Powers Engineering Comments on LADWP South Owens Valley Solar Project Draft Environmental Impact Report

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I. Overview: South Owens Valley Solar Project DEIR

LADWP proposes to build the 200 MW South Owens Valley Solar Project on approximately 1,200 acres of undeveloped LADWP-owned land approximately 6 miles southeast of Independence, California and near the National Historic Site of Manzanar. The 200 MW capacity will be installed over a 5.5-year period beginning in mid-2014 and ending in late 2019.

The project would utilize fixed solar photovoltaic (PV) panel modules and associated infrastructure. The power produced would transmitted to LADWP load through LADWP's existing 230 kilovolt (kV) Inyo–Rinaldi transmission line, which passes along the western perimeter of the project site and has sufficient available capacity to accommodate project output.

LADWP reached 70 MW of distributed local PV in 2012. A 2010 study of the rooftop PV potential in the City of Los Angeles estimated the rooftop potential at 5,500 MW.

LADWP has numerous local distributed PV programs. These include:

- Customer-installed rooftop PV, with a target of 165 MW by 2016
- Local solar feed-in tariff program with target of 150 MW by 2016
- LADWP 2-5 MW projects in City-owned property in LA Basin, 90 MW by 2020

The estimated rooftop PV potential in LADWP service territory is over 5,500 MW. Mayor Eric Garcetti stated his plan to increase the LADWP's CLEAN LA feed-in tariff program by a factor of ten to 1,200 MW following his election in May 2013. In contrast, LADWP states in the DEIR that it cannot increase local solar beyond the current 2020 projection of 425 MW and maintain grid reliability.

The DEIR acknowledges the many benefits of local solar, stating:

p. 3-20: "*A key aspect of the LADWP renewable energy development program over the next two decades is the continued development of in-basin solar generation capability. . . This local generation helps limit the costs, impacts, reliability issues, and energy loss associated with transmission of energy over longer distances*."

LADWP acknowledges that local distributed rooftop, parking lot, and brownfield solar PV in the LADWP urban core is an alternative to the proposed 200 MW project. However, when compared to the proposed 200 MW South Owens Valley Solar Project, LADWP characterizes local distributed solar as less reliable, less efficient, more expensive, and more subject to variable output due to the effects of clouds on partly cloudy days. Each of these alleged deficiencies is examined in the following sections.

II. Clouds and Reliability of Single 200 MW Project Is Less Than That of Thousands of Small PV Projects Distributed Over Hundreds of Square Miles

DEIR, p. 3-20: "*However, the energy generated from solar PV technology is also highly sensitive to cloud cover, which can cause unpredictable deviations in power output of up to 70 percent from solar panels in very short periods of time*."

DEIR, p. 3-21: "*Since the extent of cloud coverage over a broad region during a given period is limited, the variability and intermittency of solar PV energy generation related to cloud cover can be moderated to some degree within the LADWP system by dispersing the generation facilities over a wide geographic area that reaches beyond the Los Angeles basin, the entirety of which can be under the influence of a similar weather pattern at the same time*."

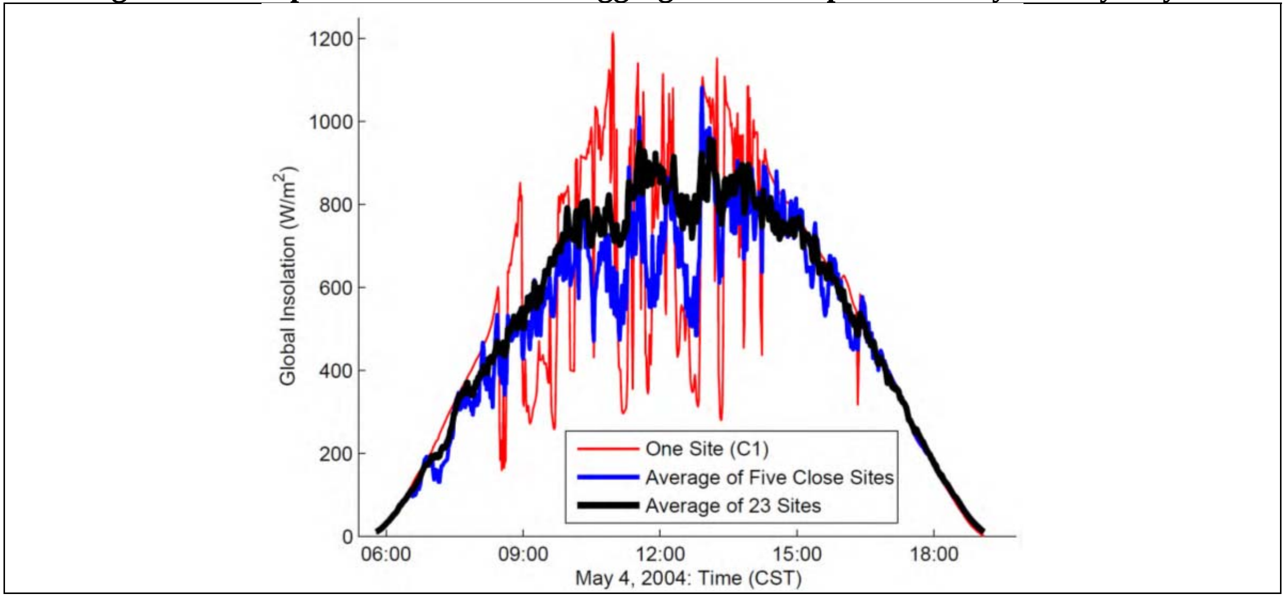
DEIR, p. 3-21: "*This so-called smoothing effect achieved through geographic dispersion helps decrease the short-term (i.e., daily, hourly, or briefer) fluctuations in solar PV power production within an interconnected power system by balancing the differences in solar insolation related to variations in weather experienced at widely separated sites at a given moment. That is, over a broad geographic area, cloud cover will have a reduced average influence on solar insolation and, therefore, on solar power generation*."

