**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

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| Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities | ) ) ) | Docket No. RM10-23-000 |

# COMMENTS OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION AND THE LARGE-SCALE SOLAR ASSOCIATION


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September 29, 2010

**UNITED STATES OF AMERICA**
**BEFORE THE**
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# COMMENTS OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION AND THE LARGE-SCALE SOLAR ASSOCIATION

The Solar Energy Industries Association ("SEIA") and the Large-scale Solar Association ("LSA") hereby respectfully submit the following comments in response to the Federal Energy Regulatory Commission's ("FERC" or the "Commission") June 17, 2010 Notice of Proposed Rulemaking ("NOPR")[1] in the above-captioned proceeding.[2]

## I. OVERVIEW

SEIA and LSA support the Commission's efforts in the NOPR to correct deficiencies in current transmission planning and cost allocation processes. In particular, SEIA and LSA believe that the proposed rulemaking, when implemented, will go a long way in facilitating development of renewables in a more timely and efficient manner. Today, the lack of transmission infrastructure is a major impediment to the development of location-constrained renewable projects that are necessary to serve the growing demand for clean energy under state renewable portfolio standards ("RPS"). The lack of transmission capacity serving areas of quality solar resource is one of the primary barriers to the development of solar generation in the

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1 *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, 131 FERC ¶ 61,253 (2010) ("NOPR").

2 Notice Granting Extension of Time, issued August 10, 2010.

United States.[3] Currently, transmission planning generally is occurring on a state-by-state basis, or with little regard to integrating remote renewable resources, and is largely focused on intrastate transmission. A White Paper on transmission barriers to renewable energy development aptly notes that the result is that the transmission planning process has

> neglected to identify and prioritize transmission lines that provide regional and system-wide renewable energy and reliability benefits. Thus, interstate transmission lines, which would deliver energy from solar generation facilities to energy demand ("load") centers in the southwestern United States, have not been the focus of current transmission planning. These interstate lines are both critical from an energy delivery and reliability perspective and complex from a planning perspective.[4]

The lack of sufficient transmission for renewable resources also provides a competitive advantage to utility generation and in-state resources, even though superior renewable resource areas lie out-of-state. Therefore, the planning and development of transmission must be done on an interregional scale and must consider the need to identify and plan for policy upgrades to the transmission infrastructure to achieve expeditiously renewable energy goals across utility service areas. However, any planning requirements resulting from this NOPR must establish coordinated and efficient processes with firm deadlines so that regions do not fall into a endless cycle of studying and re-studying – but not actually constructing – much needed transmission projects. Finally, interregional transmission planning also must consider and resolve cost allocation and scheduling issues in order to be successful. As such, SEIA and LSA recommend the Commission:

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[3] "Removing Transmission Barriers to Renewable Energy Development" ("White Paper"), Executive Summary (discussing the obstacles to renewable transmission facing solar development in the United States, and presents recommendations to resolve these barriers in a timely manner and allow states to achieve their renewable energy policy goals). SEIA and LSA will supplement their comments in this proceeding later with a copy of the White Paper.

[4] *Id*.

- **Require Regional Transmission Planning for Policy Upgrades.** The Commission should adopt the proposal in the NOPR to expand the requirements of Order No. 890,[5] Schedule K to expressly require planning for upgrades necessary to enable compliance with public policy requirements established by state or federal laws or regulations ("Policy Upgrades").[6] Forward-looking planning studies should consider multiple development scenarios to identify transmission upgrades that are likely to be needed to meet RPS goals. In addition to requiring each public utility transmission provider to amend its OATT "such that its local and regional transmission planning processes explicitly provide for consideration of public policy requirements established by state or federal laws or regulations that may drive transmission needs,"[7] the Commission should also expand these transmission planning requirements to the interregional transmission planning process.
- **Harmonize the Timing of Transmission Planning Across Transmission Providers in Common Regions.** The Commission should require closely coordinated transmission planning processes among regions for Policy Upgrades to be completed within discrete, binding and enforceable time frames so that necessary transmission can be built in a timely manner. Transmission providers within common regions must closely coordinate their transmission planning processes and complete them on the same schedule. In order to ensure timely delivery of transmission and

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5 *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs., Regulations Preambles 2006-2007 ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs., Regulations Preambles 2006-2007 ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

6 NOPR at PP 63-70.

7 *Id*. at P 64.

meet RPS goals, the transmission planning processes should also be closely coordinated with the generator interconnection process so that transmission construction is harmonized with the economic realities of generation developers and power purchasers. The adoption of a "Policy Upgrade" category of transmission will be rendered meaningless if transmission studies are not on the same schedule because this will delay the construction of necessary transmission projects. Regional study timelines must be binding and enforceable to allow transmission projects to be built in time to meet contract delivery dates in power purchase agreements approved by relevant state regulatory agencies and allow developers to take advantage of investment tax credits, grants and loan guarantees. Otherwise, it is unlikely that RPS goals can be met.

- **Provide for Cost Recovery From Project Beneficiaries to Alleviate Disincentives for States to Provide Siting Authority for New Lines.** It is essential for the Commission to establish a clear beneficiary pays policy that explicitly considers the need to build transmission lines to meet state renewable energy targets as one of the cost allocation metrics. State authorities may not see the benefit of granting certificate authority to construct transmission lines that are driven by the need to deliver renewable energy to other states if the cost of the lines must be borne by local customers. Such concerns, for example, led Arizona to deny certificate authority for the Palo Verde-to-Devers II line.

- **Find that a Beneficiary Pays Mandate to Recover the Cost of Policy Upgrades is Necessary to Eliminate Undue Discrimination and Anti-Competitive Market Outcomes for Renewable Generators Seeking to Sell their Energy Across State Lines.** The Commission should also mandate a beneficiary-pays cost allocation method as a default method as suggested in the NOPR to remedy undue discrimination and anti-competitive tariff impediments to renewable generators seeking to sell their output across state lines.[8] While voluntary interregional cost allocation plans for new Policy Upgrades are desirable, absent agreement to do so, the Commission must step in to require that such cost allocation methods be implemented. Such a mandate is necessary to alleviate disincentives to build transmission lines to deliver renewable energy across state lines. The impediments to such transmission construction often make it commercially impractical for renewable generators located in one state to be able to sell energy in competition with renewable generators in another. SEIA and LSA discuss each of these issues in greater detail below. In further support, SEIA and LSA show as follows:

## II. SEIA and LSA

SEIA is the national trade association for the solar industry. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, strengthening research and development, removing market barriers, strengthening the industry, and improving education and outreach for the public on the benefits of solar energy. SEIA represents 1,000 solar companies across a variety of solar energy technologies, including photovoltaic, solar water heating, and concentrating solar power. SEIA members include

[8] NOPR at PP 164, 174.

manufacturers, distributors, contractors, installers, financiers, and developers of solar energy projects.

LSA represents twelve of the nation's largest developers and providers of utility-scale, solar generating resources. Collectively, LSA's members have contracted to provide over 6 gigawatts of clean, sustainable solar power to utilities in the Western United States. LSA members are engaged in the development, construction and/or operation of renewable generation plants throughout California and other western states.

## III. COMMENTS

### A. The Commission Should Direct Coordinated Interregional Transmission Planning for Public Policy Driven Projects

SEIA and LSA support the Commission's proposal to require that public policy requirements be considered in the local and regional transmission processes and recommend that the Commission impose the same requirement for the interregional transmission planning process. As the Commission notes, the Order No. 890 transmission planning requirements do not sufficiently address the need for greater coordination in interregional transmission planning.[9] In addition to coordinated interregional planning, there is a critical need for meaningful and timely interregional planning to address the development of Policy Upgrades to provide transmission for renewables and other system needs. Although Order No. 890 Schedule K requires interregional coordination, it does not expressly require planning for Policy Upgrades.[10] The Commission should go further to expressly require interregional transmission planning specifically for Policy Upgrades.

