

APPENDIX A¹

Detailed Information on State Policies to Promote the Use of Renewable Resources

ARIZONA

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
AZ	Yes	Yes	Yes	Yes	Yes	Yes

Restructuring

Ending three years of deliberation, the Arizona Corporation Commission (ACC) issued final rules restructuring the state's electric utility industry in September 1999. The rules call for 20% of the market to be open in 1999 and all customers to have access to competitive suppliers by January 1, 2001. Customers of Arizona Public Service will be able to choose a competitive supplier immediately based on a settlement agreement approved by the Commission.

Arizona Retail Electric Competition Rule <http://www.cc.state.az.us/utility/electric/rules.htm>

ACC Contact: Ray Williamson, (602) 542-0828

System Benefit Fund

Arizona requires utilities to create system benefits funds to support low income, demand-side management (DSM), environment, renewables, and nuclear power plant decommissioning programs as well as nuclear fuel disposal, consumer education, and public benefits R&D.

ACC Contact: Ray Williamson, (602) 542-0828

Restructuring Rules <http://www.cc.state.az.us/utility/electric/rules.htm>

Environmental Portfolio Standard

In February 2001, the Arizona Corporation Commission (ACC) adopted the Environmental Portfolio Standard (EPS), which went into effect that year. The EPS requires any load-serving entity selling electricity to derive at least 0.2 percent of the total retail energy sold from new solar resources or

¹ The information in this Appendix was prepared by Lori Bird of the National Renewable Energy Laboratory in Golden, Colorado, November 1999. This information was compiled from the following sources: the State Renewable Energy News letter prepared for NARUC <http://www.nrel.gov/analysis/emma/projects/sren>, the U.S. DOE's Green Power Network <http://www.eren.doe.gov/greenpower/home.shtml>, EIA's Status of State Electric Restructuring Activities http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html, the Database of State Incentives for Renewable Energy (DSIRE) <http://www.ncsc.ncsu.edu/dsire.htm>, and discussions with staff of state energy offices and public utility commissions.

environmentally-friendly renewable electricity technologies, whether that energy is purchased or generated by the seller. The generation/purchase requirement increases by 0.2 percent each year and at least 50 percent of the total must come from solar electric projects. There are credits for new solar electric systems installed and operating between 1997 and December 31, 2003. Load-serving entities would qualify for extra credits for each kWh produced for 5 years following operational start-up of the solar electric system. There is also a 0.5 extra credit multiplier for solar electric power plants installed in Arizona and credits for distributed solar electric generation. The ACC will review the program in 2003 to determine if it should continue.

<http://www.cc.state.az.us/utility/electric/R14-2-1618.htm>

Net Metering

In 1981, the ACC adopted a net metering rule (Decision No. 52345) requiring the state's regulated utilities to offer net metering for renewable and cogeneration resources with a capacity of 100 kilowatts or less. Excess electricity generated by the system is purchased at each utility's avoided cost.

More detail on net metering rule <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#AZ>

Information Disclosure

Arizona's restructuring rules call for all electricity suppliers to provide upon request information regarding the composition, fuel mix, and emissions characteristics of the resource portfolio "to the extent reasonably known". The ACC is tasked with developing the format and reporting requirements for the consumer information label that will contain information on price and customer service.

ACC Contact: Ray Williamson, (602) 542-0828

Green Pricing

Two utilities in Arizona offer green power programs to their customers.

Arizona Public Service—In 1996, APS established a solar tariff to develop as much as 400 kW of "centralized photovoltaic systems" for its *SolarPartners* program. The power is being sold in 100-watt capacity blocks at \$3.00/block/month. The program costs are being partially subsidized with a grant from the Utility PhotoVoltaic Group (UPVG). The program is open to all APS customers. The initial customer response well exceeded the utility's target and the first project was expanded from 41 kW to 82 kW. APS then announced plans to expand the program statewide and constructed a second 82-kW PV project at an existing power plant site in Tempe. APS recently constructed a 34-kW PV parking structure in Scottsdale and APS plans to construct two systems totaling 180 kW at the Glendale Municipal Airport by the end of 1999. APS reports that 1,500 of its residential customers are participating in the program with another 600 on a waiting list. The Glendale project will provide enough capacity to serve the waiting list and an additional 1,400 customers.

Green Power Network (more detail) http://www.eren.doe.gov/greenpower/gp_ious.html#apsc

Salt River Project—SRP provides a solar energy purchase option to its customers from two 100-kW, single-axis tracking photovoltaic plants located at the company's Santan Power Plant in Gilbert, Arizona. Dubbed the *Solar Choice* Program, SRP customers can purchase 100-watt blocks of solar power capacity for \$3.00 per month. Customer purchases are limited to three blocks of power. The customer funds are supplemented with a UPVG grant. In the first month of marketing (August 1998), 1,900 customers requested about 2,900 power blocks, easily meeting the 1,000 block commitment necessary to fully subscribe the first 100-kW plant. As a result of the large response, SRP decided to construct the second plant. Approximately 1,300 SRP customers have now fully subscribed both systems and there is a waiting list of more than 800 customers. Green Power Network (more detail) http://www.eren.doe.gov/greenpower/gp_munipu.html#srp

Financial Incentives

Environmental Technology Facility Credit

Allows a personal or corporate income tax credit of 10% of the cost of construction of a qualified environmental technology manufacturing, producing or processing facility. Environmental technology is defined as solar and other renewable energy products or recycled materials. The amount of the credit may not exceed 75% of the taxpayer's tax liability, but unused credit may be carried forward for up to fifteen years. The statute also makes provisions for new construction to an existing facility within ten years after the start of the facility's initial construction.

Legislation <http://www-solar.mck.ncsu.edu/finance/AZ06.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Solar and Wind Energy Systems Tax Credit

Provides a personal income tax credit of 25% of the cost of a solar or wind energy device. A credit of up to \$1,000 can be claimed the year the system is installed. If the credit exceeds a taxpayer's liability in that year, the unused portion of the credit may be carried forward for up to five years. Qualifying technologies include passive solar heating, active solar space heating, solar water heating, photovoltaics, and wind systems.

Legislation <http://www-solar.mck.ncsu.edu/finance/AZ01.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Revolving Loan Program

Offers loans for companies that either 1) manufacture renewable energy, alternative energy, or energy conserving equipment or 2) acquire such equipment for their own use. Manufacturers are eligible if they have at least two years operating experience in Arizona. Loan requests may range from \$10,000 to \$500,000, up to a maximum of 60% of total project costs. Fixed interest rates are 5% for conservation/retrofit projects and 6% for manufacturing.

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Solar and Wind Energy Equipment Tax Exemption

Provides a retail sales tax exemption of up to \$5000 for solar and wind energy equipment. Qualifying equipment includes passive solar heating, active solar space heating, solar water heating, photovoltaics, wind electric generators, and wind-powered water pumps.

Legislation <http://www-solar.mck.ncsu.edu/finance/AZ08.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

CALIFORNIA

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
CA	Yes	No	Yes	Yes	Yes	Yes

Restructuring

California's restructuring law, AB 1890, called for the retail access to begin January 1, 1998, and created a nonbypassable "competitive transition charge" for the state's three IOUs to recover their stranded costs. Rates were frozen for all large industrial and agricultural customers until 2003, and an immediate 10% rate cut was given to smaller customers, with another 10% rate cut planned by 2002. The law also created two new entities, the Power Exchange (PX), which serves as a market clearinghouse for power transactions, and the Independent System Operator (ISO), for ensuring state-wide transmission access and protecting electric grid reliability. Retail access was delayed until March 31, 1998 because of delays in starting up the PX and ISO. After about a year and a half of competition, all three IOUs have sold much of their generating facilities and some of these are being used in the green power market. San Diego Gas & Electric has completed its stranded cost recovery.

AB1890 http://www.cpuc.ca.gov/electric_restructuring/er_home_page.htm

Definition of Renewables

SB90, the legislation implementing renewables funding, defines "in-state renewable electricity generation technology" as "biomass, solar thermal, photovoltaic, wind, geothermal, small hydropower of 30 megawatts or less, waste tire, digester gas, landfill gas, and municipal solid waste generation technologies, as described in the report, defined in paragraph (2), including any additions or enhancements thereto, that are produced in facilities located in this state and placed in operation after September 26, 1996, or that were operational prior to that date, and that are also certified under Section 292.2904 of Title 18 of the Code of Federal Regulations as a qualifying small power production facility either located in California, or that began selling electricity to a California electrical corporation prior to September 26, 1996, under a Standard Offer Power Purchase Agreement authorized by the California Public Utilities Commission."

SB 90 } <http://www.energy.ca.gov/renewables/documents/index.html#overview>

Policy Report on AB 1890 Renewables Funding

<http://www.energy.ca.gov/renewables/documents/index.html#overview>

Public Benefits Fund

AB 1890 created a system benefits charge for “public interest” research and development, “cost-effective” energy efficiency, low-income programs, and in-state renewable energy projects, and authorized \$1.5 billion to be collected for this purpose through 2001, with \$540 million earmarked for renewables. The monies designated for renewables have been allocated as follows: \$243 million for existing renewable technologies, \$54 million for emerging technologies, \$162 million for new technologies, and \$81 million for customer-side incentive and educational programs.

Funds for existing technologies are distributed through a production incentive, capped at 1.5¢/kWh. Funds for new technologies are distributed through a production incentive based on a competitive solicitation process, with a cap of 1.5 cents per kilowatt-hour, and will be paid over a five-year period after a project begins generating electricity. A competitive auction was held in June 1998 to distribute these funds. Funds to emerging technologies are provided through rebates, buy-downs or equivalent incentives to purchasers, lessees, lessors or sellers of eligible electricity generating systems. Eligible technologies are photovoltaics, solar thermal electric, fuel cell technologies that use renewable fuels, and wind turbines of 10 kilowatts or less.

Funds for customer-side programs are used for rebates and education. \$75.6 million is being used to provide rebates to customers purchasing renewable energy produced by certified energy providers. The credits will not exceed 1.5¢/kWh and industrial customers can receive a maximum of \$1,000 per meter per year. An additional \$5.4 million is targeted for educational activities to help develop a consumer market for renewable energy.

CEC Renewable Energy Page <http://www.energy.ca.gov/renewables/index.html>

Net Metering

Utilities are required by law (SB 656) to offer net metering to residential and small commercial customers with solar or wind systems of 10 kW or less. Net metering must be offered until the cumulative capacity reaches 0.1% of the utility’s 1996 peak demand. Excess generation is credited to the next month and customers are paid “the applicable non-time-differentiated energy payment rate for qualifying small power producers” for any unused credit at the end of the year.

SB 656 <http://www.eren.doe.gov/greenpower/netmetering/nmca.html>

Information Disclosure

In January 1999, the California Energy Commission (CEC) unveiled a new electricity label that was created to explain to Californians how their electricity is produced. By law (Senate Bill 1305), all competitive energy service providers (ESPs) must include the "power content label," in advertisements sent by mail to consumers as well as in quarterly updates to be provided to their customers. The label includes information on the energy resources used to generate electricity for the particular product, enabling consumers to compare the power "content" of the product with that of others as well as to the generic California power mix. In early 2000, the CEC is planning to begin a pilot tracking program that will enable ESPs to verify their resource mix claims.

Electricity Resource Disclosure Program <http://www.energy.ca.gov/sb1305/index.html>

Power Content Label: http://www.energy.ca.gov/consumer/power_content_label.html

Green Power Marketing

The California electricity market was opened to competition on March 31, 1998. As of August 1999, about 1.7% of all eligible utility customers had chosen to switch suppliers. Virtually all of the residential customers that have switched are receiving green power. Thirteen electric service providers have registered with the California Energy Commission as renewable power suppliers. Seven of these companies are offering products with *Green-e* certification. The *Green-e* program is an independent third-party verification program for green power products, administered by a non-profit group, the Center for Resource Solutions. Products that meet the *Green-e* standards, including the 50% renewable energy minimum, are given the *Green-e* logo.

Most green power marketers are selling power from existing renewable resources, although some new renewable resources have been installed. As of October 1999, more than 18 MW of wind and 132kW of solar have been installed in California to serve, at least in part, the green power market. Some marketers have also upgraded their products to increase the amount of power that comes from new renewable resources—five of the 13 *Green-e* certified products now claim 5% to 25% new renewables content.

Green power marketers can also purchase green power through the one of the power exchanges, the Automated Power Exchange (APX) Green Power Market or the California Power Exchange (PX). The exchanges match renewable energy producers with retail providers who want to provide “green” or renewable power to their customers. The APX, which claims to capture most of this market, participates in the *Green-e* program. In May 1999, the APX introduced a “green ticket trading” system, that allows the particular attributes of a power product, such as resource and technology type or whether the electricity comes from a new or pre-existing facility, to be separated from the electricity commodity.

Throughout 1998, green power marketers charged price premiums that generally ranged from 1.1¢ per kilowatt hour (kWh) to 2.5¢/kWh. However, in early 1999, three marketers announced price reductions to as low as 5% below the California Power Exchange (PX) price. These price cuts were made possible by a state credit, originally set at 1.5¢/kWh and made available to purchasers of qualifying renewable electricity. The CEC is now revisiting the level of the credit, and it appears likely that it will be reduced.

A number of municipal utilities and cooperatives, which are not required by law to open their service territories to competition, are offering their customers a green power option. Additional details on these green pricing programs are provided below.

City of Alameda—The City of Alameda (California) Bureau of Electricity began offering a green pricing option to its electricity customers in January 1999. Alameda, which already obtains more than 75% of its power resources from renewable energy sources, rolled out the *Clean Future Fund*, under which customers can support investment in “future renewables or new investments for upgrades and retrofits for existing renewable sources” or research and development of electric vehicle technology. Participants will pay a premium of 1.0¢/kWh to 1.5¢/kWh depending on which option they choose. The Bureau already offers a net metering program to customers with rooftop solar systems.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#alameda

Los Angeles Department of Water and Power—In May 1999, LADWP officially launched its *Green Power for a Green L.A.* program that gives customers the option to receive 100% renewable energy at an additional cost of only \$3.00 per month for the average residential customer. Twenty percent of the power will come from new renewable sources. A novel twist to the program is that participating customers will be given free energy-efficiency products and services to help reduce their bills and offset the increased cost of the green power. Commercial and industrial customers can also participate “by adding a minimum to their total energy bill for green resources.”

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#ladwp

Sacramento Municipal Utility District—Since 1993, SMUD has operated the *PV Pioneers I* program under which customers can pay a \$4.00 flat monthly fee (for 10 years) to have a 2-kW to 4-kW, grid-connected PV system installed on their rooftops. SMUD installs, operates, maintains, and owns the hardware. More than 450 residential and 30 commercial systems have been installed under the program. Total installations have been limited to around 100 systems per year.

In October 1998, SMUD received approval for the *PV Pioneers II* program, through which customers can purchase PV systems for their own use under a net metering arrangement. SMUD will “buy-down” more than half of the \$10,000-plus system cost. As of February 1999, there were 150 customers on a waiting list to participate. SMUD expects to install approximately 400 systems (about 1,200 kW) per year and plans to move to customer-owned systems entirely at some point in the future, thus eliminating the *PV Pioneers I* program.

