

DOCKETED

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Los Angeles  Department of Water & Power

**Next Century Power:
Energy Efficiency for LA**

**SB 350 EE Target Setting Workshop
California Energy Commission**

June 19, 2017

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Director of Efficiency Solutions



Next Century Power: Why Energy Efficiency?



- Drivers:
 - LADWP plans to exit coal by 2025
 - AB 32 – Environmental Leadership
 - Coal about 33% of power supply today
 - Transportation Electrification
 - AB 32
 - 100% conversion of LDV would double our load
 - Other drivers: population growth, climate change, rising affluence (plug loads), Aliso Canyon
- Options:
 - New Power Sources - IRP
 - Natural gas – (\$2.2B NG plant repowering on hold)
 - Renewables – 33% State-mandated by 2020; 50% by 2030; 100% by 2045? (De Leon leg. pending)
 - Energy Efficiency (EE) – 15% goal 2010-20; “Doubling of EE by 2030”
 - How much more EE by 2050?

Next Century Power: Non-Energy Benefits of Energy Efficiency



- Simply making the energy savings kWh goals is not enough
- LADWP and LA seek to leverage investment in Energy Efficiency to achieve additional goals
 - Equitable Customer Access
 - Skilled Job Creation
 - Transparency
 - Community Capacity Building
- LADWP Board adopted Guiding Principles in 2012 with broad stakeholder support
 - Mayor and Council offices, environmental advocates, labor and workforce development allies, business community

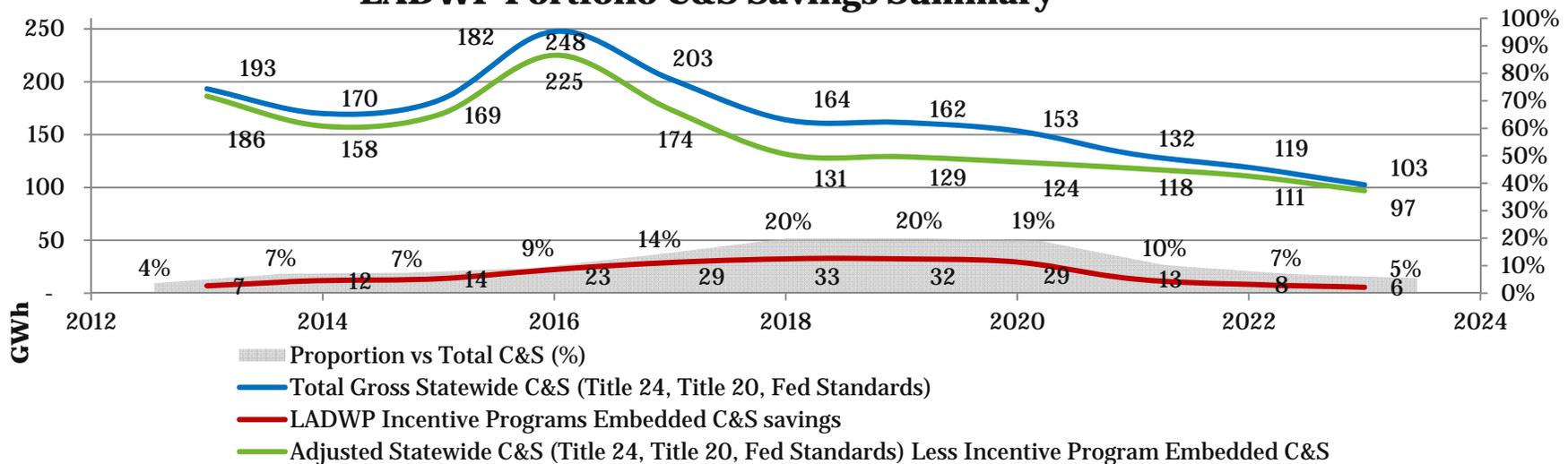
Next Century Power: Customer-Adopted EE as a Supply-Side Resource

