

ENVIRONMENTAL
LAW



presents

Confronting Climate Change:

In California And Beyond

California's Climate/Energy Trifecta: CARB, CEC & CPUC

Friday, April 7, 2023
1:00 pm - 2:15 pm

Speakers:

Linda Barrera, Chief Counsel
CA Energy Commission

Leuwam Tesfai, Deputy Executive Director for Energy & Climate Policy
CA Public Utilities Commission

Matthew Botill, Division Chief, Industrial Strategies Division
California Air Resources Board

Conference Reference Materials

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California's Climate Strategy For Carbon Neutrality

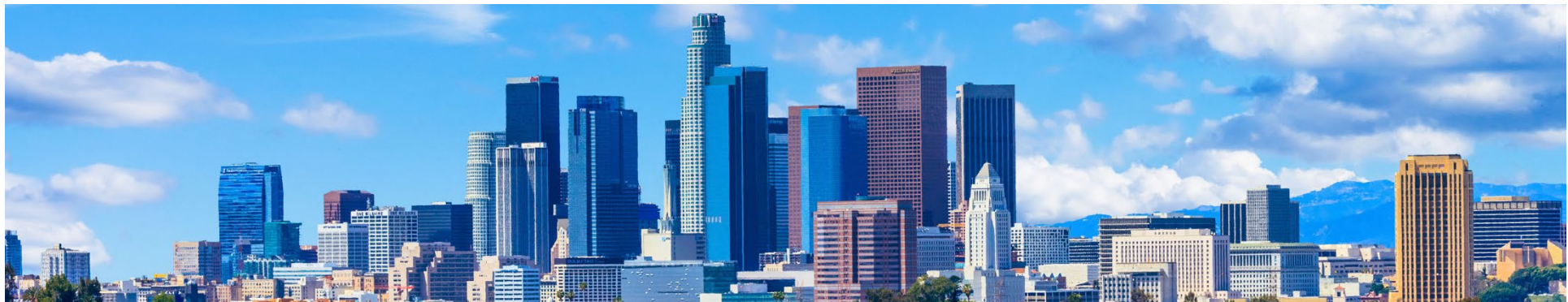




CALIFORNIA
AIR RESOURCES BOARD

Mission

- Leads California's fight against air pollution and climate change
- Protects public health
- Promotes clean, energy-efficient fuels and technology



The Board Directs Policy, Adopts Rules and Regulations



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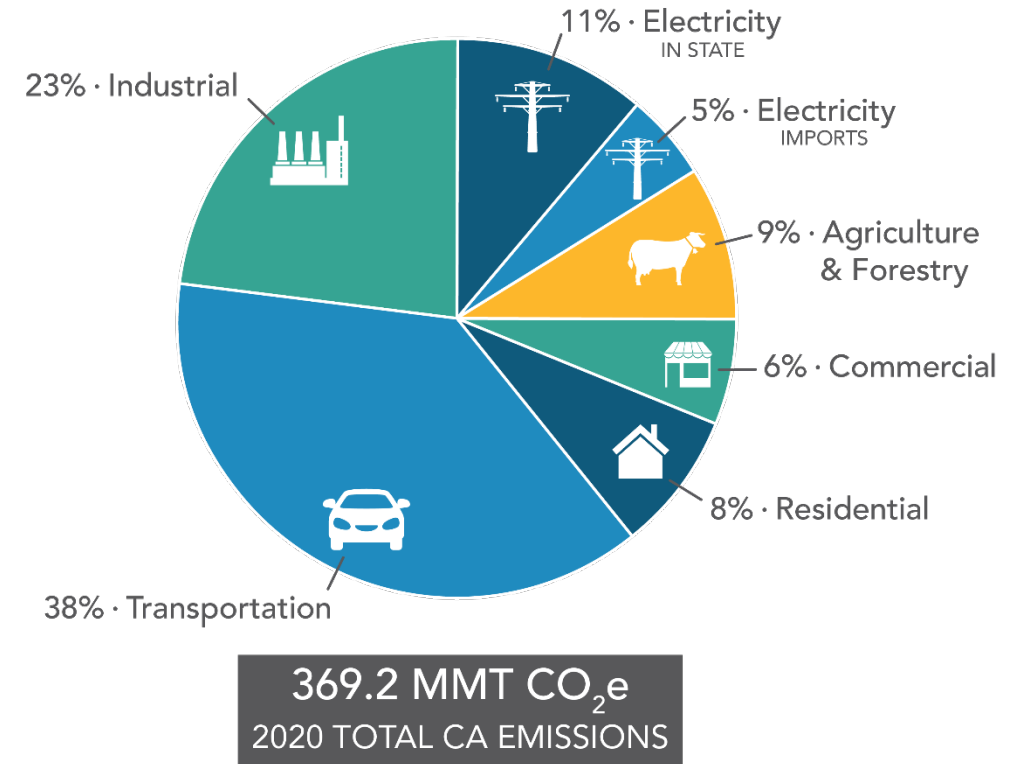
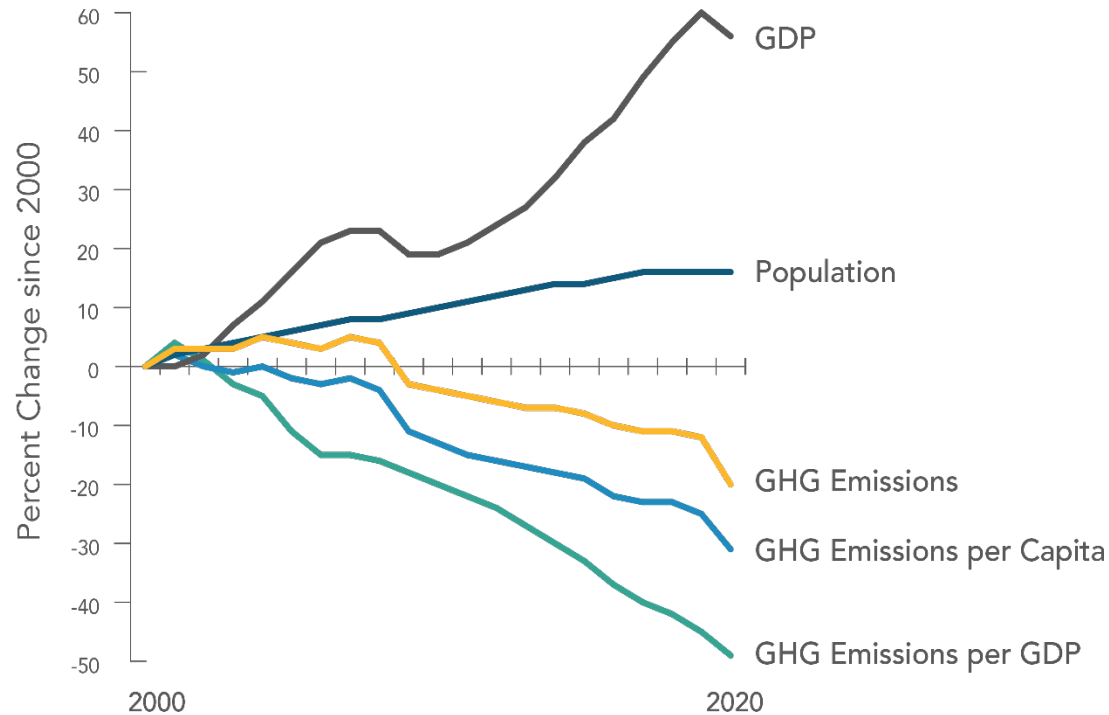


