SANTA MONICA RENT CONTROL BOARD STAFF REPORT

TO: Santa Monica Rent Control Board Commissioners

FROM: Garrett Wong, Sustainability Analyst, Office of Sustainability and the Environment

FOR MEETING OF: August 11, 2016

RE: Solar for Renters and Property Owners

Subject Matter:

Creating opportunities for landlords and tenants to benefit from the installation of solar electric systems.

How This Agenda Item Was Initiated:

In 2015, the Center for Sustainable Energy (CSE), a San Diego-based non-profit, and the California Solar Energy Industries Association (CALSEIA), initiated a pilot program with the City of Santa Monica's Office of Sustainability and the Environment (OSE) to bolster the solar market within the multifamily building sector and provide greater solar access to renters and tenants who do not typically have a direct pathway for obtaining solar energy.

The focus of the pilot is on the Virtual Net Energy Metering ("VNEM") tariff, a utility rate tariff through Southern California Edison (SCE). VNEM allows for a multitenant, multimetered building owner to install a common solar electric system, which is then shared by multiple onsite utility accounts.

CSE, OSE and EcoMotion, the City's consultant who provides services under the Solar Santa Monica program, have provided training to local solar contractors on the VNEM tariff, financing options and project delivery concepts. Community workshops were held in May 2016 to inform apartment owners and condo Home Owner Association (HOA) representatives about the VNEM opportunity that exists in the SCE territory. Throughout 2016, the project team intends to provide administrative and technical assistance to multifamily property owners and managers, as well as participating solar contractors seeking to develop VNEM projects.

Background:

Solar energy reduces the dependence on conventional fossil-fuel energy sources that produce greenhouse gasses (GHG). Presently, building energy use is responsible for 30% of the Santa Monica's GHG emissions. Solar power can also support future electric vehicle charging and energy storage, can increase property value, and can improve the tenant morale. Additionally, both the building owner and tenants can enjoy cost savings on energy use.

In 2015, the State legislature enacted several laws that support cities taking proactive measures to achieve aggressive climate and energy goals, and make it easier for building owners to understand building energy use to support upgrading energy systems.

- SB 350 (The Clean Energy and Pollution Reduction Act of 2015) requires that existing buildings must be twice as efficient and use half their energy from renewable sources by 2030. This creates an incentive to encourage immediate building upgrades across Santa Monica, including rent controlled apartment buildings.

- AB 802 ensures that California utilities keep 12 consecutive months of whole-building energy usage data and provide it to any building owner within four weeks of request. Prior to this legislation, owners

could oftentimes only find total building energy use information by asking tenants one-by-one about their unit information, which made it a laborious process for owners to understand the big energy picture of their buildings. AB 802 makes it much easier for building owners to now understand overall energy consumption, providing them with the necessary information to make key decisions regarding energy system upgrades.

- AB 693[1] provides $100 million annually for installing solar power equipment in low-income communities over 10 years, starting in 2017. That translates to a goal of 215,000 multifamily affordable units gaining access to solar, or 300 megawatts (MW) by 2030 in Californian affordable units[2]. This creates the opportunity for low-income renters to benefit from alternative energy, usually reserved for higher-income individuals.

The City of Santa Monica has also adopted aggressive goals to install solar locally. As part of its efforts to become a net zero, energy independent city by 2020, the City has a goal of 7.5 MW of installed solar by 2020, and in May 2016, City Council approved an ordinance requiring rooftop solar systems for all new construction in the City of Santa Monica—both residential and commercial.

While virtual net energy metering (VNEM) has been available since 2008 for the affordable housing sector, and since 2012 for the market-rate building sector, there has been low levels of adoption throughout California.

Expenditures on household energy beyond 6-11% of income is considered unaffordable or burdensome. Oftentimes low-income, households of color, multifamily, and renting households spend a much larger percentage of their income on energy bills than the average family. High energy burdens may cause households to sacrifice nutrition, medicine, and other necessities, which compounds the effects of inequality. Low-to-moderate income multifamily rental housing tends to have far fewer energy efficiency attributes, such as efficient appliances, insulation and windows. As a result, higher energy bills from these inefficient building systems can create a burden for tenants with limited income. Solar energy systems in multifamily buildings can provide energy cost savings for both building owners and their tenants and offer an equitable solution to a large population that is typically excluded from 'green' benefits.

