City of Santa Clara
The Center of What's Possible

AGENDA ITEM #: 13.A.9

AGENDA REPORT

Date: April 18, 2017

To: City Manager for Council Action

From: Director of Electric Utility

Subject: Approval of Revised Ten Year Goals for Energy Efficiency

EXECUTIVE SUMMARY

Under AB 2227, the State of California requires all California publicly owned electric utilities to identify all potentially achievable cost-effective electricity efficiency savings and to set annual targets for energy efficiency savings and demand reduction over ten years, and to report those targets to the California Energy Commission (CEC) every four years.

On behalf of its members, the California Municipal Utility Association (CMUA) contracted with Navigant Consulting, Inc. to develop the goals for energy efficiency for each CMUA member utility. Navigant reviewed historical and proposed sales by customer class, energy efficiency technical and cost potential, and the feasible goals that could be set by the City of Santa Clara for the next ten years to meet this potential. The incremental market potential goals represent the feasible energy efficiency savings that can be achieved by the City, and were adopted by the City Council on February 21, 2017.

After the goals were adopted by Council, Navigant found an error in its model which was used to develop the incremental market potential goals for energy efficiency. The error affected nearly all of the California publicly-owned utilities and overstated the potential demand savings by nearly 200%. This error was limited to the model's estimate of demand savings (kW) and did not affect other line items. The energy savings goals (MW-hours) remain the same as previously adopted on February 21, 2017. Because Silicon Valley Power's (SVP) energy efficiency programs are designed around achieving energy savings (MW-hours) and not demand savings, the error does not change SVP's approach to program planning.

There are no financial penalties for not achieving the goals, though under SB 1037, an annual report must be submitted to the California Energy Commission (CEC) on each utility's progress. The results are scrutinized by the CEC and other agencies. Achieving Silicon Valley Power's energy efficiency goals is directly tied to customer interest in participating in energy efficiency programs, which includes customer budget cycles, their availability to manage and implement projects, and their interest in eligible efficient technologies. In some years, SVP has exceeded its energy efficiency goals, while in other years have fallen short. Customer program participation is "lumpy" based on economic and other cycles. The intent of the legislation was to adopt ten year goals so that over the course of the ten years, the overall energy savings would be achieved.

The error has been corrected and a revised summary of the market potential by customer class is attached for both gross and net energy savings goals. The net energy savings figures remain the same, but the potential demand savings is now correctly stated as roughly 3 megawatts savings per year with a total accumulation of demand savings by 2027 of roughly 26 megawatts. For perspective, SVP's peak system demand is about 540 megawatts.

Historically, net energy savings goals have been adopted, but some utilities are moving toward the adoption of gross energy goals, so Silicon Valley Power is providing both. For program tracking purposes, net goals will be used so that they can be compared to historic net goals and energy savings results.

ADVANTAGES AND DISADVANTAGES OF ISSUE

Adopting these revised ten year energy efficiency goals meets our regulatory compliance obligations. The information gained from the potential study helps the electric utility to understand the energy efficiency market potential and design programs that are tailored to meet the needs of our community.

ECONOMIC/FISCAL IMPACT

These energy efficiency goals will be met with the existing state-mandated Public Benefit charges that are collected from customers. Therefore, there is no economic or fiscal impact.

RECOMMENDATION

That the Council approve the revised ten year goals for energy efficiency, as determined by the Incremental Market Potential identified in the Navigant potential study.

for Ken M. Kokkonen

John C. Roukema
Director of Electric Utility

APPROVED:

Rajeev Batra

Rajeev Batra
Interim City Manager

Documents Related to this Report:

1) *Navigant Potential Study: Silicon Valley Power Ten Year Incremental Goals – (2018-2027)*

Introduction

This memo provides Silicon Valley Power with the results of the California Municipal Utilities Association (CMUA) Energy Efficiency Potential Forecasting Study conducted in 2016 by Navigant Consulting, Inc. (Navigant). The potential for energy efficiency is modeled and depicted in the graphs that follow.

Summary of Potential

Navigant used their Electric Resource Assessment Model (ELRAM) to estimate achievable energy and demand savings over a 10 year forecast period specifically for the Silicon Valley Power service territory. In Santa Clara, a high degree of efficiency already exists, rates are lower, most energy is used by the business sector and the weather is mild. All of these factors play into the forecast for future energy efficiency potential resulting in an annual average target of 0.42% of forecasted retail sales.