ECONOMISTS



LAWYERS & POLICY ANALYSTS

California's Trends Achieved AB 32 Target in 2016



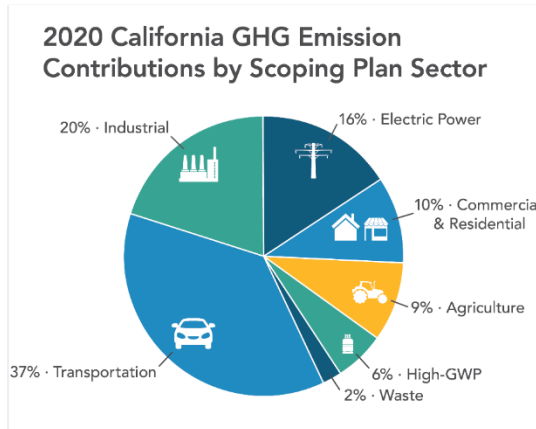
Source: 2020 Edition, California Greenhouse Gas Emission Inventory: 2000-2018

California's Climate Policy Framework



GHG Targets & Goals

Legislation & Executive Orders: Total GHGs (AB 32/SB 32/AB 1279) or sector targets (SB 1383/SB 100), etc.



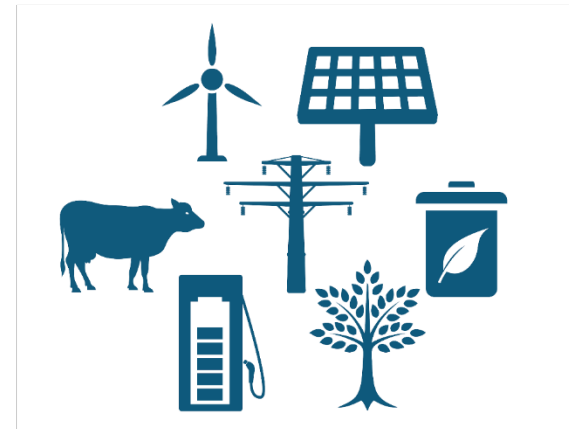
Scoping Plan

Actionable plan across all sectors



Action

Regulations & Incentives: Advanced Clean Cars, climate change investments, etc.



Projects

Examples: Zero-emission trucks, energy infrastructure and renewables, compost facilities, digesters, etc.

The Scoping Plan Scenario

The path to build our way out of over a 100 years of existing fossil energy and the built environment landscapes

AB 32 GHG
Inventory Sectors

Carbon neutrality by 2045, deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes and Executive Orders

Natural and
Working Lands
(NWL)

Land management activities that prioritize restoration and enhancement of ecosystem functions to improve resilience to climate change impacts, including more stable carbon stocks

