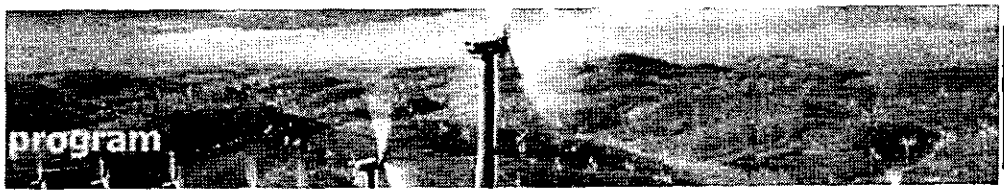
Green-e

renewable electricity certification program



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Green-e Market Impact*

Verified Renewable Sales: 2,918,000 MWh

Welcome to Green-e

a program of the Center for Resource Solutions

FILED[4]
JUL 13 2005
Missouri Public Service Commission

Exhibit No. 20
Case No(s). EO-2005-0329
Date 6-23-05 Rptr KF

Exhibit 20
Case No. EO-2005-0329
In re Proposed Experimental Regul. Plan of KCPL
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Verified Renewable Sales: 2,918,000 MWh

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Green-e Market Impact*

Verified Renewable Sales: 2,918,000 MWh

*Product numbers include regulated, competitive and TRC markets, and are from the 2003 Green-e Verification Report.

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Green-e Market Impact*

Verified Renewable Sales: 2,918,000 MWh

*Product numbers include regulated, competitive and TRC markets, and are from the 2003 Green-e Verification Report.

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what is green-e?

Every time you switch on your lights, resources are used to generate your electricity. 98% of electricity produced in the United States comes from non-renewable resources such as polluting fossil fuels and nuclear power.[1] **These non-renewable sources of electricity are the number one cause of global warming in the United States.**[2] There are huge differences between the types of resources used to meet our country's electricity needs. The remaining 2% of the electricity produced is generated from renewable resources, such as wind, solar, geothermal, small hydro and biomass, which cause dramatically less air pollution and environmental damage.

The Green-e logo is a nationally recognized symbol to help consumers identify superior, certified renewable energy products[3]. Green-e is the nation's leading independent certification and verification program for renewable energy products. If you are interested in getting your renewable energy product certified, please visit the Green-e Program Summary to learn more.

In some states, you can CHOOSE what type of power you would like to buy. In other states, your utility company may offer a renewable (green) power option as an alternative to the regular electricity you currently buy to power your home or business. Regardless of your location, you can choose to purchase Tradable Renewable Certificates (TRCs) to offset your energy use. When you see the Green-e logo, you can be assured you're getting environmentally superior renewable energy.

On this website you can see Green-e certified energy options available in your area, read about the health and environmental benefits of renewable power, and see which businesses have switched to renewable power.

***Throughout this website, your electricity "offering," "option" or TRC will be called an energy product.** If you have questions about a definition, please visit the Green-e Dictionary.

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[1] US EPA EGRID 2002 v2.01. Note that large hydro is included in this calculation.

[2] http://www.nrdc.org/globalWarming/f101.asp

[3] Products are sold in competitive retail electricity markets, regulated electricity markets, and nationwide through the sale of Tradable Renewable Certificates (TRCs)

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Green-e

renewable electricity certification program

summary

The Green-e Renewable Electricity Certification Program is administered by the non-profit Center for Resource Solutions and based in the Presidio of San Francisco, California. Green-e provides an easy way for consumers to quickly identify environmentally superior electricity products in competitive markets.

Green-e certifies renewable electricity products that meet the environmental and consumer protection standards established by the Program. The Program also requires that electricity providers disclose information about their product to their customers in a standardized format. This enables consumers to make informed purchasing decisions and helps to build consumer confidence in retail renewable electricity products. Through these efforts, the Green-e Program hopes to expand the retail market for renewable electricity products and for power from cleaner non-renewable generation.

In each state where Green-e is active, the Green-e Program works with diverse stakeholders to form Regional Advisory Committees who ensure that the consumer protection and environmental standards of the Green-e Program work for their regions. When consumers see the Green-e logo, they can be sure that the renewable electricity product is verified annually for its power content and that the electricity provider selling the power has met the Green-e Program's environmental and consumer protection standards.

Green-e Activity by State

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Certified/Accredited Green Power Products Available

Electricity Standard in Place

Tradable Renewable Certificate (TRC) Certification Available Nationwide

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overview of standard

The Green-e Standard establishes the technical criteria that electricity products must meet to be eligible for Green-e certification. This page summarizes the Standard. To view Green-e Standards, click here.

