

**Big Solar Project**  
**A Proposal From**  
**Center for Energy Efficiency and Renewable Technologies (CEERT)**

**February 26, 2008**

**I. Project Background**

As the Nobel Prize-winning U.N. Intergovernmental Panel on Climate Change recently reported, global warming is "unequivocal" and carbon dioxide already in the atmosphere commits the world to an average rise in sea levels of up to 4.6 feet, imperiling islands, coastlines and a fifth to two-thirds of the world's species.

In tune with this international scientific consensus, across the United States there has been a rapid and decisive shift in public attitudes towards climate change. While the federal government lags behind, state governments have leaped into action passing major climate legislation and entering into regional agreements to join together in the fight to reduce climate change emissions. As a result the United States is about to unleash a surge of ingenuity and investment to tackle the most daunting challenge ever faced by mankind. With this comes an almost limitless opportunity, the outcome of which may be determined by the actions we take or fail to take as a society today.

Development of California's vast solar resources presents the most significant opportunity for abating climate emissions in time to achieve California's 2020 climate targets adopted in AB32 and pending before several other Western state governments. There is nowhere else on the globe which pairs a solar resource of the highest quality and expanding electricity demand in such close proximity. The electricity demands of cities like Las Vegas, Phoenix and Los Angeles are expected to grow rapidly in the coming years. Developing solar resources across the Southwestern deserts holds the potential to meet all peaking demands for these cities.

More than 20 years ago California was one of the prime incubators of CSP technology. Over 300 megawatts of capacity remain in operation from that first generation of Big Solar projects. However, America's support for renewables dropped with the oil price bust in the late 80's and 90's, and it was left to countries more dependent on oil imports than us, like Germany and Spain, to adopt and nurture this promising technology.

Today many of the same companies and individuals that worked on the first generation of solar plants in California are experiencing a rebirth. Large multi-national energy and engineering corporations have moved in and bought up once small solar developers. Major investment capital is poised to flow into some of the poorest and most underdeveloped regions of California. At the same time an environmental conflict is visible on the horizon between Big Solar visionaries and generations of conservationists who have fought to preserve open space and important endangered species across the Mohave Desert.

The immense potential of our virtually untapped solar resource, the critical need to build terawatts of clean and renewable generation to meet our renewables and climate goals, and the potentially extreme consequences of failure to take action lead us to call this project Big Solar.

## **BIG SOLAR PROJECT**

We believe CEERT has the right balance of policy expertise and stakeholder credibility to contribute to the rapid and responsible expansion of this promising technology. Our coalition includes some of the most capable builders of Big Solar across a variety of technologies including Abengoa Solar, Solar Millennium, FPLE Group, Brightsource, Schott, and Ausra as well as other established renewables companies seeking to expand into this nascent field including PPM Energy, enXco, and AES. At the same time we remain closely allied with key environmental groups who have led the effort to preserve the fragile environment of the southwestern deserts including Sierra Club, Environmental Defense, Natural Resources Defense Council, and others.

## **PROJECT GOALS**

CEERT proposes the following goals to assist in the rapid solar expansion:

**1. Environmental Outreach, Education and Coalition Building** – CEERT will convene and help educate a strong coalition of environmental groups and individuals active in the desert to expedite acceptance and rapid growth of central station solar power in the desert regions of California and surrounding states.

**2. Media Outreach** – CEERT will work to encourage expanded coverage of the benefits of Big Solar technology and industry by local media outlets. Using our reputation for public interest work in behalf of clean power and the environment, we hope to help promote better understanding of the benefits of Big Solar electricity generation and expand its base of support.

**3. RETI Coordination** – CEERT will coordinate engagement from both Big Solar companies and environmental coalition representatives in the Renewable Energy Transmission Initiative (RETI) to ensure timely construction of renewable trunk lines to connect the solar generation resource zones to our urban load centers.

**4. Western Regional Cooperation** – With the anticipated expansion of RETI from a California only effort into other Western States, CEERT will coordinate Big Solar planning efforts with regional allies including Interwest Energy Alliance, Western Resource Advocates and Renewable Northwest Project.

**5. Big Solar Pricing and Procurement Policies** – CEERT will help develop and advocate breakout pricing mechanisms that properly value and encourage rapid development of large scale solar power generation. This will be accompanied by

procurement policy development and implementation which may include RPS enhancements and modifications and a focus on developing renewable energy zones.

