



Pasadena Water and Power

Adopt Ten-Year Energy Efficiency and Demand Reduction Goals

Environmental Advisory Commission

Item 5A

April 13, 2021





Recommendation

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- Recommend the City Council Adopt Ten-Year Energy Efficiency Goals for PWP Programs
 - > 11,720 MWh per year energy savings; and
 - > 1.8 MW per year demand reduction
- The recommended goals support the CAP
 - > *Strategy 2: Energy Efficiency and Conservation measures*
- Proposed action is not subject to the California Environmental Quality Act (CEQA).
 - > Establishment of energy efficiency goals does not involve any commitment to projects that may result in a potentially significant physical impact on the environment.



Background

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- **California Law Requires Utilities'**
 - > POU Governing boards (City Council) to adopt 10-year Energy Efficiency (EE) & Demand Reduction (DR) goals every 4 years
 - > To acquire cost-effective, reliable/feasible EE and DR prior to other resources
 - > To report EE savings, expenditures, and cumulative progress to the California Energy Commission (CEC) annually
- **Current EE Goals Were Adopted in 2017**
 - > New goals must be adopted before the end of FY2021



Goal Setting Process

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- **California Municipal Utilities Association (CMUA)**
 - > Coordinates development and reporting of EE goals and annual progress for its 45 members that provide electric services
- **For the 2021 Goal Adoption Cycle**
 - > CMUA retained GDS Associates (GDS) to help determine the ten-year EE market potential for FY 2022-2031
 - > GDS utilizes a variety of industry wide tools and best practices to determine the EE potential for each participating electric utility
 - > GDS and PWP produced a customized model with results that were deemed appropriate for PWP's service territory



Developing the EE Model

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- “Technical Potential” for EE → *The Possible*
 - > Determined based on a universal database of energy efficiency measures that could be applied to a utility
 - > Maximum possible energy savings without economic or other considerations
- “Economic Potential” for EE → *Cost Effective*
 - > Determined by selecting the measures that cost less to implement than their corresponding avoided costs
- “Market Potential” for EE → *Effective & Feasible*
 - > Considers other utility-specific factors such as penetration of existing measures, customer participation, economic conditions and other relevant factors



Avoided Cost for EE Model

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- **Avoided Cost is a Utility's Incremental Cost to Procure and Deliver Electric Energy**
- **Avoided Cost Model (ACM)**
 - > The ACM is used by the state's Investor Owned Utilities (IOU) to determine hourly avoided costs
- **ACM Was Customized for PWP**
 - > GDS worked closely with PWP staff to determine appropriate initial parameters/inputs for the ACM
 - > PWP customized inputs to reflect the current/forecast resource portfolio and projected market prices
 - > Applied PWP's social cost of carbon from the 2018 IRP



