



Solar Solutions Guide

Addressing building owner concerns

Prepared by

Clean⚡***Coalition***

Executive Summary

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About the Clean Coalition

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise.

The Clean Coalition drives policy innovation to remove barriers to procurement and interconnection of distributed energy resources (DER)—such as local renewables, advanced inverters, demand response, and energy storage—and we establish market mechanisms that realize the full potential of integrating these solutions. The Clean Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

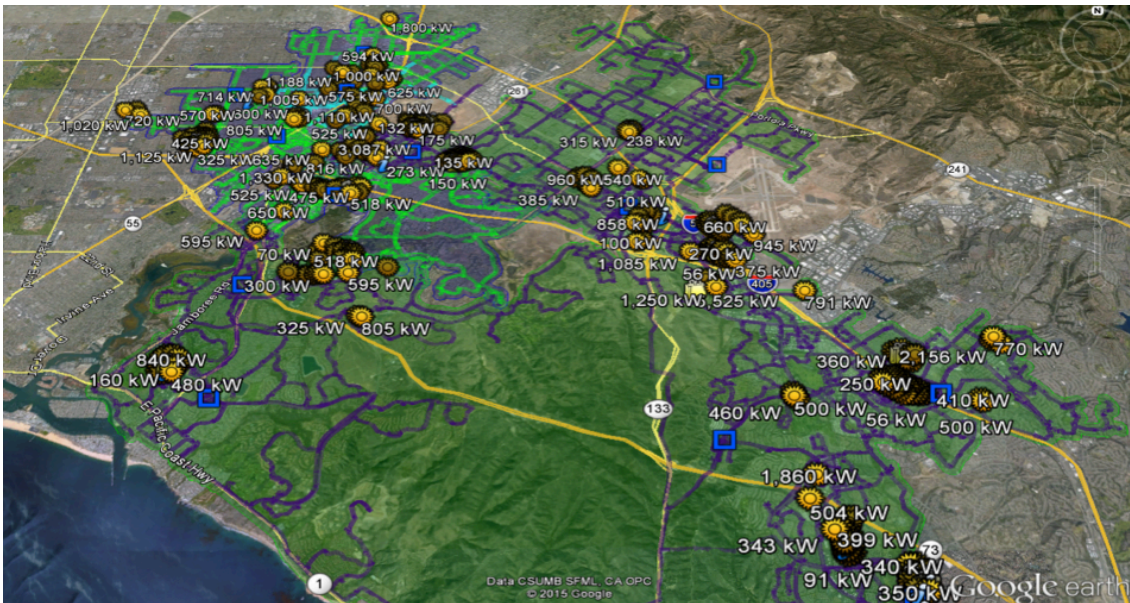
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Executive summary

In November 2013, Southern California Edison (SCE) began its Preferred Resources Pilot (PRP). The PRP is an effort to study and demonstrate how preferred resources—including local solar PV, energy efficiency, demand response, and energy storage—can offset the forecasted increase in electricity demand in the southern portion of SCE’s territory.

SCE has already acquired some preferred resources, but needs an expanded portfolio to meet the forecasted growth through 2022. In particular, SCE is looking for increased generation from local solar within the PRP grid area.

In April 2015, the Clean Coalition released a [Solar Siting Survey](#) that highlights the significant technical level of local solar PV energy that may be generated within the PRP grid area. The Solar Siting Survey identified over 160 megawatts (MW) of technical potential for large commercial solar installations within the PRP grid area.



A snapshot from the Clean Coalition’s PRP Solar Siting Survey, which details large rooftops, parking lots, and parking structures that have the potential to host at least 500 kilowatts (kW) of solar PV.

Despite this vast potential, the adoption of solar by the commercial and industrial sector in the PRP region has been low. Building owners in Orange County, home to the PRP area, have expressed concerns regarding solar installations on their facilities. SCE contracted with the Clean Coalition to work with solar developers to identify viable solutions to the building owners concerns.