**6. Expanding the Renewables Stakeholder Alliance** - The mutual benefits from rapid and significant development of solar power in desert regions presents an opportunity to more closely align the interests of rural and remote citizens with urban electricity consumers. As many of these rural districts have leaders who have been among the most skeptical toward the benefits of renewable energy investment, we believe Big Solar will present opportunities to leverage this economic cooperation to expand the base of support for complimentary renewable energy policies.

**7. Partner Support** – CEERT’s established partnerships with leading environmental groups like NRDC and Sierra Club allow environmental concerns to be closely considered in all solar development and transmission infrastructure plans. However, energy siting issues are largely a new area for many of the organizational staff working on this project. For these organizations to advocate their positions effectively they will need to build new capacity. CEERT plans to provide sub-grants to Sierra Club and NRDC which will allow them to hire new staff specifically assigned to work on Big Solar.

**8. "Voz de Solar"**– CEERT will strengthen and build upon its existing ties to local community advocates and organizations to conduct outreach and education activities in the low income and Spanish speaking communities of Southern California and the Southwest, areas of rapidly growing influence in energy policy matters. As the majority of the high quality solar resource follows the US Southern border with Mexico, and the environmental and public health burdens of fossil generation fall disproportionately on lower income urban ethnic neighborhoods, building knowledge and support for solar within the growing Latino community will greatly strengthen efforts for expanding Big Solar opportunities.

## II. Project Work Plan

### 1. Outreach and Coalition Building

CEERT’s unique coalition of clean energy companies and leading environmental and public interest groups, and our experience and reputation for applying public trust values to renewables development, well positions us to convene an approach to desert environmentalists in behalf of a scale of development they have long guarded against.

While the benefits from renewable energy policies are widely recognized and accepted by environmentalists, wilderness conservationists have had a much more difficult time supporting such projects which impact their specific interests. Our recent experience in developing guidelines for project specific wind development has expanded CEERT’s understanding and credibility in working through these difficult issues. Based in part on that experience, the CEERT team of scientific, environmental, transmission and policy experts has already initiated a series of education meetings exploring Big Solar issues

with desert environmental groups. At the same time CEERT, working with other local environmental groups has approached Los Angeles Department of Water and Power to address the environmental concerns of desert activists in expanding transmission access to renewables. As a community of businesses and organizations has coalesced around support for big solar we expect other solar advocacy groups may become engaged on the Big Solar project. We plan to work with any groups willing to support this work.

Specific tasks for coalition building will include:

- a. Convene regular meetings to educate and coordinate with desert environmental advocates on developments in the expansion of solar in California.
- b. Developing and maintaining web material including maps and technology data allowing environmental advocates to easily access information about solar development.
- c. Through a committee formed with Sierra Club and Coalition for Clean Air, CEERT will continue outreach and organizing with the broader LA environmental community to develop environmentally preferable routes for the Owens-Rinaldi and Green Path North transmission projects.
- d. Provide email and as necessary phone updates to coalition members and coordinating activity updates. CEERT will develop and maintain a website and list of interested parties for a related decision calendar.
- e. As action items develop, CEERT will initiate alerts to the interested parties for specific actions and advocacy.
- f. Provide technical and scientific support to environmental groups working on solar power siting and planning in the desert.
- g. Provide a spokesperson and communications coordinator for disseminating information and response to community concerns (see staffing Section III).

## **2. Media Outreach**

Growing awareness of the emergence of Big Solar as a new resource available for reducing climate emissions has created both concern about their potential impacts and a thirst for information about their potential benefits. It is imperative to its success that the story of Big Solar technology is made as transparent as possible from the earliest stages in its development. Recent news coverage has to the contrary been based on press releases reporting isolated utility contracts signed for embryonic projects with few details on identified sites, technologies, local impacts, or environmental or economic context. This has helped to raise fears of a Big Solar gold rush while generating nothing more than a surge of unanswered questions.

We strongly believe that to build the necessary public support for the scale of development that will be needed to meet our ambitious climate and renewable energy targets the public must be told the full story in a way which builds confidence in the integrity of the methods being followed and the likelihood of achieving the desired outcomes. CEERT proposes to be a clearinghouse for information and a place for people and media representatives to go for the answers they seek about Big Solar.

Specific action items for this goal include:

- a. Building on existing relationships with print and radio reporters CEERT will provide staff to educate reporters and expand their knowledge of the full story of the Big Solar opportunity, its development in Spain and elsewhere, its place in the context of the other relevant renewable energy and efficiency actions and strategies underway, and the scale and vision of development needed to meet future electricity demand in California and the West.
- b. Develop and maintain a website dedicated to the Big Solar project as a resource for the media and other interested parties, with links to relevant generating projects, and environmental, government and NGO resources.
- c. Develop promotional materials, potentially including a DVD and power point presentations, which would be used as educational tools for media representatives and others. (The extent of the video materials developed would be dependent upon funding being available separate from the core budget of this proposal.)