Looking toward the competitive retail market in California, SMUD developed a new “green rate” that allows its customers to obtain all of their electricity needs from renewable sources; SMUD already meets nearly half of its power needs with renewables. Customers can choose to receive 100% of their power from renewable energy sources for an additional 1.0¢/kWh or choose a 50% renewables service for an additional 0.5¢/kWh. SMUD is currently purchasing a power mix of geothermal (60%) and landfill gas (40%) resources to supply the program, including power from a new 8.3-MW landfill gas plant. As of February 1999, more than 5,400 customers had signed up for the *Greenenergy* program, representing more than 1% of total residential customers.

Another *Greenenergy* product, the *Community Solar* program, allows customers to contribute 1.0¢/kWh for the purchase and installation of photovoltaic systems on schools, churches, and other community facilities. Through March 1999, 600 customers had signed up for the program and three PV systems had been installed in the community.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#smud

Turlock Irrigation District—TID began offering a small-hydro-based electricity product to its customers in August 1999. Billing itself as “the first municipal utility in the United States to offer a 100% small hydro green product,” the utility will offer *TID Green Valley Energy* for an additional monthly fee of \$3.50 to \$8.50 depending on the type of customer subscribing. The power will come from small hydro plants that Turlock already owns and operates on its irrigation canal system. Turlock also owns a 68% share of the 203-MW Don Pedro hydro facility and part of a geothermal power plant in Lake County. As a publicly owned utility, TID is exempted from California’s restructuring law unless the utility decides to “opt in” to the competitive market. As of now, the utility has no plans to open its system to competition.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#tid

Financial Incentives

Energy In Agriculture Program

Promotes energy efficiency and conservation in California's agricultural industry by providing direct technical assistance through education and training activities, granting funds for on-farm demonstration projects, and issuing low-interest loans to the agricultural industry for the purchase of energy efficiency and energy conservation equipment.

Contact CEC <http://www.energy.ca.gov/agprogram/index.html> (916) 654-4147

Energy Efficiency Financing Program

Supplies low-interest financing for qualified energy efficiency improvements in public and non-profit schools, colleges and hospitals, local governments, special districts and public care facilities. Loans are repaid from energy cost savings. The program also provides information on other financing sources for energy efficiency projects.

CEC Contact <http://www.energy.ca.gov/efficiency/financing/index.html> (916) 654-4008

Geothermal Program

Provides funding to local jurisdictions and private entities to promote geothermal research and resource development, planning, and mitigation and environmental enhancement projects. Financial assistance is provided in the form of a grant or a loan.

CEC Contact <http://www.energy.ca.gov/development/geothermal/index.html> (916) 654-5129

COLORADO

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
CO	No	No	No	Yes	Yes	Yes

Restructuring

No restructuring law has been enacted; however, in 1998, the state legislature created a task force to assess whether retail competition will benefit the state's consumers. In October 1999, the task force decided to recommend to the state legislation that it not restructure the state's electricity industry. PUC Restructuring Page <http://www.dora.state.co.us/puc/quest.htm>

Net Metering

Net metering is not required in Colorado, but several utilities offer net metering arrangements to customers. For example, Public Service Company of Colorado has offered net metering since 1994 (PUC Decision C96-901) for small, customer-owned generating resources and qualifying facilities with a capacity of 10 kilowatts or less. Excess generation from the system is carried over and applied to the following month. Holy Cross Electric Association, Inc. offers a pilot net metering program for customers with photovoltaic (PV) systems. PV systems of any size qualify, but the pilot has cumulative cap of 50 kW.

More detail <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#CO>

Information Disclosure

In January 1999, the Colorado Public Utility Commission (PUC) adopted rules (Docket No. 98R-536E) requiring all investor-owned utilities regulated by the PUC to disclose information on power sources and purchases. The disclosure rules are also designed to give consumers an idea of how much of their monthly bill goes toward the cost of electricity generation versus power delivery. The data will be supplied twice a year, in April and October, starting in October 1999.

PUC Rules Index <http://www.dora.state.co.us/puc/723.htm?>

Green Pricing

A number of utilities in Colorado offer green power to their customers.

City of Loveland Water & Light—The City of Loveland Water & Light, which serves about 23,000 accounts, is offering both residential and business customers the option to purchase 100-kWh blocks of wind power for \$2.50/month. The utility began signing up customers earlier this year. As of April, about 215 customers, including 3 businesses, had signed up to purchase 416 blocks, fully subscribing the program. The utility has established a waiting list for other customers.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#lwl

Colorado Springs Utilities—Colorado Springs Utilities signed a contract with Public Service Company of Colorado (PSCo) to purchase 1 MW of wind power from PSCo's *WindSource* program to sell to its residential and commercial customers. Utility surveys indicated that customers want the utility to pursue clean energy for environmental reasons and to gain experience with new technologies. More than 900 customers have signed up to purchase the wind power at a premium of \$3.00 per 100-kWh block (see also PSCo summary).

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#csu

Fort Collins Utilities—Approximately 500 residential and small-business customers subscribe to a pilot program that offers wind energy at a premium of 2.5¢/kWh. The Colorado municipal utility is contracting to purchase power from two 600-kW wind turbines installed in Medicine Bow, Wyoming. The turbines, which are owned and operated by the Platte River Power Authority, began generating power in April 1998. Residential subscribers can purchase 400-kWh blocks of wind, while commercial customers can purchase wind power in 1,000-kWh blocks. In June 1999, Fort Collins announced that it was expanding the program and will purchase half of the energy generated by five new 660-kW wind turbines that will be installed at Medicine Bow by Platte River.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#ftc

Holy Cross Energy—Holy Cross, which serves Colorado's Roaring Fork Valley, has a program through which its customers can purchase 100-kWh blocks of wind energy at a rate premium of 2.5¢/kWh. Holy Cross is a wholesale customer of PSCo and has committed to purchase 1.75 MW of wind power through PSCo's *WindSource* program and is in negotiations for another 1.25 MW. As of February 1999, the utility had garnered subscriptions for 2,500 blocks of wind power from 630 residential, commercial, and municipal customers, representing 1.5% of total customers. The City of Aspen is purchasing 500 blocks per month, which is equivalent to about one-third of the city's electricity use. The Community Office for Resource Efficiency (CORE) is assisting the utility with customer recruitment.

Longmont Power & Communications—Longmont Power & Communications, the electric utility serving 30,000 accounts in the City of Longmont, Colorado, is now offering customers the option to purchase wind power. Under its wind energy program, residential customers can sign up to purchase 100-kWh blocks of wind energy for an extra \$2.50 each month. Business customers can participate by purchasing 500-kWh blocks for \$12.50 per month. Participating customers must commit to the wind purchases for a minimum of one year. Longmont will begin the subscription process in September and will provide the power starting in January 2000. About 325 customers expressed interest through an initial marketing effort conducted in March.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#lpc

Platte River Power Authority—Platte River Power Authority <http://www.prpa.org> generates power for a number of Colorado green power programs through wind its wind turbines located in Medicine Bow, Wyoming. In October 1999, PRPA completed the installation five 660 kW wind turbines, bringing the total number of turbines at the site to eight. One of the latest turbines will provide power for New Belgian Brewing Company, a Fort-Collins-based business that is purchasing wind power for 100% of its electricity needs. Another turbine will supply power to the City of Aspen, which recently elected to increase the amount of renewable power in its system mix. The remaining turbines provide wind power for the green power programs offered by Fort Collins, Loveland, Longmont, and Tri-State G&T.

Public Service Company of Colorado—PSCo established one of the first green pricing contribution programs in 1993. Approximately 13,000 customers, representing more than 1% of residential customers, contribute to the Renewable Energy Trust, either through fixed contributions or using a bill “round up” option. Through the Trust, PSCo has deployed about 40 kW of off-grid PV systems. The Trust is now implementing school-based PV systems under the *Solar Schools* program. Twenty-two school systems had been installed by mid-1999 with another eight systems planned by the end of the year.

In 1997, PSCo introduced its *WindSource* program, which offers its customers an option to purchase 100-kWh blocks of electricity from a new wind project in northeastern Colorado at a 2.5¢/kWh rate premium. Customers can also choose to receive their entire monthly electricity consumption from wind energy. As of May 1999, more than 11,000 customers had subscribed for a total of 18 MW of wind energy capacity. The *Land and Water Fund of the Rockies* is helping PSCo market the program. PSCo is also supplying a total of 2.75 MW of wholesale wind capacity to Holy Cross Energy and Colorado Springs Utilities.

Green Power Network http://www.eren.doe.gov/greenpower/gp_ious.html#psco

Tri-State G&T—Tri-State, a wholesale supplier of electric power to 32 rural electric systems in Colorado, Wyoming, and Nebraska provides a green power product to its member distribution systems—about half of the member systems are participating in the program. Tri-State is currently purchasing wind power from PacifiCorp’s Wyoming wind project under an interim agreement but plans to switch to power from two new Wyoming projects later this year, including additional turbines being erected by Platte River Power Authority in Medicine Bow and an innovative stacked vertical axis turbine project. Tri-State offers the power to its member systems in 100-kWh blocks at a rate premium of 2.5 cents/kWh.

Green Power Network http://www.eren.doe.gov/greenpower/gp_coop.html#tristate

Yampa Valley Electric Association— Yampa Valley, which serves about 21,000 accounts in Steamboat Springs and other cities in northwestern Colorado, is offering its customers the opportunity to purchase 100-kWh blocks of wind power for 3¢/kWh. Yampa Valley has entered into an agreement with Public Service Company of Colorado (PSCO) to purchase about half of the output from one of the turbines installed at the Ponnequin wind site in northern Colorado. As of August 1999, Yampa had sold about 260 of the 700 blocks available for the program.

Green Power Network <http://www.eren.doe.gov/greenpower/pricing.shtml>

Financial Incentives

Rebates for Solar Systems

The Colorado Office of Energy Conservation (OEC) Provides rebates of up to \$2500 to consumers who install qualifying grid-connected photovoltaic (PV) systems and up to \$1000 for qualifying solar hot water heating systems. In 1999, the program was expanded to cover off-grid PV systems and radiant floor heating. The Colorado Solar Energy Industries Association (COSEIA) administers the program. Funds are available for systems installed by December 31, 1999; under specific conditions the rebates can be paid through March 31, 2000.

COSEIA (303) 750-9764

Holy Cross Energy, in partnership with CORE, offers the *Sun Power Pioneers* program through which customers can receive cash incentives of up to \$3,000 for PV installations. The incentive is in the form of a 3-year energy payment of 25 cents/kWh for power generated from systems installed under the program. The funding is being provided by the Turner Foundation, the Cities for Climate Protection Campaign, and Aspen Skiing Company.

Other Renewable Programs

State Agency Renewable Energy Purchasing Rule

In August 1997, Governor Roy Romer issued an executive order requiring state agencies to “directly utilize renewable energy resources or purchase electricity generated from renewable resources whenever cost-effective and practical.” Furthermore, state agencies constructing new buildings are directed to use passive solar design and adopt solar technologies whenever cost effective and practical. The executive order tasks the OEC with identifying and developing standards for the cost-effective use of renewable energy applications and with developing a plan “for a state program that allows a price preference for the purchase of electricity from renewable energy resources.” Although a new Governor, Bill Owens, took office in 1999, the executive order remains in effect.

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>; Executive Order)

IDAHO

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
ID	No	No	No	Yes	No	Yes

Restructuring

No electric restructuring legislation has been adopted. After studying the impacts of restructuring, the legislative committee concluded that deregulation would boost electric prices in the state, and recommended against restructuring.

Restructuring Report <http://www.puc.state.id.us/elec.htm>

Net Metering

Idaho's net metering program has been available since 1980. The enabling order was Idaho Public Utilities Commission (PUC) Order No. 16025 issued in December 1980. Three investor-owned utilities subject to Idaho PUC subsequently filed tariffs (Schedule 86) to implement the order. In 1995, Idaho Power Company petitioned the PUC to modify the net metering option on Schedule 86. In January 1997, the Idaho PUC approved order 26750 modifying Idaho Power's net metering tariff to allow the utility to offer net metering to residential and small commercial customers with renewable or cogeneration systems of 100 kilowatts or less. Excess generation from net-metered systems is purchased at the utilities avoided cost. There is an extra monthly charge to recover the nongeneration-related cost of the utility. Net metering customers are required to have \$1,000,000 liability insurance. In August 1999, the PUC issued order 28035 approving a net metering tariff for Avista Corporation.

More detail <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#ID>

Green Pricing

The City of Idaho Falls has entered into a contract with Bonneville Power Administration to purchase 0.5 MW of renewable power. As of September 1999, the utility has not yet decided whether it will offer customers the option to buy the green power at a premium. If not, the power will be rolled into the utility's resource mix.

Contact – Mark Gendron (208) 529-1444

Financial Incentives

Solar, Wind and Geothermal Tax Deduction

Allows a personal income tax deduction of 40% of the cost of a solar, wind or geothermal device used for heating or electricity generation. Taxpayers can deduct 40% of the cost in the year of installation and 20% three years thereafter. The maximum deduction in any one year is \$5,000. Eligible technologies are passive solar space heat, active solar water heat, active solar space heat, solar thermal electricity, photovoltaics, wind, and geothermal.

Legislation <http://www-solar.mck.ncsu.edu/finance/ID01.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Low-Interest Loans for Renewable Resources

Provides loans at a 4% interest rate for eligible active solar, photovoltaic, wind, geothermal, hydropower, biomass energy, and energy conservation projects. The program, administered by the Energy Division of the Idaho Department of Water Resources, provides five-year residential loans of \$1,500 to \$10,000 and commercial and industrial loans of up to \$100,000. The only eligible projects are those where the savings from reduced usage of conventional fuel must be sufficient to pay for the project's installation cost (e.g. simple payback of 10 years or less). New projects are eligible if the use of a renewable energy resource is the least cost alternative. Renewable energy projects that are intended to sell the energy generated or the commodity produced are not eligible.

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

MONTANA

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
MT	Yes	No	Yes	Yes	Yes	Yes

Restructuring

In 1997, the Montana legislature passed the Electric Utility Industry Restructuring and Customer Choice Act to introduce competition into the electric utility industry. The Act sets forth a transition schedule for consumers to choose electricity suppliers. Customers with large loads of 1 MW or greater were able to choose suppliers beginning July 1998. Beginning November 1998, 5% of residential and small consumers were able to select their power supplier under a pilot program. Full retail access is scheduled for April 2000.

Restructuring Act <http://www.psc.mt.gov/gaselec/mcaelec.htm>

Definition of Renewables

The state's restructuring law does not define renewable resources. However, the Montana Public Service Commission's (PSC) proposed disclosure rule defines a renewable system as "a technology other than a conventional power source that uses biomass, geothermal, low impact hydroelectric, solar, or wind as the source of electrical generation." Low-impact hydro is further defined to be "those hydroelectric generation sources that meet requirements for low environmental impact." Biomass is defined as "an electric power source derived from combustible residues or gasses from logging, forest products manufacturing, agricultural and orchard crops, black pulping liquor, waste products from livestock and poultry operations and food processing, urban wood waste, municipal liquid waste treatment operations, and landfill gas."