The Green-e Standard is determined by the Green Power Board, based on input received from Green-e Regional Advisory Committees. More information on how Green-e is administered can be found under Governance.

Product Requirements

When the Green-e logo is displayed next to an electricity product, the product must meet the following requirements:

- 50% or more of the electricity supply comes from one or more of these eligible renewable resources: solar electric, wind, geothermal, biomass, and small or certified low-impact hydro facilities,
- if a portion of the electricity is non-renewable, the air emissions are equal to or lower than those produced by conventional electricity,
- there are no specific purchases of nuclear power, and
- the product meets the Green-e new renewable requirement.

Electricity Provider Requirements

Electricity providers selling Green-e certified electricity are required to abide by the Green-e Code of Conduct, which governs participation in the Green-e Program. Specifically, electricity providers must:

- make full disclosure of the percentage and type of renewable resources in their electricity product;
- present product pricing and contract terms in a standardized format, for easy comparison;
- submit their marketing materials for review twice a year so Green-e can ensure they are not making false or misleading claims; and
- undergo an annual independent Process Audit to verify product content claims and ensure enough renewable power has been purchased to meet customer demand.

To view PDF documents on this page, download Adobe's free Acrobat Reader.

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frequently asked questions

If your question is not answered here, please email us your question.

Q: What is the definition of "green" energy?
A: Technically, there isn't one. Terms like "green" and "environmentally friendly" currently have no standard definition in the energy industry. The Green-e program set a definition of "green" energy so consumers can have an objective standard against which products can be compared. The Program ensures that energy products receiving Green-e certification meet this standard. The Green-e Program calls a power product "green" if it contains at least 50% renewable power, it has lower air emissions than traditional power, and it contains no direct purchases of nuclear power. It's cleaner because it results in lower air emissions, less nuclear and mining waste, and is produced from renewable resources. The Green-e Program calls a Tradable Renewable Certificate (TRC) "green" if is contains 100% new renewable resources.

Q: What are Tradable Renewable Certificates (TRCs)?
A: TRCs are created when renewable energy is substituted for traditional power. TRCs represent the environmental benefits of renewable energy generation in the form of a marketable commodity. Renewable energy is sometimes more expensive than buying traditional power so TRCs are purchased in addition to the electricity that most consumers now use. Purchases of TRCs allow renewable plants to be built where cost is lowest, while their positive attributes are delivered to customers anywhere. Buying TRCs allow consumers to create similar environmental benefits to buying green power: reduced dependence on burning fossil fuels to produce electricity and reduced emissions of greenhouse gases and other harmful air pollution.

Q: Why should consumers care how their electricity is produced?
A: According to the World Watch Institute in Washington, D.C., electricity generation worldwide produces more pollution than any other single activity. In the U.S., electric power generation accounts for two-thirds of the country's emissions of sulfur dioxide (a pollutant that causes acid rain) and more than a third of the carbon dioxide (causing global warming). Electricity production also creates nitrogen oxides, which contribute to smog. A recent study estimated that approximately 64,000 people in the US die prematurely from heart and lung disease every year due to particulate air pollution - more people than die each year in car accidents. Children and seniors are most susceptible.

Q: Will it cost more to buy "green" energy?
A: Not necessarily. Some products actually cost less than traditional brown power. All of the companies participating in the Green-e Program are required to provide you with a cost-comparison, depending on the amount and type of renewables you choose.

Q: Do I need any special equipment to purchase clean power?
A: No. It's simple. Customers still use the existing meters already located on the side of your house or office when purchasing green electricity or TRCs.

Q: Whom do I call if the lights go out?
A: Switching your provider will not effect reliability. The wires that deliver electric power to you are still owned and operated by local utilities that serve you now. If the lights go out, you should call the same company you do now.

Q: Can I be sure my dollars are actually supporting clean, renewable resources?
A: A vast electric power network, often referred to as "the grid," connects states in the U.S. This electricity grid of wires, transformers, substations and other infrastructure provides a large pool of energy. Each region has its own power pool, although electricity can be delivered between regional pools. Our demand for power would drain these electricity pools in an instant if not for power plants continuously replenishing the pools by generating more electricity.