- “Gross” vs. “Net”
 - EE is a co-equal resource in the IRP (15% of 2020 supply picture vs. 2010-20 BAU w/no EE)
 - “Gross” = Expected grid-realized savings
 - “Net” = an arbitrary construct, useless for integrated resource planning
 - What matters is that LADWP can count on expected grid-realized savings (“gross”) as a supply-side resource
- “Free-ridership”
 - LADWP does not care if “the customer would have done the project anyway”
 - LADWP only cares that the project is sufficiently likely to achieve expected energy savings to be counted as a supply-side resource
 - Level of confidence on savings realization comes from our program QC processes
 - The incentive doesn’t necessarily convince the customer to undertake a project they otherwise wouldn’t have done. It may or may not, but ultimately we don’t care
 - The incentive is in place to buy down the transaction costs to the customer of going through our QC process

Next Century Power: Codes & Standards is Compatible with Customer EE Programs

- LADWP supports and relies on C&S savings to achieve goals
 - Member of Statewide C&S Program Team
 - Supports local enforcement through Statewide C&S and LADBS
- LADWP intervened in CPUC Proceeding (through CMUA-filed comments) regarding counting C&S towards IOU goals
 - CPUC Proposed Decision eliminated C&S savings due to concerns about double-counting with an existing equipment baseline (AB 802)
 - LADWP developed a methodology to eliminate double counting:

LADWP Portfolio C&S Savings Summary

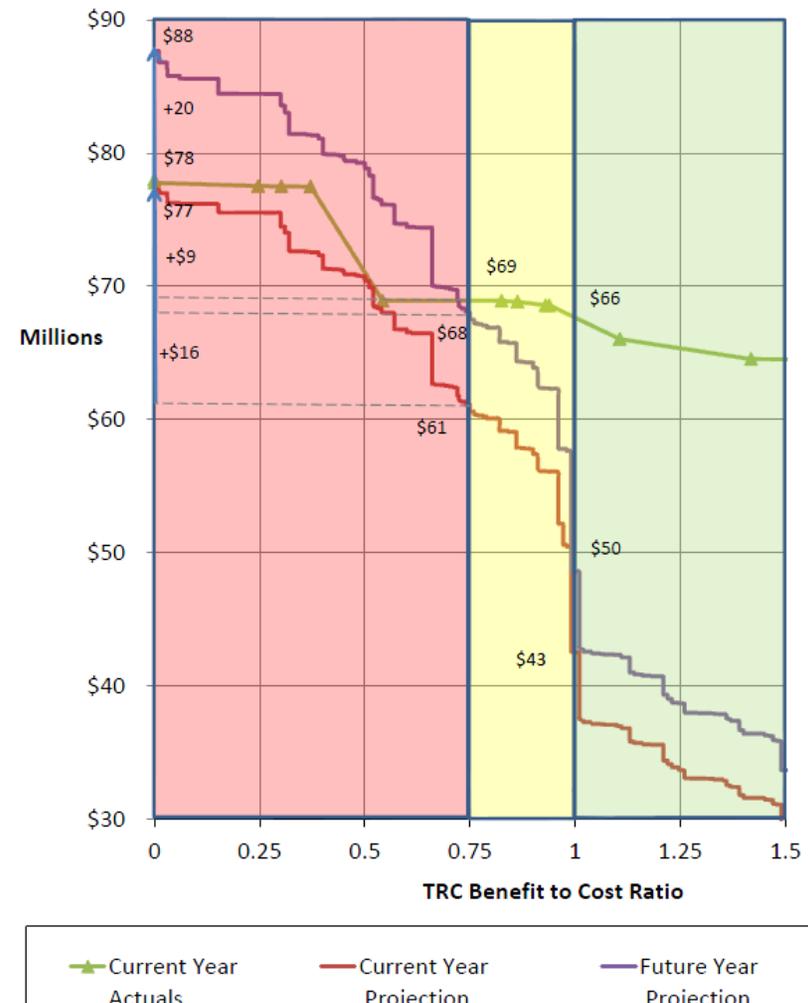


- LADWP position adopted in CPUC Final Decision

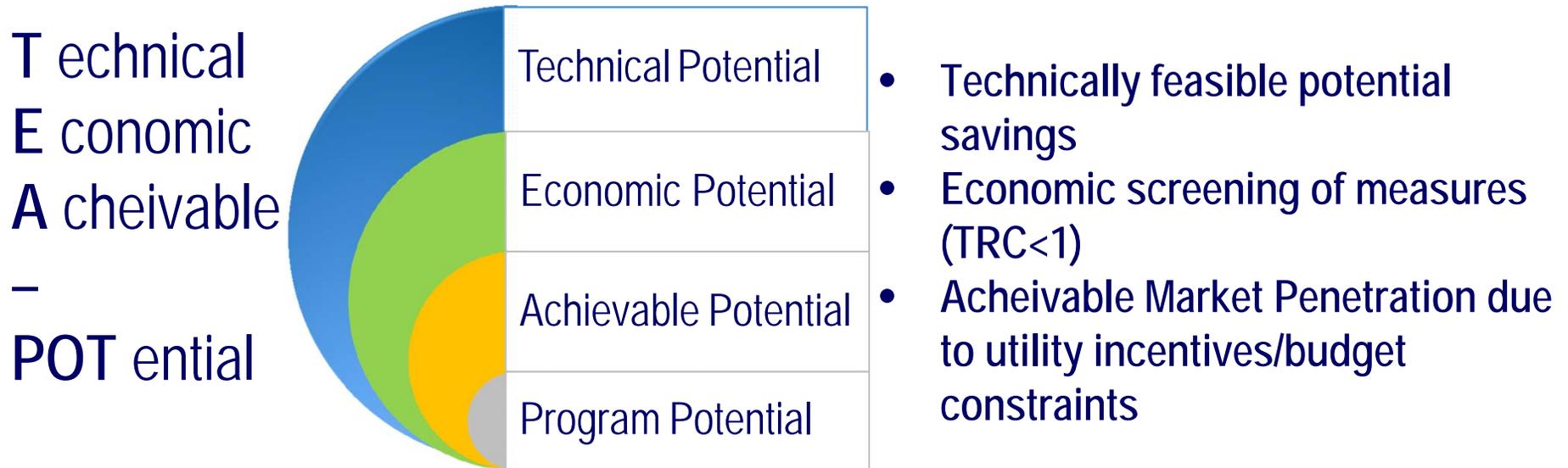
Next Century Power: 2017 Energy Efficiency Potential Study

- Cost-effectiveness screening →
- EE Budget – Long Term Commitment
