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2025 Senate Bill (SB) 100: Draft Results Workshop

Aleecia Gutierrez, Director Energy Assessments Division, CEC

February 19, 2026

Housekeeping

- The restrooms are to the left of the auditorium when you exit the doors.
- Please note the emergency exit to the rear of the room through the foyer
  - In the event of a fire alarm or other emergency and we are required to evacuate this room, immediately go down the stairs to the lobby, and out of the building. When the "All Clear" signal is given, we will return to the auditorium and resume the meeting.

Workshop Schedule - Morning

Introduction and Housekeeping (9:00 – 9:05)

Opening Comments from the Dais (9:05 – 9:20)

Presentation: Overview (9:20 – 9:25)

Presentation: Draft Modeling Results (9:25 – 10:10)

Questions from the Dais & Public (10:10 – 10:40)

Presentation: Non-Energy Impacts Analyses (10:40 – 11:10)

- Land Use Impacts
- Air Quality & Related Public Health Impacts

Questions from the Dais & Public (11:10 – 11:40)

Public Comment (11:40 – 12:00)

Lunch Break from 12:00 – 1:00 pm

Workshop Schedule - Afternoon

Welcome Back (1:00 – 1:05)

Panel Discussion: SB 100 Implementation Challenges & Opportunities (1:05 – 2:30)

Questions from the Dais & Public (2:30 – 3:00)

Public Comment (3:00 – 3:15)

Closing Remarks and Adjourn (3:15 – 3:30)

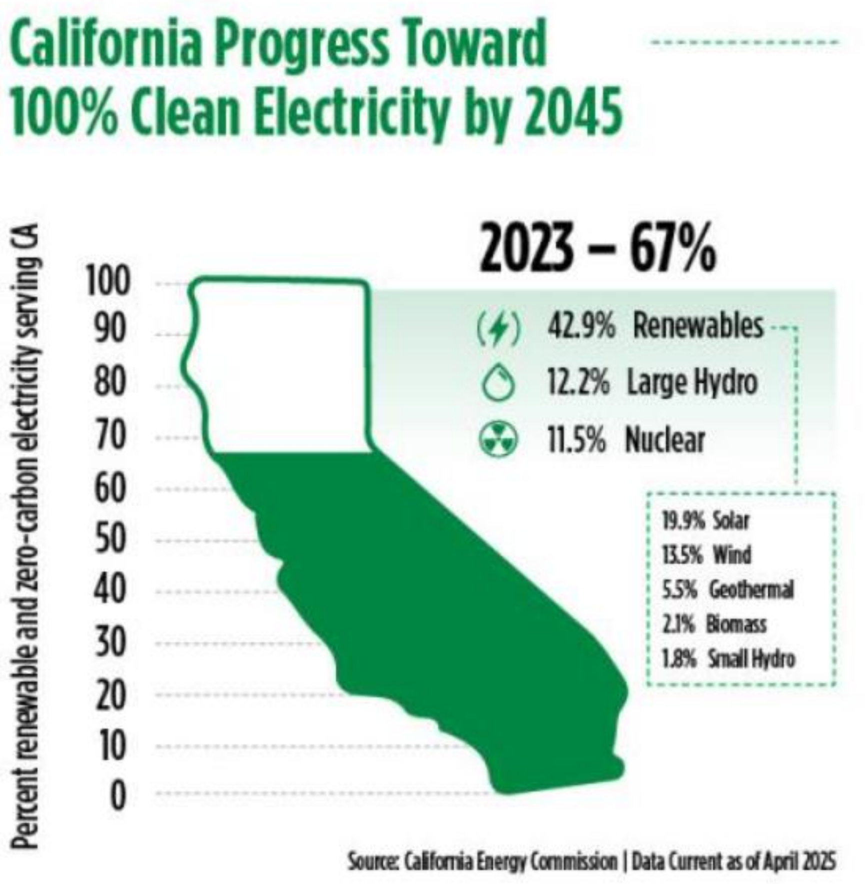
Opening Remarks from the Dais

2025 Senate Bill (SB) 100: Draft Results Workshop - Overview

Liz Gill, PhD. Manager, Reliability Analysis Branch, CEC

February 19, 2026

SB 100 is a Goal and a Report



Clean Energy Serving California

A joint agency effort – between the CEC, CARB, and CPUC.

An iterative and ongoing effort to report progress and assess barriers and opportunities to implementing the 100% clean electricity policy. Reports are due every 4 years.

California Primary Electricity Planning Processes

Implementation of the SB 100 goal is carried out via **independent and collaborative efforts** at various state and local entities.

SB 100 Report Requirements

The legislation requires the report include:

1. **Policy review** (technical, safety, affordability, reliability)
2. Assessment of costs/benefits for **alternative scenarios**, including
   - **Reliability**
   - **Financial**

SB 100: Analysis of Modeling Results

Hannah Craig, Electric System Planning Lead, Energy Assessments Division

February 19, 2026

Modeling Approach

SB100 Electricity System Supply Model: A Multi-Stage Approach

Capacity Expansion, Stage 1

- Model: REGEN
- Results:
  - WECC-wide Resource Build
  - Initial PRM and Capacity Credits

Capacity Expansion, Stage 2

- Model: PLEXOS LT (Capacity Expansion)
- Results:
  - CA Resource Build
  - Capital and Fixed Costs

Resource Adequacy

- Model: PLEXOS (Stochastic)
- Results:
  - LOLE

System Dispatch

- Model: PLEXOS (Deterministic)
- Results:
  - Generation
  - Operating Costs

SB 100 Modeling Scenario Objectives

- Illustrate and compare under different scenarios to achieve SB 100 targets
  - ➢Scenarios can represent a hypothetical "future system," state mandates, policy goals, resource costs or availability, or other broad system assumptions.
- Scenario analysis is directional and informational

Modeling Limitations and Caveats

- State analysis can help inform future system development, but the market ultimately determines what will get built.
- No single scenario is "the best" or a "prediction." Scenarios and are intended to represent a range of hypothetical paths to achieve SB100.
    - Uncertainty includes assumptions around future resource costs, fuel prices, electric demand, among others.
    - Modeling does not consider changes in federal incentives, tax credits, IRA repeal, tariffs and other developments in 2025
- Limits to this modeling:
    - Simplifies real-world constraints about transmission, distribution, and generator operations
    - Does not conduct power flow analysis
    - Relative costs of scenarios may not incorporate all aspects of system operations that affect ratepayer costs.
- SB100 is not a venue for determining resource compliance or other electricity system planning decisions.

Limits of Modeling a 2045 Future

- Modeling an electric system 20 years into the future will always involve uncertainty.

- Some uncertainties include, but are not limited to:
  - Demand increases could be larger than currently forecasted (e.g., data centers and AI load) or less than currently forecasted (e.g. slower uptake of electrified end-use technologies).
  - Demand patterns or renewable resource profiles may shift.
  - Prices could decrease as technology improves or increases as materials/land costs impose constraints.
  - Cost of fossil gas depends on many external variables.

SB 100 Modeling Inputs and Assumptions Overview

Modeling Inputs & Assumptions Vary Across Different State Modeling Efforts

- The joint agencies align where possible on inputs & assumptions (I&A) across different modeling efforts.
- However, there are reasons for divergences as each agency conducts modeling to serve different purposes
  - For example, the 2023 Preferred System Plan (PSP) used in the scenario analysis and SB 100 Report Modeling rely on different IEPR demand forecast vintages.
- Despite the inherent uncertainty in modeling future system needs the SB 100 Joint Agency Report, 2022 Scoping Plan, and CPUC's PSP show similar modeling results.

State Goals and Reliability Targets Inform SB100 Modeling

State Goals

- **SB100/SB 1020:** Percent of retail sales must be from renewable and zero-carbon resources by 2030, 2035, 2040, 2045 (not including transmission, distribution, or storage losses)
- **SB 350:** 2030 GHG planning target range from CARB Board Resolution 22-21
- **AB 1279:** 85% statewide anthropogenic GHG emissions reductions and carbon neutrality by 2045
  - 2045 electric sector GHG emissions from CA 2022 Scoping Plan

Reliability Requirements

System must meet

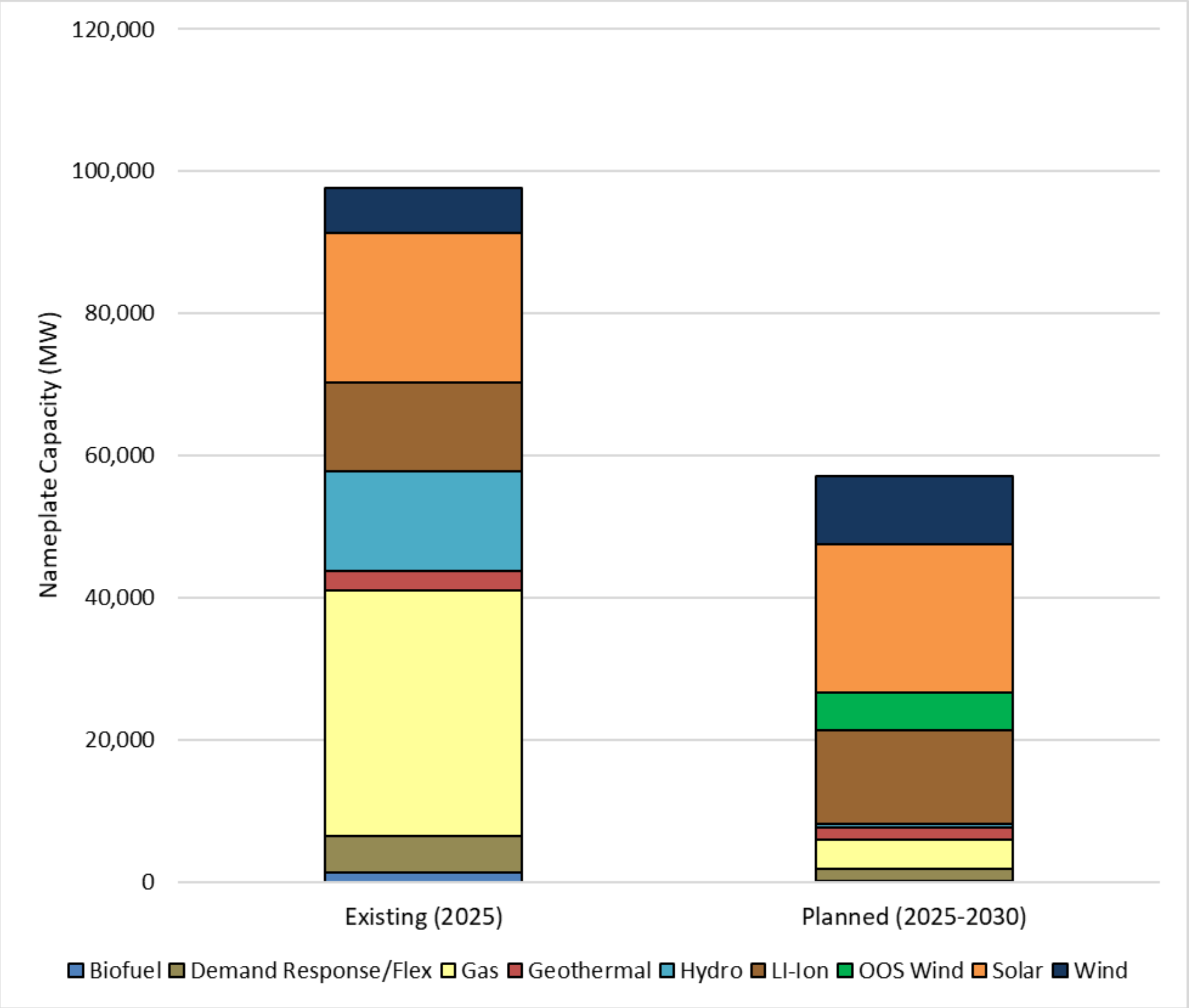
- 17% statewide planning Reserve Margin (PRM) in the capacity expansion model
- 0.1 loss of load expectation (LOLE) target in the reliability model
- No unserved load in the dispatch model

Year	SB100/SB1020 Retail Sales Target	GHG Emissions	Planning Reserve Margin
2030	[60% RPS]	30 MMT	17%
2035	90%	25 MMT	17%
2040	95%	16.9 MMT	17%
2045	100%	6.9 MMT	17%

Existing & Planned System Capacity Sets the Baseline for Modeling

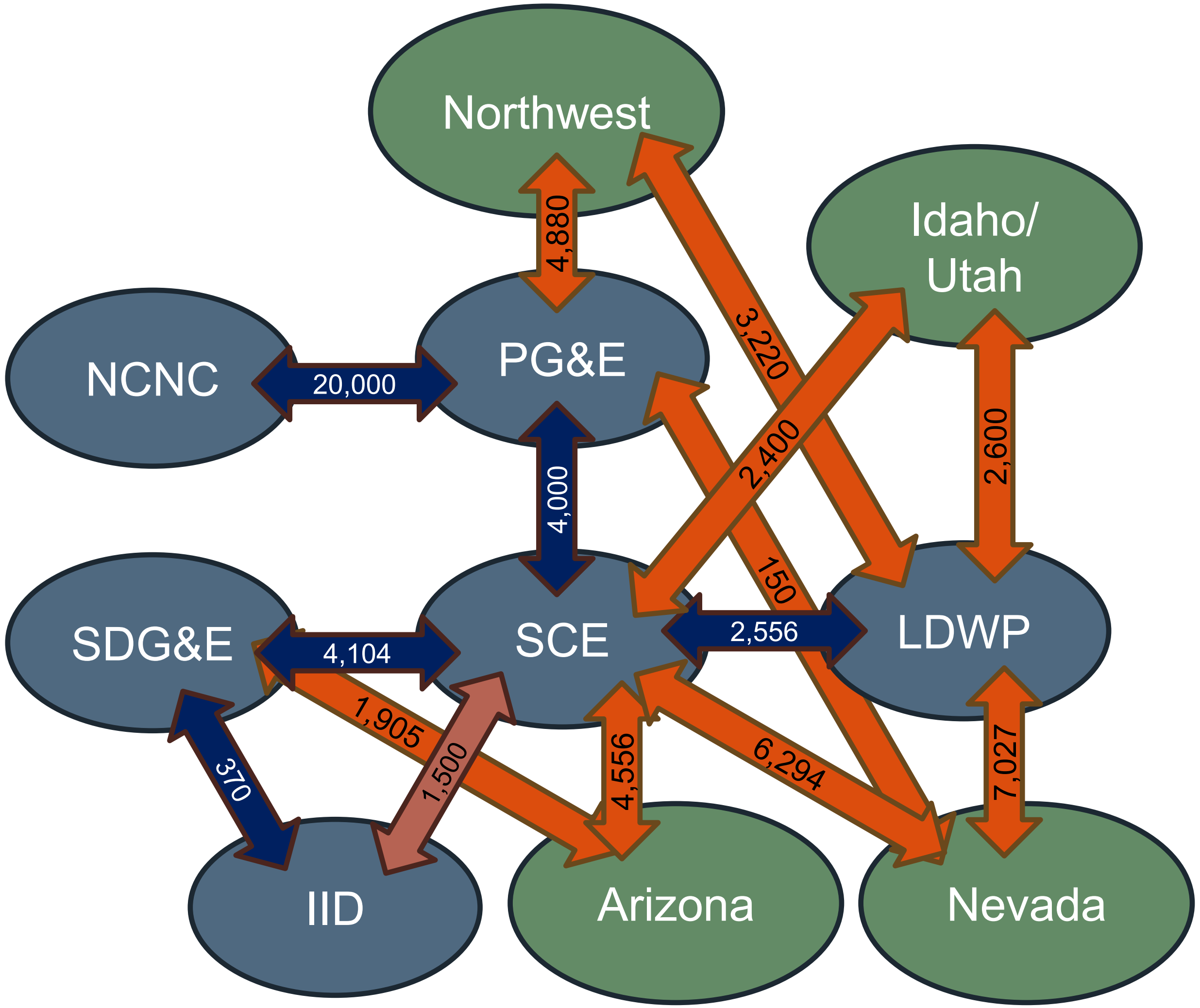
- **Existing resources:** Quarterly Fuels and Energy Resources data
- **CPUC jurisdictional Planned Resources:** 2023 Preferred System Plan
- **Non-CPUC jurisdictional Planned Resources:** based on Supply Form filings through 2030
- Planned resources built through 2030 are included in all scenarios as part of the baseline build.

