

DOCKETED

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Transportation Electrification

**CEC Medium/Heavy Duty EV & IRP
April 27, 2017**





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Discussion Today

Discussion today:

- Role of Transportation Electrification for LADWP (IRP)
- How to do it (The Plan)
- Heavy Duty EV Strategy: Infrastructure & Rates
- Recommendations



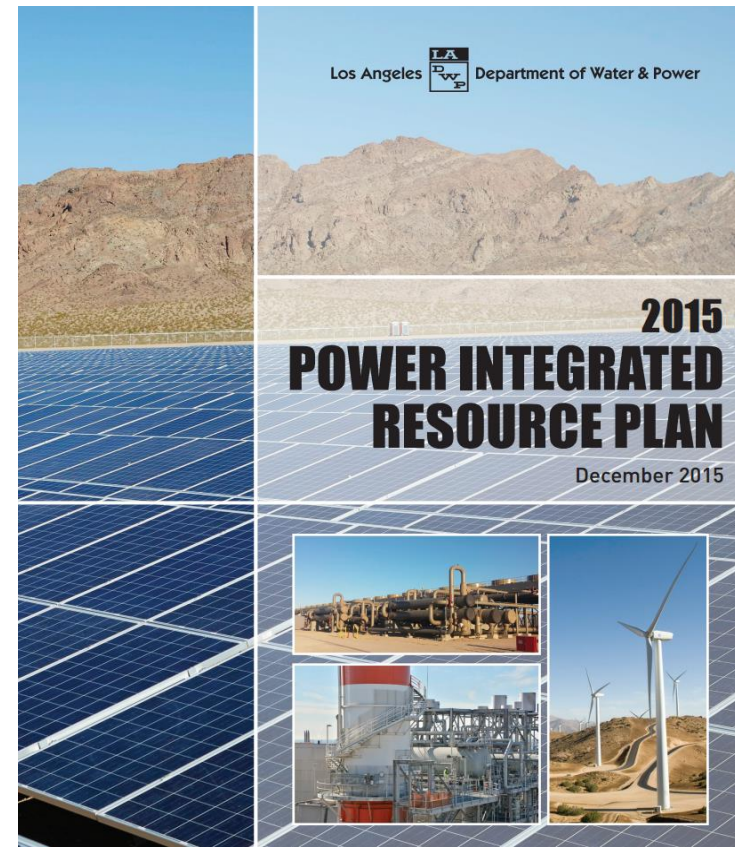


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LADWP's Integrated Resource Plan

Electric Vehicles (EVs) role in IRP...

- Promote a green environment. (75% less GHG than gas).
- Promote customer efficiency
 - Less than \$1 per gallon of gas
 - All Customer Save Money
- Integration of renewable resources.
- Every BEV = 1/2 a house night load.



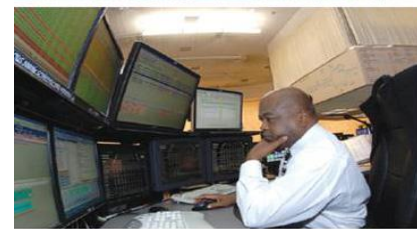
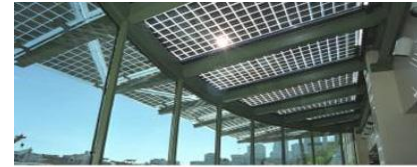


