

| DOCKETED | |
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LADWP's Efficiency Solutions: Helping Our Customers Save Water & Power

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Director of Efficiency Solutions
June 7, 2018

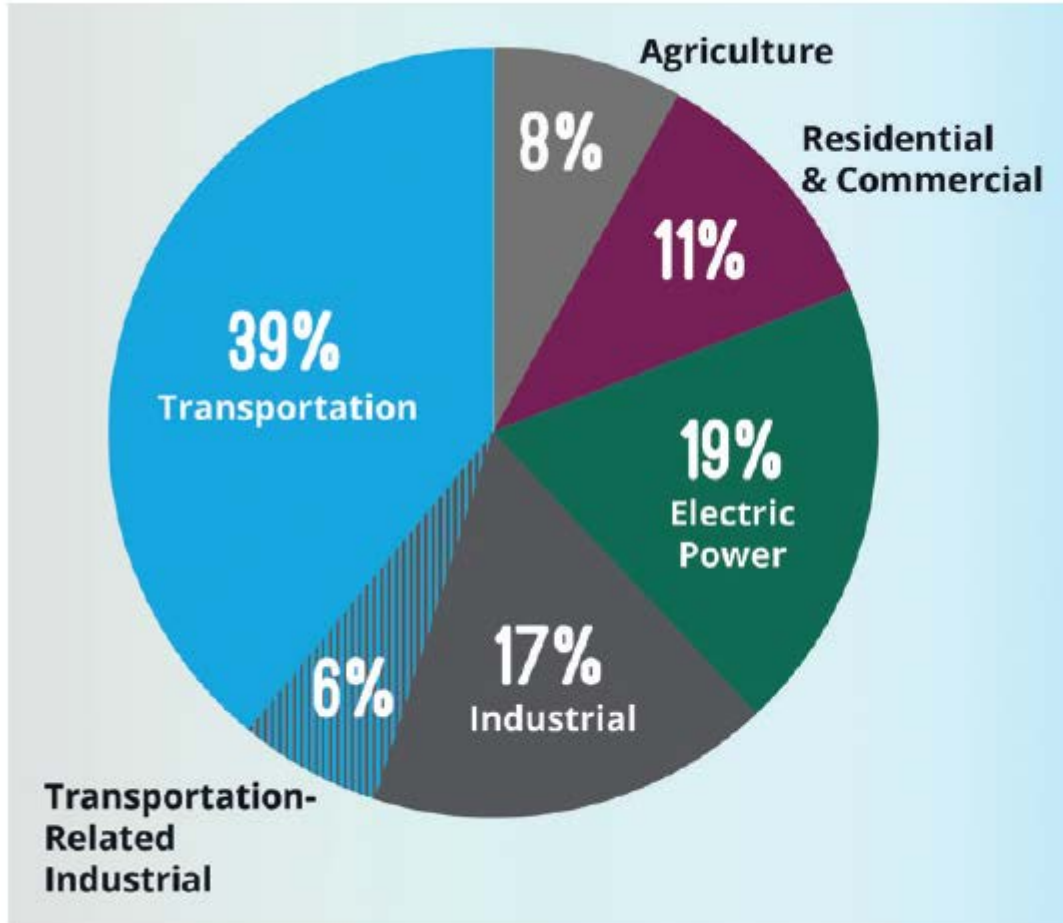
Putting Customers First 

Agenda



- Background – Why Energy Efficiency for LADWP?
- Our Sustained Effort to Achieve EE Targets for 2020 and Beyond
- Non-Energy Benefits and Equity
- EE Program Examples
- LA Kretz Innovation Campus – Driving the Next Generation of EE

Background – Why Energy Efficiency?



: California GHG
Emissions by Sector in
2015 (Source: CARB)

Role of EE in Supporting the Grid



- LADWP's Power System has undertaken an extensive Distributed Energy Resource Integration Study (DERIS)
 - Maximize grid reliability at minimum cost
- Five main categories of DERs
 - Energy Efficiency
 - Demand Response
 - Distributed Solar PV
 - Electric Vehicle Chargers
 - Distributed Battery Storage
- Integration of DERs is key to reliably accommodating higher and higher levels of renewables on the grid
- **Load growth due to electrification makes EE foundational to achieving future RPS goals: EE makes everything else smaller**