CA Statewide Baseline System



Transmission in SB100 Model is a Simplified System Representation

Transfer Capacity (MW)



- CA imports are limited to 12,450 MW
- CA exports are limited to 4,000 MW
- Planned transmission expansions include:
  - Transwest
  - SWIP North
  - Sunzia
  - Desert Southwest Reinforcement
- Additional transmission to interconnect selected resources is not modeled, but included in NRL ATB build costs

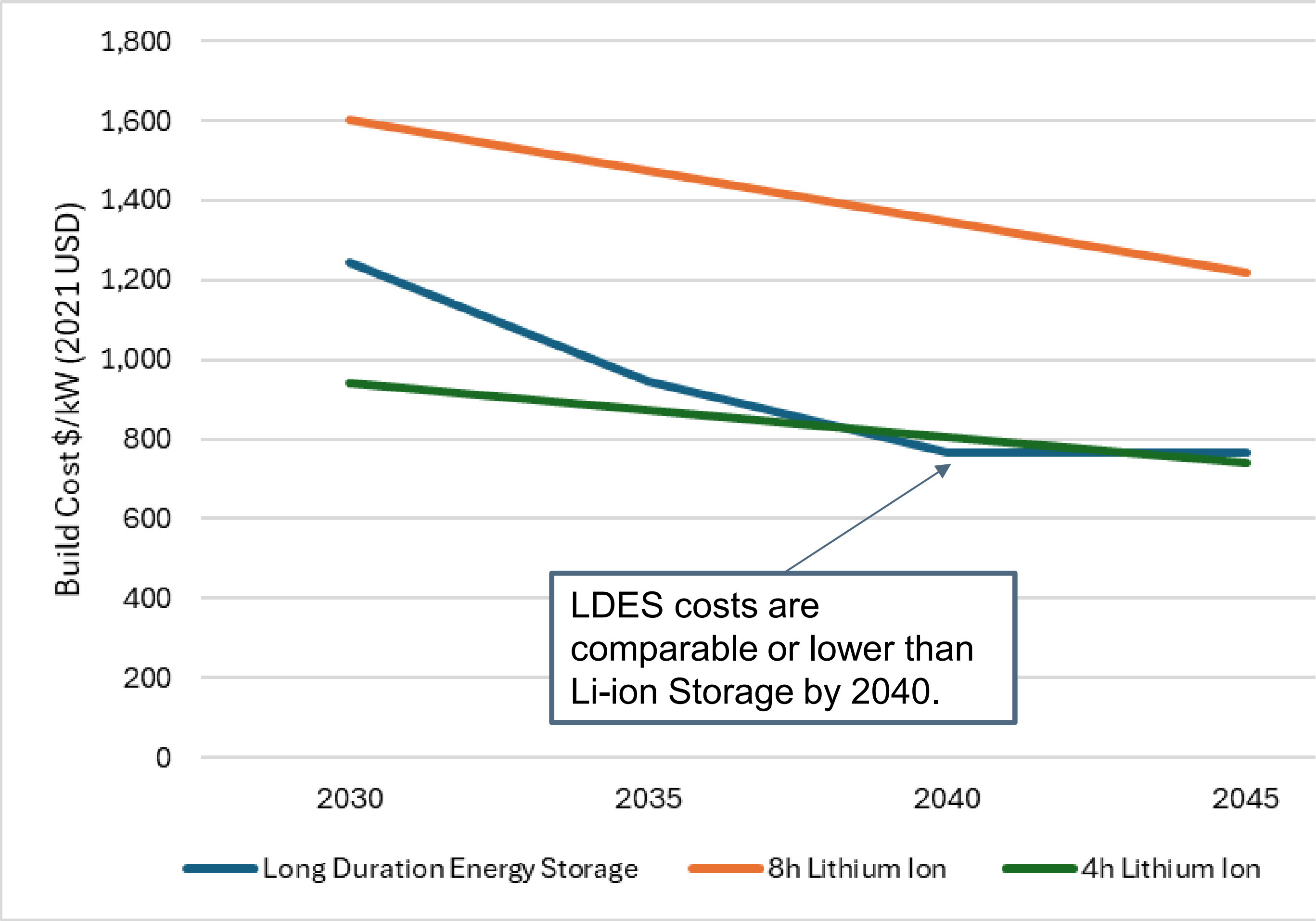
Generator Capital Costs

- Resource capital costs* are sourced from NRL ATB 2024
- Does not take into account OBBBA, tariffs, or other recent federal developments.
- Costs (further) adjusted to include:
  - Federal tax credits: ITC, PTC, 45Q, 45V
  - Offshore wind: California-specific transmission costs
  - Carbon capture and storage: costs for building and maintaining storage
  - Hydrogen GT: based on NRL gas costs with adders

*The model pays the capital cost to build the resource, then models the dispatch of the system with all resources, thus incorporating the capacity factor and capacity contribution endogenously.

Energy Storage Capital Costs Projected to Decline Over Time

Build Costs for Storage Resources

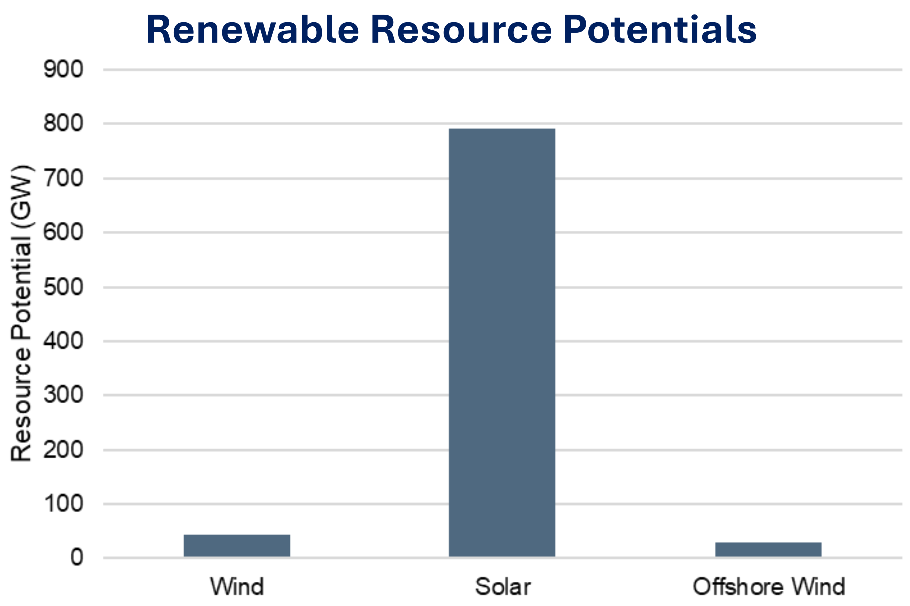


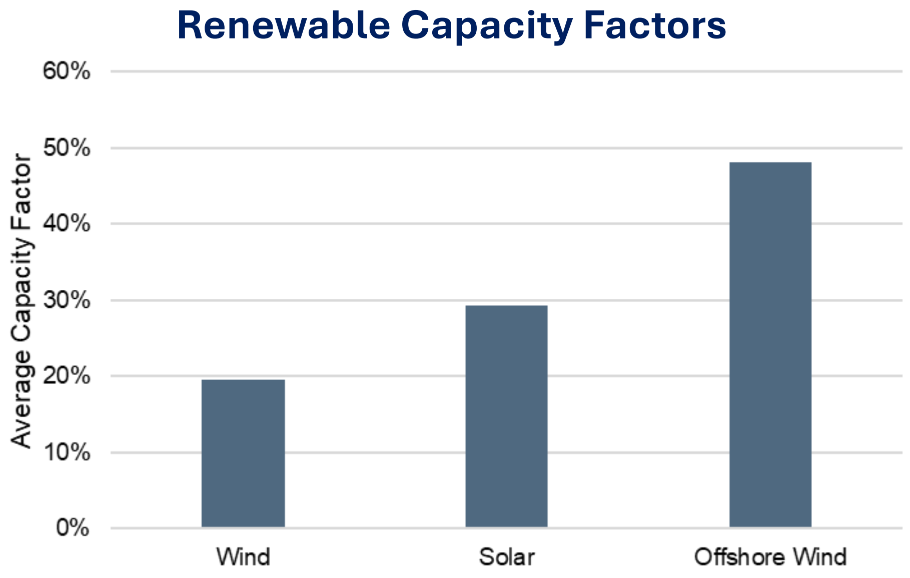
- Long Duration Energy Storage (LDES) costs sourced from McKinsey[1], Li-ion Storage costs sourced from NRL ATB.
- LDES modeled as a representative resource
  - 25h duration & 50% round-trip efficiency
- Li-ion Storage modeled with 88% round-trip efficiency.
- As with other resources, capital costs do not account for capacity factor differences between resources, nor capture contributions for meeting reliability.

[1] "Net-zero power: Long duration energy storage for a renewable Grid." Long Duration Energy Storage Council, McKinsey & Company. November 2021

In-State Renewable Resource Potentials

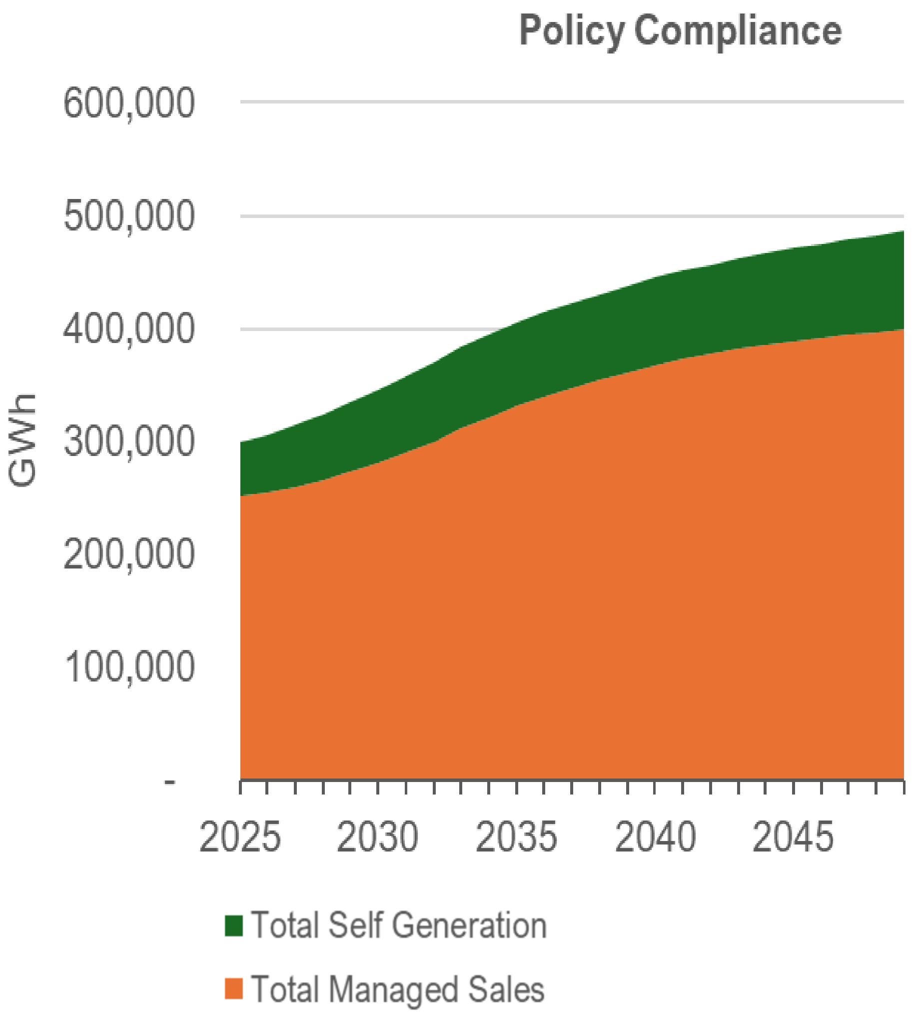
- California has extensive, high quality solar potential available across the state.
- Most geothermal and high capacity factor wind potential in CA have already been captured by existing and planned resources.
- Remaining wind available in California largely has a capacity factor below what is currently considered commercially viable (~20%).

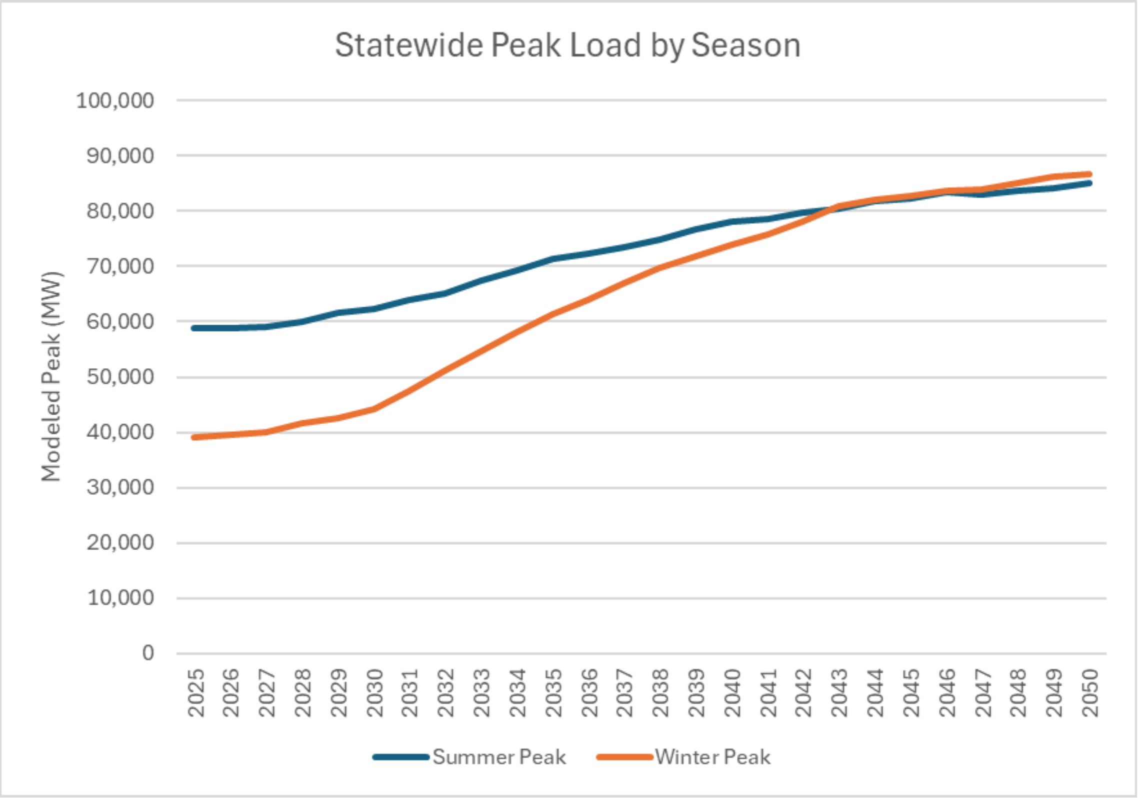




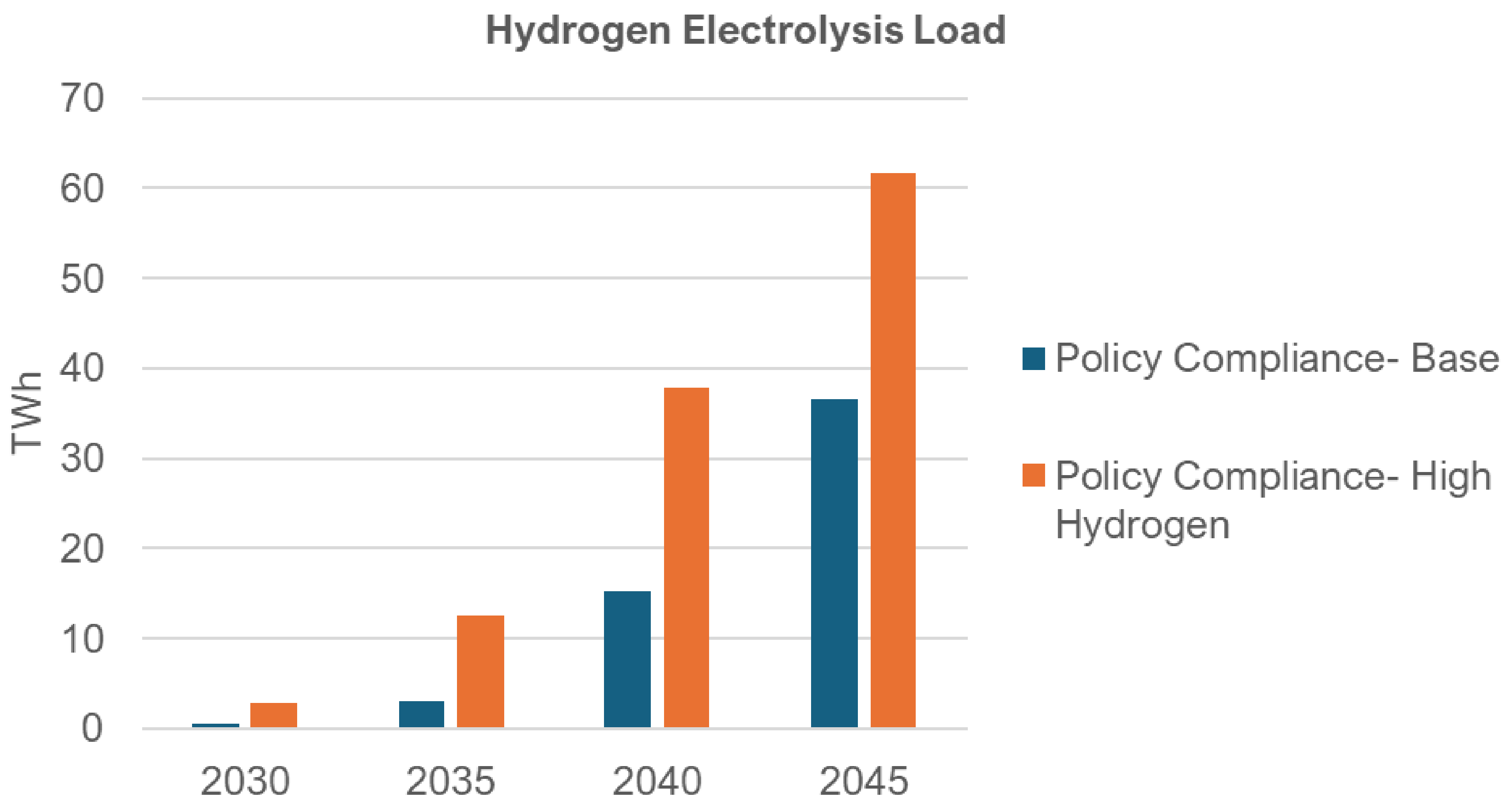
Policy Compliance Demand Scenario Peak and Load

This is the demand scenario that underpins the SB 100 scenario modeling. Additional details of the demand scenario are available here.