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9 NOPR at PP 114-120.

10 *See Midwest Indep. Trans. Sys. Operator, Inc.*, 129 FERC ¶ 61,102 (2009); *see also* Midwest ISO and PJM, Docket No. ER05-6-000, June 8, 2009 response to deficiency letter.

Additionally, while refining the process for short-term transmission planning needs, the Commission also should require a holistic long-term transmission planning on a regional basis that considers not only individual lines, but also how proposed projects that will interconnect with the transmission system will interact with other projects across the region, integration of renewable resources and distributed generation, and demand response. The Commission should require integrated coordination of transmission and generation planning[11] for non-RTO public utilities to encourage more efficient development and use of the transmission system, which would, in turn, benefit short-term planning.

Finally, the NOPR does not propose to define the scope of planning "regions" outside of existing regional transmission organizations, but implies that such regions will encompass the sub-regional planning groups created under Order No. 890. The lack of specific guidance on the appropriate scope of sub-regional planning groups could lead to regions that are not optimal for planning interregional Policy Upgrades. The Commission should require that the scope of self-selected planning regions does not create inadvertent planning seams that inhibit the development of interregional Policy Upgrades, and should use the record developed in compliance filings submitted in response to the final rule to ensure that the size and scope of planning regions are reasonably related to the NOPR's goal of promoting Policy Upgrades. For example, current transmission plans envision a network of new transmission lines from Montana and Wyoming through Idaho, Nevada and into California. Similar multi-state lines to deliver

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[11] *See Standards of Conduct for Transmission Providers*, Order No. 717, FERC Stats. & Regs. ¶ 31,280 at PP 144-152 (2008) (removing barriers to coordinated resource planning for transmission and generation and reiterating FERC's "commitment, set forth in Order No. 890, as to the desirability of a coordinated and open planning process") (citing Order No. 890 at n.269), *order on reh'g and clarification*, Order No. 717-A, FERC Stats. & Regs. ¶ 31,297 (2009), *order on reh'g*, Order No. 717-B, 129 FERC ¶61,123 (2009).

renewable energy from other Western states to load centers in California and elsewhere are also in various stages of planning, permitting and development.

### B. The Commission Should Harmonize Timeframes for Transmission Planning Across Regions

Time is of the essence for planning and permitting transmission to deliver energy from renewable resources. As SEIA noted in its comments in Docket No. AD09-8-000,[12] the pace of new transmission investment will need to be accelerated considerably to meet the ambitious renewable energy goals being set by policy makers. The lack of transmission capacity is already hindering the ability of states and utilities to meet their renewable energy goals and standards.

For example, even though California has excellent solar, geothermal, and wind resources, the state may fall short of meeting its 2010 renewable portfolio standard because it lacks the transmission infrastructure to bring these resources to market.[13] As of May 28, 2010, California had over 10,000 MW of wind plants and 22,000 MW of solar plants waiting to connect to the grid.[14] Similar backlogs exist in other regions, with 70,000 MW of wind projects waiting to interconnect in the upper Midwest, 40,000 MW in the lower Midwest, 40,000 MW in the Great Lakes/Mid-Atlantic, and 50,000 MW in Texas.[15] Thirty-four states have adopted an RPS

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12 *Transmission Planning Processes Under Order No. 890*, Docket No. AD09-8-000, Comments of The Solar Energy Industries Association, filed Nov. 23, 2009.

13 California ISO, "The California ISO Controlled Grid Generation Queue," *available at* http://www.caiso.com/14e9/14e9ddda1ebf0.xls.

14 *See* California ISO, "ISO Generator Interconnection Queue," *available at* http://www.caiso.com/14e9/14e9ddda1ebf0ex.html. Across the United States approximately 23,202 MW of solar projects are under construction and under development. *See* SEIA, "Utility-Scale Solar Projects in the United States Operational, Under Construction, and Under Development," available at http://seia.org/galleries/pdf/Major%20Solar%20Projects.pdf. A copy is attached hereto as Attachment A.

15 Interconnection Queue Databases for MISO, SPP, ERCOT and PJM: Midwest ISO Queue Requests, http://www.midwestmarket.org/publish/Document/2cfe4_119157a0478_-7f650a48324a; Southwest Power Pool Queue Requests, https://studies.spp.org/SPPGeneration/GI_ActiveRequests.cfm; ERCOT Queue Requests, http://www.ercot.com/content/meetings/ros/keydocs/2008/1211/07._November_08_System_Plan

mandating development of renewable energy resources, including eight within the Western interconnection. The Western Governors Association adopted a resolution supporting the addition of 30,000 MW of clean energy in the West by 2015 and providing 25 years of secure transmission.[16] In California, by executive order, the state's Air Resources Board is required to adopt regulations increasing California's RPS to 33% by 2020. New Mexico has a 20% by 2020 RPS, Arizona has a 15% by 2025 RPS, and Nevada has a 25% by 2025 RPS, with 5-6% coming from solar resources.

Meeting these RPS goals will depend fundamentally on appropriately timing and coordinating the planning, permitting and development of transmission for the renewable resources across regions. Indeed, planning, permitting and construction must be achieved – at least for foundational lines – by 2014.[17] Outside of the regional transmission organization ("RTO") context, transmission planning within regions is being conducted by dozens of bodies in dozens of timeframes, without clear lines of authority and responsibility. In some cases, it is not clear which planning body or jurisdiction has ultimate authority to order the implementation of transmission plans. For example, California's transmission planning process, which has undergone significant change since the California Independent System Operator ("California ISO") was established in 1996 – and is continuing to evolve, is today time-consuming and expensive with few substantive projects getting approved. There are overlapping and sometimes conflicting jurisdiction among the California ISO, the California Energy Commission, the

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ning_report_to_ROS.doc; PJM Queue Requests, http://www.pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

16 Western Governors' Association, Report of the Clean and Diversified Energy Advisory Committee to the Western Governors, "Clean Energy, a Strong Economy and a Healthy Environment" (June 2006), available at http://www.westgov.org/index.php?option=com_content&view=article&id=129&Itemid=57.

17 White Paper, Executive Summary.

California Public Utilities Commission and other entities involved in transmission decisions. An added layer to the process is efforts to coordinate transmission planning through the Renewable Energy Transmission Initiative and the California Transmission Planning Group. Despite all this planning, the Tehachapi, Sunrise Powerlink and Palo Verde-Devers #2 (California-only portion) are the only projects that have emerged from these processes and are into permitting.[18] The existing scheme of multiple separate planning processes by utilities and other entities, each within different timeframes, make it difficult for developers to obtain certainty regarding transmission planning and construction.

The development of interregional Policy Upgrades for renewable energy and other system needs must occur on a coordinated, binding and enforceable schedule that is not disrupted by individual transmission provider study processes that are out of sequence with each other. There must be clear lines of communications and effective means to resolve disagreements expeditiously. Outside of RTOs, and for planning between RTOs and non-RTO entities, the rules must clearly define which planning entity has the ultimate decision-making authority to approve projects. As such, the Commission should require transmission providers within and across properly defined planning regions, as discussed above, to harmonize their transmission planning processes through FERC-filed tariffs. The Commission should also require that the resulting transmission plans include binding, enforceable planning timelines to ensure timely implementation in order to meet RPS goals. Without this, the adoption of a Policy Upgrade category of transmission will be rendered meaningless.