Energy Efficiency: A Sustained Effort to Achieve 15% by 2020

Annual EE Investment and Goals: 2010 – 2020

| Fiscal Year | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Budget (millions) | \$49.5 | \$37.3 | \$50.0 | \$78.0 | \$79.0 | \$73.0 | \$133.0 | \$178.0 | \$180.0 | \$163.0 |
| GWh Savings | 265 | 228 | 319 | 337 | 343 | 412 | 480 | 412 | 396 | 359 |
| Portfolio Savings Cum'l | 1.1% | 2.1% | 3.4% | 5% | 6.5% | 8.2% | 10.4% | 12% | 13.7% | 15.1% |

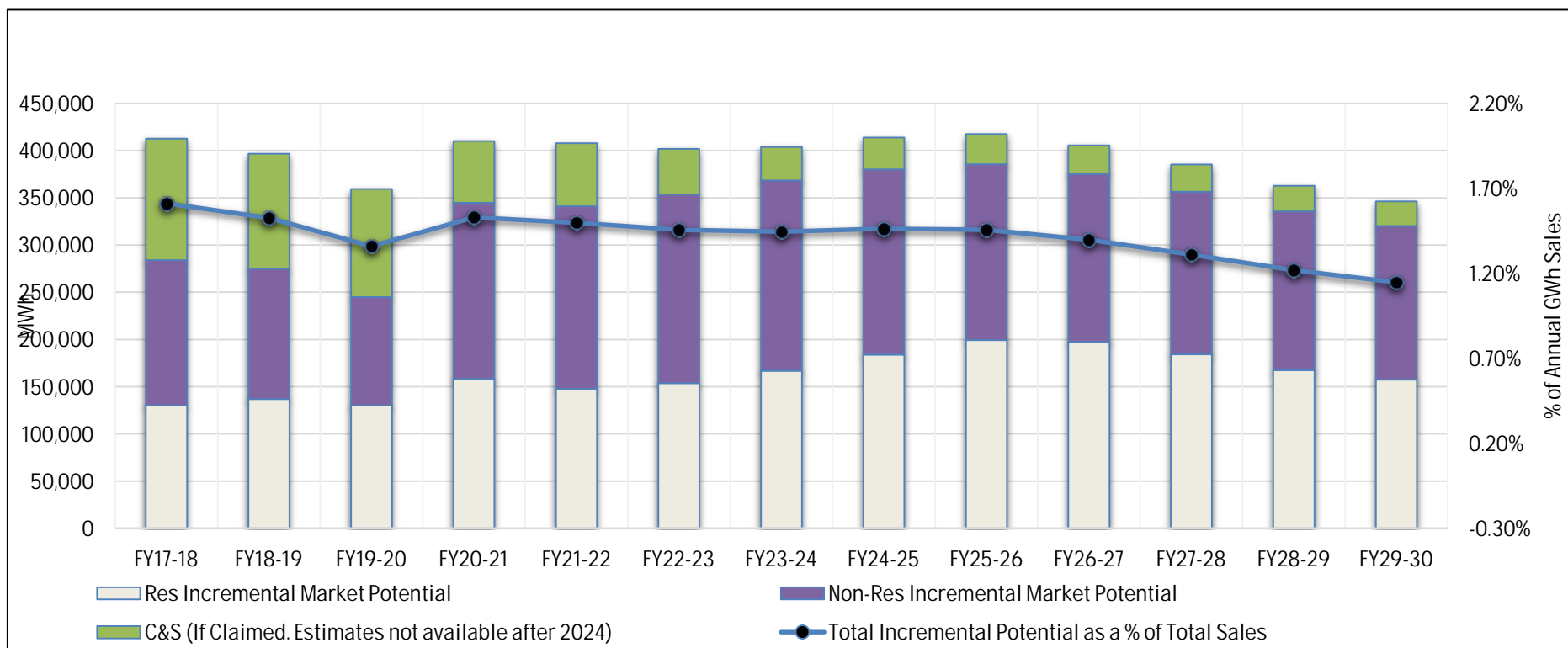
Actuals

Current
Year
Plan

Future
Planned

Onward to 2027 and Beyond

- 2017-2027 targets developed from 2017 EE Potential Study, Board Adoption planned for Summer 2018