Ambitious Action Delivers Huge Benefits

Unprecedented Deployment of Clean Technology and Nature-Based Climate Solutions



37x total on-road ZEVs



6x electric appliances in residences



1700x hydrogen supply



4x installed wind/solar generation capacity



> 2.5 Million acres of NWL climate action per year

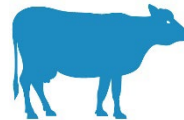
Significant GHG Reductions



94% decrease in liquid petroleum fuel demand



91% decrease in fossil gas used in buildings



66% decrease in methane emissions from agriculture



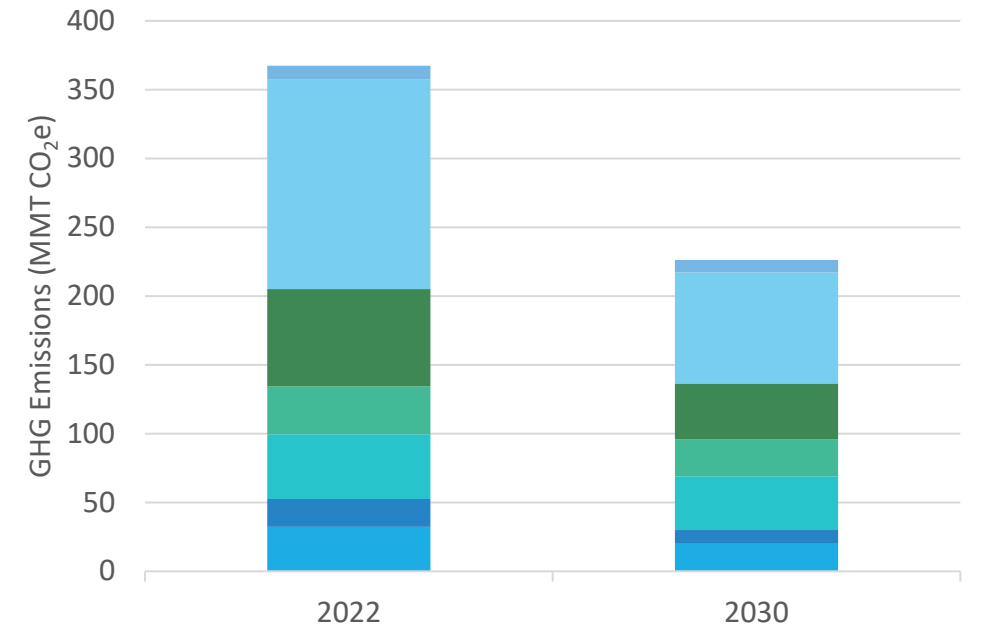
10% reduction in wildfire emissions

In 2045 relative to 2022

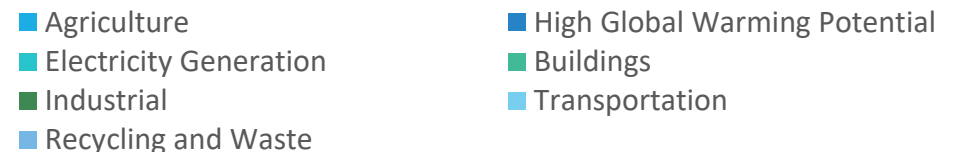
The Decade of Action

Target 2030: 48% Reduction below 1990

- Accelerate pace of building clean energy infrastructure and clean technology deployment to achieve the 2030 target and be on track for carbon neutrality:
 - Permitting for new resources and transitioning of existing resources for clean energy production
 - Transmission infrastructure
 - Consumer adoption
 - Access to raw materials
 - Action across all sectors