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[18] *See* White Paper, The California Experience: Transmission Planning. Another example is the Western Governors Association's Western Renewable Energy Zone study process which provides valuable analyses, but the results are of uncertain utility because it is not clear what the mechanism is to implement the results.

In addition, the main benefit of having a new category of Policy Upgrades is to provide transmission, construction, and financing for renewable energy-related transmission projects through the transmission planning process and the transmission provider's OATT, rather than the generator interconnection process ("GIP"). Therefore, the Commission should require that transmission providers coordinate the transmission planning study process with the GIP study process. Such coordination is necessary to timely balance the financial security posting requirements of the GIP with the identification of Policy Upgrades through the transmission planning process. This harmony is critical to renewable project development because posting financial security for major transmission upgrades identified through the GIP study process and assigned to interconnecting generators can swiftly derail all but the most deeply capitalized generation development efforts.

In sum, achieving synchronized and closely coordinated transmission planning processes among transmission providers across common regions while conducting transmission planning in coordination with GIP studies will facilitate the identification of Policy Upgrades on a schedule that will allow renewable generators to avoid having to make onerous security postings for inter-regional transmission upgrades. There is a disconnect between current transmission planning processes and the commercial realities for renewable developers. The White Paper notes, "[c]ommercial delivery obligations have been structured to meet prescribed requests for proposals (to meet the goals of state [RPS]) and to meet investment and financial realities (including the federal investment tax credit)."[19] It is unreasonable to expect the nation's renewable energy and climate goals, or developers' investors and business models, to hibernate

[19] White Paper, Executive Summary.

while awaiting resolution of a decade-long planning processes.[20] Coordinated planning will speed the interconnection and transmission development process and aid renewable energy developers in their efforts to meet RPS requirements and delivery obligations under power purchase agreements ("PPAs"), and allow them to take advantage of time-sensitive financial incentives, such as investment tax credits and federal loan guarantees. Therefore, it is imperative that the transmission planning process for Policy Upgrades operate within tight timeframes that consider these and similar factors.

### C. The Commission Should Direct Allocation of Costs of Interregional Transmission Lines To Project Beneficiaries So that States Will be More Willing to Grant the Necessary Siting and Certificate Authority

The NOPR recognizes that the question of how the costs of transmission projects will be recovered in rates is "a threshold consideration for any company considering investment in transmission."[21] Normally, transmission providers recover the costs of new lines needed to provide reliable service for their customers in their system transmission rates. When transmission customers request transmission service from the utility to transmit energy from new generating facilities, they pay either the utility's embedded cost-based rates, or incremental rates if the cost of the new line is greater than the system average embedded transmission cost. Transmission service requests that require new transmission lines to export power to other regions can, however, raise concerns with state regulators and consumers who may believe it unfair to pay for the cost of new transmission lines if the energy and other benefits are delivered to consumers in another state.

Transmission lines that cross state lines require siting and certificate authority from multiple state and local agencies. Policy Upgrades that are built primarily to deliver renewable

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20 *Id*.

21 NOPR at P 152.

energy from one state to meet another state's RPS requirements may face opposition in the source state over concerns that its ratepayers may be required to foot the bill for a transmission project that is conceived mainly to aid the green energy goals of another. Thus, transmission development—a key ingredient for location-constrained renewable resources—may be stymied over cost allocation disputes. As the Commission is well aware, this type of situation derailed the Palo Verde-to-Devers #2 transmission line when Arizona officials expressed concerns that energy deliveries from the line would flow mainly to California consumers.

Financing high voltage interregional lines to accommodate renewable resources that are typically location-constrained are beyond the financial means of most renewable developers and so cannot be financed by them through the existing generator interconnection procedures or merchant models.[22] Many transmission projects, particularly interregional projects, are unable to move forward until they receive up-front certainty about their opportunity to recover their costs. The lack of certainty about cost recovery can be a significant impediment to new transmission investment, particularly for large new inter-system transmission lines. These commercial realities mean that incumbent franchised utilities are often best-positioned to construct large transmission projects to meet renewable energy and other needs because they can recover project costs in their system rates and are thus able to obtain financing on more reasonable terms than merchant generation developers.

Incumbent utilities are reluctant to build transmission lines primarily to export renewable projects if they must recover the costs from their native load customers because state public

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[22] This has led to the "chicken and egg" development problem noted by the Commission. See *Chinook Power Transmission, LLC*, 126 FERC ¶ 61,134, at P 44, *order on reh'g*, 128 FERC ¶ 61,074 (2009) ("We acknowledge that as a practical matter, merchant transmission developers face difficulties in financing large transmission projects, such as the 'chicken-and-egg' scenario that arises when generators, purchasers, and transmission owners all wait for the other to commit money to a project before committing themselves.").

service commissions and legislators will not allow it.[23] While Commission rules require them to honor such transmission service requests, the resulting cost allocation does not necessarily align with cost causation.[24] Moreover, state public service commissions that must issue certificates to build such lines may be reluctant to do so if they believe their ratepayers will get a raw deal.[25] Under these circumstances, in-state renewable projects have a competitive advantage based solely on the availability of transmission, which unduly discriminates against otherwise similarly situated renewable projects located in other states.

As SEIA explained in its comments in Docket No. AD09-8-000, assigning cost responsibility for transmission upgrades to integrate renewable energy projects to the loads who ultimately receive the benefits is consistent with cost causation. Therefore, we agree with the Commission's proposal to follow the beneficiary pays model in the NOPR. In determining beneficiaries for purposes of cost allocation, the Commission should consider factors such as: is the transmission being built to deliver renewable energy from state (or regionally) identified renewable energy zones, is the energy required to meet state RPS targets, will the line deliver renewable energy under signed PPAs, will consumers benefit from renewable energy certificates ("RECs") or carbon credits?

Furthermore, it makes much more sense for all parties to assign cost responsibility to utilities directly through transmission rates, rather than to require generators to upfront fund. In the former case, consumers pay just and reasonable rates for the new network transmission lines at rates reviewed by the Commission. In the latter, the generators must pass the increased cost of

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23 *See NorthWestern Corp.*, 127 FERC ¶ 61,266 (2009).

24 Cost causation requires that cost allocation be roughly commensurate with the benefits received by those paying the rates. *Illinois Commerce Comm'n v. FERC*, 576 F.3d 470, 476 (7th Cir. 2009); *K N Energy, Inc. v. FERC*, 968 F.2d 1295, 1300 (D.C. Cir. 1992).

25 See, for example, the Arizona Corporation Commission's refusal to issue a certificate for Southern California Edison's Devers to Palo Verde #2 line.

financing to the consumers indirectly through their PPA, and thus the contribution of consumers to the costs of transmission varies from one negotiated PPA to the next. In the former case, assuming they get abandoned plant protection from the Commission, utilities have assured cost recovery for the upgrades through transmission ratebase. In the latter case cost recovery is uncertain, and subject to greater risk, which invariably leads investors to expect higher returns before they will invest their capital.

Absent voluntary arrangements, the Commission should use the compliance filing process to develop a cost allocation record and impose just and reasonable cost recovery tariffs in individual cases. It is well-settled that FERC has authority under Section 206 of the FPA and is required to exercise it to remedy undue discrimination and anti-competitive circumstances and practices.[26] Here, without Commission action, renewable generators operate at a disadvantage to incumbent utilities and intra-regional generators that benefit from the regional transmission planning processes currently in effect. Accordingly, the Commission should use its authority under Section 206 of the FPA to level the playing field for renewable generators.

