



Abengoa Solar
BrightSource Energy
Infinia
Solel
Tessera Solar/Stirling
Energy

Amonix
First Solar
NextLight
SunPower

Ausra
FRV
NRG
Suntech

May 5, 2010

Dave Mehl, Manager
Energy Section
Air Resources Board
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Gary Collord
Energy Section
Air Resources Board
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RE: Comments on Draft Regulations and Associated Environmental and Economic Analyses

Dear Mr. Mehl and Mr. Collord:

The Large-scale Solar Association¹ (LSA) appreciates the opportunity submit the following comments on the Air Resources Board's (ARB) Draft Regulations and the associated environmental and economic analyses for these regulations. As developers and providers of utility scale solar energy generation resources, LSA's members seek to ensure that the renewable electricity standard (RES) developed by ARB will encourage increased development of renewable generation to serve California load. In addition, LSA's members believe that the RES must properly account for the environmental and economic benefits to California of the different compliance options. LSA is supportive of the 33% RES goal, in general; however, LSA is concerned that ARB has yet to answer certain fundamental compliance questions.

I. Overall Comments

LSA is primarily concerned about the draft regulation's failure to (1) define what types of contractual arrangements constitute bundled contracts (i.e., whether energy must be delivered to serve California load) and (2) decide to what extent tradable renewable energy credits (TREC's) will be permitted for compliance. Both of these decisions are critical to ascertaining whether the regulations meet their fundamental purpose of reducing the greenhouse gas emissions associated with the generation of

¹ LSA represents thirteen of the nation's largest developers and providers of utility-scale solar generating resources. Collectively, LSA's members have contracted with utilities in California and the West to provide more than 6 gigawatts ("GW") of clean, sustainable solar power. Our members develop, own and operate various types of utility-scale solar technologies, including photovoltaic and solar thermal system designs. LSA and its individual member companies are leaders in the renewable energy industry, advancing solar generation technologies and advocating competitive market structures that facilitate significant integration of renewable energy throughout the western United States. LSA actively represents the interests of utility-scale solar development in California, Arizona, and Nevada, and also works to shape regional and federal policies that affect solar market development.

electricity used to serve California² and to determining the environmental and economic benefits that will accrue to California from RES implementation. As such, LSA retains the right to comment further on the regulations and associated analyses after the RES's TREC and delivery parameters have been defined.

The TREC and delivery rules will dictate how the RES influences future energy development both within California and in surrounding states. LSA believes that limiting the use of TRECs and requiring that RES-eligible resources deliver energy to serve California load will ensure that the RES meets its goal of reducing emissions associated with energy serving the state and maximizes the associated benefits that will accrue to California.

The RES regulations are intended to help California reach the greenhouse gas (GHG) reduction goals set out in AB 32. To accomplish those goals, the RES must accomplish real, permanent, verifiable GHG emission reductions. Allowing load serving entities (LSEs) to comply with the standard by simply buying unbundled renewable energy credits (RECs) from existing out-of-state facilities or bundled RECs without delivery guarantees does not ensure that AB 32's emission reduction goals will be achieved. The intent behind these goals is to ensure actual change in the type of energy generation facilities serving California's load and establish a diverse portfolio of renewable generation. Therefore, ARB's regulations should account for the emissions associated electricity delivered to and consumed in California. In fact, AB 32 specifically defines statewide GHG emissions as including GHG emissions "from the generation of electricity *delivered to and consumed in California.*"³ While LSA believes that allowing a percentage of unbundled RECs or RECs without delivered electricity is appropriate for compliance flexibility, LSA recognizes that the RES's benefits to California depend on encouraging generation that serves California load and limits the use of RECs without delivered energy for RES compliance.