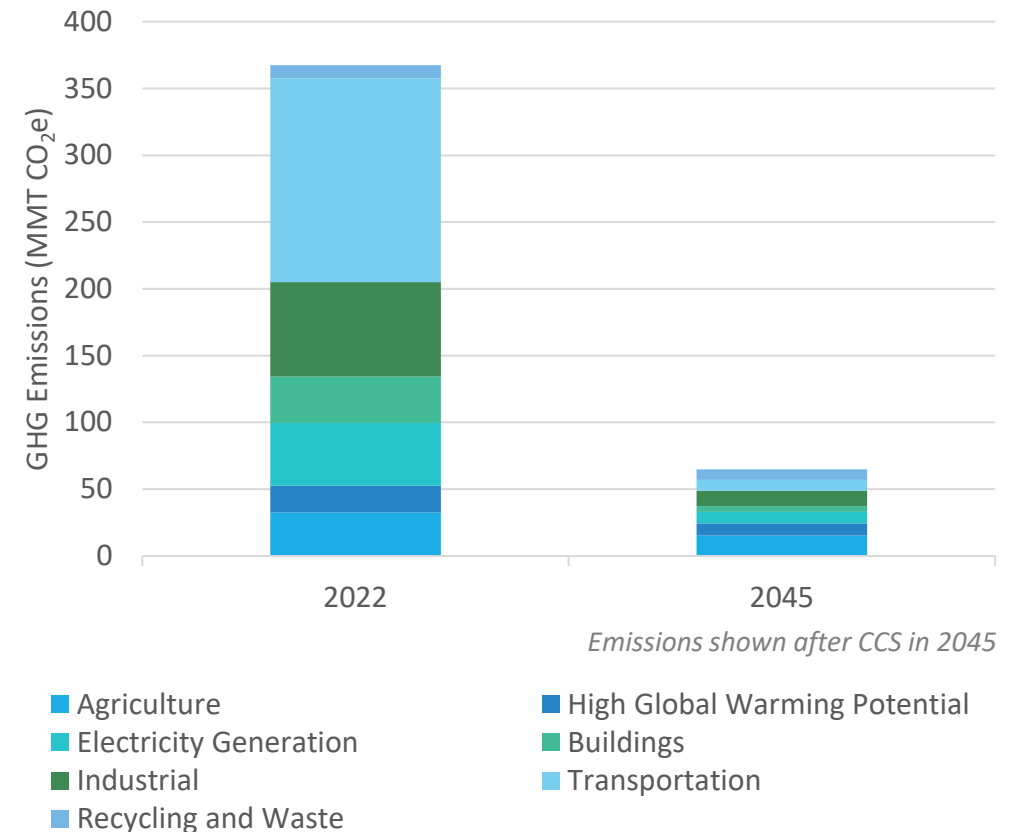
Emissions shown after CCS in 2030



Anthropogenic GHGs

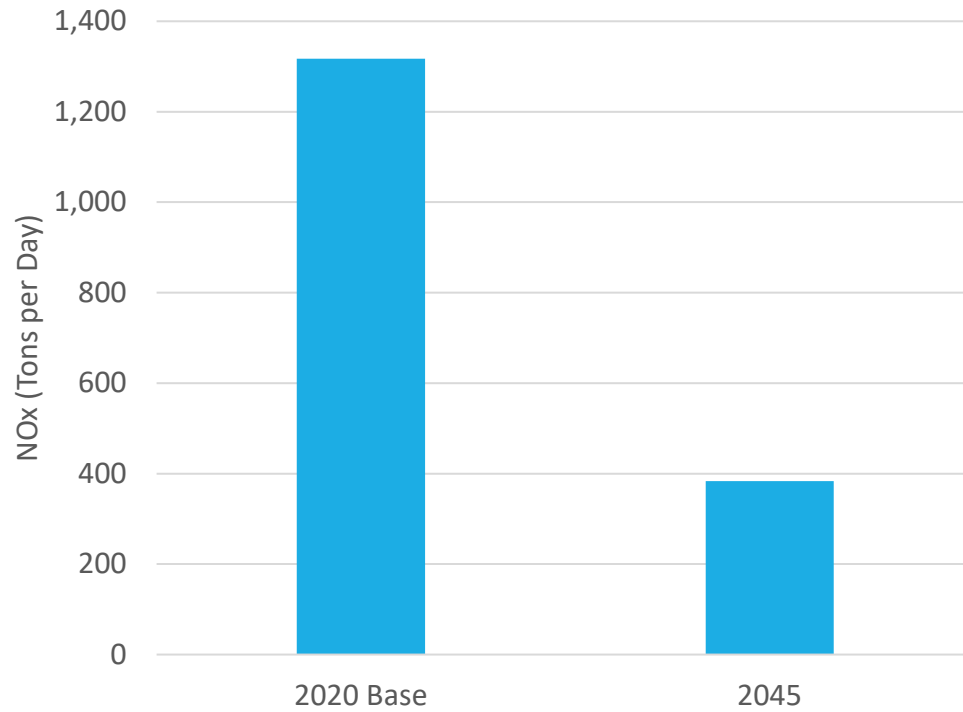
Target 2045: 85% Reduction below 1990

- Some emissions remain in the AB 32 Sectors
- Need carbon dioxide removal to compensate for residual emissions to achieve carbon neutrality
- Need both nature-based and engineered carbon dioxide removal

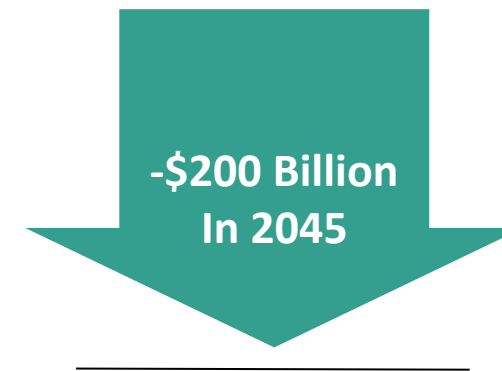


Fossil Fuel Combustion Reduction Air Quality Benefits of Carbon Neutrality

71% reduction in air pollution



\$200 Billion in health cost savings from decreased fuel combustion*



*Compared to 22 Billion in direct costs in 2045 for AB 32 climate action

Scoping Plan - Strategies for Success

- Phasing down fossil fuel combustion and fossil fuel energy demand/infrastructure
- Accelerating build-out of low-carbon energy infrastructure
- Ramping-up carbon dioxide removal, both mechanical and nature-based
- Ensuring adequate, reliable, and affordable energy resources
- Addressing air pollution disproportionately impacting vulnerable communities
- Addressing barriers to deployment, for example:
 - Permitting and construction delays
 - Consumer adoption/awareness
 - Workforce availability
 - Technology availability
 - Economic incentives for the transition and affordability of alternatives

