

STAFF REPORT

DATE: May 24, 2016
TO: City Council
FROM: Mike Webb, Assistant City Manager
Mitch Sears, Sustainability Manager
SUBJECT: Climate Action and Adaptation Plan – Solar Goals Update

Recommendations

1. Adopt a resolution acknowledging achievement of the City’s 2015 rooftop solar goals and setting new goals for 2020.
2. Direct staff to work with Cool Davis, other community based organizations, and solar businesses to execute the solar components of the Cool Community Campaign as outlined in the December 2015 City/Cool Davis Memorandum of Understanding.

Council Goals

The recommended actions partially implement the Davis Climate Action and Adaptation Plan, directly addressing the Council goal of pursuing environmental sustainability and conserving natural resources and protecting the environment. Specifically, the actions are an implementation step for Council Goal #3, Objective #1 to “Reduce the community’s carbon footprint and achieve measureable GHG emission reductions....”.

Background and Analysis

In 2010 the City Council adopted the Davis Climate Action and Adaptation Plan (CAAP). The CAAP includes goals to reduce and produce energy. Specifically the Plan called for meeting 5% of the Davis community’s peak electricity needs by 2015. A recent assessment of City building permit and PG&E data shows that the City exceeded this goal. As shown in the table below, Davis exceeded the goals for both the total number of solar installations and renewable energy generation capacity.

CAAP Goal	Metric	Objective	Outcome (2015/16)	Notes
Produce 5% of the (peak) electricity used in Davis from renewable on-site and/or local sources	Number of roof top solar PV systems (Residential + Non-Residential)	1,733 roof top systems	2,360 roof top systems	Exceeded goal by 36%

<p>Produce 5% of the (peak) electricity used in Davis from renewable on-site and/or local sources</p>	<p>Generation capacity</p>	<p>2.6 Mw (Ave 1.5 Kw system)</p>	<p>29.6 Mw (Ave 12.5 Kw system)</p> <p><u>Note:</u> this is an average size of residential and non-residential systems combined.</p> <ul style="list-style-type: none"> • Res. Ave: 4.7 Kw • Non-Res. Ave: 246 Kw 	<p>Exceeded goal by 1,038%</p> <p><u>Note:</u> Meets: Approx. 57% of total peak demand;</p> <p>Or approx. 20% of total annual community electricity demand.</p>
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Figures 1 and 2 below show summary information for solar PV installations in Davis from the April 2015 PG&E Green Communities Report for Davis.

Figure 1: Residential rooftop PV systems, PG&E Green Communities Report, April 2015

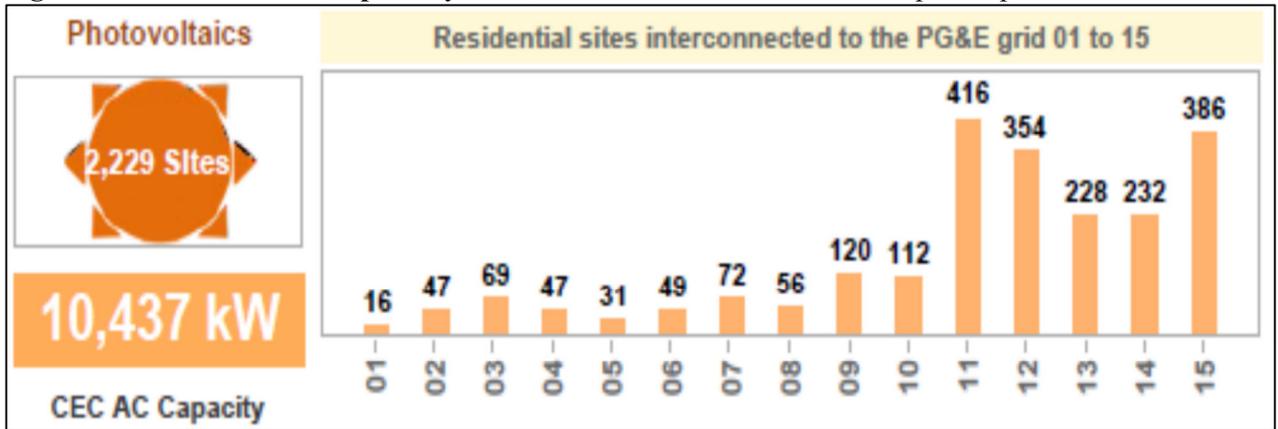
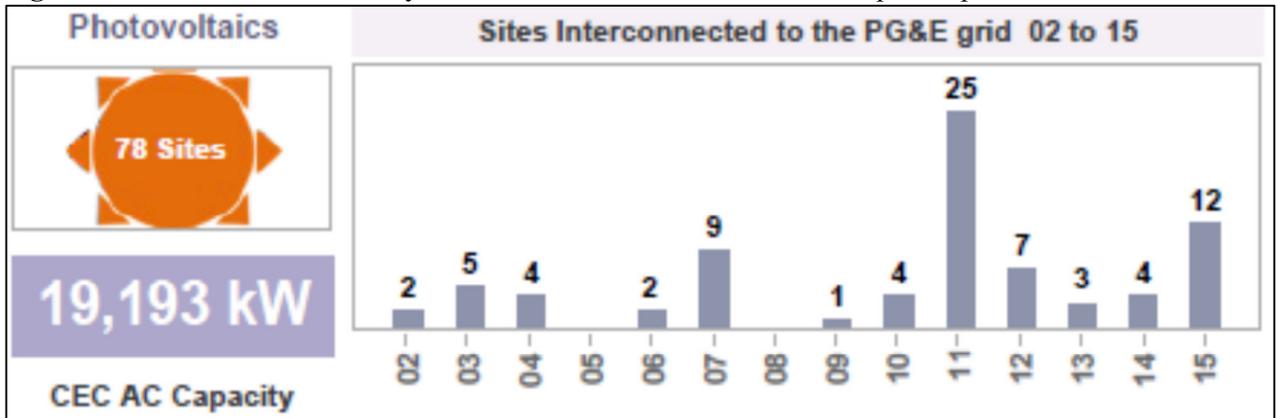


