



CLEAN ENERGY FOR A HEALTHY PLANET

2011



CRS

center for
resource
solutions

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Center for Resource Solutions was established as a nonprofit in 1997 in San Francisco to promote global renewable energy development with the knowledge that developing clean energy generation is the solution to many of our most pressing environmental issues.

Replacing conventional fossil fuels with clean energy can help eliminate many of the health effects on communities near mining operations and coal plants, but renewable energy has benefits that extend far beyond individual neighborhoods. Electricity generation from fossil fuels is the number-one source of greenhouse gases that contribute to climate change, more than all of our driving and flying combined. Renewable energy reduces harmful smog, toxic buildup in our air and water, and the impacts caused by coal mining and gas extraction, while providing a clean, unlimited source of electricity that we don't have to mine, buy, or import.

We fulfill our mission of promoting clean energy development by creating policy and market solutions to advance sustainable energy and climate-change-mitigation strategies. We do this through our market-leading Green-e programs and also by advocating for policies and market mechanisms that encourage clean energy and carbon emission reduction project development. CRS provides technical assistance to U.S. states and countries like China, India, and the Philippines that are looking to build clean energy infrastructures. We also engage in education and outreach through consumer programs such as Buy Clean Energy (www.buycleanenergy.org) and our annual Renewable Energy Markets conference

that attracts attendees from around the world, representing all facets of the global renewable energy community.

Many believe that moving our energy grid to renewable energy is something the government should be doing, but the reality is that clean energy has nowhere near the same level of financial and policy supports given to fossil fuels. In order to get more renewable energy built in the U.S. and abroad, we must provide a combination of strong advocacy that puts continuous pressure on lawmakers to make renewable energy a top priority, and market-based mechanisms like Green-e that increase demand in the private sector by creating confidence in clean energy purchases. Consumers and businesses know that when they buy Green-e certified clean energy from a utility or renewable energy seller, they're making a real difference.

Currently renewable energy is a small part of the U.S. electricity portfolio, but with improvements in technology and rapidly falling material costs, renewable energy is more competitive than ever. At CRS, we are often called upon to be an independent voice representing all the individuals and organizations that believe in the transformative effect of clean electricity on our economy, health, and energy security. We have always taken

this responsibility seriously because we believe strongly that building clean energy now is an immediate, all-hands-on-deck imperative.



Scaling Up Impact

During this decade, our primary goal at Center for Resource Solutions is to scale up our impact on clean energy development and adoption to create clear and measurable improvements in environmental quality and standards of living for North America and countries around the globe that are willing to invest in their clean energy future.

Our strategy moving forward is guided by two organizing themes. The first is scaling the impact of our successful Green-e certification programs. By 2011, Green-e Energy had facilitated commitments, by both individuals and organizations, to renewable energy purchases greater than the electricity needed to power all the households in New Jersey for an entire year. Green-e has proven to be an effective tool in accelerating the growth of renewable energy by providing consumer assurance, transparency, and oversight to the markets for renewable energy and carbon offsets. Our goal is to continue to develop these markets, building on the existing infrastructure we and our stakeholders have created: CRS's standard development, certification, verification, and stakeholder engagement processes, as well as new tools and strategies to reach new

sectors of the market. By 2020, we hope to achieve a tenfold increase in the amount of renewable energy certified by Green-e Energy, giving organizations certified through Green-e Marketplace even more renewable energy options. Over the next decade, Green-e Climate will continue scaling in order to provide the highest level of assurances for carbon offsets to an even larger number of households and organizations looking to mitigate their greenhouse gas emissions.

According to independent research by the branding firm BBMG, the Green-e logo is one of the most widely recognized independent environmental certification marks. To be most effective in leveraging the brand to attract new renewable energy users, CRS will invest in brand-building outreach, education, and marketing activities that allow future participants to more clearly demonstrate return on their renewable energy commitments.