In the past, your electric utility decided what types of power plants were built, and generated the power that gets poured into the pool to match your needs. In states that have green energy options, people can choose who to buy their power from and consequently, what types of power gets poured into the pool. Nationwide, people can support renewable energy through the purchase of Tradable Renewable Certificates. When people choose renewable power, they are directing their energy dollars to companies that contract with renewable electricity generators, who will put green power into the grid.

Q: What exactly are renewable power sources?
A: Renewable power sources are those that rely on "renewable" resources, rather than fossil or nuclear fuels. Click on each link for a description of the clean power sources.

- **Solar**: The term "solar energy" in this context refers to sources that collect solar radiation to produce electricity. The two most common forms of solar energy are photovoltaic panels, which are semiconductors that directly generate electricity, and solar thermal plants, which use the sun to create steam to turn a turbine.

- **Wind**: The heating of the earth is uneven due to the daily rotations of our planet and creates winds whose energy can be captured by turbines and converted into electricity. This is one of the cheapest, and fastest growing, renewable energy technologies.

- **Biomass**: Energy that is stored in green plants and other organic matter is referred to as biomass. Biomass facilities burn wood, agricultural wastes and/or methane gases from landfills to spin a turbine that generates electricity. Using biomass in this way helps reduce the amount of material that goes to landfills and reduces the amount of greenhouse gases that would otherwise be released into the atmosphere. Biomass resources that are not eligible under the Green-e standard include municipal solid waste incineration (MSW), tire incineration and additional regional exclusions.

- **Geothermal**: Geothermal power plants, which like biomass facilities resemble conventional power plants, utilize steam that lies below the surface of the earth in certain locations to generate electricity. Geothermal plants emit little air pollution and can have minimal impacts on the environment.

- **Hydroelectric**: The energy produced from flowing water is the oldest and most readily available form of renewable energy. While all forms of hydropower are renewable, not all facilities qualify for Green-e. Currently only small hydro and Low Impact Hydro qualify. Green-e defines small hydro as dams 30 megawatts or less in size. Hydropower facilities that

have been certified by the Low Impact Hydropower Institute (LIHI), regardless of size also qualify for Green-e, beginning in 2002. The LIHI criteria for certifying dams takes into account the environmental impacts of the hydropower plants.

Q: Are there enough renewable resources to supply our electricity needs?
A: Yes and no. Currently, there are enough renewable resources to meet the current demand for renewables. However, as demand for renewable energy grows, more resources will need to be built. When individuals and businesses switch to renewable energy, it sends a strong message to generators, developers and investors that there is a growing demand for renewable power over fossil fueled power. Green-e certified electricity products are required to have an increasing percentage of power from new renewable resources, and TRCs must contain 100% new renewables, to help encourage the development of renewable resources.

Q: How can consumers be sure that a new provider is reliable and ethical?
A: Green-e Certified providers have signed a contract with the Center for Resource Solutions' Green-e Program agreeing to submit to an annual verification and abide by our Code of Conduct. In addition, the company must tell you, in writing, the price of power, the fuel source used to generate power, terms and conditions of service and the amount of any additional charges. Consumers can revoke any contract under a three-day "right of rescission." These consumer protection and environmental requirements help protect consumers from fraud and abuse.

Q: When will I be able to choose a renewable electricity option for my home?
A: More than 350 green power products are currently available through investor-owned utilities, municipal utilities, and cooperatives in monopoly markets, or through competitive marketers in deregulated states. For a complete list of green power products available nationwide go to: http://www.eere.energy.gov/greenpower/home.shtml. To see if there is a Green-e certified electricity product in your area go to: http://green-e.org/your_e_choices/pyp.html. If there is currently not a product available in your area, we encourage you to email, write or call your electricity company and encourage them to offer a Green-e certified electricity option to their customers. While you may not be able to currently support renewable electricity generation directly through your electricity bill, TRCs are available nationwide.

In states that have not restructured their electricity market, some utilities do offer green pricing programs which have been accredited by the Green Pricing Accreditation Program at the non-profit Center for Resource Solutions (CRS). These accredited programs are able to gain Green-e certification if they meet the Green-e standards. *Accredited Green Pricing Programs*

Q: What other websites offer information on power plants?

A: Please visit the Power Scorecard for a ranking of electricity products based on environmental performance.

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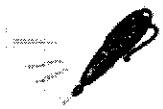
requirements

PLEASE NOTE: The following information regards application requirements for Green-e Certified Electricity Products. If you are interested in Green-e Certification of Tradable Renewable Certificate (TRC) Products, please visit the TRC marketers page .

All electricity products eligible for Green-e certification must meet the Green-e Standard and be sold into a competitive market where Green-e is active.