Annual Energy Efficiency Goals

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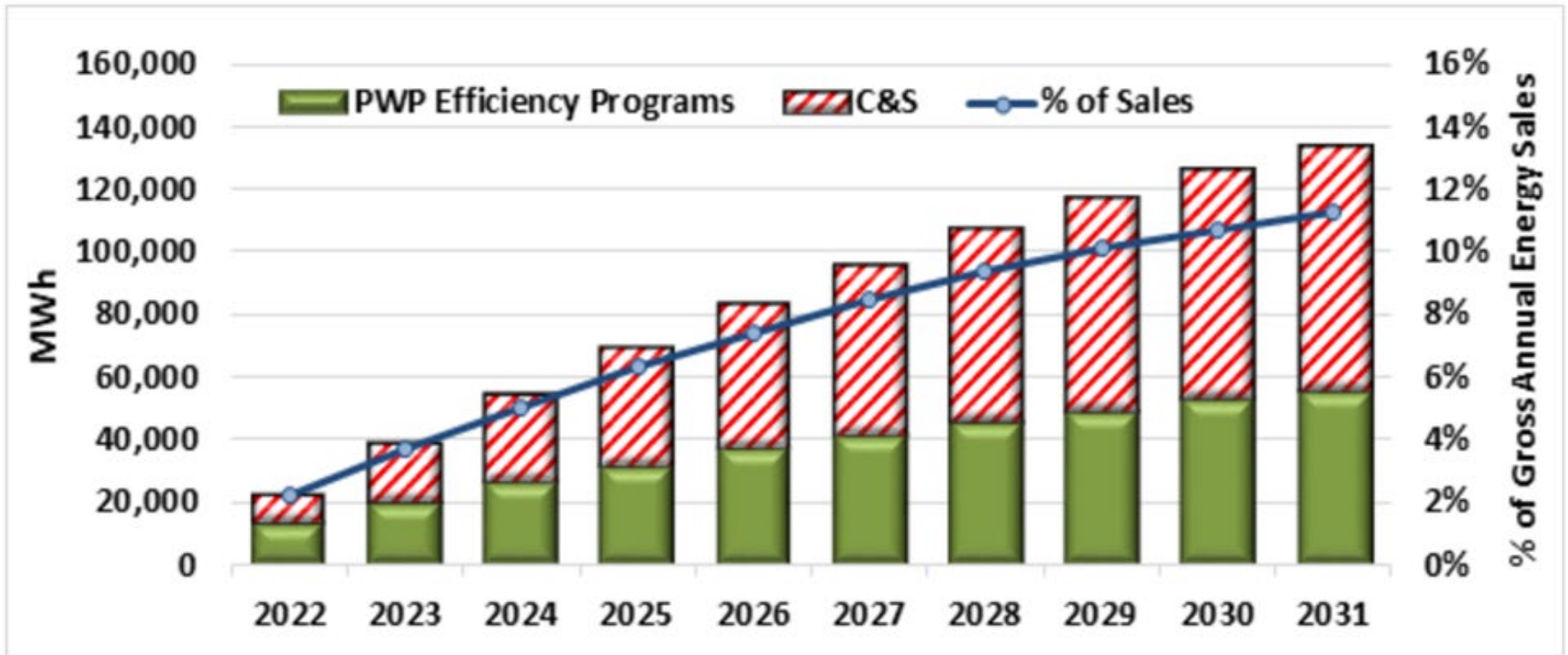
- **Prior 13,500 MWh & 2.3 MW Per Year EE & DR Goal**
 - > Adopted by City Council in 2017 for FY2018-2027
 - > Included savings from statewide codes and standards
- **Recommended 11,720 MWh & 1.8 MW Per Year EE & DR Goal**
 - > Goal is savings from PWP programs only
 - > Equal to ten-year average incremental market potential W/O C&S
 - > Effective July 1, 2021 (FY2022) until next goal adoption
 - > Program goal + C&S savings = 19,524 MWh/yr ~45% higher than prior goal

Energy Efficiency Target	PWP Program Savings Goal	Codes & Standards	Total Savings	Adopted 2017 Goal, Incl. C&S
Energy Savings (MWh/yr)	11,720	7,804	19,524	13,500
Demand Reduction (MW/yr)	1.8	1.7	3.5	2.3