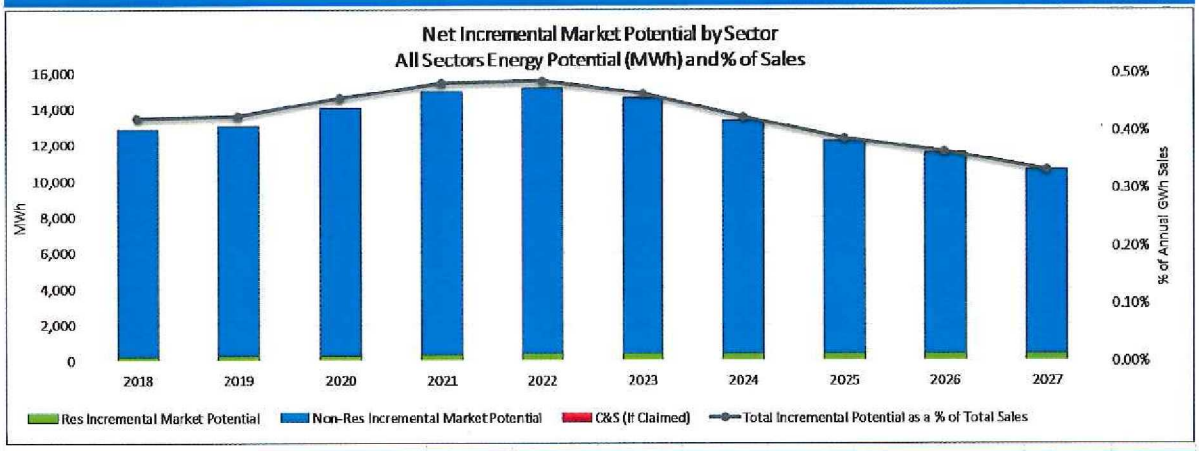
The terms Net and Gross are used in this analysis and both results play into the determination of whether or not a particular measure or program is cost effective under well-established utility cost-effectiveness tests. The Gross savings is the total savings without any adjustment for "free riders" or other discounting factors such as the role of new codes or standards. Free riders are those customers who would have moved forward on a particular energy efficiency measure without the rebate or incentive. Each efficiency measure is given an estimated discounting factor based on a number of inputs to produce a Net value and the Net-to-Gross ratio. In a simple example, if it is expected that 30% of a particular wattage of LED light bulb would have been purchased without a rebate, the net-to-gross for that measure would be 0.70 and the cost effectiveness would be adjusted accordingly. The bottom line: the utility/societal value of rebating any particular measure is adjusted by this ratio to test the merits of asking the entire community of a utility's customers to pay these rebates for those who buy LED bulbs.

Residential sales for Silicon Valley Power are now only 6.5% of the utility's total sales, hence the majority of energy efficiency potential lies in the non-residential sectors. Appropriately, some new efficiency measures were added to account for increased opportunity in the commercial sector. These results are based on increasing incentives by 10%.

At a glance, Silicon Valley Power's the Net and Gross savings potential graphs that follow show:

- A 2018-2027 average annual target of 0.42% of forecasted retail sales
- Net and Gross savings targets
- Cumulative savings potential
- No claim of savings from codes and standards (C&S)
- Add new commercial sector measures
- Increase measure incentives by 10%

Silicon Valley Power Ten Year Incremental Goals - Net (2018 - 2027)



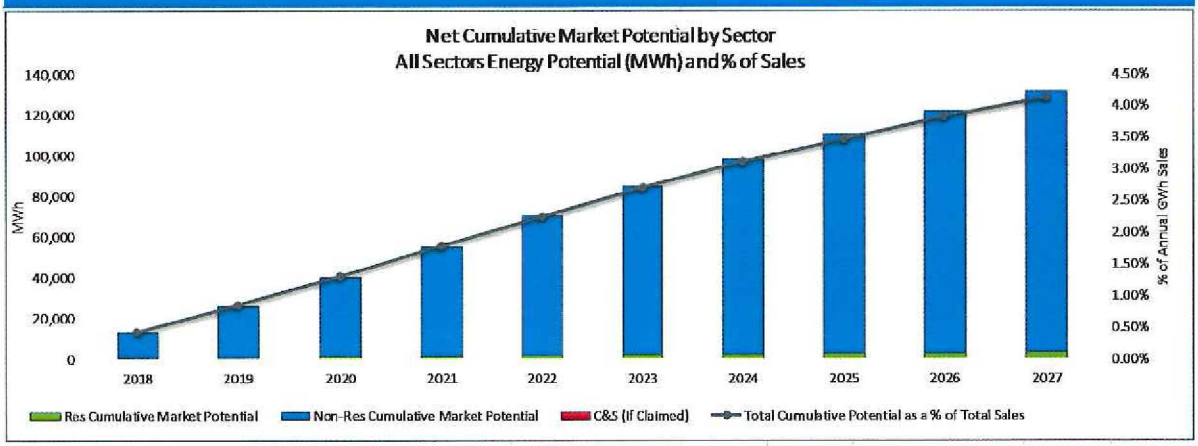
10 Year Energy Goals (Net MWh)

