



# Business Investments in Renewable Energy Credits

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## Summary

This paper is written for small-to-medium-sized U.S. businesses that are looking for guidance on the topic of renewable energy credits (REC). In this paper, you will learn what RECs are and how you can purchase them, what types of companies are investing in them and what their experiences have been. Also, this paper will describe the benefits of pursuing RECs. After reading this white paper you should be able to make an informed decision and perform a cost-benefit analysis of whether Renewable Energy Credits are a smart investment for your company.



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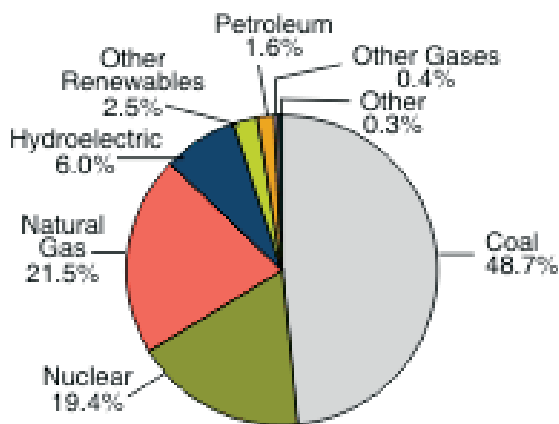


# Business Investments in Renewable Energy Credits

## INTRODUCTION

The U.S. is beginning to rethink the way energy and power is being supplied. Close to 97 percent of the U.S.'s power is generated from nonrenewable fuels.<sup>1</sup> With almost all of the U.S.'s power generated coming from finite natural resources, over the decades these types of power generations have started to show their ugly head in the form of pollution and hazardous emissions.

When generating power from fossil fuels such as oil, natural gas, and coal, many chemicals are released into the earth's atmosphere. Some of the most harmful to the natural environment are greenhouse gasses



Source: Energy Information Administration, Form EIA-906, "Power Plant Report;" and Form EIA-920, "Combined Heat and Power Plant Report."

Many of these greenhouse gasses are naturally occurring on earth and help support life. One such gas is carbon dioxide. As these gasses are forced into the atmosphere far above the amount required to support life, they begin negatively affecting the world we live in. When there is too much of these greenhouse gases in the atmosphere, it becomes very toxic and

1 ([http://tonto.eia.doe.gov/energy\\_in\\_brief/electricity.cfm](http://tonto.eia.doe.gov/energy_in_brief/electricity.cfm)). Graph

## Greenhouse Gases (GHG)

*Gases in the earth's atmosphere produce the greenhouse effect. Changes in concentration of certain greenhouse gases, due to human activities such as the burning of fossil fuels, increase the risk of global climate change.*

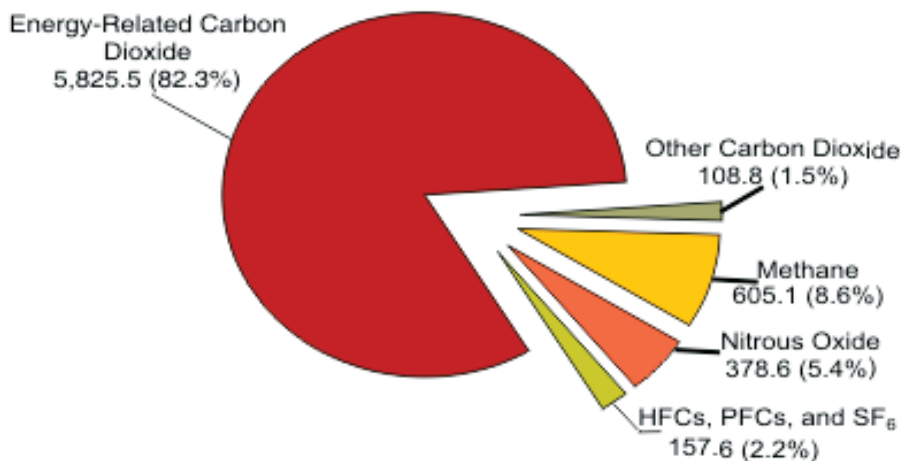
*Greenhouse gasses include water vapor, carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinate carbons, and hydro fluorocarbons. ([www.epa.gov/global-warming](http://www.epa.gov/global-warming))*