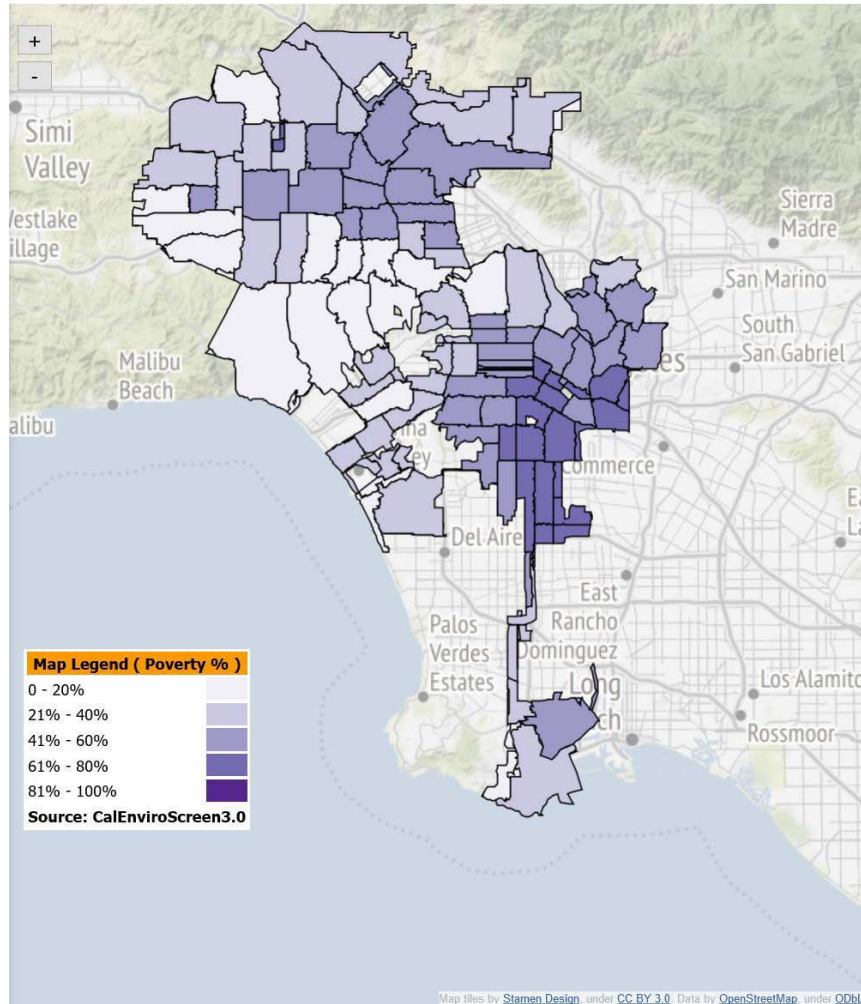


Non-Energy Benefits of EE

- Board-adopted Guiding Principles for Efficiency programs, which pledge to serve all customers
- Leverage investment in EE to achieve equitable access, skilled jobs, transparency, community capacity building
- UCLA-LADWP 2014 Study on Job Creation from LADWP Energy Efficiency Investments:
 - Expect to create 16 jobs per \$1M invested
 - Compares favorably to jobs created in residential construction, smart grid deployment, solar generation
 - Estimate creation of 11,000 jobs by 2020
- Increased investments will result in more jobs created

Equity Metrics

Geographic Distribution of Los Angeles Poverty Levels (CalEnviro3.0)