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GHG Emission Reduction

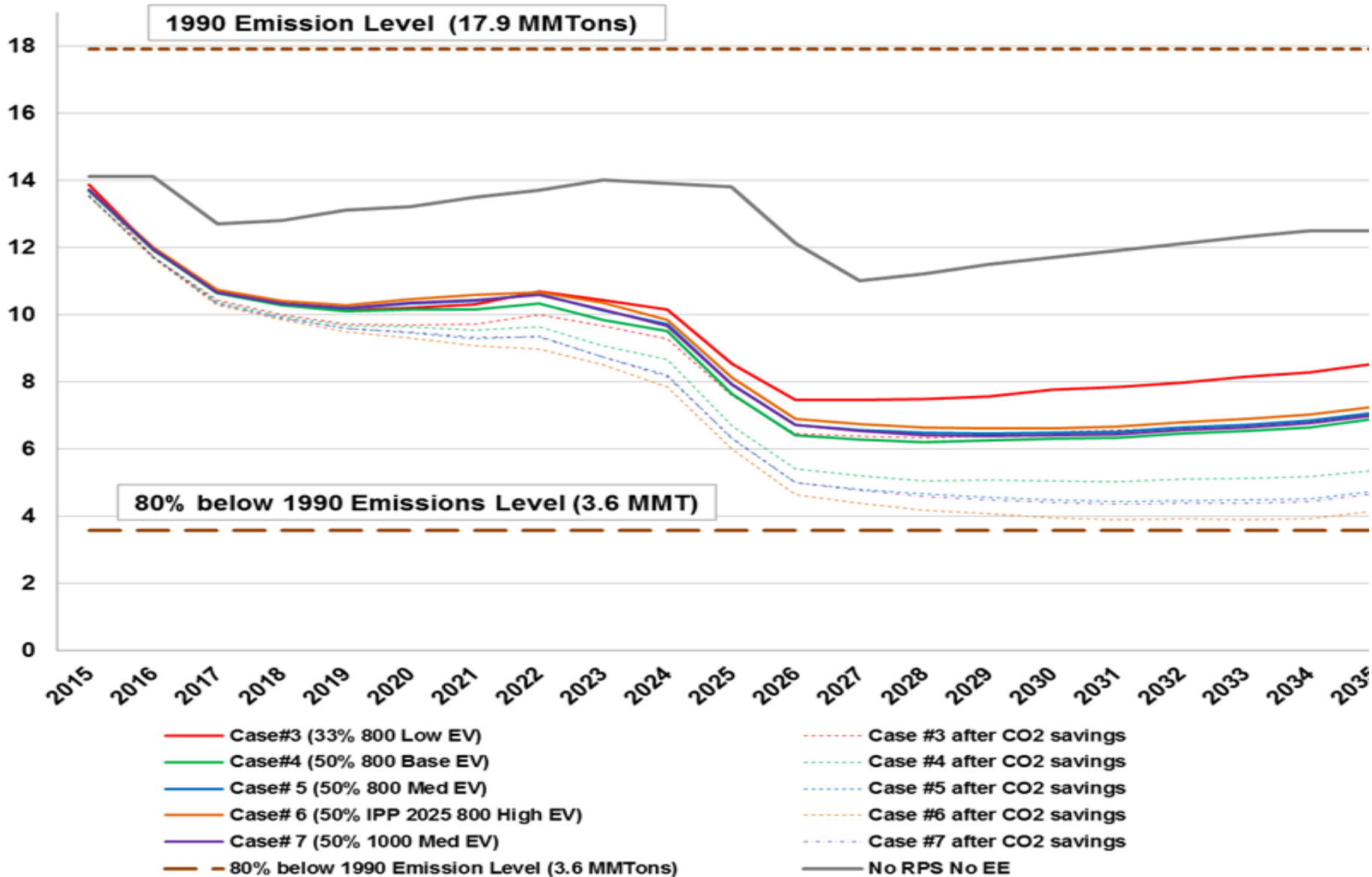
Green House Gas Emission Reductions:

- Goal of AB 32 is 80% reduction below 1990 levels by 2050
- CARB reported in 2012 Transportation was 37% of CO₂.
Electric Generation was 11%.
- Recommended IRP Case:
 - 50% Renewable
 - No Coal Power
 - High Energy Efficiency (EE)
 - No Once Through Cooling
 - High EV Model





GHG Emission Reduction



How Many EVs are Needed?