ALL Sectors (MWh)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Incremental Market Potential	12,851	13,032	14,015	14,928	15,129	14,565	13,333	12,192	11,528	10,590
Res Incremental Market Potential	205	238	277	328	371	383	388	392	395	397
Non-Res Incremental Market Potential	12,646	12,794	13,738	14,600	14,758	14,182	12,945	11,800	11,132	10,193
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0
Total Incremental Potential as a % of Total Sales	0.42%	0.43%	0.46%	0.48%	0.48%	0.46%	0.42%	0.38%	0.36%	0.33%
Res Incremental Potential as a % of Res Sales	0.09%	0.10%	0.12%	0.14%	0.15%	0.16%	0.16%	0.16%	0.16%	0.16%
Non-Res Incremental Potential as a % of Non-Res Sales	0.45%	0.45%	0.48%	0.51%	0.51%	0.49%	0.44%	0.40%	0.38%	0.34%

10 Year Demand Goals (kW)

ALL Sectors (kW)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Incremental Market Potential	572,845	523,147	524,930	541,304	546,184	447,497	355,679	49,371	24,884	8,915
Res Incremental Market Potential	25	29	32	34	35	36	37	38	38	38
Non-Res Incremental Market Potential	572,820	523,118	524,898	541,270	546,149	447,461	355,642	49,334	24,846	8,876
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0

Silicon Valley Power Ten Year Cumulative Goals - Net (2018 - 2027)



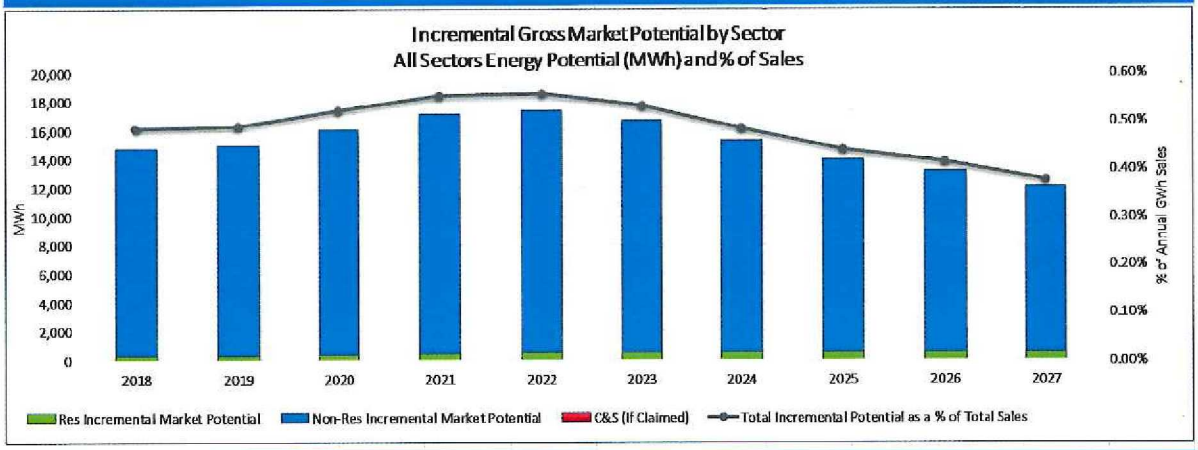
10 Year Energy Goals (Cumulative Net MWh)

