Renewable Energy Credits: How a Good Idea is Slowing Our Economy's Transition to Renewable Energy and Genuine Environmental Stewardship

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We live in an age in which "green" products are becoming trendy, jobs dealing with environmental issues are booming, and more and more people are becoming aware of their individual impacts on the state of our planet. It can be very confusing to try to figure out what daily decisions and behaviors to take on in order to be "green", and environmental stewardship in the workplace and in the corporate arena can help model behavior that can then be carried over to the home. I have had the experience of walking into a large Safeway store, seeing a promotional poster advertising that the store is 100% powered by renewable energy, and wondering where exactly all that energy comes from. What does supporting renewable energy really mean for large companies, who have offices and warehouses all over the world and emit millions of tons of carbon pollution every day?

Many of the world's largest companies are starting to use renewable energy as a power source (David Gardiner & Associates 2), and renewable energy is becoming an increasingly attractive investment option as a crucial aspect of a "sustainable company in the 21st century" (David Gardiner & Associates 6). Investing in renewables "makes good business sense": renewable energy contributes to a diverse energy portfolio, lowers "long-term operating costs", and protects companies against "market volatility" that is common in markets for fossil fuel-powered energy sources (David Gardiner & Associates 2). Companies are always looking to minimize risk and invest in energy sources with "fixed, long-term prices", and renewable energy provides a market in which companies can do this (David Gardiner & Associates 18). As public awareness of the perils of carbon pollution and climate change has increased significantly over the past decade, companies are now finding additional environmental incentives to investing in renewables.

Companies can demonstrate a commitment to environmental stewardship to clients,

customers, competitors, investors, and the general public by setting goals to reduce their net greenhouse gas emissions and their carbon footprints (David Gardiner & Associates 2). Environmental stewardship is something to strive for in the corporate world because individual consumers look to the companies and organizations that they support for guidance in this muddled world of mass media and miscommunication. Corporations and government agencies are also some of the biggest energy consumers, and the movement of these companies towards more sustainable energy practices can make a huge impact on our economy's energy use.

As the corporate renewable energy market has grown, so have the programs that support, encourage, and document this growth. The U.S. Environmental Protection Agency's Green Power Partnership is a program that promotes the purchase of "green power" in order to "reduce the environmental impacts associated with purchased electricity use". According to the Partnership's "Guide to Purchasing Green Power", this includes renewable energy ("Guide to Purchasing Green Power" 33). The Green Power Partnership has established itself as an important player in the corporate sustainability market by attracting partners, creating lists of top renewable energy profiles, and giving awards. Two of the Green Power Partnership's 100% Green Power Users, Intel and Whole Foods ("100% Green Power Users"), are very large corporations that have stores, warehouses and offices spread all over the country, yet they are publicly recognized for powering their entire operations with green power. What methods are available for large companies to support and use renewable energy? And which of these methods actually add renewable energy to the grid instead of just supporting the idea of renewables? In other words, which methods and strategies are moving our economy towards sustainability and environmental stewardship?

Many companies find it difficult to incorporate on-site renewable energy generation at their facilities (David Gardiner & Associates 25), but there are other ways for large companies to support and use renewable energy. Some of these options are making investments (Hodek), securing power purchase agreements (PPAs), which are contracts for companies to buy renewable energy over a specified time period (David Gardiner and Associates 4), and purchasing renewable energy credits, or RECs. I first learned about RECs this past summer during an internship with EPA's Region 8 office in Denver, Colorado. During my internship, I read a report by Tim Rehder, a colleague at Region 8, who had been researching REC use by corporations and government agencies. By doing some basic research and talking to Tim and other colleagues, I learned much about RECs and became very interested in this issue of growing importance in our current economy.

What are RECs?

Renewable energy credits, or RECs, are a way for companies to support renewable energy without paying for the transportation of actual electricity. RECs are also referred to as renewable energy certificates, but it is important to note that renewable energy certificates provide the paperwork that acknowledges the purchase of renewable energy credits (Pinkel and Weinrub). One credit typically represents one megawatt-hour (mWh) of energy (David Gardiner & Associates 19), which can power 350 houses for one hour (Medici), but one credit can also represent another measurable amount of energy. In energy markets, RECs are sold by utilities, renewable energy companies, and third-party brokers, and RECs are bought by individual consumers and companies ("Renewable Energy Certificates (RECs)"). The following image (Figure 1) shows what a typical Renewable Energy Certificate might look like:

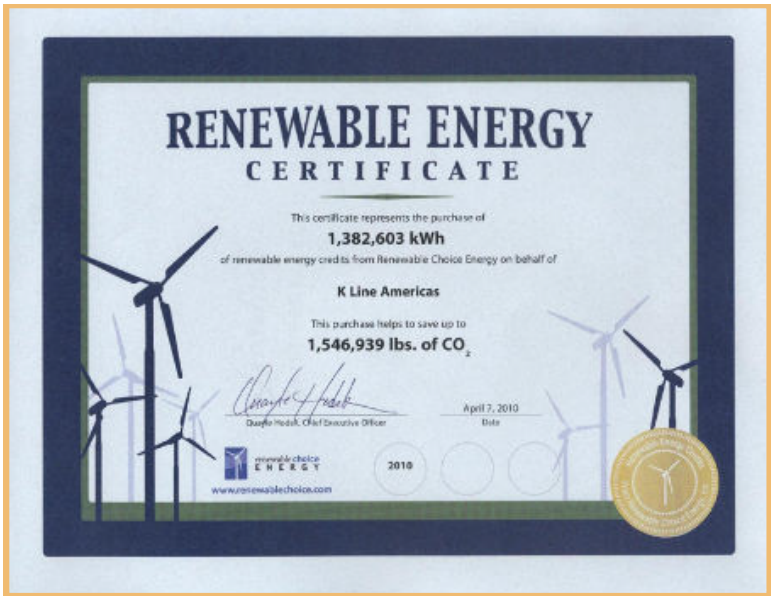

Figure 1. A Renewable Energy Certificate (Pinkel and Weinrub)

Electricity from renewable energy sources can be broken down into two parts: (1) the physical electricity, and (2) the added "environmental and non-power" characteristics of the renewable energy ("Renewable Energy Certificates (RECs)"). These two parts can be sold separately in an energy market, and represent the two main types of RECs: bundled and unbundled. Both types of RECs encompass the qualitative, environmental benefits of renewable energy, but the types differ in their relationship to the physical electricity from the renewable energy resource ("Renewable Energy Certificates (RECs)").

Bundled RECs are sold with the physical electricity attached, and unbundled RECs are not. In other words, the physical electrons that are transported to the energy user in a purchase of normal renewable electricity, to which a bundled REC is essentially equivalent, are not included when a company purchases an unbundled REC. Once an unbundled REC has been sold, the

energy originally associated with the REC cannot be described as renewable energy, since the legal right to the renewable, environmental characteristics of the energy has been sold in the REC (Pinkel and Weinrub 3). This happens with any energy resource - the electrons produced from any source are identical, so without the attached renewable label or characteristics, a buyer can't tell exactly which resource their electricity comes from ("Renewable Energy Certificates (RECs)"). The following diagram (Figure 2) shows where the RECs (representing the renewable attributes of energy) and the physical energy go in the two cases of bundled RECs and unbundled RECs:

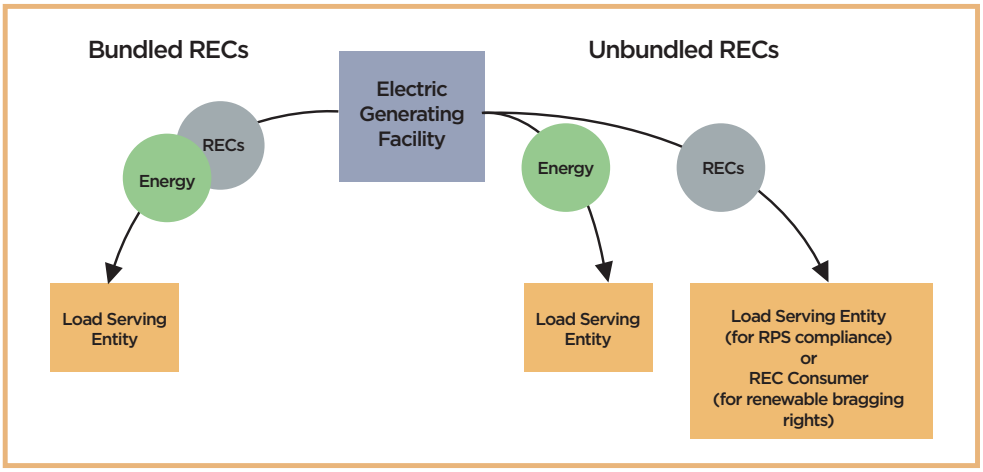

Figure 2. "Bundled and Unbundled RECs Compared" (Pinkel and Weinrub 3)

In the current renewable energy market, companies are using renewable energy credits improperly, which is in turn "green washing" consumers and giving the general public an inaccurate view of our economy's current level of environmental stewardship. Current policy on REC use and energy reporting needs to be changed to accurately reflect the renewable energy use of today's corporations, and later on I will propose three policy changes for the EPA's Green

Power Partnership that will clear up confusion and pave the way for accurate communication in today's REC market.