DEIR, p. 3-21: "*By providing 200 MW of solar PV generating capacity in a location geographically removed from the Los Angeles basin, the proposed Project would help achieve more effective and reliable integration of solar renewable energy resources into the LADWP power generation system*."

Partly cloudy conditions will have a much more dramatic impact on the reliability, or lack of reliability, of the South Owens Valley Solar Project than on thousands of smaller local solar projects spread over a much greater area in the City of Los Angeles.

A 2010 analysis conducted by Lawrence Berkeley National Laboratory determined that, even on partly cloudy days, the aggregate output from dispersed PV systems would follow a relatively smooth bell-shaped curve similar to a clear day PV profile, though with lower output depending on the density of cloud cover. This is an important finding, as one argument used against PV systems is the potential for a cloud to drop output from rated capacity to near zero in a matter of seconds. Partly cloudy conditions would cause little PV output variability in aggregate on a minute-to-minute or hour-to-hour basis across thousands of systems over hundreds of square miles in the City of Los Angeles. The modeled variability of PV system output on partly cloudy days relative to clear days, correlated to the number and distribution of PV sites, is shown in Figure 1.

Figure 1. Multiple PV Sites Smooth Aggregate PV Output on Partly Cloudy Days[1]



III. Solar Energy Production in Owens Valley Compared to Los Angeles

p. 3-24: "*Furthermore, the Owens Valley, particularly the southeastern portion, provides among the highest solar resource values in the nation according to the NREL data. By locating the proposed Project in the southeastern Owens Valley, electrical energy generation from the solar PV facilities would be maximized, helping to meet objectives related to renewable energy sales, reductions in GHG emissions, and energy demand as well as facilitating the integration of renewable energy into the LADWP power system.*"

p. 5-4: "*Because of the efficiencies of scale offered by the proposed Project compared to small-scale distributed generation, and the superior solar resource at the Project site compared to the Los Angeles Basin, the distributed solar generation systems under this alternative would need to provide at least 25 percent greater generation capacity (50 MW) than the proposed Project in order to provide the same actual annual energy production, even assuming relatively conservative factors for transmission losses between the Owens Valley and Los Angeles.*"

p.5-5: "*This experience demonstrates the challenges of implementing customer-installed solar programs through incentive structures, especially considering that within LADWP's system, rooftop installations are estimated to cost approximately one-third more per megawatt hour (MWh) of energy produced than utility-scale solar facilities (such as the proposed Project), even when the additional costs of transmission and distribution associated with the utility-scale projects are factored in.*"

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[1] A. Mills, R. Wiser – Lawrence Berkeley National Laboratory, *Implications of Wide-Area Geographic Diversity for Short-Term Variability of Solar Power*, September 2010, p. 11.

The solar insolation at the proposed Owens Valley site is about 15 percent better than the solar insolation in Los Angeles.[2]However, the California Energy Commission estimates average transmission losses in California at 7.5 percent and peak transmission losses at 14 percent.[3] The incrementally better solar insolation at the Owens Valley site is largely negated by the losses incurred by transmitting Owens Valley solar power to City of Los Angeles. In contrast, distributed PV located in the City of Los Angeles would have minimal losses between generation and user.

The proposed 200 MW South Owens Valley Solar Project should have been compared on price in the DEIR to a comparable 200 MW project on commercial rooftops in the City of Los Angeles that would also be awarded to a single bidder. This would have provided an apples-to-apples cost comparison of equivalent capacity under equivalent financial terms between remote and urban solar projects. Just as the successful bidder would receive free use of LADWP land for the proposed project, free use of City of Los Angeles buildings should be assumed for the 200 MW commercial rooftop alternative project. This comparison was not done in the DEIR.

IV. Reliability of Thousands of Distributed Local PV Systems Compared to the Proposed 200 MW Project

p. 5-5: "*The energy provided from these various distributed solar generation systems will involve virtually tens of thousands of individual sites spread throughout the LADWP service area, which creates significant issues associated with the safe and reliable integration of the distributed generation into the power system. Because existing technology does not currently allow for the mass storage of electrical energy at a level that would be consequential to large-scale power generation and transmission systems*."

The proposed project is vulnerable to major output variations in a matter of minutes as large clouds pass over the array. The entire proposed 200 MW project would cover a contiguous area of approximately 5,000 feet by 10,000 feet, as shown in Figure 2.

