



CITY OF HAYWARD

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Cover Memo

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DATE: July 11, 2016

TO: Council Sustainability Committee

FROM: Director of Utilities & Environmental Services

SUBJECT

Net Energy Metering 2.0 Regulations

RECOMMENDATION

That the Committee reviews this report and provides comments.

BACKGROUND

This report is informational only. The purpose is to inform the Committee about the state of distributed solar in Hayward and recent Net Energy Metering (NEM) proceedings by the California Public Utilities Commission (CPUC).

What is Net Energy Metering?

NEM is a utility billing structure (tariff) that is intended to encourage the adoption of solar and other distributed generation systems. These systems have high up-front costs and NEM rate structures are intended to make the investment more cost-effective for property owners.

Energy customers rely on the electrical grid to provide consistent, around-the clock service. Because solar systems do not generate electricity at all times, customers with solar systems purchase electricity from the grid at night and on cloudy days.

NEM allows consumers with solar systems or other renewable energy systems to “sell” electricity back to the grid when they are overproducing (during the middle of the day) and use this as a credit to offset the electricity that they purchase from the grid when they are under-producing or inactive (at night). Any surplus credit is rolled over to the following billing period.

In some states, such as California, if a NEM customer has produced surplus power at the end of a twelve month billing period, then the utility company gives the customer a Net Surplus Compensation check. The CPUC has set the Net Surplus Compensation rate based on current market prices, which is between \$0.03 and \$0.04 per kilowatt-hour (kWh).

Virtual Net Metering, which is a variation to NEM for multifamily and multi-tenant buildings, allows certain customers that generate their own electricity to credit that electricity towards additional accounts. Under VNM, electricity produced by a single solar installation on a multifamily building may be credited toward multiple tenant accounts.

Each state's Public Utilities Commission (PUC) determines the structure of the NEM tariff for the large Investor Owned Utilities (IOUs) in that state. In California, the CPUC determines the NEM tariff structure for Pacific Gas and Electric (PG&E), San Diego Gas and Electric, Southern California Edison, and a handful of smaller IOUs.

Relevant General Plan Policies

NR-4.6 Renewable Energy

The City shall encourage and support the generation, transmission, use, and storage of locally-distributed renewable energy in order to promote energy independence, efficiency, and sustainability. The City shall consider various incentives to encourage the installation of renewable energy projects (i.e. reduced permit fees and permit streamlining).

NR-4.10 Public Renewable Energy Generation

The City shall ensure that all new City-owned facilities are built with renewable energy, as appropriate to their functions, and shall install renewable energy systems at existing City facilities where feasible.

PFS-8.8 Renewable Energy Integration

The City shall encourage energy providers (e.g., PG&E) to offer their support and assistance in integrating individual renewable energy systems (e.g., solar systems) into the electricity grid.

Solar Systems in Hayward

Attachment I displays the number of permits issued for solar permits in Hayward each year from 2008 to the present (note that the data for 2016 is through June 21). From 2012 to 2015, the number of annual solar permits grew by 485%.

To make the solar permitting program easier, the City launched its solar permit program, "Solar Tuesday," on September 23, 2014. Through this program, applicants can come to the permit center and receive a same-day solar permit over the counter. This program has been a success. In 2015, 86% of solar permits were issued on Solar Tuesday.

Solar Capacity in Hayward

According to PG&E data, at the end of 2015, Hayward had 1,061 residential solar sites interconnected to the PG&E grid with a combined capacity of 4,005 kilowatts (kW). In addition, Hayward had sixty non-residential solar sites with a combined capacity of 10,278 kW.

Therefore, if all solar systems in Hayward were to be operating at their full capacity, the combined output would be 14,283 kW. For comparison, the average community demand for all Hayward PG&E accounts in 2015 was 110,599 kW. However, note that solar systems are often under-producing or inactive for large parts of the day.

DISCUSSION

The NEM tariff structure in California expires by July 1, 2017 or when NEM capacity reaches 5% of an IOU's peak demand. Last summer, the IOUs warned that they were getting close to their 5% caps. As a result, the CPUC conducted hearings to adopt a NEM Successor Tariff last fall. Attachment II provides a

summary of the hearings.

PG&E reached its 5% cap in June 2016, so all new solar customers in Hayward will now be enrolled under the Successor NEM Tariff.