Cost causation and the "used and useful" ratemaking principle[27] also mean that FERC must provide guidelines for defining Policy Upgrades, which may not otherwise be identified through reliability or economic planning analyses. To do so, the Commission should adopt

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[26] *See Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity Market Design*, Notice of Proposed Rulemaking, FERC Stats. & Regs., Proposed Reg. 1999-2003 ¶ 32,563 at P 102 (2002) (noting that the "Commission's regulatory authority 'clearly carries with it the responsibility to consider, in appropriate circumstances, the anticompetitive effects of regulated aspects of interstate utility operations pursuant to [Federal Power Act sections] 202 and 203, and under like directives contained in [Federal Power Act sections] 205, 206, and 207.'") (citing Order No. 888 at p. 31,669 (quoting *Gulf States Utilities Co. v. FPC*, 411 U.S. 747, 758-783-84 (D.C. Cir. 1974))); *see also New York v. FERC*, 535 U.S. 1 (2002).

[27] *New England Power Co. Mun. Rate Comm. v. FERC,* 668 F.2d 1327, 1333 (D.C.Cir. 1981), *cert. denied,* 457 U.S. 1117 (1982) (noting that a utility's rate base normally consists only of items presently "used and useful" in providing service).

general criteria for what qualifies as "public policy" upgrades.[28] Order No. 890's three general cost allocation guidelines are an appropriate starting point, but the Commission should provide policy guidance on default metrics it would consider to be acceptable to distinguish public policy upgrades, whose costs should be allocated across regions, from those that should be recovered locally such as highway/byway distinctions, dispatch savings, and loss reductions.[29] In defining Policy Upgrades the Commission should also take into account whether the lines are needed to meet the RPS requirements of states where energy delivered over Policy Upgrades will be consumed, the size and cost of the renewable resource potential in an area, economies of scale of large lines to connect these resource areas with load centers, whether transmission projects are needed to integrate multiple (more than two) unaffiliated renewable energy projects, whether renewable generators that would connect to the lines have signed PPAs, whether the proposed transmission lines would integrate renewable resources from state (or regionally) identified renewable energy zones, and incorporating in the economic balancing equation the value of any RECs associated with the projects. The Commission should require development plans to weigh appropriate metrics to be based on transmission-distribution type analysis under multiple development scenarios to identify upgrades that are needed to meet RPS goals under most expected development scenarios to minimize stranded cost risk.[30]

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28 *See*, *e.g.*, *California Independent System Operator Corporation*, Docket No. ER10-1401; *Midwest Independent Transmission System Operator, Inc.*, Docket No. ER10-1791 (transmission allocation proposal).

29 *E.g.*, *Southwest Power Pool, Inc.*, 131 FERC ¶ 61,252, at PP 69-76 (2010).

30 *See Southwest Power Pool, Inc.*, 132 FERC ¶ 61,042 (2010) (transmission planning and cost allocation).

### D. The Commission Should Find that Tighter Regional Planning for Policy Upgrades and the Beneficiary Pays Cost Allocation Method Are Necessary to Remedy Undue Discrimination and Anti-Competitive Market Outcomes

The Commission's regulatory authority "'clearly carries with it the responsibility to consider, in appropriate circumstances, the anticompetitive effects of regulated aspects of interstate utility operations pursuant to [Federal Power Act sections] 202 and 203, and under like directives contained in [Federal Power Act sections] 205, 206, and 207.'"[31] Indeed, the Federal Power Act "fairly bristles with concern" for undue discrimination.[32] At the same time, "the circumstances in which the Commission must fulfill its statutory responsibilities change with developments in the electric industry, such as changes with respect to the demands placed on and the corresponding operation of the transmission grid."[33] The rapid evolution towards greater integration of renewable generation across regions presents the Commission with such changed circumstances that require it to evaluate its statutory responsibilities in a new light, as it has proposed to do in the NOPR.[34]

Here, location-constrained renewable generators are in competition to serve utility purchasers that must comply with state renewable energy mandates. Solar generators such as SEIA's and LSA's members often find attractive generation sites in the Southwestern United States, but seek to serve loads that may be located in other states. A coordinated and cooperative interregional planning effort is required to ensure that interstate transmission lines are developed

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31 Order No. 888, at p. 31,669 (quoting *Gulf States Utilities Co. v. FPC*, 411 U.S. 747, 758-59, *reh'g denied*, 412 U.S. 944 (1973); *City of Huntingburg v. FPC*, 498 F.2d 778, 783-84 (D.C. Cir. 1974) (finding that the Commission has the duty to consider the potential anticompetitive effects of a proposed interconnection agreement).

32 *Associated Gas Distributors v. FERC*, 824 F.2d 981, 998 (D.C. Cir. 1987), *cert denied*, 485 U.S. 1006 (1988).

33 *Southwest Power Pool, Inc.*, 131 FERC ¶ 61,252, at P 63 (2010).

34 *E.g.*, NOPR at P 64 (citing past instances when the Commission took evolutionary changes in wholesale power markets into account in exercising its statutory responsibilities).

to provide renewable energy with the opportunity it needs to transmit energy across state lines and compete for wholesale power sales.[35] Notably, in the western United States, "interregional" can mean crossing the border from one state to the next state a few miles from where the project is located. For example, in the Southwest, main transmission corridors needed to deliver energy from the remote locations where the solar resources are concentrated into load centers in Southern California run through Nevada and Arizona.

The lack of transmission access impedes the ability of these resources to compete with in-state generation that does not have the same impediments to transmission access. As discussed above, the main source of these impediments is the reluctance of state authorities to provide the necessary authorizations to site and construct new transmission lines to export renewable energy to other states if the lines must be paid for by local customers. Thus, the key impediments to competition for renewable energy sales in interstate power markets is the lack of coordinated transmission planning for Policy Upgrades, and the lack of assured rate recovery for interregional Policy Upgrades that emerge from the planning process. The Commission should exercise its Federal Power Act authority to alleviate these impediments to build new transmission lines for renewable energy and other system needs to promote a robust competitive marketplace that will benefit consumers and the environment for generations to come.

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[35] *See Green Power Express LP,* 127 FERC ¶ 61,031 (2009).

## IV. CONCLUSION

SEIA and LSA thank the Commission for the opportunity to provide these comments and urge the Commission adopt the proposed changes to the transmission planning process discussed above in its final rulemaking.