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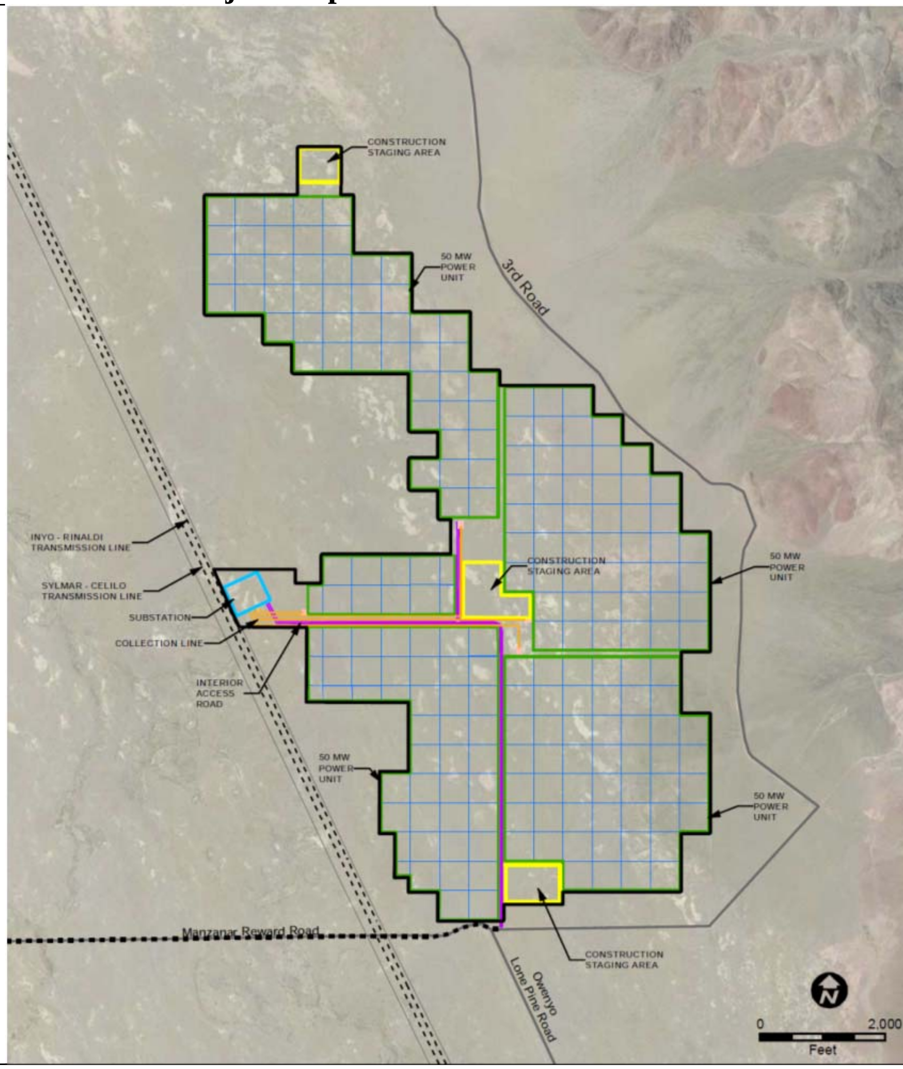
[2] NREL PV Watts Calculator, Daggett & Los Angeles, California: http://rredc.nrel.gov/solar/calculators/PVWATTS/version1/US/code/pvwattsv1.cgi
[3] E-mail communication between Don Kondoleon, manager - CEC Transmission Evaluation Program, and Bill Powers of Powers Engineering, January 30, 2008.

Figure 2. Proposed Contiguous 200 MW Project: Single Large Cloud Could Result in Major Output Reduction within Minutes



Source: DEIR, Figure 3-5, p. 3-27.

In contrast, the land area of the City of Los Angeles is 465 square miles, over 200 times the area of the proposed 200 MW South Owens Valley Solar Project.[4] The extent of the LADWP service territory is shown in Figure 3. Thousands of smaller projects spread over a much greater area would be far less susceptible to passing clouds, in terms of aggregate output variation, than the single contiguous large project.

[4] M. Beshir – LADWP, *CEC Workshop: Electricity Infrastructure Issues in California - Status Report on AB 1318 Project on Capacity Requirements/Emission Implications*, June 22, 2012, p. 2.

Figure 3. Land Area of the City of Los Angeles[5]

Finally, utility-scale battery storage is readily available now. The California Public Utilities Commission required that California investor-owned utilities contract for 1,325 MW of energy