harmful to all humans and living things. Some of the chemicals in greenhouse gases include "primarily carbon dioxide (CO<sub>2</sub>), but also including methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride, hydrofluorocarbons (HFCs), and per fluorocarbons (PFCs). While some of these gases have a higher global warming potential compared to CO<sub>2</sub>, because CO<sub>2</sub> makes up the majority of greenhouse gas emissions, it is responsible for about 80% of effective annual greenhouse gas emissions."<sup>2</sup>

## Renewable Energy White Paper

*For more information on renewable energy sources please find Lucinda's White Paper at <http://www.sustainabilityconsulting.com/>. Here you can read more detailed explanations of each individual renewable energy source and the advantages and disadvantages of each of them.*

2 [http://www.thegreenoffice.com/go-green\\_take-action\\_carbon-offsetting\\_climate-science](http://www.thegreenoffice.com/go-green_take-action_carbon-offsetting_climate-science) (Greenhouse gas chemicals)



Source: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2006* (Washington, DC, November 2007)

Forcing this much carbon dioxide into the atmosphere from fossil fueled energy producers is polluting not only humans but is affecting the natural environment. There is evidence of disruptions to earth's natural systems and cycles in the forms of changing regional climates and weather cycles. Some of these changes are referred to as **global climate change**. Humans have begun to realize the negative effects carbon emissions have on earth.

So where do we go from here and how do we reduce the pollutants and carbon emissions produced in energy generation? An initial step is to look at other opportunities to generate power that do not output hazardous materials. There are multiple types of energy generators that harness different opportunities and characteristics the earth's natural environment presents. Some of these opportunities are renewable resources such as the wind, sun, and the natural heat from the earth. It has been difficult for renewable energy producers to compete because most of the utility companies own many of the dirty energy sources. Because renewable energy sources have such a small portion of the energy market share, it is difficult for them to be profitable. However, not only the U.S. but

### **Global Climate Change**

*For most of human history, changes in the earth's climate resulted from natural causes that took place over thousands of years. But today, human activities are beginning to affect our climate in serious and immediate ways by rapidly adding greenhouse gases to the atmosphere. These gases trap heat close to the earth that would otherwise escape into space, intensifying a natural phenomenon called the green house effect. Over the next century, scientists project that global temperatures will rise two to six degrees Fahrenheit as a result of rising concentrations of greenhouse gases. Scientists believe that this rate of global warming will be unprecedented compared with that of the past 10,000 years. Global warming could result in a rise in sea levels, changes in patterns of precipitation, more variable weather, and many other consequences. These changes threaten our health, agriculture, water resources, forests, wildlife, and coastal areas.*

*([www.epa.gov/global-warming](http://www.epa.gov/global-warming))*

the rest of the world is starting to see the benefits of investing in renewable energy and promoting it as a future large scale energy producer.

## BACKGROUND ON RENEWABLE ENERGY CREDITS

We must first understand what constitutes a renewable energy source. “Renewable energy is derived from natural sources that replenish themselves over short periods of time.”<sup>3</sup> Some of these sources include wind, biomass, solar, geothermal, biogas, landfill gas, and low impact hydro-electric. Renewable energy sources harness the natural environment’s clean and infinite opportunities for power generation rather than burning a finite resource such as coal or oil.

Currently, fossil fuel power generation is cheap and has dominated the power production market for centuries. Renewable energy is starting to enter the marketplace, but production is not at a large enough scale to become competitive. Also, renewable energy technologies are relatively young and have expensive start-up and operational costs. Because of these barriers of entry into the marketplace, it is difficult for renewable energy sources to compete against traditional nonrenewable power sources.

Is there a way to help drive demand of renewable energy in a market that is demanding low cost energy? This mechanism would need to bridge the price gap allowing renewable power sources to compete against non-renewable power. The mechanism is a REC.



