

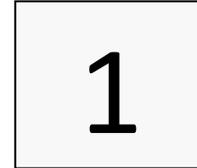
MEMORANDUM

TO: UTILITIES ADVISORY COMMISSION

FROM: UTILITIES DEPARTMENT

DATE: October 5, 2016

SUBJECT: Recommendation that the Utilities Advisory Commission Recommend that Council Adopt a Net Energy Metering (NEM) Transition Policy



Recommendation

Staff requests that the Utilities Advisory Commission (UAC) recommend that Council adopt the following NEM Transition Policy for eligible NEM customers:

1. Establish a 20-year transition period from the time of system interconnection through which NEM customers will remain eligible for net metering and related terms and conditions described in California Public Utilities Code Section 2827, and
2. Allow NEM customers to expand their systems by any amount, and adjust the transition period by a ratio of the expanded and original system sizes, according to the following formula: $\text{New Remaining NEM Term} = \text{Original system's remaining NEM term} \times (\text{Original system size in kW} / \text{New system size in kW})$.

Executive Summary

Net energy metering (NEM) is a billing mechanism designed to promote the installation of renewable distributed generation by allowing customers to be compensated at the full retail rate for electricity generated by their on-site systems, such as solar photovoltaic (solar PV) systems. State law requires all electric utilities to offer NEM to customers with eligible renewable distributed generation up to a maximum cap, or "NEM cap". Council adopted a NEM Successor Program to be implemented when the NEM cap is reached, but requested that staff evaluate options and a recommendation for the NEM Transition Policy and change the method for calculating the NEM cap.

The proposed NEM Transition Policy provides a fair way for customers under NEM to expand their systems and remain under NEM for a reasonable period of time before transitioning to the NEM Successor Program. Staff recalculated the NEM cap using the Council-approved method and revised the NEM cap to 10.8 MW, a 13.3% increase from the prior NEM cap of 9.5 MW.

Background

Council Action on NEM Successor Program

The UAC reviewed, and recommended that Council approve, the proposed NEM Successor Program and NEM Transition Policy at its April 2016 meeting. The Finance Committee acted likewise at its May 17, 2016 meeting. Council reviewed the proposal at its August 22, 2016 meeting ([Staff Report 7150](#)). The Council voted unanimously (8-0 with Council Member Filseth absent) to:

1. Adopt a resolution:
 - a. Adopting a Net Energy Metering (NEM) Successor Rate, E-EEC-1 (“Export Electricity Compensation”); and
 - b. Amending Utilities Rule and Regulation 2 (“Definitions and Abbreviations”) and 29 (“Net Energy Metering and Interconnection”); and
2. Direct staff to:
 - a. Return to Council within four months with options and a recommendation for the NEM Transition Policy
 - b. Return to Council within one year of reaching the cap from the expiring NEM program with a report describing other NEM programs in California, with a comparison to the Palo Alto program including the effectiveness of Palo Alto’s program in spurring local residential solar options; and
 - c. Change the method for calculating the NEM cap to five percent of the customer class non-coincident peak.

NEM Cap

The California Public Utilities Code requires all electric utilities to offer NEM to eligible customers with renewable distributed generation, up to a cap. Currently, the California Public Utilities Code affords publicly-owned utilities (POUs), like Palo Alto, with flexibility to define the City’s 5% NEM cap. Section 2827(c)(4)(A) of the California Public Utilities Code specifies that POUs must offer NEM until “combined total peak demand” of NEM customers exceeds 5% of “aggregate customer peak demand” of the electric utility. The statute is silent as to how to define “aggregate customer peak demand” for POUs, leaving matters such as the best method for calculating aggregate customer peak demand, or what reference year to use to the City to decide.¹

In October 2015 Council formally adopted a resolution setting a NEM cap calculation methodology which resulted in a 9.5 MW cap for Palo Alto ([Staff Report 6139](#)), which is equal to 5% of the City’s 2006 system peak demand for electricity of 190 MW. The reference year (2006) was utilized since California Senate Bill 1 (SB1) took effect on January 1, 2007, which set

