

May 21, 2018

Ms. Rajinder Sahota
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Dear Ms. Sahota:

Subject: Comments on April 30 Senate Bill 350 (SB 350) Integrated Resource Plan (IRP) Workshop

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide additional comments in follow up to the April 30 California Air Resources Board (CARB) public workshop to discuss the 2030 Greenhouse Gas (GHG) emission reduction targets for the electricity sector and individual publicly owned utilities (POUs) and load serving entities (LSE) as part of the integrated resource planning process.

1) GHG Targets should account for the forecast growth in electricity demand due to electrification

LADWP encourages CARB staff to ensure that the IRP GHG target ranges allow sufficient room to grow to satisfy the expected growth in electricity demand due to electrification. LADWP requests that CARB recalculate the POU and LSE IRP GHG targets using the 2018-2030 California Electricity Demand forecast which shows overall higher growth in electricity demand compared to the 2016-2026 demand forecast that was used to calculate the draft IRP GHG targets.

SB 350 recognizes that *"Reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification."* SB 350 also recognized that utilities should not be penalized for promoting transportation electrification. SB 350 directs the California Air Resources Board (CARB) to *"identify and adopt appropriate policies, rules, or regulations to remove regulatory disincentives preventing retail sellers and local publicly owned electric utilities from facilitating the achievement of greenhouse gas emission reductions in other sectors through increased investments in transportation electrification. Policies to be considered shall include, but are not limited to, an allocation of greenhouse gas emissions allowances to retail sellers and local publicly owned electric utilities, or other regulatory mechanisms, to account for increased greenhouse gas emissions in the electric sector from transportation electrification."*

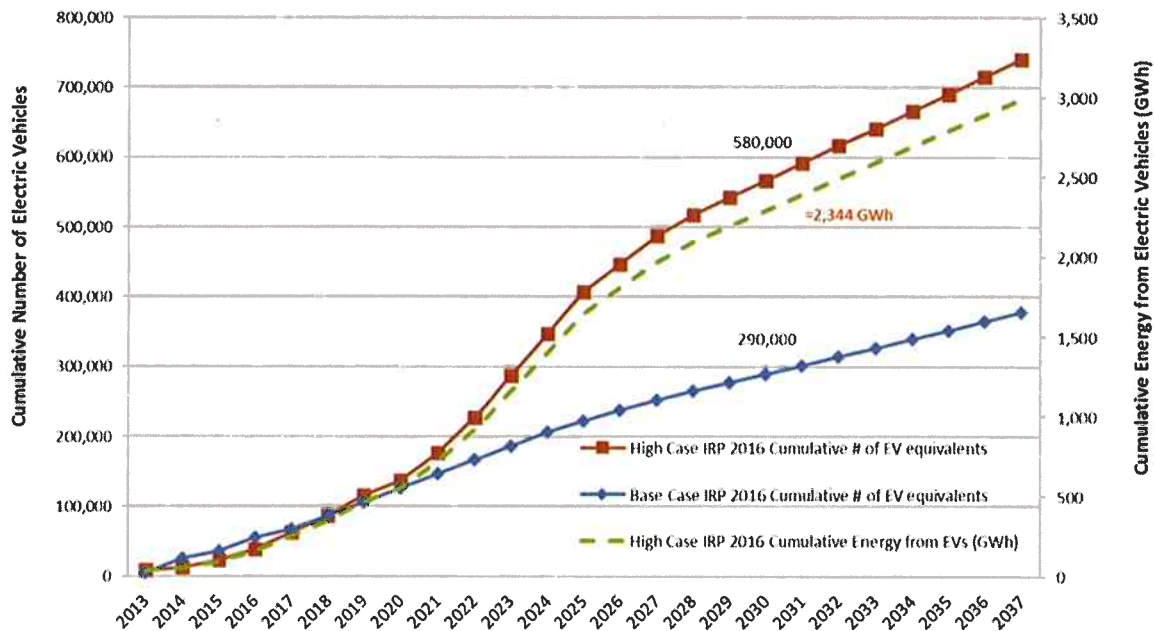
SB 350 specifies that the GHG reduction targets for the electricity sector and each load-serving entity should *"reflect the electricity sector's percentage in achieving the economy wide greenhouse gas emissions reductions of 40 percent from 1990 levels by 2030."* Economy wide