- Rate design to support EE goals
- 2014 vs. 2017 EE Potential Study
 - Measure mix
 - Updated savings values & sources

Annual Cumulative Program
Budgets vs TRC B/C



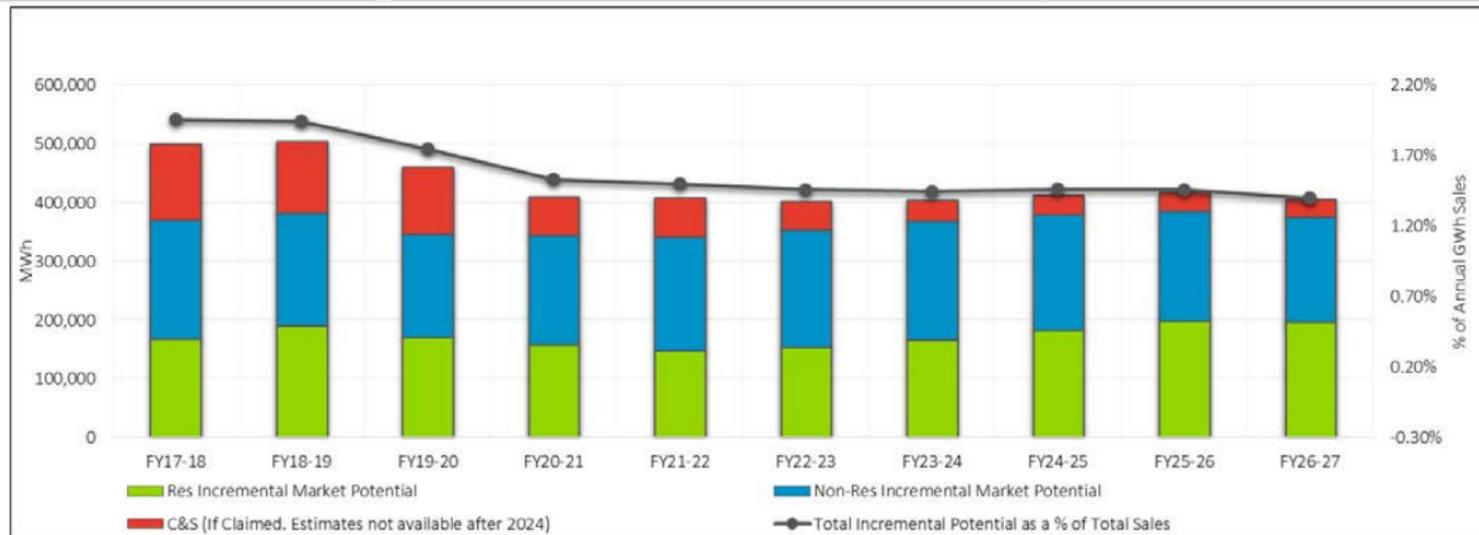
Next Century Power: 2017 Energy Efficiency Potential Study