Proposed Rule (9/9/1999) <http://www.psc.mt.gov/gaselec/rulemaking.htm>

System Benefits Charge

Montana's restructuring law established a "universal system benefits charge" to ensure continued funding of energy conservation, renewables, and low-income energy assistance programs, with the funding level set at 2.4% of each utility's 1995 retail sales revenue. The charge became effective January 1, 1999 and will remain in effect until July 1, 2003 unless modified. Funds can be used for renewable resource projects and renewables-related research and development programs. At least 17% of the utility's annual system benefits funding must be spent on low income and weatherization programs.

Montana Power Company's SBC Plan <http://www.psc.mt.gov/gaselec/mcaelec.htm>

Legislative Service Commission: (406) 444-3064

Net Metering

In 1999, the Montana Legislature passed a bill (S.B. 409) requiring all utilities to offer net metering for solar, wind, and hydro systems less than or equal to 50 kilowatts in size. Any net excess generation is to be credited to the following month, and any unused credit is granted to the utility at the end of a 12 month period.

More detail <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#MT>

Environmental Disclosure

The PSC issued a proposed rule regarding disclosure and labeling on September 9, 1999. The draft rule requires electricity suppliers to provide customers with information on fuel mix and environmental impacts of power generation in connection with any sale or offer for sale of electricity. The rule requires suppliers to provide a pie chart showing the fuel mix used to generate the electricity. Suppliers that make a "claim of specific purchases" or make a "claim-based sale" must show the projected fuel mix for the upcoming year. Suppliers that make no such claims must show a chart of the fuel mix for the previous calendar year. In contracts with customers, suppliers are also required to provide a bar chart showing emissions of carbon dioxide, sulfur dioxide, nitrogen oxides, the amount of spent nuclear fuel generated, and the impact of hydro resources as measured by the percentage of non low-impact hydro used.

Proposed Rule (9/9/1999) <http://www.psc.mt.gov/gaselec/rulemaking.htm>

Green Pricing

One utility in Montana offers green power to its customers.

Flathead Electric Cooperative—Flathead, which serves 47,000 customer accounts throughout northwest Montana, announced that it has entered into a two-year contract with Bonneville Power Administration (BPA) to purchase 1 MW of "environmentally preferred" power. Beginning October 1, 1999, BPA will provide the cooperative with electricity from its standard green power mix, which is a blend of new wind power from the Arlington, Wyoming wind project and small hydro resources (under 30 MW). Flathead is giving all of its customers the option of purchasing the green power at a premium of 2¢/kWh and began marketing the program in August 1999.

Financial Incentives

Wind Energy System Tax Credit

Provides a 35% corporate or personal income tax credit for any individual, partnership or corporation making an investment of \$5,000 or more in wind energy systems or facilities to manufacture wind energy equipment. Eligible property includes wind energy system equipment, transmission lines, and equipment used in the manufacture of wind energy devices.

Montana Code (Title 15, Chap. 32, Part 4) <http://www-solar.mck.ncsu.edu/finance/MT04.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Renewable Energy Systems Property Tax Exemption

Exempts qualified renewable energy sources from property tax for up to 10 years following installation. The exemption is applied based on the “value added” by the system. The exemption applies to systems valued at up to \$20,000 in the case of a single-family residential dwelling and \$100,000 in the case of a multifamily residential dwelling or a nonresidential structure. Qualified equipment includes active and passive solar, geothermal, wind, and low-emission wood or biomass combustion devices.

Montana Code (Title 15, Chap 6, Part 2) <http://www-solar.mck.ncsu.edu/finance/MT03.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Residential Geothermal Systems Income Tax Credit

Allows individuals to claim an income tax credit up to \$250 of the cost of installing of a geothermal energy system. This credit is available for three years following installation. The credit may not be applied retroactively or carried forward. Montana Code (Title 15, Chap. 32, Part 1) <http://www-solar.mck.ncsu.edu/finance/MT02.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

NEVADA

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
NV	Yes	Yes	No	Yes	Yes	Yes

Restructuring

In July 1997, the Nevada Legislature passed a restructuring bill (AB366) calling for the state's electricity industry to be opened to competition by the end of 1999. The legislation leaves the resolution of many restructuring issues up to a newly created Public Utility Commission, which replaced the Public Service Commission. Among the issues left to the PUC were the identification of stranded costs and how to deal with them, licensing conditions for retail suppliers, the designation of potentially competitive services, and the creation of consumer protection measures. Since passage of the bill, the legislature has delayed the start of electric competition, originally scheduled for December 1999, to on or before March 1, 2000.

Full Text of AB366 <http://www.state.nv.us/puc/electric/ab366.htm>

Summary of AB366 <http://www.state.nv.us/tciy/index1.htm>

Information on Nevada PSC Competition Delay Recommendation:

<http://www.state.nv.us/puc/news/366delay.htm>

PUC Contact: Kathy Kollar, (775) 687-6080

Definition of Renewables

Nevada's restructuring law defines renewable resources as the following: "wind, solar, geothermal and biomass energy resources in this state that are naturally regenerated." The law further defines a renewable energy system to mean "an energy system in this state that utilizes renewable energy resources to produce electricity or solar thermal energy systems that reduce the consumption of electricity that was installed and commenced operations after July 1, 1997."

Renewable Portfolio Standard

Under the restructuring law, the PUC is directed to establish "portfolio standards for domestic energy to assure that a minimum percentage of all electricity consumed annually in the state is provided by in-state renewable energy producers." The standard begins at 0.2% in 2001 and rises to 1% by 2009; 50% of the portfolio requirement must be derived from solar systems.

Net Metering

Nevada utilities are required by law (SB255) to offer net metering for solar and wind systems of 10 kW or less for up to 100 customers. Under SB255, which was adopted by the legislature in 1997, utilities are not required to compensate customers for any net excess generation.

More detail <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#NV>

Information Disclosure

AB366 requires that any person selling a potentially competitive service is to provide sufficient information to enable retail customers to easily compare price, price variability, and resource mix of their purchases. A rule on the form of the disclosure has not yet been developed.

Green Pricing

One utility offers a green power program to its customers. The program allows customers to donate funds to develop renewable resources.

Nevada Power—In November 1999, the Nevada Public Utilities Commission (PUC) approved a request by Nevada Power Company to turn over operation of its GreenPower program to a non-profit arm of the Desert Research Institute. The utility is giving up the program because it agreed to sell its power plants in its recent merger with Sierra Pacific Resources. Since the program's inception in April 1998, Nevada Power collected \$30,000 in contributions from 720 customer participants and installed one, 16-kW photovoltaic (PV) project after initially committing to build two, 20-kW projects. Under the agreement, the utility will not be required to install the remaining 24 kW of capacity. Nevada Power will continue to support the program by collecting funds, which will now be tax-deductible, and promoting the option through bill inserts and other customer communication mechanisms.

Green Power Network http://www.eren.doe.gov/greenpower/gp_ious.html#npc

Financial Incentives

Renewable Energy System Property Tax Exemption

Provides a property tax exemption equal to the value added by a qualified renewable energy source installed on a residential, commercial or industrial building. Qualified equipment includes solar, wind, geothermal, solid waste converters and hydro power systems. This exemption applies for all years following the installation.

Legislation <http://www-solar.mck.ncsu.edu/finance/NV02.htm>

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Energy Producers Property Tax Exemption

Provides a property tax exemption for any business that generates electricity from recycled material and is found by the commission on economic development to "have as a primary purpose the conservation of energy or the substitution of other sources of energy for fossil sources of energy." The exemption for a qualified business applies to 75% of all the business's property--personal and real. Personal property may be exempt for 10 years, while real property may be exempt for 20 years.

Legislation http://www-solar.mck.ncsu.edu/xincentF.cfm?Incentive_Code=Nv01&Back=xstate

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Solar Energy Production Facility Property Tax Exemption

Provides a property tax exemption for property used to generate electricity from solar energy. A personal property exemption may be taken for up to 10 consecutive years, and a real property exemption can be taken for up to 20 years. The exemption does not apply to residential property or property used for the production of electricity from solar systems prior to July 1, 1997.

NRS 361.0785

Contact: Dave McNeil, Nevada State Energy Office (775) 687-5975

NEW MEXICO

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
NM	Yes	No	Yes	Yes	Yes	No

Restructuring

In 1999, Governor Gary Johnson signed legislation that gives schools, residential, and small business customers the opportunity to choose among competing power suppliers beginning in January 2001. Competition will be expanded to include all customers in January 2002. The law does not include a guaranteed rate cut for residential customers; electric rates during the transition to competition will be set by the Public Regulation Commission (PRC).

NM Restructuring Law (SB 428), 1999 Legislative Session

http://legis.state.nm.us/scripts/bill_explorer.asp

Definition of Renewables

The law defines renewable energy as the following: “electrical energy generated by means of a low- or zero-emissions generation technology that has substantial long-term production potential and may include, without limitation, solar, wind, hydropower, geothermal, landfill gas, anaerobically digested waste biomass or fuel cells that are not fossil fueled.”

Public Benefits Fund

New Mexico’s law creates a system benefits charge of 0.3 mills per kWh that, based on current consumption rates, will raise about \$5 million annually for consumer education, low-income customer assistance, renewable energy, and for Native American tribes without electric service. According to the law, up to \$4 million dollars of the total funds can be used for investments in renewable technologies, although the allocation is likely to be smaller given that other programs will also be competing for funds. Eligible investments are restricted to schools, colleges, and local governments. Although there is no explicit sunset date for the SBC, the law does contemplate an evaluation of the renewables support at a future date.

Net Metering

In accordance with New Mexico’s Administrative Code (17NMAC10.571) net metering is required for cogeneration facilities and small power producers with systems of 10 kW or less. Excess electricity generated by a qualifying system must be purchased by the utility at the energy rate in accordance with NMPRC Rule 570.17 or be credited to the consumer. Credits are carried forward to the next month. When the customer leaves the system, the customer must be paid for any extra credits at the utility’s energy rate pursuant to NMPRC Rule 570.17. The net metering requirements became effective on September 30, 1999.

Contact: Terry Rodriguez (505) 827-6954

Information Disclosure

The restructuring law requires the PRC to establish rules on disclosure of generation sources and associated emissions. As of September 1999, rules have not been developed.

Contact: Terry Rodriguez (505) 827-6954

Green Pricing

One utility in New Mexico offers a green power program to its customers.

Southwestern Public Service—SPS has installed one, 660-kW turbine near Clovis, New Mexico to serve its New Mexico-based customers. The wind power is being sold as an optional service to interested customers at a premium of \$3.00 per 100-kWh block, or 3¢/kWh. Similar to the *Windsource* program of its sister company, PSCo, customers can choose to purchase as few or as many blocks of wind energy as they want, up to their total monthly consumption. The utility has committed to build a second turbine if warranted by customer demand. SPS is the first utility in New Mexico to offer its customers the opportunity to purchase wind energy.

Green Power Network http://www.eren.doe.gov/greenpower/gp_ious.html#sps

Financial Incentives

No financial incentives are available.

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

NORTH DAKOTA

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
ND	No	No	No	Yes	No	Yes

Restructuring

In 1997, the legislature created a Joint Legislative Study Committee on Restructuring, which is scheduled to complete its investigation of restructuring by 2003. The Electric Utilities Committee submitted its report to the legislature in November 1998.

Public Service Commission Restructuring Information <http://pc6.psc.state.nd.us/psc/pud/pud.htm>

Net Metering

Since 1991, North Dakota PUC has required (Administration Code, Section 69-09-07-09) investor-owned utilities to offer net metering for renewable energy and cogeneration systems of 100 kW or less. Municipal utilities and rural cooperatives are currently exempt. The rule requires excess generation to be purchased at the utility's avoided cost. There is no limit on the total capacity under the net metering program.

More detail <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#ND>

Green Pricing

There are no utility green power programs in North Dakota.

Green Power Network <http://www.eren.doe.gov/greenpower/pricing.shtml>

Financial Incentives

Renewable Energy System Property Tax Incentive

Provides a local property tax exemption for any solar, wind or geothermal energy device (whether stand alone or part of a conventional system). In the case where the solar, wind or geothermal system is part of a conventional energy system, only the renewable energy portion of the total system is eligible. This exemption applies for five years after installation. The incentive is currently provided for systems under 100 kW in size, although the Attorney General's office is expected to issue an opinion regarding whether this is an appropriate interpretation of the law.

Legislation <http://www-solar.mck.ncsu.edu/finance/ND02.htm>

Contact: Joe Murphy (701) 328-2904

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Personal Income Tax Credit for Renewables

Allows any taxpayer to deduct five percent (5%) of the cost of equipment and installation of a geothermal, solar or wind energy device for a period of three years. The incentive is currently provided for systems under 100 kW in size, although the Attorney General's office is expected to issue an opinion regarding whether this is an appropriate interpretation of the law.

Legislation <http://www-solar.mck.ncsu.edu/finance/ND01.htm>

Contact: Joe Murphy (701) 328-2904

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

OREGON

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
OR	Yes	No	Yes	Yes	Yes	Yes

Restructuring

Oregon's restructuring legislation (SB1149), passed in July 1999, gives commercial and industrial customers of the state's investor-owned utilities direct access to competitive electricity suppliers by October 2001. Residential customers will not be able to choose their electricity supplier but instead will be given a choice of rate options, including a green power option, to be provided by the incumbent utilities.

Oregon restructuring law (SB1149):

gopher://gopher.leg.state.or.us:70/00/measure.dir/Senate_Measures/sb1100.dir/sb1149g.en

Definition of Renewables

Oregon's restructuring law defines "renewable resources" as the following: facilities fueled by wind, waste, solar, geothermal power, landfill or digester gas, dedicated energy crops available on a renewable basis, or low-emission nontoxic biomass based on solid organic fuels from wood, forest and field residues.

System Benefits Charge

Oregon's restructuring law requires electric service providers to charge all customers a 3% "public purpose charge" for a period of 10 years for funding energy conservation programs, low-income weatherization assistance, and the development of new renewable energy resources. Nineteen percent of the expected \$60 million-per-year fund is to be used to cover "above-market costs of new renewable energy resources." Schools receiving funds may use them to purchase electricity from "environmentally focused sources" or to invest in renewable resources.

Oregon PUC Contact – Lee Sparling (503) 378-6137 lee.sparling@state.or.us

Net Metering

Beginning in September 1999, utilities are required by law to offer net metering to customers with home solar, wind, fuel cell, or hydro systems of less than 25 kilowatts. Only systems meeting national standards for safety and power quality can qualify.

Oregon net metering bill (HB3219):

gopher://gopher.leg.state.or.us:70/00/measure.dir/House_Measures/hb3200.dir/hb3219g.en

Information Disclosure

Oregon's restructuring law states that every bill issued to a retail customer must contain "power source and environmental impact information necessary to ensure that all consumers have useful, reliable and necessary information to exercise informed choice."

Green Pricing

Several utilities in Oregon offer green power to their customers.