Energy Efficiency Model Results

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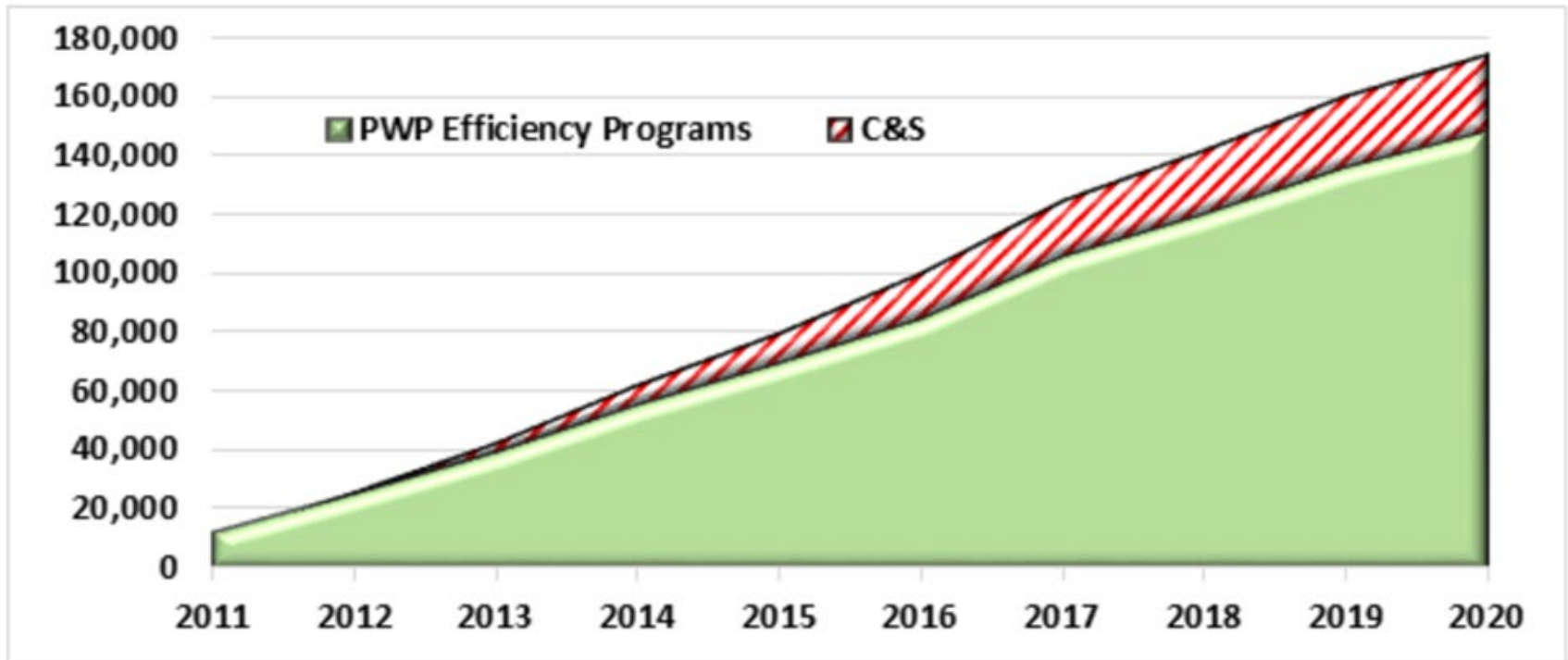


- Cumulative market potential for energy savings (MWh/year)
- 133,400 MWh/yr reduction in FY2031
- ~11.3% of Forecast Gross Retail Sales Volume (net sales + EE savings)



Cumulative Impact on Energy Efficiency

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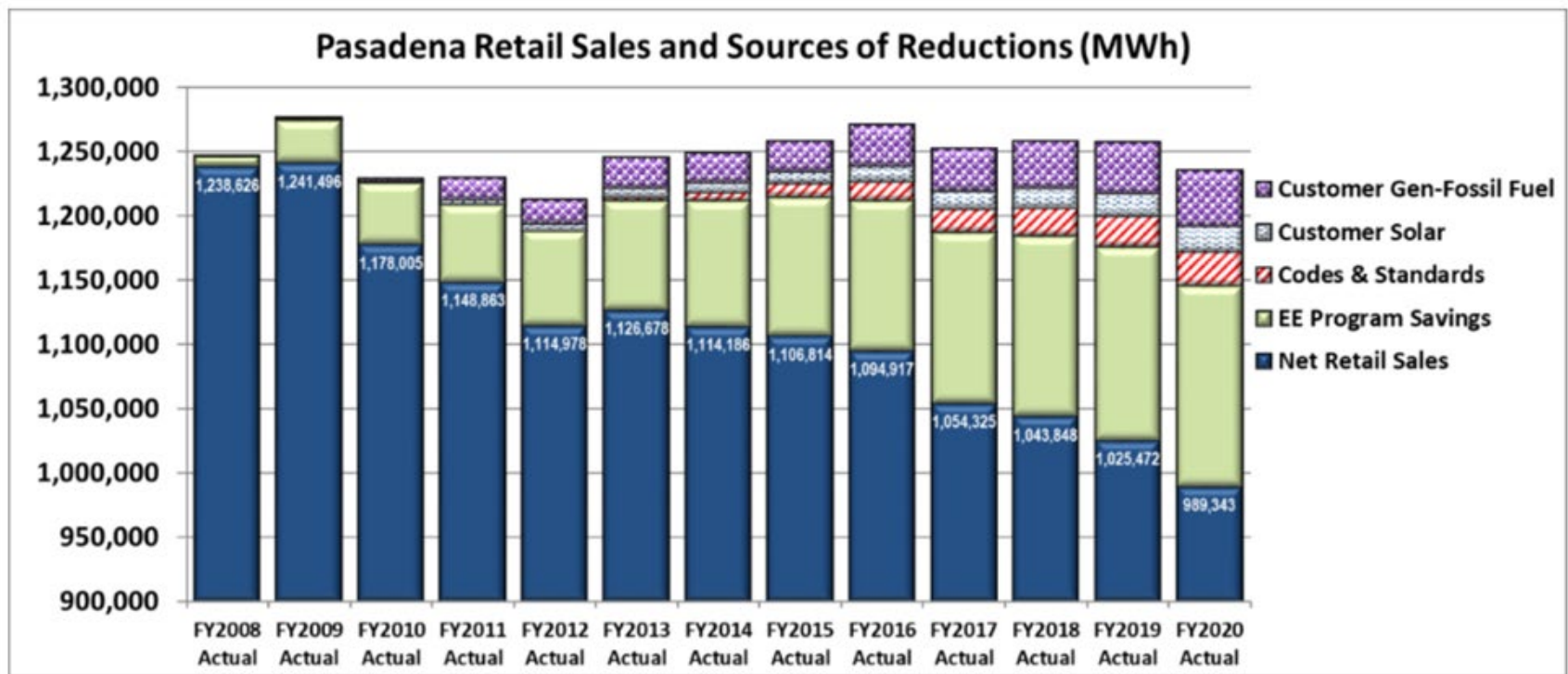


