.crainsdetroit.com/energy/dte-ford-link-wind-farm-green-energy-project

utility-scale projects. These PPAs, however, differ a great deal from a standard PPA, in that they do not actually provide for the purchase of power by the contracting customer. Instead, these contracts provide for the purchase by the customer of the green attributes associated with a project (including the Renewable Energy Credits ("RECs") and offer economic support for facilities that would not otherwise have enough demand to be built.

Virtual PPA Example: General Mills

In April 2019, General Mills announced it had signed a virtual PPA with Roaring Fork Wind, LLC for 200 MW of the Maverick Creek wind project in Texas. The company noted the project "will produce renewable energy credits for General Mills, that together with the company's previous wind power agreement, are calculated to equal 100% of the electricity used annually at the company's owned domestic facilities." The company noted its financial commitment would help ensure construction of the project and would be counted toward the company's goal of reducing Scope 2 (greenhouse gas) emissions.[22]

Needed New Tool: Power Reduction Agreements

As described above, companies and institutions tend to begin their efforts to achieve sustainability and climate change goals with the cheapest and most powerful emissions-reduction option: reducing energy waste in their own operations. Next, they often turn to off-site renewable energy expansion, and sometimes to onsite renewable

[22] Holbrook, Emily. "General Mills Signs Virtual PPA for 200 Megawatts of Wind Power, "Energy Manager Today, April 23, 2019, available at:
https://www.energymanagertoday.com/general-mills-signs-virtual-ppa-for-200-megawatts-of-wind-power-0182337/

energy installations (depending on feasibility and price). There is a missing "square" in that toolbox matrix, however: off-site energy waste reduction, as shown in Figure 1 below.

Figure 1: Toolbox Matrix

	Energy Efficiency	*Renewable Energy*
Done on site	Almost always utilized	Occasionally utilized
Done off site	Missing tool	Often utilized

The Power Reduction Agreement ("PRA") is the "missing tool" in the box below, functioning much like a virtual PPA described above. Essentially, instead of paying to buy down the costs of renewable energy projects and get credited with the green attributes of doing so, the customer buys down the costs of energy-reducing improvements, like insulation, new furnaces/boilers, etc. The project's energy reduction is calculated in kWh/year or MWh/year for larger projects; these are converted to emission savings much like the company or institution's own internal energy efficiency projects, and all green attributes are assigned to the purchaser.

The counterparty to such contracts can vary depending on the requirements of the purchaser and the amount of measurement and verification, as well as financial assurance, that is required by the purchaser. Three options for counterparties are described briefly below: a building owner, a specialized building contractor, or an energy services company.

The first potential counterparty to a PRA would be a property owner directly. For instance, a school district might be a counterparty, and it would use the money to

make energy efficiency improvements across its portfolio. A PRA with a local government could allow energy waste reduction measures to be taken across the water and wastewater utility system. A PRA with a nonprofit rural hospital could allow energy upgrades to heating and cooling systems, equipment, and other measures to lower operational energy usage and therefore costs. In each of these cases, the counterparty would be required to procure a contractor, manage the project, and certify the savings annually. A PRA with a building owner would therefore likely contain terms requiring certain procedures in contractor selection (ensuring experience in energy performance), ensuring the work was done properly, and annual certification requirements. The PRA customer would then use the same calculations it performs regarding emission reductions from its own energy reduction efforts and claim the green attributes associated with the energy reductions. Alternatively, a few states allow RECs or their equivalent (sometimes called white tags, Energy Savings Certificates (ESCs) or Energy Efficiency Credits) to be issued for energy efficiency projects,[23] and in such a case the RECs would transfer in a PRA just as they do for a PPA.