Bonneville Power Administration—BPA is marketing a green power blend in the Pacific Northwest, consisting of 90% small hydro and 10% wind energy. For the wind energy component, BPA has contracted to purchase 1.8 MW of wind generated from three new turbines at the Arlington, Wyoming wind project. As of July 1999, BPA was selling a total of 14.5 MW of the power blend to four utility customers: Emerald People's Utility District, Flathead Electric Cooperative, Orcas Power & Light, and Snohomish County Public Utility District #1. BPA is purchasing another 15 MW of wind power from the Arlington, Wyoming site that it is wholesaling to utilities including the Salem Electric Cooperative.

Green Power Network http://www.eren.doe.gov/greenpower/mkt_gpm.html#bpa

Eugene Water and Electric Board—EWEB is marketing power from its share of the newly constructed Wyoming wind project to its residential customers. The 41.4-MW project is owned jointly by EWEB (8.8 MW) and PacifiCorp (32.6 MW). Customers can purchase wind energy to provide from 10% to 100% of their electricity needs at a price premium of 3.2¢/kWh. EWEB plans to offer the green power option to its commercial and industrial customers in late-1999.

Green Power Network http://www.eren.doe.gov/greenpower/gp_munipu.html#eweb

Midstate Electric Cooperative—Midstate has announced that it will purchase 0.25 MW of green power from BPA. The utility has not yet decided whether it will offer a green pricing program allowing customers to choose to purchase the green power.

Contact: Todd Young (541) 536-2126

Pacific Northwest Generating Cooperative (PNGC)—PNGC is a not-for-profit, private energy services cooperative owned by 11 electric cooperative utilities in the Pacific Northwest. PNCC owns and operates the Coffin-Butte landfill gas generation facility, which became operational in 1995. While the output of the 2.5-MW plant is shared proportionally among the member cooperatives, three Oregon-based members are test-marketing the output to their customers as a premium green power service. The three utilities are *Central Electric Cooperative*, *Douglas Electric Cooperative*, and *Umatilla Electric Cooperative*. The green premium ranges from 1.8¢/kWh to 2.0¢/kWh.

Portland General Electric (PGE)—In November 1999, PGE announced plans to offer customers two green power options. PGE has filed a tariff rider with the Oregon Public Utility Commission (OPUC) that will give residential customers the option of purchasing up to two 100-kWh blocks of "salmon friendly" power or wind power, or a combination of the two, at a premium of \$5 per block per month. The two-block option would supply about 20% of an average residential customer's load. The salmon-friendly power is a blend of existing, low-impact hydro and wind power. The revenue from the power sales would be split evenly between paying the cost of the power and supporting local salmon habitat recovery projects. The wind power option would offer power generated from the Vansycle Ridge wind farm in northeastern Oregon, with half of the revenues to be used for the development of new wind resources. Commercial and industrial customers would be able to purchase a limited amount of green power, depending on their size, at the same rate as residential customers.

Financial Incentives

Small Scale Energy Loan Program

The Oregon Office of Energy provides loans for small renewable energy systems. The loan program was created in 1981 through an amendment to the Oregon Constitution authorizing the sale of bonds to finance small scale, local energy projects. In order to be eligible, projects must demonstrate significant energy savings or other benefits. The program has been used to fund several federal renewable energy projects.

Office of Energy Contact – Dave Stevens (503) 378-4040

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Business Energy Tax Credits

Created in 1980, the Business Energy Tax Credit allows a thirty-five percent (35%) investment credit for the construction of systems on business facilities that produce energy from renewable resources, provide energy savings, or recycle waste. The credit applies to projects of \$10 million or less. Eligible renewable energy technologies include solar, wind, hydropower, geothermal, and biomass. Qualifying systems must replace ten percent (10%) or more of electricity, gas, or oil used in the facility where installed if the system supports in-house energy needs. The program also includes a "pass through" option, allowing Oregon's investor owned utilities to claim the tax credit granted for certain projects. In return, that utility pays the customer (the project installer) an up front cash payment equal to the net present value (NPV) of the credit—about 28% of the project cost.

According to the Oregon Department of Energy, by 1997, 4,653 projects had been completed, resulting in savings or production of about 13.5 trillion BTUs. The majority of projects have involved conservation, although roughly five hundred energy generation projects have been completed.

Legislation http://www-solar.mck.ncsu.edu/xincentF.cfm?Incentive_Code=OR03&Back=xstate
(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Renewable Energy Production Credit

Provides a personal income tax credit based on the first year energy yield of an alternative energy device installed on an individual's primary or secondary dwelling. Qualifying alternative energy devices include photovoltaics, solar space heating, passive solar, solar water heating, and geothermal systems. The credit was initially set at 48¢/kWh, but dropped to 40¢/kWh in 1998. The credit is capped at \$1,000 as of 1998. The credit is scheduled to sunset in 2001.

Legislation <http://www-solar.mck.ncsu.edu/finance/OR02.htm>
(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

Property Tax Incentive

Provides a property tax exemption for the value added by renewable energy devices installed on any property (residential, commercial or industrial). Qualifying renewable energy devices include: solar, geothermal, wind, water or methane gas energy systems for the purpose of heating, cooling or generating electrical energy. The exemption does not apply to property owned or leased by anyone directly or indirectly involved in "the production, transportation or distribution of energy."

Legislation <http://www-solar.mck.ncsu.edu/finance/OR01.htm>
(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

UTAH

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
UT	No	No	No	No	No	Yes

Restructuring

No restructuring legislation has been enacted. The legislature created a task force to study electric industry restructuring. The task force has recommended a slow approach.

Dept. of Public Utilities Restructuring page <http://www.commerce.state.ut.us/pubutls/EL002.htm>

Net Metering

Utah does not have a net metering policy in place.

More information <http://www.eren.doe.gov/greenpower/netmetering/index.shtml#state>

Green Pricing

There are no utility green power programs in Utah.

Green Power Network <http://www.eren.doe.gov/greenpower/pricing.shtml>

Financial Incentives

Renewable Energy Income Tax Credit

Provides a corporate or personal income tax credit for renewable energy systems installed on commercial and residential buildings. Eligible technologies include active and passive solar systems, photovoltaics, biomass, hydropower, and wind. For residential buildings owned by a business, the credit is 25% of the cost of installation of a system up to a maximum credit of \$2,000 per system. For commercial systems, the credit is 10% of the cost of installation up to \$50,000. The credit was extended after it expired in 1996, and the new credit expires on January 1, 2001.

Contact: Donna Coulson, Utah Dept. of Natural Resources (801) 538-5428

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

WASHINGTON

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
WA	No	No	No	Yes	Yes	Yes

Restructuring

No restructuring legislation has been enacted. In 1995, the Washington Utilities and Transportation Commission (WUTC) issued a report on electric restructuring and recommended a gradual approach. In 1998, the legislature passed a law requiring utilities to show separate charges for generation, distribution, transmission, and public benefits on customer bills. Also, in December 1998, the WUTC issued a report to the legislature on consumer protection issues.

WUTC Restructuring Page:

<http://www.wutc.wa.gov/webimage.nsf/63517e4423a08de988256576006a80bc/fe15f75d7135a7e28825657e00710928?OpenDocument>

Net Metering

In 1998, the legislature passed a bill (HB 2773) requiring utilities to offer net metering to customers with solar, wind, or hydro systems of 25 kilowatts or less. The utility is required to offer net metering until the cumulative generating capacity is equal to 0.1% of the utility's 1996 peak demand. Excess electricity generated by the customer is credited to the following month's bill and any unused credit is granted to the utility at the end of the year.

Washington net metering bill (HB 2773)

<http://search.leg.wa.gov/pub/textsearch/ViewRoot.asp?Action=Html&Item=2&X=913151714&p=1>

Washington Utilities and Transportation Commission (WUTC):

<http://www.wutc.wa.gov/webimage.nsf/63517e4423a08de988256576006a80bc/1098bcb3d11d349588256715007b32a6?OpenDocument>

Information Disclosure

Washington does not have any environmental information disclosure requirements, although the state legislature has considered disclosure bills.

Contact: Northwest Energy Coalition, Nancy Hirsh (206) 621-0094

Green Pricing

One utility in Washington offers green power to its customers.

Orcas Power & Light—Orcas, an electric cooperative serving Washington's San Juan Islands, has contracted to buy 500 kilowatts of green power from the Bonneville Power Administration. The green power product is a mix of small hydro and wind energy. Participating customers can choose to purchase the green power in blocks of 100, 200, 400, 800 and 1,000 kWh at a price premium of 3.5¢/kWh above the standard residential rate of 5.1¢/kWh.

Green Power Network http://www.eren.doe.gov/greenpower/gp_coop.html#orcas

Bonneville Power Administration—BPA is marketing a green power blend in the Pacific Northwest, consisting of 90% small hydro and 10% wind energy. For the wind energy component, BPA has contracted to purchase 1.8 MW of wind generated from three new turbines at the Arlington, Wyoming wind project. As of July 1999, BPA was selling a total of 14.5 MW of the power blend to four utility customers: Emerald People's Utility District, Flathead Electric Cooperative, Orcas Power & Light, and Snohomish County Public Utility District #1.

Green Power Network http://www.eren.doe.gov/greenpower/mkt_gpm.html#bpa

Financial Incentives

Excise Tax Exemption for High-Tech Manufacturers

Exempts qualifying high technology manufacturers, including alternative energy resource companies, from the state corporate excise tax. The exemption is 100% with no limit and it sunsets in 2004.

Contact: Jim Kerstetter, Washington State University (360) 956-2069

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

WYOMING

	Restructuring	RPS	SBC	Net Metering	Green Pricing	Financial Incentives
WY	No	No	No	No	No	No

Restructuring

No restructuring law has been enacted. In 1997, the PSC issued a study calling for further study, pilot programs, and legislative action. A joint committee of the Wyoming legislature also held hearings on electric industry restructuring.

PSC Electric Restructuring studies <http://psc.state.wy.us/electric/electric.html>

Net Metering

There is no net metering policy in place.

More net metering information <http://www.eren.doe.gov/greenpower/netmetering/index.shtml>

Green Pricing

There are no utility green power programs in Wyoming.

Green Power Network <http://www.eren.doe.gov/greenpower/pricing.shtml>

Financial Incentives

There are no financial incentives for renewables in place.

(Source: DSIRE Database <http://www.ncsc.ncsu.edu/dsire.htm>)

APPENDIX B

Definitions of Renewable Resources from State Electric Restructuring Legislation

California

SB90, the legislation implementing renewables funding, defines "in-state renewable electricity generation technology" as "biomass, solar thermal, photovoltaic, wind, geothermal, small hydropower of 30 megawatts or less, waste tire, digester gas, landfill gas, and municipal solid waste generation technologies, as described in the report, defined in paragraph (2), including any additions or enhancements thereto, that are produced in facilities located in this state and placed in operation after September 26, 1996, or that were operational prior to that date, and that are also certified under Section 292.2904 of Title 18 of the Code of Federal Regulations as a qualifying small power production facility either located in California, or that began selling electricity to a California electrical corporation prior to September 26, 1996, under a Standard Offer Power Purchase Agreement authorized by the California Public Utilities Commission."

SB 90: <http://www.energy.ca.gov/renewables/documents/index.html#overview>

Policy Report on AB 1890 Renewables Funding:

<http://www.energy.ca.gov/renewables/documents/index.html#overview>

Montana

Montana's restructuring law does not define renewable resources. However, the Montana Public Service Commission's proposed disclosure rule defines renewable as "a technology other than a conventional power source that uses biomass, geothermal, low impact hydroelectric, solar, or wind as the source of electrical generation." Low-impact hydro is further defined to be "those hydroelectric generation sources that meet requirements for low environmental impact." And biomass is defined as "an electric power source derived from combustible residues or gasses from logging, forest products manufacturing, agricultural and orchard crops, black pulping liquor, waste products from livestock and poultry operations and food processing, urban wood waste, municipal liquid waste treatment operations, and landfill gas."

Proposed Rule (9/9/1999) <http://www.psc.mt.gov/gaselec/rulemaking.htm>

Nevada

Nevada's restructuring law defines renewable resources as the following: "wind, solar, geothermal and biomass energy resources in this state that are naturally regenerated." The law further defines a renewable energy system to mean "an energy system in this state that utilizes renewable energy resources to produce electricity or solar thermal energy systems that reduce the consumption of electricity that was installed and commenced operations after July 1, 1997."

NV Restructuring Law (AB366) <http://www.state.nv.us/puc/electric/ab366.htm>

New Mexico

New Mexico's restructuring law defines renewable energy as the following: "electrical energy generated by means of a low- or zero-emissions generation technology that has substantial long-term production potential and may include, without limitation, solar, wind, hydropower, geothermal, landfill gas, anaerobically digested waste biomass or fuel cells that are not fossil fueled."

NM Restructuring Law (SB 428), 1999 Legislative Session:

http://legis.state.nm.us/scripts/bill_explorer.asp

Oregon

Oregon's restructuring law defines "renewable resources" as the following: facilities fueled by wind, waste, solar, geothermal power, landfill or digester gas, dedicated energy crops available on a renewable basis, or low-emission nontoxic biomass based on solid organic fuels from wood, forest and field residues.

Oregon restructuring law (SB1149):

gopher://gopher.leg.state.or.us:70/00/measure.dir/Senate_Measures/sb1100.dir/sb1149g.en

APPENDIX C

Membership of the WRAP Air Pollution Prevention Forum

(As of December 9, 1999)

Forum Co-Chair	Representing
R.T. "Hap" Boyd	Enron Wind Corporation
Jeff Burks	Utah Office of Energy and Resource Planning

Forum Member	Representing	Interest Group
Bill Becker	U.S. Department of Energy Denver Office	Federal government
Alan Davis	Montana Department of Environmental Quality	State government
Steven Ellenbecker	Wyoming Public Utility Commission	State government
Trisha Frank	Manzanita EPA Air Quality Project	Tribal government
Rich Ferguson	Center for Energy Efficiency and Renewable Technologies	Environmental group
Van Jamison	Informed Public	Public
Rose Mckinney-James	Corporation for Solar Technology and Renewable Resources	Small Business
John Nielsen	The Land and Water Fund	Environmental group
Terry O'Connor	Arch Coal Co.	Industry
Amanda Ormond	Arizona Department of Commerce Energy Office	State government
Rachel Shimshak	Renewable Northwest Project	Environmental group
Julie Simpson	Nez Perce Tribe	Tribal government
Barrett Stambler	Pacificorp	Industry
Chris Wentz	New Mexico Energy Conservation & Management Division	State government

**ENVIRONMENTAL MARKETING GUIDELINES
FOR ELECTRICITY**



National Association of Attorneys General

**Environmental Marketing Subcommittee of the
Energy Deregulation Working Group**

December 1999

Introduction

As the 20th century draws to a close, the electric power industry in the United States stands poised to reshape itself, from regulated monopoly to open competition. Whether this change will benefit consumers overall remains to be seen, but one thing is certain: it will transform the way power is marketed, and, as a consequence, the way power is perceived by the public. The dark side of this development is the potential for deceptive advertising. Just as deregulation of interstate telecommunications spawned deceptive marketing, competition among deregulated power companies for new customers may give rise to unfair and deceptive practices where none existed before.

There is cause for concern not only because of the enormity and importance of the electric power industry, but also because electricity has a major environmental component. How power is generated can affect the extent to which our air is (or is not) polluted, our groundwater contaminated, hazardous wastes created, scarce resources consumed, and animal and plant habitat endangered. For those consumers who prefer non-fossil fuels or renewable energy, the marketing of environmental benefits will be a powerful advertising theme, one which is open to abuse.