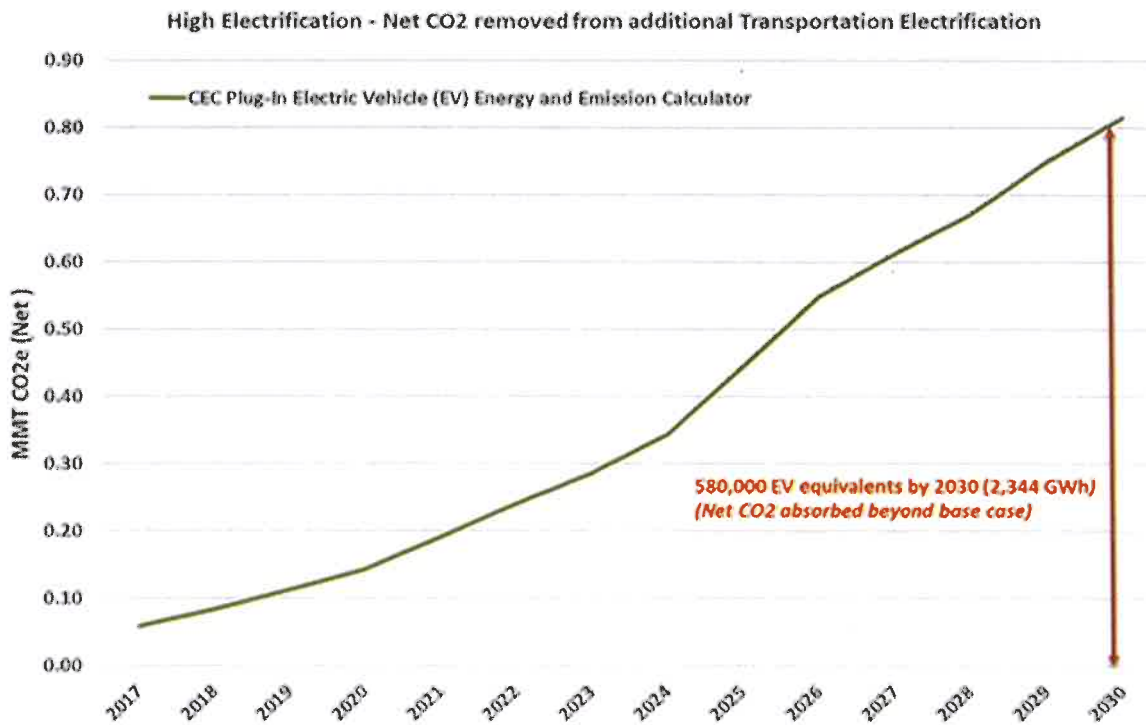
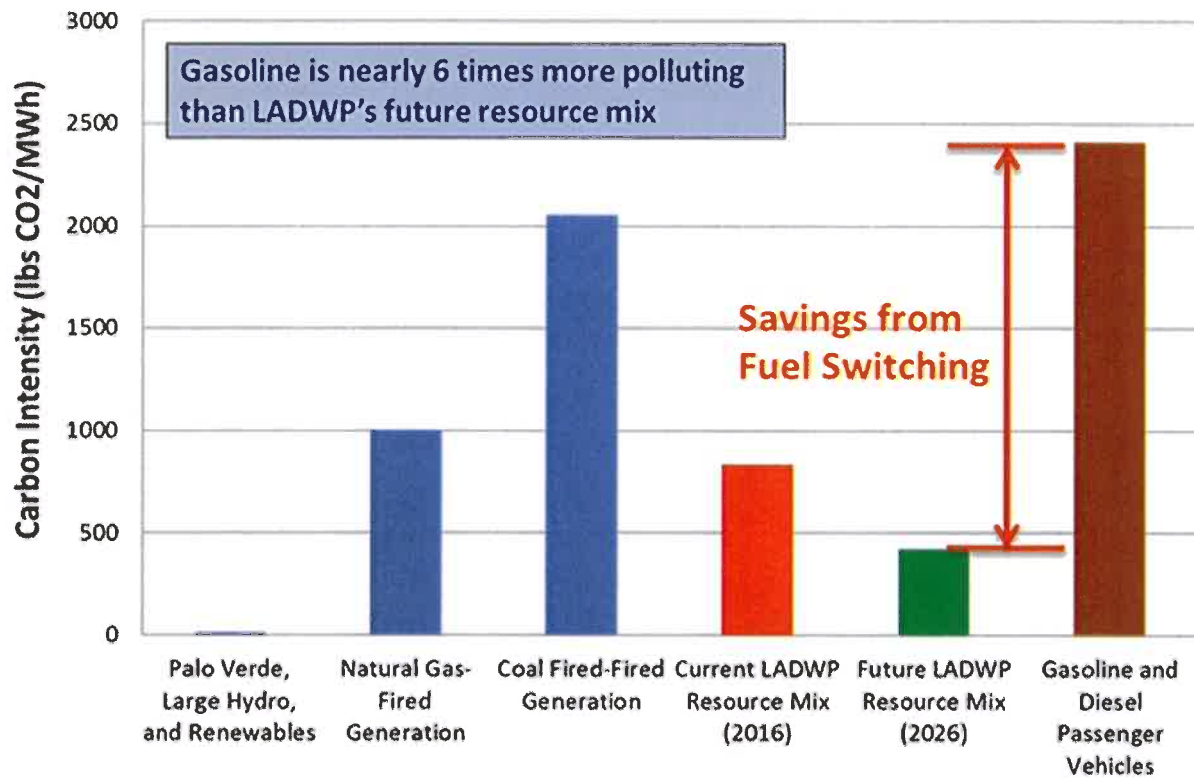
GHG emission reductions include reducing emissions in other sectors due to electrification. Electrification of vehicles and the goods movement infrastructure will result in an overall net decrease in emissions within the California economy because the average carbon intensity of the electricity supply is lower than the carbon intensity of transportation fuels.