The second part of our strategy is to expand our ongoing initiatives in education, partnerships, technical assistance, and policy guidance. All of these functions are necessary in order to maximize the impact of our influence on clean energy demand and market integrity. CRS is placing increasing focus on partnering with other

certification, industry, consumer advocacy, and environment groups globally to expand clean energy adoption and leverage our programs and reach. Our engagement with the burgeoning electric vehicle industry to promote renewable energy charging—including manufacturers, dealers, service providers and user groups—is a good example of how our targeted work can leverage growth in other industries to drive new renewable energy development. CRS will also expand our expert assistance and best practices outreach and communication to support renewable energy development and policy advancement in the U.S. and around the world.



A BRIEF HISTORY OF CRS

Center for Resource Solutions was founded in the mid-1990s when environmental leaders knew that the burgeoning renewable energy industry was at a crossroads.

An industry intimately tied to global economics, policy, technology and science, renewable energy had emerged onto the scene as a powerful product with seemingly boundless potential. But it was clear that the great commercial, environmental, and societal benefits of a thriving renewable industry could never be realized if left to compete independently in a fossil fuel-dominated marketplace. Renewable energy leaders knew they needed an expert body that could help steer policy, provide oversight and work collectively with stakeholders to facilitate its growth to maturity. In 1997, renewable energy expert Dr. Jan Hamrin founded Center for Resource Solutions (CRS) with ambitious goals to help lead the industry in the design and implementation of programs that increase the demand and use of renewable energy around the world.

In the late 1990s, as California and several northeastern states began to restructure

their electricity markets, many companies opted to market and sell renewable energy to the new consumer base. But there were no standards or definitions for renewable energy in place to ensure quality, and reliable and responsible renewable energy production and sales. CRS, in its growing role as a leader in the renewable energy marketplace, coordinated the communication between stakeholders to identify what the environmental, consumer protection, and renewable energy sector could do to address this problem. Out of this communication, the Green-e certification program was born. Green-e has since become one of CRS's most important and largest programs, and a powerful and influential tool for consumer and environmental protection in the North American renewable energy market. Soon after launching Green-e, and continuing through the present day, CRS developed an array of important domestic and international programs that work to further promote the development of renewable energy globally.



Shaping and Accelerating Clean Energy Markets

The policy activities of CRS have been instrumental in the development of landmark state, regional, and national renewable energy and climate legislation. With increasing action on climate change, we are at the forefront in integrating renewable energy and climate policy goals.

CRS worked closely with policymakers and regulators in the design and implementation of state and regional initiatives like the Regional Greenhouse Gas Initiative, the nation's first greenhouse gas emissions cap and trading scheme in the Northeast U.S.; the Western Climate Initiative, a collaboration of state and provincial jurisdictions in the Western U.S. and Canada focused on regional policy solutions to climate change; and the numerous state policies across the country requiring renewable electricity supply.

CRS works closely with the other entities providing functional support for renewable policies, including regional and state electricity and renewable energy certificate tracking systems, and federal and state agencies regulating the electricity sector. As an ongoing part of our policy work, we continually collaborate with other environmental policy organizations to provide research and guidance in the areas of renewable

energy and climate change. We also work with other voluntary standards to refine and strengthen programs that add credibility to voluntary and corporate climate and environmental action.

CRS's current policy focus is the acceleration of the renewable energy and carbon markets. We bring our expertise to bear in such areas as voluntary renewable electricity, the regulation of electricity imports, and state cap-and-trade policies including California's groundbreaking Global Warming Solutions Act (AB 32). CRS was instrumental in the adoption of the California emissions allowance set aside for the voluntary renewable energy market, allowing renewable energy generated and purchased voluntarily in California to reduce statewide greenhouse gas emissions beyond the minimums required by law.

CRS is actively involved in the continuing development and implementation of several state renewable energy policies, submitting comments and analyses on multiple occasions to California, Washington, and Oregon, on such issues as the use of renewable energy certificates for renewable portfolio standard compliance, the splitting of environmental attributes, and retroactive creation of renewable energy certificates. CRS also worked diligently with Washington state in response to numerous bills attempting to redefine

rules around utility fuel source disclosure in such a way as would enable double-counting of renewable energy sold to consumers and businesses.