Application Process



Power providers with an eligible product begin the Green-e certification process by submitting an application. The application consists of a contract and four appendices. A $4,000 annual application fee accompanies the contract. For more information on Green-e Certification fees, please see the: 2005 Green-e Fee Structure.

After receiving two copies of the signed contract, the staff at the Center for Resource Solutions begins a review process, which includes but is not limited to evaluating the resource mix of the electricity product and the veracity of product marketing claims. In some instances, electricity providers may need to make changes to their sales materials before certification will be granted. Upon verifying that the product meets Green-e standards, the Center for Resource Solutions will certify the product.

Requirements of Green-e Certification

- Electricity providers must provide prospective customers with a resource content disclosure statement using a standard "disclosure label" format that meets either the state or Green-e Program requirements;
- Electricity providers must provide all of their residential customers with a historic annual disclosure of the fuel mix used during the past year to generate the electricity purchased by the customer;
- Electricity providers must post a one-page summary of contract information for pricing and contract terms of service disclosure on their company website;
- Electricity providers agree to undergo, at the company's expense, an annual third party verification of contracts, meter data, billing statements, and any other records necessary to substantiate that the product meets the Green-e Standard; and
- Electricity providers agree to abide by specific ethical guidelines in product marketing, the provision of product information, and the treatment of customers as outlined in the Green-e Code of Conduct and Customer Disclosure Requirements documents.
- Electricity providers must abide by the program's general ethical guidelines in all of their business practices and product marketing, not solely for the Green-e products.

Green-e Logo
Any electricity provider who has a certified product is eligible to use the Green-e logo for that product provided that the company meets all of the Green-e Program's requirements above.

Electricity providers who do not adhere to the Code of Conduct or knowingly use deceptive or unethical practices/advertising will be denied the right to use the Green-e logo on any of their electricity products for 18 months. Repeat or egregious offenders are subject to Program censure.

Additional Information for Electricity Providers

- **Products Exceeding the Standard**
  The Green-e Standard is meant to be a minimum standard for environmentally preferable electricity. Green-e encourages electricity providers to develop products that exceed the Green-e Standard.

- **Verification Requirements**
  All products must meet the Green-e Standard to gain certification. If however, at the end of the calendar year, it becomes apparent that the electricity provider did not purchase enough renewable electricity of the type and percentage promised to customers during that year, Green-e allows a three month grace period into the next calendar year to purchase the requisite amount of renewable electricity to meet the supply needs of the previous year. This electricity can only be applied to one year, and may not also count toward meeting the current year's total.

- **On-Site Generation**
  The purpose of the Green-e Program is to certify electricity products, not hardware. If some or all of the electricity from a renewable facility owned by one party is being sold to another party (and can be verified through metering), that power can comprise (or be part of) an eligible electricity product. It is important to note that in states where there is a mandated resource disclosure label, this type of activity may not be allowed or would create an inconsistency between product claims and the resource content disclosure. Because Green-e requires the consistency between resource content disclosure and other product claims, in this case, the use of on-site generation would not be allowed.

- **Guidelines for Purchasing Renewables**
  The retail provider must have a contract for renewable energy that results in electricity from renewable facilities being supplied to the power pool where the customer is located. Any traceable contract or spot purchase of renewable electricity that results in renewable generation is acceptable. A retail provider with a contract that does not include a performance obligation (i.e. a financial instrument only that does not result in renewable energy generation) does not have an eligible product.

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Green-e is governed by a national board called the Green-e Governance Board. Green-e also administers a Power Marketers Advisory Committee (PMAC), which is comprised of representatives from each marketer that is selling a Green-e certified competitive electricity or TRC product, and a Utility Green Pricing Advisory Committee (UGPAC), which is comprised of representatives from each utility that is offering Green-e certified green pricing products. In addition, in each region where Green-e is active, Green-e has established and administers Regional Advisory Committees, which consist of representatives from environmental groups, regulatory groups and the industry. The Green-e Governance Board receives and may act on recommendations from the PMAC, UGPAC or regional groups, to ensure the program is practical and consistent with local public policies. Green-e also relies on an Ad-hoc Governmental Advisory Committee to ensure that the Green-e Program remains consistent with national policy goals. Please click on the links below for more information about each group.

- Green-e Governance Board
- Power Marketers Advisory Committee
- Regional Advisory Committee
- Ad-hoc Governmental Advisory Committee

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The Green-e Renewable Energy Certification Program (Green-e) is governed by an independent board called **"The Green-e Governance Board" (Board)**. The Center for Resource Solutions serves as the program administrator.