The History of RECs

The REC market is still fairly young, as the idea of separating environmental attributes from physical electricity first came up in discussions around 1995 and 1996 about "how to design a California renewable portfolio standard" (Holt and Bird 7). RECs continued to develop in the United States and around the world throughout the late '90s; in 1997, the Netherlands "developed a certificate trading program", and the first "retail REC product" in the United States was sold in May 1998 (Holt and Bird 8). In general, RECs were introduced to verify consumer electricity labels and renewable portfolio standard (RPS) compliance, and to provide flexibility for RPS compliance ("The Environmental Value of Purchasing Renewable Energy Certificates Voluntarily" 1). Since then, REC markets have grown enormously, and today, RECs are sold for two different purposes in separate markets.

Today's REC Markets

In compliance markets, companies buy RECs to satisfy state Renewable Energy Portfolio Standard requirements for renewable energy, which "require that a percentage of a utility's electricity generation comes from renewable resources" ("Renewable Energy Certificates (RECs)"). Fourteen of the 18 states with Renewable Energy Portfolio Standards can or have to use RECs to meet these requirements (Holt and Bird 1). In voluntary markets, companies choose to buy RECs and this can "provide an additional revenue stream" for renewable projects and "raise consumer awareness" about some of the positive environmental impacts of renewables.

Both markets have seen growth in recent years (Heeter and Bird v), and participation in voluntary markets rather than compliance markets demonstrates that some companies are supporting renewables willingly and not just to meet a standard. The following graph (Figure 3) shows the types of renewable energy purchases in the voluntary market from 2006-2012:

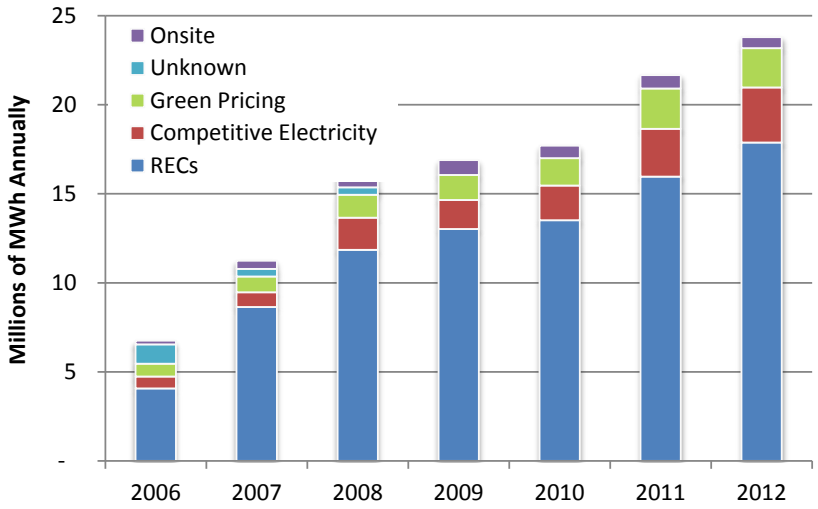

Figure 3. "EPA Green Power Partnership annual voluntary sales by classification system, 2006-2012" (Heeter, Armstrong and Bird 8)

As shown in Figure 3, the voluntary market has been increasingly dominated by RECs in recent years. All of the RECs included in these data are unbundled because this particular report, which was issued by NREL about the 2011 voluntary REC market, counted bundled REC numbers according to the renewable energy source that they were bought from and did not include them in the voluntary market graph (Heeter, Armstrong, and Bird 7). For the remainder of my paper, I will be referring to unbundled RECs in voluntary markets when I mention "RECs". This is because these particular RECs are the ones that represent the most communication and green washing issues in the current REC market, and they are also the type

of RECs that have the most capacity for change in the future in terms of how they are communicated, treated, and used by the companies that buy them.

Overall demand for RECs will likely continue to increase in the future "as a consequence of growing renewable energy markets" (Holt, Sumner, and Bird 3), and we have seen an increase over the past few years in the portion of the renewable energy market that RECs represent. The "number of REC-only buyers" more than doubled from 2008 to 2010, and 56% of "total green megawatt-hour sales" in 2010 were REC sales (Heeter and Bird 28). Why is this market seeing so much rapid growth, and why are so many companies buying RECs?