CRS is also involved in renewable energy policy at the national level. We provided information to the U.S. Senate Committee on Energy and Natural Resources on design elements of a potential Clean Energy Standard. We also submitted comments to the U.S. Commodities Futures Trading Commission and Securities and Exchange Commission on the implementation of the Dodd-Frank Act as it pertains to environmental commodity markets in the U.S. We commented on proposed updates to the Federal Trade Commission's *Guides For The Use of Environmental Marketing Claims* (the "Green Guides"), which provide guidance on environmental claims that businesses can make when they want to portray their products as eco-friendly or environmentally sustainable, and how marketers can avoid misleading consumers. We also coauthored with the U.S. Department of Energy, U.S. Environmental Protection Agency, and World Resources Institute the *Guide to Purchasing Green Power*, an important resource offering broad guidance to organizations that are considering clean energy purchases.

Bringing Individuals and Business Investment Into the Clean Energy and Low-Carbon Economy



Green-e Energy

In 1996 the California energy market began an experiment in deregulation, giving residents the option to choose their power provider for the first time.

The value proposition was clear—if customers signed up for green power, new markets for renewable technologies could be opened, the case for clean energy would be made to a significantly expanded audience, and the private sector would acquire new incentives for investing in sustainable energy technologies.

But the new market held both peril and promise for the renewable energy industry—potential customers were naive about energy issues and could be misled by sellers operating without clear guidelines for marketing new green power products, and there was no way for consumers who signed up for green power to know whether they were actually getting it. An independent third-party program was needed that would track renewable energy sales to customers. CRS launched the Green-e Renewable Electricity Program in November 1997 on the assumption that if households and businesses were given the option to buy renewable energy, they

would—but only if they could be certain they were getting what they paid for. The Green-e logo provided for the first time a simple way for the public to identify renewable electricity options that had been certified under the highest standards. It still does. Three years after the program began, 16 Green-e certified products offered by 23 companies were available in four states. In 2010, over 700 facilities provided renewable energy to Green-e certified products. In 2011 the program certified nearly two-thirds of the voluntary renewable energy market, including nearly 98% of renewable energy certificate sales for a total of 33 million unique megawatt-hours of certified renewable energy transactions from over 300 different renewable energy suppliers across all 50 states and Canada. By 2011, over half a million households and 60,000 businesses purchased Green-e Energy certified renewable energy, and more than half of all the new wind capacity in the United States participated in the program.

The voluntary market for renewable energy will continue to be a primary driver for new generation, especially with threats to long-term state and Federal incentives. The impact of green pricing programs and renewable energy certificates on development will be even more important as we move through this decade.

Green-e Climate

In 2008, after several years of development and stakeholder consultations, CRS launched a Green-e program to certify carbon offsets sold to consumers in the retail market. Called Green-e Climate, this unique certification program serves a consumer protection role by ensuring the integrity and transparency of sales to individuals and businesses looking to reduce the environmental impact of their flying, driving, and other activities that can result in greenhouse gas emissions. At its launch at the Carbon Forum America conference in San Francisco in February 2008, it was hailed by some of the most important players in the international carbon market as providing a much-needed level of support to a market still in its infancy. “The Green-e Climate program is the first program to address retailer accountability for the voluntary market and fills an important niche for quality assurance,” said the Stockholm Environment Institute.

Green-e Climate remains the only certification program ensuring the quality of the underlying carbon reductions and accuracy and transparency along the entire chain of custody from the project to the retail consumer. By 2012, Green-e Climate was referenced in several other standards, including the market-leading LEED green

building standard, and certified over 200,000 metric tons a year from seven participants offering 16 different certified offset products from project types that included renewable energy and various types of methane capture.

Green-e Marketplace

Green-e Marketplace began as a natural extension of the increase in use of the Green-e brand among companies that wanted to communicate their use of renewable energy with their stakeholders and customers. The program developed guidelines that set purchase requirements for companies. In 2011, the program had 50 certified organizations, with over 80% percent of them using 100% renewable energy for their operations.