The additional demand for electricity and overall net change in emissions that will occur due to electrification of emission sources within other sectors of the economy should be factored into the GHG targets for the electricity sector and individual POU and LSEs. When setting the GHG targets, CARB should take into account the state's goals to significantly increase the number of electric vehicles in operation within California. Senate Bill 1275 (De Leon, 2014) established a goal to place one million zero-emission and near-zero-emission vehicles in service by January 1, 2023, and to increase access to zero-emission and near-zero-emission vehicles for disadvantaged communities. On January 26, 2018, Governor Edmund G. Brown Jr. signed Executive Order B-48-18 to boost the supply of zero-emission vehicles and charging and refueling stations in California. This executive order implements the Governor's call for a new target of five million Zero Emission Vehicles (ZEVs) in California by 2030, significantly increasing the Governor's previous goal of 1.5 million ZEVs by 2025 established by Executive Order B-16-12. Executive Order B-48-18 further increases the expected growth in electricity demand due to electrification, a significant increase from the electrification assumptions in the 2016-2026 electricity demand forecast that was used to calculate the draft POU and LSE IRP GHG targets.

The graphs below illustrate the forecast growth in electric vehicles within LADWP's service territory and the associated net reduction in emissions due to transportation electrification.

Cumulative Transportation Electrification





Based on LADWP's forecast, the net GHG emission reduction due to transportation electrification is estimated to be 5.3 million metric tons from 2017 through 2030.¹

Electrification is an important tool to reduce statewide GHG emissions. It is also an important tool to reduce emissions of criteria air pollutants at the local level to meet the federal ambient air quality standards.

- Transportation Electrification: The California Energy Commission (CEC) created a calculator to quantify the net reduction in emissions due to electrification of vehicles. Earlier this year while discussing the IRP GHG target calculation method with CEC staff, LADWP encouraged CEC to include the net change in emissions from this calculator in the GHG targets. However, CEC deferred that topic to the CARB proceeding. When LADWP asked about this at the April 30 CARB workshop, CARB seemed to defer it back to the CEC as part of IRP implementation. LADWP recommends this calculator be utilized within the IRP process to quantify the net change in GHG emissions between sectors due to transportation electrification. This calculator should be used as a crediting mechanism in both the GHG targets and in the Greenhouse Gas Emissions Accounting Standardized Tables to adjust for potential modest increases in utility GHG emissions (due to generating more electricity to supply the additional demand) in recognition of the overall economy-wide GHG emission reduction.
- Building electrification: Growth in demand for electricity due to building electrification could easily be of the same magnitude as transportation electrification. LADWP is partnering with Southern California Edison and the Sacramento Municipal Utility District on a building electrification potential study, the results of which will be used to respond to the Los Angeles City Council motion directing LADWP to set building electrification targets for 2028 and 2038.
- Port Electrification: Electrification at the Port of Los Angeles is expected to increase demand for electricity nearly 900 gigawatt hours by 2030. Examples of electrification measures at ports include providing shore side power so that ships can turn off their main and auxiliary engines while at berth, electric cargo handling equipment, automation of container terminals, and electrification of vehicles.
- Emission Control Equipment: Electrification related emission control measures identified in the South Coast Air Quality Management District's 2016 Air Quality Management Plan include the installation of electric powered emission control equipment to reduce criteria pollutant emissions from stationary emission sources.

