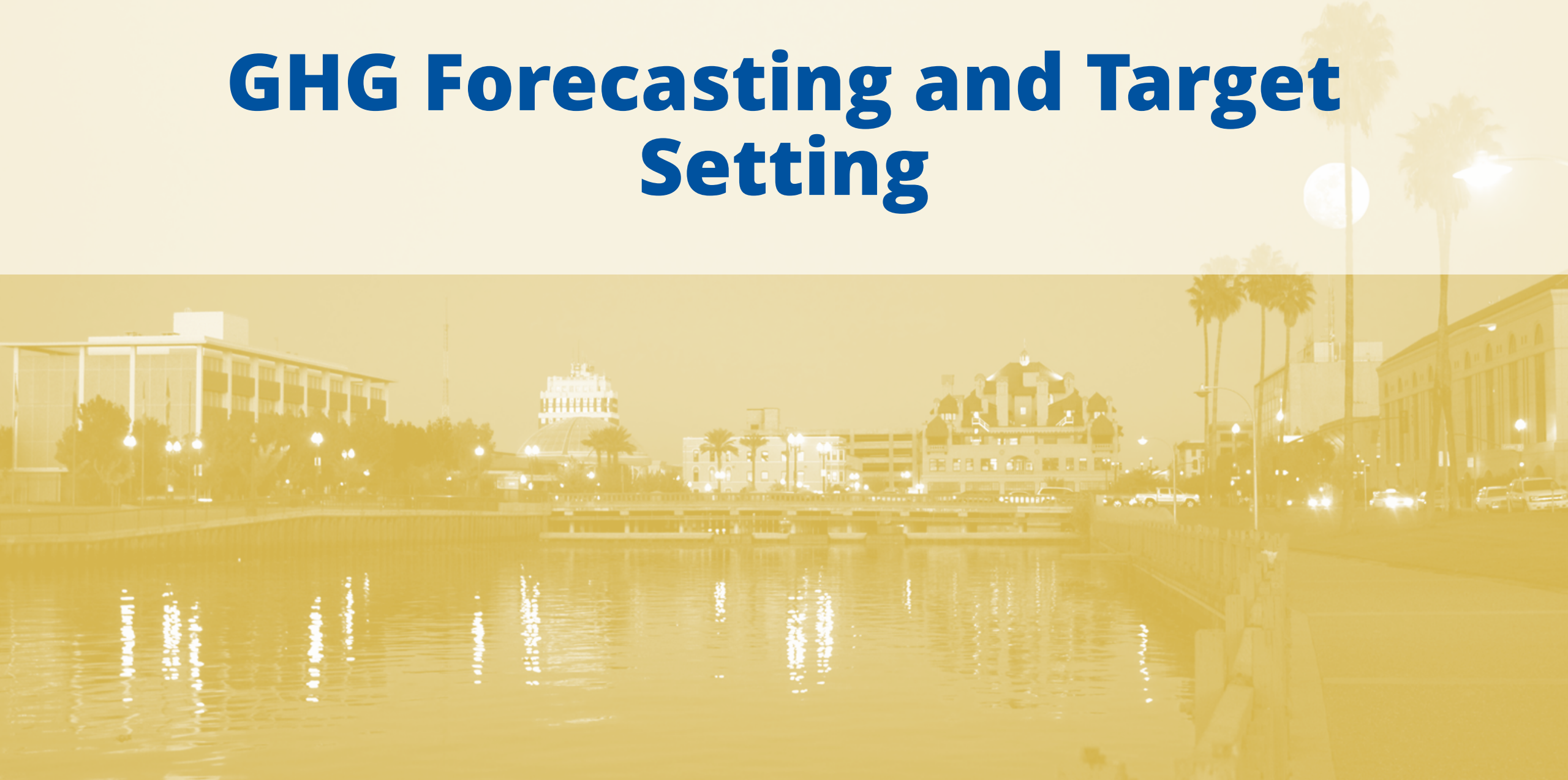
GHG Forecasting and Target Setting



GHG Forecasts

The Stockton MSA region's 2022 GHG emissions were projected to 2045 under two scenarios:

- A **"business-as-usual" (BAU)** scenario that shows how emissions could change if no additional action is taken to curtail their growth.
- A **"adjusted business-as-usual" (ABAU)** scenario that shows the potential emissions impacts of existing California and federal regulations/programs but assumes the region will not take further action to reduce emissions.