Why Buy RECs?

If there are so many options for supporting renewable energy, why are RECs "quickly becoming the currency of renewable energy markets" (Holt and Bird vi)? Unbundled RECs have more flexibility than bundled RECs or physical electricity mainly because they are not subject to geographical constraints, and actually "overcome a major barrier to renewable facility development" in that sources of renewable energy may not be located close to the majority of people or companies that want to use it. This makes it possible for companies to support renewables even if they cannot buy from local renewable energy suppliers ("Guide" 11). RECs also "enable companies to maintain existing relationships with their utilities" (David Gardiner & Associates 21). Besides flexibility, RECs also provide companies with risk benefits in terms of contract length and pricing.

RECs generally "require no up-front capital" and their typical short-term contracts are fairly easy to secure ("Guide" 15). This makes it easy for companies to buy RECs for very short periods of time, which is much less costly and risky than long-term investments. REC prices are

also lower than prices for regular renewable electricity because of the flexibility and avoided costs associated with RECs ("Guide" 11). In general, voluntary REC prices have ranged from $1-$10 per megawatt-hour, and in 2011, the voluntary REC price was under $1 per megawatt-hour (Heeter, Armstrong, and Bird 20). To add some perspective, buying a megawatt-hour of physical electricity from an onshore wind farm usually costs between $35 and $50, and a megawatt of electricity from solar ranges from $125 to $200 (Channell, Jansen, and Syme et al. 9). Purchasing RECs is a good option for many companies looking to support renewable energy over short-term periods, at low prices, and with great flexibility.

Despite the merits of buying RECs, many companies are now transitioning away from a REC-driven energy portfolio. The Department of Defense and Walmart are two organizations that have moved away from RECs in recent years. In 2010, the DoD set a goal to be 5% powered by renewable energy, and it met that target partly by buying 440,000 mWh of RECs. However, in 2011, the DoD decided to stop buying RECs because their purchases were "not creating any new capacity" in renewable energy. Until the DoD decided to stop using RECs to meet its own renewable energy targets, it was just "spending money to meet a goal" (Medici). Walmart is another organization that no longer buys RECs, and is instead buying actual renewable energy for economic reasons. It is buying electricity from the "most cost-effective" renewable markets and "signing long-term contracts" to guarantee that the company will remain powered for many years into the future (David Gardiner & Associates 24). Walmart is currently using a combination of on-site generation and power purchase agreements to move towards a "goal to be supplied by 100% renewable energy" (Hodek).

Many companies like the DoD and Walmart that historically were big purchasers of RECs are now "favoring PPAs and on-site direct investment". These companies recognize the

importance of supporting actual renewable energy and reducing their own carbon footprint on a long-term, sustainable scale. Economically, renewable energy has a stable "long-term value", which is not reflected when a company buys RECs on one-year contracts. By using strategies like direct investments or PPAs, companies can really support the growth of renewables by "incentiviz[ing] new investments" and "directly adding renewable capacity to the grid" (David Gardiner & Associates 4). Many of these non-REC strategies do create new renewable energy, which effectively offsets carbon emissions. In the REC market, however, a huge point of confusion and contention is the actual role that RECs play in starting and continuing new renewable energy projects and thereby increasing the overall amount of renewable energy that is produced in the market.

What Role Do RECs Play in Developing New Renewable Energy Projects?

With their extremely low prices, volatile demand, and short-term commitments, do RECs provide enough security and revenue to push new renewable energy projects over the edge and influence the build-versus-no-build decision? In order to pay for new projects, renewable energy suppliers usually require an "upfront guaranteed revenue stream" (Holt and Bird 3), and neither voluntary nor compliance demand provides enough certainty to "serve as the primary basis for project finance" (Holt and Bird 37). RECs do provide additional revenue for renewable energy suppliers, but REC prices are "generally too low or too volatile" to influence development of new projects. While there are a few situations in which REC revenue could support a new project, for example a situation in which a highly-price REC is secured under a long-term contract, most RECs are instead sold in the market as short-term, cheap credits, and do not provide enough revenue to change a build-versus-no-build decision. In general, REC revenue

goes towards a project that "would have been built anyway, or already has been built" (Pinkel and Weinrub 8). In an interview with Tim Rehder, he commented on exactly what costs are usually reduced by REC revenue: "A […] project is generating revenue from direct sales of the energy, the production tax credit and [the] depreciation of the capital assets. That revenue is used for paying down project debt, insurance, operations and maintenance [O&M] and profits. The additional revenue from cheap unbundled RECs increases the money available to do those things, albeit by a minor amount […] if the REC revenue were dedicated to O&M, it would cover about 10% of the O&M cost. If it were dedicated to paying off the loan it could shorten a 15 year loan term by 6 months" (Rehder). In summary, while any source of revenue is helpful to a renewable energy supplier, REC revenue does not provide nearly enough money or security to play an important role in going ahead with a new renewable energy project and adding more energy to the grid.