Graphic from <http://www.greenerprinter.com>

“Renewable Energy Certificates (RECs) allow any customer, anywhere in the country to support renewable energy generation.”<sup>4</sup> A certificate or credit represents one mega-watt hour of electricity that a renewable source added to the U.S.’s power grid. When a certificate is purchased the owner has displaced 1,000 kilowatts of dirty energy with 1,000 kilowatts of clean renewable power on the energy grid. A buyer of the certificate owns all the rights and associated benefits of the credit once it has been pulled off the market and retired by the owner.

*One Megawatt hour of electricity = 1,000 kilowatt hours of electricity. Average residential households uses about 936 kilowatt hours per month or 11,242 kilowatt hours per year or roughly 11 megawatt hours per year.*

5

<sup>3</sup> [http://www1.eere.energy.gov/femp/pdfs/purchase\\_green\\_power.pdf](http://www1.eere.energy.gov/femp/pdfs/purchase_green_power.pdf) (PDF Guide)

<sup>4</sup> <http://www.3degreesinc.com/products/recs/>  
<sup>5</sup> <http://michaelbluejay.com/electricity/cost.html> and <http://www.eia.doe.gov/cneaf/electricity/esr/table5.html> (Residential Kilowatt hrs per month table)

Each REC is certified by the generator and is audited by a 3rd party body. “RECs are certified by Green-e, Environmental Resources Trust’s EcoPower Program, and The Climate Neutral Network. Also, REC markets are increasingly overseen through regional tracking systems such as WREGIS, NEPOOL, GATS, ERCOT, and M-RETS” to ensure legitimacy.<sup>6</sup> During the certification process each REC is given a unique identification number to ensure that each credit cannot be sold more than once. After the REC is created it can then be issued or sold in the market place. Currently in the United States, there exist two markets for REC, the voluntary and compliance markets.

The compliance market is where states are mandated by the federal government to produce a certain amount of renewable power through the Renewable Portfolio Standard program. Many states currently do not have any renewable sources located within their geographic boundaries, so they cannot meet the mandated requirements. These states are forced to purchase RECs. This demand for renewable energy credits can affect the price of RECs for voluntary users.

*Green-e Energy is the nation’s leading voluntary certification program for renewable energy. For over a decade, Green-e Energy has been certifying renewable energy that meets environmental and consumer protection standards that it developed in conjunction with leading environmental, energy and policy organizations. Green-e Energy also requires that sellers of certified renewable energy disclose clear and useful information to potential customers, allowing consumers to make informed choices. (<http://www.green-e.org/>)*

The second and most important market for individuals or businesses is the voluntary market. This is where people and businesses can buy RECs as a commodity in an open market setting. Many different renewable power sources or coops sell RECs from the energy they produced and sell it to the market. This is where brokers and marketers who are in between the renewable source and the buyer facilitate the purchase of RECs.

There are numerous brokers and marketers currently working with companies to help supply their REC needs. Some of those companies include 3Degrees, Sun Edison, Clean Currents, and many more.

*For a comprehensive listing of Brokers and Marketers please refer to the USDOE’s Green Power Network website. (<http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=4>)*

These companies will analyze your power needs, educate about renewable energy, and explain the options that are available in the market. Different brokers will offer RECs that come from different renewable sources and have different prices. RECs are becoming a bigger business and more and more marketers are helping to facilitate companies that want to invest in renewable power.

The cost of a REC can range on average from \$.005/kWh to \$.056/kWh. Many different factors cause the prices of RECs to vary, including whether the sources are producing for the compliance market or are producing power several hundred miles away from your location. Please see the below chart which lists out different RECs, their price, and a description of what they represent.