Another potential counterparty for a PRA would be a specialized building contractor, which is essentially the equivalent of a developer of a renewable energy project. There are many building contractors that specialize in achieving energy improvements, and contracting directly with the party that has more expertise in this area may be desirable, especially if there is concern regarding the ability of

[23]Connecticut, Pennsylvania, and Nevada. Michigan allows utilities to be issued RECs for energy waste reduction measures but does not extend the REC awards for energy efficiency measures to non-utilities.

procurement procedures of the building owner to allow for additional requirements by the customer. In order to allow a project to go forward that otherwise may lack sufficient funds or may be significantly scaled down, contractors are often willing to work with outside parties and perform the work, provided the property owner is amenable. Thus, PRAs with building contractors would typically need a companion letter agreement between the contractor and the building owner spelling out how change orders, etc may be handled, or the PRA itself may have three parties that addresses these issues.

Finally, for customers that want a financial guarantee of the energy savings, a potential counterparty would be a DOE-certified Energy Services Company (ESCO).[24] These companies, which largely operate in the "MUSH" market (municipalities, universities, schools and hospitals), will offer financial guarantees that energy savings will pay for improvements the ESCO will make during the project over a period of time. This allows bond-financed projects to have a more certain revenue stream, since the payments will either be made from savings from utility bills or by the ESCO. Since these companies are guaranteeing certain energy savings, there is a high level of guarantees of the improvements being made, and depending on customer desire and costs, there may be opportunities to provide a secondary financial backup for REC purchases in the event the project is unsuccessful.

Advantages of a PRA

[24] See https://www.energy.gov/eere/downloads/department-energy-qualified-list-energy-service-companies.

A PRA may have several advantages that earn it a place in the sustainability goal toolbox. First, it has the same price advantage that causes companies to begin by reducing their own energy usage. Second, it can be deployed comparatively quickly. Third, it avoids the negative PR risk that growing siting opposition can create in the renewable space. Fourth, it allows a company to tailor their sustainability goal to their core customer or competency. Each of these advantages are discussed below.

Price Advantage

As discussed above, US EPA's review of many nationwide studies of energy efficiency programs determined both that energy efficiency is traditionally a much cheaper option than new builds. Similarly, utility programs for energy efficiency show this general pattern. For instance, DTE's voluntary green power program described above is estimated to cost between $33-$45 MWh; the utility's own efficiency program for multifamily (i.e., apartment buildings) and school buildings come in at $26-$28 MWh.[25]

While a project to project comparison would obviously be necessary for any customer seeking to evaluate a PRA, the above information indicates that there is the potential to meet sustainability goals more cost-effectively by adding PRAs to the toolbox that are considered by corporate and institutional energy and sustainability managers.

Comparatively Speedy Deployment

[25] https://newlook.dteenergy.com/wps/wcm/connect/e20de3d0-11df-41e5-bfbc-b41927e5a77c/2015-EO-Annual-Report.pdf?MOD=AJPERES

In order to obtain permission to hook up a new generator project in the footprint of the Midcontinent Independent System Operator territory, the largest regional transmission organization in the United States that includes wind-resource rich states like Iowa, developers must spend more than 400 days in the interconnection queue and pay hundreds of thousands, if not more than a million dollars, to complete the queue process. Prior to entering the queue, developers must show they have sufficient control of the land in question. In addition, environmental permits and zoning permissions must be obtained. Therefore, a company that wishes to enter into a PPA with a new facility may have to wait years for construction and operation of the plant on which the PPA depends. In contrast, most energy waste reduction efforts require little more than pulling a building permit, which is a matter of months and much lower costs.

Avoid Negative PR Risk for Siting of Renewables

The siting of renewable projects is sometimes quite controversial, and that opposition has prevented some projects from going forward. There are many recent examples of PPA customers being mentioned in criticism of proposed projects, which creates a risk for a company attempting to achieve a sustainability goal at least in part for the potential positive connection with its customers and the public.