Because of the confusion over the role RECs play in developing new renewable energy projects, RECs are sometimes referred to as carbon offsets. However, unbundled RECs are "tradable instruments" not attached to physical renewable electricity, so it is incorrect to view them as such ("Guide" 23). RECs indicate support of renewable energy but do not transfer the physical electricity to the company buying the REC, so buying RECs does not cover a company's carbon emissions or make the company renewable-energy powered, in whole or in part. Only on-site generation and other methods of buying physical renewable electricity make a company renewable energy powered and offset carbon emissions already produced by a company. While RECs can make a company "look good" and "provide legal bragging rights for using renewable energy", there is no proof to back up a claim made by a company that buying RECs has "displac[ed] fossil fuels or reduc[ed] greenhouse gas emissions" since RECs do not

create new renewable energy projects or add new energy to the grid (Pinkel and Weinrub 8). Treating RECs as carbon offsets or as an equivalent to buying actual renewable energy is incorrect, and this has many implications for today's large REC-buying companies as well as our entire economy as our world moves towards a more sustainable energy future.

Up to this point, I have introduced the concept of a REC, described how RECs have evolved over the past decade and a half, explained why many companies are buying RECs and why some are now transitioning away from RECs, explicated the role that RECs play in developing new renewable energy projects, and clarified the relationship between RECs and carbon offsets. For the remainder of my paper, I argue that many companies, including many of those that are listed in the Green Power Partnership's rankings, are using RECs to "green wash" consumers and give them an inaccurate picture of our economy's current level of sustainability and environmental stewardship. I will then go on to propose three policy changes for the Green Power Partnership, as a highly regarded program in corporate sustainability and a main facilitator of communication in the REC market, to implement in order to promote clearer communication and corporate accountability for protecting the environment.

How Are RECs Used in "Green Washing" Consumers?

The term "green washing" was first coined by environmentalist Jay Westerveld over 20 years ago when he encountered a sign in his hotel room encouraging guests to reuse their towels and "conserve the Earth's vital resources". After this experience, Westerveld wrote an essay that said that hotels pollute the environment in so many more detrimental ways than washing too

many towels, and that the hotel "seemed more interested in projecting an image of itself as environmentally green rather than truly being green" (Sullivan). In relation to the renewable energy market, stakeholders and members of the general public may view the use and purchase of green power, including RECs, by companies as "green washing" ("Guide" 8). According to a book titled "Battling Big Business" that uncovers many "corporate bullying" tactics, including green washing, this is a term that has moved beyond describing "environmental advertising" to now encompassing "more comprehensive maneuvering" to support current environmentalist trends (Lubbers 19). Green washing tries to move companies into a position as "[stewards] of the Earth and public health" and "promote the language of corporate reform" while discouraging drastic or "radical" changes in consumer behavior (Lubbers 20). This new definition of green washing makes it appropriate for use in talking about RECs because many companies do buy RECs to boost their public relations and environmental image.

There is much potential for green washing in the REC market, where there is a current "lack of understanding" of RECs and "inconsistency in REC definitions" among key stakeholders such as renewable energy developers, buyer companies, brokers, regulatory personnel, and the general public. For instance, referring to a REC as a renewable energy credit and therefore thinking of it as a "credit" of some sort is misleading because RECs do not give the buyer any renewable energy *credit*; rather, they give the buyer an opportunity to support renewable resources and gain only the qualitative aspects of that energy. Because of the limited and fragmented understanding of the REC market, and because the concept of a REC is very complicated, abstract, and hard to understand, it is very hard to clearly and succinctly communicate the idea of a REC in marketing language (Holt and Bird 36). The "risk of consumer confusion and the potential for misleading advertising" is very clear in a REC market

that has grown so much in such a short period of time (Holt and Bird 9). Despite the challenges in grasping and communicating the concept of a REC, many companies use RECs to enhance their image as a "green" organization that is dedicated to protecting the environment.