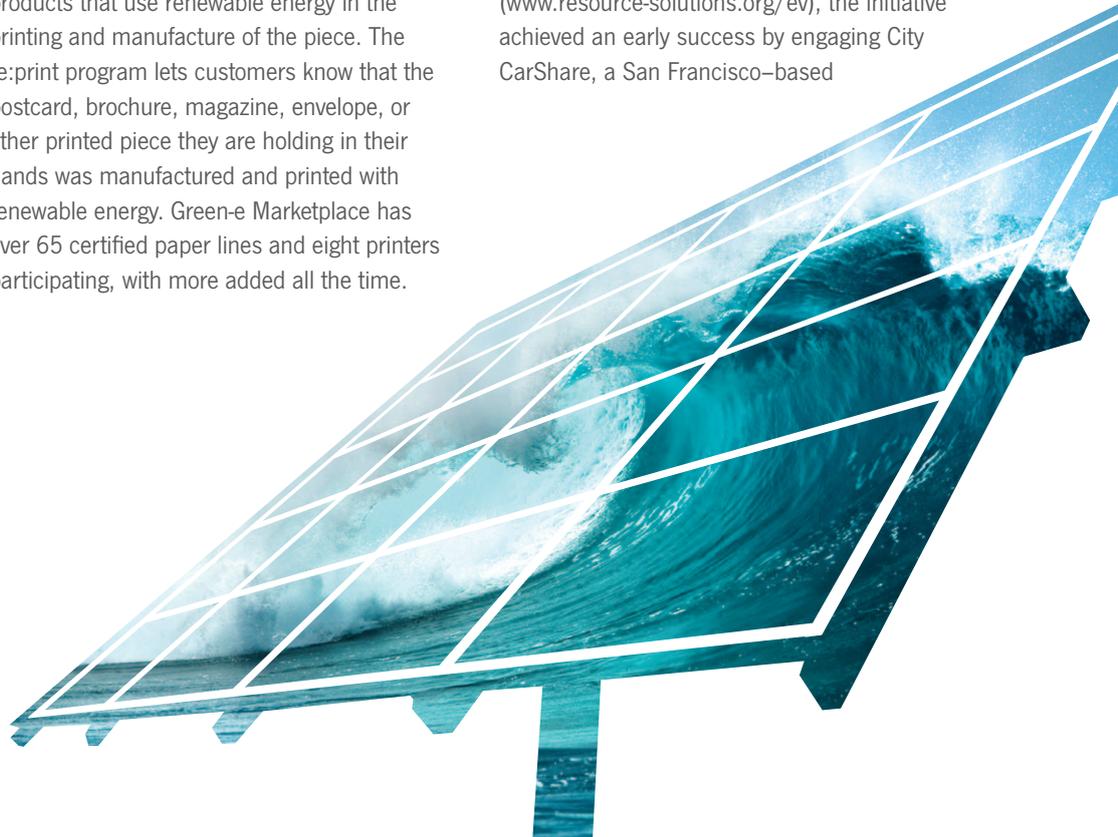
Green-e Marketplace certifies companies across a range of industries, from food to paper manufacturers to web services, and offers them a range of services to help them better find, use, and promote clean energy in their operations and facilities. In 2011, the Green-e logo appeared on over 500 products, from prepared food to paper and packaging to medical supplies. Because the Green-e logo is used on many different products on store shelves, it continues to be one of the most effective methods for educating consumers about the availability of renewable energy.

re:print

Paper manufacturing is extremely resource-intensive, requiring enormous amounts of water, energy, and forest products, and consumers have long asked for paper sourced from sustainably managed forests and postconsumer waste. Green-e Marketplace began a program in 2011 to grant logo usage to finished printed products that use renewable energy in the printing and manufacture of the piece. The re:print program lets customers know that the postcard, brochure, magazine, envelope, or other printed piece they are holding in their hands was manufactured and printed with renewable energy. Green-e Marketplace has over 65 certified paper lines and eight printers participating, with more added all the time.

Green EV

With growing awareness on the part of utilities and other electricity providers about the opportunities created by the fast-growing electric vehicle (EV) industry, CRS and Green-e Marketplace began an awareness campaign in 2011 to explore the nexus between renewable energy and electric vehicles. Called Green EV (www.resource-solutions.org/ev), the initiative achieved an early success by engaging City CarShare, a San Francisco-based



carsharing company that was one of the first in the country to power its new electric fleet with Green-e Certified renewable energy. Austin Energy also began providing 100% renewable energy from its Green-e Certified GreenChoice program for more than 100 plug-in electric vehicle (PEV) charging stations in the city of Austin. A panel discussion at the 2011 Renewable Energy Markets conference on this nexus discussed some of the ways renewable energy could be matched to the electricity used by electric vehicles, and the ways utilities are looking at EVs as distributed energy storage. CRS continues to expand its outreach to stakeholders in the EV industry, to ensure that as EVs enter the mainstream of our transportation sector they are truly zero-emission vehicles. Green-e Marketplace formalized the rules for certifying corporate and municipal EV fleets that use 100% renewable energy, making it possible to use the Green-e logo on vehicles for the first time.