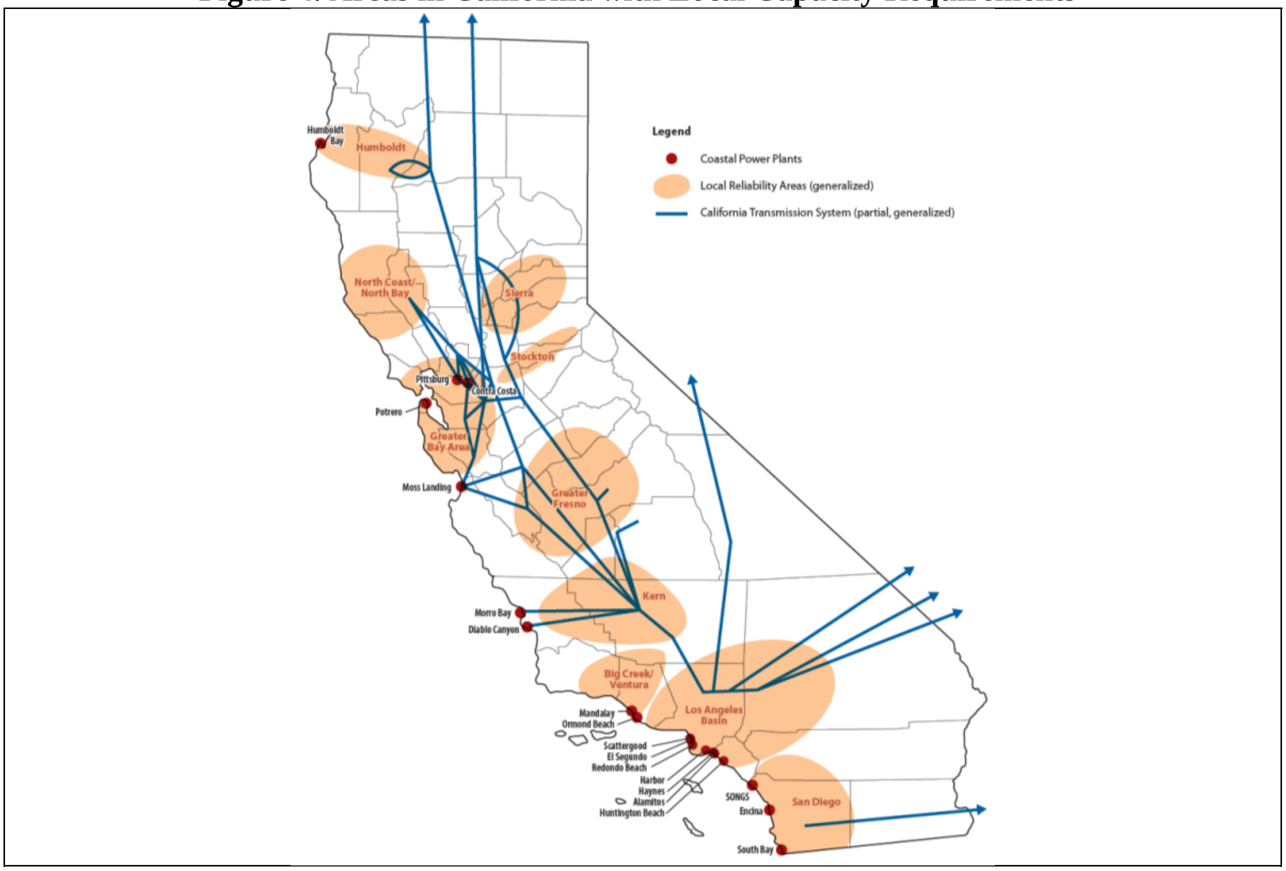
[5] See: http://sustainablecities.usc.edu/research/Chapter%203.%20LADWP%2012%2019%20p.pdf

storage by 2020. This decision was issued by the Commission on October 17, 2013.[6] If LADWP were an investor-owned utility, based on its size it would have been required to contract for 200 MW of energy storage by 2020. The DEIR is factually incorrect in asserting that energy storage is not available on a scale that matters.

V. Local Solar Meets Local Capacity Requirements, the South Owens Valley Solar Project Does Not

Certain areas of California are required to maintain a minimum amount of local generation, known as "local capacity," to assure local grid reliability under high demand conditions with one or more major elements, either transmission line(s) and/or power plant(s), unavailable for whatever reason. Figure 4 is a map of the geographic areas in California with local capacity requirements. LADWP is required to maintain sufficient quantities of local generation within its load pocket to assure service reliability at the 1-in-10 year projected peak demand with the largest transmission line serving the load pocket assumed to be unavailable.

Figure 4. Areas in California with Local Capacity Requirements[7]



[6] CPUC press release, *CPUC Sets Energy Storage Goals for Utilities*, October 17, 2013. See: http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M079/K171/79171502.PDF.
[7] ICF Jones & Stokes, *Electric Grid Reliability Impacts for Regulation of Once-Through Cooling in California*, April 2008, Figure 1.

Solar generation located in the LADWP load pocket contributes to meeting the local capacity requirement need. Remote solar generation does not. Meeting local capacity requirements with new gas-fired generation is very expensive. This issue is not addressed in the DEIR.

For example, LADWP just added six new 100 MW LMS100 gas turbines at the Haynes Generating Station. The capital cost of this 600 MW of local capacity is $782 million, or $1.3 million per MW.[8]

The availability at peak of fixed rooftop solar is typically assumed to be approximately 50 percent of rated capacity.[9] This means that 200 MW of rooftop solar in the LADWP load pocket would contribute 100 MW to the LADWP local capacity requirement. This 100 MW would have an equivalent value of the cost of one new LMS100 gas turbine. Based on the LADWP Haynes LMS100 project, each 100 MW unit has a value of approximately $130 million. 200 MW of distributed solar in the LADWP load pocket would provide the equivalent of $130 million in new local capacity. The 200 MW South Owens Valley Solar Project would provide 0 MW of local capacity and not contribute at all to reducing the amount of costly new local gas-fired generation.

VI. Mayor Garcetti's Goal of Expanding LADWP Feed-In Tariff to 1,200 MW Clashes with DEIR Assertion of Infeasibility

p. 5-6: "*Among the stated objectives of the LADWP smart grid program are initiatives to support renewable power integration, distribution system automation, and the feed-in tariff and distributed solar generation incentive programs. Smart grid technology will enhance the capabilities of system operators to manage dispatchable and intermittent generation resources and allow for greater control of the flow of energy to and from distributed generation sites at the point of interconnection to the grid, including the ability to automatically isolate individual sites to ensure safety and maintain the critical balance between generation and demand.*

However, these technologies are currently under research, development, and testing, and they will not be entirely realized for many years."

p. 5-7: "*The proposed Project and local distributed generation represent complementary aspects of LADWP's renewable energy program. Because additional expansion of local distributed solar generation beyond the currently proposed program is not feasible under existing power system operational capabilities without compromising system integrity and safety, Alternative 2 has been dismissed from further consideration in this Draft EIR*."