State Attorneys General have an important role to play in ensuring that environmental marketing by electric power companies does not mislead consumers. This role is not an unfamiliar one. In the early 1990s, eleven Attorneys General brought their collective influence to bear on how environmentally “friendly” claims were to be made in the first wave of environmental marketing. At that time, the claims were made to sell tangible consumer products like diapers and plastic bags. In 1990, these Attorneys General issued *The Green Report*, and, a year later, *The Green Report II*, containing recommendations for responsible environmental advertising. Several well-publicized enforcement actions followed, as did the enactment in some jurisdictions of state environmental marketing standards, by statute or rule, and the Federal Trade Commission’s promulgation of Guides for the Use of Environmental Marketing Claims, 16 C.F.R. part 260. These actions were taken in response to environmental claims that were already being made, though they operated prospectively to limit future deception. In the case of electric power, on the other hand, there is an opportunity to forge standards of conduct before the newest wave of “green” marketing takes hold.

It is the purpose of these Guidelines to: (1) diminish the potential for deceptive environmental marketing by providing guidance to the electric power industry as it undertakes to craft its advertising and information campaigns; (2) facilitate compliance with the law by providing industry with an interpretation by the Attorneys General of what state prohibitions on deceptive and misleading advertising mean in the context of environmental advertising for electricity; and (3) offer a model for state legislation and/or rulemaking.

At the same time, because some states have enacted their own environmental marketing standards¹ (and others may do so in the future), companies are cautioned to ensure that their marketing in or into a particular geographic area is also consistent with such state-specific standards.

At the outset, it should be stressed that electric power is different from most other products in two fundamental ways. First, the electricity that most consumers buy cannot be traced to its exact source. Rather, electricity created by numerous generators is transmitted to a power pool or grid, mixed together, and then drawn upon for customer use. A company that advertises “100% hydropower” cannot mean to say that the electrons provided to a consumer’s home are the same as those that were generated by a hydro plant, but only that it has put into the pool as much electricity from that plant as its customers will use, or, in a “tradable tag” system, that a portion of the consumer’s payment will go to support hydropower. Thus, the way in which electricity is transmitted from the generator to the end user tends to complicate marketers’ ability to tie the attributes of the generation process directly to the purchase of the product. Moreover, because electricity itself is a fungible product, consumers may find it more difficult to verify the truthfulness and accuracy of electricity marketers’ claims than they would the claims associated with many other consumer products and services.

Second, the characteristics of electric power sold by a specific company change over time. A generator can break down; transmission lines can become overloaded; weather can affect the availability of wind or solar energy. As a result, it becomes more difficult than with most products to predict the source and related environmental attributes (e.g., emission levels) of the power being offered by any one supplier.

These differences being noted, it is still possible to interpret existing consumer protection law to set forth the standards that follow.² It is hoped that these Guidelines will aid industry in ensuring that its environmental advertising serves to inform, rather than to mislead. Conduct which does not do so may result in corrective action by the relevant enforcement agency.

1. Overview

These Guidelines apply to any marketing claim about the attributes of electricity products or companies connected with the generation, distribution or sale of electricity. The claims covered may appear in labeling, advertising, promotional materials, or any other form of marketing, whether asserted directly or by implication, through words, symbols, logos, certifications, depictions, company or product names, or through any

¹ See, e.g., Mass. Regs. Code tit. 940, § 19.06; and 52 Pa. Code § 54.6.

² Of course, as pointed out above, in those states that have adopted environmental advertising laws or regulations, marketers must be certain that their claims comply not only with these Guidelines, but also with such individual state laws and regulations, when those are applicable. In the event of a conflict between such state laws or regulations and these Guidelines, the former will prevail.

other means. Such claims may appear in any medium, including print, broadcast, and electronic media. Claims which are misleading or deceptive could serve as the basis for an enforcement action which alleges unfair or deceptive trade practices under state law, notwithstanding a claim's compliance with other laws or regulations.

These Guidelines set forth general principles based on state laws which prohibit the use of misleading or deceptive advertising claims, followed, where appropriate, by commentary that provides further clarification and examples that illustrate the principle. The examples used are not intended to state or imply factual characteristics of the particular fuels or generation methods referred to, but are for the purpose of illustration only. These guidelines are intended to be applied to the facts applicable to a particular advertiser's claim. A particular advertising claim may raise more than one issue under the Guidelines. A supplier may be in compliance with one section of the Guidelines but not another. By the same token, the examples do not reflect the full range of violations, and may not identify all ways of complying with or violating the principles they illustrate. Additionally, literal compliance with a Guideline may still be deceptive when the context of the claim is considered.

2. General Principles

(a) Deception

A claim is deceptive, and therefore unlawful, if it contains an express or implied representation or omission of fact that is likely, or has a tendency, to mislead consumers. An express claim directly makes a representation. The identification of an implied claim requires an examination of the representation in the context of the overall advertisement or other form of marketing, including the juxtaposition of phrases, images, and the nature of the claim and the transaction. The determination of a claim's meaning is made by reviewing the advertisement's overall impression. A claim that can be interpreted in a misleading way may be deceptive, even though other, non-misleading interpretations may be equally possible.

The omission of information may also be deceptive in certain circumstances. Deception can occur through the omission of information that is necessary to prevent an affirmative representation from being misleading. Similarly, it can be deceptive simply to remain silent under circumstances that constitute an implied but false representation. The test for whether an omission is deceptive is whether the overall impression created by the advertisement is deceptive. Throughout these Guidelines, whenever reference is made to an express or implied claim, or to a representation, the reference is intended to include omissions.

Comment. This section states the general principle that a claim is unlawful if it contains a representation or omission of fact that may mislead consumers. The precise elements of deception will vary somewhat, depending upon the state in or into which the representation or omission is directed. Suppliers of electricity should take these differences into account by conforming their marketing claims to the most consumer-protective standards prevailing in their

marketing area. A special caveat is also warranted for deception by omission; if the overall impression created by the claim is deceptive, it does not matter whether the deception is the result of an express representation, an implied representation, or an omission.

(b) Substantiation

Any party making an express or implied claim that presents an objective assertion about the environmental attributes of an electricity product or company must, at the time the claim is made, possess and rely upon a reasonable basis substantiating the claim. In substantiating technical claims about electricity products or companies, a reasonable basis consists of competent and reliable evidence which supports the claims made. Such evidence may include tests, analyses, research, studies or other evidence based on the expertise of professionals in the relevant area, conducted and evaluated in an objective manner by persons qualified to do so, using procedures generally accepted in the profession to yield accurate and reliable results.

Substantiation should cover the period that is relevant to the claim. Both prospectively and retrospectively, substantiation evidence may be averaged over a reasonably recent one-year period of time, with allowance made for a de minimis amount of emergency backup power occurring toward the end of the annual averaging period. A claim for which substantiation consistent with these Guidelines does not exist prior to the time the claim is made is considered to be deceptive.

Furthermore, if the same electricity or its attributes are sold more than once to consumers, the claim is deceptive. The Attorneys General take no position on which system of substantiation—auditable contract paths, tradable certificates or some other system—states should adopt.

The types of claims about electricity products or companies that are subject to substantiation requirements include, but are not limited to: (1) identifying fuel types or attributes, generation processes, emissions, or environmental benefits; (2) indicating quantities, whether expressed as a percentage of the whole product, a percentage as compared to competing products, or a measure in relation to an environmental standard, a number of kilowatt-hours, or a rate (e.g., emissions per kilowatt-hour); (3) characterizing the function of generation or transmission systems (e.g., how electricity is transmitted through the power grid); (4) making comparisons (e.g., between competing products, or between past and current performance); (5) linking products or associated attributes to environmental benefits (or harms), including claims of general environmental benefit; (6) indicating endorsements or certifications (e.g., seals of approval); and (7) describing mitigation of environmental impacts.

Substantiation of a claim about the *past* attributes associated with a specific electricity product, or with the electricity offered by a supplier, should consist of competent and reliable evidence sufficient to establish, for the period relevant to the claim, that (a) the supplier generated or purchased electricity with the claimed attributes in amounts sufficient to match actual consumption by consumers who purchased the advertised electricity, (b) the electricity was supplied to the interconnected grid serving those

consumers, and (c) the same generated electricity was not sold to more than one consumer.

Substantiation of a claim about *current* or *future* attributes associated with a specific electricity product, or with the electricity offered by a supplier, should consist of (a) competent and reliable evidence to support the expectation that supplies of electricity will be sufficient to meet the reasonably anticipated demand for power with the claimed attributes (e.g., contracts for future supplies of power), and (b) competent and reliable evidence sufficient to establish retrospectively, for the period relevant to the claim, that (i) the supplier generated or purchased electricity with the claimed attributes in amounts sufficient to match actual consumption by consumers who purchased the advertised electricity, (ii) the electricity was supplied to the interconnected grid serving those consumers, and (iii) the same generated electricity was not sold to more than one consumer.

Where a claim is based on the purchase of certificates or “tags” representing the attributes of an electricity product or of the electricity offered by a supplier, but not the power itself, substantiation should consist (a) for a claim about *current* or *future* attributes, of competent and reliable evidence to support the expectation of certificates sufficient to meet reasonably anticipated demand for the attributes they represent; and (b) for *any* claim, of certificates that reliably establish that for the period relevant to the claim, the supplier purchased the rights to the claimed attributes in an amount adequate to meet consumption demand for the product consistent with the claimed attributes. In addition, no more than one certificate should be issued for any one unit of power. Finally, it is recommended that certificate-based claims be accompanied by a clear and prominent disclosure of the use of a tagging system to substantiate the claim.

Comment. This section addresses how to substantiate claims associated with specific electricity products and with a company’s products as a whole. For the FTC’s definition of what constitutes “competent and reliable evidence” to substantiate a claim, see FTC Policy Statement Regarding Advertising Substantiation Program, 49 Fed. Reg. 30999 (Aug. 2, 1984). Claims are divided into those that relate to past characteristics and those that relate to current or future characteristics. The former require competent and reliable evidence that electricity with the advertised characteristics was generated or purchased by the supplier, was placed on the grid serving the consumers to whom the offer was directed, and was not sold to more than one customer. The latter require competent and reliable evidence to support (1) the prospective expectation that the characteristics of the electricity being offered will conform to the claim, given reasonably anticipated public demand for it, and (2) the retrospective assertion that electricity with the advertised characteristics was generated or purchased by the supplier, was placed on the grid serving the consumers to whom the offer was directed, and was not sold to more than one customer. This means that if, in the course of an advertising campaign, it appears that consumer demand may outstrip the supply of available power with the advertised attributes, the supplier must either arrange for additional power of the same description or stop soliciting new customers.

The Attorneys General recognize that it is physically impossible to determine the sources of the electrons used by any given consumer. Thus, when a consumer chooses a particular electricity product based on the environmental attributes associated with how and where that

power was generated, what s/he is actually doing is financially supporting the chosen generation source, not buying the precise energy generated by that source. The Attorneys General believe that such financial support is consistent with what consumers who prefer a certain type of generation for environmental reasons would seek to do—that is, direct the flow of their payments for electricity toward preferred generation sources. Nonetheless, it is likely that many consumers do not currently understand this feature of electricity and the market for power, so that consumer education in the area will be very important.

The Guidelines accept an auditable contract path as an acceptable form of competent and reliable evidence. This is because, while one cannot verify the source of any particular electrons, it is possible to follow the financial transactions that underlie the generation of electricity and its purchase by specific consumers. First, the usage by the customer is measured at the customer's meter. The customer is billed for that usage and the proceeds for the energy go to the supplier. The supplier in turn must pay, either directly or through a middleman, the generators whose power it bought in order to meet customer demand. In this way, the customer's usage is linked, through the financial process, to identifiable generation units and characteristics—for example, the fuel type or emissions associated with electricity that came from those units. Thus it is possible to say with reasonable certainty that the customer's purchase and use of power did result in the generation and placement on the grid of power possessing the power characteristics of the supplier's offer and that no other claim is made on that power. This allows suppliers to use the financial trail to substantiate their claims as to the quantity and attributes of their electricity.

The Guidelines also accept averaging of characteristics over a reasonably recent one-year period. This is because inherent in the process of generating and transmitting electricity are fluctuations over time. In order to ensure that the availability of electricity to customers is reliable, suppliers use contingencies such as buying or generating power from other sources to make up for any temporary shortfalls in their regular supply. As a result, the fuels, generation processes and emissions characteristics associated with a customer's electricity are likely to vary slightly from hour to hour and from month to month. Moreover, suppliers may not know in advance what the exact characteristics will be. For example, if they need to purchase contingency power, they may have to buy it from the spot market, the exact characteristics of which they cannot predict. The FTC has adopted a similar approach in permitting calculation of recycled content based on an annual weighted average. See 16 C.F.R. § 260.7(e), Ex. 9. However, literal compliance with a Guideline may still be deceptive when the claim is considered in the context of the entire advertisement. In making claims about the future attributes of an electricity product or company, marketers are urged to be specific about the period over which they are averaging environmental characteristics.

Using a tradable certificates (or "tagging") system to substantiate electricity product or company claims raises an additional and significant issue of consumer understanding and acceptance. Under a tagging system, the environmentally preferable attributes of specific power generation—the "premium" associated with preferred generation—are available to be sold separately from the power itself. Such a system is similar to substantiation based on a contract path in that both involve the flow of money from the consumer to the advertised generation source and evidence that claims are not made twice for the same units of electricity. However, under a tagging system, a supplier of power that is advertised as "50% hydro, 50% natural gas" may actually buy all of its electricity from a nuclear power plant, but has the right to claim a "hydro-gas"

mix because it also purchased unique tags from “hydro-gas” generators. This raises questions about what tagging-based claims mean to consumers and underscores the benefit to consumers of disclosure of the use of a tagging system.

For any claim that is based on a tagging system, the supplier should have certificates that reliably establish that, for the period relevant to the claim, the supplier purchased the sole rights to the claimed attributes in an amount adequate to meet consumption demand for the product consistent with the claimed attributes. In addition, no more than one certificate should be issued for any one unit of power. To help consumers understand what they are buying, it is recommended that the claim be accompanied by a clear and prominent disclosure of the use of a tagging system to substantiate the claim. Furthermore, any claim about current or future attributes that is based on the purchase of certificates requires competent and reliable evidence to support the expectation that the generators of electricity from whom the certificates are purchased will produce sufficient electricity to meet reasonably anticipated demand for the attributes they represent. Unless state law allows otherwise, marketers are cautioned to avoid making claims based on a tagging system that state or imply that the supplier has actually purchased the power itself—as opposed to its environmental attributes—from the preferred generators.

The Attorneys General do not take a position on which method of substantiation—auditable contract paths, tradable certificates, or some other method—a state should adopt. However, recognizing that some states are already moving in the direction of permitting either auditable contract paths or tagging as means of substantiation, the Attorneys General have adopted a Guideline that seeks to ensure that whichever system is used, (1) reasonable substantiation exists prior to the time an environmental marketing claim is made, (2) substantiation data can be averaged over a fair and reasonably recent period of time, and (3) claims relating to electricity (or its attributes) are not “double-sold.” If a tagging system is adopted, the Attorneys General also recommend that disclosure be made so that consumers understand the meaning of tagging-based claims.