EPA's Green Power Partnership (GPP) is one entity that helps bolster the environmental image of many large corporations. At the first Green Power Leadership Awards held by the Partnership in 2001, the EPA recognized nine of "the nation's leading green power purchasers" ("2001 Green Power Leadership Awards" 3). The winners were chosen based on the amount of renewable energy purchased, the "impact" of those purchases in helping to "establish a precedent" of supporting renewable energy in the corporate world, and any "innovative purchasing strategies" used ("2001" 3). Today, the Green Power Partnership has over 1,400 partners ("Basic Information"). This program has grown tremendously over the past decade, and this shows that more large companies want to be seen as green and environmentally friendly.

Joining the GPP gives a company "credibility", "publicity and recognition", "communication tools and resources", and a "network of like-minded organizations" as it seeks to expand its energy portfolio and improve its environmental image. Companies, organizations, and even cities and universities can meet Partnership requirements and become partners by purchasing green power that accounts for a certain percentage of their total electricity use ("EPA's Green Power Partnership"). In an interview with Tim Rehder, he remarked that "It's obvious that many companies want to be seen as good stewards of the environment. [EPA's Green Power Partnership] encourages companies to burnish their environmental image via purchase of [renewable energy]. The problem is that [the Green Power Partnership] doesn't distinguish between RECs and actual [renewable energy]" (Rehder). By examining some of the companies recognized as top partners in the Partnership's rankings and investigating their REC

purchases as compared to their total electricity use, I will demonstrate exactly why it is a problem that EPA does not distinguish RECs from actual renewable energy.

The first case study I will examine is Intel Corporation, which is listed as the #1 company on EPA's Green Power Partnership 100% Green Power Users list. Intel buys "more than 3.1 billion kilowatt-hours a year" of RECs and also has "on-site solar plants at several Intel facilities" ("100% Green Power Users"). As of 2012, REC purchases have covered almost 90% of Intel's domestic electricity use (David Gardiner & Associates 19). Below is a picture (Figure 4) of Intel's logo with an added "green" touch, likely released to promote Intel's image of environmental stewardship (Do It Yourself Solar). This image is an example of a media item that is used to promote the "greenness" of a company but just might achieve the opposite effect. In this picture, the leaf projections on the right hand side represent nature and sustainability, while the modern building on the left hand side represents technology, progress, and innovation. This image portrays the overlap of these two concepts which seem mutually exclusive, but which Intel, whose logo appears in the middle of the image at the intersection of these two sides, has managed to merge. At first glance, this image seems to truly capture Intel as a corporate leader in innovation and sustainability, as exemplified by its numerous awards from the EPA's Green Power Partnership. However, as we look deeper at the colors used in the image, there is little modulation and very intense color saturation, which contributes to the overall impression of the image as a show and even as fake. Perhaps this image, and Intel's political and corporate

Figure 4. Intel's "Green" Logo (Do It Yourself Solar)

"image", of sustainability is really just a show to gain support in today's fast-paced economy.

Another example of a company in the Green Power Partnership is Safeway, which is listed as #20 on the EPA's list of Top 30 On-Site Power Generation Users. However, less than 1% of Safeway's total electricity use comes from on-site generation, and the company purchases nearly 12 times the number of kWh of energy that they generate ("Top 30 On-site Generation"). Below is a poster (Figure 5) that many Americans could see in their local Safeway store, and that promotes the use of wind energy in particular as well as Safeway's role in supporting green power (Geehsien). Although this image is much more believable than the image of Intel's logo, as this image was taken by a consumer of a poster in an actual Safeway store, and there is more modulation and less saturation in the colors used in the poster, the simplicity of this poster is worrisome. A clear blue sky illuminates the simple statement that "This Store is 100% Powered by Wind Energy", and the poster is complete with the EPA Green Power Partnership insignia in the bottom left-hand corner. There is also a clear vector in this image that starts along the line of wind turbines in a diagonal and extends beyond the poster into the physical store. This vector connects the store and the consumers with the image and brings up the idea of community sustainability. The poster is extremely effective in that it involves consumers by stirring in them the notion that they are directly supporting renewable energy and are directly benefitting from its power, but the hidden assumptions and generalizations behind the poster oversimplify what is a very complicated issue, and may make

Figure 5. Safeway Poster, "100% Wind Powered" (Geehsien)

consumers fully believe the poster as truth without much background knowledge or research.

In the two examples above, there is no doubt that these companies are doing great things for the environment, but their use of RECs to complete their environmental actions, as well as the ambiguity about how much of their power and carbon emissions are covered by RECs, brings into question the validity of their rankings. While it is nice to believe that all of the corporations in the Green Power Partnership are truly supporting renewable energy at such a high level, the lack of clarity in the Green Power Partnership's policy on the use of RECs in determining these rankings brings up questions about where this renewable energy comes from. If most of it comes from buying RECs, should these companies really be able to claim that they are 100% renewable energy powered or are Top On-Site Generators?

