California Air Resources Board

Senate Bill 350
Integrated Resource Planning Electricity Sector
Greenhouse Gas Planning Targets: 2023 Update

September 2023

Section 1: Introduction

Under the Clean Energy and Pollution Reduction Act (Senate Bill 350) (de León, Chapter 547, Statutes of 2015), the California Air Resources Board (CARB or Board) must establish 2030 greenhouse gas (GHG) planning targets for individual publicly-owned utilities (POU) and load-serving entities (LSE).[1] CARB staff originally developed, and the Board adopted, these targets in July 2018, as published in Staff Report: Senate Bill 350 Integrated Resource Planning (IRP) Electricity Sector Greenhouse Gas Planning Targets (2018 Staff Report) and updated the targets for host electrical distribution utilities (EDU),[2] community choice aggregators (CCA),[3] and electricity service providers (ESP)[4] in March 2021, as published in Senate Bill 350 Integrated Resource Planning Electricity Sector Greenhouse Gas Planning Targets: 2020 Update (2020 Update).

Board Resolution 18-26 directs that "updates to the electricity sector, load-serving entity, and publicly owned utility GHG planning targets should be considered every five years, in coordination with future Scoping Plan updates." In December 2022, the Board approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update). The electricity sector target was updated in Board Resolution 22-21, which determined that the 2022 Scoping Plan Update "provides the basis for establishing the revised planning target range for the electricity sector of 30-38 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2030 for use in Integrated Resource Plans pursuant to SB 350."

The Integrated Resource Planning Electricity Sector Greenhouse Gas Planning Targets: Draft 2023 Update (Draft 2023 Update) provides updated targets for POUs. As was the case in the 2018 Staff Report and the 2020 Update, the targets in this Draft 2023 Update are ranges. These updates are necessary to reflect the revised GHG planning target range for the electricity sector and to support the California Energy Commission's (CEC) IRP planning cycle.[5] The updated targets were derived consistent with the methodology used in the 2018 Staff Report in coordination with the California Public Utilities Commission (CPUC) and CEC.

In June 2022, CPUC established 2030 GHG planning targets for host EDUs, CCAs, and ESPs for use in CPUC's 2022-23 IRP Cycle. Because these 2030 GHG planning targets

[1] Load-serving entities include investor-owned utilities (IOU), electric service providers, and community choice aggregators.
[2] The term "host EDU" is used to describe the IOU operations that are served by the IOU itself, after accounting for load served by the CCAs and ESPs that operate in the IOU's territory.
[3] CCAs are governmental entities formed by cities and counties as authorized under Public Utilities Code Section 366 to procure electricity for residents, businesses, and municipal facilities within the service territory of IOUs. CCAs serve load but are not EDUs. IOUs provide transmission and distribution service for CCAs.
[4] ESPs are non-utility entities authorized under Public Utilities Code Section 394 that offer direct access electric service to customers within the service territory of IOUs. ESPs serve load but are not EDUs. IOUs provide transmission and distribution service for ESPs.
[5] POUs subject to IRP are required to submit IRP filings every five years.

were developed using a similar method to CARB's, and are based on the same electricity sector GHG planning target range CARB set in Board Resolution 22-21, this Draft 2023 Update does not include revised targets for these entities.

Section 2: GHG Planning Target Range for Electricity Sector

The 2030 electricity sector GHG planning target range used in this Draft 2023 Update is 30–38 $MMTCO_2e$ as established in Board Resolution 22-21, which also approved the 2022 Scoping Plan Update. The 2022 Scoping Plan Update used PATHWAYS to model different GHG emissions scenarios that achieve the 2030 economy-wide GHG emissions target.[6] The selected Scoping Plan Scenario reflects outcomes and actions to achieve carbon neutrality and reduce anthropogenic GHG emissions at least 85% below the 1990 level no later than 2045, incorporates SB 350's energy efficiency doubling goal, aligns with the CPUC's IRP 2030 GHG target and GHG benchmarks through 2035, is consistent with the governor's 20 GW offshore wind and no new gas generation goals, and plans for SB 100's 2030 Renewables Portfolio Standard and 2045 zero-carbon retail sales targets. In its 2019-2021 IRP Cycle, CPUC adopted a 38 $MMTCO_2e$ GHG target for the electricity sector in 2030 and 35 $MMTCO_2e$ in 2032.[7] Alignment with CPUC's IRP 2030 GHG target establishes the new electricity sector GHG emissions planning target of 38 $MMTCO_2e$ as the upper bound of the range. This upper bound is lower than the one used in the 2020 Update and the 2018 Staff Report (53 $MMTCO_2e$) which was informed by California's 2017 Climate Change Scoping Plan. The lower bound (30 $MMTCO_2e$) remains the same as in the 2020 Update and the 2018 Staff Report, wherein a more detailed description of the methodology can be found. As reflected in Board Resolution 22-21, the 2022 Scoping Plan Update modeling indicates the need to accelerate the pace of developing and deploying clean energy and technology, and successful implementation of the 2022 Scoping Plan Update will reduce GHG emissions from AB 32 GHG Inventory Source sectors 48 percent below 1990 levels by 2030, surpassing the SB 32 2030 statutory minimum reduction target.