¹ By contrast, the statute and the CPUC afford Investor Owned Utilities (IOUs) with no discretion for how to calculate “aggregate customer peak demand.” The CPUC approved a decision requiring the large IOUs to define aggregate customer peak demand as the sum of individual customers’ peak demands, or so-called non-coincident peak demands. The Public Utilities Code was later modified to further clarify this definition for the IOUs (Cal. Public Utilities Code, §2827 (c)(4)(B)).

a statewide goal of deploying 3,000 MW of new solar PV systems by 2017 and concurrently modified the California Public Utilities Code to raise the NEM cap from 0.5% to 2.5%.²

On August 22, 2016, Council directed staff to change the methodology to determine the City’s NEM cap to be 5% of the customer class non-coincident peak. The sum of the customer class non-coincident peaks is estimated to be about 215 MW, so the new methodology will revise the City’s new NEM cap to 10.8 MW, or 5% of 215.6 MW, as shown below.

Rate: Customer Class	Non-Coincident Peak in 2006 (MW)
E-1: Residential	36.8
E-2: Small Non-residential	18.5
E-4: Medium Non-residential	89.2
E-7: Large Non-residential	66.2
E-18: City Accounts	3.8
Street/Traffic Lights	1.1
Total	215.6

Discussion

Proposed NEM Transition Policy

Transition Period

In March 2014, the CPUC ruled that the investor-owned utilities’ (IOU’s) existing NEM customers (and all those who install eligible systems within each IOU’s respective NEM cap) can remain in NEM through a 20-year transition period from the date of interconnection. The length of the transition period was determined in part based on an assessment of expected useful life, as indicated by module warranties, power purchase agreements, and third-party financing agreements. The Sacramento Municipal Utility District (SMUD), the San Francisco Public Utilities Commission (SFPUC) and the Modesto Irrigation District (MID) have also proposed that NEM customers remain eligible for NEM for 20 years from the date of initial system interconnection.

To help promote regulatory certainty and transparency for existing NEM customers who have invested in solar PV systems and for solar developers operating in Palo Alto, staff proposes that existing NEM customers and all eligible customers within the NEM cap in CPAU service territory remain eligible for NEM through a 20-year transition period.

System Expansions

Some customers who install systems within the NEM cap may wish to expand their systems after the NEM cap has been reached. Allowing system expansion up to a given threshold is broadly in-line with system expansion policies established in the California IOU service territories and Turlock Irrigation District, as shown in the table below. Adopting a system

² The NEM cap was later raised from 2.5% to the current 5% in 2010 by Assembly Bill 510.

expansion policy would allow a customer to expand their system or to replace panels that failed prematurely with higher efficiency panels while still remaining eligible for NEM.

Policies of California utilities for system expansions after the NEM cap has been reached

Utility	Description of System Expansion Policy
IOUs: PG&E, SDG&E, So Cal Edison	Customers may increase the system size up to 10% of the original system size and remain eligible for NEM. Customers who wish to expand their systems more may either 1) meter the added capacity separately under the NEM successor tariff, or 2) elect for the entire system to take service under the NEM successor tariff.
Turlock Irrigation District	Residential customers whose original system size is less than 10 kW may increase their system up to 11 kW total. Residential customers with an original system size of 10 kW or greater and non-residential customers may increase their system by a maximum of 10%. For expansions beyond these thresholds, the customer must transition the entire system capacity to the NEM successor rate.
Imperial Irrigation District	No existing policy for system expansions.
Modesto Irrigation District	Proposal: PV systems operating under NEM that want to add panels must reapply under the NEM successor for the total system.
City of Lompoc	No existing policy for system expansions.

Staff originally proposed that if the existing NEM system is modified or repaired after the NEM cap is reached, the customer will remain eligible for NEM as long as the system does not increase by more than 10% of the original system size. If the system modification or expansion results in an increase of over 10% of the original system size, the customer would be required to transition to the NEM successor program for the entire system capacity.