These projected increases in electricity demand need to be factored into LADWP's integrated resources plan.

CARB should ensure that the IRP GHG emission reduction targets reflect the expected increase in electricity demand due to electrification.

¹ Los Angeles Department of Water and Power 2017 Power Strategic Long-Term Resource Plan, December 2017.

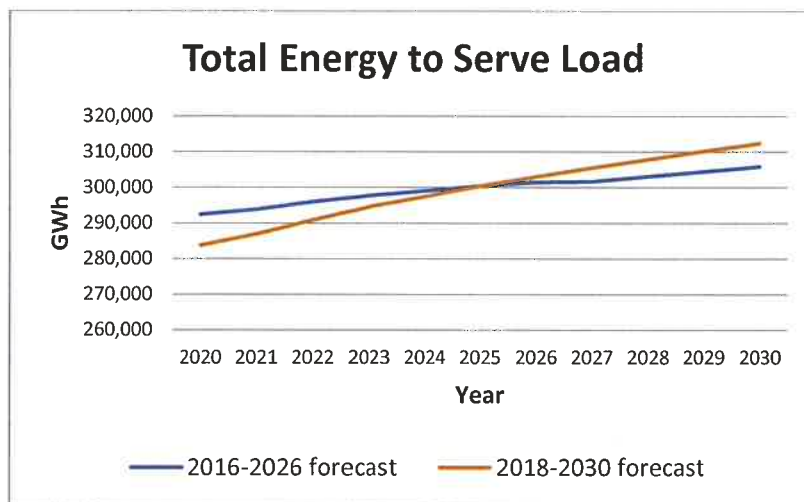
2) LADWP believes that use of the most recent 2018-2030 demand forecast and 2017 Form S-2 generating resource data in the allowance allocation methodology will provide a better estimate of 2030 GHG emissions for setting the IRP GHG targets.

At previous meetings, CARB staff has stated that the electricity distribution utility (EDU) IRP GHG targets are independent from the EDU allowance allocation. LADWP agrees. While it is fine to use the allowance allocation methodology to estimate 2030 GHG emissions for the IRP GHG targets, LADWP believes there is value in plugging in the most recent demand forecast (2018-2030) and generating resource (2017 IEPR Form S-2) data to calculate an updated estimate of LSE and POU GHG emissions in 2030 for the IRP GHG targets.

The allowance allocation data set used to calculate the draft IRP GHG targets is based on the 2016-2026 demand forecast which CARB staff extrapolated out to 2030 using an average of the 3 prior years. The 3-year average actually decreased the slope of the growth trend out to 2030, thereby underestimating the electricity demand in 2030. By using the older 2016-2026 California Energy Demand forecast instead of the current 2018-2030 California Energy Demand forecast to calculate the individual LSE and POU IRP targets, CARB is not properly accounting for the expected growth in electricity demand out to 2030.

The table and graph below compare the 2016-2026 and 2018-2030 California Energy Demand forecasts. Note that the 2018-2030 forecast shows a significantly higher Average Annual Growth rate.