Thank You



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CALIFORNIA'S CLIMATE PLAN LAYS THE ROADMAP TO 2045



CUT AIR POLLUTION **71%**



SLASH GREENHOUSE GAS
EMISSIONS **85%**



DROP GAS CONSUMPTION **94%**



CREATE **4 MILLION** NEW JOBS



SAVE CALIFORNIANS **\$200 BILLION**
IN HEALTH COSTS DUE TO
POLLUTION



California's Climate/Energy Trifecta: CARB, CEC, & CPUC

Achieving 100% Clean Electricity in California



Linda Barrera, Chief Counsel
California Energy Commission



Presentation Overview

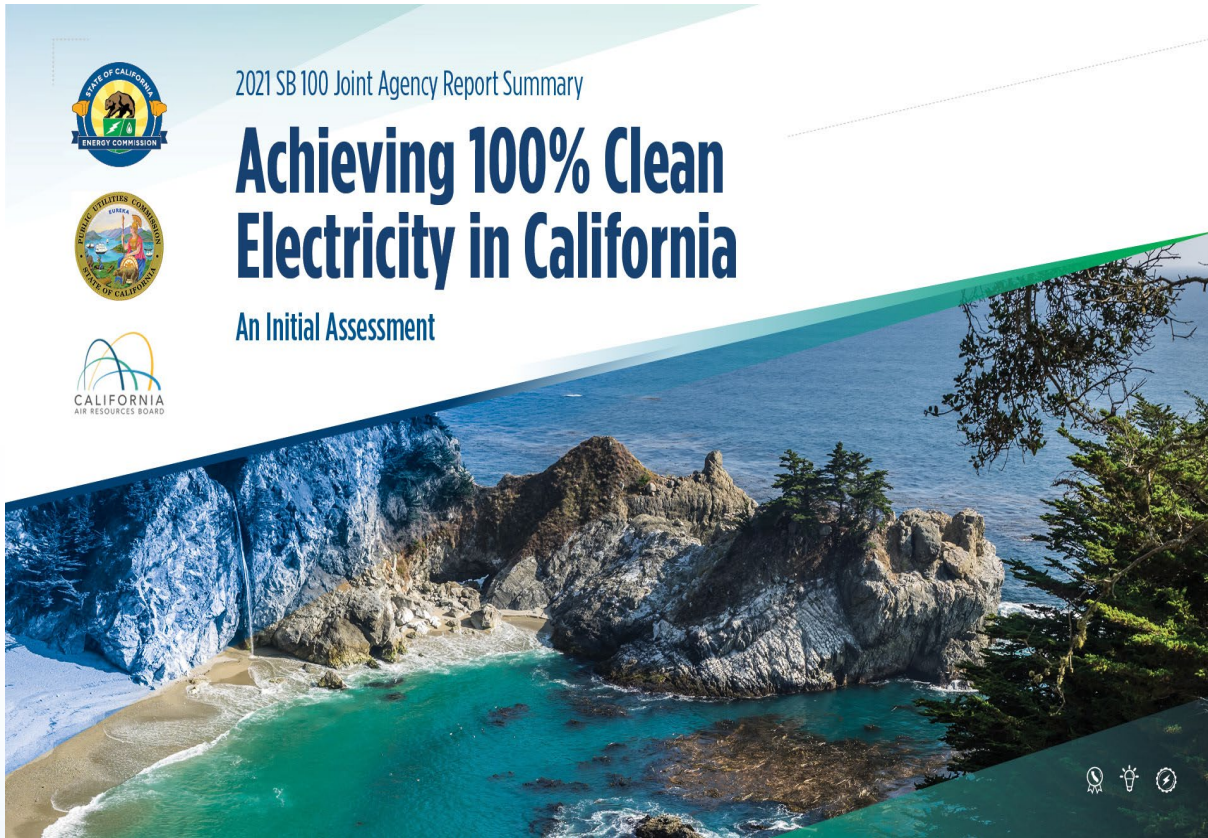
On the path to 100% clean energy, CEC is committed to promoting a clean, affordable and reliable energy supply for all Californians.