Hydrogen Electrolysis Demand



Hydrogen loads are modeled as 1/2 baseload, 1/2 dispatchable

Reference Scenario

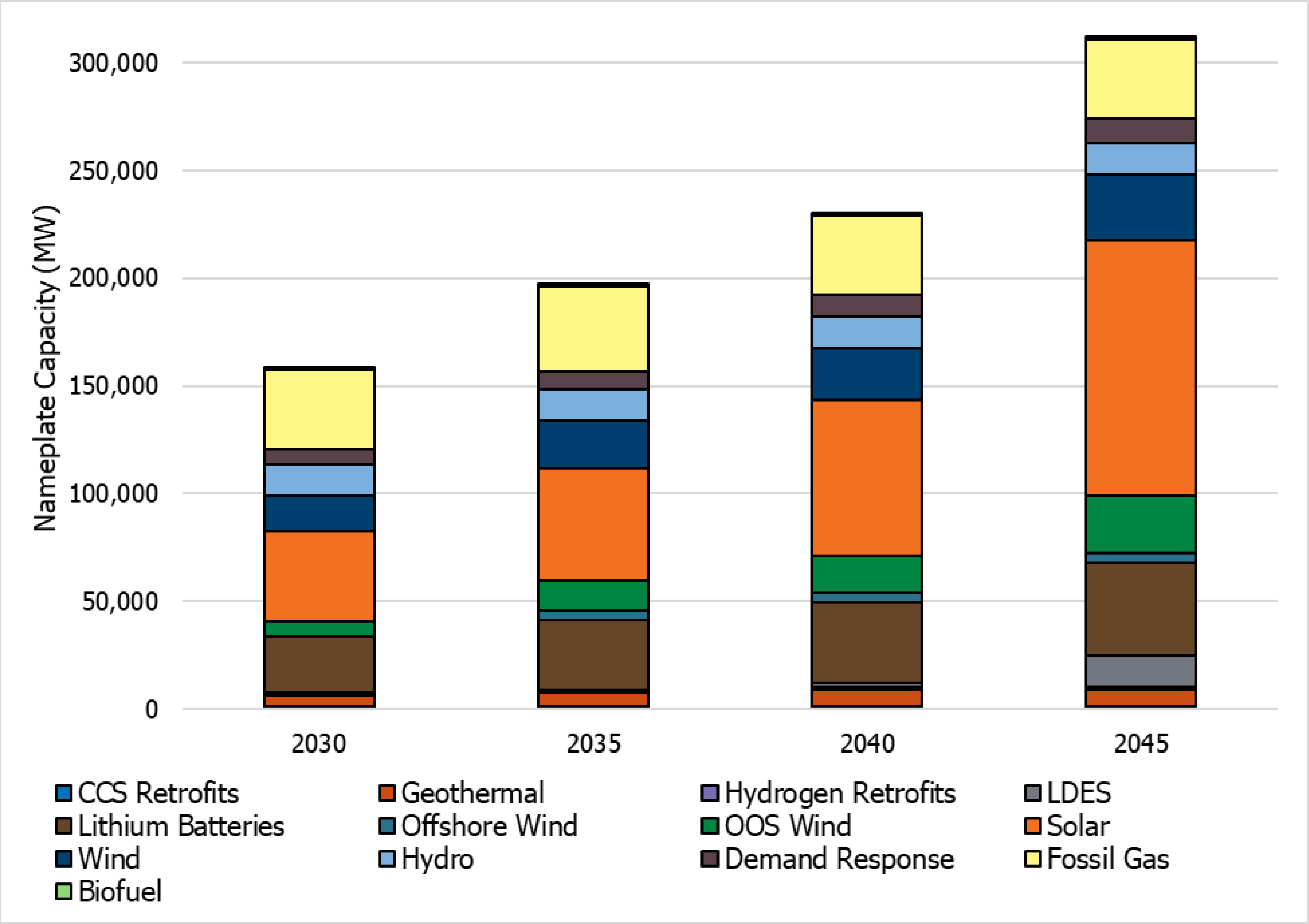
Reference Scenario – Aligns with Other State Planning Efforts

- Reference Scenario aligns with the CPUC’s 2023 Preferred System Plan, modeled to meet statewide needs, including POUs’ planned and contracted resources.
- Scenario illustrates many general trends affecting electricity system in 2045 under deep decarbonization.
- **Central Scenario Assumptions**
  - **Demand Scenario:** Policy Compliance- Base (High Electrification)
  - **2045 GHG Emissions:** 6.9 MMT
  - **Planned Resource Build:** 2023 PSP* and POU Resource Plans to **2039**
    - **Hydrogen**: Includes 1,500 MW of POU-planned hydrogen blending
    - **CCS**: Includes the option to build 1,600 MW of proposed CCS
    - **OSW:** Includes 4,500 MW of CPUC jurisdictional-planned OSW based on November 2022 IRPs

*2023 PSP included CPUC-jurisdictional utility online, under contract, and planned resources through 2035

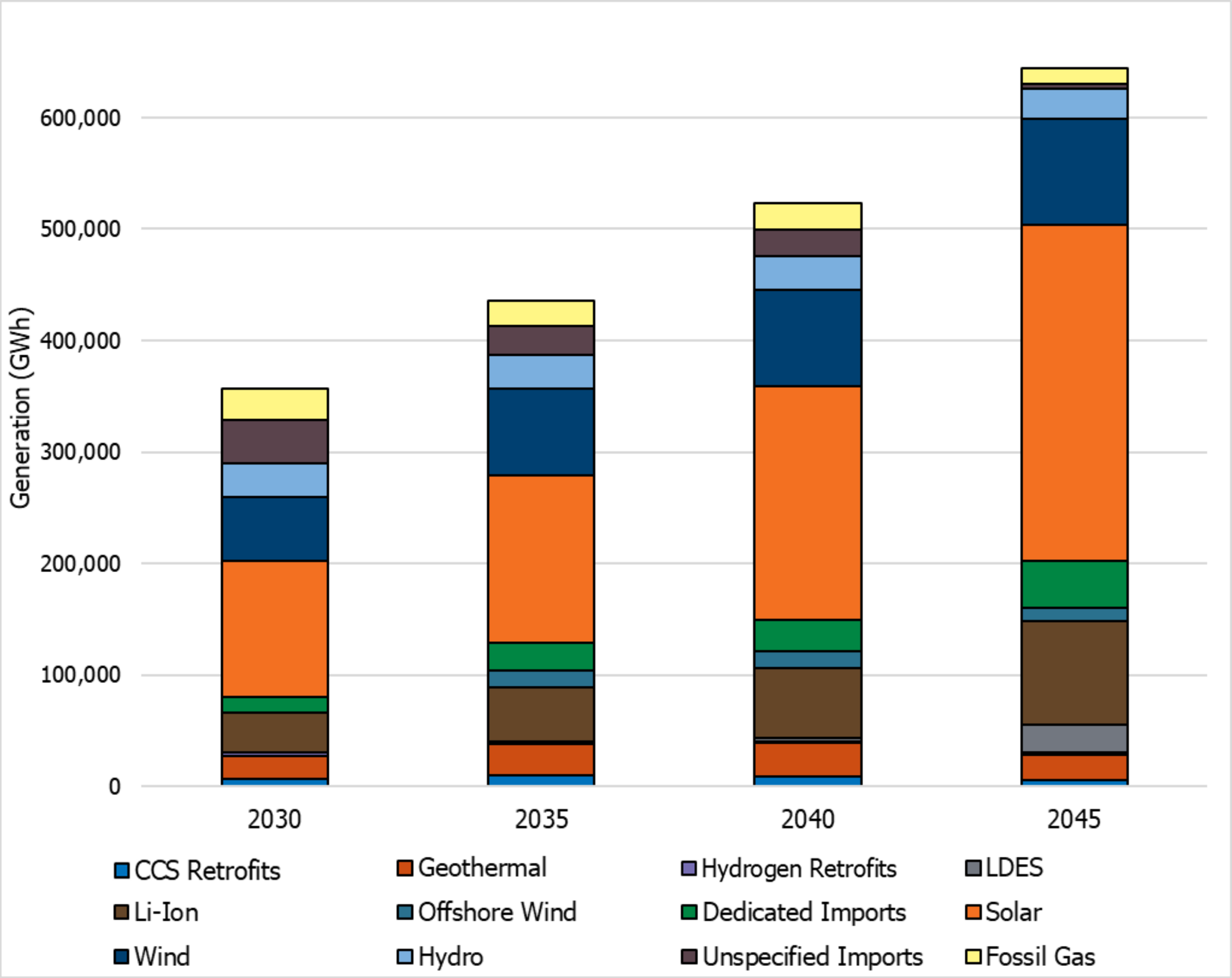
Reference Scenario System Buildout

Statewide Existing, Planned, and Selected Capacity



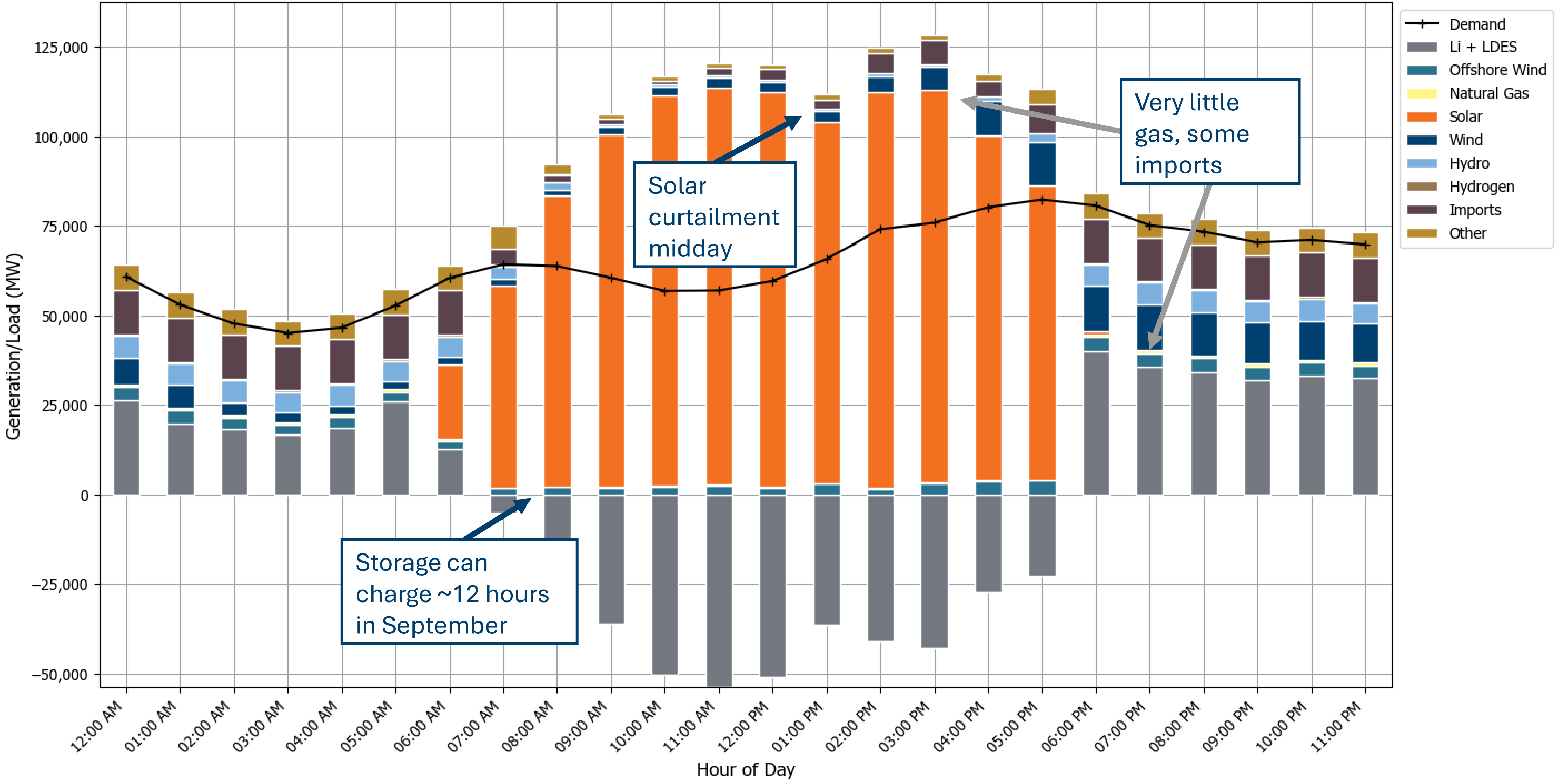
- Between 2025 and 2045, the system builds:
  - **97 GW** of solar
  - **45 GW** storage
  - **24 GW** of wind
  - **27 GW** of out of state wind
  - **1.6 GW** of CCS Retrofits
- Total system capacity rises from **150 GW** to **310 GW**

Reference Scenario Annual Generation

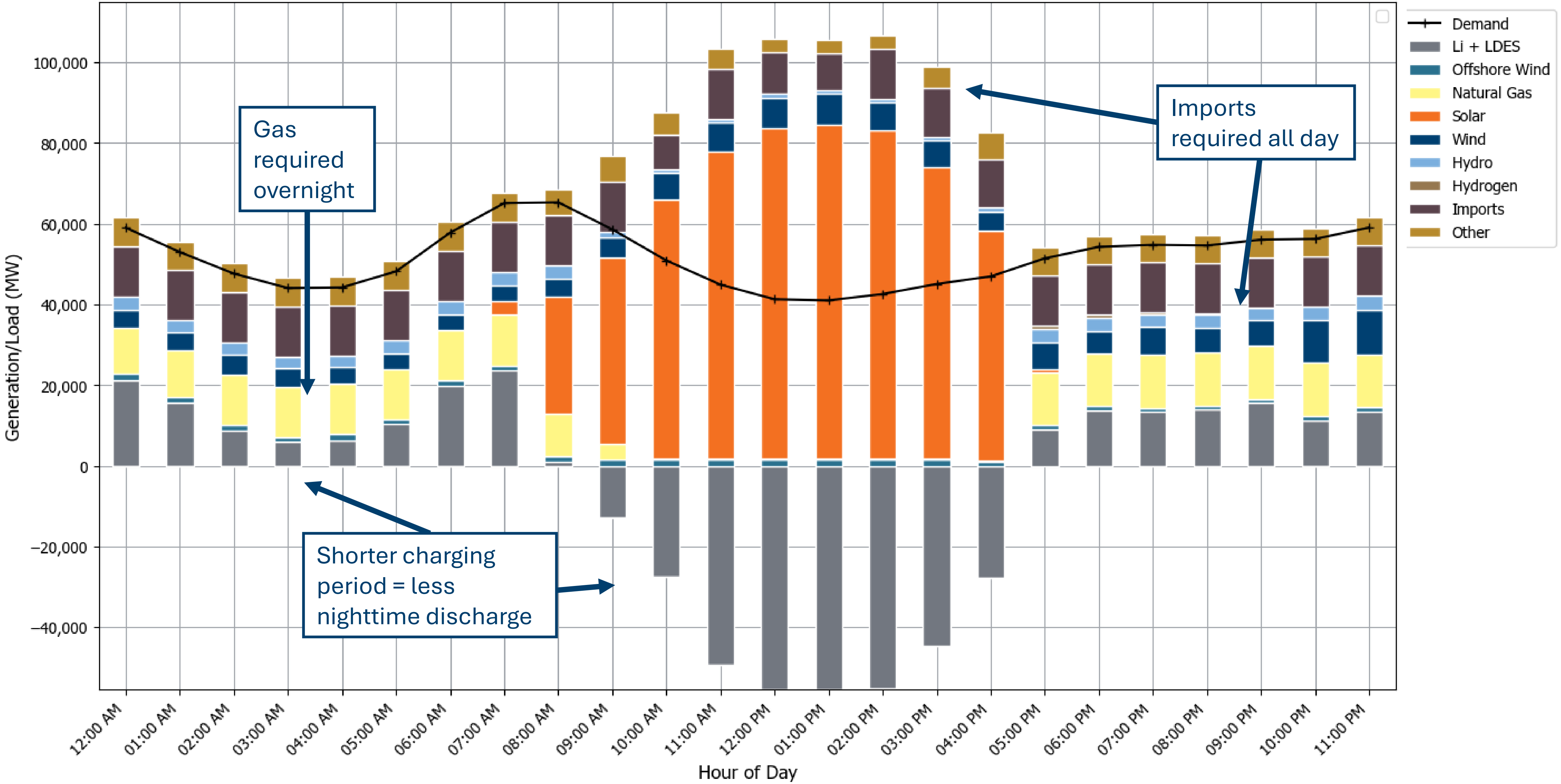


- Total generation nearly almost doubles from 2030 to 2045 to meet electrification and storage charging load.
- Solar and wind generation rises, providing **67%** of energy in 2030 and **85%** in 2045.
- Generally, trends persist across all modeled scenarios

Reference Scenario Sample Summer Peak Day



Reference Scenario: Sample Winter Day



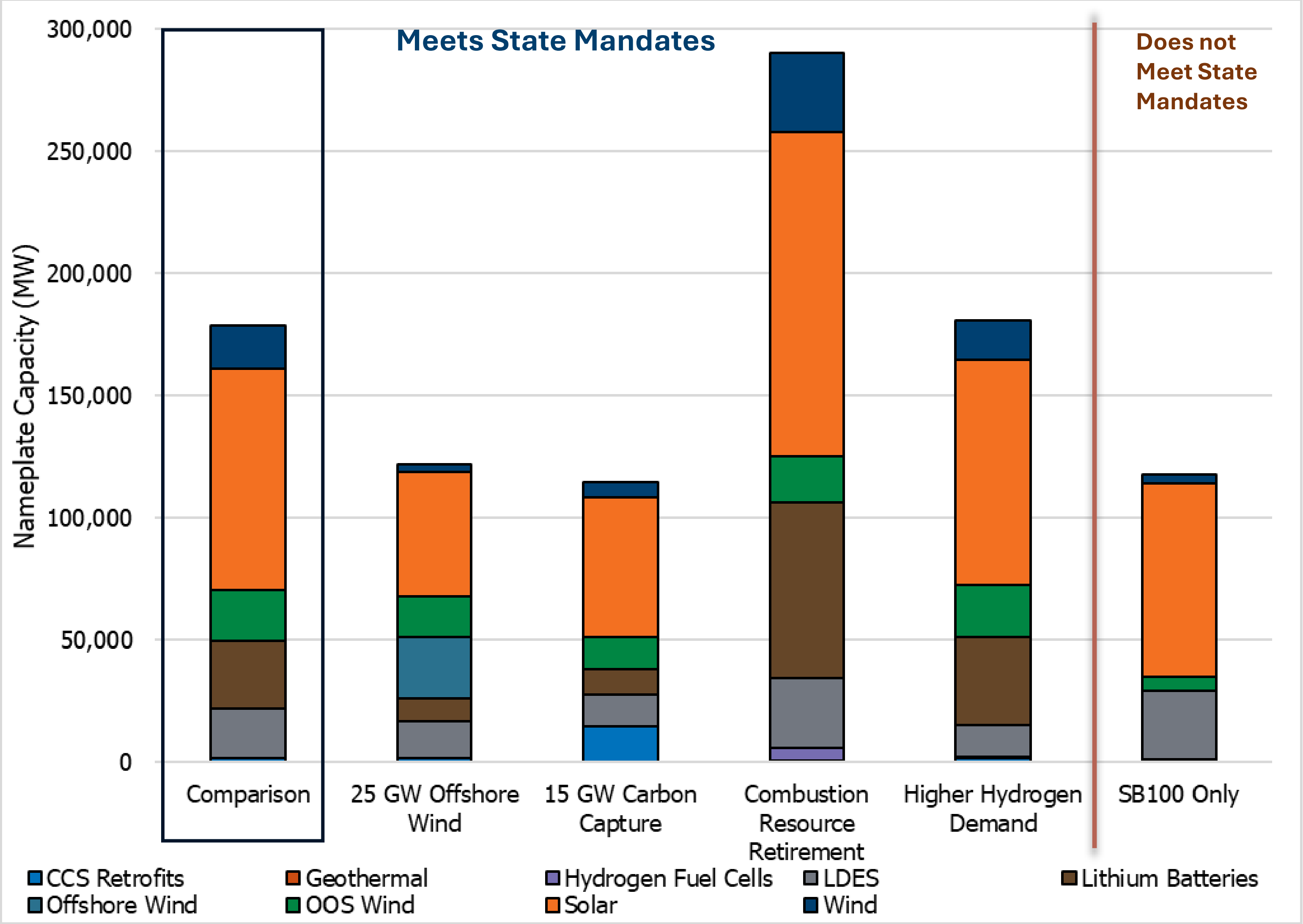
Results: Scenario Analysis

Scenario Analysis

This set of scenarios explores how different resource assumptions change the model selected build to reliably meet 6.9 MMT GHG Emissions by 2045. All scenarios use Policy Compliance demand scenario (except Higher Hydrogen Demand), assume the CPUC's 2023 PSP through 2030, and meet minimum reliability criteria.