Although the recent Public Utilities Commission (PUC) decision on RECs (D.10-03-021) is currently in flux, LSA generally supports the approach taken by the PUC in its recent TREC decision for renewable portfolio standard compliance, limiting TRECs to a certain percentage of the renewable goals.⁴ However, in addition to the TREC limitations in the PUC decision, LSA supports permitting some limited category of firm transmission transactions in bundled transmission and modifying the Least Cost Best Fit (LCBF) methodology to account for integration costs, in-state delivery value and other relevant factors. With these modifications, LSA believes that LSEs will have sufficient compliance flexibility to meet renewable goals, while also ensuring that California ratepayers receive the majority of the environmental and economic benefits associated with this increased renewable generation.

The environmental and economic benefits experienced by California depend heavily on the increased development of renewables in the state, which, in turn, depends on the design of the RES compliance requirements (specifically the delivery and TREC limitations). Until these critical decisions are made, LSA believes that the environmental and economic analyses are premature and incomplete. LSA reserves the right to comment further on these analyses after such decisions have been made. LSA urges ARB to do a thorough analysis of the impacts of such decisions and to consult with the many other state and federal agencies working on renewable energy issues (including 20% RPS implementation, transmission, siting, scheduling, and integration)⁵ prior to finalizing the regulations and the associated analyses.

² See ARB's Questions and Answers for California Renewable Electricity Standard Preliminary Draft Regulation (March 11, 2010).

³ Health & Safety Code § 38505(m) (emphasis added).

⁴ Cal. Pub. Util. Comm'n Decision 10-03-021 (March 11, 2010).

⁵ Such agencies include, but are not limited to, the PUC, California Energy Commission, California ISO, Department of Fish and Game, Bureau of Land Management, and the Federal Energy Regulatory Commission.

II. Draft Regulations

LSA encourages ARB to focus the final regulations on energy that is delivered to and consumed by California. Buying attributes of out-of-state generation that is not delivered to California neither augments nor offsets the actual generation serving California. California will not receive air quality benefits from out-of-state renewable generation unless such energy is delivered to the state and replaces energy from high-emitting, in-state generation. As ARB is the agency charged with regulating California's air quality and the location of renewable generation will determine whether California receives air quality benefits from the RES, the implementing regulations should encourage renewable development that will provide in-state air quality benefits.

LSA believes that the central purpose of the regulations should be reducing GHG emissions "associated with the generation of electricity used to serve California"⁶ and regulating and managing the reduction of in-state criteria pollutants, in accordance with the purpose of ARB. LSA recommends that ARB revise the purpose of the regulations (§ 97000) to specify that the electricity targeted by the regulations is the electricity serving California. Further, to achieve this goal, the regulations must include limitations on the use of TRECs, particularly RECs from contractual arrangements which do not require the delivery of energy to serve California load. Below, LSA provides additional detail about the purpose of limiting TRECs and the benefits that such limits will provide to California.

The following items address specific questions posed by ARB in the draft regulations.

A. Tradable REC approach (draft regulations, p. 6)

LSA believes that allowing unlimited TRECs without delivery requirements could be less expensive in the short-term, but will not achieve the goal of shifting California generation toward renewables in the long term. While the effect of allowing unlimited, unbundled RECs for future renewable development in California is uncertain, this compliance mechanism could discourage LSEs from seeking bundled contracts, thereby undermining the ability of renewable developers to secure financing for new projects serving in-state load. Less in-state renewable generation reduces the air quality benefits to California and leaves California ratepayers with increased risk and price volatility in their energy supply. In addition, this uncertainty could discourage the development of transmission lines to access California's renewable resources. As LSA noted in its November 20, 2009 comment letter in this proceeding, "a high allowance of such REC-only contracts could also undermine efforts and momentum to construct transmission to access California's renewable resource areas for its own consumption, as well as for export throughout the West."

Regarding the availability and cost of RECs, LSA recognizes that allowing unlimited, unbundled RECs will result in an increased supply and lower prices of RECs in the short term, as LSEs could purchase RECs from any renewable resource located throughout the Western Electricity Coordinating Council (WECC) region.⁷ However, allowing unlimited, unbundled RECs could inhibit the growth of renewable generation in the region in the long term. Limited growth of renewable generation would result in fewer RECs being available in the future and higher prices across the market.