The estimated rooftop PV potential in LADWP service territory is over 5,500 MW.[10] Newly elected Los Angeles Mayor Eric Garcetti announced the day after his election his plan to expand

[8] Power Magazine, *LADWP Harnesses LMS100 to Solve Once-Through Cooling Dilemma*, June 1, 2013. "On Sept. 29, 2011, LADWP broke ground on the $782 million repowering project."
[9] CPUC, RPS Calculator, May 16, 2012. On-peak availability: tracking solar = 65%, fixed solar = 51%.
[10] Los Angeles Business Council & UCLA Luskin Center, *Bringing Solar Energy to Los Angeles*, July 2010, p. 13. City of Los Angeles estimate is 5,536 MW.

the LADWP feed-in tariff from 150 MW 1,200 MW.[11] This expansion will add 1,050 MW additional distributed local solar in the City of Los Angeles, an amount more than five times greater than the 200 MW capacity of the South Owens Valley Solar Project.

The DEIR assertion that it is infeasible to add more local solar than the 425 MW sum of existing LADWP local solar programs by 2020 is unsupported.[12] The DEIR also states that exceeding 30 percent of substation peak load with local solar inflows could cause back-flow on the distribution system and attendant reliability challenges. However, the all-time peak load experienced in LADWP service territory on September 27, 2010 is 6,177 MW. LADWP has at least 6,177 MW of substation capacity available.[13] Thirty percent of 6,177 MW is approximately 1,850 MW.

With no upgrades of any kind to LADWP distribution circuits, these circuits could collectively absorb at least 1,850 MW of local solar inflows with no back-feeding onto the transmission system. This is sufficient capacity to absorb the additional 1,050 MW of feed-in tariff capacity in Mayor Garcetti's plan.

VII. Local Distributed Solar is Predictable and Reliable

DEIR, p. 3-22: "*The randomized load fluctuations across tens of thousands of distributed solar generation sites within the LADWP service area have a greater potential impact on power system operations and stability by increasing the probability of excess voltage or current, negatively affecting power quality, and creating potential safety issues related to unexpected back-feeding of power into distribution lines from a distributed generation site*."

DEIR, p. 3-23: "*While dispatchable peak-load resources will still be required to balance the highs and lows in demand and generation from large-scale solar stations, the energy produced at such stations is more readily managed in terms of monitoring and responding to fluctuations in output than from a widespread distributed generation system consisting of tens of thousands of small individual generation sources*."

The overwhelming majority of non-RPS customer-owned PV in California is net-metered. The California *Million Solar Roofs* program will add over 5,000 MW of primarily rooftop PV by the end of 2016 under net-metering.[14] Net metering means the solar generators swap electricity with the utility at retail electricity rates. The solar generator can net meter up to 100 percent of the building's annual electricity demand. Net metering at retail electricity rates is a core financial assumption in advancing zero net energy building retrofits as cost-effective. An example of how net metering works is shown in Figure 5.

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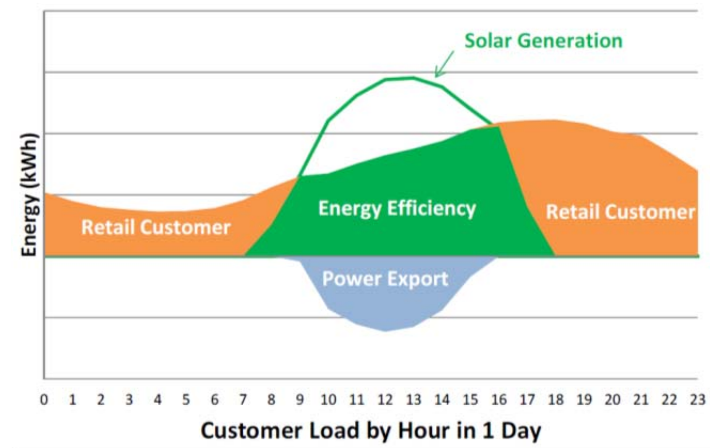
[11] SolarServer, *Solar feed-in tariff advocate Eric Garcetti elected mayor of Los Angeles*, May 22, 2013. "Garcetti has said that he plans to expand the city's "CLEAN LA" feed-in tariff program to 1.2 GW, including 600 MW on public buildings."
[12] DEIR, p. 5-6.
[13] LADWP press release, September 27, 2010: http://www.ladwpnews.com/go/doc/1475/907083/.
[14] T. Beach – Crossborder Energy, *Evaluating the Benefits and Costs of Net Energy Metering in California*, January 2013, p. 1.

Figure 5. Three Phases of Operation of a Net-Metered PV System[15]



The net-metering solar profile in Figure 5 is just as predictable as the macro-solar profile shown in Figure 6. Concerns expressed in the DEIR of the collective reliability and predictability of net-metered solar are not supported by any facts or evidence in the DEIR.