- Major Difference in LADWP approach compared to standard practices:
- LADWP Opted to bypass economic screening on measure basis and test cost effectiveness on a program/portfolio level.
- Optimization of Achievable/Program potential by setting incentive rates and capping mechanism matching program designs instead of fixed % of cost across the board.

Next Century Power: 2017 Energy Efficiency Potential Study

- LADWP draft targets submitted w/SB 1037 report – 2017-2027



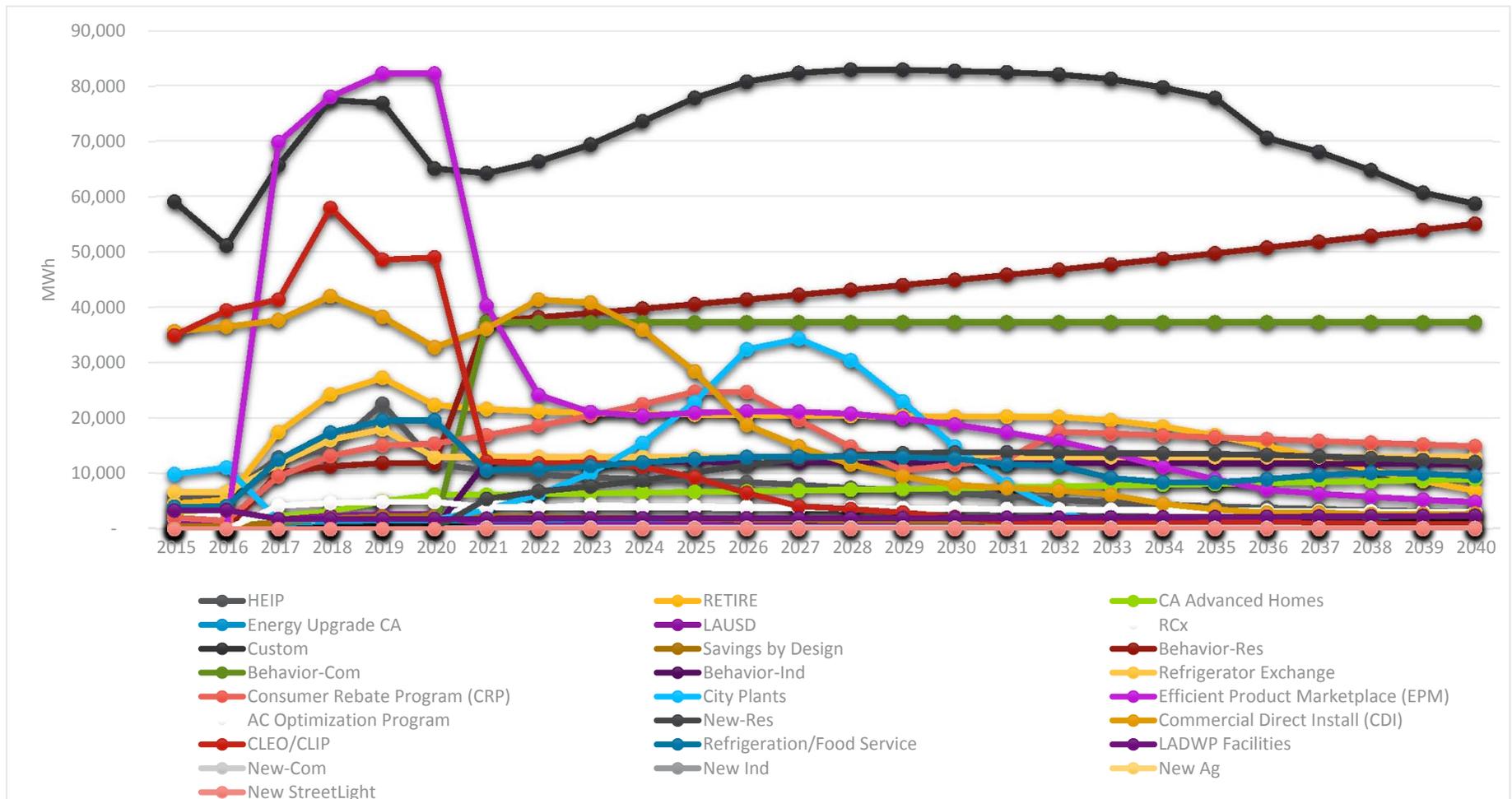
The results of this potential study are subject to LADWP Board approval, currently scheduled during summer of 2017. As a result, the details may potentially change, at which time LADWP will notify the CEC of any such discrepancies from this report