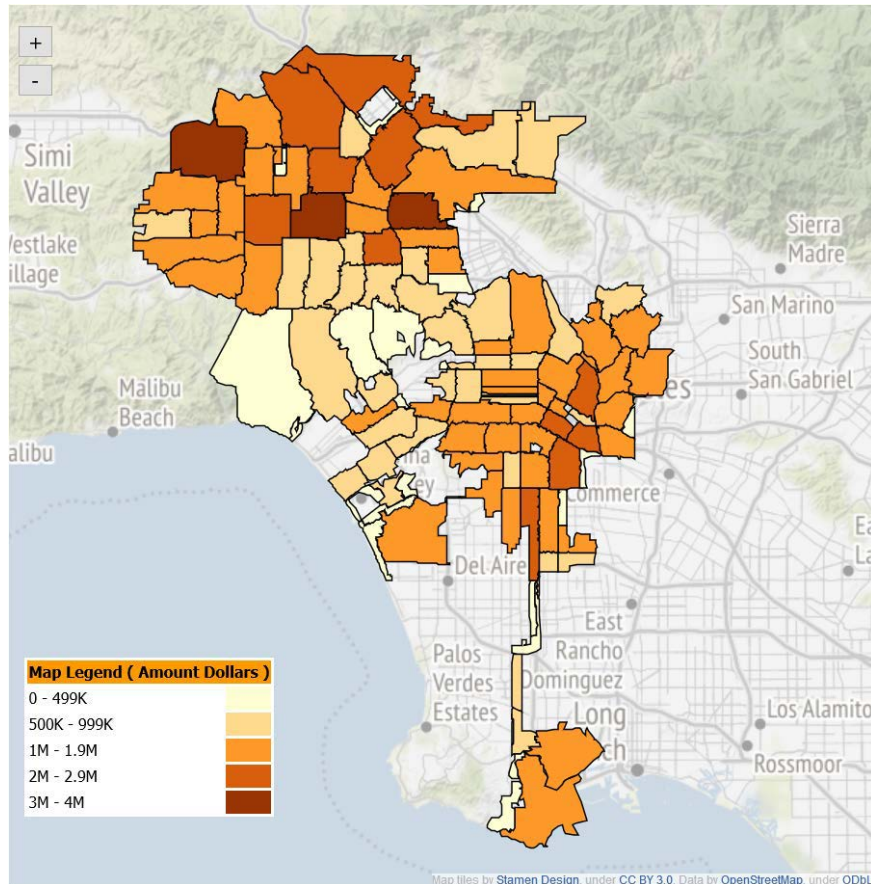


***Source: CalEnviroScreen 3.0 - From the 2011-2015 American Community Survey - the dataset contains percent of population living below two times the federal poverty level.**

| Equity Core Category | Metric |
|---|---|
| Water & Power Infrastructure Investment | <ol style="list-style-type: none"> 1. Water Quality Complaints 2. Water System Probability of Failure & Planned Replacements 3. SAIDI & SAIFI 4. Power System Reliability Program – Pole, Cable, and Transformer Replacements |
| Customer Incentive Programs/Services | <ol style="list-style-type: none"> 5. Rain Barrel/Cistern/Water Tank Rebates 6. Turf Removal Rebates 7. Tree Canopy Program 8. Commercial Direct Install Program 9. Home Energy Improvement Program 10. Refrigerator Exchange Program 11. Consumer Rebate Program 12. Electric Vehicle Infrastructure 13. Low Income & Lifeline Programs |
| Procurement | 14. LADWP SBE/DVBE Program |
| Employment | 15. New Hire/Promotion Demographics |

Equity Metrics

Geographic Distribution of Low Income Discount Rates Program, Energy Efficiency and Water Conservation Program Expenditures for Calendar Year 2017



Low Income Discount Rates Program (307,501 Participants)

Low Income Discount
Lifeline Discount

Life Support Discount
Physician Certified Allowance Discount (PCAD)

Energy Efficiency (52,796 Participants) and Water Conservation Programs (28,209 Participants)

Commercial Lighting Incentive Program (CLIP)
Food Services Program (FSP)
Custom Performance Program (CPP)
Energy Efficiency Technical Assistance Program (EETAP)
Retro-Commissioning Program (RCX)
Upstream HVAC
Savings by Design
Home energy improvement program (HEIP)
AC Optimization program

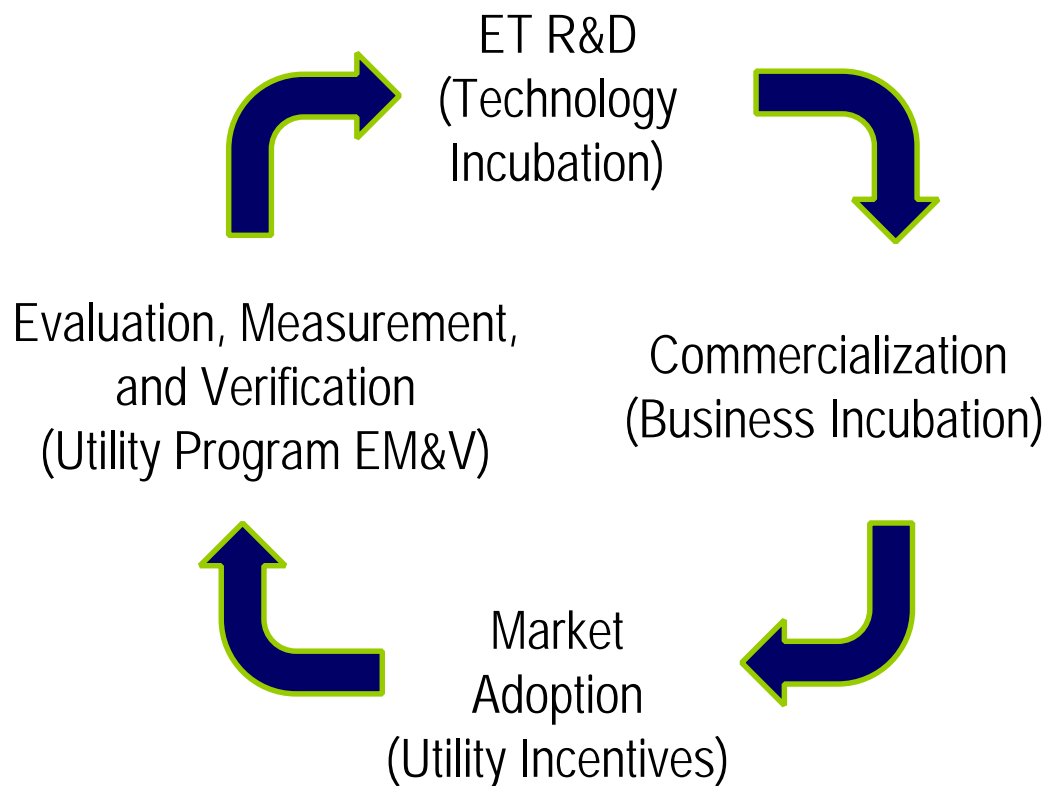
Efficient Product Marketplace
Refrigerator Exchange Program
RETIRE
Energy Savings Assistance Program
Consumer Rebate Program
MWD Device Rebates
Technical Assistance Program
Device Distribution Program
Direct Install Program