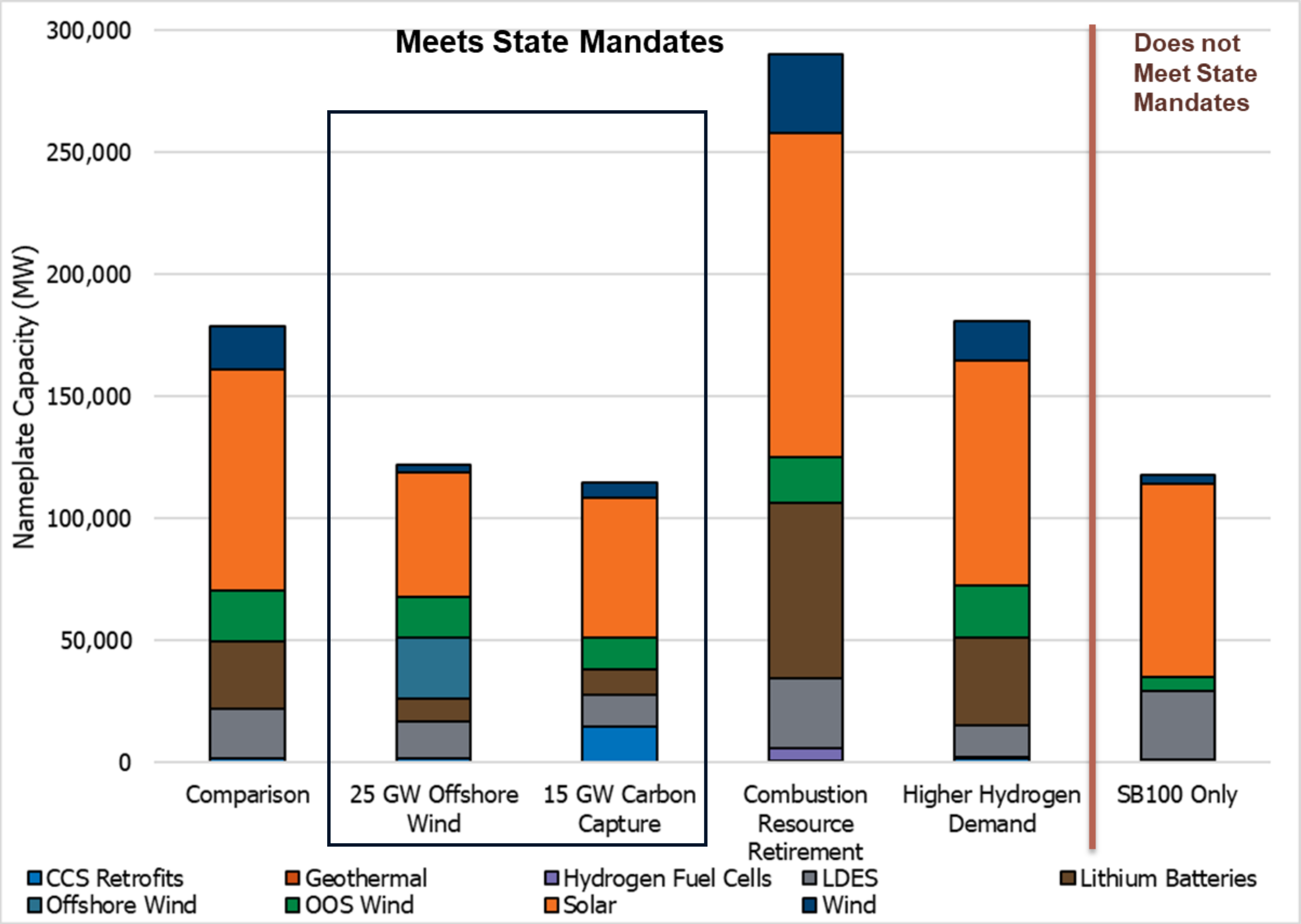
Scenario	Scenario Details	Selected Scenario-Specific Uncertainties
Comparison	Extends planned builds through 2030 only.	• Impact of tax credit removal • Development of resources to meet local needs/goals
15 GW Carbon Capture	Resource build tax credits for CCS through 2045 and no limitation on how early CCS can be built	• Impact of changes to Federal tax credits • CCS adoption rates and retrofit/build costs
25 GW Offshore Wind	Resource build deploying 25 GW of OSW per the AB 525 report State planning target report	• Federal actions • OSW Build Costs
Combustion Retirement	Resource build if all combustion power plants are retired	• Local reliability impacts of retiring combustion resources – these are not modeled • Plant owners/operator retirement decisions
Higher Hydrogen Demand	Resource build associated with high hydrogen demand, with hydrogen for transportation and other end uses at 85% of the 2022 Scoping Plan	• Growth of hydrogen supply and diversity of viable end uses
SB100 Only	Models retail sales requirements only.	• **Scenario does not sector GHG reductions needed to comply with legislative mandate** to reduce economy-wide anthropogenic GHG emissions by 85% by 2045.

Solar, Storage, and Wind are Economical



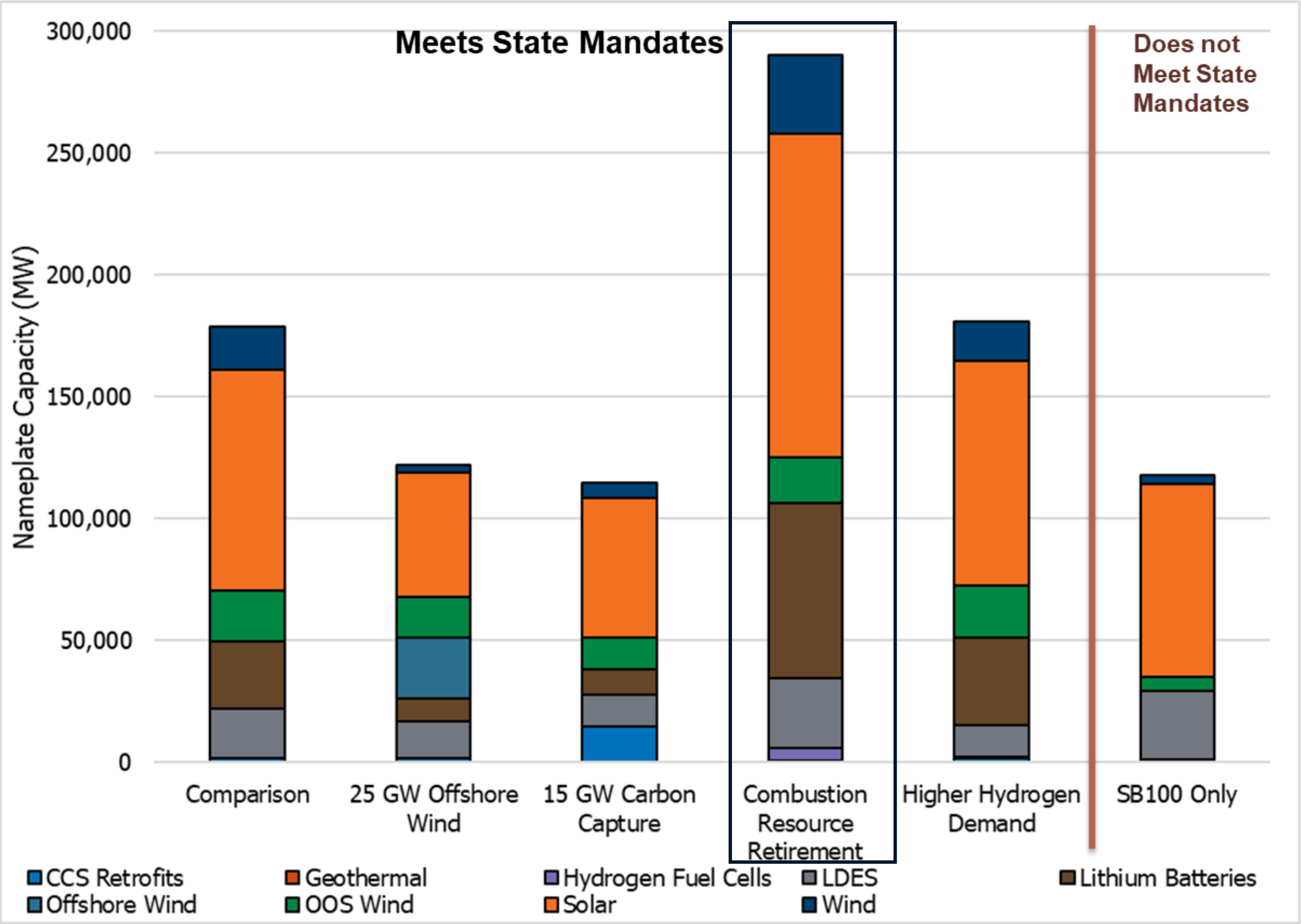
- Comparison Scenario builds mostly solar, batteries, and LDES.
- Lots of low-capacity factor wind.
- All 1.6 GW CCS available to be built before 45Q subsidy eligibility expiration.
- No offshore wind, hydrogen, or geothermal: these resources appear in the Reference scenario due to LSE plans.

Offshore Wind and CCS Scenarios



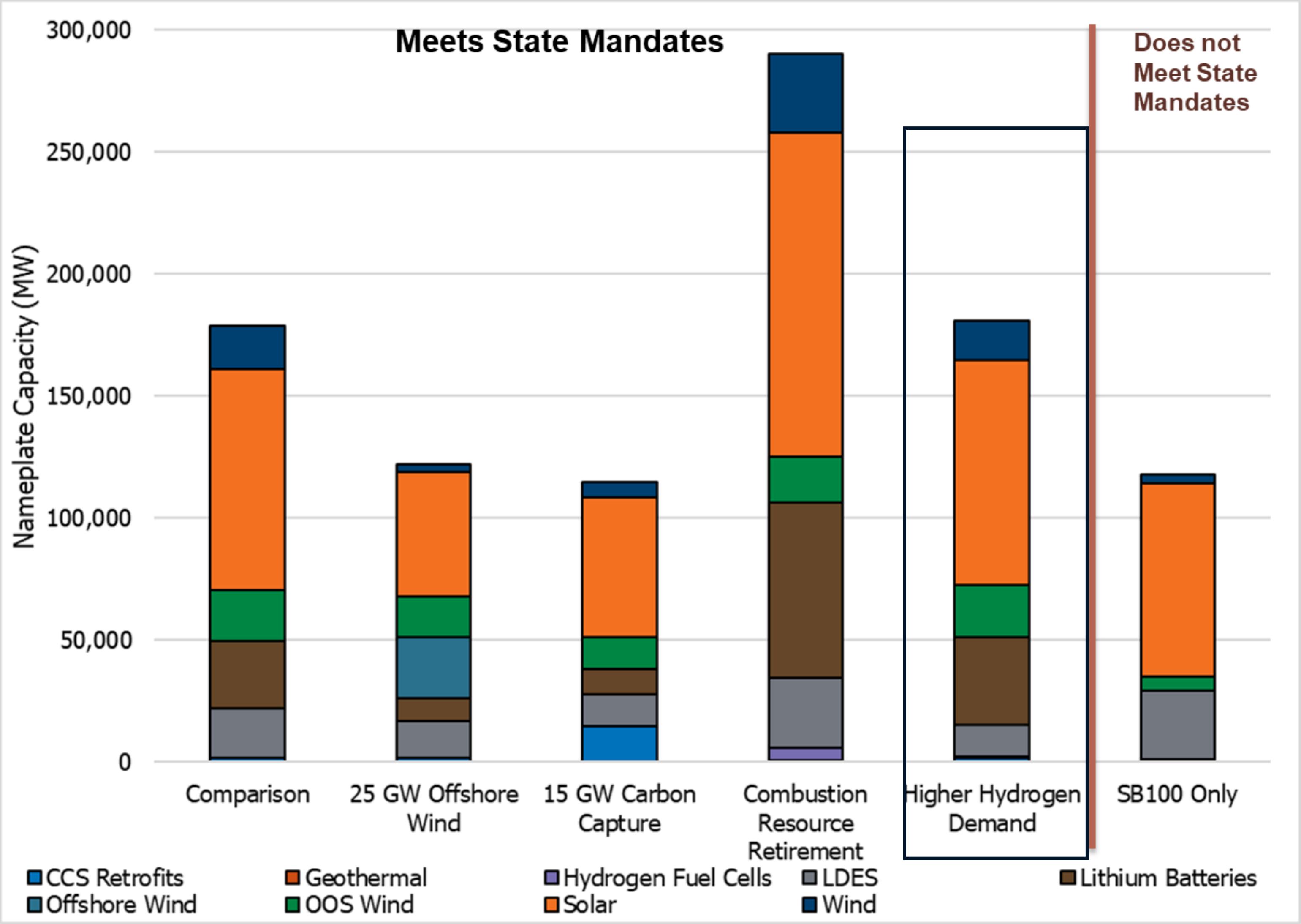
- Offshore Wind and CCS scenarios incorporate higher capacity factor resources which provide low/no carbon energy during winter months.
- 15 GW Carbon Capture economically selects 15 GW of CCS retrofits, replacing 75 GW of solar, storage, and wind.
- 25 GW Offshore Wind forces in 25 GW of OSW, replacing 80 GW of solar, storage, and wind.
- Neither of these scenarios build low capacity factor wind.

Larger Buildout of Renewables Required for Combustion Retirement



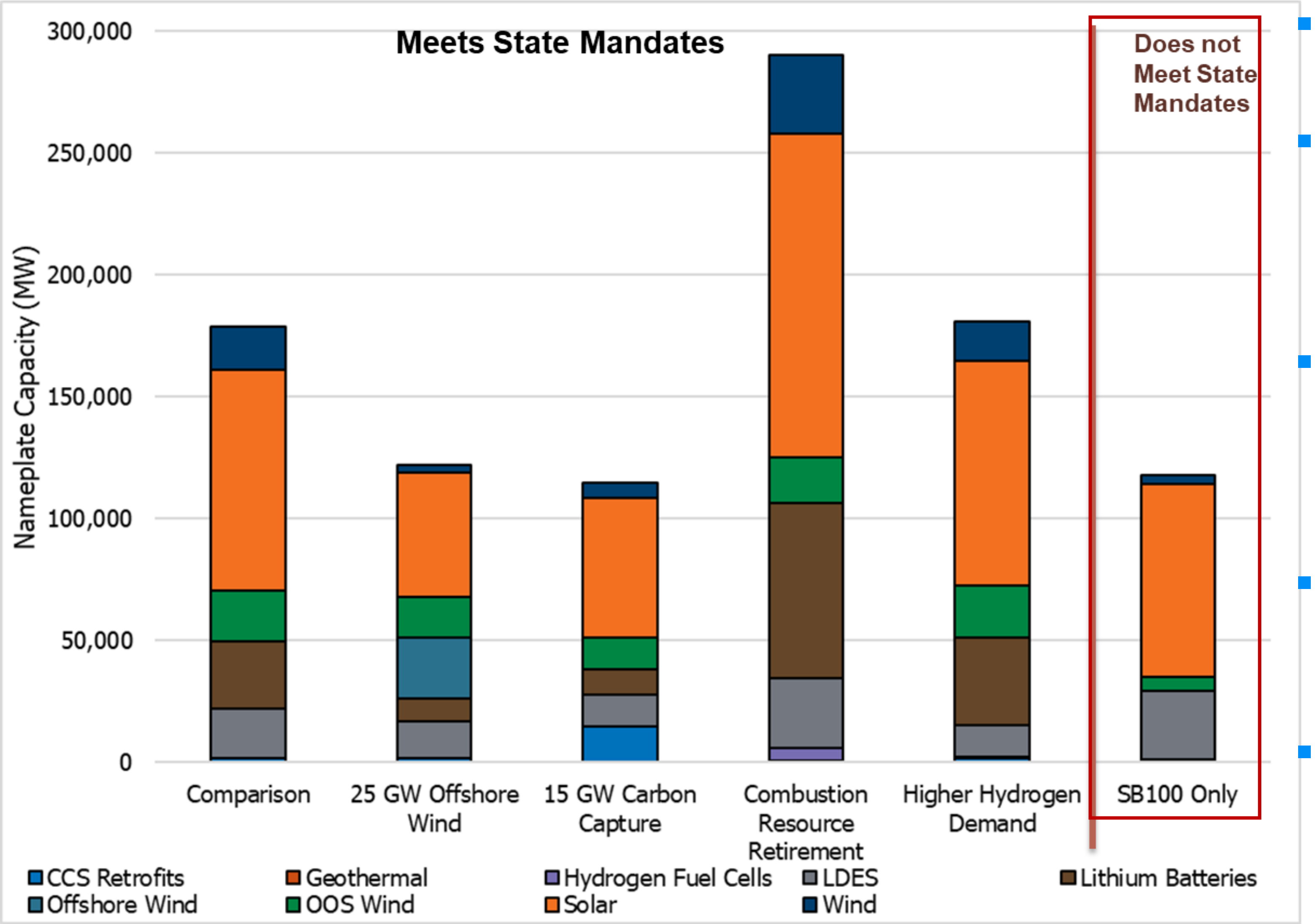
- Combustion Retirement scenario forces retirement of 35 GW of fossil gas plants and 1.5 GW of biofuel plants.
- Requires an additional 135 GW of resources compared to Comparison.
- Builds 5 GW of non-combusting hydrogen fuel cells to provide winter power.