The Board ensures that the Program's standards and policies are appropriate and necessary to meet its stated goals and objectives, and that certification and verification are handled in a credible and effective manner. The Board regularly reviews the Program's standards and will amend them as necessary so that they remain consistent with changing circumstances and evolve with market conditions. The Board will receive and act on recommendations from the Power Marketers Advisory Committee, the Utility Green Pricing Advisory Committee, and Regional Advisory Committees to ensure the Program is practical and consistent with broader public policies. A subcommittee of the Board will also serve to review and make recommendations for Board approval of Green-e applications for utility green pricing programs.

Green Power Board Members

Karl R. Rabago, *Chair*
Houston Advanced Research Center

Lori Bird
National Renewable Energy Laboratory

Sheryl Carter
Natural Resource Defense Council

Matt Freedman
The Utility Reform Network

Jan Hamrin
Center for Resource Solutions

Susan Innis
Western Resource Advocates

Jim Marston
Environmental Defense

Alan Nogee
Union of Concerned Scientists

Rachel Shimshak
Renewable Northwest Project

Stephen Smith
Southern Alliance for Clean Energy

Jan Smutny-Jones

Independent Energy Producers Association

Bill Spratley
Legislative Energy Advisory Program

Michael Vickerman
Renew Wisconsin

Rick Weston
The Regulatory Assistance Project

Non-voting Member, PMAC Chair
Brent Beerley
Community Energy

Non-voting Member, UGPAC Chair
Michael Brown
Santee Cooper

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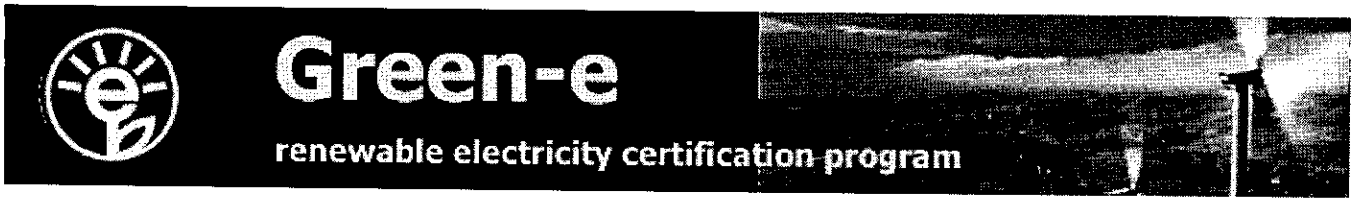

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The **Power Marketers Advisory Committees** are comprised of representatives of participating renewable electricity providers. Power Marketers Advisory Committees are established in each state or region that Green-e is active.

All participating marketers may suggest program modifications to the Power Marketers Advisory Committees and request that such suggestions be forwarded to the Green Power Board for consideration and approval. The Committees elect a chair who sits on the Green Power Board as a non-voting member, and has the responsibility of representing all Power Marketers Advisory Committees.

The Committees' prime responsibility is to provide recommendations for changes that improve the effectiveness of the Green-e Program. The Committees make suggestions to the Green Power Board on the feasibility and practicality of policy decisions. In addition, the Committees provide advice on the public education campaign.

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The Green-e Program forms **Regional Advisory Committees** in each state or region where Green-e sets a standard. Green-e works with these regional stakeholders to establish a Green-e Standard that is appropriate for a specific state or region while remaining consistent with the goals of the Green-e Program.

Representatives from local environmental organizations, electricity providers, renewable developers, energy policy experts and other interested parties form the Committee and meet regularly to consider regional issues related to Green-e. The Regional Advisory Committees make recommendations to the Green Power Board for modifications to the national Green-e Standard based on regional issues such as the availability of renewable resources, the potential market in a region, environmental sensitivities, state laws, and other issues as they arise. The Regional Advisory Committees have open meetings and a transparent decision process.

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The **Ad-Hoc Governmental Advisory Committee** helps ensure that Green-e standards are consistent and compatible with broader public policies and programs. Representatives of local, state, federal, and other governmental organizations with interests in renewable electricity policies and markets (e.g., the Federal Trade Commission, the U.S. Department of Energy, the U.S. Environmental Protection Agency, Air Resources Boards, Departments of Consumer Affairs, Attorneys General, utility regulatory commissions, etc.) are asked periodically to provide input and recommendations.

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