A community stakeholder, Carbon Free Palo Alto, proposed a formula for system expansions that would allow customers to expand their systems and remain under NEM for a term that is proportional to the original and expanded system sizes. The formula for the modified transition period (“Remaining NEM term”) for an expanded system is as follows:

$$\text{New remaining NEM Term} = \text{Original system's remaining NEM term} \times (\text{Original system size in kW} / \text{New system size in kW}).$$

For example, if a 4 KW system, which was interconnected for 5 years (thus, had 15 years remaining under NEM), was expanded by 2 KW to 6 KW, the new NEM transition period would be 10 years for the entire expanded 6 KW system using the formula as follows:

$$\text{New remaining NEM term} = 15 \text{ years} \times (4 \text{ KW} / 6 \text{ KW}) = 15 \text{ years} \times 2/3 = 10 \text{ years}$$

This formula results in the same amount of NEM-eligible “capacity-years” before and after the expansion.³

Carbon Free Palo Alto argues that limiting the NEM transition period for expansions to only 10% is not reasonable as customers are unlikely to make such small system additions. Instead, they may seek to upsize their systems by at least 25% due to additional electricity needs due to the addition of an electric vehicle or electrification of a gas-using appliance.

Options for system expansion policies are described in the table below.

Alternative policies for system expansions after the NEM cap has been reached

Alternative	System Expansion Policy	Discussion
Original Staff Proposal	Customers remain eligible for NEM for system expansions within 10% of the original system size using the original system interconnection date for the transition period. Larger system expansions require the entire system capacity to be transitioned to the NEM successor rate.	This policy accommodates small expansions that are driven by replacement of damaged panels or those that failed prematurely. Since newer panels may be larger, or more efficient, a simple panel-for-panel replacement will likely increase system size.
Carbon Free Palo Alto Proposal	Additions of any size are acceptable, but the expanded system transition period is shortened pro-rata by the ratio of the original system size and the expanded system size.	This policy allows all system expansions to remain eligible for NEM, but shortens the transition period by the fraction that the system is expanded. This would accommodate system expansions that are sought to meet increased electric usage.
Allow expansions of up to 25%	Customers remain eligible for NEM for system expansions within 25% of the original system size. Larger system expansions require the entire system capacity to be transitioned to the NEM successor rate.	This policy is similar to the original staff proposal above, but allows larger expansions. This policy is not recommended since it could allow significant additions to remain NEM-eligible, pushing the installed NEM capacity far over the NEM cap.

³ Before the expansion, the 4 KW system had 15 years left in NEM, or 60 kW-years. After the expansion, the 6 kW system has 10 years left in NEM, or (again) 60 kW-years.

Alternative	System Expansion Policy	Discussion
No Expansion	For any system expansions, the customer must transition the entire system capacity to the NEM successor rate.	This policy does not allow expansions of any kind to remain under NEM so that all expanded systems would be transitioned to the NEM successor. This policy is not recommended as repairing failed panels or even minor system expansions would not be accommodated.
Expansion only under NEM Successor	System expansion capacity would be under the NEM Successor while the original system capacity would remain under NEM for the transition period (20 years from the date of interconnection).	This policy is not recommended as it would be a large metering and administrative burden to accommodate both NEM and the NEM successor program and rates for the combined system.

Staff Recommendation

Staff considered the options for how to treat solar PV system expansion in the City’s NEM Transition Policy. Staff’s original proposal was targeted at small additions that were likely prompted by the need to replace defective panels and, thus, limited the chance that significant additional solar capacity would be added to the NEM program after the NEM cap was reached. The proposal from Carbon Free Palo Alto is a creative and fair way to allow system expansions prompted by customers who desire to add more solar PV capacity to their systems while keeping the overall capacity under the NEM cap. Thus, staff recommends the Carbon Free Palo Alto proposal to pro-rate the transition period for an expanded system according the formula:

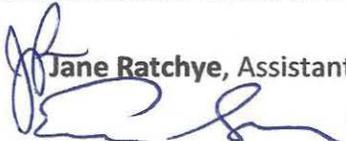
$$\text{New remaining NEM Term} = \text{Original system’s remaining NEM term} \times (\text{Original system size in kW} / \text{New system size in kW}).$$

RESOURCE IMPACT

The proposed NEM Transition Policy and expansion of the NEM cap support Strategy #2 of the Local Solar Plan, to “develop proper policies, incentives, price signals and rates to encourage solar installation”.

ENVIRONMENTAL IMPACT

The UAC’s review of the proposed NEM Transition Policy does not meet the California Environmental Quality Act’s (CEQA) definition of “project” under California Public Resources Code Sec. 21065, thus no environmental review is required.

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