There are real-world examples of the effectiveness and reliability of large-scale deployment of local solar resources. Germany has the most effective FIT structure in the world. Germany added 7,400 MW_{dc} of solar PV in 2010, 7,500 MW_{dc} in 2011, and 7,600 MW_{dc} in 2012. Germany had installed a cumulative total of about 33,000 MW_{dc} of solar PV by the end of 2012.[16,17] The average size of these installations is approximately 30 kW. Despite higher labor rates, installed PV system costs in Germany are substantially lower than in California.[18]

Solar energy in Germany supplies up to 50 percent of mid-day demand on clear spring days. The country had about 30,000 MW of distributed solar online by the end of 2012, of which about 85 percent is rooftop solar. Germany has not added any new flexible gas-fired capacity specifically to address the effects of late afternoon solar output decline.[19] German electricity demand is about double that of California and twenty times that of LADWP.

Germany and Spain have dedicated extensive resources to develop highly accurate wind and solar forecasting. This forecasting is used to adjust the output of existing dispatchable resources, like hydro and fossil fuel-fired plants, to maintain grid reliability. German and Spanish capability is substantially more accurate than California wind and solar forecasting. A comparison of German, Spanish, and California forecasting accuracy is provided in Table 1.

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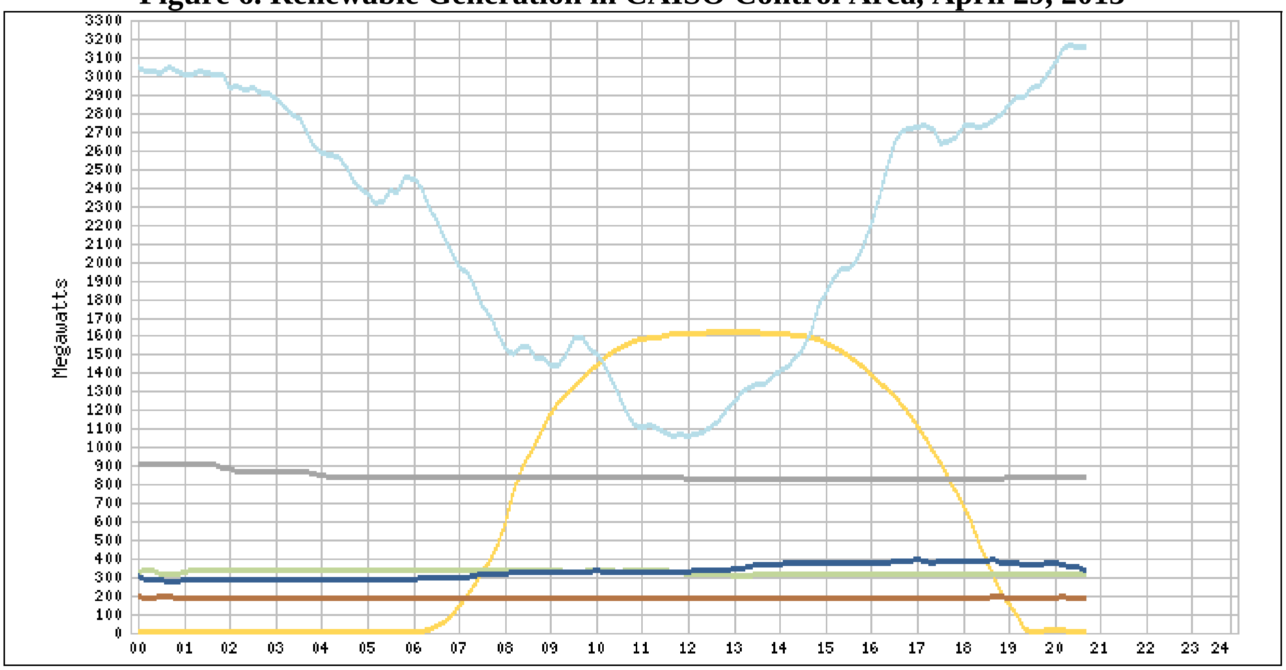
[15] T. Beach, P. McGuire - Crossborder Energy, *Re-evaluating the Cost-Effectiveness of Net Energy Metering in California*, December 20, 2011, Figure 1, p. 3.
[16] Solar Observer, *German PV installations in 2011 even higher than in record year 2010*, January 10, 2012. See: http://www.solarserver.com/solar-magazine/solar-news/current/2012/kw02/german-pv-installations-in-2011-even-higher-than-in-record-year-2010-3-gw-installed-in-december.html.
[17] Renewables International Magazine, *German power exports to France increasing*, February 6, 2012. "Germany currently has around 25 gigawatts of PV installed."
[18] LBNL, *Why Are Residential PV Prices in Germany So Much Lower Than in the United States? A Scoping Analysis*, September 2012.
[19] Personal communication, B. Powers of Powers Engineering and Harry Lehmann, German Federal Environment Ministry, April 17, 2013.

Table 1. Comparison of Renewable Production Forecasting Accuracy in Germany, Spain, and California[20]

RMSE Renewables Forecast Error	Germany, Spain[2]	California[1]
Day-Ahead	< 5%	< 15%
1 Hour-Ahead	1.5%	<10%

High demand days in California and LADWP territory are clear or mostly clear days with high heat and humidity.[21] The clear or nearly clear nature of high demand days means the solar resource is reliability available. A representative clear day solar output pattern is shown in Figure 6 for the CAISO control area, comprised primarily of California's three investor-owned utilities, on April 29, 2013.