BAU and ABAU Scenario Comparison

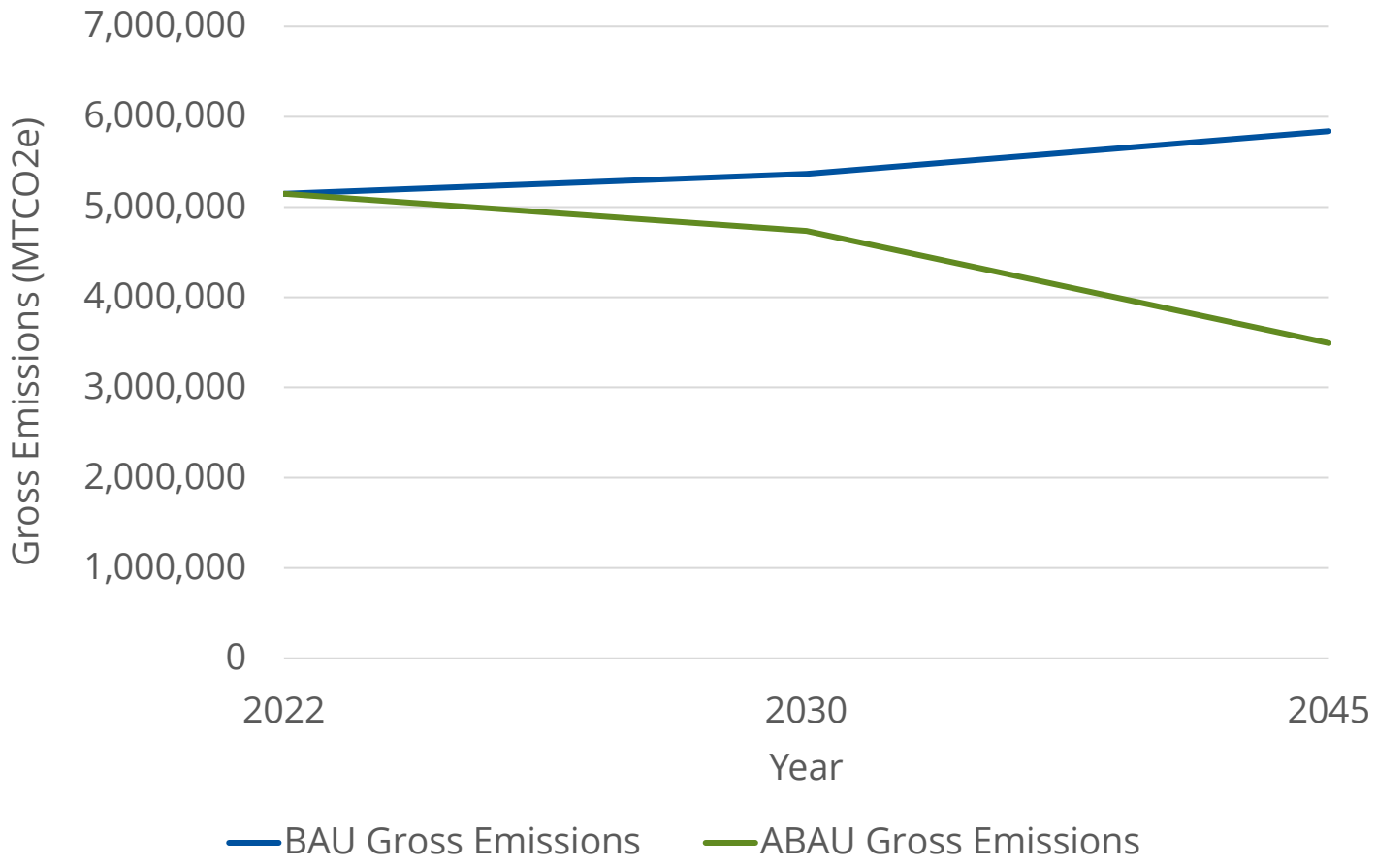
Similarities	Differences

• Forecast emissions for the following activities using **population and jobs** growth rates:
  • Natural Gas
  • Waste
  • Freight Rail
 	
• Held emissions **constant**:
  • Agriculture
  • Industrial Processes
  • Forests and Trees
 	
• Forecast **VMT** using **SJCOG travel demand model**
	• **On-road Vehicles**: BAU on-road vehicle types remain constant; ABAU reflects state and federal policies (e.g., ACCII).
	
	• **Electricity Emissions Factor**: BAU electricity emission factor remains constant; ABAU electricity emission factor reflects SB 100 adoption (100% clean energy by 2045).
	
	• **Off-road Emissions**: BAU off-road emissions forecast using service population growth; ABAU integrates state regulations.

Forecast Results

From 2022 to 2045, **BAU emissions increases 13%** while **ABAU emissions decreases 32%.**

This emphasizes the importance of external regulation on regional emissions and how most emission sources are out of the region's direct control.