Amazon.com, Inc., which supported development of a North Carolina wind farm, drew a lawsuit from some locals and was mentioned repeatedly in news accounts regarding later projects and the criticisms of them (including noise, damage to birds,

and harming the visual landscape.[26] Georgetown University entered into a PPA for a wind farm in Maryland, and newspaper articles featured the university's involvement when discussing criticisms of the project that included alleged negative impacts it could have on the local ecology ("destroying the forest"), as well as negative impacts on the native Piscataway people's culture and history.[27] Nor were solar projects exempt from the potential for negative media mentions: Walmart's support of a local solar farm was highlighted by critics who claimed a solar installation ruined farmland.[28]

There is simply less potential for criticism for helping to insulate, relamp, or update the heating and cooling system of local nonprofit or government facilities. The lower controversy associated with energy efficiency improvements compared to renewable installations may be preferred by companies that are particularly risk-averse to these types of criticisms.

Allow Sustainability Goals to Directly Enhance Brand and Customer Connection

PRAs can offer key marketing and branding advantages when compared to virtual PPAs, whether or not those PPAs carry the marketing risks described above. Specifically, there are options to both geo-target and mission-target the projects themselves, which can strengthen the association with the core mission and customers of the corporation or institution seeking a PRA. Geo-targeting efforts can also address environmental justice concerns, by focusing investment in precisely those communities

[26] https://www.newsobserver.com/news/business/article95357957.html#storylink=cpy.

[27] https://georgetownvoice.com/2019/03/07/proposed-gu-solar-project-faces-opposition-at-public-hearing/

[28] https://www.newsobserver.com/news/politics-government/state-politics/article54892455.html

that may have borne or are bearing a disproportionate pollution burden from fossil-fuel coal plants. Both these focusing opportunities available in a PRA structure are discussed briefly below.

Geo-Targeting Potential for Customer Engagement, Environmental Justice

Many corporations that have a large retail footprint have sustainability goals that include reductions in energy-related emissions (e.g. Staples,[29] CVS[30]). When such companies use virtual renewable energy PPAs to meet sustainability goals, few if any of their customers in the immediate area from the store will ever see the installation. (Utility-scale installations typically require a rural environment.) Energy efficiency opportunities, however, are highest in areas with a high level of building stock, which is also where the highest density of potential retail customers would be. Under a PRA, investment can be made in facilities owned by local governments, institutions or non-profits, allowing customers in the immediate vicinity from the store to see a direct benefit to their community from the PRA. Signage or other advertising by the partner organization, can further enhance the customer connection in the area nearby the retail stores.

Geo-targeting can also allow corporations to meet sustainability goals while directly addressing issues of environmental justice. For instance, there are communities that have been or are disproportionately affected by the pollution from

[29] https://www.staples.com/sbd/cre/marketing/about_us/corporate-responsibility/environment/renewable-energy-efficiency/index.html?icid=envh:pane:8:env:20180422

[30] https://cvshealth.com/sites/default/files/2018-csr-full-report.pdf.

fossil fuel electric generating facilities because of proximity. A PRA could be reached with schools, nonprofits, or other institutions that directly serve that community, creating a disproportionate benefit from the reductions in emissions for those areas that have previously borne the disproportionate burden. This can also more tangibly show the connection between global or national sustainability and local-level impacts for brands that wish to enhance the customer connection in this way.[31]

Mission-Targeting Potential

Just as there are geo-targeting opportunities to enhance customer connections, PRAs can be tailored to enhance the core mission of the corporation or institution that utilizes them. For instance, universities could partner with public or private schools (including those that are being targeted for higher recruitment for applications) to make energy efficient upgrades. Thus, universities could have a daily connection with future students, overall support their educational mission, and meet their sustainability goals all at once. Office or school supply related brands could also benefit from partnerships with schools that meet sustainability goals. Educational signage explaining the methods and benefits of reducing wasted energy that features corporate branding may be particularly effective for connecting with core customers in the community.

For-profit institutional and corporate actors could have similar opportunities. Water brands may wish to partner with governments to improve energy efficiency at water or wastewater treatment plants, showing a commitment to clean water overall.