This Solar Solutions Guide seeks to address the six major concern areas expressed by building owners in Orange County, California regarding solar adoption. These include:

- 1) Economic considerations** - Building owners are concerned about the cost of the system, as well as ongoing operations and maintenance (O&M) costs.
- 2) Outside core business area** - Building owners see solar as a distraction to their core business area.
- 3) Facility concerns** - Building owners see solar installations as a facility liability.
- 4) Vendor and technology risk** - Building owners have expressed concern regarding the reliability of solar developers—with respect to workmanship, project management, and length of time in business.
- 5) Permitting and approvals** - Building owners do not want to navigate the permitting and approval process for a solar installation. Additionally, some building owners need approval from the landowner to make significant modifications.
- 6) Other** - Other building owner concerns, such as safety issues and contract flexibility, are inherent in all solar development projects.

While this guide has been designed to address the concerns of building owners in Southern California, many of the issues addressed are highly applicable to other utility service territories.

1. Economic considerations

Building owners are unwilling to pursue business ventures that don't make economic sense. With respect to solar, building owners are concerned about the cost of the system. This includes the initial cost, as well as ongoing operations and maintenance (O&M) costs. O&M costs issues are greatly exacerbated if the developer goes out of business.

Besides system costs, building owners are concerned about the return they will see on a solar project. Even if the internal rate of return (IRR) is reasonable or the income is 100% accretive through a site lease, the profit from a solar installation is low relative to normal business operations.

Lastly, opening a property to a solar installation brings inherent risk. Penetrations create concerns about rooftop integrity. Solar installations bring new insurance risks. And there is economic risk from changing a building's aesthetics by adding solar, including a potential impact on building resale value.

In this section, solar developers propose a variety of solutions including:

- The developer acts as the sole liable party in all instances, including insurance matters, repair and replacement of roof, permitting, and associated fees.
- The developer offers a simple, pre-defined, and attractive rate of return for the building owner.
- The developer creates a deal structure to meet the building owner's preferences regarding length of the lease, construction timelines, insurance coverage, and legal liability.
- The developer offers a site lease that includes the deferral of capital expenditures, such as a new rooftop, which increases the value of a building.

2. Outside core business area

Building owners have a clear area of expertise. Many see solar as a complicated distraction to their core business area.

Other investments, like traditional real estate investments, are relatively common and easier to consider—even if they are not part of the core business. Building owners want to see solar investment opportunities that are also easy to consider.

Building owners should seek out developers that can structure a solar deal so it would be within their area of expertise. This means that a building owner could lease a parking lot or rooftop available square footage for a negotiated length of time.

It is worth noting that solar installations using a site lease model are quite similar to the deal structure for cell towers and antennas to service targeted population centers. Building owners' detailed knowledge of this type of leasing arrangement can result in mutually beneficial terms that will result in simple, profitable solar installations.

In this section, solar developers propose a variety of solutions including:

- A simple, proven solution to turn underutilized square footage—such as rooftop space and parking lots—into a revenue-generating asset.
- The developer provides testimonials, references, and a project portfolio highlighting their ability to structure successful solar deals for other building owners.
- A contract structured like a site lease, which the telecommunications industry has used for multiple decades to install cell towers and antennas.

3. Facility concerns

Maintaining a quality facility is essential for all building owners. Solar installations raise a suite of facility concerns.

Perhaps the largest concerns arise from rooftop solar installations—as opposed to parking lot installations. Added weight to the rooftop can cause structural engineering issues. Investing in a rooftop system is not worth the hassle if the rooftop is old and in need of replacement in the near future.

Building orientation and shading can prohibit the development of a profitable installation. Limited rooftop and/or parking area availability can also affect profitability. Building owners are not experts in the feasibility of solar installations and are looking for developers to clearly articulate answers to these concerns.

Additionally, any construction to a building can result in tenant disruption, which is undesirable. Building owners are going to avoid unnecessary tenant disruption, unless absolutely necessary and currently solar is not. Therefore, solar that can be installed with no, or minimal, disruption to tenants is desirable.

In this section, solar developers propose a variety of solutions including:

- The developer holds adequate liability and construction risk insurance coverage over the entirety of the solar project.
- The developer conducts and shares a feasibility analysis—defining project scope, construction timeline, and expected ROI—before asking the building owner to enter into a contract.
- The developer utilizes a project design and construction approach that maintains the validity of existing building warranties, such as a roof warranty.