1. Clean Electricity Goals
2. Speed Up Permitting
3. Fund Long Duration Storage
4. Look Beyond the Shore

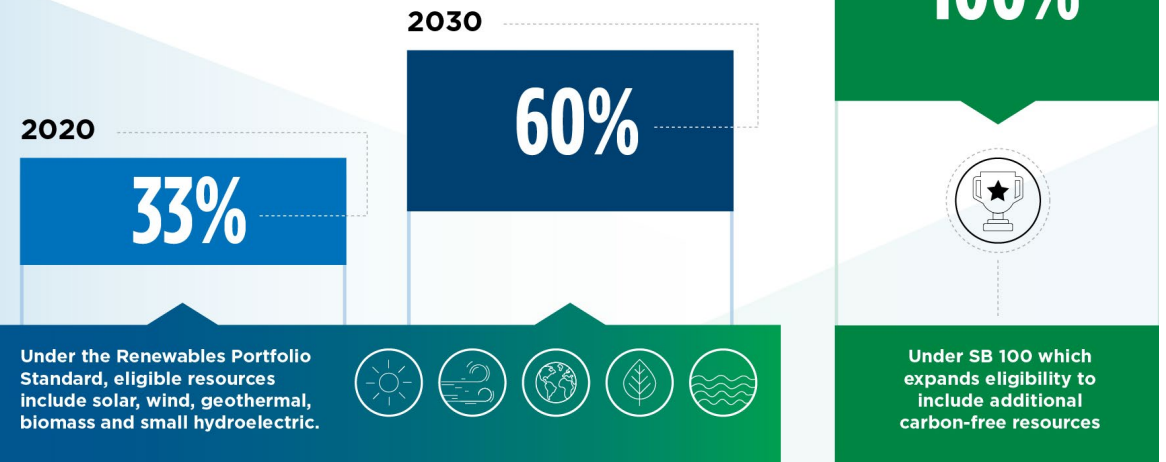




Clean Electricity Goals



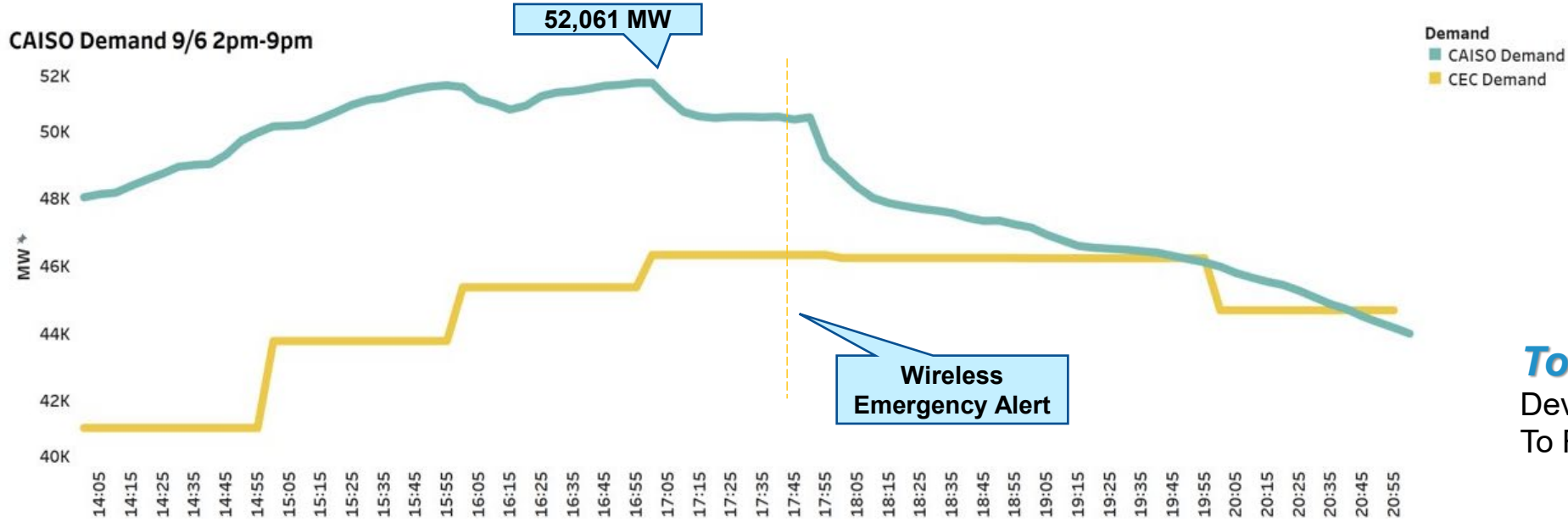
California's Clean Electricity Goals



- ✓ SB 100 (De León, 2018)
- ✓ SB 1020 (Laird, 2022)
- ✓ AB 1279 (Muratsuchi, 2022)



Clean Electricity Goals: The Challenge



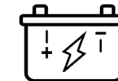
To Achieve Clean Energy
Development Needs
To Rapidly Accelerate



Solar & Wind

3X

Solar and wind build rates need to nearly triple*



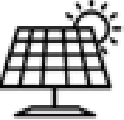

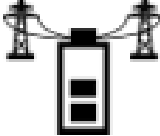


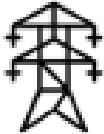
Battery

8X

Battery storage build rates need to increase by nearly eightfold**



Speed Up Permitting: Opt In Program

<p>Solar photovoltaic power plant of at least 50 MW</p> 	<p>Terrestrial wind power plant of at least 50 MW</p> 	<p>Energy storage system of at least 200 MWh</p> 
<p>Non-fossil-fueled thermal power plant of at least 50 MW (i.e., jurisdictional facility)</p> 	<p>Manufacturing/assembly facility for renewable energy/energy storage systems or components with at least \$250 million investment</p> 	<p>Transmission from an eligible power plant or energy storage system to the first point of interconnection</p> 

- ✓ Certification of Nonfossil-Fueled Powerplants, Energy Storage, and Related Facilities (AB 205, 2022)



Speed Up Permitting: Opt In Program

Streamlined process:

- One-Stop-Shop to increase energy resources
- Comprehensive environmental review
- Ensure public transparency and local benefits
- CEC permit supersedes local permits and most state permits
- Enhanced state agency coordination

CEC must:

- Prepare Environmental Impact Report
- Complete review within 270 days after the application is deemed complete
- Heighten public outreach and process, beyond CEQA
- Ensure conformance with laws, ordinances, regulations, and standards or override findings if applicable

Applicant must:

- Apply by June 30, 2029
- Pay prevailing wages and use skilled and trained workforce
- Enter into a legally binding community benefits agreement
- Ensure overall net positive economic benefit to local government



Fund Long Duration Energy Storage



✓ AB 209 (Stats. 2022)

- Up to \$380,000,000 over two years
- At least eight hours of continuous discharge of electricity
- Deploy innovative energy storage systems to the electrical grid



Look Beyond the Shore: Offshore Wind

California's Offshore Wind Goals

- 5 GW by 2030
- 25 GW by 2045

Enough electricity to power up to 25 million homes by mid-century.

✓ Offshore Wind Generation (AB 525, Chiu, 2021)

June 1, 2022

- Establish megawatt planning goals for 2030 and 2045

December 31, 2022

- Assess Economic Benefits of Seaport and Workforce Development
- Develop a Permitting Roadmap

July 31, 2023

- Develop a strategic plan for offshore wind off the California coast in federal waters



We are Hiring! Join us for a Virtual Career Fair on April 19 11:30 am – 1pm

www.energy.ca.gov/careers/jobs

Additional Resources at <https://www.energy.ca.gov/>

California's Climate/Energy Trifecta: CARB, CEC & CPUC

Leuwam Tesfai, Deputy Executive Director for Energy and Climate Policy
California Public Utilities Commission