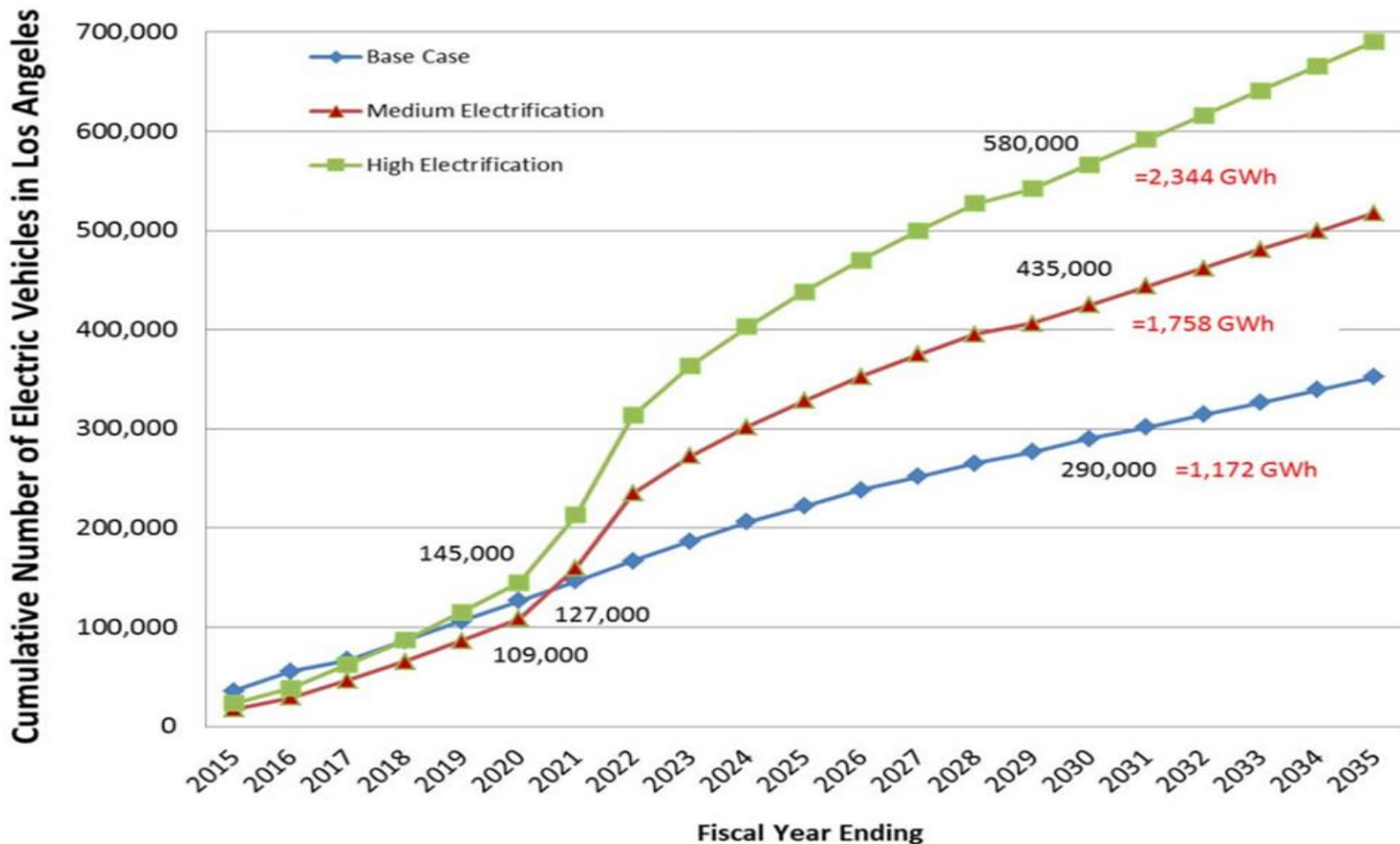
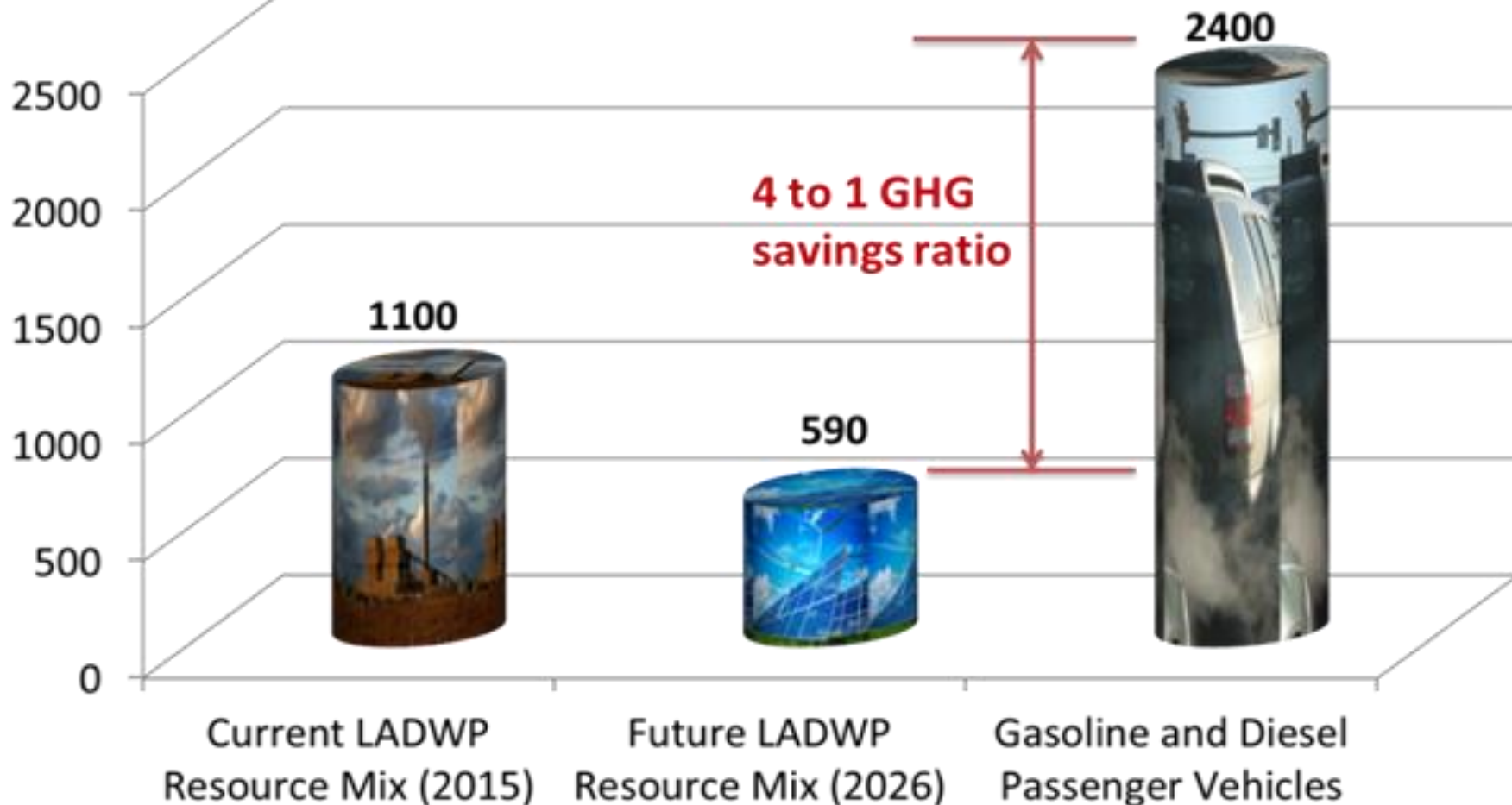