Respectfully submitted,

***/s/ Raymond B. Wuslich***

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September 29, 2010

# ATTACHMENT A

# Utility-Scale Solar Projects in the United States
# Operational, Under Construction, and Under Development
## Updated September 29, 2010

**Utility-Scale Projects in Operation (Page 2)**

| | | |
|---|---|---|
| | *Concentrating Solar Power Total (MW)* | 433 |
| | *Photovoltaics Total (MW)* | 168 |
| **Total Projects in Operation (MW)** | | **601** |

**Utility-Scale Projects Under Construction (Page 3)**

| | | |
|---|---|---|
| | *Concentrating Solar Power Total (MW)* | 77 |
| | *Photovoltaics Total (MW)* | 115 |
| **Total Under Construction (MW)** | | **192** |

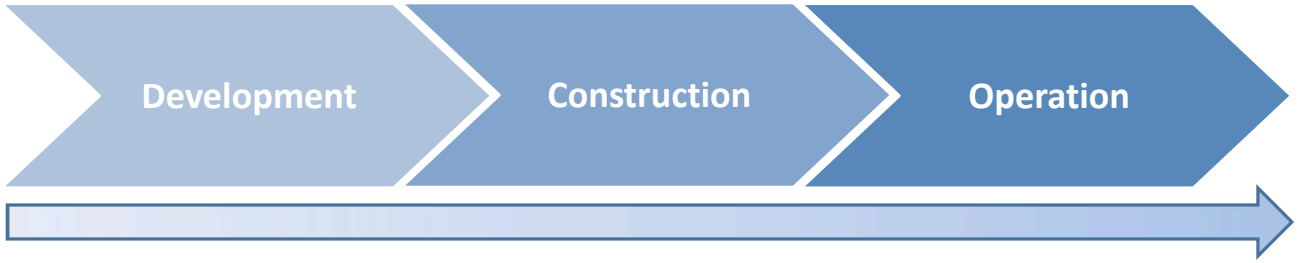
**Utility-Scale Projects Under Development (Pages 4 - 6)**

| | | |
|---|---|---|
| | *Concentrating Solar Power Total (MW)* | 11,011 |
| | *Photovoltaics Total (MW)* | 13,214 |
| **Total Under Development (MW)** | | **24,225** |

**Utility-Scale Projects in Operation, Under Construction, and Under Development**

| | | |
|---|---|---|
| | *Concentrating Solar Power Total (MW)* | 11,521 |
| | *Photovoltaics Total (MW)* | 13,497 |
| **Total Projects in Operation, Under Construction, and Under Development (MW)** | | **25,018** |

### Major Steps to Bring a Utility-Scale Solar Project On-Line




* This list is for informational purposes only, reflecting projects and completed milestones in the public domain. It is not a comprehensive list of all utility-scale solar projects under development, nor is it a guarantee that every identified project will be built. Like any other industry, market conditions may impact project economics and timelines. SEIA actively promotes public policy that minimizes regulatory uncertainty and encourages the accelerated deployment of utility-scale solar power.

** Solar projects proposed on public lands overseen by the federal government must complete a full Environmental Impact Statement before being issued a construction permit by the U.S. Department of the Interior. This review process, which takes as long as four years to complete, involves coordinated analyses by federal, state and local stakeholders to identify the potential impacts of a proposed project.

On June 29th, 2009, Secretary of the Interior Ken Salazar announced "Fast-Track" initiatives for solar projects on lands in the West. Currently, 14 solar projects have received the "Fast-Track" distinction and are undergoing environmental review. The "Fast-Track" initiative goal is to focus BLM efforts on promising projects in order to complete review prior to the December 2010 deadline required to qualify for some funding programs under the American Recovery and Reinvestment Act. For more information on the "Fast-Track" solar projects, please visit: http://www.blm.gov/wo/st/en/prog/energy/renewable_energy/fast-track_renewable.html

Please note that some figures may not add up exactly due to independent rounding.
Press inquiries should be directed to Monique Hanis at mhanis@seia.org.
If you have comments on this list, please contact Samantha Jacoby at sjacoby@seia.org.
For information on distributed generation solar projects, including utility-owned DG programs, see the Open PV Project Database at http://openpv.nrel.gov

## Utility-Scale Projects in Operation

| Developer | Project Name | Electricity Purchaser | Location | Technology | Land Type | Online Date | Capacity (MW) |
|---|---|---|---|---|---|---|---|
| ***Concentrating Solar Power (including Concentrating Photovoltaic)*** | | | | | | | |
| Abengoa Solar | Cameo Coal-Fired Hybrid Demonstration Project | Xcel Energy | Grand Junction, Colo. | Trough[1] | Private | 2010 | 1 |
| Acciona | Nevada Solar One | NV Energy | Boulder City, Nev. | Trough | Private | 2007 | 64 |
| Ausra | Kimberlina | California's wholesale market | Bakersfield, Calif. | Linear Fresnel | Private | 2009 | 5 |
| eSolar | Sierra SunTower | Southern California Edison | Antelope Valley, Calif. | Tower | Private | 2009 | 5 |
| Luz | Solar Energy Generating Systems (SEGS) I | Southern California Edison | Daggett, Calif. | Trough | Private | 1985 | 14 |
| Luz | Solar Energy Generating Systems (SEGS) II | Southern California Edison | Daggett, Calif. | Trough | Private | 1986 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) III | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1987 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) IV | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1987 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) V | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1988 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) VI | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1989 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) VII | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1989 | 30 |
| Luz | Solar Energy Generating Systems (SEGS) VIII | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1990 | 80 |
| Luz | Solar Energy Generating Systems (SEGS) IX | Southern California Edison | Kramer Junction, Calif. | Trough | Private | 1991 | 80 |
| Solargenix | Saguaro Solar Power Plant | Arizona Public Service | Red Rock, Ariz. | Trough | Private | 2005 | 1 |
| Sopogy | Holaniku at Keahole Point | HELCO | Kona, Hawaii | Trough | Private | 2009 | 2 |
| Tessera Solar | Maricopa Solar Power Plant | Salt River Project | Phoenix, Ariz. | Dish-engine | Private | 2010 | 2 |
| | | | ***Concentrating Solar Power Total (MW)*** | | | | **433** |
| ***Photovoltaics (excluding Concentrating Photovoltaic)*** | | | | | | | |
| ARCO Solar Inc., Siemens Solar | Rancho Seco Nuclear Station | Sacramento Municipal Utility District | Herald, Calif. | PV | Private | 1984 | 3 |
| Arizona Public Service | Prescott Solar Power Plant | Arizona Public Service | Prescott, Ariz. | PV | Private | 2006 | 4 |
| Cleantech America Inc. | CalRENEW-1 | Pacific Gas & Electric | Mendota, Calif. | Thin-film PV | Private | 2010 | 5 |
| Conectiv Energy | Vineland Solar One | Vineland Municipal Electric Utility | Vineland, N.J. | PV | Private | 2009 | 4 |
| Conergy | Exelon-Conergy Solar Energy Center | Exelon Generation LLC | Philadelphia, Pa. | PV | Private | 2008 | 3 |
| Efficient Energy of Tennessee | | Tennessee Valley Authority | Knox County, Tenn. | PV | Private | 2010 | 1 |
| enXco | Sacramento Soleil 2008 | Sacramento Municipal Utility District | Sacramento, Calif. | PV | Private | 2008 | 1 |
| First Solar | FSE Blythe | Southern California Edison | Blythe, Calif. | Thin-film PV | Private | 2009 | 21 |
| First Solar/Sempra Generation | El Dorado Energy Solar Project | Pacific Gas & Electric | Boulder City, Nev. | Thin-film PV | Private | 2008 | 10 |
| First Solar/Sempra Generation | Copper Mountain Solar Project | Pacific Gas & Electric | Boulder City, Nev. | Thin-film PV | Private | 2010 | 8 |
| Florida Power & Light Co. | DeSoto Next Generation Solar Energy Center | Florida Power & Light Co. | Arcadia, Fla. | PV | Private | 2009 | 25 |
| Florida Power & Light Co. | Space Coast Next Generation Solar Energy Center | Florida Power & Light Co. | Kennedy Space Center, Fla. | PV | Private | 2010 | 10 |
| Global Solar Energy | Springerville Generating Station Solar System | Tuscon Electric Power | Springerville, Ariz. | Thin-film PV | Private | 2003 | 5 |
| juwi solar Inc. | Jacksonville Solar | Jacksonville Electric Authority | Jacksonville, Fla. | PV | Private | 2010 | 15 |
| juwi solar Inc. | Wyandot Solar Facility | American Electric Power Co. Inc. | Salem Township, Ohio | Thin-film PV | Private | 2010 | 12 |
| MMA Renewable Ventures | Nellis Air Force Base | Nellis Air Force Base | Clark County, Nev. | PV | Private | 2007 | 14 |
| Solon Corporation | Vaca-Dixon Solar Station | Pacific Gas & Electric | Vacaville, Calif. | PV | Private | 2010 | 2 |
| SunEdison | Alamosa Photovoltaic Solar Plant | Xcel Energy | Alamosa, Colo. | PV | Private | 2007 | 8 |
| SunEdison | | Duke Energy | Davidson County, N.C. | PV | Private | 2010 | 4 |
| SunPower | West Pullman Industrial Redevelopment Area | Exelon Generation LLC | Chicago, Illinois | PV | Private | 2010 | 10 |
| SunPower/ Duke Energy Generation Services | Shelby Solar Project | NCMPA1 | Shelby, N.C. | PV | Private | 2010 | 1 |
| Three Phases and Green Rock Capital | Fort Carson Army Base | Fort Carson Army Base | Colorado Springs, Colo. | PV | Private | 2008 | 2 |
| | | | | ***Photovoltaics Total (MW)*** | | | **168** |
| **Total in Operation (MW)** | | | | | | | **601** |