Ex. 1. Company A burns coal to generate electricity and claims that new technologies allow the generator to cut its rate of emissions for SO₂ and NO_x to half their previous levels. The generator possesses scientific tests conducted according to accepted scientific procedures that support the claim. The claim is adequately substantiated and is not deceptive.

Ex. 2. Company B runs an advertisement that claims, “Last year, one-quarter of our power came from the sun or the wind.” Company B possesses an auditable record of contracts which shows that 25 percent of the electricity it purchased and put on the grid serving the area in question came from solar and wind generators, and that that electricity was not sold to more than one consumer. The claim is adequately substantiated.

Ex. 3. Company C offers an electricity product that it advertises as “less than 10% fossil fuels.” Company C arrives at a reasonable estimate of the consumer demand for the product over the next year and enters into contracts with generators sufficient to meet that demand from sources that include no more than ten percent fossil fuels. In addition, at the end of the year, an audit of the amounts of electricity supplied to Company C establishes that the electricity supplied under its contracts which included less than ten percent fossil fuels met actual consumer demand for the product in the area where the claim was aired, was placed

on the interconnected grid serving those consumers, and was not sold to more than one consumer. The claim is adequately substantiated.

Ex. 4. A supplier advertises an electricity product in Region A as “50% Hydro, 50% Natural Gas.” The basis for the claim is that the supplier has purchased “tags” from hydro and natural gas generators for power sufficient to meet reasonably anticipated demand for the product for the next year. In addition, for the period relevant to the claim, the supplier possesses certificates adequate to meet such demand; and the tagging system exists throughout Region A, with no more than one certificate issued for any one unit of power. Assuming that the fuel-mix claim does not imply any specific geographic location of the generators, the claim is properly substantiated. However, it is also recommended that the claim be accompanied by a clear and prominent disclosure which explains to consumers that the claim is based on the purchase from specific generators of the right to claim those generators’ fuel mix for the power it sells.

(c) Qualifications and Disclosures

In order to be effective, any qualifications or disclosures should be sufficiently clear and prominent to prevent deception. Clarity of language, relative type size and proximity to the claim being qualified, and an absence of contrary claims that could undercut effectiveness, will maximize the likelihood that the qualifications and disclosures are appropriately clear and prominent. If a claim states any specific environmental benefit, it should be accompanied by disclosure of all significant environmental harms associated with the relevant product (in the case of a product claim) or the relevant company (in the case of a company claim) that reduce or eliminate the stated environmental benefit. A claim that is otherwise deceptive cannot be rendered non-deceptive by a qualification that is inconsistent with the substance of the claim.

Comment. The Federal Trade Commission’s approach to qualification of environmental product claims is consistent with this section, see 16 C.F.R. § 260.6(a), with two clarifications. First, to avoid overstating a claimed environmental benefit, all environmental harms associated with the advertised product or company that serve to diminish the claimed benefit should be disclosed. Second, if a claim is deceptive, it cannot be saved by a qualification that is inconsistent with the claim. Marketers are cautioned to ensure that qualifications and disclosures serve the function of explaining or detailing, rather than changing the meaning of, the claims they modify.

Ex. 1. An Ohio company sends direct mail to potential customers stating that the company is “working to reduce air pollution in Ohio” and including a bar graph showing a recent “50% decline in NO_x, SO₂ and CO₂ emissions” from the company’s local coal plants. The decline is significant and can be substantiated based on the company’s installation of advanced scrubber technology. However, the company fails to disclose that it also recently constructed new garbage incineration generators in Ohio which produce enough air emissions to diminish significantly the impact of the coal plant emission reductions. The mailing is deceptive because it implies that the company’s net pollution reduction is significantly greater than it really is. Clear and prominent disclosure of the new garbage incineration emissions or a bar graph showing the net decline in the company’s total air pollution could prevent the deception.

Ex. 2. A print advertisement describes an electricity product as “No Nukes, No Coal.*” At the bottom of the ad, next to the asterisk, there appears this statement: “When there is a

sufficient supply of wind and solar power.” The meaning of the disclaimer is that the supplier will purchase nuclear- or coal-generated power when conditions limit the availability of wind or solar energy. If, in order to meet consumer demand for the product as advertised, the supplier will rely on nuclear or coal generation, the qualification is inconsistent with the substance of the claim, and the claim is deceptive.

(d) Properly Linking Attributes and Benefits to the Product

An environmental marketing claim about electricity should be presented in a way that makes clear whether the environmental attribute or benefit refers to the fuel source, the generation process, the emissions, or some other aspect of the product, of a portion or component of the product, or of a company. The claim should also indicate whether it reflects historical performance or projections of future performance. If, however, the environmental attribute or benefit applies to all but minor, incidental components of the product, the claim need not be qualified to identify that fact.

Comment. Environmental claims can be based on all of a company’s sales or activities, or on differing percentages of the electricity it sells divided into different products. Although the “company approach” is responsive to consumers who are interested in a firm’s total operations, it can be easily evaded by creating other companies to offer specific products; it may also remove any incentive to developing environmentally preferable products, and would represent a major departure from the “products approach” applicable to other industries. However, claims which state or imply that certain environmental benefits or attributes apply to a company will be evaluated based on the company’s record as a whole.

Ex. 1. An advertisement tells consumers they will “make the air clean” if they buy Company A’s electricity. The basis for the claim is that the supplier plants trees in Central America to replenish the rain forest, which in turn recycles carbon dioxide through the natural process of photosynthesis. The supplier also plans to purchase and retire credits of sulfur dioxide (which causes acid rain). Notwithstanding the value of the efforts to mitigate air pollution, the fuel source for the supplier’s generation includes significant amounts of coal. The advertisement makes an implied claim that the electricity sold by this supplier, taken as a whole, results in no significant detrimental impact on air quality. The fact that the supplier sells power generated from coal means that the claim is misleading, since combustion of coal emits significant air pollutants.

Ex. 2. A company generates electricity from two sources: a hydrodam and a nuclear power plant. Both are located on the same river in the Pacific Northwest. The company brochure declares that its electricity is “fish-friendly” because it has installed fish ladders and special turbines designed to enable salmon populations to spawn and return to the ocean. However, the nuclear reactor emits hot water into the river after it has been used as a coolant in the plant. The heat changes the water temperature, causing significant mortality in fish eggs. Since consumers could reasonably assume that the “fish friendly” claim applies to both sources of the company’s electricity, the claim is misleading. Even if this claim were qualified to apply only to the hydrodam energy source, it would still be deceptive if the hydrodam caused any significant harm to fish. The FTC takes a similar approach with respect to “ozone friendly” claims. See 16 C.F.R. § 260.7(h).

Ex. 3. A product claims simply to be generated from “biomass.” The materials combusted to generate the electricity are all taken from agricultural residues with the exception of a small amount of natural gas used to ignite the biomass. Because in this case consumers are likely to consider the ignition fuel to be a minor, incidental component associated with the product’s generation, the claim is not deceptive.

Ex. 4. Western Hydropower, a company that generates hydroelectric power in a region that allows for tradable tags, sells to another facility tags representing the hydroelectric nature of the power generated. The company then markets the untagged energy under the name Western Hydropower, thus implying that the electricity still has the attributes that were sold with the tag. The company’s marketing scheme is deceptive.

(e) Overstatement of Environmental Attributes

An environmental marketing claim should not be presented in a manner that overstates the environmental attribute or benefit, expressly or by implication. Marketers should avoid implying a significant environmental benefit if the benefit is in fact negligible. They should also avoid making claims about the absence or low level of a particular attribute if there is no known environmental harm associated with that attribute.

Comment. The Federal Trade Commission takes a similar approach to environmental product claims. See 16 C.F.R. § 260.6(c).

Ex.1. A supplier labels its electricity product as “50% more renewables than before.” Of the 250 megawatt-hours generated by the supplier, the total derived from renewables has risen from two to three megawatt-hours. While it is technically true that the supplier generates 50 percent more electricity from renewables than it did previously, the claim is likely to convey the false impression that the increase in renewables is a significant portion of the total power produced.

Ex. 2. “Choose our 100% renewable power option to make a difference in the world and reduce our nation’s addiction to fossil fuels,” a newspaper advertisement urges. The advertiser is able to substantiate that 100% of its power comes from renewable power facilities. However, none of the facilities are new, and all of them are generating the same amount of power they produced for the former, regulated electricity market; in addition, there is no evidence that once the demand for renewable power exceeds the supply, the amount or percentage of renewable power generation will increase. The claim is deceptive because it overstates the environmental benefit of supporting the pre-existing renewable facilities.

Ex. 3. An advertisement on television states, “Company Z—We protect the planet!” In fact, 97% of Company Z’s energy portfolio is comprised of highly polluting, antiquated coal generators and poorly sited hydroelectric dams which have profound negative impacts on the environment. The television ad is deceptive because it overstates Company Z’s environmental record.

(f) Comparative Claims

Environmental marketing claims that include a comparative statement should be presented in a manner that makes the basis for the comparison sufficiently clear to avoid consumer deception. Comparative claims should also not be made unless the difference between what is being compared is environmentally significant.

Comment. The Federal Trade Commission takes a similar approach. See 16 C.F.R. § 260.6(d).

Ex. 1. An electricity product is described as “20% more renewables.” The claim is ambiguous. Depending on contextual factors, it could be a comparison either to the advertiser’s immediately preceding product or to a competitor’s product. The advertiser should clarify the claim to make the basis for the comparison clear, for example, by saying, “20% more renewables than our previous product.” With such a clarification, the claim is not deceptive if there is a significant environmental benefit associated with the comparison. In addition, the advertiser should be prepared to substantiate the comparison.

Ex. 2. A generator claims, “Our electricity has the lowest rates of emissions of any generator in the region.” The claim is true as to all types of emissions, although the electricity is considerably less than 100 percent emission-free. Provided that the difference in emission rates between the advertised product and those of its competitors is significant, and that the specific comparison can be substantiated, the claim is not deceptive.

Ex. 3. A generator claims, “Our facilities emit fewer pollutants per kilowatt-hour” than a competing company’s facility. Whether or not this claim is true depends on the basis used to determine the comparison. Under state and federal permit standards, emission levels are determined by a plant’s potential-to-emit rather than its actual emissions, which may result in misleading “apples v. oranges” comparisons. Whenever such statements are made, the basis for the comparison must be uniform (actual emissions v. actual emissions; permit levels v. permit levels), and the advertiser must be prepared to substantiate the claim.

Ex. 4. An advertisement reads, “Our air emissions are among the lowest.” It is true that the company making the claim produces air emissions that are, company-wide, lower than the emission levels of most of its competitors. On the other hand, because a large portion of the competitors’ power is generated by a small number of companies, the marketer’s emission levels are above the average for the appropriate region. Since consumers are likely to interpret this comparative claim as meaning, among other things, that the marketer’s emissions are at least below average, the claim is deceptive.

(g) Geographic Limitations on Claims

Consumers should be informed, by clear and prominent disclosure, if a claim states or implies an environmental attribute or benefit which actually occurs or exists outside the geographic area in which the environmental marketing claim is being made.

Comment. The environmental effects of producing electricity are often, though not always, felt most acutely in the locality or region where the generation or related activity takes place. This section seeks to ensure that marketers do not mislead consumers as to the beneficial impact of an electricity product or company on the environment in their particular geographic area. Some claims (e.g., global warming) may not imply a limited geographic impact. However, special caution

should be used in connection with claims that are either communicated over a wide geographic area or directed at environmental attributes that are localized in their beneficial effects. Special caution should also be used when the supplier relies on contract paths that create uncertainty as to where the purchased power will be generated.

Ex. A company advertisement depicting windmills claims the supplier “does not pollute the air.” The company owns a wind farm on the West Coast. All of the power from the wind farm, whose generation results in no air emissions, is used to meet the usage of its customers in California. However, the company also offers electricity service in the East, where it purchases power from a variety of sources, none of which includes wind. The ad runs on the East Coast. While it is true that the wind-generated electricity has no air emissions, the claim is deceptive since it implies an environmental benefit to customers on the East Coast where little or no meaningful benefit exists. On the same facts, it would not be deceptive to run an advertisement stating that the company is “not polluting the air in the West.”

(h) Scope of Claims

Claims of general and specific environmental impact should take into account, as relevant to the claim made, the environmental impact of (1) any process by which the fuel source is created or prepared, (2) the process of generating the electricity, (3) the disposal of waste resulting from the generation process, and (4) the siting of the generating facility.

Comment. The range of activities that ultimately underlie the generation and sale of electricity is very broad. Makers of environmental marketing claims need to know which aspects of the “life cycle” of electric power they should take into account in crafting their claims. The Attorneys General are of the view that consumers evaluate such claims primarily with reference to the activities that are closest to the processes by which the power is generated: the creation or preparation of the fuel source, the actual generation of the electricity, the disposal of waste resulting from generation, and the siting of the generating facility. Life-cycle aspects that are further afield (e.g., the materials and processes used to construct/manufacture a generating facility/device, or the aesthetic aspects of siting) should be taken into account only when the claim requires it to avoid deception. In determining which of the four life-cycle aspects to take into account, marketers should consider whether each is relevant to the environmental impact that is the subject of the claim in question.

Ex. 1. An advertisement for the nuclear power industry states, “Nuclear power plants don’t burn anything to produce electricity, so they don’t pollute the air.” However, highly polluting coal plants are often used to produce the enriched uranium fuel that powers nuclear plants. The advertisement is deceptive.

Ex. 2. In an advertisement, a power supplier that uses coal as its fuel source claims that in producing electricity the company uses only “clean coal from the Great West” and couples this statement with images of mountains, forest streams and fly-fishermen. In fact, the process of mining the coal includes open pits, haul roads and stream degradation. The advertisement is deceptive.

3. General Environmental Benefit Claims

(a) Basic Principles

It is deceptive to misrepresent, directly or by implication, that a product or company offers a general environmental benefit. Unqualified claims of general benefit are difficult to interpret, and, depending on their context, may convey a wide range of meanings to consumers. In many cases, such claims may suggest that the product or company or their associated processes have specific and far-reaching environmental benefits. Every implied representation that the general assertion conveys to consumers must be substantiated. Unless this substantiation duty can be met, broad environmental claims should either be avoided or properly qualified, as necessary, to prevent deception about the specific nature of the environmental benefit being asserted. When a claim of general environmental benefit is made, the environmental impacts that will be considered in evaluating that claim include all significant environmental impacts.

Comment. General environmental claims are too vague to be meaningful, are difficult if not impossible to substantiate, and, because of the inherent complexity of environmental issues, tend to be inaccurate. Indeed, such claims may implicitly convey the message that a product or company is good for the environment in all respects—a message that, in the case of most forms of electric power generation, no matter how benign, will be inaccurate and not capable of being substantiated. By contrast, consumers need clear environmental information in order to make meaningful comparisons between electricity products and providers. Those who make such claims risk violating state prohibitions against deception and would be well advised to keep their claims narrowly drawn and focused on specifically identified environmental attributes. See 16 C.F.R. § 260.7(a).