In fact, most of the green power bought by GPP's partners does come from RECs. Since 2007, RECs have constituted around 75% of "total green power purchases under the Partnership" (Heeter, Armstrong, and Bird 7). A document released by the GPP states that REC buyers "cannot claim to be buying or using green power in the absence of owning the REC", yet the same document states that they can "claim to be buying zero-emission, renewable energy, which reduces its indirect emissions from purchased energy […and its] carbon footprint" ("The Environmental Value" 2). Since RECs are not carbon offsets and do not add new renewable energy to the grid, REC buyers should not be given license to claim an emissions or carbon footprint reduction. This is the basis of the argument that RECs are involved in corporate green washing: RECs are an easy and mutually beneficial way for companies to support renewable energy, but these companies are using RECs beyond their definition and purpose to claim and be recognized for certain levels of environmental stewardship.

By using RECs as an equivalent to carbon offsets and as a feasible way to cover already-

produced carbon emissions, companies like Intel and Safeway are leading consumers to think that the companies they are supporting are using more renewable energy and are therefore more sustainable or eco-friendly than they actually are. Based on these perceptions, consumers may start to form a general opinion about the current state of the renewable energy market and the "greenness" of our economy in general. We are what we repeatedly do, and if the companies from which consumers regularly buy are portraying images and media about being "100% renewable" or "powered by wind energy", this could lead consumers to believe that our economy is in much better shape in terms of reducing carbon pollution and demonstrating environmental stewardship than it actually is.

The public needs to be well informed about the energy use of individual companies and of our economy in general because consumers are an integral part of the economy, and the whole system would not be able to function without them. By going to certain stores whenever we shop, we are casting a dollar vote that supports companies that may or may not reflect our own personal values. Consumers have a right to know and understand what goes on behind the scenes and what they are supporting with their purchases. If a company is buying off most of its carbon emissions with RECs and is only minimally supporting renewable energy, a consumer may not want to be supporting that company. Inversely, if a consumer sees a sign or advertisement that a company is "100% renewable powered", they may be more willing to support that company and may start to buy more products from that company, regardless of the truth of the statement made by the company. In both cases, the consumer needs to be well informed of the company's actual energy use so that he or she can make that decision. Each individual consumer plays a role in contributing to the sustainability of our current economy and the protection of the environment. Small actions make a difference, and understanding current energy issues and being well

informed about energy decisions in the corporate world helps consumers feel that they have power and weight in the current movement towards a cleaner and more sustainable energy future. Despite the importance of consumers in driving demand and supply in our economy, individuals do not have direct power to make policy changes and change the way RECs are treated and used by companies. In the next section, I will propose three policy changes for EPA's Green Power Partnership, which is a very important player in the REC market and a main communicator to REC buyers, to consider.

Proposed Policy Changes

In order to facilitate better communication, understanding, and treatment of RECs in today's renewable energy market, I have three proposed policy changes for EPA's Green Power Partnership: (1) Clarifying the definition of a REC; (2) Redefining the policy around using RECs in making energy claims; and (3) Publicizing the role of every type of green power, and possibly changing the role of RECs, in calculating the EPA Green Power Partnership's awards and rankings of their corporate partners. I believe that at this point, the Green Power Partnership is the primary entity that should institute major policy changes, as it is a very credible and well-known program that has set the standard for green power and REC use in the corporate world. Since the GPP has set up many of the requirements and rules around REC use and making energy claims when RECs are involved, it is the entity that needs to implement these initial policy changes in order to create a ripple effect of clearer communication throughout the REC market and the corporate world.

The first step to better communication within the renewable energy market is clearing up the definition of a REC and specifically what it represents. The GPP needs to re-emphasize the

distinction between a REC and a carbon offset, and companies, brokers, as well as the general public needs to understand that unbundled RECs are not attached to any physical electricity at all. The EPA can most easily communicate the definition of a REC since it deals with policymakers, companies, and citizens alike. There is an inherent and very significant challenge in communicating the concept of a REC in mass media, as the idea of a REC is very complicated and abstract; however, distribution of this information in mass media is a big step that will eventually need to be taken if all constituents in the working economy are to fully understand what a REC is and how it is used by today's corporations and organizations.