Unbundling RECs from renewable energy will provide California ratepayers with only part of the value of the renewable energy. Californians could still receive power from fossil-fuel fired plants and be subject to the price volatility associated with those fuels, while paying for RECs representing pollutant reductions occurring out of state. Although such a system could help reduce GHG emissions, it will

⁶ ARB's Questions and Answers: California Renewable Electricity Standard Preliminary Draft Regulation (March 11, 2010).

⁷ LSA is opposed to any REC scenario that would allow LSEs to purchase RECs from outside of the WECC region.

not provide the state with the many environmental and economic benefits associated with those emission reductions (e.g., reduced criteria pollutant emissions, reduced fossil fuel price volatility, job growth, increased project and personnel taxes, and a more reliable and diverse energy supply).

For these reasons, LSA asks ARB to limit the amount of unbundled RECs allowed for RES compliance and include requirements that RES-eligible generation be delivered to serve California load.

B. Large Hydropower as a RES-eligible resource (draft regulations, p. 6)

LSA is opposed to allowing large hydropower as a qualifying resource under the RES. Under the state's Renewable Portfolio Standard, only hydropower projects under 30 MW in size are eligible resources.⁸ LSA believes that it is inappropriate for ARB to second-guess the legislative determination of what types of energy resources constitute renewable resources. LSA urges ARB to retain the eligibility criteria for renewable resources defined in the Public Utilities Code to maintain consistency with the RPS. Although the draft regulations note that the proposed change would affect mostly large hydropower resources, it is unclear what other resources might be affected and how this reclassification might be used in the future. LSA believes that allowing LSEs to define what constitutes an eligible resource will set an unacceptable precedent of permitting the reclassification of energy resources without fully evaluating the environmental implications of such a decision.

C. Trading and Banking of RECs (draft regulations, p. 7)

LSA believes that any system which allows for trading must be designed carefully to avoid double-counting RECs. Assuming that ARB decides that trading and banking is appropriate, LSA supports a limited banking period, like the three year period proposed in ARB's draft regulations, to ensure that the REC market remains robust and that there will continue to be a market force driving the development of new renewables in the future.

Finally, LSA has a few specific comments on items needing additional clarification in the draft regulations.

- First, the draft regulations provide separate definitions for RECs and WREGIS certificates (§§ 97002(a)(13) and (a)(22)), however these definitions appear to be the same. Please clarify the distinction between RECs and WREGIS certificates under the regulations.
- Second, the draft regulations do not clearly define how a LSE's compliance obligation is calculated (§ 97003), but rather only provide REC percentages. LSA believes that the intent is to compute the REC obligation as a percentage of the delivered energy (in MWh) by each LSE (as alluded to in § 97001(b)(2)) and asks that the regulations state this explicitly.⁹
- Third, the regulations do not describe the factors that will be considered for determining whether a new facility is an eligible resource under the RES program. LSA requests that the regulations provide some guidance on how ARB will determine whether a particular resource is eligible for the RES program.

III. CEQA Functionally Equivalent Document

ARB is authorized to prepare functionally equivalent documents (FEDs) under CEQA only for regulatory actions involving "the adoption, approval, amendment, or repeal of standards, rules,

⁸ Public Utilities Code § 399.12(c)(1)(A); see also Public Resources Code § 25741(b).