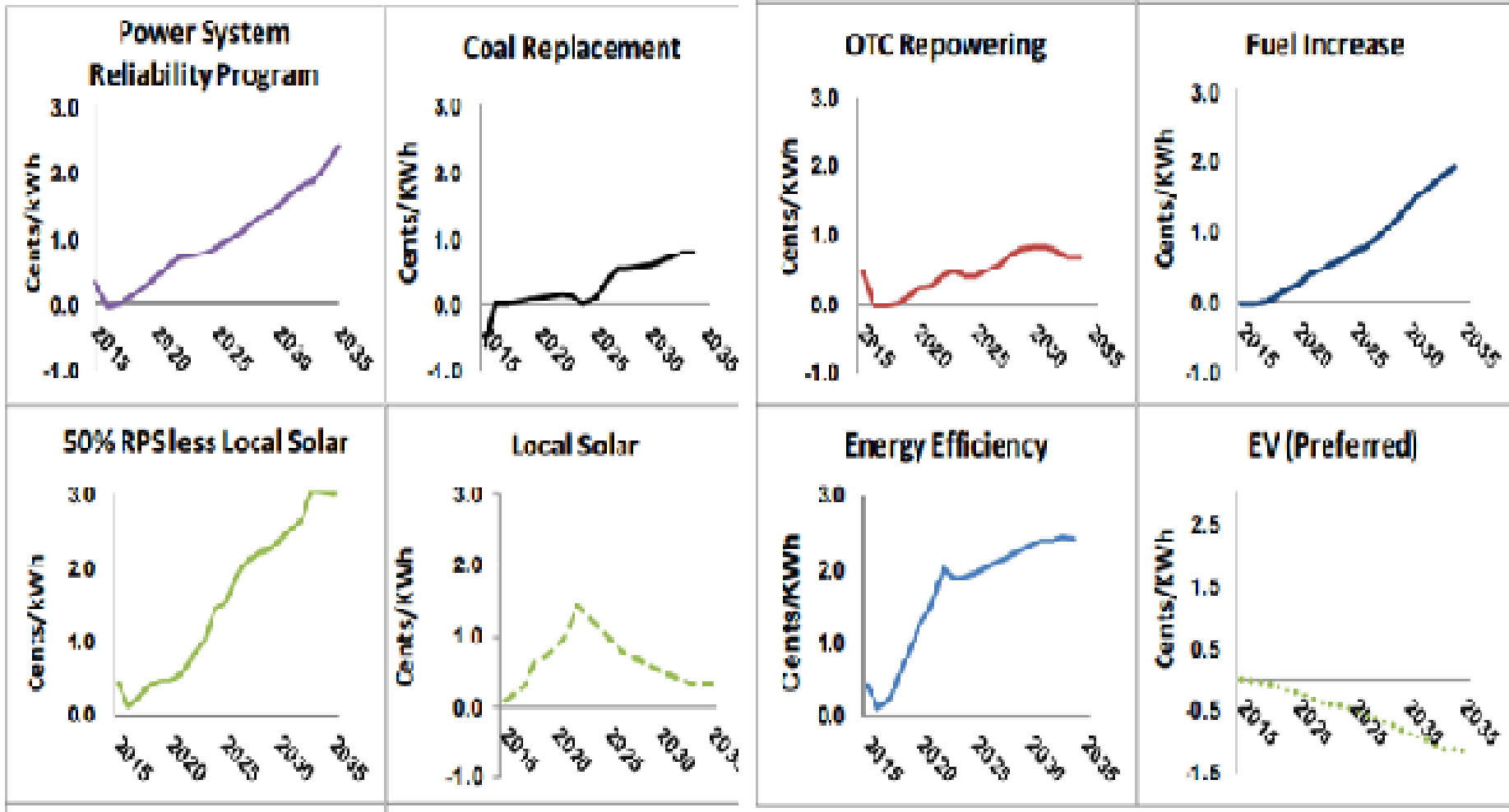
Figure 3-9. Electrification levels in the Los Angeles basin