Table 1. Inputs to Figure 1

ALL Sectors (MWh)	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27
Total Incremental Market Potential	499,377	504,128	460,618	410,067	407,695	401,709	403,761	413,682	417,318	405,533
Res Incremental Market Potential	168,212	190,300	171,100	158,389	147,813	153,870	166,908	184,058	199,221	197,379
Non-Res Incremental Market Potential	202,633	192,115	175,349	186,486	193,204	199,710	201,374	195,958	186,152	177,841
C&S If Claimed	128,532	121,712	114,169	65,192	66,677	48,130	35,479	33,666	31,945	30,313
Total Incremental Potential as a % of Total Sales	1.95%	1.94%	1.74%	1.53%	1.50%	1.46%	1.44%	1.46%	1.46%	1.40%
Res Incremental Potential as a % of Res Sales	1.96%	2.17%	1.91%	1.73%	1.58%	1.62%	1.72%	1.86%	1.97%	1.91%
Non-Res Incremental Potential as a % of Non-Res Sales	1.23%	1.15%	1.04%	1.10%	1.13%	1.16%	1.16%	1.12%	1.06%	1.00%

Next Century Power: 2017 Energy Efficiency Potential Study

- EE Goals by Program



Next Century Power: 2017 Energy Efficiency Potential Study Optimization

Measure Category	Base Year Weighted Average (From LADWP ELRAM Scenario 1 final)	Incentive Multiplier	Revised Incentive \$/kWh	Scenario Incentive Cap (% of TMC)	Effective 2018 Incentive \$/kWh (after incentive cap and weighted by tech potential)	Weighted TRC (over forecast period)
Res Cooling	\$0.7450	1.04	\$0.77	75%	\$0.77	2.06
Res RCx/Controls DI	\$1.6208	1.00	\$1.62	100%	\$1.62	1.34
Res Refrigeration	\$0.1975	1.34	\$0.27	75%	\$0.22	2.86
Res Lighting	\$0.2258	2.00	\$0.45	75%	\$0.41	4.69
Res Clothes Washers	\$0.2258	2.00	\$0.45	75%	\$0.45	2.31
Res Dishwashers	\$0.1070	1.30	\$0.14	75%	\$0.14	4.05
Res Electronics	\$1.5538	1.76	\$2.73	75%	\$1.17	1.05
Res Pool Pump	\$0.6744	1.31	\$0.88	75%	\$0.88	1.30
Res Water Heating	\$0.2258	2.00	\$0.45	75%	\$0.45	2.18
Res Water Heating -DI	\$0.2169	2.00	\$0.43	100%	\$0.22	7.26
Res Shell - DI	\$0.9972	1.31	\$1.30	100%	\$0.89	0.23
Res Shell	\$0.3418	2.00	\$0.68	75%	\$0.66	1.31
Res RCx/Controls	\$0.2258	2.00	\$0.45	75%	\$0.34	1.06
Shade Tree	\$0.2282	1.52	\$0.35	75%	\$0.35	8.43
Non-Res Motors	\$0.1154	1.40	\$0.16	75%	\$0.13	2.63
NonRes RCx/Controls	\$0.1225	2.00	\$0.24	75%	\$0.12	5.79
Non-Res Process	\$0.2054	1.51	\$0.31	75%	\$0.24	4.40
Non-Res NC Comprehensive	\$0.3806	1.00	\$0.38	75%	\$0.28	4.84
Non-Res Comprehensive	\$0.1184	1.00	\$0.12	75%	\$0.12	2.52
Non-Res Heating	\$0.1184	1.42	\$0.17	75%	\$0.15	2.21
Non-Res Lighting	\$0.2401	1.98	\$0.48	100%	\$0.34	2.98
Res Comprehensive	\$0.4167	2.00	\$0.83	75%	\$0.83	0.50
Res NC Comprehensive	\$0.3621	1.04	\$0.38	75%	\$0.38	3.32
Non-Res Cooking	\$0.2766	2.00	\$0.55	75%	\$0.33	4.81
Non-Res Lighting - Lamp	\$0.0728	1.40	\$0.10	100%	\$0.07	4.31
Non-Res Refrigeration	\$0.4554	1.86	\$0.85	75%	\$0.79	2.54
Non-Res Shell	\$0.3127	1.96	\$0.61	75%	\$0.34	6.79
Non-Res Cooling	\$0.3765	1.96	\$0.74	75%	\$0.74	2.32
Com-Data Center	\$0.0758	1.00	\$0.08	75%	\$0.04	37.50