### **3. RETI Coordination**

The Renewable Energy Transmission Initiative (RETI) is an effort supported by the California Energy Commission (CEC) and implemented by CEERT to convene a stakeholder planning process for meeting high voltage transmission needs from California's significant renewable resource regions to its mostly-urban load serving entities. Under our recently concluded arrangement with CEC CEERT helped ensure the construction by Southern California Edison of the needed transmission lines from the Tehachapi wind resource region to SCE's retail power distribution grid. Future transmission needs point largely to the desert solar resources under review for Big Solar generation.

The unique role of the RETI process coordinator has evolved from the policy need to identify and link untapped resources with underserved markets for renewable generation. Stakeholder representatives are active participants in their respective fields and organizations and are not necessarily committed by those roles to collaboratively achieve RETI goals. CEERT has experience, both from its prior renewables transmission planning and wind guidelines development processes, in ensuring there is a constant and free flow of information on the project and continuous engagement from all stakeholder groups. CEERT's central function in strengthening this partnership within the diverse voices of the larger steering committee will help ensure that consideration of critical transmission capacity planning needs are fully integrated with Big Solar development timetables.

Specific steps to be taken to maintain RETI coordination with Big Solar include:

- a. Maintaining an updated email list of engaged representatives from the Big Solar and environmental communities.
- b. Sending regular email updates of RETI activities and other action related to Big Solar development.

- c. Coordinate RETI activities with the newly formed Concentrated Solar Power Association (CSPA).
- d. Utilizing CEERT's two RETI coordinators, Rich Ferguson and Dave Olsen, as technical experts on transmission issues and to communicate with developers, local planners, policy makers, and environmental activists on the needs and status of Big Solar transmission planning.
- e. Conduct phone correspondence with individual representatives and host group conference calls to maintain engagement from all groups including government agencies on the progress of Big Solar transmission development.
- f. Collection and assessment of land use, electricity infrastructure and solar resource data to facilitate decision making.
- g. Feed information from the RETI process into the coalition building and media outreach tasks identified above.

#### 4. Regional Cooperation

The Big Solar resource opportunity extends beyond California's desert regions into neighboring states of the US Southwest and even northern Mexico. Simultaneously the greatest growth in population and electricity demand is occurring in these same regions and during the peak times of Big Solar generation availability. CEERT believes the best existing forum for expanding the RETI process and Big Solar development is through the Western Governors Association (WGA). CEERT has existing strong communication ties with regional renewables advocates engaged in the WGA including Interwest Energy Alliance, Western Resource Advocates and Renewable Northwest Project. In expanding Big Solar development opportunities, close coordination with the WGA and our network of regional advocates will be essential assets to build upon.

Specific action items for this goal include:

- a. Organize regular conference calls and email updates among other renewable advocates around the West to ensure advocacy efforts are both effective and efficient as the process expands.
- b. CEERT consultant Dave Olsen will continue advocacy at WGA functions to engage other western states in the RETI effort.
- c. Hold meetings as needed outside of formal WGA and RETI processes to facilitate integration of a broader regional renewable planning effort.

#### 5. Big Solar Pricing and Procurement Policies

Like all renewable technologies, Big Solar must contend with the comparative disadvantage of electricity prices that do not properly value the environmental, public health, lack of fuel price volatility, or climate benefits of renewable technologies. At the same time those same costs imposed by fossil generation are not attached to the cost of that electricity. The new greenhouse gas cost adder being implemented at the California Public Utilities Commission (CPUC) will be an improvement, however it will not go nearly far enough to reflect the advantages of robust Big Solar development. CEERT strongly believes that some form of breakout pricing strategy need to be considered by

policymakers and rate setting bodies. In addition, some enhancements to the RPS, like a Big Solar set aside or renewable technology procurement mix, may prove worthy of consideration.

Specific action items for this goal include:

- a. Continue CEERT's policy research, development, and political strategy leadership for breakout pricing policies which capture the full system and climate benefits of Big Solar resources.
- b. Evaluate the need for complimentary procurement policies specifically for Big Solar technologies, including enhancements to the state RPS.
- c. Develop a consensus strategy among solar companies and advocates for support of these policies at all relevant venues including the CPUC, the CEC, and the California Air Resources Board's AB 32 implementation process.