EE Program Examples

- Residential LED Distribution
- Other Residential Services
- Commercial Lighting Incentive Program
- Custom Performance Program
- Commercial Direct Install
- LADWP Facilities
- SoCalGas Partnership



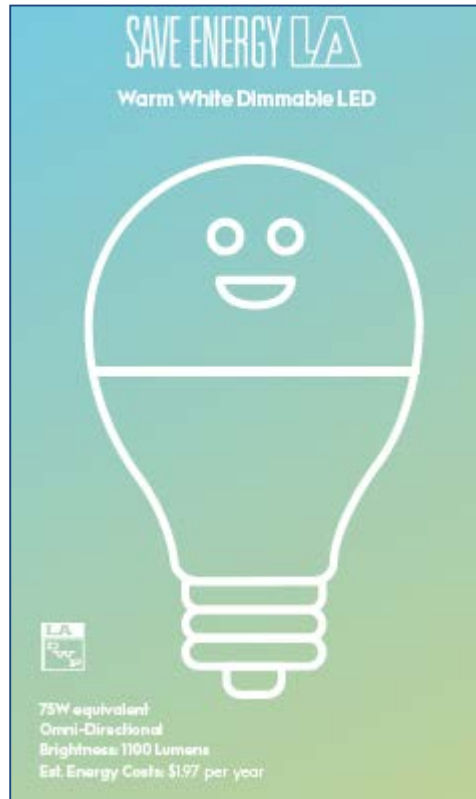
LADWP and LKIC – A Virtuous Cycle for ET Development and Deployment



Questions?

Appendix

Residential LED Distribution



- First distribution Fall 2016
- Second distribution Spring 2018
- 2.6M bulbs to ALL 1.3M LADWP residential customers, SF and MF
- Two 12 Watt LED (Light Emitting Diode) bulbs
- Recycled/Reusable tote bags

Other Residential Services

Efficient Product Marketplace

- Rebate for the purchase of energy efficient products
- On-line application
- Research, locate, and purchase energy efficient products
- Receive prepaid LADWP gift card

Certified Pool Pump Replacement

- Single to Variable Speed - \$1,000
- Qualified models at www.ladwp.com/cppr
- Requires application, addendum, photos

AC Optimization Program

- Direct Install service provides basic tune-up
- Free Wi-Fi enabled smart thermostat and set up
- 3,432 Customers served as of 3/12/18



Efficiency in Action – Commercial Lighting Incentive Program



Awarded \$204,899.65

LA Premier Shopping Destination
Major Lighting Retrofit

- 1,332 LED fixtures installed
- Fixtures include daylight and occupancy sensor controls
- 1,431,117 kWh saved



Over 250 - 1000W Lamps
Removed

LED Stadium Lighting Installation

- 136 LED fixtures installed
- 719,246 kWh saved
- \$104,341.80 awarded



6,094,489 kWh Saved

University Campus Parking
Lighting Renovation

- 3,736 LED fixtures installed across 8 parking structures
- LED fixtures also include integrated multi-level controls

Efficiency in Action – Custom Performance Program



Awarded \$511,837.92

- Large Office Building
"New Chillers Installed
Variable Volume Pump System
Cooling Tower Controls"
- 2,715,274 Annual kWh Savings
 - 98.54 kW Demand Reduction



Awarded \$ 448,318.58

- Industrial Gases Company
"Compressed Air Systems Upgrade
With Controls"
- 5,603,982 Annual kWh Savings
 - 584 kW Demand Reduction



Awarded \$ 455,788.24

- LAX Central Utility Plant
Replacement Project
"Chillers, Variable Pump System, &
Cooling Tower Controls"
- 2,923,870 Annual kWh Savings
 - 70 kW Demand Reduction