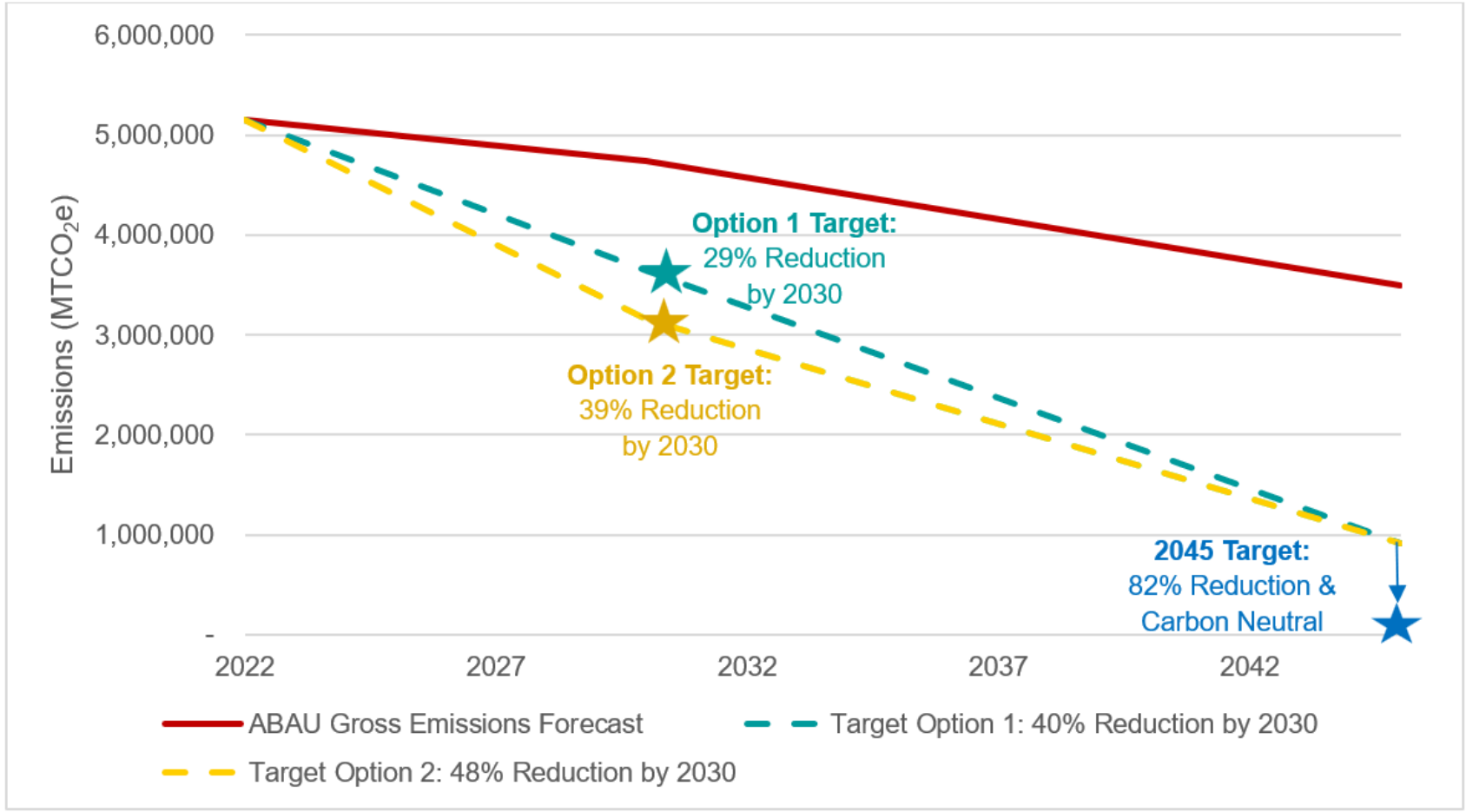


Target Recommendations

- EPA requires voluntary GHG reduction targets to be established (not required/mandatory to meet targets under EPA program)
- As best practice, GHG targets should be aligned with State of California legislation and climate targets.

Target Option	2030	2045
Emissions Target Option 1	**Gross emissions**: 29% below 2022 levels (3,639,577 $MTCO_2e$) *Equates to 40% below 1990 levels aligned with Senate Bill 32*	**Gross emissions**: 82% below 2022 levels (909,894 $MTCO_2e$) *Equates to 85% below 1990 levels aligned with AB 1279* **Net emissions**: Carbon neutral *Aligned with AB1279*
Emissions Target Option 2	**Gross emissions**: 39% below 2022 levels (3,154,300 $MTCO_2e$) *Equates to 48% below 1990 levels aligned with 2022 CA Scoping Plan recommendation*	

Target Comparison



Recommend selecting Target Option 2 to align with the State of California's latest climate research and policy direction

Target Selection

- Which target option should be selected?