⁹ To the extent that ARB has not yet decided whether the REC compliance obligation should be based on sales or load served, LSA refers ARB to its November 20, 2009 comment letter discussing the importance of using retail sales as the metric for measuring RES compliance.

regulations, or plans to be used in the regulatory program for the protection and enhancement of ambient air quality in California.¹⁰

LSA's primary substantive concern regarding ARB's FED is that preparation of the document is premature until the fundamental delivery and TREC decisions are made. ARB intends to have the FED completed in late May. LSA is concerned that the current timeline is not sufficient to allow for final regulations to be fully analyzed, the environmental impacts to be identified, and proper mitigation and alternatives to address any significant impacts identified to be developed.¹¹ To date, ARB has focused only on GHG and criteria pollutant emissions, but has not considered how the delivery and REC limitations (or lack thereof) could affect both the magnitude and the location of these emission changes.

For instance, if ARB decides to permit unlimited TRECs for RES compliance, the regulation could encourage the development of less expensive, out-of-state renewable generation facilities. Moreover, siting renewable generation in California is difficult and expensive. Without some incentive to site plants locally, California's energy mix might not actually change at all, but California ratepayers could be asked to pay additional money for TRECs generated in other states. Out-of-state TRECs do not provide California with the same environmental (air quality) and economic (development and energy reliability) benefits that would be expected from new, in-state renewable generation. ARB must account for the RES's TREC and delivery rules when evaluating regional and local air quality impacts.

In addition, ARB has yet to discuss any of the other environmental impacts that could result from the RES. LSA wants to ensure that ARB uses a consistent scope for the impact evaluation. To the extent that ARB accounts for GHG emission reductions WECC-wide, ARB should also evaluate the RES's environmental impacts on a WECC-wide scale. In deciding how to craft the RES, ARB should consider how different approaches affect the location where the benefits of the RES accrue. As noted previously, permitting out-of-state generation that does not serve California load to count towards RES compliance will limit the environmental and economic benefits to California ratepayers.

Finally, LSA notes that ARB should avoid recommending specific mitigation approaches or ratios for land-use impacts. For mitigation, the on-the-ground impacts of the regulation are highly uncertain, as it is difficult to predict precisely where renewable generation projects will be located. LSA has been working with land use and resource agencies to understand the potential impacts of renewable generation and to develop siting guidelines and mitigation protocols. LSA believes that it is premature for ARB to endorse any particular mitigation approach prior to the determinations of the land-use agencies. LSA encourages ARB to take into account the work done to-date in the Desert Renewable Energy Conservation Plan and Solar Programmatic Environmental Impact Statement in its discussion of potential land use impacts and appropriate mitigation measures. The work of these processes is not scheduled to be complete for several years, and LSA cautions the ARB against prejudging the results of either process in its FED.

IV. Environmental Analysis

Similarly, ARB's environmental analysis of the RES regulations is premature until decisions on TRECs and delivery are made. As ARB acknowledges in its environmental presentation, the agency is required under AB 32 to consider the economic benefits of the RES. The RES's economic effects will depend heavily on ARB's decisions regarding TRECs and delivery. California will experience the greatest economic benefits from a RES that encourages long term investment in new renewable

¹⁰ 14 Cal. Code of Regs. § 15251(d).

¹¹ 14 Cal. Code of Regs. § 15252(a)(2)(A).

facilities delivering energy to California. New in-state renewable generation facilities provide construction jobs in the short term, operations jobs over the long term, and ensure the energy mix within California is diverse, thereby insulating ratepayers from volatile fossil fuel prices.¹² According to the Center for Energy Efficiency and Renewable Technologies 2009 Report, *Harvesting California's Renewable Energy Resources: A Green Jobs Business Plan*,¹³ renewable energy investments generate four to six times as many jobs as fossil fuels per megawatt of installed capacity. Along these lines, LSA requests that ARB explain how its analysis determines which existing resources will stay in California's electricity mix and that ARB consider the differences in the resulting electricity mix based on different TREC and delivery rules in the RES.