All Program Rate Contribution

Carbon Intensity of Electricity vs. Petroleum (lbs CO₂/MWh)



EVs Save Everyone Money



- Contribution to Retail Rates for Recommended Case



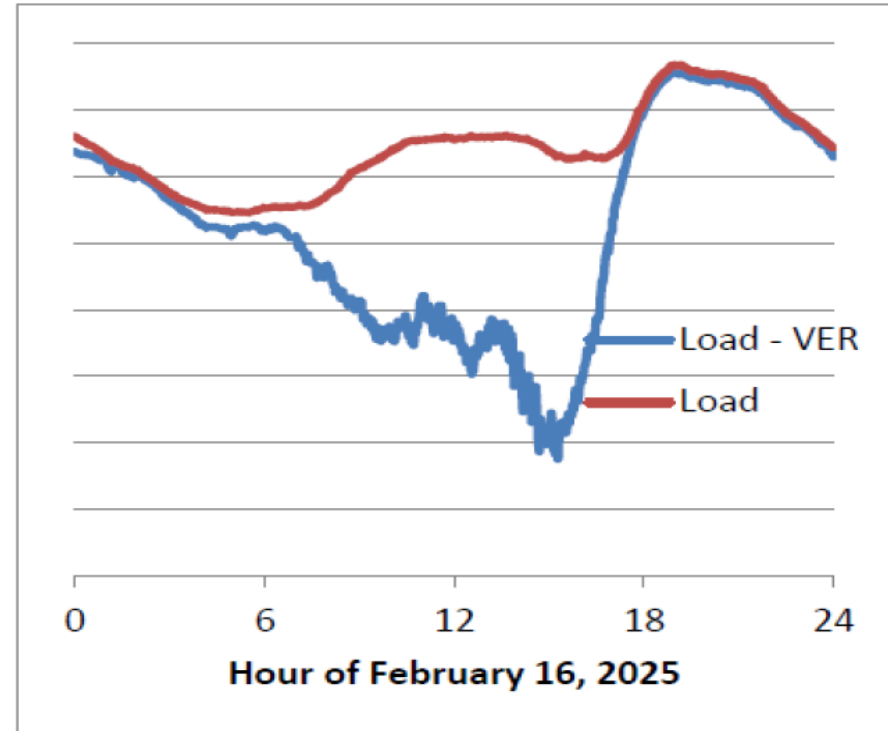
EVs and Integration of Renewables

Three Concerns:

- Intermittency of Renewables
- Over-generation from Solar
- Huge Load Ramp Rate at Sundown

EV Solution:

- Prescriptive Preferred Rates
- Dynamic Rate Pricing
- EV Infrastructure to Support It.
- Better Utility Load Factor



LADWP Electric Transportation Program

FY 2015-2020

Draft-For Discussion Only

5 Year Goal: The equivalent of 145,000 Electric Vehicles in LA.

Strategy:

1. Increase EV adoption to 15% of vehicle purchases.
2. Count Public and Workplace Chargers as EV equivalents.
3. Consider non-light duty as EV equivalents (i.e., Medium & Heavy Duty)





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LADWP Draft EV Plan

Education and Outreach:

Goal: 15% of all new vehicle purchases in LA are plug-in by 2020.

60K registered EVs in LA,
Programs: Drive, Social, HOA, etc.

Med. & Heavy Duty Fleet:

Includes POLA, LAWA, Forklift, Rail, Busses. Incentive toward charging infrastructure (Proportional to Commercial). Goals: TBD

Commercial Charging:

Charge-Up LA!, Workplace, Public EVSE
\$4000 rebates, (9K EVSE) Phase II:
Direct Install & Green Bldg. Ordinance.

LADWP & LA City Fleet:

LADWP 100%, City 50% New Cars
1600 vehicles.—No Program Cost

Residential Charging:

Charge-Up LA! Rebate:\$500 (5K)
Phase II: Smart Charger Rate

City EV Chargers:

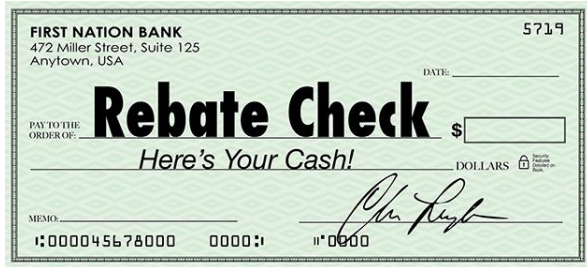
1000 Curbside/Parking Lot Public
1600 City Fleet Chargers,
25 City DC Fast Chargers
500 City Workplace Chargers
3125 Total Chargers





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Heavy Duty Electrification DWP Infrastructure Strategy



**DWP Charger
Rebates**



**Funding Gap
LCFS**



**Service Planning
Allocation**



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Real-Life Examples

- LADOT purchased 4 EV DASH Busses
- Metro Planning to convert LA Orange Line
- Port Of LA (POLA) doing a 5 yard truck demo





Two Heavy Duty EV Needs:

- **Depot Charging:** DWP has a great off-peak, A3 “industrial rate” with no monthly demand charge.
 - 14 hours a day weekdays
 - 24 hours weekends.
- **“Anytime Rate”:** Need to develop a rate for charging anytime during the day.





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LADWP Recommendations

- PEVs are key to meeting air quality goals and the progressive electrification goals align with their long history of supporting environmental goals.
- LADWP has implemented a variety of programs in support of L/M/HDVs, including infrastructure, fleet, consumer education.
- LCFS regulation is important to LADWP.
- Consideration should be given to post-2020 GHG allocations for those that invest in EV infrastructure.
(4:1 ratio)





SCPPA Recommendations

- 1) POU's are fully supportive of collaborating w/ the CEC to advance the data analytics for transportation electrification, to the extent cost-effective and possible.
- 2) POU's are doing all we can to expand and evaluate the market so we can include that data in our load forecasts – but it will be most helpful if the CEC works with DMV to share EV locations so utilities don't have to guess how many are in their service territories;



SCPPA Recommendations (cont.)

- 3) The EV market is currently very small and quantitative data points that they are asking for are limited – so qualitative descriptions on what we are doing will probably be most appropriate for most POUs.
- 4) The med/HD sector is changing quickly with new vehicles and equipment. To the extent we share techniques to reduce cost would benefit all.





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LADWP EV Program 5 year Results

Expected Program Results:

- The equivalent of 145,000 plug-in EVs in Los Angeles.
- LA's visible support for EV Technology through 10,000 City and Private Commercial Chargers for Public, Workplace, Multi-Unit Dwellings and 1600 City Plug-in vehicles.
- Support Residential Charging (5000 chargers)
- Utility Goals including GHG emission reductions, integration of renewable energy, better utilization of assets, and customer savings.



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Questions