ELS Climate Change Conference
April 7, 2023



California Public
Utilities Commission

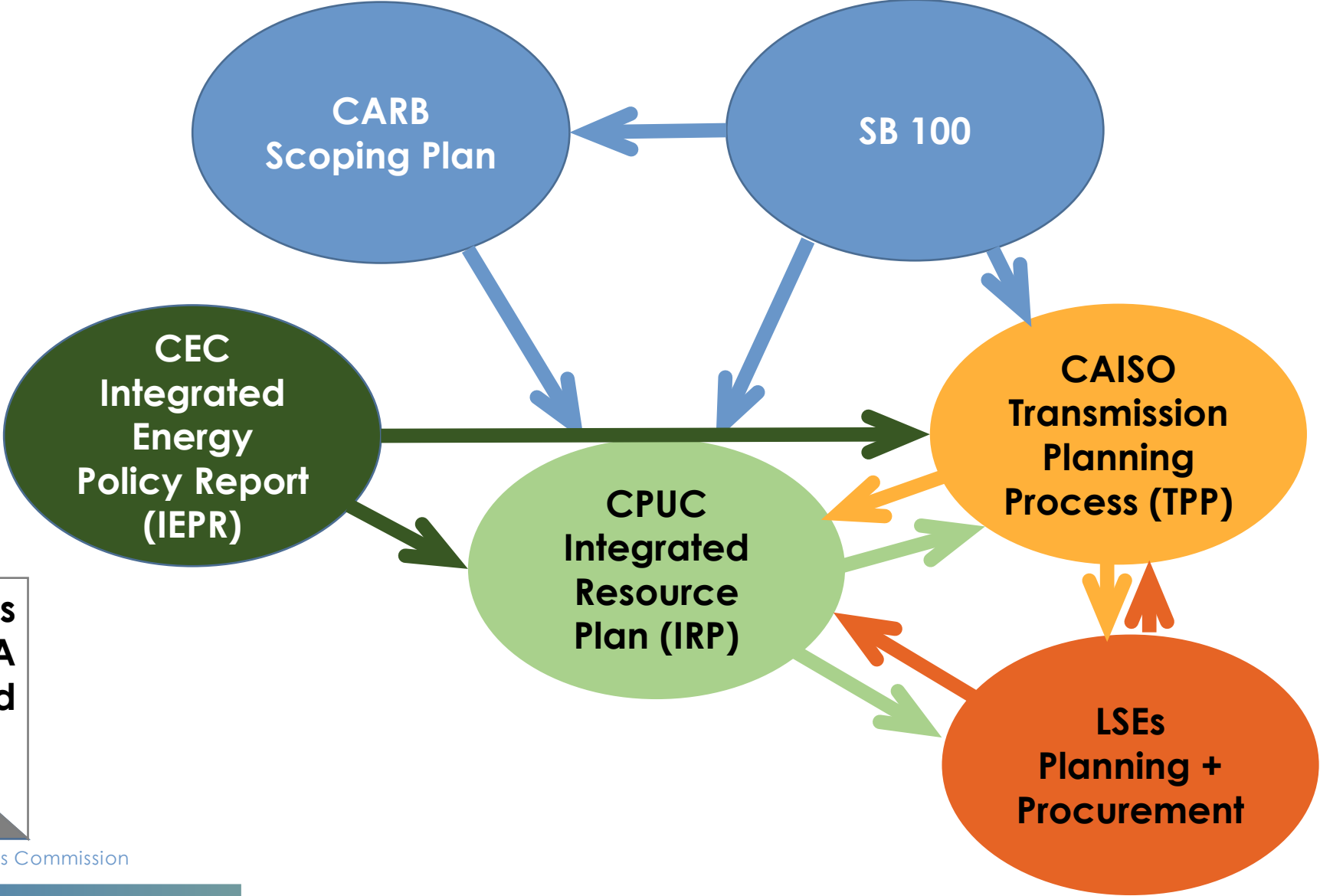
Presentation Overview

The CPUC is encouraging greenhouse gas reductions through increasing renewable energy procurement and building decarbonization:

- 1. Integrated Resources Planning**
- 2. Transforming the Market**
- 3. Ending Gas Incentives**
- 4. Changing how we use Electricity**



California's Electricity Planning Ecosystem



IOUs
~75% CA
Load

POUs
~25% CA
Load

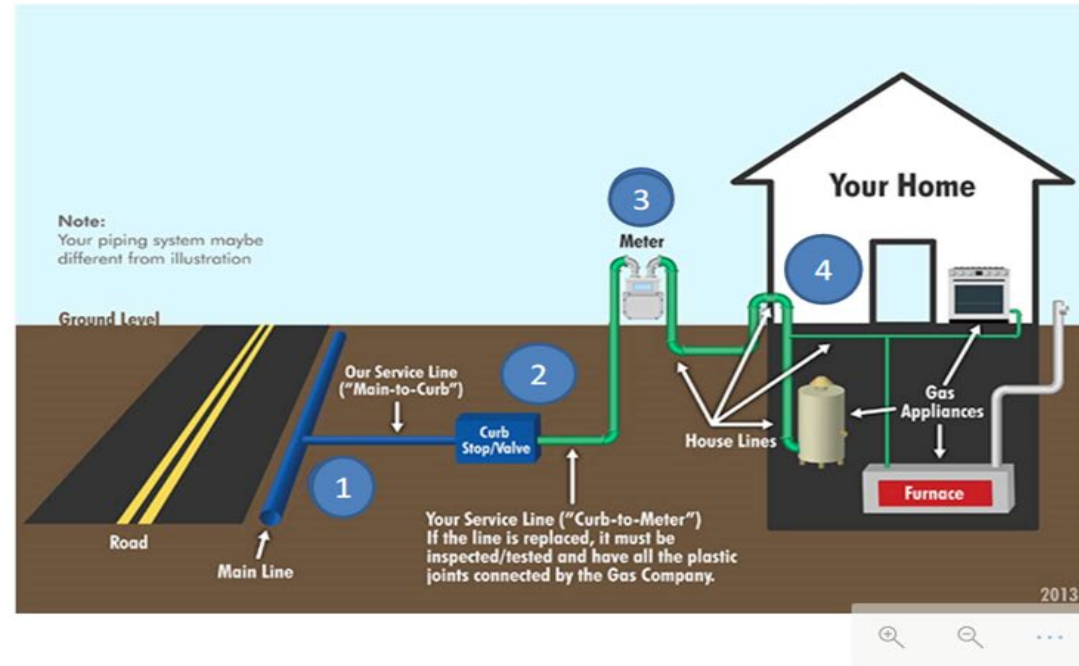
Transforming the Market

- In March of 2020, the CPUC allocated \$200 million in funding approved pursuant to SB 1477 (Stern, 2018). Both programs were intended to create market conditions for widespread building electrification. Increased building electrification also means a need for more renewable electricity resources
- **BUILD – Building Initiative for Low Emissions Development Program**
 - \$80 million
 - Focus on new construction, mostly low-income
 - CEC is administrator
 - Mandatory tech assistance and bill savings requirement
 - Goal to build between 7,000 and 24,000 units
- **TECH – Technology and Equipment for Clean Heating Initiative**
 - \$120 million + \$50 million 2022 augment
 - Focus on market transformation through contractor training and incentives
 - Energy Solutions is implementer
 - To date has trained 964 contractors, installed 1,152 water heaters & 8,546 HVACs
 - Campaign website: www.SwitchIsOn.org