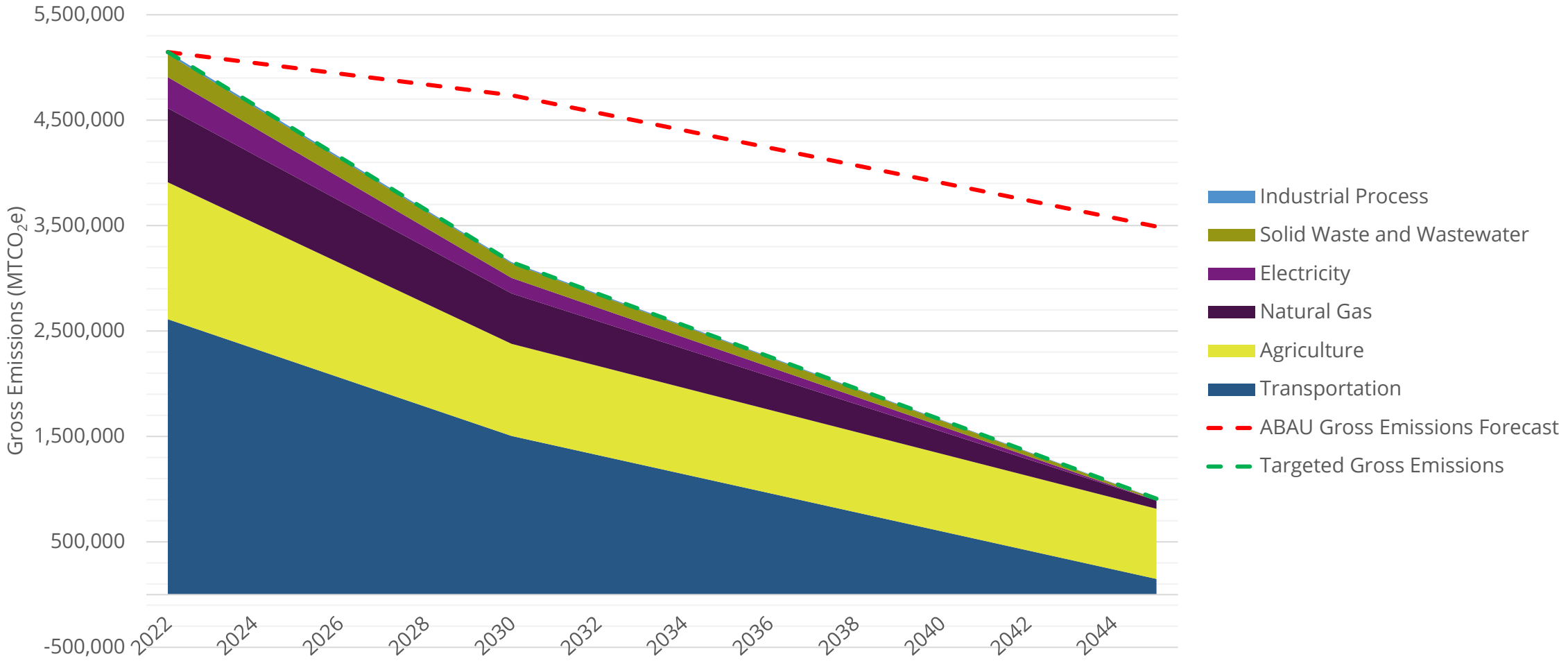
Sector-Specific Targets

- **Sector-specific GHG reduction targets** are recommended (but not required) by EPA
- While it is not necessary to achieve the exact sector-specific targets to meet the economy-wide targets, the sectoral targets can act as **guideposts** to demonstrate the **relative level of effort** needed to meet regional reduction targets
- The recommended sectoral targets were developed to meet **Target Option 2** and were informed by the California Scoping Plan Scenario sector-specific reductions

Sector-Specific Targets

Sector	2030 Target (% reduction from 2022 levels)	2045 Target (% reduction from 2022 levels)	Reasoning
Transportation (On-Road, Off-Road, Waterborne, Aviation, Rail)	-42%	-94%	In line with 2022 Scoping Plan
Agriculture	-33%	-49%	In line with 2022 Scoping Plan
Natural Gas	-32%	-89%	In line with 2022 Scoping Plan
Electricity	-50%	-100%	In line with SB100
Solid Waste and Wastewater	-36%	-94%	In line with meeting gross targets
Industrial Processes	-44%	-84%	In line with 2022 Scoping Plan
Total Region-wide GHG Reductions (in Line with Target Option 2)	**39% below 1990 levels**	**82% below 2022 levels**	**-**

Sector-Specific Target Achievement



Sector-Specific Target Selection

- Are these sector-specific targets acceptable as general guideposts for target achievement?