**Project Name: Nevada Solar One**
**Developer: Acciona**
**Electricity Purchaser: NV Energy**
**Location: Boulder City, Nev.**
**Technology: Trough**
**Capacity: 64 MW**
**Source: Acciona North America**

**Project Name: Sierra SunTower**
**Developer: eSolar**
**Electricity Purchaser: Southern California Edison**
**Location: Antelope Valley, Calif.**
**Technology: Tower**
**Capacity: 5 MW**
**Source: eSolar**

**Project Name: Nellis Air Force Base**
**Developer: MMA Renewable Ventures**
**Electricity Purchaser: Nellis Air Force Base**
**Location: Clark County, Nev.**
**Technology: PV**
**Capacity: 14 MW**
**Source: MMA Renewable Ventures**

**Project Name: DeSoto Next Generation Solar Energy Center**
**Developer: Florida Power & Light Co.**
**Electricity Purchaser: Florida Power & Light Co.**
**Location: Arcadia, Fla.**
**Technology: PV**
**Capacity: 25 MW**

## Utility-Scale Projects Under Construction

| Developer | Project Name | Electricity Purchaser | Location | Technology | Land Type | Capacity (MW) |
|---|---|---|---|---|---|---|
| ***Concentrating Solar Power (including Concentrating Photovoltaic)*** | | | | | | |
| Florida Power & Light Co. | Martin Next Generation Solar Energy Center | Florida Power & Light Co. | Martin County, Fla. | Trough[1] | Private | 75 |
| GreenVolts Inc. | GV1 | Pacific Gas & Electric | Byron, Calif. | CPV | Private | 2 |
| | | | | ***Concentrating Solar Power Total (MW)*** | | **77** |
| ***Photovoltaics (excluding Concentrating Photovoltaic)*** | | | | | | |
| American Capital Energy | | NV Energy | Searchlight, Nev. | PV | Private | 20 |
| American Capital Energy | | National Grid | Boston, MA | PV | Private | 2 |
| American Capital Energy | Yardville Solar Farm | PSE&G | Hamilton, N.J. | PV | Private | 5 |
| BlueChip Energy | Rinehart Solar Farm | Progress Energy Florida | Lake Mary, Fla. | PV | Private | 10 |
| Conergy | Ingram's Mill Farm | PJM wholesale market | Chester County, Pa. | PV | Private | 1 |
| First Solar | Cimarron I Solar Project | Tri-State Generation and Transmission | Cimarron, N.M. | Thin-film PV | Private | 30 |
| J. Fletcher Creamer & Son | Silver Lake Solar Farm | PSE&G | Edison, NJ | PV | Private | 2 |
| juwi solar Inc. | Blue Wing Solar Project | CPS Energy | San Antonio, Texas | PV | Private | 14 |
| Rivermoor Energy | | National Grid | Haverfield, Mass. | PV | Private | 1 |
| SunEdison | Trenton Solar Farm | PSE&G | Trenton, N.J. | PV | Private | 1 |
| SunEdison | | Duke Energy | Davidson County, N.C. | PV | Private | 12 |
| SunPower | Alamosa County Plant | Xcel Energy | Alamosa, Colo. | PV | Private | 17 |
| Western Massachusetts Electric Co. | William Stanley Business Park | Western Massachusetts Electric Co. | Pittsfield, Mass. | PV | Private | 2 |
| | | | | ***Photovoltaics Total (MW)*** | | **115** |
| **Total Under Construction (MW)** | | | | | | **192** |

(1) Hybrid solar plants cofiring with other fuels (output reflects peak solar contribution)