Ending Natural Gas Incentives

- 1 Gas main extension
- 2 Service Lateral
- 3 Meter
- 4 In-house Gas Infrastructure
- 5 Other costs



- Total reported subsidies for Residential and non-residential line extensions in 2020 equaled \$144,349,622 (mostly added to rate base rather than realized immediately).
- In December 2022 the CPUC eliminated these subsidies for residential and non-residential customers effective July 1, 2023.
- CPUC working on a parallel modification to Energy Efficiency incentives to end Natural Gas Incentives

Changing How We Use Energy

Self-Generation Incentive Program (SGIP)

- 2020: \$44.67 million in funding approved for utilizing heat pump water heater (HPWH) technologies as thermal energy storage (*i.e.*, load shifting).
- Senate Bill 209 for further energy storage incentives

PG&E's Water Saver Program & SCE's Smart Heat Pump Water Heater Pilot Program

- Installs smart controls and thermostatic mixing valves on existing HPWHs and electric resistance water heaters to enable load shifting
- Provides incentives to replace propane water heaters with load shifting HPWHs



California Public Utilities Commission

Discussion / Q&A

The CPUC's Energy Division is hiring! Join us for an upcoming open house on April 12 and 13th

<https://www.cpuc.ca.gov/about-cpuc/divisions/energy-division/energy-division-recruiting>

EnergyDivisionRecruiting@cpuc.ca.gov



Additional Resources

Integrated Resources Planning

<https://www.cpuc.ca.gov/irp/>

EE Natural Gas Incentive Phase Out

<https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-efficiency/rolling-portfolio-program-guidance/ng-staff-prop-81622.pdf>

Removing legal barriers to building electrification:

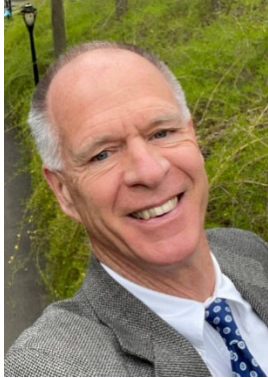
https://www-cdn.law.stanford.edu/wp-content/uploads/2020/10/2020-10-20_Natural-Gas-Memo_formatted.pdf

Overcoming obstacles to decarbonization

<https://www.energy.ca.gov/sites/default/files/2022-03/CEC-500-2022-001.pdf>

Moderator

Tom McHenry, Claremont McKenna College



Thomas McHenry served as Dean and President of Vermont Law School from 2017 to 2021 and previously worked as an attorney in Los Angeles for thirty years, the last twenty as a partner at Gibson, Dunn & Crutcher where he practiced general environmental law. He is currently an Adjunct Professor at Claremont McKenna College where he teaches a course in climate solutions. He continues to serve as the Chair of the Leadership Council at the Yale School of the Environment, as Vice-Chair of the Advisory Council for the Roberts Environmental Center at Claremont McKenna College, as Chair of the Conservation Committee of the National Forest Foundation and on the board of the Center for Large Landscape Conservation in Bozeman, Montana. He is researching and drafting a book on environmental leadership and a chapter on forest law. Tom graduated from New York University Law School in 1983 where he served on the Journal of International Law and Politics. He received a Master of Forest Science Degree from the Yale School of the Environment (formerly the School of Forestry and Environmental Studies) in 1980 and a Bachelor of Arts Degree in history from Yale College in 1977.

Panelists

Linda Barrera, Chief Counsel, CA Energy Commission



Linda Barrera is the chief counsel for the California Energy Commission. She joined the Energy Commission in 2015 as a senior attorney and has also served as an advisor to former Vice Chair Janea A. Scott, as assistant chief counsel, and as acting chief counsel. Before joining the Energy Commission, Linda worked as an attorney for the California Public Utilities Commission, the California Department of Justice, and the California Department of Fish and Wildlife.

She has been passionate about clean energy solutions for many years, including helping launch a community energy program at the Sustainable Economies Law Center in the Bay Area and advocating for indigenous communities and local energy solutions in Central America. Linda earned a Bachelor of Science in mechanical engineering from The University of Texas at Austin, and a J.D. and certificate in environmental and natural resources law from Lewis & Clark Law School. Linda was born and raised in Panama, and loves to camp, hike, dance, and travel with her family.

Matthew Botill, Division Chief, Industrial Strategies Division, California Air Resources Board



Matthew Botill is a Division Chief at the California Air Resources Board. Matthew is responsible for overseeing several of the state’s climate programs, including the Scoping Plan, Cap-and-Trade Program, and the Low Carbon Fuel Standard. Matthew also serves as the agency’s policy lead for natural and working lands, including their relationship to carbon neutrality.

Leuwam Tesfai, Deputy Executive Director for Energy & Climate Policy, CA Public Utilities Commission



Leuwam Tesfai was named the CPUC’s Deputy Executive Director for Energy and Climate Policy, effective July 1, 2022. She previously served as Commissioner Genevieve Shiroma’s Chief of Staff and Legal Advisor, a position she held since 2019 when appointed by Governor Gavin Newsom. She has worked at the CPUC since 2011 in several roles including as an Advisor to former Commissioner Liane M. Randolph and in the CPUC’s Legal, Energy and Administrative Law Judge Divisions. Leuwam’s private sector experience includes renewable energy markets, siting and permitting generation facilities, and commercialization of clean energy technologies. She serves on the Executive Committee of the Environmental Law Section and on the board of the League of

Women Voters of San Francisco. In 2022 she participated in the UN COP 27, in Sharm El-Sheikh, Egypt, as part of Governor Newsom’s delegation. She is a graduate of Emory University and the University of San Francisco School of Law.