A second proposed policy change is redefining the rules and regulations around the use of RECs in making claims about energy use. In my opinion, this policy needs to be changed to reflect the true nature of RECs and how they are used in today's renewable energy market. Companies should not be able to factor in REC purchases when making overarching claims about their energy use, such as claiming that they are "100% powered by renewable energy". In addition, companies should clearly publicize the amount of RECs they are purchasing and how that amount compares to their total energy use on their individual websites and should update this information regularly. Only clear, transparent, frequent communication about REC use will clear up confusion about this issue and produce accurate energy claims in the corporate world.

My third policy change involves the methodology behind the awards and rankings published regularly by EPA's Green Power Partnership of its top corporate partners. I believe that the GPP's methodology for determining these rankings and awards in terms of what role each type of green power (including RECs) plays needs to be published clearly on their website and updated whenever any part of the methodology changes. As long as the Green Power Partnership continues to factor REC purchases into a company's renewable energy use, it needs

to clearly publish and widely circulate this information. If the GPP were to change its policy according to my second proposed change, and it were to not count RECs in determining rankings and awards for the Partnership, it also needs to publish this information. In addition, if RECs were to no longer be included in the GPP's rankings, the GPP needs to release new information outlining the claims companies can make about their emissions and carbon footprint in relation to RECs. In addition to publishing methodologies and clarifying REC use in the Partnership's rankings, the GPP needs to publish complete, comprehensive energy portfolios of each of its partners, regardless of a given partner's position in the rankings. These energy portfolios should clearly articulate the types, amounts, and origins of the energy that each partner company uses.

If the Green Power Partnership is to remain a credible, highly regarded program that accurately reports the energy usage and rankings of many of the world's largest corporations, it needs to do so openly, transparently, publicly, and with regard to the actual impact of the different methods that companies currently use to procure renewable energy. In addition to implementing the three policy changes I have proposed, the GPP should also consider expanding its definition of "green power" beyond RECs, on-site generation, and utility products to include methods such as PPAs and direct investment. The GPP needs to be up to date on all the various ways to support and use renewable energy, and must diversify its portfolio of "green power" in order to maintain its current role in the renewable energy market. The GPP cannot be fully accurate in terms of what specific companies are leading the corporate world in sustainability and renewable energy use until it expands its definition to include all or most of the methods that companies use to procure renewable energy. The GPP is a key player in the renewable energy market and in the movement towards a more sustainable energy future, and clear, transparent

communication about how they publish their findings and determine their rankings is a crucial first step in clearing up confusion and encouraging open communication about REC use.

Conclusion

In the fairly new and rapidly expanding REC market, there is much confusion and miscommunication about what a REC actually is and how it should be used, and this information is very hard to succinctly convey through mass media. Many corporations are using REC purchases to essentially offset much of their carbon emissions and further claim that they are all or in part renewable-powered. Since unbundled RECs are not attached to physical electricity, are not carbon offsets, and do not add new renewable energy to the grid, these corporations are treating RECs improperly. In turn, this is "green washing" consumers and giving the general public an inaccurate view of the energy use of individual companies as well as the environmental awareness encompassed in much of our economy.

In my essay, I proposed three policy changes for EPA's Green Partnership to institute in order to clear up confusion about RECs, enhance communication in the renewable energy market, and move towards a cleaner and more sustainable energy future. These policy changes are (1) Clarifying the definition of a REC; (2) Redefining the policy around using RECs in making energy claims; and (3) Publicizing the role of every type of green power, and possibly changing the role of RECs, in calculating the EPA Green Power Partnership's awards and rankings of their corporate partners. I believe that these policy changes will effectively communicate what RECs are and how they should be used in an open, transparent, and sustainable renewable energy market.

Many companies are currently using RECs as an excuse to not invest in actual renewables, and as a short-term, easy energy decision that will make the company look good without actually contributing to the growth of renewable energy. To make claims about a company's carbon footprint, the company needs to actually offset the carbon emissions that they have already made by adding new, physical renewable energy to the grid. Right now, many companies are using RECs to do just that, and that is not what RECs do. Companies can't use RECs to buy off their carbon emissions, and in pretending to offset their carbon emissions but not actually doing so, companies are actually slowing the growth of renewables and our economy's overall transition to a more sustainable and diversified energy future.

The impending energy crisis and the fate of our economy in the crucial transition to a better energy future lies in the hands of our corporations, government agencies, and large organizations, who use a significant portion of our global energy. These organizations need to set the right tone for our whole economy to follow, and a successful transition of these companies to more transparent communication about RECs, as well as their use of more actual renewables, will help promote a culture of sustainability and environmental awareness. This will empower the entire economy to take ownership and create our new energy future.

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