Ex. 1. A California supplier has won several awards for making contributions to the study of environmental issues. In an advertisement for an electricity product that is fully renewable and without significant emissions, the supplier describes itself as an “environmentally friendly” company. However, the company offers a variety of products in California in addition to the one advertised, and at least one of these products is composed of power from fossil fuels and nuclear resources; the fuels used to generate this power emit harmful substances into the environment. The unqualified use of “environmentally friendly” in the advertisement implies that there are no significant threats to the environment from the company, not just from the particular product being advertised. The claim is deceptive.

Ex. 2. An advertising flyer for an energy service provider displays an image of children playing by a sparkling, tree-lined lake and makes the claim, “Because we care about the environment and our common future, we sell only low-impact power from state-of-the-art electricity generation facilities.” Without further qualification, the claim and its context create an impression of general environmental benefit, and any meaning this conveys to consumers must be substantiated. On the other hand, if the term “low-impact” is expressly defined in the advertisement in relation to some generally accepted standard of “low-impact,” it may not be deceptive.

(b) “Green”

It is deceptive to misrepresent, directly or by implication, that any product or company is “green.” “Green” is a term of general environmental benefit, and as such, every implied representation of significant environmental benefit or lack of significant environmental harm that the general assertion conveys to consumers must be substantiated. Accordingly, use of “green” should be accompanied by clear and prominent disclosure of the sense in which the term is being used; and even where qualified, “green” may have some other, contextual meaning to consumers that must be substantiated. Claims using the term “greener” should be presented in conformity with this subsection and with the Guideline on comparative claims.

Comment. The Attorneys General believe that at this time, the term “green” has no generally accepted meaning and thus cannot be defined with any precision. Depending upon the specifics and context of the claim and the nature of the audience, “green” may convey a message of no significant impact, of general environmental superiority, or of some specific positive environmental attribute. Given this potential for consumer confusion, the most reasonable course is to consider “green” to be a term of general environmental benefit and hold marketers responsible for substantiating any meaning that a “green” claim in context conveys to consumers. Even limiting language may not be enough to save a “green” claim from being deceptive when the overall import of the advertisement implies more than the stated limitation would suggest. Marketers are cautioned to use the term “green” only in ways that leave no doubt as to the claim’s intended meaning.

Ex. 1. Company A mails consumers a solicitation which refers to its electricity product as “green.” The marketer’s unwritten basis for this claim is that a portion of the fuel mix comes from certain renewable resources that have no harmful emissions or other significant impacts on the environment. However, the remainder of the product comprises system power, much of which is derived from fossil fuels and nuclear resources and produces significant air emissions and radioactive waste. If consumers interpret the term “green” to mean that no significant harmful impact will result to the environment, the claim is deceptive. The claim is not deceptive if it is accompanied by clear and prominent language limiting the “green” representation to the emissions-free renewable resources, provided that no other deceptive implications are created by the context.

Ex. 2. Company B offers “green power” made from solar panels located in the nearby desert. The fuel source is renewable within the meaning of the Guidelines. The generation and transmission processes release no harmful substance into the environment, and, together with the placement of the panels and transmission lines, pose no significant harm to the environment. The claim is not deceptive.

Ex. 3. Company D runs an advertisement that claims that consumers will “be green” by buying a product derived entirely from wind. The wind is renewable, and the turbines release no air emissions into the environment. However, the particular location of the turbines used to generate this “green” power has been shown to threaten an endangered species of raptor. Absent a clear and prominent disclosure of this detrimental environmental impact, the use of “green” in the advertisement is deceptive.

4. Specific Environmental Claims

(a) “Clean”

A “clean” energy source is defined as any energy source that does not cause significant emissions. It is deceptive to misrepresent, directly or by implication, that any product or company is “clean.” Claims using the term “cleaner” should be presented in conformity with this subsection and with the Guideline on comparative claims.

Comment. The term “clean” has a common vernacular meaning of “not dirty.” As an environmental marketing claim, it can be expected to connote to most consumers an absence of significant emissions. It is deceptive to represent, directly or by implication, that electricity is derived from clean sources when it is not.

Ex. 1. An energy product generated by Company X is advertised as “Hydropower—The Clean Energy Source.” If the electricity being sold is in fact derived from hydropower, and the supplier can substantiate that the generation of that electricity results in no significant emissions, the claim is not deceptive.

Ex. 2. A supplier urges consumers to “Help us make the environment clean.” The product offered for sale comes from a portfolio comprising half renewable energy resources with no emissions, and half from the spot market; the latter comes in part from fossil-fuel burning plants and nuclear reactors and thus has significant air pollution and radioactive waste associated with its generation. Since continued purchase of this product would result in releasing harmful substances into the environment, the claim is deceptive.

Ex 3. A generator claims that its plants use “clean coal” to make electricity. Consumers may infer, erroneously, that the use of this type of coal will eliminate significant air emissions commonly associated with coal. The claim is deceptive.

Ex. 4. A generator advertises that “we sell clean power, thanks to new scrubber technology.” However, the generator’s facilities produce significant amounts of scrubber residues, which constitute solid and hazardous waste. The generator’s claim is deceptive.

Ex. 5. An advertisement states, “Choose Natural Gas—Cleaner Than Other Fossil Fuels.” Company B can substantiate that its product produces significantly less air emissions than other fossil fuels. The claim is not deceptive.

(b) “Renewable”

A “renewable” energy source is defined as any energy source that is replenishable and replenished on some reasonable time scale. Renewable energy sources include, but are not limited to, wind, sun, heat from the earth’s interior, oceans and rivers, and eligible biomass. It is deceptive to represent, directly or by implication, that electricity is derived from renewable sources when it is not. It is also deceptive to claim, directly or by implication, that a renewable energy source has no significant negative environmental impacts by sole virtue of the fact that it is renewable. Notwithstanding the above, if a particular state’s law provides for a different definition of “renewable,” that definition would prevail in that state.

Comment. In defining “renewable” for the purpose of these Guidelines, the Attorneys General have opted for the common meaning of the word, focusing on replenishability on a reasonably short time scale, and applying it to energy sources, rather than technologies. Under this definition, there is no basis for distinguishing between large-scale and small-scale hydro. However, renewable resources can still have a significant environmental impact, so “renewable” is not equatable with “green,” “clean” or similar terms, and care must be taken to avoid overstating the environmental import of renewability. The term “eligible biomass,” as used in this Guideline, refers to plant matter and animal waste which are replenishable and replenished on some reasonable time scale. Municipal solid waste does not satisfy the definition of “eligible biomass” because it has a significant component of non-renewable organic and inorganic material. Nonetheless, municipal solid waste may be marketed as “renewable” in a particular state if it is so considered under the law of that state.

Ex. 1. A company advertises an electricity product as “Good for the Earth, Because It’s 100% Renewable!” The product is based on two renewable energy sources: a large hydrodam and wind turbines. The hydrodam’s design prevents significant numbers of a threatened salmon population from spawning and returning to the ocean, and the location of the wind turbines causes the death of endangered birds. The claim is deceptive because the company improperly asserted that its energy product had no significant environmental impacts by sole virtue of the fact that it is renewable.

Ex. 2. A wind power generator markets its power to consumers as “renewable wind power,” but fails to disclose that ten percent of the time the generator is forced to rely on a back-up natural gas generator to deliver a supply of power adequate to meet the consumer demand for the advertised electricity product. Ten percent is not a de minimis variation from the unqualified “renewable” claim made by the generator, and the failure to disclose the use of natural gas is deceptive because natural gas is not a renewable energy source. (This example is not meant to create a “safe harbor” or threshold of ten percent.)

Ex. 3. A supplier advertises a “100% renewable” electricity product composed of wind power, geothermal power and biomass. The biomass portion is the wood waste by-product of a timber operation which clear-cuts large areas of forest and neglects to effectively replant the land. This kind of biomass is “replenishable” but not “replenished,” and therefore fails to meet the definition of “renewable” in this Guideline. A “100% renewable” claim may not be made using this supplier’s mix of energy sources. However, if the timber operator used techniques in deriving the wood waste such that the biomass is replenishable and replenished on a reasonable time scale, the claim would not be deceptive.

(c) “New” Claims

Generating facilities and improvements to existing facilities should not be described as “new” unless they have been constructed or put into service within the relatively recent past or unless they will be constructed or put into service in the relatively near future, and the “newness” has a significant environmental benefit.

Comment. One of the attributes of power generation that is likely to be material to consumers is its “newness.” The fact that a generating plant has been built or come on line recently can create the impression that the environment will benefit, appealing to consumers who want to see a change in current emissions levels. Thus, in making a claim of “newness,” the

marketer must be certain that the implied environmental benefit actually exists. This section does not define exactly how long a facility or facility improvement may be described as “new”; that will depend on consumer perceptions in any given case.

Ex. An advertisement urges consumers to “support new wind generation” by buying a certain electricity product. The product includes electricity generated by a facility comprising a number of wind turbines which came on line within the past year. The use of the term “new” is not deceptive.

(d) Fuel Source Claims

It is deceptive to misrepresent, directly or by implication, the attributes of the fuel source from which an electricity product is derived, or its associated impacts on the environment. Claims about fuel source should be qualified to the extent necessary to avoid consumer deception about the types of fuel used in the process of generating electricity and the benefits to the environment associated with the use of certain fuels.

Ex. 1. A marketer claims its product is derived from hydropower and therefore produces “no harmful air emissions.” In fact, the water that makes the hydropower is first pumped uphill into a storage tank using electricity generated by coal and nuclear fuels. Later, the water is released downhill and runs through turbines to make electricity. The claim is deceptive. Claims should not be presented in a way that tends to obscure the true nature of the fuel, the relative amounts of fuels used to generate electricity, or the location where the fuel or the electricity originated.

Ex. 2. In a region where consumers use a total of 100 megawatt-hours of electricity, a supplier offers an electricity product characterized as a mix of 50 percent electricity from renewable resources and 50 percent power from system power, as shown by a pie chart in the supplier’s literature. The supplier possesses records which show that it owns enough renewable energy resources to generate 20 megawatt-hours. At the time it makes the claim, the supplier also possesses contracts with other renewable generators for 30 megawatt-hours. Between the “own generation” and the contracts, the supplier has an entitlement to 50 megawatt-hours of electricity from renewable resources, which is enough to satisfy reasonably anticipated consumer demand, and can actually provide that amount of power available to its customers. The claim is substantiated.

Ex. 3. A supplier advertises that electricity generated from biomass helps to solve the problems associated with overfull landfills in a particular state. The supplier does not own any landfills, has no entitlement to landfill fuels, and does not operate in a region where there are landfills in which matter is recovered for incineration. Instead, the company’s access to biomass fuels comes from agricultural waste from local farming operations, which would otherwise not be disposed of in a landfill. The claim is deceptive, because the biomass generation relied upon does not help to solve the problems associated with overfull landfills.

(e) Claims Regarding Generation Process, Transmission and Distribution

It is deceptive to misrepresent, directly or by implication, the attributes of the generation process by which electricity is made and the way it is transmitted and distributed. Claims should be qualified to the extent necessary to avoid consumer

deception about such matters as: the methods by which electricity is generated, transmitted and distributed; special types of technology and other processes used in generation, transmission and distribution; the location of the generation and the path of transmission from the generator to the customer; the nature of the power “pool” and “grid”; and the benefits or reduction in harm to the environment associated with the use of certain methods of generation, transmission or distribution.

Ex. 1. A company advertises the efficiencies of its combined-cycle natural gas burning power plants, claiming, “This process enables us to get more megawatts, with lower air emissions, from a cubic foot of gas than our competitors get from their old conventional generators.” The company possesses competent and reliable scientific data on the efficiency and emissions of its generation process and that of its competitors to substantiate the comparison. The claim is not deceptive.

Ex. 2. A wholesale company generates electricity made by burning coal. The company claims that its plants use selective catalytic reduction and a dry scrubbing system to control and reduce emissions that lead to smog and acid rain. The company is in the process of installing these new technologies and has completed the process in only a small fraction of its generation capacity. Since consumers are likely to infer that the technologies are already in place in all of the plants, the fact that they are not fully operational at the time of the claim makes the claim deceptive. Also, since the company claims that these new technologies control and reduce environmentally harmful emissions, it must possess, at the time of making the claim, competent and reliable evidence to demonstrate that there is a causal relationship between the use of the technology and the stated environmental benefit.

Ex. 3. A supplier places an ad throughout State A that claims, “Buy your power from us. We produce more hydropower than any other provider in State A.” The company does in fact produce the most hydropower in the state, but it has sold all of the generation from its generating facilities at a premium price to a wholesale broker in State B for the next 12 months. The company will meet the load of consumers in State A by purchasing electricity at a discount from other generators. Since the claim could be read by consumers to mean that the power from these facilities would be put into the grid for the purpose of serving customers in State A, it is deceptive.

Ex. 4. An advertisement describes an electricity product comprising hydropower as “from the river to your door,” implying that the power used by consumers of the product comes directly from the hydro generating source. The claim is deceptive, because it is impossible to track electricity directly from the generator to the user.

(f) Emissions Claims

It is deceptive to misrepresent, directly or by implication, the amounts or attributes of emissions that result from the generation of electricity. Emissions are defined as all discharges of matter or energy that have a significant negative impact on the environment. Claims about emissions should be quantified or qualified to the extent necessary to avoid consumer deception about such matters as: the types of emissions associated with specific generation; the amounts of emissions relative to environmental standards; the benefits or reduction in harm to the environment associated with the absence or reduction of various types of emissions; and the relevance of the emissions claims to the geographic

area in which the claims are made. Care should also be taken to ensure that consumer deception does not occur by the failure to disclose other emissions that have a significant negative impact on the environment. If a reference is made to a specific emission or emissions that have a certain negative impact on the environment, the reference should be accompanied by a clear and prominent explanation of all emissions associated with the product or company that is the subject of the claim that reduce or eliminate that environmental impact.

Comment. In addition to applying the basic principles of deception to claims relating to emissions, this section addresses the appropriate limits of disclosure when the low level or absence of one or more specific emissions, but not others, is referred to in a claim. In such a case, a determination must be made as to what negative environmental impact, if any, is claimed to be reduced or eliminated by the low level or absence of the stated emission(s). Specifically, if an express or implied claim is made regarding the favorable environmental impact of an emission or emissions, the claim should be accompanied by a clear and prominent disclosure of all other emissions that cause the same type of environmental impact.

Ex. 1. An advertisement in a magazine describes an electricity product as “Climate Friendly.” The claim is deceptive if the product’s energy sources emit any greenhouse gases in any of the four processes closest to power generation set forth in Section 2(h) (Scope of Claims).

Ex. 2. A gas generation company accurately claims that its electricity product produces “75% fewer acid rain producing pollutants” than a coal-burning plant. The claim is not deceptive, notwithstanding the lack of disclosure of the gas plant’s emissions of carbon dioxide (which do not produce acid rain).

Ex. 3. A nuclear energy trade association claims that “nuclear power has substantially lower greenhouse gas emissions than coal-fired electric generation.” Assuming the claim can be substantiated, it is not deceptive.