Higher Hydrogen Demand Scenario Influences Resource Selection



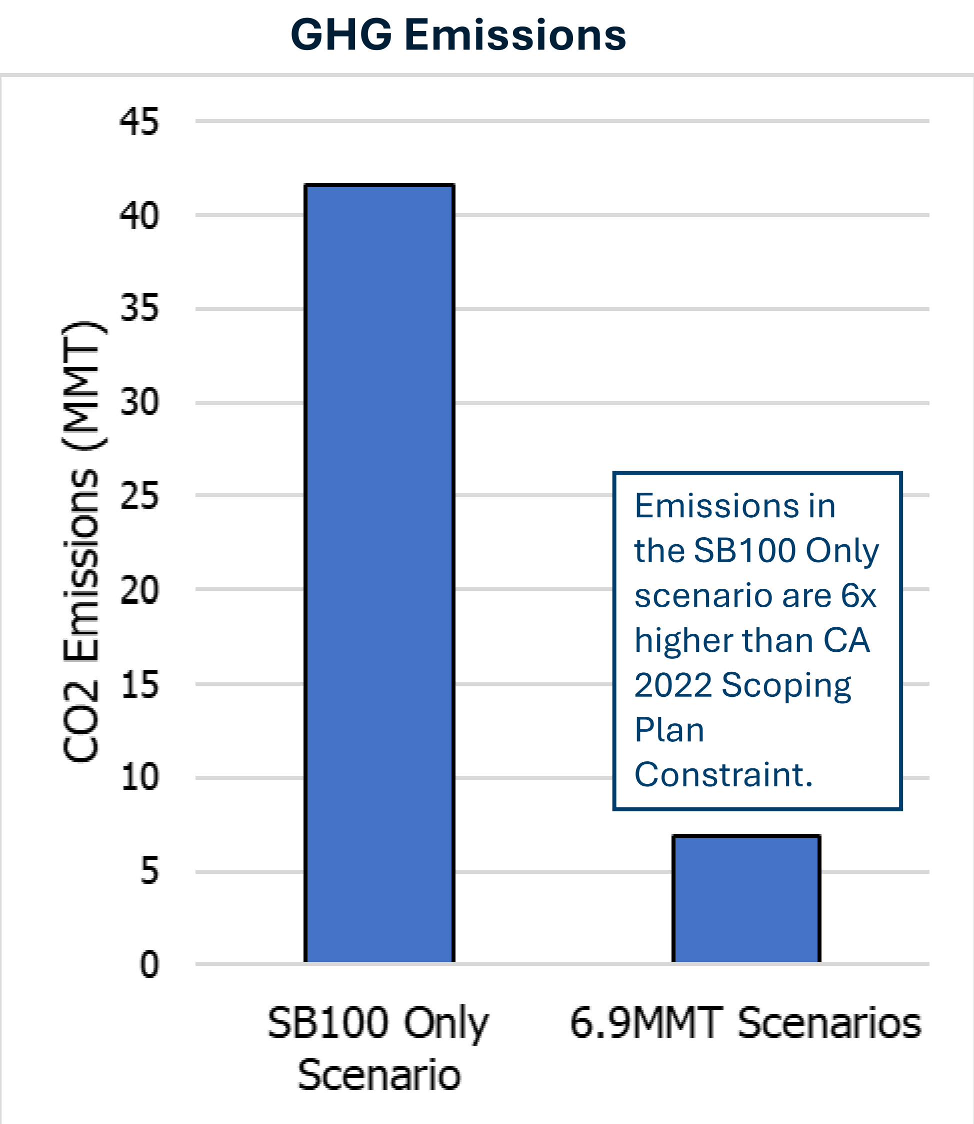
- Higher Hydrogen Demand Scenario has higher baseload demand due to larger amount of electricity demand to produce hydrogen.
- Overall impact is small (~1GW compared to 27-87 GW of retail demand).
- Higher baseload demand translates into more resources overall and 1GW of geothermal selection.

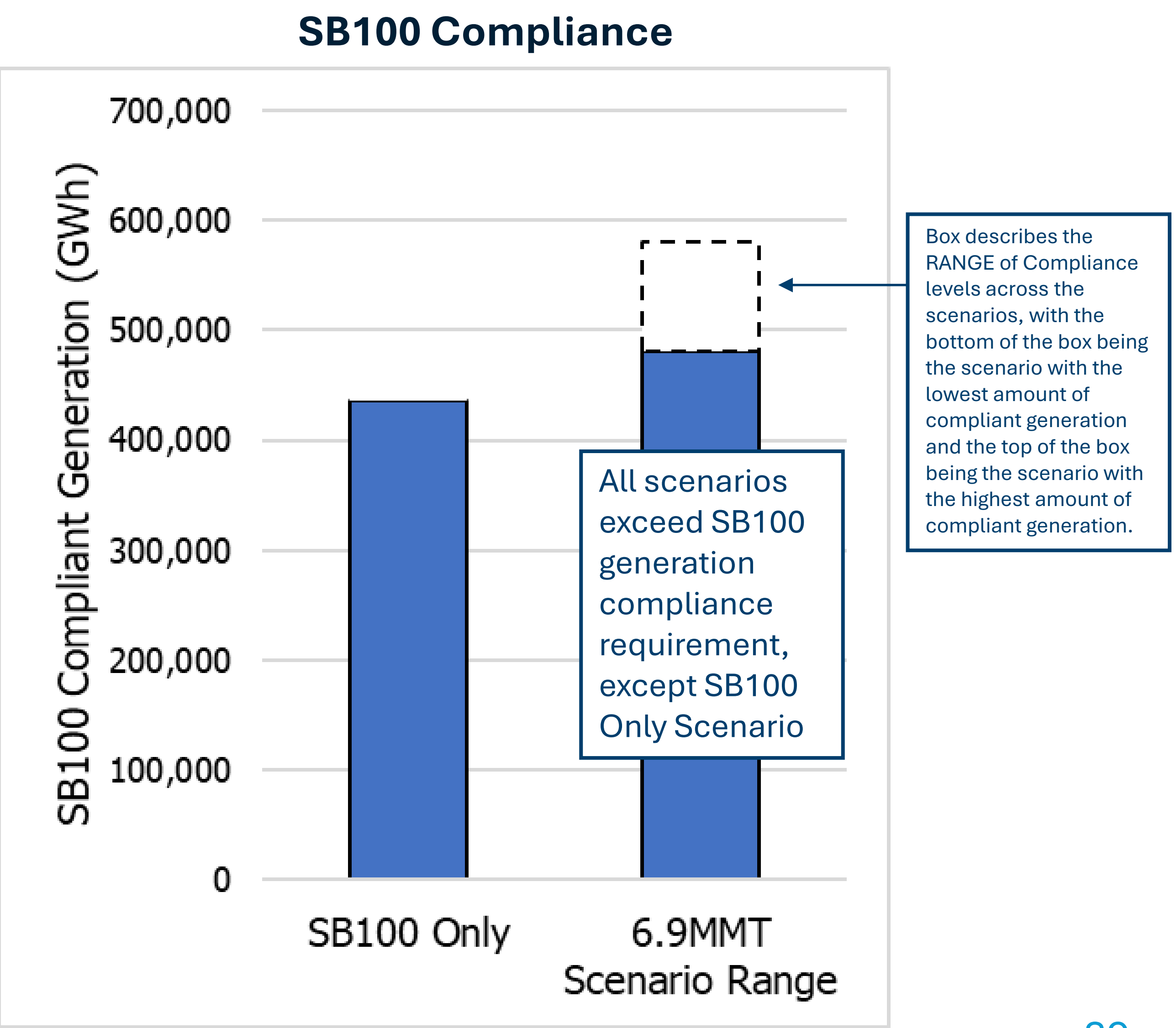
Solar and LDES Economically Meet SB100 Requirements



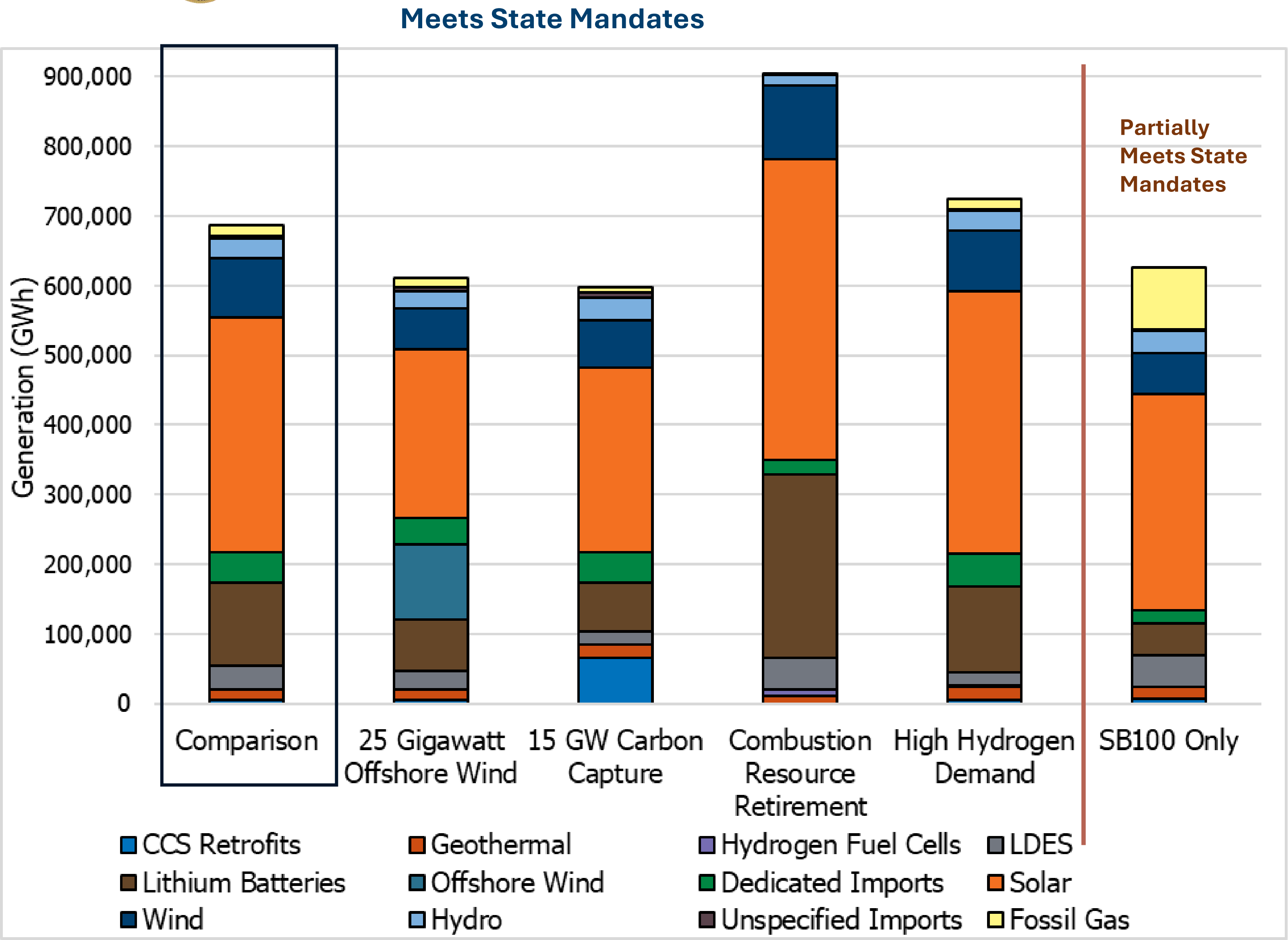
- SB100 Only scenario is provided for comparison only
- SB100 Only scenario does not meet the GHG emissions limit required to meet GHG reduction mandate.
- Gas resources operate more freely in winter with storage charging not needing to meet SB100 requirements.
- Solar and LDES most cost-effectively meet the retail sales requirement.
- This scenario does not build any low-capacity factor wind or lithium batteries.

Statewide Climate Targets Require More Stringent Electricity Sector GHG Emissions Than SB100 Alone



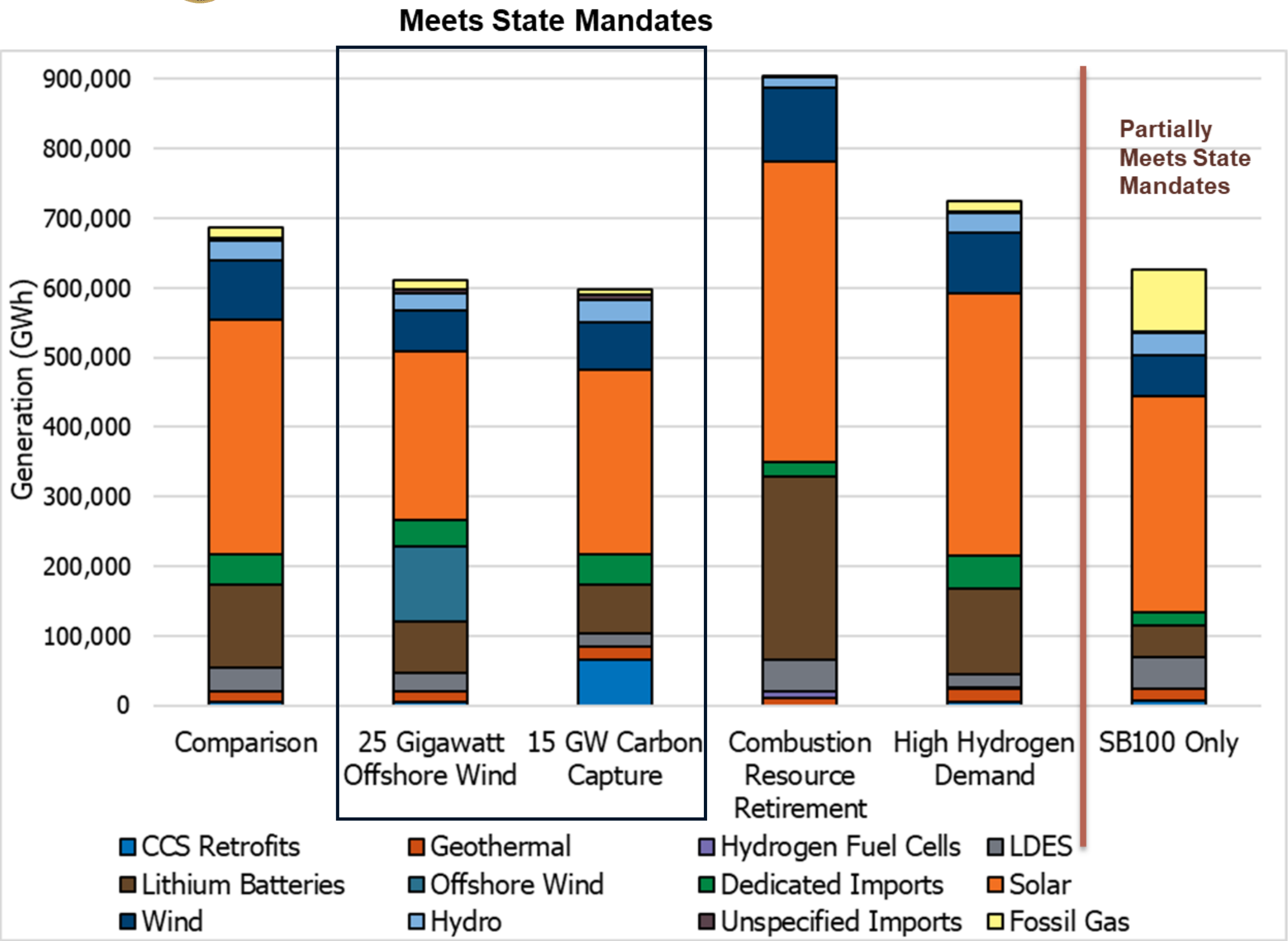


2045 Generation: Solar, Storage and Wind are Primary



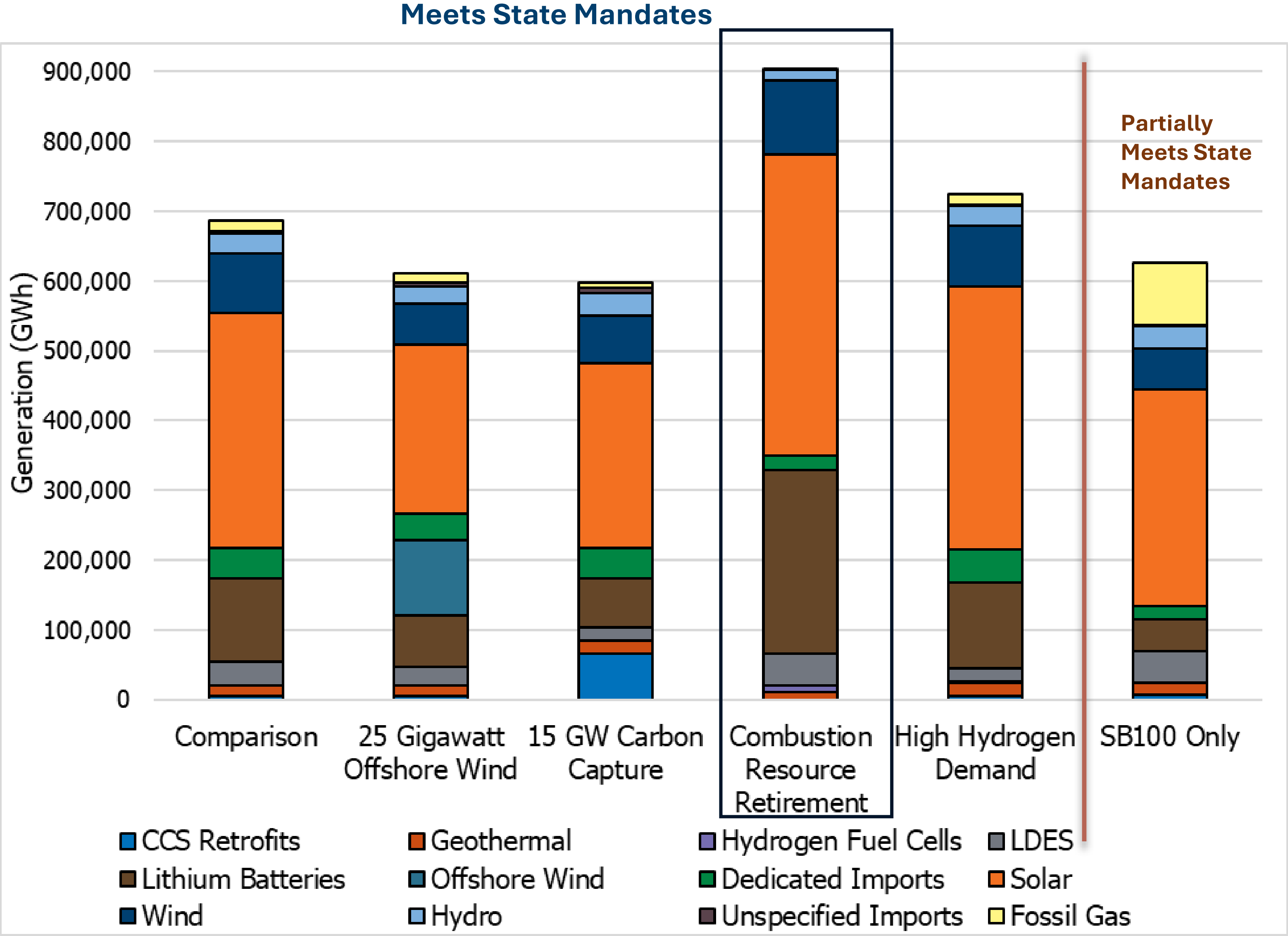
- Solar, storage, and wind make up majority of generation in all scenarios.
- Comparison scenario has about 460 GWh of retail sales but 700GWh of total generation due to significant use of storage.
- Solar makes up over half of generation in 2045.