<sup>6</sup> [http://en.wikipedia.org/wiki/Renewable\\_Energy\\_Certificates](http://en.wikipedia.org/wiki/Renewable_Energy_Certificates)

National Retail REC Products (last updated May 2008)					
Certificate Marketer	Product Name	Renewable Resources	Location of Renewable Resources	Residential Price Premiums*	Certification
3 Phases Renewables	Green Certificates	100% biomass, geothermal, hydro, solar, wind	Nationwide	1.2¢/kWh	Green-e
3Degrees	Renewable Energy Certificates	100% new wind	Nationwide	1.5¢/kWh	Green-e
NativeEnergy	CoolWatts	100% new wind	Nationwide	0.8¢/kWh	Green-e
NativeEnergy	Remooable Energy	100% new biogas	Pennsylvania	0.8¢/kWh-1.0¢/kWh	***
Ameren Energy Marketing (AEM)	AEM 5% Renewable Energy	various	Nationwide	2.0¢/kWh	—
Bonneville Environmental Foundation	Solar Green Tags	100% new solar	Nationwide	5.6¢/kWh	Green-e
Bonneville Environmental Foundation	Wind & Solar Green Tags Blend	50% new wind, 50% new solar	Nationwide	2.4¢/kWh	Green-e
Bonneville Environmental Foundation	Wind Green Tags	100% wind	Nationwide	2.0¢/kWh	Green-e
Bonneville Environmental Foundation	Denali Green Tags (Alaska only)	100% new wind	10% Alaska, 90% Nationwide	2.0¢/kWh	Green-e

Source: National Renewable Energy Laboratory

For a full listing of available RECs please visit the National Renewable Energy Laboratory’s website.<sup>7</sup>

You can see from the chart that some RECs are only available in certain areas while others use different types of renewable resources which can affect the prices. Understanding why prices of RECs vary is a great way to begin the analysis of whether investing in RECs aligns with your company’s strategic plan or mission.

## WHY SHOULD A COMPANY INVEST IN RENEWABLE ENERGY CREDITS

We have touched on what renewable energy is, what a renewable energy credit is, and how a credit can be

purchased. Now why would a company want to invest and purchase RECs? There are numerous business reasons that can provide returns for companies that invest in renewable energy.

*For companies that are interested in possible LEED certification of their facility, points are awarded purchase of RECs under the LEED for Existing Building Operations & Maintenance Rating System certification. If you purchase renewable energy credits to offset your building’s electricity load up to 25%, 50%, 75%, or 100% you receive 1 through 4 points respectively. ([www.usgbc.org](http://www.usgbc.org))*

<sup>7</sup> <http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=1&print>

Investing in RECs can help lower a company's overall carbon footprint. RECs represent power that came from a clean renewable energy that has lower carbon emissions than a fossil fuel generating power source. Companies can prove by purchasing RECs they have reduced their company's carbon emissions. Lowering carbon emissions helps protect the humans from pollution and combat global climate change.

Within any business environment there are inherent risks associated with all aspects of operations. There is financial risk such as costs of unexpected accidents. Environmental risks such as pollution and negative publicity. Lastly, there are risks associated with social impacts to a company's policies and operations. Investing in RECs can hedge against possible business risks.

Changes in energy costs can have a negative effect on businesses cash flows. If you can stabilize your energy costs you can alleviate possible cost volatility in the future. A great example of this is Fed Ex who supports renewable energy to diversify energy sources to lower the risk of energy price changes. When you purchase a REC, you are boosting demand for renewable energy and lowering your risk from fossil fuel prices.

Many companies have seen the new wave of legislation worldwide about regulations to combat global climate change. Renewable energy will be unaffected by these regulations. Much of the new climate change legislation is aimed at sources that emit dangerous greenhouse gases. By investing in RECs you can lower your risk of government influence on your business in the form of new climate change laws.

Also, energy produced by fossil fuels has harmful effects not only to humans but also to the earth's natu-

ral environment. If you are contributing to clean energy by buying renewable energy you can separate your company from these negative effects on the environment caused by dirty energy sources. In the eyes of the community and local businesses you are taking the lead to help lower your impacts of operating on the local citizens and environment.

Investing in RECs can help a company create a competitive advantage within a business sector numerous ways.