California's Multifamily Affordable Solar Housing (MASH) program demonstrates the impact solar can have for tenants. Between 2008- 2015, 25 megawatts of solar capacity were installed in about 370 solar projects, serving more than 6,500 low-income households in California. In buildings that utilized Virtual Net Energy Metering, tenants' electricity bills fell by an average of about $480-$540 in the first year[3]. The program is now fully subscribed and is no longer available.

Discussion:

The Center for Sustainable Energy's pilot project in Santa Monica is specifically aimed at overcoming market and policy barriers in order to promote a larger uptake of VNEM and solar adoption within the multifamily building sector. In Santa Monica, there are more than 3,000 rent controlled buildings. Adoption of solar energy in a portion of Santa Monica's rent controlled properties would help the City achieve the goal to become a carbon neutral community by 2050.

[1] Eligible affordable housing complex per CPUC Code 2852 – 20% of the households within the complex fall below 80% of the AMI.

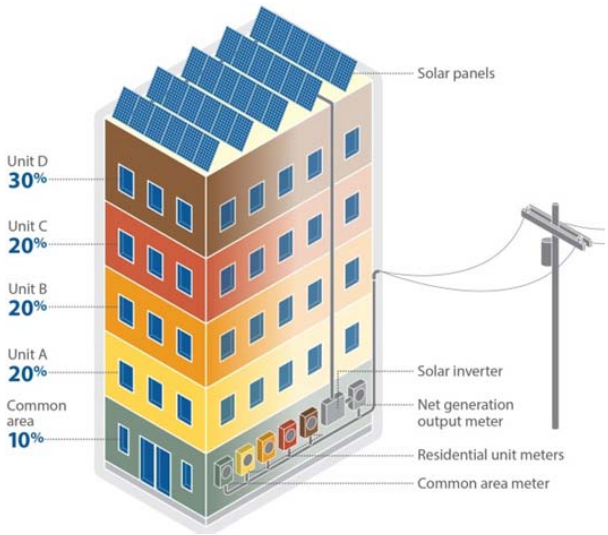
[2] Source: https://www.sunlineenergy.com/making-free-sunshine-available-to-all-californians/

[3] Source: EPA Case Study: California Multifamily Affordable Solar Housing Program

Distributing Solar Power to Tenants

Virtual Net Metering allows a multitenant, multimetered property to install a single solar photovoltaic (PV) system that can be shared by multiple utility accounts. A single solar system installed by the property owner or a third-party can generate enough electricity to support more than one utility account within the property.

Figure 1: Virtual Net Energy Metering



Common areas and tenant units can receive a portion of the monthly building solar production. This portion can be determined by a variety of factors like historical electricity consumption, square footage or financial share. Solar credits can then be directly applied to the utility bill. A hypothetical example is presented in Exhibit A.

As tenants would benefit from the distribution of the total monthly electricity generation, the cost of that electricity could also be distributed as well. A San Diego-based property owner of affordable housing reported tenant savings of approximately $540/year per tenant[4]. In a non-rent controlled building, the property owner's purchase price of the solar system is often recouped, or lease payment paid, by-way of an "energy fee" collection each month from tenants. The fee is based on the number of kWh allocated to each benefitting tenant utility account, thus reducing the utility bills and the amount owed to Southern California Edison (SCE) Utility. This "energy fee" would not exceed the price/kWh charged by the Utility, but would rather be competitive with the Utility rate, and ideally provide the tenant with an overall net savings of their utility costs.

While Virtual Net Metering offers an opportunity for landlords and tenants to enjoy clean electricity and reduced utility bills, and therefore overall reduced living expenses, current rent control restrictions may limit the property owner's ability for cost recovery of the initial investment.