Growing Green Power Markets Beyond North America

Over the last few years, Green-e has hosted delegations and provided guidance and education to parties from around the world, including project developers, government agencies, corporate renewable energy users,

and international environmental certification organizations. Our expertise has been sought on renewable energy market design, tracking systems, certification and program design, and clean energy policy implementation. As electricity-market maturity varies substantially throughout the world, there is a clear need for expert international guidance to support access to credible renewable energy purchasing and products and develop appropriate claims that can be made for purchasers.

Looking forward, CRS will provide guidance on best practices for international purchasing, selling, and marketing of high-quality and credible renewable energy and continue to support the development of renewable energy markets, policy, and voluntary action globally.



Learning From the Best in Class



Since the first Renewable Energy Markets conference in 1996 (then called the National Green Power Conference), this annual gathering of renewable energy stakeholders has set the agenda for the voluntary renewable energy market. CRS organizes this conference, which is co-sponsored by the U.S. Environmental Protection Agency. It remains the only conference of its kind in North America, and increasingly attracts international representatives looking to replicate the success of the U.S. voluntary market abroad. The conference serves as an indispensable annual “check-in” for participants in the voluntary market, and as a way to share best practices and lessons learned with the rest of the world.

One highlight of the conference every year is the Green Power Leadership Awards. Sponsored by CRS and the U.S. Environmental Protection Agency, these coveted awards are given out in three categories: the Purchasers Award, in which the EPA recognizes leading partner organizations that have helped further the green power market by making leading green power purchases and increasing awareness among stakeholders; the Suppliers Award, which recognizes exceptional achievement among



green power suppliers to end-use customers in supporting increased market deployment of renewable energy technologies; and the CRS Market Development Awards, which recognize individuals, companies, and other renewable energy industry leaders that have helped build the market for green power. Together, these awards represent an important way to honor environmental champions who serve as an example to the fast-growing industry.

In 2011, the 16th annual conference was held in San Francisco, California. It was highly successful, and included a new partnership with New

Energy Capital Summit, which held a pre-conference meeting attracting new participants from the renewable energy finance community. CRS also hosted an Executive Summit following the conference, which gathered industry thought leaders together to focus on strategic initiatives that will contribute to continued growth of renewable energy markets.

Expert Assistance

One role CRS has played since its founding is to share our experience and expertise with other organizations in the industry working on renewable energy development, with a focus on market-based and policy solutions. We are increasingly looking outside the U.S., to countries that have strong incentives to build renewables but don't have the same infrastructure the U.S. has for grid integration.

China Sustainable Energy Program

CRS has worked for a decade on renewable and clean energy policies through the China Sustainable Energy Program (CSEP), launched by the San Francisco-based Energy Foundation. CSEP engages with key Chinese policymakers and research institutions to develop and implement clean energy projects in China and provide expert guidance on policy development and international best practice. Since 1999, CRS and an international team of consultants have pursued a diverse array of renewable energy programs and activities, ranging from conducting technical analysis to offering policy support that has been crucial to renewable power development.

During 2011, CSEP work covered more than a dozen program areas, including renewable electricity integration, grid dispatch order, ancillary services, electricity storage, and renewable energy quotas.

Greenhouse Gas Management

CRS is part of a multi-disciplinary team assisting the U.S. Department of Defense (DoD) in evaluating the cost and greenhouse impacts of its global real estate portfolio. The DoD is the second-largest land owner in the world (after the government of China), and much of its building stock is aging.