First, investing in renewable energy can demonstrate to the market and to the public that a company is a civil leader. Currently in the U.S., companies that are purchasing REC are doing so voluntarily. A company voluntarily investing in renewable energy wants to take the lead in supporting energy that has a smaller impact on humans and the natural environment. With smart positioning and marketing, the investment in RECs can create an advantage for an organization in a marketplace that demands social responsibility.

A smart marketing campaign showcasing your company's commitment toward cleaner energy is a great way to publicizing your company's green initiatives. You can create a connection for a consumer's choice to use your product and service as a choice to support renewable energy. This publicity is an effective way to separate you from your competitors in the marketplace. New Belgium Brewing uses renewable energy and wanted to inform its customers about their use of clean energy. In a clever marketing plan, it created coasters showing its product and a windmill. One of its customers, Mark Powell, comments "The coaster got me to their website, which informed me about all of their green ventures, right down to being com-

pletely wind powered.”<sup>8</sup> Many companies are becoming more transparent and are showcasing their use of renewable energy and their investments in RECs such as FedEx, Prana, and PepsiCo.

A company must be careful to have hard data and evidence of its public claims. Many non-governmental and watchdog organizations research company’s green advertisements and will spotlight many false claims in the public and market eye which can have drastic effects to a company’s image. However, if you purchase a REC, you have a certificate that can prove your commitment to clean renewable energy.

Every company wants to have team members who are proud of their company and how it operates. When employees are excited about what they work on and how the company is operating, there are fewer turnovers. Fewer people leaving the company can help maximize efficiency in the workplace. Investing in renewable energy is a great way to showcase a company’s commitment to clean energy internally to its employees. This commitment can help provide increased pride team members feel toward the organizations they work. When employees are proud of where they work, the company can expect to retain employees. Investing in RECs can help boost morale and add to a positive corporate culture team members can take pride in.

When a company invests in a REC, it is helping to support renewable energy, allowing it to compete with fossil fuel energy producers. By competing in the energy market, these clean-power sources will have time to grow and develop newer and cheaper ways of operating. With increasing demand for renewable power,

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8 <http://parkhowell.com/green-advertising-and-marketing/this-beer-coaster-deserves-a-toast-for-its-green-marketing-folly>

new facilities and projects can be justified. If the U.S. can get renewable energy to gain market share it can help diversify the country’s energy portfolio. Having a wide variety of energy available can help lower risks of volatile energy prices.

Low cost dirty energy is exposing pollution and harmful toxins to the local communities and the environment. By investing in renewable energy, a company is helping support clean energy that does not have the negative outputs. Companies that buy RECs are lowering the demand for dirty-energy producers which will lower the amount of pollution many communities are exposed to.

There are many reasons and benefits to buying RECs, but the fact is that clean energy can cost more than dirty energy. Your company must analyze the markets and industries you operate in and look at the costs versus the benefits of supporting renewable energy. Below are a few examples of companies across many different industries that have decided to pursue RECs and some of the reasons they have chosen to help renewable energy compete against dirty energy suppliers.

## **EXAMPLES OF COMPANIES WHO PURCHASE RECS**

Companies are starting to see many competitors and larger companies beginning to use renewable power. In order to adapt to the market place businesses are faced with a decision to pursue investments in Renewable Energy Credits. Here are a few examples of some companies that have decided to purchase clean energy credits and why companies think it’s important.

### **Fed Ex**

Fed Ex is an international shipping company. They have decided to buy RECs for a number of different reasons.



From its website, it has disclosed a few of them. “At FedEx, we have taken a leadership role in the adoption and advancement of responsible environmental practices. We support the growth of sustainable energy use through commitments to renewable power sources in our operations and use of innovative technologies in our transportation fleet. FedEx seeks to diversify its energy supply whenever possible, relying on energy sources such as wind and solar power.”<sup>9</sup> Diversifying energy can lower business risks. FedEx is a great example of a company buying RECs because it makes strategic business sense.