- Cumulative savings over the last ten years from FY2011-2020 have reduced annual consumption by 174,000 MWh/year as of June 30, 2020
- This equates to approximately 17.2% of FY2020 gross retail sales
 - > “Gross retail sales” is actual sales plus cumulative energy efficiency savings



Impact of Energy Efficiency & Customer-Owned Generation on Electric Sales

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- PWP experienced a net 22% decline in actual retail electric sales
- Creates funding gaps for infrastructure investment
- Applies upward pressure on rates



Legislative Requirements

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Senate Bill 1037
(2005)

- Requires POU to acquire all cost effective, reliable/feasible energy efficiency and demand response prior to other energy supply resources

Assembly Bill 2021
(2006)

- Requires that POU governing bodies adopt ten-year energy efficiency & demand reduction goals every 3 years, starting in 2007

Assembly Bill 2227
(2012)

- Changed the adoption timeline to every 4 years, starting in 2013

Senate Bill 350
(2017)

- Directs the CEC to achieve an overall doubling of efficiency across all energy sectors through “cost effective...and...feasible” means



Public Benefits Charge

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- **Public Benefit Charge (PBC)**
 - > Volumetric rate applied to metered electricity usage
 - > Rate is currently \$0.00685/kWh
 - > Generates ~\$6.9 million/year in revenue
 - > \$3.43 per month for customer using 500 kWh/month
- **PBC Fund**
 - > PBC revenues and interest retained in PBC Fund
 - > PBC Fund only used for specific purposes authorized
 - Under Public Utilities Code 385(a); and,
 - By the City Council



Public Benefits Fund Use

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- Cost-effective energy efficiency incentives
- Beneficial electrification incentives
- Renewable Resources incentives
- Low-income rate assistance
- Research, Development and Demonstration (RD&D)



Public Benefits Budget

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- ~\$3 million Per Year EE Program Budget to Achieve Recommended Goals
 - > Current PBC revenue is sufficient for all PBC programs at current spending levels
 - > If rate assistance or electrification programs require funding increases, the PBC rate may need to be revised to generate sufficient funding

Annual Cost (\$000/yr)	FY2016	FY2017	FY2018	FY2019	FY2020
Residential Programs	\$782	\$854	\$1,727	\$1,935	\$1,664
Non-Residential	\$2,008	\$3,766	\$1,267	\$1,099	\$1,080
Total Program Cost	\$2,790	\$4,620	\$2,994	\$3,034	\$2,744



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- Questions & Comments