[31] For a discussion of concerns that corporate sustainability standards may not translate into localized benefits for poorer communities, see Gouldson, Andy. "Do Firms Adopt Lower Standards in Poorer Areas? Corporate Social Responsibility and Environmental Justice in the EU and the US." *Area* 38, no. 4 (2006): 402-12. http://www.jstor.org/stable/20004564.

Grocery stores or other food-related brands may wish to assist food banks or soup kitchens with energy efficiency upgrades to tie into their brand identity.[32] Health-related brands may be able to help a rural hospital survive by lowering their operating costs while improving patient experiences. These are simply examples of the wide range of opportunities a PRA may present for improving brand identity and connecting with customers while achieving sustainability goals.

PRAs and Utility Programs

Many utilities have energy waste reduction or energy efficiency programs in order to comply with state mandates. In such cases, the state's utility regulators likely have programs verifying the energy savings of various types of projects (e.g. replacement of a boiler with a ground-source heat pump; lighting upgrades). In such a case, there will usually be a governmental standard for energy savings that can be used to issue certified energy savings, which is a help for PRA transactions.

These efforts may also be able to provide a stream of projects in a particular geography, assuming a willing and motivated utility partner. There may be an option when utility programs have reached a "cap" to partner with the utility to complete those projects for the price of the rebates advertised in the program materials. This gives the PRA customer a potential stream of "vetted" projects at a known cost, and the utility a benefit in customer satisfaction by avoiding the impression of a 'bait and

[32] For an example of a utility assisting a soup kitchen, see https://www.corpmagazine.com/break-room/inspiration/lower-energy-bills-means-this-non-profit-can-feed-even-more-people/.

switch" when program budgets do not allow additional rebates to be awarded in a particular year.

There is a key way in which utility programs may not mesh well with the PRA framework, however. In most utility programs, rebates are available for certain energy waste reduction efforts. These rebates are not able to be utilized in a PRA framework, because the utility is using these programs to comply with a legal requirement. Thus, if the customer attempted to claim the savings, there would be "double counting" and a failure to transfer the green attributes, which is the essential core of a PRA. Therefore, most PRA counterparties will not be able to participate in utility programs.

Finally, there is a potential area in which utilities may be able to utilize the PRA framework: the voluntary utility program option. All of these programs of which the author is aware that are offered by utilities are for purchases of renewable power (e.g. for energy generation from wind, solar, biomass, or other facilities.) Michigan law, however, allows RECs to be earned by utilities that exceed their energy waste reduction requirements. Therefore, if a utility offered its customers an option to support energy efficiency projects that exceed those normally offered to meet requirements, it would receive RECs that could be transferred in a PRA framework just as they are in the PPA framework on which these programs are built.

A Note on Scalability

Because of the lack of use of PRAs, a natural concern is whether there is sufficient "deal flow" or projects to allow companies to achieve large goals when attempting to use a PRA model. This concern is best answered by a few examples. In

2015, the Roseville Community School District in Michigan, which has a total of 10 instructional buildings (only one high school), made energy efficiency improvements that reduced the district's electric usage by nearly 1,000 MWh/yr.[33] In 2018, a single apartment building for low income seniors in Jackson, Michigan was able to reduce their energy usage by more than 140 MWh/yr.[34] This points to the significant opportunities that exist to achieve large energy and emission savings through PRAs.

Conclusion

The current toolbox for meeting sustainability goals is missing one key element: the ability to utilize off-site energy waste reduction (and thus emission-reducing) opportunities in the same way off-site renewables can be utilized. Corporations and institutions seeking to meet sustainability goals may be able to reduce costs, deploy faster, and better connect with their customers through a PRA model. PRAs also offer the ability to directly address environmental justice issues or tie in directly with brand identities. Utilities may also be able to offer these options in their voluntary green programs, increasing interest in participation though both lower costs and higher branding possibilities. The potential benefits of Power Reduction Agreements as a tool for meeting sustainability and climate change goals warrants serious investigation of their deployment.

[33] https://mienergyexcellence.org/award-finalists-and-winners/

[34] https://mienergyexcellence.org/award-finalists-and-winners-2018/