ALL Sectors (Cumulative MWh)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Cumulative Market Potential	12,851	25,883	39,898	54,826	69,955	84,511	97,718	109,759	121,093	131,343
Res Cumulative Market Potential	205	443	721	1,049	1,419	1,795	2,089	2,373	2,651	2,922
Non-Res Cumulative Market Potential	12,646	25,440	39,177	53,777	68,536	82,716	95,629	107,386	118,443	128,421
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0
Total Cumulative Potential as a % of Total Sales	0.42%	0.84%	1.30%	1.77%	2.24%	2.69%	3.10%	3.46%	3.81%	4.11%
Res Cumulative Potential as a % of Res Sales	0.09%	0.19%	0.30%	0.43%	0.58%	0.73%	0.85%	0.96%	1.07%	1.17%
Non-Res Cumulative Potential as a % of Non-Res Sales	0.45%	0.89%	1.37%	1.87%	2.36%	2.84%	3.27%	3.66%	4.02%	4.34%

10 Year Demand Goals (Cumulative kW)

ALL Sectors (Cumulative kW)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Cumulative Market Potential	572,845	1,096,065	1,621,069	2,162,435	2,708,671	3,156,342	3,512,373	3,563,952	3,591,497	3,603,233
Res Cumulative Market Potential	25	54	86	120	156	190	209	225	239	253
Non-Res Cumulative Market Potential	572,820	1,096,010	1,620,983	2,162,315	2,708,515	3,156,151	3,512,165	3,563,728	3,591,258	3,602,981
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0

Silicon Valley Power Ten Year Incremental Goals - Gross (2018 - 2027)



10 Year Energy Goals (Gross MWh)

ALL Sectors (MWh)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Incremental Market Potential	14,757	14,936	16,063	17,116	17,351	16,701	15,274	13,928	13,141	12,053
Res Incremental Market Potential	296	344	401	475	536	554	562	569	573	577
Non-Res Incremental Market Potential	14,461	14,592	15,662	16,641	16,815	16,146	14,712	13,359	12,568	11,477
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0
Total Incremental Potential as a % of Total Sales	0.48%	0.49%	0.52%	0.55%	0.56%	0.53%	0.48%	0.44%	0.41%	0.38%
Res Incremental Potential as a % of Res Sales	0.12%	0.14%	0.17%	0.20%	0.22%	0.23%	0.23%	0.23%	0.23%	0.23%
Non-Res Incremental Potential as a % of Non-Res Sales	0.51%	0.51%	0.55%	0.58%	0.58%	0.55%	0.50%	0.45%	0.43%	0.39%

10 Year Demand Goals (kW)

ALL Sectors (kW)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Incremental Market Potential	655,070	596,694	598,467	616,986	622,303	509,479	404,220	55,909	28,105	10,050
Res Incremental Market Potential	36	42	46	49	51	53	54	55	55	56
Non-Res Incremental Market Potential	655,034	596,652	598,421	616,937	622,252	509,426	404,166	55,855	28,050	9,995
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0

Silicon Valley Power Ten Year Cumulative Goals - Gross (2018 - 2027)

10 Year Energy Goals (Cumulative Gross MWh)

ALL Sectors (Cumulative MWh)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Cumulative Market Potential	14,757	29,693	45,756	62,872	80,224	96,911	112,015	125,742	138,630	150,261
Res Cumulative Market Potential	296	640	1,042	1,517	2,053	2,597	3,025	3,440	3,844	4,241
Non-Res Cumulative Market Potential	14,461	29,053	44,715	61,356	78,171	94,315	108,990	122,302	134,785	146,020
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0
Total Cumulative Potential as a % of Total Sales	0.48%	0.97%	1.49%	2.03%	2.57%	3.08%	3.55%	3.97%	4.36%	4.70%
Res Cumulative Potential as a % of Res Sales	0.12%	0.27%	0.43%	0.63%	0.84%	1.06%	1.23%	1.39%	1.55%	1.70%
Non-Res Cumulative Potential as a % of Non-Res Sales	0.51%	1.02%	1.56%	2.13%	2.69%	3.24%	3.72%	4.16%	4.57%	4.93%

10 Year Demand Goals (Cumulative kW)

ALL Sectors (Cumulative kW)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Cumulative Market Potential	655,070	1,251,764	1,850,231	2,467,217	3,089,521	3,598,997	4,003,188	4,059,064	4,087,125	4,097,109
Res Cumulative Market Potential	36	78	124	174	225	276	302	326	347	367
Non-Res Cumulative Market Potential	655,034	1,251,686	1,850,107	2,467,044	3,089,296	3,598,721	4,002,886	4,058,738	4,086,778	4,096,742
C&S (If Claimed)	0	0	0	0	0	0	0	0	0	0