Next Century Power: 2017 Energy Efficiency Potential Study Optimization

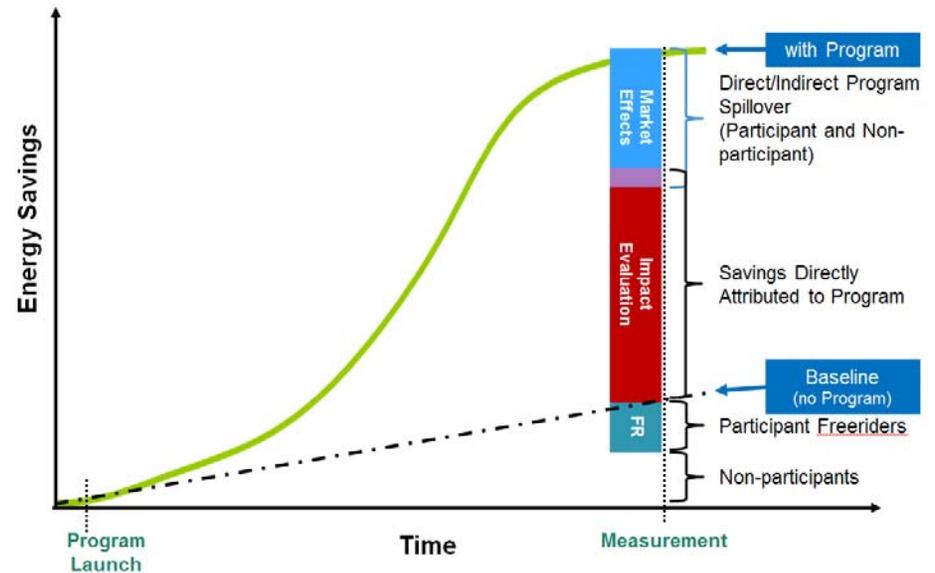
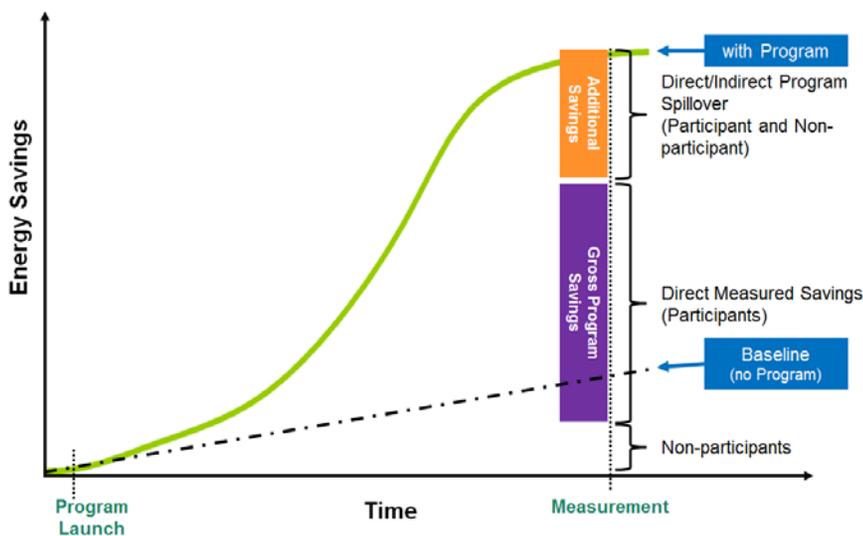
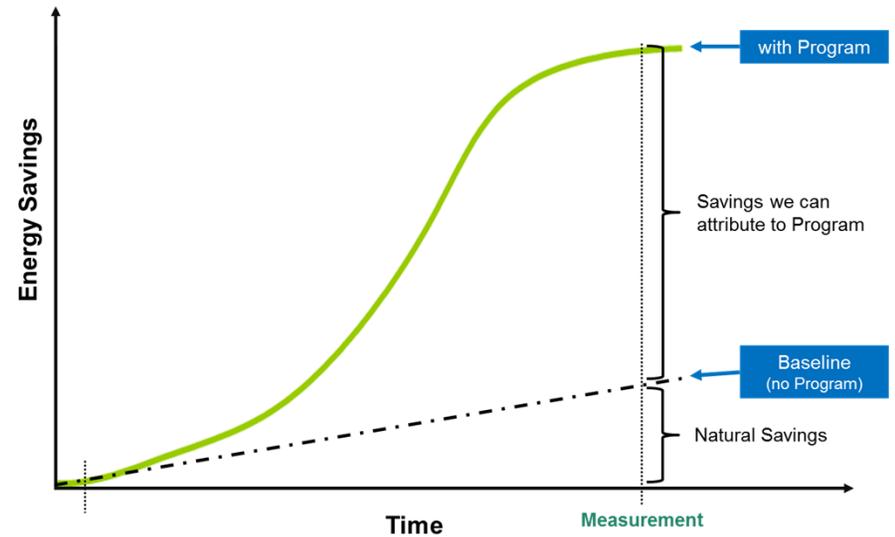
Program	Base Year Weighted Avg. <i>(From LADWP ELRAM Scenario 1 final)</i>	Admin Multiplier	Revised Admin \$/kWh	Starting Year	Weighted TRC (over forecast period)	Admin % of Total Budget
Refrigerator Exchange	\$0.041	0.72	\$0.030	2021	8.84	31%
RETIRE	\$0.015	0.96	\$0.014	2021	6.18	17%
HEIP	\$0.038	1.30	\$0.050	2021	0.71	9%
CA Advanced Homes	\$0.061	0.81	\$0.050	2021	3.32	12%
Energy Upgrade CA	\$0.061	0.95	\$0.058	2021	0.25	7%
Consumer Rebate Program (CRP)	\$0.889	1.00	\$0.889	2021	1.30	77%
City Plants	\$0.085	0.79	\$0.067	2021	8.43	16%
Efficient Product Marketplace (EPM)	\$0.111	0.48	\$0.053	2021	4.63	29%
AC Optimization Program	\$0.111	0.78	\$0.087	2021	1.06	25%
New-Res	\$0.111	0.59	\$0.066	2021	1.49	9%
Commercial Direct Install (CDI)	\$0.111	0.91	\$0.101	2021	2.32	31%
LAUSD	\$0.037	1.02	\$0.038	2021	1.90	11%
Custom	\$0.084	0.44	\$0.037	2021	4.11	11%
CLEO/CLIP	\$0.136	0.91	\$0.124	2021	2.34	43%
Savings by Design	\$1.048	0.10	\$0.105	2021	4.84	57%
RCx	\$0.052	0.90	\$0.047	2021	7.31	26%
Refrigeration/Food Service	\$0.165	0.88	\$0.145	2021	8.65	44%
LADWP Facilities	\$0.056	0.95	\$0.053	2021	2.46	14%
New-Com	\$0.111	0.99	\$0.110	2021	2.58	66%
New Ind	\$0.111	1.00	\$0.111	2021	0.00	0%
New Ag	\$0.111	1.00	\$0.111	2021	9.55	79%
New StreetLight	\$0.111	1.00	\$0.111	2021	0.00	0%
Behavior-Res						100%

Next Century Power: Additional EE Discussion Topics

- LA Reach Codes (Cool Roofs, EBEWE)
- New program areas to achieve accelerated goals
 - Door-to-door LED Distribution
 - Room AC exchange/replacement (LI component also)
 - Behavioral EE
 - VMT reduction measures
- Conceptual Market Transformation Framework

Next Century Power: Additional EE Discussion Topics

- Conceptual "Market Transformation" framework for LADWP EE Program design and Evaluation



Questions?