## **6. Expanding the Renewables Stakeholder Alliance**

As seen in the model of biofuels in farm regions, the location of an energy resource creates opportunities for the benefits of renewable energy investment policies to be more widely distributed throughout the political universe. The anticipated Big Solar development presents a unique opportunity for underdeveloped desert rural regions to capitalize on one of their least captured assets: Radiant solar thermal energy. Planned and executed in an environmentally sensitive and orderly manner, development of that resource will result in increased land values, construction activity, employment, tax revenue, and other economic and lifestyle benefits to the region. Having local support for the large scale deployment of solar in these regions will be tremendously useful in our execution of all other aspects of this project. CEERT believes this also presents an opportunity to advance support for other compatible clean energy and efficiency programs into a wider and previously unsupportive territory.

Specific action items for this goal include:

- a. CEERT staff and consultants will set up meetings with local political leaders and outreach coalition members to build support for the Big Solar development process from the beginning.
- b. CEERT will look for opportunities to educate, develop relationships, and engage local leadership in discussions and proposals for broader energy efficiency and renewables investment policies both statewide and in their communities.

## **7. Partner Support**

CEERT's early efforts on this project have built close working relationships with Sierra Club and NRDC as leading environmental voices on the development of solar power in the Southern California desert. These are the two groups which have been selected to represent the environmental community in the RETI process and have had a strong historical presence on desert protection issues. At the same time, if development proceeds in an environmentally damaging manner, these groups will be the first to oppose new projects. The obvious solution is to provide these groups with the capacity and expertise

to identify the most environmentally preferable solar locations and give them the tools to navigate the regulatory landscape and advocate effectively for properly sited projects. Many of the staff currently working on these issues for these organizations come from land and species conservation backgrounds. In order to advocate effectively on energy related issues, these organizations will need to build new capacities. CEERT can help with the educational portion of this effort, but ultimately it will be up to the staff of each organization to implement their own advocacy strategy.

Specific action items for achieving this goal include:

- a. Provide sub-grants to NRDC, Sierra Club and other environmental groups to hire energy siting policy staff to support organizational efforts in the RETI process and related solar activities.
- b. Help these groups to identify and train new staff members on agency processes for energy siting and electricity regulation.
- c. Coordinate CEERT and solar industry advocacy in line with the concerns of these environmental groups.

## **8. "Voz de Solar"**

One of the greatest promises of Big Solar is the opportunities it will offer for development of in-state resources for the mutual benefit of rural and urban communities, while displacing reliance on out-of-state fossil electricity resources like natural gas and coal. This is the essence of CEERT's belief that renewable resources will help fuel the new energy economy of California.

While the climate benefits of Big Solar are global in nature, there are many specific local benefits also to be captured. The economic benefits to the rural and remote desert regions are the most apparent, and those regions are closest to our southern border with Mexico. There is also the related benefit to impacted urban low income neighborhoods that unfortunately are also the home for much existing and proposed natural gas generation. CEERT has had some success in providing technical assistance to local environmental justice leaders in opposition to siting additional gas generation near their communities. Increasingly, political leadership from these communities provides the decisive margin of success or failure for clean energy policies. CEERT believes that the benefits of Big Solar may not be widely recognized in those communities without continued efforts at public education and engagement of local community organizations.

Through the leadership of Jose Carmona, CEERT has built close ties to numerous environmental justice and Latino grassroots organizations across California. Beginning with those relationships CEERT proposes to build understanding and support for Big Solar technologies in both the resource regions and urban centers. With increased investment needed for Big Solar generation, one of the most contentious and potentially damaging issues will be the impact of increasing electricity prices on lower-income communities and communities of color. Our proposed "*Voz de Solar*" outreach will allow CEERT to provide information about solar to these communities and also regarding the negative public health impacts of alternatives such as gas and coal. Advancing this

dialogue can also inform our policy development efforts in designing programs that effectively address the financial and public health concerns of these communities.

Specific action items for achieving this goal include:

- a. Developing introductory educational materials describing Big Solar technologies and the opportunities they represent for the Latino community, including materials appropriate for use in Spanish language media.
- b. Through Jose Carmona, CEERT will implement an educational campaign and open a dialog with local organizations in roundtable meetings in Latino communities across the desert Southwest.
- c. By teaming with these local groups CEERT will build a network of grassroots support for Big Solar in the communities of influential present and future state leaders.

### **III. Project Financing**

We have an estimated annual budget for this project at \$750 thousand, not including supplemental consulting on BLM land use, publications, and transmission planning.

CEERT has received a grant from the Energy Foundation for a portion of this work and other contributions totaling \$350 thousand. We are currently seeking support for the unfunded portions.