CCS and OSW Policy Provide Significant Annual Generation



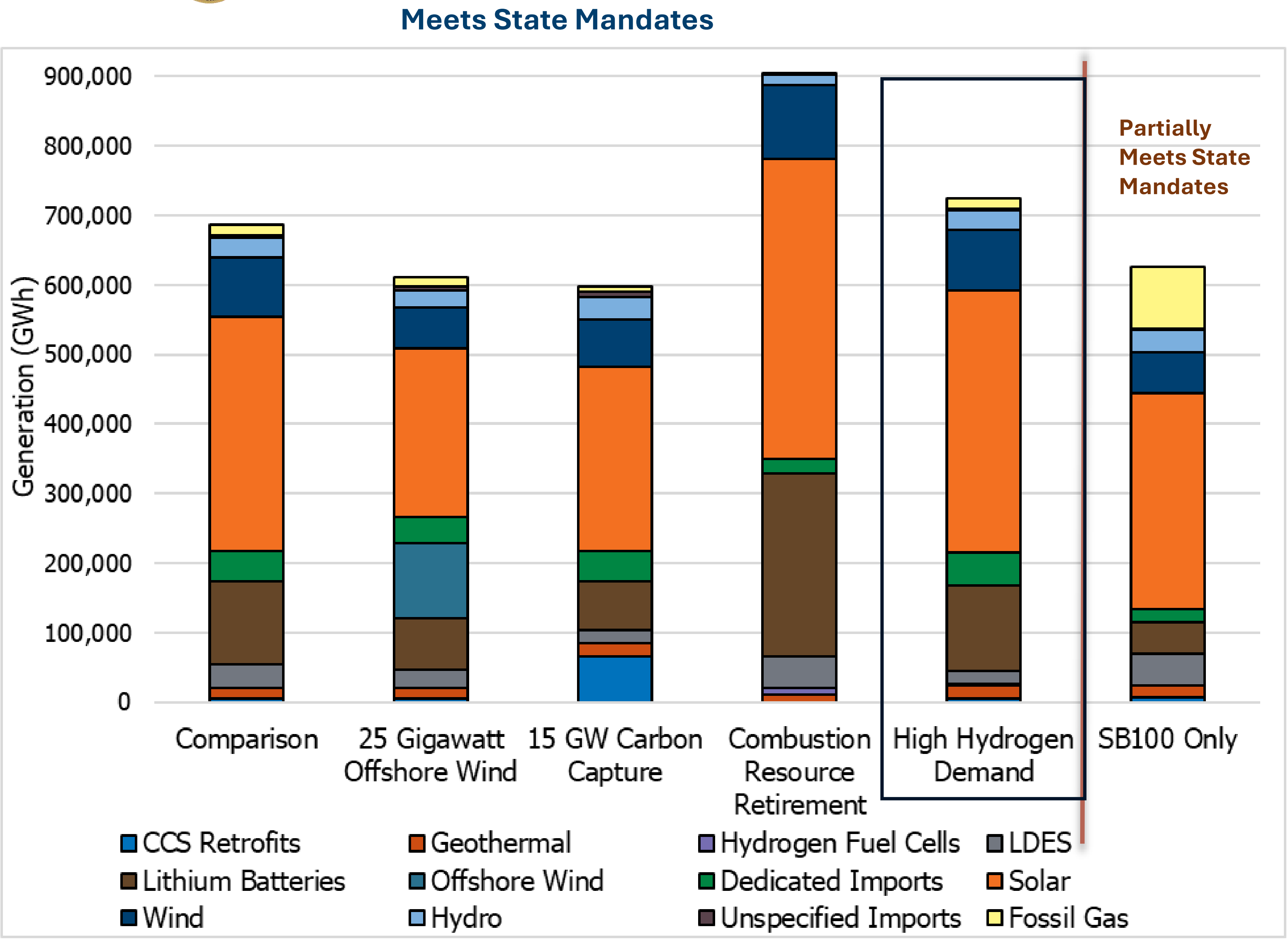
- 25 GW OSW and 15 GW Carbon Capture scenarios have 100 TWh less generation than Comparison due to less reliance on storage.
- Offshore wind makes up about 20% of total generation under the AB525 goal.
- CCS retrofits make up about 10% of total generation in the 15 GW Carbon Capture Scenario

Combustion Retirement Has High Exports and Storage Losses



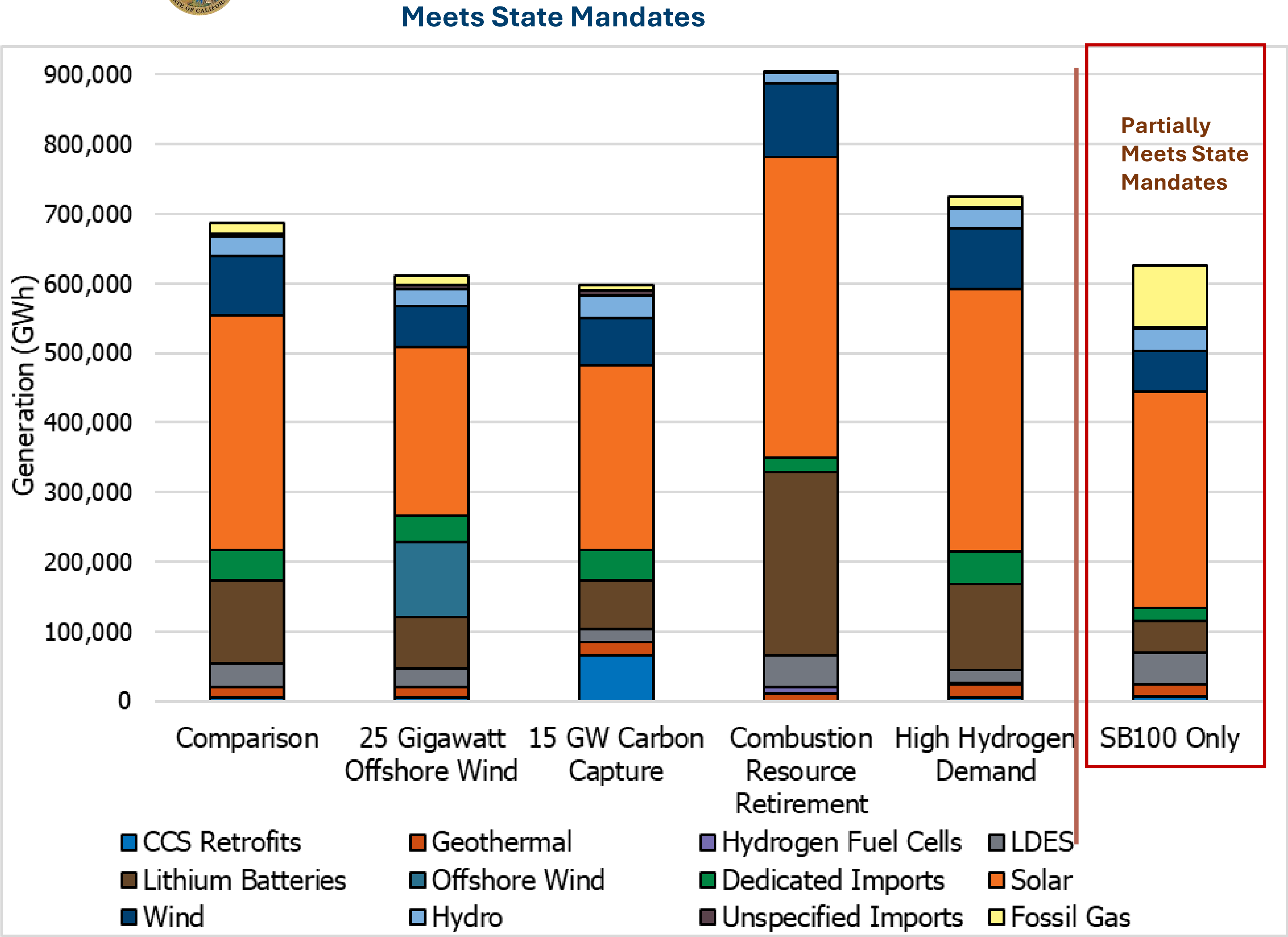
- Generation from combustion resources provides only 20 TWh of energy in the Comparison scenario.
- The Combustion Retirement Scenario requires an additional 200 TWh of total generation due to efficiency losses at very high intermittent resources penetration.

Higher Hydrogen Demand Has More Demand and More Generation



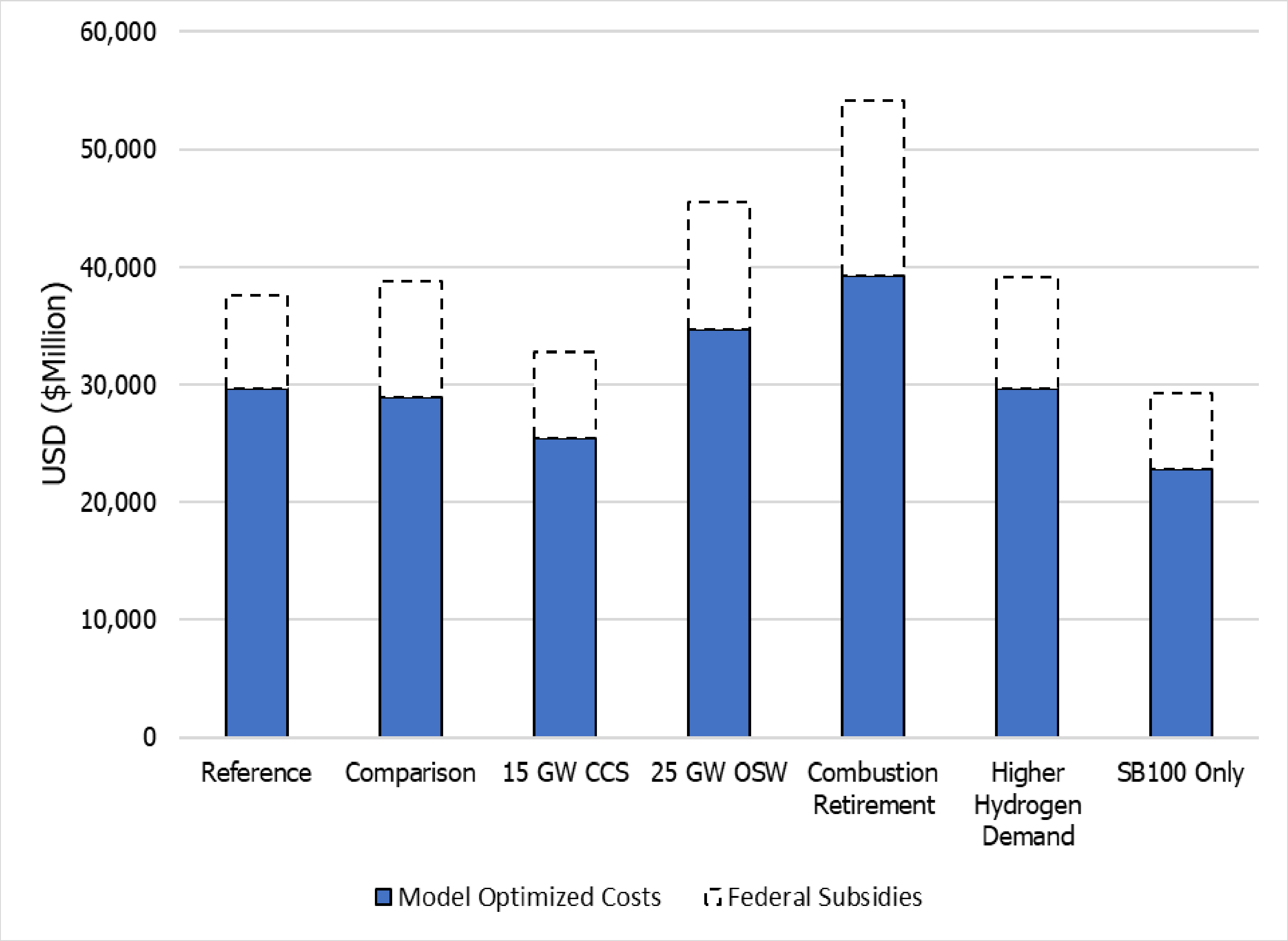
- Higher Hydrogen Demand has more baseload demand and thus more generation.
- This scenario relies more on lithium than LDES.
- Lithium is more expensive than LDES, but more efficient, making better use of scarce resources at night and in winter.

SB100 Only Generates Significant Energy From Fossil Gas



- SB100 Only Scenario has about 90,000 GWh from fossil gas, a similar amount of generation seen on the system today.
- Solar provides 50% of generation and fossil gas 20% of generation, as compared to 21% solar and 34% fossil gas today.

Scenario Modeled Costs



- Graph at left shows the optimized model portfolio costs and the contribution of federal subsidies to lowering overall costs.
- Model optimized costs includes:
  - Cost of building planned and new generators
  - Cost of maintaining all generators
  - Cost of fuel
- Costs do not include
  - Costs of transmission, distribution, or public programs, which today make up about 70% of total costs.

Closing Remarks

Overall Trends

SB 100’s modeled scenarios share some common generation and market dynamics, including:

- All scenarios demonstrate a need for large amounts of renewable and zero carbon resources and *in particular,* **clean-firm resources** by 2045, where demand forecast shows a system that peaks in both summer and winter.
- **Generation capacity:** Solar and storage provide the majority of generation capacity by 2045 with solar and wind together providing 85% of all generation.
  - ➢ OSW and hydrogen resources are not selected by model because they are not cost competitive as modeled.
  - ➢ By 2045, all scenarios select additional clean-firm and LDES capacity to meet increased load and serve winter-peaking need.

Overall Trends, continued

- **Gas generation:** Gas usage drops across all scenarios as more clean resource capacity is added to the system, but gas power plants are retained for reliability. Gas use is concentrated in low-renewable periods of winter.
- **Curtailment:** Curtailment is no longer limited to spring because of the widespread deployment of solar.
- **Imports:** Out of state imports drop in the spring and summer but rise in the winter. California becomes a net exporter in the spring.

Challenges

- Solar, high-quality wind, and storage are selected as low-cost resources in all modeled scenarios, but the state will need clean firm resources to cost-effectively meet GHG goals.

- Efforts to develop resources will need to continue in order to meet state decarbonization needs.

Modeling Uncertainties

- The model simplifies real-world constraints about transmission, distribution, and generation operations.
- The modeled scenarios study system-level reliability and do not conduct power flow analysis, which would be needed to understand local reliability.
- Results are contingent on projections of resource costs and electric demand 20 years into the future.

Questions from the Dais (1/3)

Public Q&A (1/3)

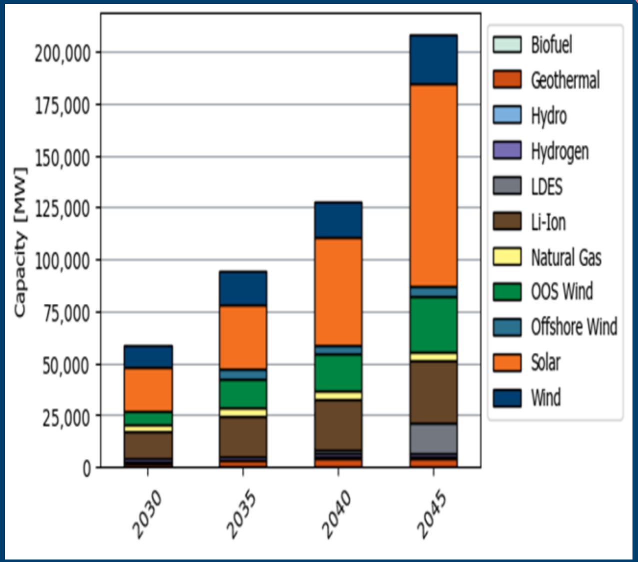
2025 Senate Bill (SB) 100 Joint Agency Report: Land Use Analysis of Resource Buildouts

Fred Hochberg, Land Use Planning Supervisor, STEP Division

February 19, 2026

Land Use Analysis

Power Sector Modeling



Example: Planned and Model-Selected Capacity for the Reference Scenario

Scenario Land Use Analysis

Land area and sea space required for the resource build

Comparison of space required with available area where resources could feasibly be developed (resource potential)

Land Use Analysis Scope

- ✓ Estimation of the land area and sea space required for the resource build
- ✓ High-level comparison of space required to available area where resources could feasibly be developed (resource potential)
- ✓ Provides landscape-level information
- ✓ Range of approximate results for hypothetical futures

Land Use Analysis Caveats

Analysis does not include:

- ✗ Anticipation of technological advancements over next 20 years
- ✗ Evaluation of individual generation or storage projects
- ✗ Environmental impact analysis per CEQA
- ✗ Analysis of commercial interest or contracts that will be signed by utilities
- ✗ Siting and permitting, which are done at a local level
- ✗ Any other project-specific analysis performed as part of the permitting process
- ✗ Any authorization or ordering of procurement (which occurs in processes such as IRP)

Land Area and Sea Space Indicated by the Model by 2045 (All Generating Resources)