Major highlights of NEM Successor Tariff for new solar customers: (paraphrased from the CPUC website)

- The Successor Tariff maintains the retail rate for NEM successor customers. This means that NEM customers will continue to be able to “sell” electricity back to the grid at the same rate that they purchase electricity. This arrangement is beneficial for solar customers because it allows them to reduce or break even on their electricity bills.
- New NEM customers will be grandfathered into the successor tariff for twenty years after their connection. This protects solar customers from any future CPUC decisions.
- The Successor Tariff does not add any new demand charges or grid access fees for solar customers. The IOUs advocated for these charges, but the CPUC ruled in favor of solar advocates, who argued that these charges would put solar out of reach for some families.
- The Successor Tariff adds a new interconnection fee for customers with systems under one megawatt (MW), which is a one-time flat fee likely to be approximately \$75-\$150.
- The Successor Tariff defines which fixed (“non-bypassable”) charges NEM customers are required to pay on each kWh of electricity they consume. These charges primarily fund low income and energy efficiency programs. The Solar Energy Industries Association estimates that the average new solar customer will pay eight to ten dollars more a month than existing solar customers due to these charges. The rationale behind this increase is that previous solar customers were paying for their fair share of the “public good” by being earlier adopters of solar. As the price of solar has come down, solar customers are being required to contribute more to these other public good programs.
- The Successor Tariff requires that new solar customers use time-of-use (TOU) rates. TOU rates are favorable to solar customers because they allow the customer to sell electricity to the grid when it is more expensive (during the day) and purchase electricity from the grid when it is less expensive (at night).
- The Successor Tariff requires IOUs to make solar available to residents of multi-tenant buildings through Virtual Net Metering

In summary, new residential and small commercial solar customers between now and 2019 will have a similar NEM rate structure to existing solar customers, with an added interconnection fee of \$75-\$150 and an estimated eight to ten dollars in additional monthly charges for public good programs.

Large commercial customers will pay more each month for public good programs because those charges are based on kWhs consumed. However, large customers will pay the same flat interconnection fee of \$75-\$150 as long as their solar system does not exceed one MW. Customers with solar systems over one MW

must pay for all distribution upgrade costs triggered by their system.

FISCAL IMPACT

The City is currently a NEM customer for several PG&E accounts that are attached to buildings with solar, such as the Animal Shelter and Utility Center on Soto Road. These accounts are grandfathered into the previous NEM structure and will not be impacted by the CPUC's current and future decisions. The new library and any other new solar installations will be subject to the Successor NEM Tariff and will be subject to the new interconnection fees as well as the monthly charges for public good programs. These fees will be factored into the financial analysis of future solar projects.

ECONOMIC IMPACT

NEM pricing can dramatically impact the number of new solar installations, which has a direct impact on the health of the local solar industry. For example, in December 2015, the Nevada PUC passed a decision to triple the fixed charges for NEM customers and reduced the credit received for surplus generation by 75%. As a result of these NEM changes, new solar installation permits dropped by 92% in the first quarter of 2016 and the state's three largest solar providers left the market.

The Solar Foundation, an independent nonprofit organization, conducts an annual State Solar Jobs Census. According to the Foundation, the solar industry accounted for 75,598 jobs in California in 2015 and 4,619 jobs in Alameda County. Sixty percent of these workers were employed as solar installers. This data can be found at www.solarstates.org <<http://www.solarstates.org>>.

SUSTAINABILITY FEATURES

Energy:

The NEM Successor Tariff continues to be favorable to solar customers and thus encourages adoption of distributed solar. This is policy goal of the Hayward's General Plan. Staff will continue to promote financing programs for solar installations, such as PACE Financing. Staff will be hosting a workshop this fall on several solar programs that are available to Hayward residents, including low-income homeowners.

Air:

Continued adoption of distributed solar as an energy source offsets more polluting forms of energy, which improves regional air quality. Solar improves local air quality when it is used as a fuel source for electric vehicles that replace the use of gas-powered cars and when it offsets the use of natural gas (for example, by switching from a gas powered water heater to an electric water heater).


Purchasing:

All City purchases associated with distributed solar are consistent with the City's Environmentally Preferred Purchasing Policy.

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Recommended by: Alex Ameri, Director of Utilities & Environmental Services

Approved by:



Fran David, City Manager

Attachments:

Attachment I
Attachment II

Solar Permit Data
Summary of CPUC Hearings