[4] Townspeople Apartments, Normal Heights, in San Diego CA

Financing Options for Building Owners

Property owners have many financing options available to manage the installation costs of solar energy. In addition to federal tax credits, some recommended financing opportunities include:

- Power Purchase Agreements (PPAs): A third-party developer owns, operates, and maintains the solar system, but the building owner approves the system to be added to the property and then purchases the system's energy at a set per-KWh price. This price/kWh is generally locked in for the lifetime of the PPA contract (typically 20 years), with a possibility of an escalator built into the payment schedule.

- Solar leases: Similar to PPAs, a third-party developer owns, operates, and maintains the solar electric system, but the building owner approves the system to be added to the property and then pays a fixed monthly fee for the life of the lease contract (typically 20 years), with a possibility of an escalator built into the payment schedule

  Most lease and PPA providers, currently, do not employ contracts or business models that involve multiple participants (tenants), nor do these companies typically work directly with tenants to solidify a solar arrangement. Due to this, the property owner is the entity who would need to contract with the solar provider and collect the tenant fees to fulfill the monthly solar dues

- Property Assessed Clean Energy (PACE): The local government pays for the up-front costs of solar system installation, and the building owner pays back the loan through a special assessment on the building's property tax over an extended period of years. Repayment obligation remains with the property, so if it is sold, the loan obligation stays with the building and not the previous owners.

Next Steps:

OSE recommends that the Rent Control Board discuss the issues raised in this report and, if interested, direct rent control staff to explore options that could allow property owners to recover the investment costs of solar electric systems that benefit both owner and tenant utility accounts. The goals of such a program would be to: foster sustainable building practices and upgrades; provide a path for the City to meet its sustainability goals; and to provide equal access to solar energy for all Santa Monica residents.

Exhibit A

Virtual Net Metering Hypothetical Example

A 10 kW solar electric system installed in Santa Monica would generate approximately 16,000 kWh per year. The owner has the ability to determine the share of solar generation per common area and tenant unit. In Figure 2, a percentage per space has been allotted to illustrate a hypothetical distribution. Then, given the monthly consumption and solar generation received per space, one can approximate the net monthly consumption. The consumption amounts not serviced by the solar generation allocated to each unit would continue to be provided by Southern California Edison and would be paid for by the individual account holder.

Figure 2: Illustrating a Hypothetical Virtual Net Metering Example

Solar PV - 10 kW

generates 16,000 kWh per year

kWh	Common Area	Unit A	Unit B	Unit C	Unit D
Existing monthly consumption	150	290	300	350	500
Share of solar generation	10%	20%	20%	20%	30%
Annual solar generation received	1,600	3,200	3,200	3,200	4,800
Monthly solar generation received	133	267	267	267	400
Net monthly consumption (remaining SCE bill)	17	23	33	83	100

Translates to bill savings from SCE

Can be influenced by user behavior

To see how a solar PV system can impact the owner and tenants financially, we can assume that it costs $4 per watt to install a 10 kW solar system and that the electricity rate is $0.16/kWh. These assumptions are based on the average costs for system installation and the first tier of kWh used under Southern California Edison. Under the current net energy metering policies, the full value of excess electricity that is generated is recognized by SCE. Using these financial equivalents, it would cost $40,000 for the building owner to install the PV system from Figure 2. Given the same allocated breakdown per common area and tenant unit, the building owner would save $256 per year and the tenants would collectively save $2,304 per year. A portion of these tenant savings could revert back to the owner for initial cost recovery (See Figure 3 below for illustration).

Figure 3: Translating kW to Dollars

10 kW solar PV - $40,000 to install

$256 annual savings to the owner

Portion of tenant savings could revert back to owner

Value of kWh	Common Area	Unit A	Unit B	Unit C	Unit D
Existing monthly electricity bill	$24	$46	$48	$56	$80
Share of solar generation	10%	20%	20%	20%	30%
Annual solar generation allotted	$256	$512	$512	$512	$768
Monthly solar generation allotted	$21	$43	$43	$43	$64
Net monthly electricity bill (paid to SCE)	$3	$3	$5	$13	$16

$2,304 annual tenant savings