Total Land Area And Sea Space

1.4 – 4.6 million acres

Total In-State Land

0.8 – 3.2 million acres

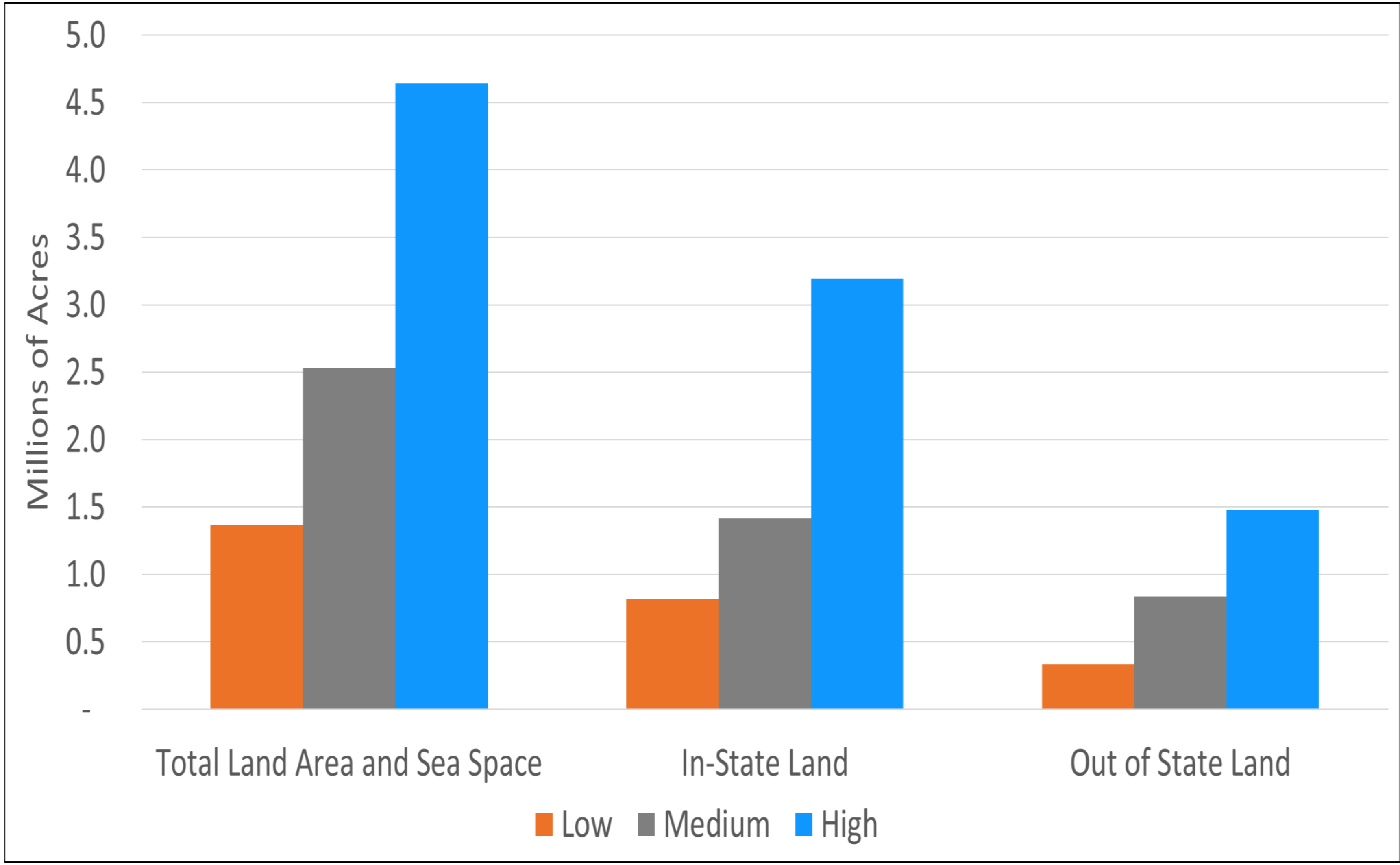
Total Out-of-State Land

0.3 – 1.5 million acres

(77% – 96% of this is wind; remainder is solar)

Offshore Wind Sea Space

0 – 2.1 million acres



Land Area and Sea Space Indicated by the Model by 2045 (By Resource Type)

Land-Based Wind

Total: 0.6 – 3.1 million acres

In-state: 0.3 – 1.9 million acres

Out-of-state: 0.3 – 1.3 million acres

Solar

Total: 0.5 – 1.5 million acres

In-state: 0.5 – 1.3 million acres

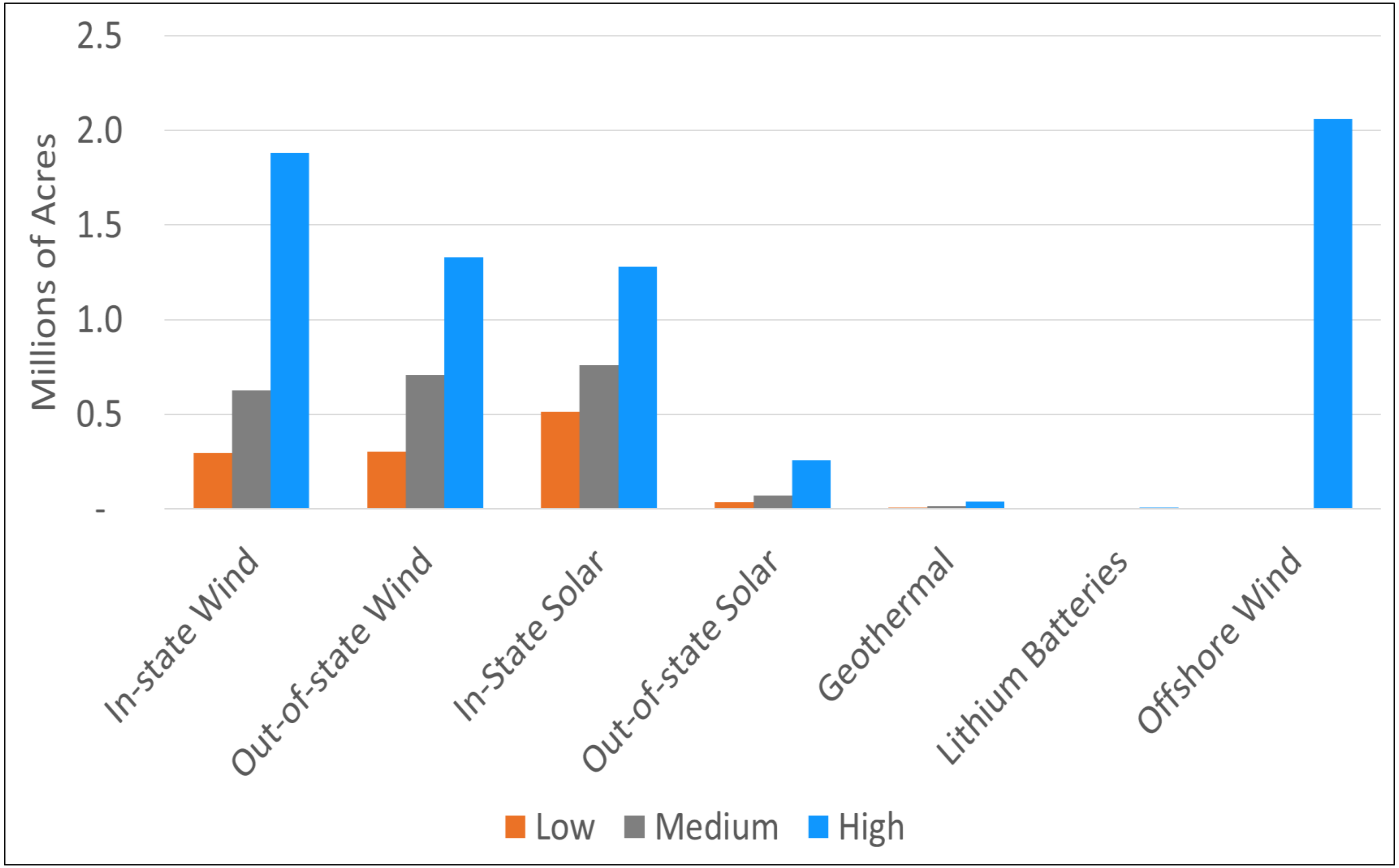
Out-of-state: <0.1 – 0.3 million acres

Geothermal & Lithium Batteries

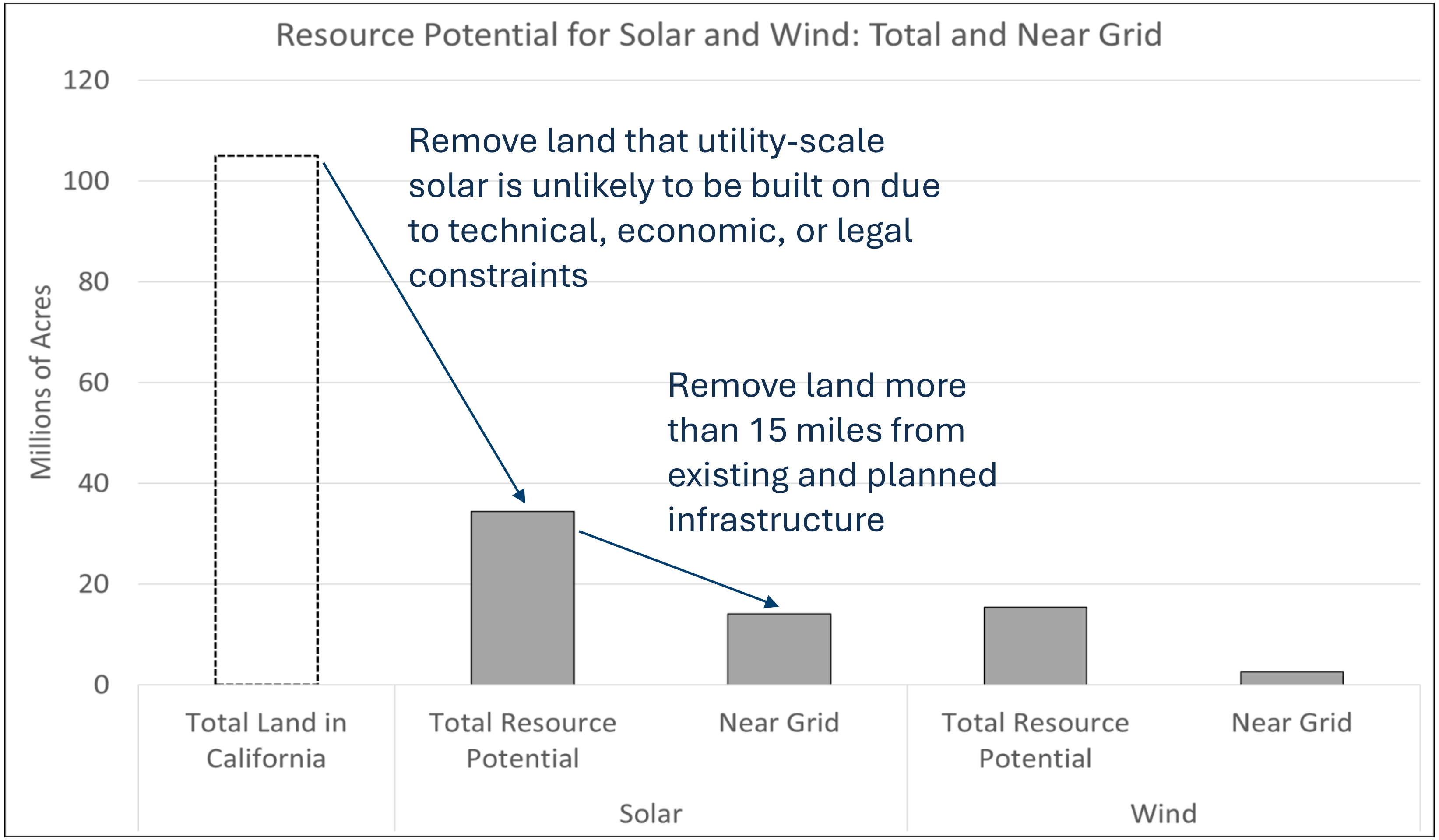
<0.1 million acres

Offshore Wind Sea Space

0 – 2.1 million acres



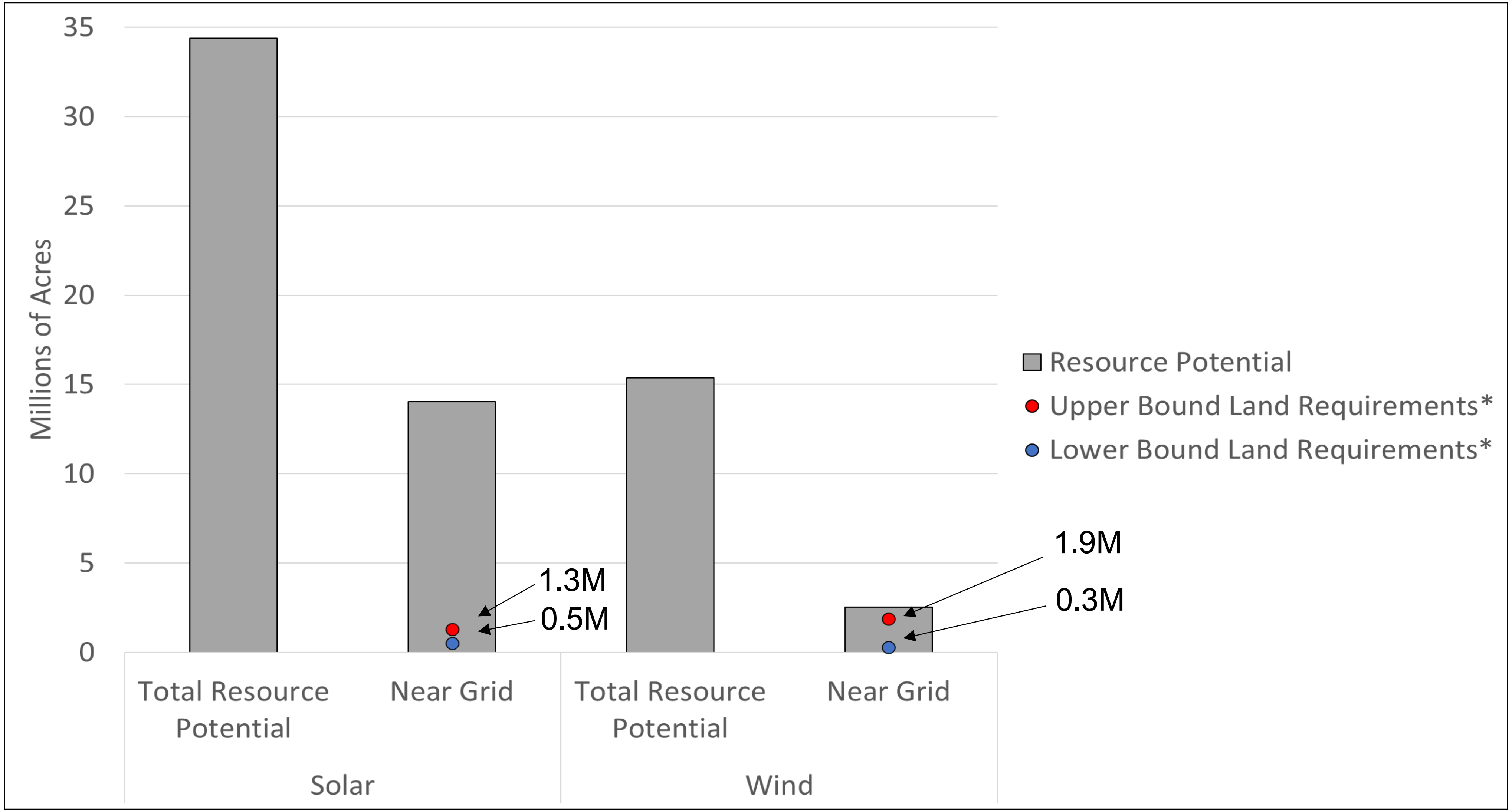
Resource Potential for Solar and Wind



Resource Type	Total Resource Potential	Near Grid Only
Solar	34.4 (33%)	14.0 (13%)
Wind	15.4 (15%)	2.5 (2%)

Resource potential, millions of acres (as percent of 105 million acres of total California land)

Resource Potential Compared with Area Required for Build



*Upper bound and lower bound land requirements are based on variation in capacity density (acres / MW) and the quantity of new MW built. The upper bound uses the highest values of both, and the lower bound uses the lowest values of both.

Land Use Analysis Conclusions

- There is sufficient land and sea space to accommodate the buildout of resources needed across all scenarios modeled in the SB 100 analysis.

- The land and sea space indicated by the model for SB 100 build could vary significantly from 1.4 to 4.6 million acres.*

- This acreage is equivalent to **1 to 4 percent** of total land in California (105 million acres).

*Results are directional; the wide range shows the high level of uncertainty inherent in this analysis.

Land Use Analysis Conclusions Continued

- With California's access to diverse, high-quality renewable resources throughout the state and across the west, there is enough available land to accommodate modeled resource build.