**Projects Under Development: Concentrating Solar Power (including Concentrating Photovoltaic)**

| Developer | Project Name | Electricity Purchaser | Location | Technology | Land Type | Capacity (MW) |
|---|---|---|---|---|---|---|
| Abengoa Solar | Mojave Solar | Pacific Gas & Electric | San Bernardino County, Calif. | Trough | Private | 280 |
| Abengoa Solar | Solana | Arizona Public Service | Gila Bend, Ariz. | Trough | Private | 280 |
| Acciona Solar Power | Ft. Irwin Solar Power Project | U.S. Army/surrounding utilities | Ft. Irwin, Calif. | Trough | Public | 500 |
| Albiasa | Kingman Project | | Kingman, Ariz. | Trough | Private | 200 |
| Bell Independent Power Corp | UA Tech Park Thermal Storage Demonstration Project | Tucson Electric Power | Tucson, Ariz. | Trough | Private | 5 |
| Boulevard Associates LLC | Sonoran Solar Energy Project | | Maricopa County, Ariz. | Trough | Public | 375 |
| BrightSource Energy | Ivanpah Solar Electric Generating System (SEGS) I | Pacific Gas & Electric | Barstow, Calif. | Tower | Public | 126 |
| BrightSource Energy | Ivanpah Solar Electric Generating System (SEGS) II | Southern California Edison | Barstow, Calif. | Tower | Public | 133 |
| BrightSource Energy | Ivanpah Solar Electric Generating System (SEGS) III | Pacific Gas & Electric | Barstow, Calif. | Tower | Public | 133 |
| BrightSource Energy | Coyote Springs 1 | Pacific Gas & Electric | Coyote Springs, Nev. | Tower | Private | 200 |
| BrightSource Energy | Coyote Springs 2 | Pacific Gas & Electric | Coyote Springs, Nev. | Tower | Private | 200 |
| BrightSource Energy | | Southern California Edison | Nev. | Tower | | 1,200 |
| BrightSource Energy | BrightSource PG&E 5 | Pacific Gas & Electric | Calif. | Tower | | 200 |
| BrightSource Energy | BrightSource PG&E 6 | Pacific Gas & Electric | Calif. | Tower | | 200 |
| BrightSource Energy | BrightSource PG&E 7 | Pacific Gas & Electric | Calif. | Tower | | 200 |
| Chevron Technology Ventures | | | Questa, N.M. | Lens CPV | Private | 1 |
| Cogentrix Solar Services | North Alamosa County Project | Xcel Energy | Alamosa County, Colo. | Lens CPV | Private | 30 |
| Emcore/SunPeak Power | | | Southwest U.S. | Lens CPV | | 200 |
| eSolar | Gaskell Sun Tower (Phase I) | Southern California Edison | Kern County, Calif. | Tower | Private | 105 |
| eSolar | Gaskell Sun Tower (Phase II) | Southern California Edison | Kern County, Calif. | Tower | Private | 140 |
| Harper Lake LLC | Harper Lake Solar Plant | | Calif. | Trough | | 250 |
| Inland Energy Inc. | Palmdale Hybrid Gas-Solar plant | | Palmdale, Calif. | Trough | Public | 50 |
| Inland Energy Inc. | Victorville Hybrid Gas-Solar plant | | Victorville, Calif. | Trough | Public | 50 |
| MMR Power Solutions | Mt. Signal Solar | San Diego Gas & Electric | Imperial Valley, Calif. | Trough | | 49 |
| Mojave Sun Power | Hualapai Valley Solar Project | | Mojave County, Ariz. | Trough | | 340 |
| NextEra Energy Resources | Beacon Solar Energy Project | | Kern County, Calif. | Trough | Private | 250 |
| NextEra Energy Resources | Genesis Solar Energy Project | Pacific Gas & Electric | Riverside County, Calif. | Trough | Public | 250 |
| NRG Energy | eSolar 1 | | Los Angeles County, Calif. | Tower | private | 84 |
| NRG Energy | eSolar 2 | | Los Angeles County, Calif. | Tower | Private | 66 |
| Pacific Light & Power | Westside Solar Project | Kaua'i Island Utility Cooperative | Kauai, Hawaii | Trough | Private | 10 |
| Siemens Energy (Solel) | Mojave Solar Park | Pacific Gas & Electric | Calif. | Trough | Private | 533 |
| Solar Millennium | Amargosa Farm Road Solar Energy Project 1 | NV Energy | Nye County, Nev. | Trough | Public | 242 |
| Solar Millennium | Amargosa Farm Road Solar Energy Project 2 | NV Energy | Nye County, Nev. | Trough | Public | 242 |
| Solar Millennium | Blythe Solar Power Project | Southern California Edison | Blythe, Calif. | Trough | Public | 1,000 |
| Solar Millennium | Ridgecrest Solar Power Project | Southern California Edison | Ridgecrest, Calif. | Trough | Public | 250 |
| Solar Millennium | Palen Solar Power Project | Southern California Edison | Desert Center, Calif. | Trough | Public | 500 |
| SolarReserve | Crescent Dunes Solar Energy Project | NV Energy | Nye County, Nev. | Tower | Public | 100 |
| SolarReserve | Quartzsite Solar Energy Project | | La Paz County, Ariz. | Tower | Public | 100 |
| SolarReserve | Rice Solar Energy Project | Pacific Gas & Electric | Riverside County, Calif. | Tower | Private | 150 |
| Southwest Solar | SolarCAT Pilot Plant | | Ariz. | Dish-engine | Private | 10 |
| Tessera Solar | Buckeye Landfill Project | | Buckeye, Ariz. | Dish-engine | Public | 150 |
| Tessera Solar | SES Solar One | Southern California Edison | Victorville, Calif. | Dish-engine | Public | 850 |
| Tessera Solar | SES Solar Two | San Diego Gas & Electric | Imperial County, Calif. | Dish-engine | Public | 750 |
| Tessera Solar | Western Ranch | CPS Energy | San Antonio, Texas | Dish-engine | Private | 27 |
| (1) Hybrid solar plants cofiring with other fuels (output reflects peak solar contribution) | | | ***Concentrating Solar Power Total (MW)*** | | | **11,011** |

## Projects Under Development: Photovoltaics (excluding Concentrating Photovoltaic)

| Developer | Project Name | Electricity Purchaser | Location | Technology | Land Type | Capacity (MW) |
|---|---|---|---|---|---|---|
| Acciona Solar Power | Ft. Irwin Solar Power Project | U.S. Army/surrounding utilities | Ft. Irwin, Calif. | PV | Public | 20 |
| Advanced Solar Products | Linden Solar Farm | PSE&G | Linden, N.J. | PV | Private | 4 |
| AES Solar | | | Palm Springs, Calif. | PV | Private | 13 |
| American Capital Energy | William Stanley Business Park | Western Massachusetts Electric Co. | Pittsfield, Mass. | PV | Private | 2 |
| American Capital Energy | | Florida Power & Light Co. | | PV | Private | 6 |
| American Capital Energy | | | Vineland, N.J. | PV | Public | 5 |
| Atlantic Green Power | | | Salem County, N.J. | PV | Private | 80 |
| Axio Power | The Greenfield Solar Farm | Town of Greenfield | Greenfield, Mass. | PV | Public | 2 |
| BP Solar | BNL Area 1 | Long Island Power Authority | Brookhaven, N.Y. | PV | Public | 19 |
| BP Solar | BNL Area 2 | Long Island Power Authority | Brookhaven, N.Y. | PV | Public | 18 |
| BP Solar | | | Sierra County, N.M. | PV | Private | 22 |
| C.F. Properties | | | Barstow, Calif. | PV | Private | 19 |
| Cascade Solar, LLC | | Southern California Edison | Joshua Tree, Calif. | PV | Private | 10 |
| Chevron Energy Solutions | Lucerne Valley Solar Project | Southern California Edison | San Bernardino County, Calif. | Thin-film PV | Public | 45 |
| Clear Skies Solar Inc. | | | Cantil, Calif. | PV | | 6 |
| Community Energy | | Wholesale Power Market | Lancaster County, Pa. | PV | Private | 6 |
| Conectiv Energy | Vineland Solar One Expansion | Vineland Municipal Electric Utility | Vineland, N.J. | PV | Private | 12 |
| Corporación Gestamp/ GA-Solar | | | Guadalupe County, N.M. | PV | | 300 |
| CPV Renewable Energy Company | CPV Piney Reach Solar Farm | | Charles County, Md. | PV | Private | 10 |
| Element Power | Little Mountain solar project | | Weber County, Ore. | PV | Private | 55 |
| Energy 5.0 | Florida Solar 1 | Tampa Electric | Polk County, Fla. | PV | Private | 25 |
| Energy Farm Inc. | | | Freeport, Fla. | PV | Private | 74 |
| enXco | Long Island | Long Island Power Authority | Long Island, N.Y. | PV | Public | 13 |
| ESA Renewables | | Tennessee Valley Authority | Culberson, N.C. | PV | Private | 1 |
| Eurus Energy | Avenal Solar Facility | Pacific Gas & Electric | Avenal, Calif. | Thin-film PV | Private | 57 |
| First Solar | Topaz Solar Farm | Pacific Gas & Electric | Carrisa Plains, Calif. | Thin-film PV | Private | 550 |
| First Solar | Desert Sunlight | Pacific Gas & Electric | Desert Center, Calif. | Thin-film PV | Public | 300 |
| First Solar | Desert Sunlight | Southern California Edison | Desert Center, Calif. | Thin-film PV | | 250 |
| First Solar | | PNM | 5 sites in N.M. | Thin-film PV | | 22 |
| Florida Power & Light Co. | Babcock Ranch | Florida Power & Light Co. | Babcock Ranch, Fla. | PV | Private | 75 |
| Fotowatio Renewable Ventures | | Tucson Electric Power | Tucson, Ariz. | PV | | 25 |
| Fotowatio Renewable Ventures | | U.S. Air Force | Lancaster, Calif. | PV | Public | 500 |
| Fotowatio Renewable Ventures | Austin Energy PV Project | Austin Energy | Austin, Texas | PV | Private | 30 |
| Fotowatio Renewable Ventures | | NV Energy | Apex, Nev. | PV | | 26 |
| GrandView Solar PV One | | Idaho Power Co. | Mountain Home AFB, ID | PV | Public | 20 |
| Green Energy Capital Partners | Pennsylvania Solar Park | | Nesquehoning, Pa. | PV | Private | 20 |
| GWS Technologies Inc. | Florence Solar Farm | | Florence, Ariz. | PV | | 6 |
| Iberdrola Renewables Inc. | | Salt River Project | near Phoenix, Ariz. | PV | | 20 |
| Jemez Pueblo | | | Jemez Pueblo, N.M. | PV | Private | 4 |
| Lincoln Renewables | | | Alamosa County, Colo. | PV | | 37 |
| LS Power | Centinela Solar Energy | San Diego Gas & Electric | Imperial Valley, Calif. | PV | Private | 130 |
| LS Power/SunPower | Dover SUN Park | Delmarva Power | Dover, Del. | PV | Public | 10 |
| Matinee Energy | | | Cochise, Ariz. | PV | Private | 25 |
| Matinee Energy | | | Dragoon, Ariz. | PV | Private | 150 |
| Needle Mountain Power LLC | Sterling Project | | Lake Havasu City, Calif. | PV | Private | 1,200 |
| New York Power Authority | SUNY Buffalo | New York Power Authority | Buffalo, N.Y. | PV | Private | 7 |
| Nextlight Renewable Power/First Solar | Agua Caliente | Pacific Gas & Electric | Yuma County, Ariz. | PV | | 290 |
| Nextlight Renewable Power/First Solar | AV Solar Ranch One | Pacific Gas & Electric | Antelope Valley, Nev. | PV | Private | 230 |
| Nextlight Renewable Power/First Solar | Silver State North Solar Project | NV Energy | Primm, Nev. | PV | Public | 140 |
| Nextlight Renewable Power/First Solar | Silver State South Solar Project | NV Energy | Primm, Nev. | PV | Public | 267 |
| Nextlight Renewable Power/First Solar | Boulder City Solar | | Boulder City, Nev. | PV | Private | 150 |