Figure 6. Renewable Generation in CAISO Control Area, April 29, 2013[22]



light blue = wind; yellow = solar; gray = geothermal; dark blue = small hydro; green = biomass; brown = biogas

CAISO and LADWP already have the ability to predict with a high degree of accuracy a day in advance the load curve for the next day, as well as the hour-to-hour statewide output of wind and solar resources.

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[20] C. Hewicker et al – KEMA, *European Experience Integrating Large Amounts of DG Renewables*, CEC IEPR Committee Workshop on Renewable, Localized Generation, May 9, 2011, p. 22.

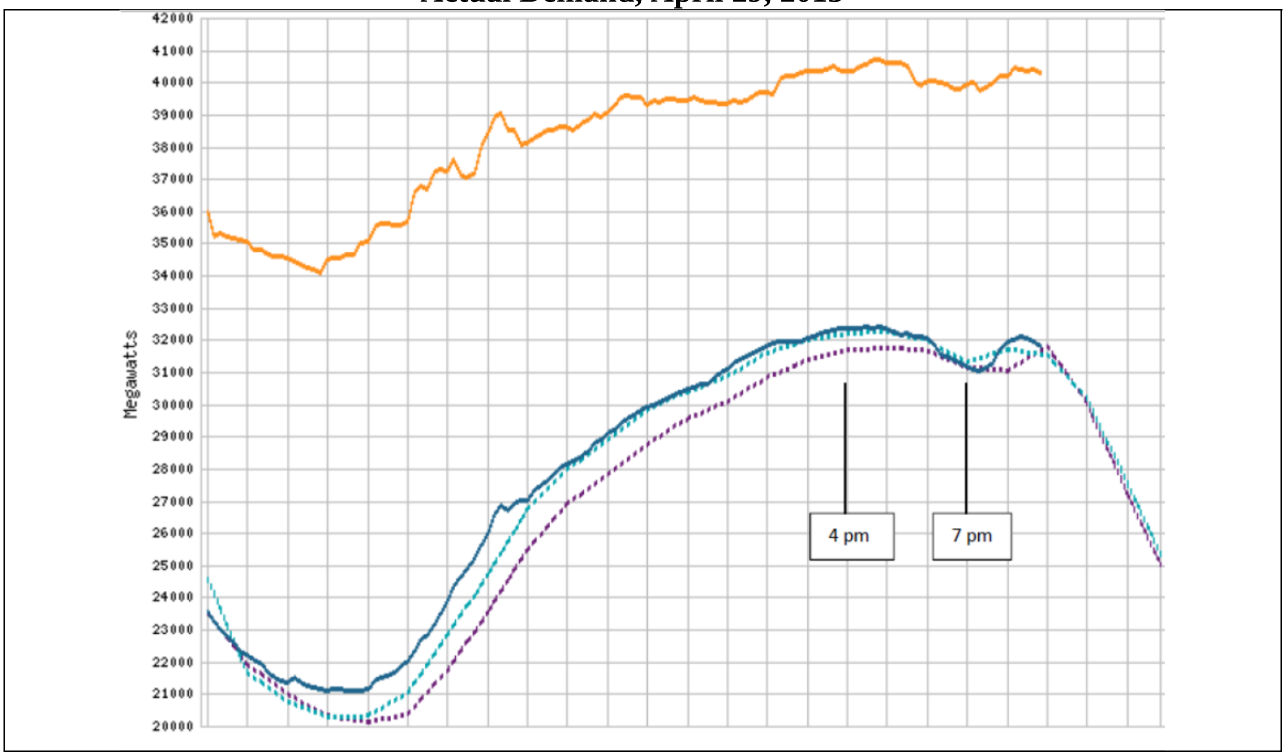
[21] CAISO, *CPUC Rulemaking R.11-10-023: Flexible Capacity Procurement Obligation - Initial CAISO Comments on Workshop Issues*, April 5, 2013.

[22] CAISO homepage graphic, April 29, 2013, 9 pm.

This phenomenon is shown in Figure 7 for CAISO for April 29, 2013. In the 4 pm to 7 pm period when the solar resource is declining rapidly, the difference between the day-ahead forecast and actual demand is less than 500 MW. In this same 4 pm to 7 pm time period, there is almost no difference between the hour-ahead forecast and actual demand.

The idea advanced in the DEIR that thousands of small-scale distributed solar resources would make the LADWP grid less reliable is not supported by any documentation and is contrary to the experience of countries with much greater penetration of distributed solar resources.

Figure 7. Comparison of CAISO Day-Ahead and Hour-Ahead Demand Forecasts to Actual Demand, April 29, 2013[23]



yellow = available resources; solid blue = actual demand; light blue dashed = hour-ahead demand forecast; purple dashed = day-ahead demand forecast.

A. An Unevaluated Alternative: LADWP-Owned Large-Scale Distributed PV Project in the City of Los Angeles

One obvious alternative to the proposed project is an LADWP-owned project of comparable size on commercial rooftops within LADWP service territory. Such a project would achieve the same economy of scale as the proposed project, would eliminate transmission losses, would be less effected by partly cloudy conditions due to greater geographical dispersion than the contiguous 200 MW in Owens Valley, and the output at peak would count toward LADWP local capacity requirements, thereby avoiding the cost high cost gas-fired generation to back-up output from the Owens Valley project. Finally, locating a comparably-sized project on commercial buildings

[23] CAISO homepage graphic, April 29, 2013, 9 pm.

within the City of Los Angeles would help Mayor Garcetti realize his campaign pledge to expand the existing LADWP feed-in tariff program from 150 MW to 1,200 MW.