4. Vendor and technology risk

Building owners have expressed concern regarding the reliability of solar developers—with respect to workmanship, project management, and length of time in business. The onus is on solar developers to prove that they are not like “used car salesmen.” A long track record of successful project development and testimonials/referrals may help to overcome this challenge.

In addition to vendor risk, building owners perceive significant technology risk. Solar technology—in regards to cost, lifespan, and efficiency—is constantly improving. Additionally, opportunities to pair solar with other distributed energy resources (DER) like energy storage and demand response schemes may be more lucrative in coming years. Building owners question whether or not now is the right time to move forward with a solar installation.

In this section, solar developers propose a variety of solutions including:

- The developer offers consultation on current incentives and market opportunities, such as the investment tax credit and Preferred Resources Pilot solicitations, while creating a unique and time-sensitive business opportunity that maximizes revenue for the building owner.
- The developer provides testimonials, references, and a project portfolio highlighting their ability to structure successful solar deals for other building owners.
- The developer assigns an on-site Project Manager during the entire construction process to keep the project on schedule, promptly address building owner questions or concerns, and minimize potential disruption to tenants.

5. Permitting and approvals

Business owners do not want to navigate bureaucracies to secure necessary permitting and approval for a solar installation. This includes municipal agencies, associations, or a Board of Education and Division of State Architecture for schools. The lengthy application to receive Permission to Operate (PTO) from utilities is also a deterrent. Building owners want solar developers to bring turnkey solutions to these barriers.

Importantly, some building owners need approval from the landowner to make significant modifications. This structure, where the landowner is a separate entity from the building owner, is quite common in Orange County.

Other concerns in this area include a lack of support from municipal agencies, miscellaneous jurisdictional issues, and the long duration of contracts, as 20-year contracts can be perceived as too long.

In this section, solar developers propose a variety of solutions including:

- The developer holds all responsibility for securing approvals, permitting, code compliance, and project interconnection.
- The developer offers flexible contract terms to meet the building owner's preferences regarding length of the lease, construction timelines, insurance coverage, and legal liability.
- The developer offers a turnkey, headache-free solar solution, handling every aspect of project development.

6. Other

Other building owner concerns, such as safety issues and contract flexibility, are inherent in all solar development projects. Some solar developers have identified others building owner issues they have encountered, as well as their solutions.

In this section, solar developers propose a variety of solutions including:

- The developer takes sole responsibility for site safety and operation.
- The developer offers a lease that gives the building owner maximum flexibility for bringing new tenants or business activities into the building.

Directory of contributing solar developers

Kana Engineering Group

Christopher Gee
Business Development Manager
9674 Hermosa Ave
Rancho Cucamonga, CA 91730
cgee@kanaeg.com
(310) 562-6783

Mirasol Development LLC

Genevieve Liang
SVP Development
9415 Culver Blvd
Culver City, CA 90232
gl@mirasoldev.com
(323) 786-3211

NRG Energy, Inc.

Benjamin Herhold
Manager – Business Development
100 California St Suite 650
San Francisco, CA 94109
benjamin.herhold@nrg.com
(415) 627-1652

RA Power & Light LLC

Michael Campbell
CEO
1278 Glenneyre Street Suite 122
Laguna Beach, CA 92651
michael@rapowerandlight.com
(949) 294-5212

Solar Provider Group, LLC

Jason Chiang
Director of Business Development
5657 Wilshire Blvd Suite 310
Los Angeles, CA 90036
jchiang@solarprovidergroup.com
(213) 784-3523

Sunplicity LLC

Jan Jacob Boom-Wichers
President
1841 Webster St
San Francisco, CA 94115
jboom-wichers@gosunplicity.com
(805) 704 3911

West Hills Construction, Inc.

Rusty Wood
Vice President
423 Jenks Cir Suite 101
Corona, CA 92880
rusty@whc.us.com
(800) 515-5270 (w)
(909) 489-2997 (m)