Figure 2: Non-Residential PV systems, PG&E Green Communities Report, April 2015



Though there are minor variations between the PG&E data and City permit data, both sources show that Davis far exceeded its goals in this sector.

Updated Solar PV Goals

Staff has consulted with local solar installation providers and Cool Davis to assess these outcomes. The general conclusions are that these results are due in large part to falling solar PV prices, innovations in financing, tax incentives, increasing sophistication of the solar industry, and a general acceptance of the technology in Davis. While local and national solar companies have heavily promoted roof top solar, there has not been a coordinated local effort to drive even higher levels of adoption.

In light of these results, staff has been working with Cool Davis and local solar companies to identify new goals for rooftop solar installations and develop a local campaign to boost adoption. Based on their knowledge of the industry and local adoption characteristics (market), combined with the City's understanding of the build out potential for rooftop systems developed through the 2015 Davis Future Renewable and Energy Efficiency (FREE) plan, staff is recommending the following revised rooftop solar goals for 2020 for single family homes:

- Double the number of single family household roof top systems by the end of 2020 to approximately 4,500 systems.
- Double the total power production capacity of single family household roof top systems by the end of 2020 to approximately 21 Mw.

(Note: these goals focus on owner-occupied single family households due to the “split-incentive” issue that significantly limits the economic value of installing solar on rental properties. The “split incentive” refers to the situation where the tenant pays the electricity bill so the owner doesn't have the economic incentive to invest in a roof-top system. Staff and subject matter experts continue to research and develop methods to address this market based issue and will recommend updated goals if it can be resolved.)

The new goals would equate to approximately 2,500 new systems averaging 4.7kW over the next 5 years. This would result in roof top solar on approximately 50% of the owner occupied single family homes in Davis. The local solar companies that the City and Cool Davis are coordinating with on development of the campaign believe these are ambitious but reachable goals given anticipated market conditions, the extension of federal tax credits, and the added driver of a sophisticated campaign tailored to the local market. In addition, if a local Community Choice Energy (CCE) program incentivizes roof top solar similar to existing CCE programs in Marin, Sonoma, and Lancaster, adoption rates may increase further.

Note: residential solar PV permits are typically issued over the counter; non-residential solar PV permits require a plan check due to their relative complexity. Feedback from the local solar companies currently advising the City on the solar campaign indicates that the City's permit system is working well.

CAAP Update

If adopted by the Council, these goals would be incorporated into an update of the Climate Action and Adaptation Plan later this year. Staff is recommending this approach so that there is alignment with the local campaign which is scheduled to kick-off at an event on June 5th at the Veterans Memorial Center featuring the film “Catching the Sun”. The event is being co-sponsored with Cool Davis and the local solar companies that are participating on the campaign planning task-force (Solar Roof Dynamics, Repower Yolo, and Aztec Solar).

Attachments

1. Resolution

RESOLUTION NO. _____, SERIES 2016

RESOLUTION UPDATING SOLAR PHOTOVOLTAIC GOALS

WHEREAS, in 2010 the Davis City Council adopted the Davis Climate Action and Adaptation Plan (CAAP); and

WHEREAS, the CAAP calls for significant reduction of GHG emissions through increase of the local use and production of renewable energy and set a goal to produce 5% of the peak electricity used in Davis (2.6 Mw) from local renewable energy sources by 2015; and

WHEREAS, the Davis community exceeded this goal by installing over 2,000 solar PV systems in the last 5 years that generate 29.6 Mw, approximately 10 times more than the 2015 CAAP goal; and

WHEREAS, the City, in partnership with Cool Davis and local solar companies, have determined that market conditions and the execution of a local campaign to drive adoption in the next 5 years can continue these trends; and

WHEREAS, the City and Cool Davis adopted a Memorandum of Understanding in December 2015 that lays the foundation for a community campaign to reduce local GHG emissions, including a program developed with local companies to increase local adoption of solar PV; and

WHEREAS, the City's update of its CAAP renewable energy production goals are consistent with its overall goals to reduce local GHG emissions.

NOW, THEREFORE, BE IT RESOLVED by the Davis City Council:

The City of Davis adopts the following 2020 CAAP renewable energy goals for single family owner occupied roof-top solar PV:

- (a) Double the number of single family household roof top systems by the end of 2020 to approximately 4,500 systems.
- (b) Double the total power production capacity of single family household roof top systems by the end of 2020 to approximately 21 Mw.

PASSED AND ADOPTED on this 24th day of May, 2016, by the following vote:

AYES:

NOES:

ABSENT:

Daniel M. Wolk
Mayor