### **Mohawk Fine Papers Inc.**

Mohawk is a large paper company based out of Co-hoes, N.Y. Currently all electricity used in its manufacturing is offset by purchasing RECs from renewable wind power. CEO of Mohawk Thomas O’Connor says on his company’s webpage it is committed to transparency “to give customers confidence our claims are accurate, and we publicize what we do not only to inform customers, but also to have a positive impact on our suppliers, our industry, other manufacturers, regulating and government organizations and beyond. At Mohawk in everything we do, we’re simply committed to being part of the solution.”<sup>10</sup> They have invested in renewable energy to help be part of something bigger than any company and to help provide the solution to dirty energy sources.

### **Prana**

Prana is an outdoors clothing company that has been operating for 16 years. They currently support U.S. based wind energy projects. Using the “brand as a vehicle to create positive change” is a dream and mis-

sion of Prana that aligns with their decision to support clean energy and purchase RECs.<sup>11</sup> A relatively young company Prana believes “the bottom line is, we feel grateful that we have come to a point that we have the resources to launch initiatives such as this (using wind power).”<sup>12</sup> A smaller company that has only been in operations 16 years is willing to invest in something that is voluntary and is costing the company more money. Staying true to the company’s mission and values, they have chosen to support the development of renewable energy.

### **Host Gator**

Host Gator is a website hosting company that operates many data centers and servers. It uses a great deal of electricity to power its shared and reseller servers. Currently it has bought enough RECs to offset 130% of their electrical usage!! Host Gator has not only offset its use but invested more than it uses. Host Gator thinks of their efforts as “thinking globally and acting locally.”<sup>13</sup> They paid for more expensive RECs to support local Texas wind power producers.

### **Coldwater Creek**

Coldwater Creek is a U.S.-based women’s clothing company that has stores throughout the country. It has decided to off set 100% of its energy consumption by purchasing RECs. From its website, Coldwater Creek is committed to supporting renewable energy for a couple of reasons. “Through this commitment, we are providing concrete support to the burgeoning renewable energy market, encouraging its growth and helping to lessen our country’s dependence on fossil fuels. This decision affects communities across the country and the world, and we are proud to be a part

9 [http://about.fedex.designcdt.com/corporate\\_responsibility/the\\_environment/alternative\\_energy](http://about.fedex.designcdt.com/corporate_responsibility/the_environment/alternative_energy)

10 <http://www.mohawkpaper.com/>

11 [http://www.prana.com/npi\\_overview.aspx](http://www.prana.com/npi_overview.aspx)

12 [http://www.prana.com/npi\\_overview.aspx](http://www.prana.com/npi_overview.aspx)

13 <http://www.hostgator.com/green-web-hosting>.

of this growing movement.”<sup>14</sup> Coldwater Creek understands the need for the U.S. to move away from dirty fossil fuels and is proactive in helping to support the transition to clean energy. It also believes clean energy is good for local communities in which its stores operate and are excited about the progress it has made.

### **Sugar Bowl Ski Resort**

Sugar Bowl is a ski resort located near Lake Tahoe, Nevada. The resort has decided to purchase RECs from local wind energy producers in California. All of its electricity use is offset by wind farms. It has chosen to purchase RECs because it “reduces Sugar Bowl’s consumption of fossil fuels, cleans the air, and keeps greenhouse gases out of the atmosphere.”<sup>15</sup> Its business is based on the earth’s natural cycles and seasons. Sugar Bowl is helping to limit their effects towards global climate change.

From the examples above we can see that numerous companies of various sizes are buying RECs for many different reasons. Some of those reasons include showing transparency to the community and to shareholders, helping to diversify the different types of power that feed their operations, and choosing to invest because it aligns with the company’s mission or values.

## **FINAL THOUGHTS**

So will your company decide to pursue RECs? During this paper, we have described the current trends in producing power, what renewable power is, what renewable energy credits are, why companies are deciding to invest in RECs, and a few examples of companies that have chosen to purchase RECs. With all this information, you can make an informed decision if buying RECs is the correct decision for your company.

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14 <http://www.coldwatercreek.com/socresp/protectresources.aspx?>

15 <http://www.sugarbowl.com/green-energy>