California Energy Demand Revised/Final Forecast, 2016 - 2026, Mid Demand Baseline Case, No AAEE Savings (Adopted Jan 2016)	Statewide Total													Average Annual Growth (%)
	YEAR	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2014 - 2026	
	Form 1.5a - Total Energy to Serve Load (GWh)	292,401	293,805	296,009	297,692	299,030	300,413	301,480	301,699	303,096	304,500	305,910	0.46%	
	Form 1.1c - Electricity Deliveries to End Users (GWh)	271,569	272,889	274,953	276,529	277,790	279,093	280,094	280,317	281,648	282,985	284,328	0.47%	
CED forecast ends in 2026. CARB estimated 2027 to 2030 as follows: 2027 = (average of 2024-2026) * (Average Annual Growth). 2028 to 2030 = (prior year) * (Average Annual Growth).														
California Energy Demand Forecast 2018 - 2030, Mid Demand Baseline Case, No AAEE or AAPV Savings, Revised CCA (Adopted Feb 2018)	Statewide Total													Average Annual Growth (%)
	YEAR	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2016-2030	
	Form 1.5a - Total Energy to Serve Load (GWh)	283,712	286,925	290,850	294,562	297,447	300,416	302,990	305,495	307,893	310,181	312,475	0.72%	
	Form 1.1c - Electricity Deliveries to End Users (GWh)	263,466	266,462	270,124	273,598	276,289	279,063	281,462	283,809	286,062	288,210	290,374	0.72%	



Based on the difference in growth between the 2016-2026 and 2018-2030 forecasts, LADWP requests that CARB and the CEC update the LSE and POU GHG target calculation by plugging in the most recent 2018-2030 California Energy Demand forecast and Form S-2 generating resource data from the 2017 Integrated Energy Policy Report for each LSE and POU to provide the best estimate of GHG emissions in 2030 for the IRP GHG targets.

3) Request for transparency in the level of renewable energy, energy efficiency, demand response and energy storage needed to achieve the lower end of the electricity sector GHG target range

The draft staff report does not reveal how much renewable energy, energy efficiency, demand response and energy storage would be needed to achieve the lower end of the electricity sector GHG target range. The draft staff report states that the 30 to 42 million metric ton (MMT) GHG planning target range “reflects increased action beyond existing statutes or other requirements, such as greater deployment of renewable energy and increased energy efficiency, or potentially new responses and innovative technologies developed by POUs and LSEs.”² If the 53 MMT scenario represents the SB 350 mandated levels of 50% RPS and doubling of energy efficiency, then what do the 42 MMT and 30 MMT scenarios represent?

LADWP requests that CARB provide the list of assumptions behind the 42 and 30 MMT electricity sector emission scenarios, so that stakeholders have a clear picture of what efforts it would take to achieve those targets. At the workshop, CARB staff indicated that the 30 MMT scenario represents 70% renewable energy portfolio standard (RPS) on a statewide average. However, one size does not fit all utilities. Utilities that have generating resources located far away from the load center will have higher transmission losses, and need to compensate for those losses either with additional generation from natural gas-fired resources (with GHG emissions) or produce more zero emission electricity to support the losses. LADWP’s system has higher than average transmission losses, so an 80 to 90% RPS may be required for LADWP to achieve the lower end of the proposed GHG target range.

² CARB Draft Staff Report: Senate Bill 350 Integrated Resource Planning Electricity Sector Greenhouse Gas Planning Targets, page 21

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It is important that CARB provide the details behind the electricity sector targets so that stakeholders can evaluate whether those assumptions are reasonable, and utilities can consider those factors when preparing their integrated resource plans. The difficulty to achieve higher percentages of RPS and energy efficiency and the associated costs increase exponentially the higher up the scale you go. Electric utility customers need to understand the magnitude of emission reductions being asked of the electric utilities and the associated costs for those reductions that would be passed through to customers.

4) Request to review the IRP GHG targets calculation worksheet

For additional transparency, LADWP requests that CARB make the IRP GHG targets calculation worksheet(s) available for public review so that stakeholders can see how the LSE and POU targets are being calculated and how the electric sector total is divided among the LSEs and POUs.

In closing, LADWP appreciates your consideration of these comments as well as our previous comments on the March 2 SB 350 Integrated Resource Plan Workshop.

If you have any questions or would like additional information, please contact Ms. Cindy Parsons of my staff at (213) 367-0636.

Sincerely,



Mark J. Sedlacek
Director of Environmental Affairs

CP:rs

c: Mr. Jason Gray, CARB
Ms. Rachel Gold, CARB
Mr. Jakub Zielkiewicz, CARB