



**ALAMEDA
MUNICIPAL POWER**

A Department of the City of Alameda

**AGENDA ITEM NO.: 4.G.1
MEETING DATE: 10/19/2020
ADMINISTRATIVE REPORT NO.: 2021-18
ACTION: BY MOTION**

To: Honorable Public Utilities Board

Submitted by: _____ */S/*

Rebecca Irwin
AGM – Customer Resources

From: Harpreet Singh
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Approved by: _____ */S/*

Nicolas Procos
General Manager

Subject: By Motion, Accept the Evaluation, Measurement, & Verification of Alameda
Municipal Power’s Efficiency Programs for Fiscal Years 2018 and 2019

RECOMMENDATION

By motion, accept the evaluation, measurement, & verification of Alameda Municipal Power’s energy efficiency programs for fiscal years 2018 and 2019.

BACKGROUND

California Assembly Bill (AB) 2021 (September 2006) requires that all publicly-owned utilities, in consultation with the California Energy Commission (CEC), develop an estimate of all potentially achievable, cost-effective energy efficiency savings and establish annual targets for energy efficiency savings and demand reductions over 10 years. It also requires an independent evaluation that measures and verifies the energy efficiency savings and reductions in demand achieved by utility programs.

The legislative requirement for a bi-annual evaluation, measurement, & verification (EM&V) study also provides staff with a valuable opportunity to learn from an independent third party how well the utility’s programs performed and how they can be improved. Additionally, the findings are used in Alameda Municipal Power’s (AMP) load forecast.

AMP has completed an EM&V of energy efficiency programs every other year since 2010. This year’s study focuses on the utility’s residential online rebate program and the commercial self-install rebate program.

Cadmus was selected to manage the measurement and verification through a Request for Qualification process managed by Northern California Power Agency (NCPA) in 2019. Three vendors were qualified through this process, including Cadmus. AMP selected Cadmus based on the company’s qualifications and positive feedback received from other publicly-owned utilities.

DISCUSSION

The EM&V study focused on the residential rebate program administered by CLEAResult Consulting Inc. and the commercial self-install program administered by AMP staff. The residential online rebate program offers rebates for energy-efficient lighting and appliances that meet Energy Star guidelines, while the commercial self-install rebate program offers rebates to customers who work with their in-house staff or hire an independent contractor to install measures for heating, ventilation, and air conditioning (HVAC), interior and exterior lighting, window films, and refrigeration.

In fiscal year (FY) 2018 and FY 2019, 335 residential customers installed program-rebated measures and 10 commercial customers completed self-install projects that qualified for rebates. The study measured how well AMP's reported savings were aligned to the savings verified through survey and on-site verification.

Cadmus employed what is known as a realization rate to measure the current observed or evaluated energy savings and compare them to the originally reported savings estimates. A high realization rate means that the energy efficiency savings were delivered as expected based on the original estimates. The realization rates were 103 percent for the residential program and 50 percent for the commercial program.

The results for the residential rebate program were quite positive. The evaluation showed a realization rate for lighting measures of 114 percent and 97 percent for non-lighting measures. Additionally, Cadmus also surveyed customer satisfaction, which showed that 72 percent of residential customers who participated in AMP's rebate program were very satisfied and 16 percent were satisfied.

The realization rate for the commercial self-install program was lower than expected due to one HVAC project. As a general rule, AMP's commercial energy efficiency programs calculate rebate amounts using actual hours of operation to determine reported energy savings. However, HVAC rebates are the exception to this rule. HVAC rebates are not based on reported savings but rather on 50 percent of the difference in cost between the required minimum efficiency from the CEC's 2016 Appliance Efficiency Regulations and the high efficiency equipment. Since this type of rebate calculation does not take into account actual hours of operation, staff did not collect data on the actual hours of operation for the HVAC units and instead assumed 24/7 operation of the units. This inflated the amount of energy savings, so Cadmus had to adjust downwards the evaluated savings for the HVAC project. Going forward, AMP will continue to calculate HVAC rebates in the same manner; however, staff will ensure that actual hours of operation of HVAC units is collected as well.

Table 1 presents the reported and evaluation savings as well as realization rates.

Table 1. Evaluated Savings

Program	Reported Savings (kWh/yr)	Evaluated Savings (kWh/yr)	Realization Rate	Precision^a
Residential Online Rebates	100,432	103,177	103%	9.2%
Self-Install Commercial Rebate	466,682	231,410	50%	3.2%

^a Overall precision is calculated at 90% confidence.

Detailed results and full descriptions of the test methodology are available in the attached report, Exhibit A.

NEXT STEPS

Staff will work on implementing appropriate changes to improve the realization rate of future self-install HVAC projects. The next EM&V study will occur in 2022 and will likely focus on commercial energy efficiency projects.

FINANCIAL IMPACT

There is no financial impact at this time.

EXHIBIT

- A. Fiscal Year 2018-2019 Energy Efficiency Program Evaluation