A 250 MW commercial rooftop PV project is already being built in the LA Basin. In its March 2008 application to the CPUC for an urban PV project up to 500 MW, SCE expressed a high level of confidence that it can absorb thousands of MW of distributed PV without additional distribution substation infrastructure. SCE indicated that "SCE's Solar PV Program is targeted at the vast untapped resource of commercial and industrial rooftop space in SCE's service territory,"[24] and "SCE has identified numerous potential (rooftop) leasing partners whose portfolios contain several times the amount of roof space needed for even the 500 MW program."[25]

The utility stated it has the ability to balance loads at the distribution substation level to avoid having to add additional distribution infrastructure to handle this large influx of distributed PV power.[26] SCE explains:

> SCE can coordinate the Solar PV Program with customer demand shifting using existing SCE demand reduction programs on the same circuit. This will create more fully utilized distribution circuit assets. Without such coordination, much more distribution equipment may be needed to increase solar PV deployment. SCE is uniquely situated to combine solar PV Program generation, customer demand programs, and advanced distribution circuit design and operation into one unified system. This is more cost-effective than separate and uncoordinated deployment of each element on separate circuits.[27]

SCE also noted that it will be able to remotely control the output from individual PV arrays to prevent overloading distribution substations or affecting grid reliability:[28]

> The inverter can be configured with custom software to be remotely controlled. This would allow SCE to change the system output based on circuit loads or weather conditions.

As SCE states, "Because these installations will interconnect at the distribution level, they can be brought on line relatively quickly without the need to plan, permit, and construct the transmission lines."[29] This statement was repeated and expanded in the CPUC's June 18, 2009 press release regarding its approval of the 500 MW SCE urban PV project:[30]

> Added Commissioner John A. Bohn, author of the decision, "This decision is a major step forward in diversifying the mix of renewable resources in California and spurring the development of a new market niche for large scale rooftop solar applications. Unlike other generation resources, these projects can get built quickly and without the need for expensive new transmission lines. And since they are built on existing structures, these projects are extremely benign from an environmental standpoint, with neither land use, water, nor air

[24] SCE Application A.08-03-015, *Solar Photovoltaic (PV) Program Application*, March 27, 2008, p. 6.
[25] SCE Application A.08-03-015, *Solar Photovoltaic (PV) Program Testimony*, March 27, 2008, p. 44.
[26] SCE Application A.08-03-015, *Solar Photovoltaic (PV) Program Application*, March 27, 2008, pp. 8-9.
[27] Ibid, p. 9.
[28] SCE Application A.08-03-015, *Solar Photovoltaic (PV) Program Testimony*, March 27, 2008, p. 27.
[29] Ibid, p. 6.
[30] CPUC Press Release – Docket A.08-03-015, *CPUC Approves Edison Solar Roof Program*, June 18, 2009.

> emission impacts. By authorizing both utility-owned and private development of these projects we hope to get the best from both types of ownership structures, promoting competition as well as fostering the rapid development of this nascent market."

The CPUC made a similar observation with its approval of the PG&E 500 MW distributed PV project in April 2010:[31]

> This solar development program has many benefits and can help the state meet its aggressive renewable power goals," said CPUC President Michael R. Peevey. "Smaller scale projects can avoid many of the pitfalls that have plagued larger renewable projects in California, including permitting and transmission challenges. Because of this, programs targeting these resources can serve as a valuable complement to the existing Renewables Portfolio Standard program.

The use of the term smaller scale in the CPUC press release is a misnomer. A 200 MW distributed PV project on commercial rooftops is the same size as a 200 MW solar PV project in the Owens Valley. Each rooftop is a contributor to a much bigger complete project.

VIII. Conclusion

The DEIR overview statement on the benefits of in-basin solar generation is accurate:

p. 3-20: "*A key aspect of the LADWP renewable energy development program over the next two decades is the continued development of in-basin solar generation capability. . . This local generation helps limit the costs, impacts, reliability issues, and energy loss associated with transmission of energy over longer distances*."

LADWP has not substantiated any compelling reason in the DEIR for converting 1,200 acres of undeveloped Owens Valley land to a utility-scale solar project. LADWP does not acknowledge in the DEIR Mayor Garcetti's plan to expand the LADWP feed-in tariff program by 1,050 MW. This feed-in tariff expansion plan would obviate the stated need for the Owens Valley project, It also undermines the assertion in the DEIR that increasing local solar beyond 425 MW by 2020 is infeasible for grid reliability reasons. The DEIR does not address the economic benefits, from a local capacity requirement standpoint, of preferentially constructing LADWP solar capacity within the City of Los Angeles load pocket. At a minimum the DEIR should have included an equivalent 200 MW or 250 MW distributed PV project on commercial rooftops in the City of Los Angeles, similar to the 250 MW distributed warehouse rooftop project SCE is currently constructing in the LA Basin.

[31] CPUC Press Release – Docket A.09-02-019, *CPUC Approves Solar PV Program for PG&E*, April 22, 2010.