The criteria pollutant emission reductions resulting from the RES also depend on the TREC and delivery rules. ARB's current estimates of criteria pollutant emission reductions are based on a RES that does not permit out-of-state TRECs from facilities whose energy is not delivered to California. Since such TRECs would be used to purchase only the renewable attributes of power, the TRECs would not provide the same avoided emissions benefits to California, as LSEs could comply with the RES without changing their actual electricity mix at all. Instead, the power from out-of-state renewable facilities could serve out-of-state load and provide air quality benefits to those states, as opposed to California. Limiting this type of TREC would lead to more renewable facilities that deliver power to California and, in turn, provide broader environmental benefits to the state by displacing in-state fossil-fuel generation and reducing the associated criteria pollutant emissions. ARB must evaluate the emission reductions that will accrue to California under the RES regulations in their final form.

Finally, LSA also wants to ensure that ARB evaluates the other environmental impacts of the RES from the baseline set by the current RPS, as ARB has done for the air emissions. To properly account for the effect of a 33% RES, ARB's environmental analysis must evaluate the mix of energy development that would occur to meet the current renewable portfolio standard, requiring 20% renewables by 2020. The environmental impacts of the 33% RES are the incremental difference between the projected impacts resulting from the RPS and those resulting from meeting the 33% RES standard.¹⁴

V. Economic Analysis

Without knowing the delivery and TREC parameters of the regulation, LSA lacks the information necessary to fully comment on the economic analysis. E3's April 5, 2010 economic presentation indicates that the RES calculator used to determine the economic impacts of the RES will be modified to account for various REC scenarios without defining which REC scenarios will be evaluated. Moreover, the current delivery assumptions in the model are unclear. The current model runs assume that all RECs are bundled,¹⁵ but the model fails to indicate what types of contractual arrangements will provide bundled RECs and how delivery is defined. ARB must make a determination about what constitutes a bundled contract in the regulations and ensure that the

¹² See Commission for Environmental Cooperation, *Renewable Energy as a Hedge Against Fuel Price Fluctuation: How to Capture the Benefits* (Sept. 2008), available at http://www.cec.org/Storage/62/5461_QA06.11-RE%20Hedge_en.pdf.

¹³ Report available at http://www.ceert.org/PDFs/reports/Harvesting_California_Renewable_Energy_Resources_II.pdf.

¹⁴ For instance, for the development of new fossil-fuel fired generation to serve 2020 load under the 20% RPS scenario, ARB should account for both the impacts of new generation facilities and the impacts of fuel extraction and delivery to serve these facilities.

¹⁵ Status Report: Renewable Electricity Standard Economic Analysis, pg. 19, presented at April 5, 2010 workshop.

economic analysis is consistent with the definition in the regulations.¹⁶

The economic analysis also indicates that the model runs will be augmented with additional TREC and delivery scenarios. As noted above, allowing more out-of-state TRECs or providing less stringent delivery requirements could encourage more out-of-state renewable development, at the expense of in-state development. California will accrue greater economic benefits from renewable development in state, through job and tax base growth and more stable energy prices. LSA retains the right to comment further on the economic analysis after the RES's TREC and delivery restrictions are developed.

LSA also notes that the EDRAM model must be re-run to quantify the impacts to California's economy of the final RES regulations. The April white paper indicates the impacts on California's economy from the 33% RES are the difference between the modeled economic indicators for a 20% RPS scenario and a 33% RES scenario. It appears that these model runs used the same bundled REC assumptions as the RES calculator. Therefore, ARB must repeat the model runs to incorporate the proper assumptions once the RES regulations have been finalized.

Thank you for the opportunity to comment. Please feel free to contact me if you have any questions about these comments.

Sincerely,

_____/s/_____

Shannon Eddy
Executive Director

¹⁶ For instance, without delivery restrictions and REC limitations, the integration and transmission costs are likely to be much lower than the amounts assumed for the data presented in the April 5, 2010 white paper and presentation, as out-of-state generation would not be required to deliver energy to the California grid. Therefore, the project ranking, used to determine which generation sites will be developed, could be quite different and weigh more heavily in favor of more mature renewable technologies, as the expense of establishing a diverse renewable energy portfolio to serve California.