Section 3: GHG Planning Target Ranges for POUs

The methodology used in this Draft 2023 Update to develop 2030 GHG planning target ranges for POUs remains the same as that used in the 2018 Staff Report, where a more detailed description of the methodology can be found. Staff assigned a portion of the 30–38 $MMTCO_2e$ electricity sector GHG planning target range to each POU required to submit an IRP. The basis for this is the POU's percentage of 2030

[6] California PATHWAYS Model Framework and Methods (January 2017). PATHWAYS is a model structured to estimate GHG emissions in future years while recognizing the integrated nature of the industrial economic and energy sectors. The PATHWAYS Model has undergone some updates over the years but remains structurally consistent with the model framework provided with the 2017 Scoping Plan documents. More information can be found on E3's website at: https://www.ethree.com/tools/.

[7] The February 10, 2022, Decision 22-02-004 by the CPUC adopts the 2021 Preferred System Plan, completing the 2019-21 IRP cycle. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M451/K412/451412947.pdf

GHG emissions from the 2021–2030 EDU Allocation Spreadsheet[8] developed for CARB's Cap-and-Trade Program's 2021–2030 Allowance Allocation to EDUs. The lower bounds of the ranges presented in Table 1 are unchanged from the 2020 Update because both the lower bound of electricity sector planning target range and the EDU Allocation Spreadsheet remain unchanged. Because the 2021–2030 EDU Allocation Spreadsheet considers POUs and LSEs under CPUC's jurisdiction, using this spreadsheet as the basis for GHG planning targets ensures electricity sector GHG targets are appropriately allocated regardless of the governing jurisdiction.

Table 1 – 2030 GHG Planning Target Ranges for POUs

Publicly Owned Utility	Percentage of 2030 Electricity Sector Emissions[9]	2030 GHG Planning Target Range, 30–38 $MMTCO_2e$[10]	
		Low ($MTCO_2e$)	High ($MTCO_2e$)
City of Anaheim	1.015%	305,000	386,000
City of Burbank	0.430%	129,000	163,000
City of Glendale	0.396%	119,000	151,000
City of Palo Alto	0.174%	52,000	66,000
City of Pasadena	0.426%	128,000	162,000
City of Redding	0.191%	57,000	72,000
City of Riverside	0.918%	275,000	349,000
City of Roseville	0.452%	136,000	172,000
City of San Francisco	0.041%	12,000	15,000
City of Vernon	0.497%	149,000	189,000
Imperial Irrigation District	1.745%	524,000	663,000
Los Angeles Department of Water & Power	8.851%	2,655,000	3,363,000
Modesto Irrigation District	1.055%	317,000	401,000
Sacramento Municipal Utility District	3.621%	1,086,000	1,376,000
Silicon Valley Power	0.915%	275,000	348,000
Turlock Irrigation District	0.629%	189,000	239,000

Section 4: Public Process

CARB released a draft version of this 2023 Update for a public comment period on August 4, 2023. Four comments were submitted. Several commenters requested that the lower bound of the electricity sector's GHG planning target range be set as the maximum GHG planning target for the sector. As discussed above, the electricity sector GHG planning target range was set by the Board and revisions are not within the scope of this 2023 Update. CARB will continue to work with CPUC and CEC, plus other key stakeholders such as the California Independent System Operator, to ensure a coordinated effort to reduce electricity sector GHG emissions, in particular through the SB 100 process.

[8] Note POU-specific GHG emissions are listed on tabs for each POU; POU-specific GHG emissions include the industrial source electricity demand in the spreadsheet. Industrial source electricity demand is excluded for POU allowance allocation purposes.
[9] Percentage of 2030 electricity sector emissions are rounded to the nearest thousandth.
[10] Emissions targets for each utility are rounded to the nearest 1,000 $MTCO_2e$.