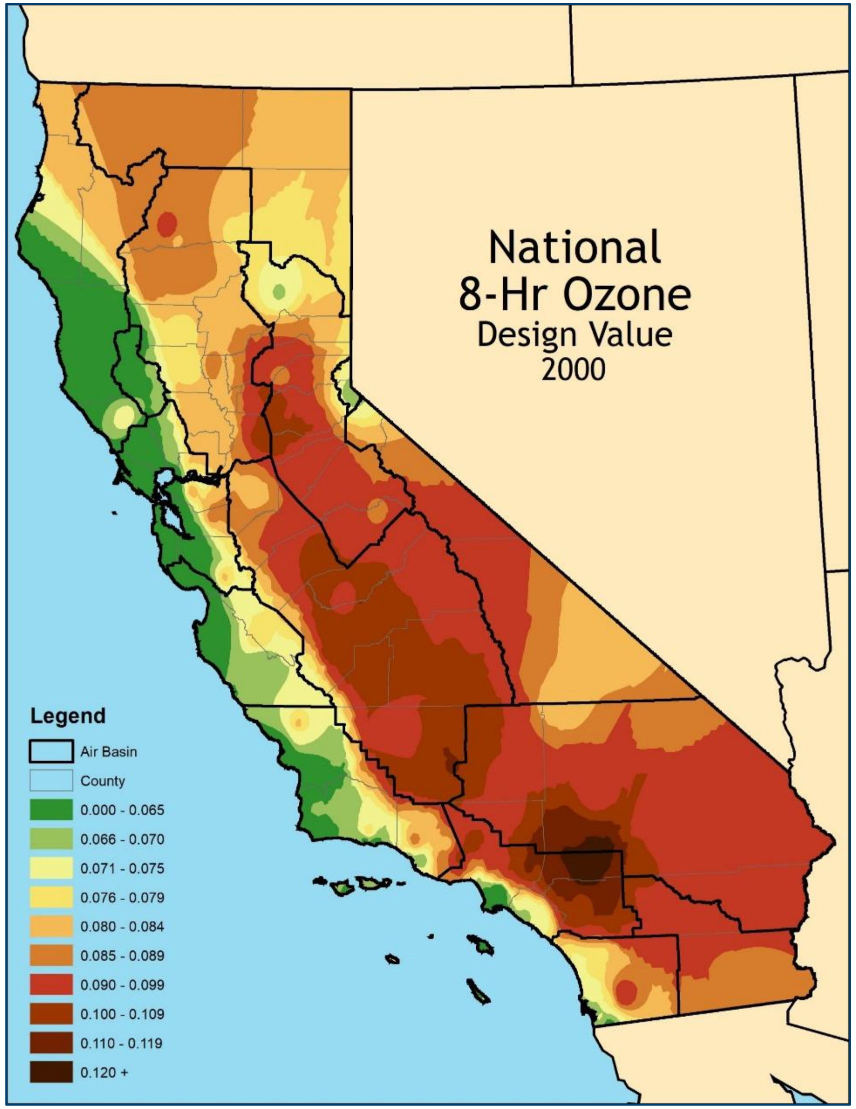
- Overall, resource potential exceeds the area required for solar and wind build as modeled in the SB 100 Joint Agency Report. This holds for both total resource potential, and resource potential in the near grid areas.
  - Solar uses 1-4% of total resource potential, or 4-9% of resource potential in near grid areas
  - Wind uses 2-12% of total resource potential, or 12-74% of resource potential in near grid areas

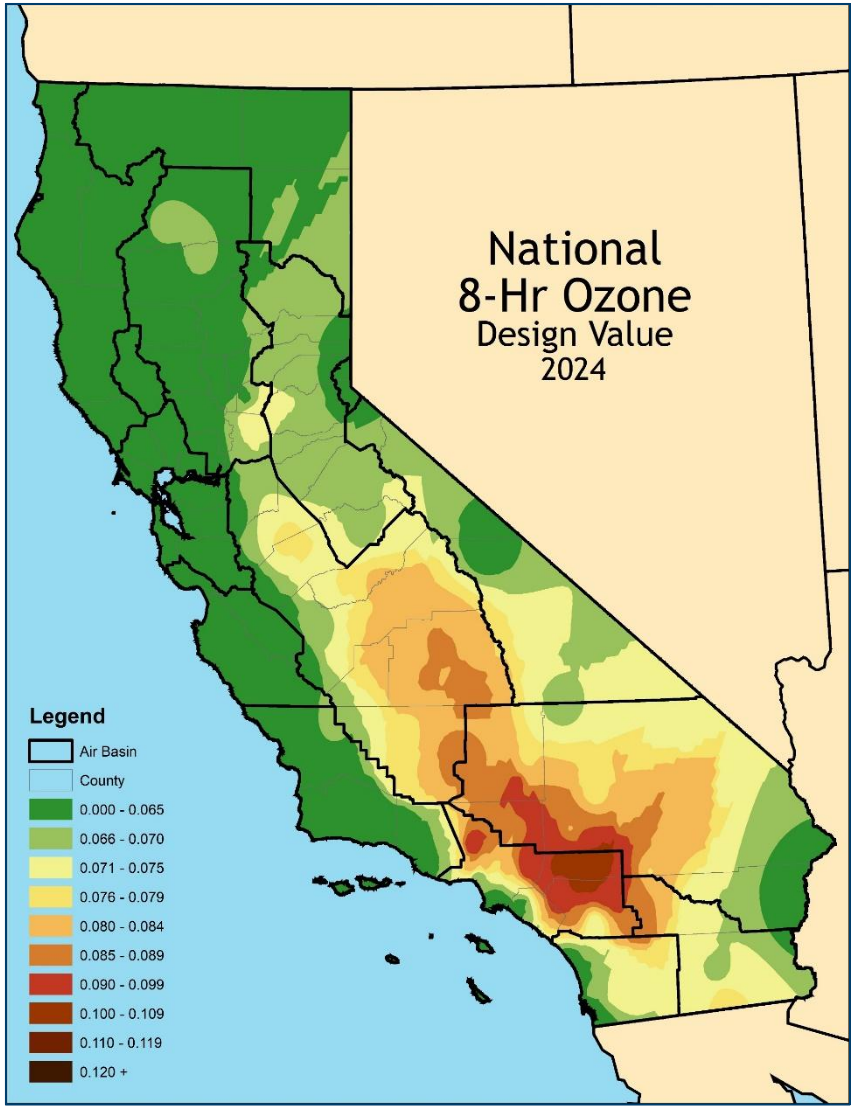
SB 100 Non-Energy Impact (NEI) Analysis Air Quality-Related Public Health & Social Cost of GHGs

Stephanie Kato, Staff Air Pollution Specialist, California Air Resources Board

February 19, 2026

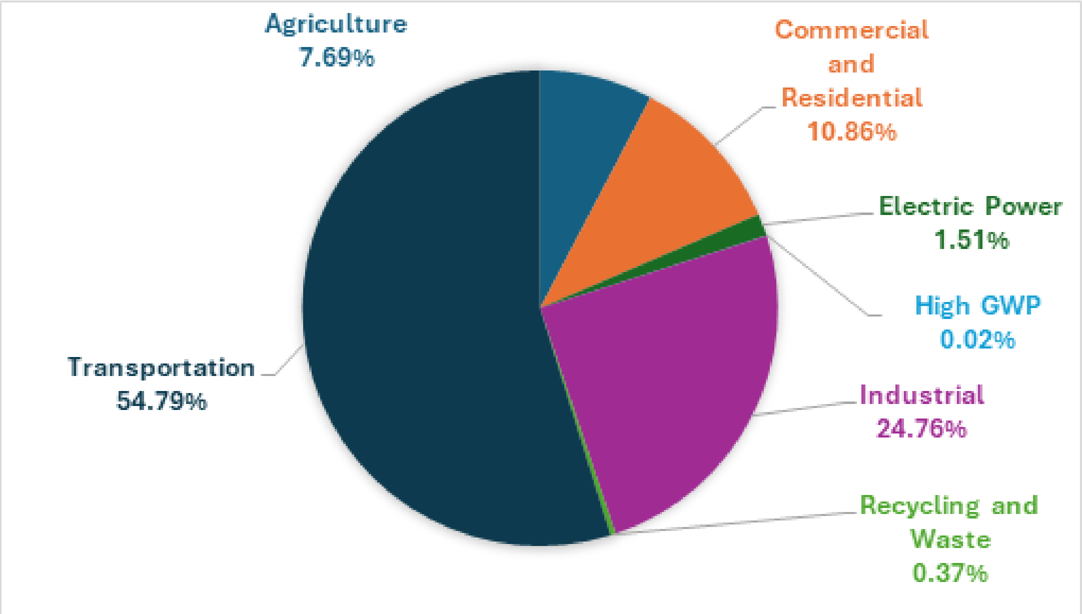
Significant Air Quality Progress



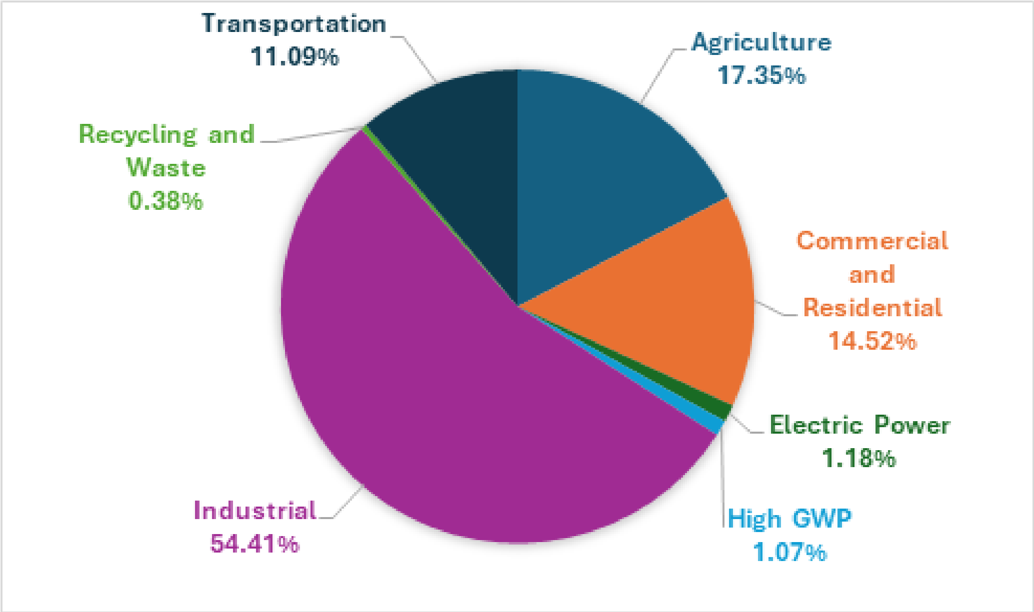


More Work Ahead

Statewide NOx Emissions by Scoping Plan Category, 2023 Annual Average short tons per day



Statewide PM2.5 Emissions by Scoping Plan Category, 2023 Annual Average short tons per day



Estimating Air Quality-Related Public Health Impacts

- Estimate the air quality-related public health impacts from emissions changes in the electricity sector for the SB 100 scenarios

Input

- Fuel consumption by generation resource type from electric system modeling results
- Emissions factors for criteria air pollutants by generation resource type
- Population Projections

→

EPA

COBRA

Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool

→

Output

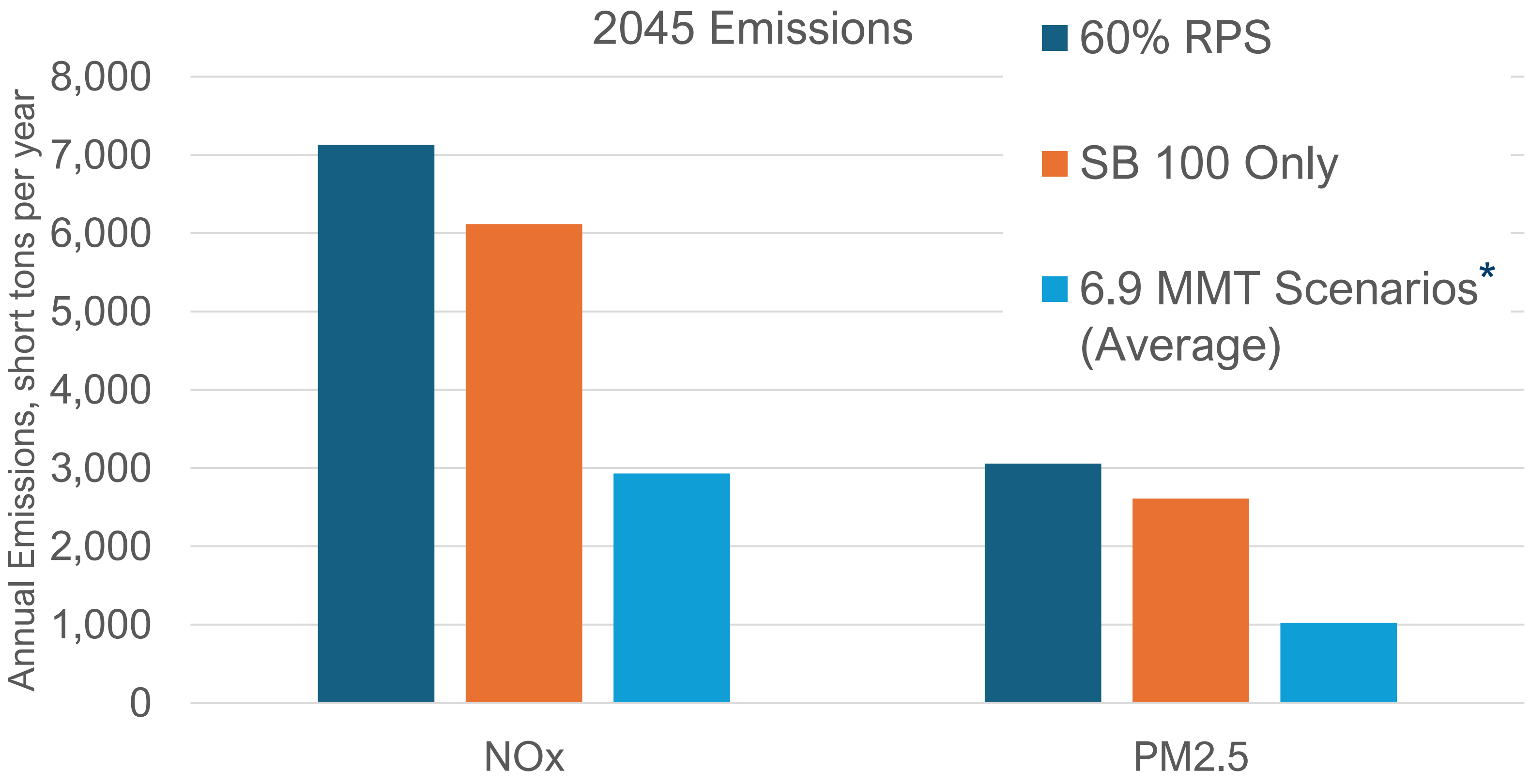
- $PM_{2.5}$ and O_3-related health impacts by health endpoint and monetary value
- Health Endpoints Incidences including, asthma, hay fever/ rhinitis, ER visits-respiratory, all respiratory, total hospital admits, nonfatal heart attacks, lung cancer, stroke, work loss days, school loss days

Air Quality/Public Health Analysis Caveats

- COBRA is a streamlined health impact tool that provides information on health outcomes and how different scenarios may compare to each other and should not be used to predict the actual impact of a specific scenario
- Analysis only evaluates emission changes in the electricity sector. It does not account for emission changes in other sectors as decarbonization policies and programs are implemented.
- Analysis results presented at statewide level to match the precision of energy modeling outputs and considering uncertainties introduced in downscaling emissions for use in the health impacts modeling tool

Criteria Pollutant Emissions Estimates

- Scenarios achieve emissions reductions due to shifts to zero pollutant emissions resources and reductions in total energy consumption
  - Reductions in total NOx from 60% RPS scenario range from 14% to 100%
  - Reductions in total PM2.5 from 60% RPS scenario range from 15% to 100%



* The Combustion Resource Retirement Scenario retires all in-State combustion resources by 2045. Therefore, there are no direct NOx and PM2.5 emissions associated with the resource portfolio in 2045. It is not included in the 6.9 MMT Scenarios (Average).

Avoided Health Impacts

- Air pollution improvements reduce incidence of harmful health outcomes

Summary of Avoided Incidence of Health Endpoints from Reduced Exposure to Ozone and PM2.5 in 2045 relative to 60% RPS

	Meets State Mandates		Does Not Meet State Mandates
Health Endpoint	**Combustion Resource Retirement Scenario**	**Range Across Other 6.9 MMT Scenarios**	**SB 100 Only Scenario**
Total Mortality (high estimate)	140	40-105	20
Total Mortality (low estimate)	85	25-65	10
Total Asthma Symptoms	55,680	17,720-39,750	7,745
Total Incidence, Asthma	320	105-230	45
Total Incidence, Hay Fever/Rhinitis	2,150	690-1,525	300
Total ER Visits, Respiratory	100	35-70	15
Total Hospital Admits, All Respiratory	5	<5-5	<5
PM Nonfatal Heart Attacks	40	15-35	5
PM Minor Restricted Activity Days	39,710	11,440-30,755	5,645
PM Work Loss Days	6,690	1,925-5,180	950
O_3 School Loss Days, All Cause	19,510	6,725-13,020	2,680

Note: All values are rounded to the nearest 0 or 5, except for values less than 5 which are indicated <5.

Avoided Health Impacts - Value

- Scenarios achieve public health benefits relative to 60% RPS
  - Benefits range from $190 million in SB 100 Only scenario to $2.2 billion in Combustion Resource Retirement scenario

Value of Avoided Health Incidence from Reduced Exposure to Ozone and PM2.5 in 2045 (Million 2023$)

	Meets State Mandates		Does Not Meet State Mandates
Endpoint	**Combustion Resource Retirement Scenario**	**Range Across Other 6.9 MMT Scenarios**	**SB 100 Only Scenario**
Total Health Benefits (low)	$1,350	$420 to $990	$190
Total Health Benefits (high)	$2,150	$650 to $1,610	$300

Social Cost of Greenhouse Gases (SC-GHG)

- SC-GHG estimates the present value of costs associated with the emission of GHGs in future years (value of avoided damages)

Input

- Modeled CO_2 emissions for each scenario
- Estimated CH_4 emissions for each scenario based on modeled natural gas fuel offtake
- Values from:
  - 2023 values from US EPA

Calculation

Output

- Sum of:
  - Avoided cost of CO_2 reductions in the modeled year
  - Avoided cost of CH_4 leakage reductions for the modeled year

Analytical Approach

CO_2 Emissions$_y$* Social Cost of Carbon = Total Social Cost of Carbon$_y$

CH_4 Emissions$_y$ * Social Cost of Methane = Total Social Cost of Methane$_y$

y → year

SC-GHG Results

- Scenarios will produce economic benefits in the form of avoided damages from reductions in GHG emissions along the planning horizon

Estimated Avoided Social Cost of CO_2 and Methane of SB 100 Scenarios in 2045 (Billion 2023$)

Scenario		Discount Rates (percent)		
		2.5	2	1.5
Meets State Mandates	Combustion Resource Retirement	$12	$18	$28
	Range of Other 6.9 MMT Scenarios	$10-$11	$15-$16	$23-$24
Does Not Meet State Mandates	SB 100 Only	$2	$3	$5

Conclusions

- All scenarios result in reduced criteria pollutant emissions and related health impacts
- Scenario criteria pollutant emissions and related health impacts are directly connected to fuel combustion
- Scenarios with less fuel combustion correspond to the largest avoided climate damages

Questions from the Dais (2/3)

Public Q&A (2/3)

Public Comment (1/2)

Zoom App/Online

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Telephone

- Press *9 to raise hand
- Press *6 to mute/unmute

When called upon

- CEC will open your line
- Unmute on your end
- Spell name and state affiliation, if any
- 3 minute or less per speaker, 1 speaker per entity

3-MINUTE TIMER

Lunch Break

Workshop will resume at 1:00 p.m.

Moderated Panel Discussion

SB 100 Implementation Challenges and Opportunities

Moderator: Nathan Barcic (CPUC)

Panelists Names & Organizations

- **CA Public Advocates Office** - Shelly Lyser - Program Mgr., Electric Pricing & Cust Prgms
- **Clean Power Alliance** - Lindsay Descagnia – VP, Power Supply
- **CA Environmental Justice Alliance** - Deborah Behles – Counsel for IRP & Res Adequacy
- **SMUD** - Jon Olson – Director, Energy Trading & Contracts
- **Fervo Energy** - Harper – Sr. Associate, Policy & Regulatory Affairs
- **UC Berkeley Labor Center** - Betony Jones - Sr. Policy Researcher, Green Economy

Questions from the Dais (3/3)

Public Q&A (3/3)

Public Comment (2/2)

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Acknowledgements

Closing Remarks from the Dais