Ex. 4. Company B claims that its fossil-fuel based product is “good for the environment” because, the advertisement states, its use of new scrubbers will mean that “20% less SO₂” is released into the air. No other qualifications are made. The claims are likely to be deceptive. First, the marketer has failed to state the basis of the comparison, so that one can answer the question, “20 percent less than what?” Second, the “good for the environment” statement is a claim of general environmental benefit. Consumers might infer that there is little or no detrimental environmental impact associated with the generation of this electricity; but in fact a product derived exclusively from fossil fuels, even with a 20 percent reduction in SO₂, will still emit significant amounts of air pollutants.

Ex. 5. A generating company claims that its “low sulfur” coal results in “lower levels of SO₂ emissions than other types of coal.” In a particular state, consumers infer from this claim that the lower levels of SO₂ will impact favorably on air quality. However, in the case of some low-sulfur coal supplies, any benefit to air quality by these “lower” emissions may be reduced by increases in NO_x and CO₂ resulting from a lower heat rate and the consequent need to burn more coal to achieve the same energy output. If that were the case, the claim would be deceptive.

Ex. 6. Company D advertises an electricity product as “no SO₂,” referring to the absence of sulfur dioxide, an air pollutant which is commonly known to contribute to acid rain. However, the generating facility from which the advertised power is purchased emits significant amounts of nitrogen oxides, which also contribute to acid rain. The claim is deceptive.

Ex. 7. A marketer claims that its electricity generated by nuclear power is free of any water pollution. In fact, such generation results in the discharge of hot water, causing significant harm to the aquatic environment. The claim is deceptive.

Ex. 8. An unqualified claim is made that electricity generated by a new hydro facility is “emissions-free.” In fact, the consequent flooding of organic matter leads to the early release of significant amounts of greenhouse gases. The claim is deceptive.

(g) Environmental Certifications

It is deceptive to misrepresent, directly or indirectly, that the use of a “seal of approval” or third-party certification in connection with an electricity product or company indicates the superior environmental quality of the product or company. Such certifications should not be advertised unless they mean that the product or company is in fact environmentally superior in some substantial respect. In addition, to avoid consumer deception, such certifications should be accompanied by the name of the certifying organization, a brief statement of the criteria used to award them, and information sufficient to allow consumers to make further inquiry into the identities of financial sponsors of the certifying organization and any fees charged for certification. If a certification appears without adequate qualifying language, use of the certification should be treated as a general environmental benefit claim for the product or company with which it is associated. Finally, the certifier must have the expertise that it is representing that it has; any certification must be supported by an actual exercise of its expertise in evaluating product features or characteristics with respect to which it is expert; the certification must reflect the position of the certifying organization as a whole; and the certifier must be independent of the company or product to which its certification attaches.

Comment. “Green” certifications for electric power already exist and can be expected to flourish as consumer demand increases for short-hand ways of choosing among competing electricity products. Several possibilities are of concern: that some certifications will be based on attributes of little significance to the environment or will ignore other, more significant negative attributes; that consumers will be confused about the criteria used to award certifications; and that financial considerations may affect the certification process. To address these issues, the Guidelines consider environmental certifications to connote environmental superiority in some substantial respect. It is also recommended that certifications be accompanied by the name of the certifying organization, a summary of the criteria used to award them, and information—preferably a toll-free telephone number—to allow consumers to make further inquiry into the identities of financial sponsors of the certifying organization and any fees charged for certification; otherwise, a certification becomes a general environmental benefit claim, all of whose implied meanings must be substantiated. If in the future it becomes clear that such fees are high enough to pose a significant barrier to companies’ obtaining certifications which they would otherwise merit, further disclosure of the fee arrangements may be necessary. Moreover, in some jurisdictions,

certification grantors may have an independent duty to prevent the deceptive use of their certifications. Three of the four final requirements—relating to the certifier’s expertise, exercise of that expertise, and certification by the organization as a whole—are adapted from the Federal Trade Commission’s Guides on Endorsements and Testimonials in Advertising, 16 C.F.R. part 251. The last of the requirements—the certifier’s independence from the company or product it certifies—represents a logical inference from the use of such an endorsement.

Ex. 1. A New England supplier distributes promotional literature for its product. The literature displays an environmental seal in the form of a logo that is conferred upon electricity products meeting certain environmental criteria. The seal is accompanied by the words, “Approved by Greenseal, Inc. ... At Least 50% Renewable ... Contact 1-800-xxx-xxxx for details.” The sole criterion for awarding the Greenseal certification is that half of the product’s fuel mix is renewable. If the supplier can adequately substantiate the 50 percent renewability of its product, the claim is not deceptive.

Ex. 2. An electricity marketer advertises an energy product which contains 75 percent hydropower, 10 percent wind and 15 percent geothermal. Next to the product description is a smiling earth symbol and the words “Green-Earth Certified by the Eco-Project NW.” Absent a more detailed explanation of what “Green-Earth Certified” means and disclosure of how consumers can obtain more information about the certification, the appearance of the symbol is a general environmental benefit claim, and all meanings that consumers would take from the claim must be substantiated.

(h) Mandatory Labeling

Governmentally mandated “labels” for electricity products should, to the maximum extent possible, be in conformance with these Guidelines.

Comment. A number of efforts have been undertaken to design mandatory disclosures or “labels” stating the environmental characteristics (particularly, the fuel source and some emissions characteristics) of electricity products. These labels can contribute substantially to consumer understanding of the environmental attributes of the products on the market and inform consumer choice among those products. It is beyond the scope of these Guidelines to attempt to prescribe the form or content of such disclosures. However, it is strongly recommended that mandatory labels be consistent with these Guidelines and not have the unintended effect of misleading consumers. This goal can be furthered by including in any label a clear and prominent explanation of what information is being presented (for example, absolute and comparative levels of three specific air emissions) and what information is being omitted (all other emissions into air, land and water).

(i) Other Quantitative Claims

(1) “No x” or “x-free.” Where “x” is either a pollutant or a source of electric power, it is deceptive for a company to represent that it or its product uses, or causes the emission of, “no x” or that it is “x-free” unless it can substantiate that it or its product uses, or causes the emission of, absolutely no “x.” A company may qualify its claim of “no x” or “x-free” by clearly and prominently disclosing that it may occasionally use emergency back-up power which may consist of, or may cause the emission of, some “x,” provided

that the amount of emergency backup power is de minimis and no more than is necessary to compensate for the emergency shortfall.

(2) “Low x.” Where “x” is a pollutant or a source of electric power, it is deceptive for a company to represent that it or its product causes the emissions of a “low” amount of “x” unless (i) the company clearly and prominently discloses the standard against which “x” is measured; (ii) the level of “x” is substantially lower than the standard; and (iii) the low amount of “x” has a significant environmental benefit.

(3) “100% x” or “All x.” Where “x” is a source of electric power, it is deceptive for a company to represent that it or its product uses “100% x” or “all x” unless it can substantiate that it or its product uses absolutely nothing but “x” as the source of its power. A company may qualify its claim of “100% x” or “all x” by clearly and prominently disclosing that it may occasionally use emergency back-up power which consists of some source other than “x,” provided that the amount of emergency backup power is de minimis and no more than is necessary to compensate for the emergency shortfall.

(4) Specific percentage claims. Where “x” is a source of electric power, a claim that x represents “p%” (i.e., a specific percentage) of a company or product’s power mix should be viewed in light of its general context and purpose. If the claim as a whole promotes the benefit of having a small or reduced amount of “x,” then the claimant must be able to substantiate that “p%” is the maximum percentage of “x” in the company’s or product’s power mix. If the claim as a whole promotes the benefit of having a large or increased amount of “x,” then the claimant must be able to substantiate that “p%” is the minimum percentage of “x” in the company’s or product’s power mix. Without proper substantiation, these claims are deceptive.

Comment. Absolute claims like “no x,” “x-free,” “100% x” and “all x” should mean absolutely no or all x, subject to a de minimis tolerance in the event that emergency backup power is necessary due to unanticipated circumstances beyond the generator’s control. Such emergency backup power should be drawn from system power and be no more than is necessary to make up for the emergency shortfall. With respect to claims of “low x,” it is not feasible to draw a bright-line threshold because that term has a range of meanings for different people. Therefore, any claim of “low x” must be accompanied by a disclosure of the basis for the “low” comparison. In addition, the level of “x” must be substantially lower than the stated benchmark; and the low amount of “x” must have a significant environmental benefit. Apart from situations involving emergency back-up power, the Guideline does not permit tolerances from quantitative claims that favor the marketer, as subparagraph (4) makes clear. If there is some doubt about the ability to substantiate a particular quantitative claim, the marketer has the choice of not making the claim in the first place.

Ex. 1. A supplier advertises its electricity product as “no SO_x.” The supplier qualifies the claim by clearly and prominently disclosing that in an emergency, it may be forced to rely on a de minimis amount of back-up power that may emit SO_x. During the course of its annual averaging period, the product uses no more than a de minimis amount of emergency back-up power that may cause the release of SO_x. The claim is not deceptive.

Ex. 2. A supplier advertises its electricity product as “no fossil fuels.” The supplier also qualifies the claim by clearly and prominently disclosing that it occasionally may be compelled to rely on emergency backup power which may include fossil fuels. During the course of the relevant annual averaging period, the supplier uses no more than a de minimis amount of emergency back-up power which may include power generated from fossil fuels. The claim is not deceptive.

Ex. 3. A supplier advertises its electricity product as “low SO₂ compared to all other coal power plants in [the relevant region].” The company clearly and prominently discloses, and can substantiate, that the amount per kilowatt-hour of its SO₂ emissions is substantially less than the amount of SO₂ emissions per kilowatt-hour of the other coal generators in the relevant region. As long as this claim is environmentally significant, it is not deceptive.

Ex. 4. A supplier advertises that its electricity product consists of 15 percent wind power. During the course of the year, the actual percentage of wind power in the product’s power mix is 14.1 percent instead of 15 percent. From the context of the advertisement, it is clear that the supplier is promoting the environmental benefit of a high level of wind power. Because the actual percentage of wind power in the advertised product’s mix is less than the stated 15 percent, the claim is deceptive.

(j) Claims of Indirect Environmental Attributes

It is deceptive to misrepresent, directly or by implication, the nature of any attributes or environmental benefits that are indirectly associated with an electricity product or company. Claims should be qualified to the extent necessary to avoid consumer deception about indirect environmental benefits, including mitigation or abatement; financial or other support for businesses, organizations, causes, education, or research which benefits the environment; and benefits associated with any other programs or activities. If a claim states or implies a specific benefit, proper qualification requires clear and prominent disclosure of the magnitude of that benefit relative to any negative environmental impact caused by the product or company being advertised that reduces or eliminates that specific benefit.

Comment. Where indirect environmental benefit claims state or imply a specific benefit, the marketer must clearly and prominently disclose any environmental impacts by the product or company that is the subject of the claim which reduce or eliminate the particular benefit at issue. This is consistent with the Guidelines governing qualifications and disclosures and emissions claims.

Ex. 1. Company A advertises the fact that it plants a tree for every 5,000 kilowatt-hours used by all of its residential customers. The company’s advertisement claims this helps to minimize the impact of greenhouse gases that are emitted as a result of generating electricity from its power plants. To substantiate its claim, the company possesses numerous articles from scientific journals which prove that trees absorb greenhouse gases from the air. The company estimates that its average customer will consume 5,000 kilowatt-hours in one year and reasonably anticipates a customer base for the advertised product of 10,000. However, 10,000 trees will have no discernible effect on greenhouse gases; moreover, the electricity generated by the company results in emissions that more than offset any beneficial effect of the trees on greenhouse gases. The claim is deceptive. On the other hand, the claim would

not be deceptive if it were limited to the accurate statement that Company A plants a tree for every 5,000 kilowatt-hours used by its residential customers, provided that the context of the claim created no other inferences that could not be substantiated.

Ex. 2. A marketer makes a claim that it is committed to reducing air pollution in State Z. It claims to have given a half million dollars to the Z State University to conduct research on new fuel and engine technologies to replace diesel burning engines. The donation is documented and is substantiated. However, 80 percent of the marketer's contracts for electricity are with antiquated oil burning plants that emit significant pollution into Z's environment. Unless the impact of the oil burning plants on air pollution in State Z is clearly and prominently disclosed, the claim is deceptive. The claim would not be deceptive if it were limited to an accurate statement of the marketer's donation to the university, provided that the context of the claim created no other inferences that could not be substantiated.

Ex. 3. A company runs an advertisement stating only that it contributed \$100,000 to a specific environmental organization last year. Assuming the contribution can be substantiated, the claim is not deceptive.

5. Definitions

(a) "Auditable contract path" refers to a system of tracking environmental attributes of electricity generation in which the contracts of a retail provider of electricity to purchase electricity from power marketers or generation companies can be audited.

(b) "Clear and prominent" means that the representation in question is both (i) readily understandable, in the sense that it is expressed in such common words, phrases or expressions, or in such symbolic or graphic form, as to be understood without difficulty by its audience, and (ii) of such size, contrast, color and placement as to be readily noticed and read by its audience.

(c) "Company," "marketer" and "supplier" all refer to companies that market or sell electricity to retail end-users.

(d) "Competent and reliable evidence," for technical marketing claims, means tests, analyses, research, studies or other evidence based on the expertise of professionals in the relevant area, conducted and evaluated in an objective manner by persons qualified to do so, using procedures generally accepted in the profession to yield accurate and reliable results.

(e) "Consumer" means a retail end-user of electricity, whether a business or an individual.

(f) "CO₂" (carbon dioxide) is a colorless, odorless gas that blocks heat radiating from the earth's surface from escaping the atmosphere. CO₂ contributes to global climate change or warming due to the "greenhouse effect." Electric generation facilities are a major source of CO₂ emissions.

(g) “Electricity product” means the electrical energy produced by a generating facility (or an on-site generator), or the attributes associated with that electrical energy, that a retail seller offers to sell or sells to consumers or businesses under terms and conditions specific to an offer or a tariff.

(h) “Emergency backup power” means undifferentiated system power which is needed to make up for shortfalls in electricity generation in situations which are unanticipated and beyond the control of the generator.

(i) “Emit” means to cause a significant release or discharge of matter or energy.

(j) “Environmental impact” means any impact on the physical environment (including human structures) or on living things.

(k) “NO_x” (nitrogen oxides) are compounds of nitrogen and oxygen that once in the air, may undergo a chemical transformation into nitrates and nitric acid. NO_x contributes to acid rain, ground-level ozone (photo-chemical smog), and excessive nutrients in lakes and coastal waters. Electric generation facilities that burn fossil fuel are a major source of NO_x emissions.

(l) “Significant” means not de minimis.

(m) “SO₂” (sulfur dioxide) is a heavy, colorless gas that once in the air may undergo a chemical transformation into sulfates and sulfuric acid, contributing to acid rain. Coal-burning generators facilities are the largest source of SO₂ emissions. SO₂ is one type of sulfur oxide (SO_x).

(n) “Tradable certificates” or “tagging” refers to a system of tracking environmental attributes of electricity generation in which the electricity, and the environmental attributes of the generating sources of the electricity, are distinct commodities and are sold or traded separately. Under such a system, a retail provider of electricity can buy electricity in one place and environmental attributes in another. The “tag” is the right to claim the attributes of the electricity.