As the DoD expands its office use, CRS is helping to provide the agency with a tool to determine the cost and carbon impacts under several scenarios: maintaining these older buildings as-is, retrofitting while complying with historic building rules and applicable facility standards, or demolishing the existing building and replacing it with a new energy-efficient one. CRS's role on the team is to provide the carbon footprint analysis for the project. CRS investigates and includes the supply chain effects of construction materials as well as the energy use and carbon impacts of the building scenarios over a 30-year period. The team's work includes specific analysis of buildings at three major U.S. bases.

Regional Policy Assistance

CRS is frequently called on to assist state agencies in developing and implementing clean energy policies. In 2011, CRS began supporting the California Energy Commission to track the status of renewable portfolio procurements for electricity service providers in California that are required to source a third of their electricity from renewable resources by 2020. CRS also assisted the State of Oregon in verifying the eligibility of specific renewable energy certificates for compliance with the state's renewable energy goals. CRS hosted several international delegations, including groups from the Philippines, India, and Italy, and provided educational resources on renewable energy markets and voluntary mechanisms to support international growth.



Communications and Education

As awareness of the importance and benefits of clean energy grows, there are new opportunities to educate communities that are considering adopting it for themselves, often for the first time.

At CRS, we recognize that with the complexity of the energy sector and options for buying renewable energy, it can be confusing to understand them all, and often the transition to clean energy in a community or organization is pushed forward by a single voice—one person who must articulate its value to the group. That's why we have always invested resources in communication and education. By translating complex topics into accessible language, and providing resources in a variety of formats, it is always our goal to help inform every conversation about the hows, whys, and wheres of renewable energy.

Our communication strategy uses social media, including daily posts on Facebook and Twitter; frequent webinars on renewable energy, carbon offsets, CRS programs, and the market that are then posted to Vimeo and YouTube for anyone to watch free; and traditional press releases that are sent to our extensive opt-in lists and a number of wire services.

Buy Clean Energy

Since we launched the program to coincide with the 40th anniversary of Earth Day in 2010, Buy Clean Energy (www.buycleanenergy.org) has remained a unique resource in the renewable energy space. It provides a simple, easy-to-use website that lets visitors learn basic facts about renewable energy and a zipcode-lookup tool to help users find options available to them, including Green-e certified green power programs. The site also offers a unique “buy now” button that lets users buy national wind renewable energy certificates from a choice of vendors. At the end of 2011, the program was responsible for over 604,000 kilowatt-hours of new renewable purchases. It remains a one-of-a-kind, consumer-focused resource that is the place to begin for those who want to switch to clean energy.

Community

CRS began as a networking organization, acting as a catalyst for the development of new programs and the implementation of new policies in the renewable energy sector, chiefly by bringing together different sets of stakeholders to work together on common issues. By providing a forum and leadership that allows interested parties to coalesce around an issue and find successful solutions, we knew we could help move the industry forward.

The results from the past decade are astonishing, as renewable energy generation has achieved exponential year-over-year growth and become an integral part of the national conversation. CRS's flagship program, Green-e, continues to certify the vast majority of the voluntary renewable energy market, while we also participate in policymaking activities at the state and regional level, effectively connecting the dots between individuals, businesses, policy-makers, and market participants.

Since early 2011, CRS has participated in the development of the World Resources Institute's (WRI's) Green Power Accounting Guidelines, as a part of its GHG Protocol Initiative. The Guidelines are intended to harmonize green-

house gas accounting practices for renewable energy instruments and purchasing worldwide, and will supplement WRI's existing Corporate Accounting and Reporting Standard.

CRS also consulted with the U.S. Green Building Council on their update to the Leadership in Energy and Environmental Design (LEED) green building standard's Green Power credit. This credit gives developers points toward LEED certification for purchasing renewable energy for the building's electricity use. The update includes recognizing green power for up to 100% of electricity use for a minimum of five years for some LEED standards. This could result in an increase of more than 600% for green power use in a LEED-certified building, resulting in greater and longer-term support of renewable electricity generation, and even more CO₂ and other pollution being avoided, since that amount won't be drawn from traditional sources of electricity.

CRS engages with and participates in many multi-stakeholder processes with other environmental NGOs, business groups, and policy-oriented forums in the U.S. and abroad to provide education and information, and help guide outcomes to support the transformation to a clean energy economy.



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