Continued on next page

**Projects Under Development: Photovoltaics (excluding Concentrating Photovoltaic)**

| Developer | Project Name | Electricity Purchaser | Location | Technology | Land Type | Capacity (MW) |
|---|---|---|---|---|---|---|
| NRG Energy | Wharton Generating Station | City of Houston | Houston, Texas | PV | Private | 10 |
| NRG Energy | | Pacific Gas & Electric | Lancaster, Calif. | PV | Private | 66 |
| OPDE U.S. Corporation | | | West Sacramento, Calif. | PV | | 20 |
| Pacific Blue Energy Corporation | Sunshine Solar Farm | | Coconino County, Ariz. | PV | Private | 20 |
| Pacific Blue Energy Corporation | | | Gila Bend, Ariz. | PV | Private | 150 |
| Pacific Solar Investments Inc. | Amargosa North Solar Project | NV Energy | Nye County, Nev. | PV | Public | 150 |
| PowerWorks | Golden Hills | | Alameda County, Calif. | PV | | 70 |
| PowerWorks | Kauai Solar Project | Kauai Island Coop | Kauai, Hawaii | PV | Private | 10 |
| PPL Renewable Energy | Warren County Project | PPL Renewable Energy | Warren County, N.J. | PV | | 5 |
| Recurrent Energy | | Southern California Edison | Kern County, Calif. | PV | | 6 |
| Recurrent Energy | | Southern California Edison | Kern County, Calif. | PV | | 22 |
| Recurrent Energy | | Southern California Edison | San Bernardino County, Calif. | PV | | 22 |
| RRE Austin Solar | Pflugerville Solar Power Plant | | Pflugerville, Texas | PV | Private | 60 |
| Sempra Generation | Mesquite Solar | | Phoenix, Ariz. | PV | Private | 600 |
| SEPV 1, LLC | | Southern California Edison | Palmdale, Calif. | PV | Private | 2 |
| SEPV 2, LLC | | Southern California Edison | Twentynine Palms, Calif. | PV | Private | 2 |
| Signal Energy | West Tennessee Solar Farm | | Haywood County, Tenn. | PV | Public | 5 |
| Sithe Global Power | Toquop Energy Project | | Mesquite, Nev. | PV | | 100 |
| Solar Energy Initiatives Inc. | West Texas Solar Park | | West Texas | PV | | 300 |
| Solar Energy Initiatives Inc. | California Solar Park | | Calif. | PV | Private | 100 |
| Solar Energy Initiatives Inc. | | | Georgia | PV | Private | 1 |
| Solar Power Inc. | | Southern California Edison | Palm Springs, Calif. | PV | Private | 3 |
| Solar Power Inc. | | Southern California Edison | Palm Springs, Calif. | PV | Private | 5 |
| Solar Power, Inc. | | | Rio Linda, Calif. | PV | | 10 |
| Solar Project Solutions | Atwell Island | Pacific Gas & Electric | Tulare County, Calif. | PV | Public | 20 |
| Solar Project Solutions | Alpaugh North | Pacific Gas & Electric | Tulare County, Calif. | PV | Public | 20 |
| Solar Project Solutions | White River | Pacific Gas & Electric | Tulare County, Calif. | PV | Private | 20 |
| Solar Project Solutions | Corcoran | Pacific Gas & Electric | Kings County, Calif. | PV | Public | 20 |
| Solar Project Solutions | Alpaugh | Pacific Gas & Electric | Tulare County, Calif. | PV | Public | 50 |
| Solargen Energy | | | San Benito County, Calif. | PV | | 420 |
| Solutions for Utilities | | Southern California Edison | Newberry, Calif. | PV | | 8 |
| SunEdison | | California State Universities | Calif. | Thin-film PV | Public | 8 |
| SunEdison | | Xcel Energy | Lea & Eddy Counties, N.M. | PV | | 50 |
| Sunergy World | | | Boise, Idaho | PV | Public | 10 |
| SunPower | California Valley Solar Ranch | Pacific Gas & Electric | San Luis Obispo County, Calif. | PV | Private | 250 |
| SunPower | Luke Air Force Base | Arizona Public Service | Glendale, Ariz. | PV | Private | 15 |
| SunWorks Solar Systems | | | Central Fla. | PV | | 2 |
| Sustainable Energy Capital Partners | | Southern California Edison | Santa Ana, Calif. | Thin-film PV | | 20 |
| Teanaway Solar Reserve LLC | Teanaway Solar Reserve | | Cle Elum, Wash. | PV | Private | 75 |
| TriLand Partners | Williamstown solar farm | | Williamstown, Vt. | PV | Private | 2 |
| Tucson Electric Power | Bright Tucson | Tucson Electric Power | Tucson, Ariz. | PV | Private | 2 |
| Vidler Water Co. | Fish Springs Solar Ranch | | Washoe County, Nev. | PV | Private | 100 |
| Wanxiang America/New Generation Power | Rockford Solar Project | | Rockford, IL | PV | Private | 62 |
| Westside Holdings | Westlands Solar Park | | San Joaquin Valley, Calif. | PV | | 5,000 |
| Westwood Renewables | | Dairyland Power Cooperative | Olmsted County, Minn. | PV | Public | 2 |
| | Springerville Generating Station Solar System (expansion) | Tuscon Electric Power | Springerville, Ariz. | Thin-film PV | Private | 2 |
| | | Los Angeles Department of Water & Power | Owens Lake, Calif. | PV | Private | 10 |
| | | | | ***Photovoltaics Total (MW)*** | | **13,214** |