



# Climate-Safe California: accelerated, equitable climate action

January 19, 2022

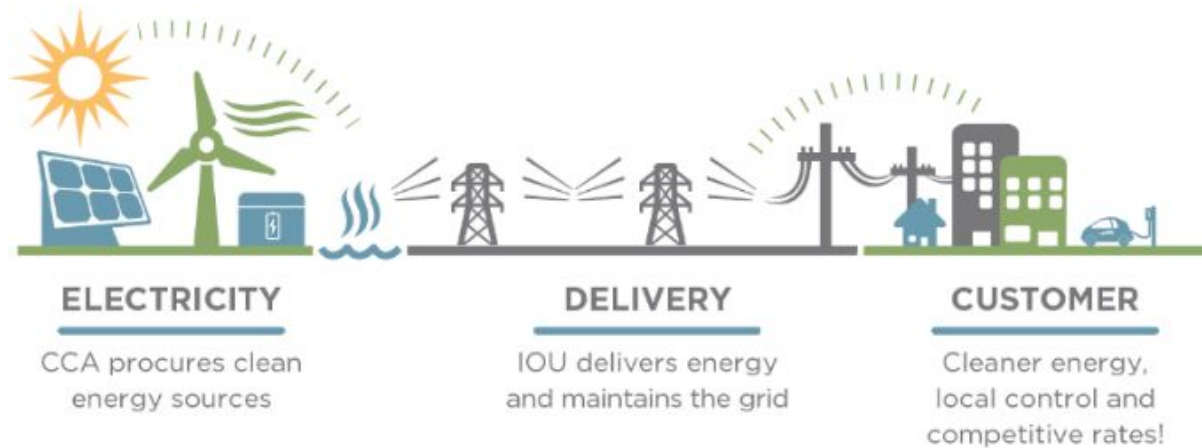
Ellie Cohen and team

[ellie@theclimatecenter.org](mailto:ellie@theclimatecenter.org) [www.theclimatecenter.org](http://www.theclimatecenter.org)





# A think tank/do tank nonprofit working collaboratively for equitable speed and scale greenhouse gas reductions



**Key role in growing Community Choice Energy:  
23 CCAs serving 80-90% GHG-free electricity to  
11 million Californians- 1/4 of state!**



# Current global climate goals bold but inadequate

## UN IPCC 1.5C Report- Oct 2018

- Cut emissions by 45% by 2030

AND

- remove up to 1000 Gt CO<sub>2</sub>e from atmosphere

to achieve **net-zero emissions** by **2050** and **stay under the 1.5C** dangerous warming threshold agreed to in 2015 Paris accord



**Current pledges => 11% increase in emissions!**

<https://www.ipcc.ch/sr15/>

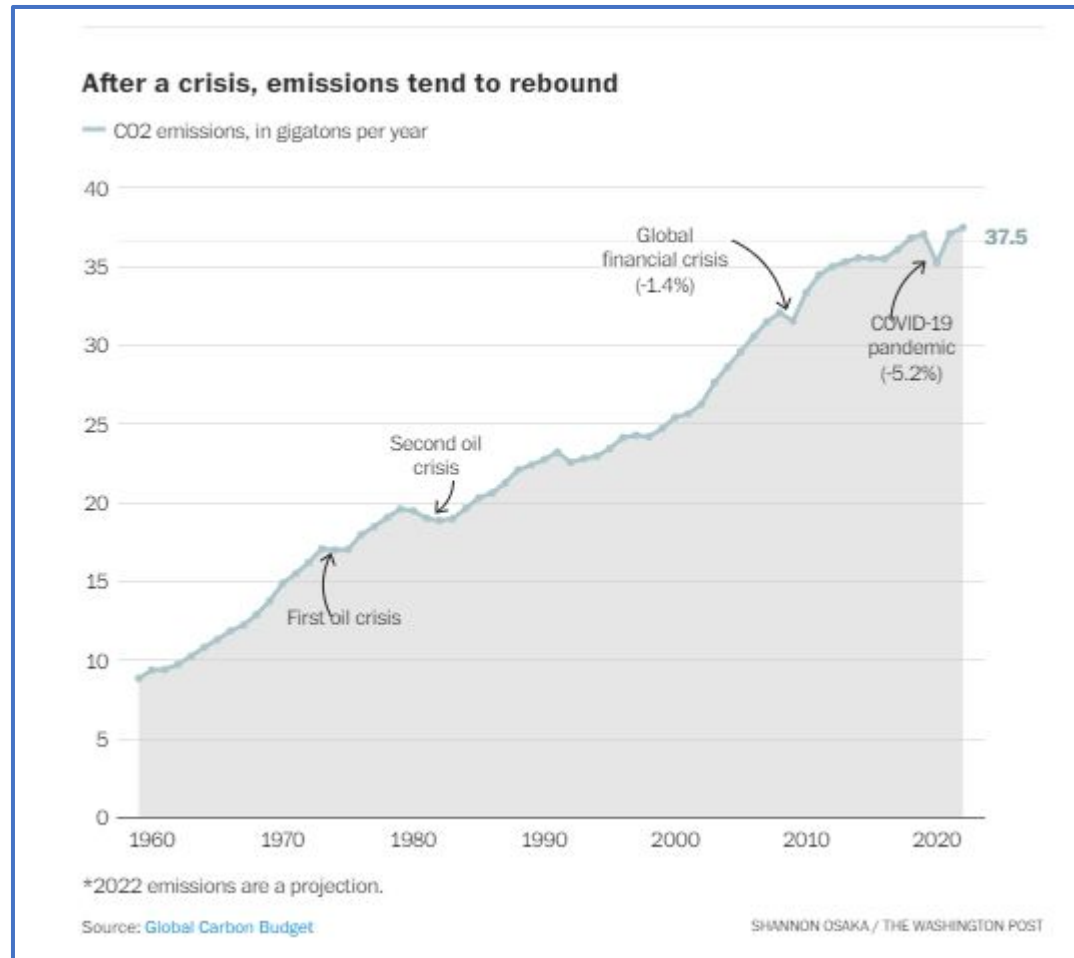
<https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>

<https://news.un.org/en/story/2022/04/1115452>

<https://www.reuters.com/business/environment/cop27-world-track-increase-emissions-106-by-2030-un-report-2022-10-26>



# Record emissions globally 2022; Govt. plans for 2x new oil & gas production by 2030



<https://www.washingtonpost.com/climate-environment/2022/12/05/carbon-emissions-peak-record-2022/>  
<https://www.sei.org/about-sei/press-room/2021-production-gap-report-fossil-fuel-production/>





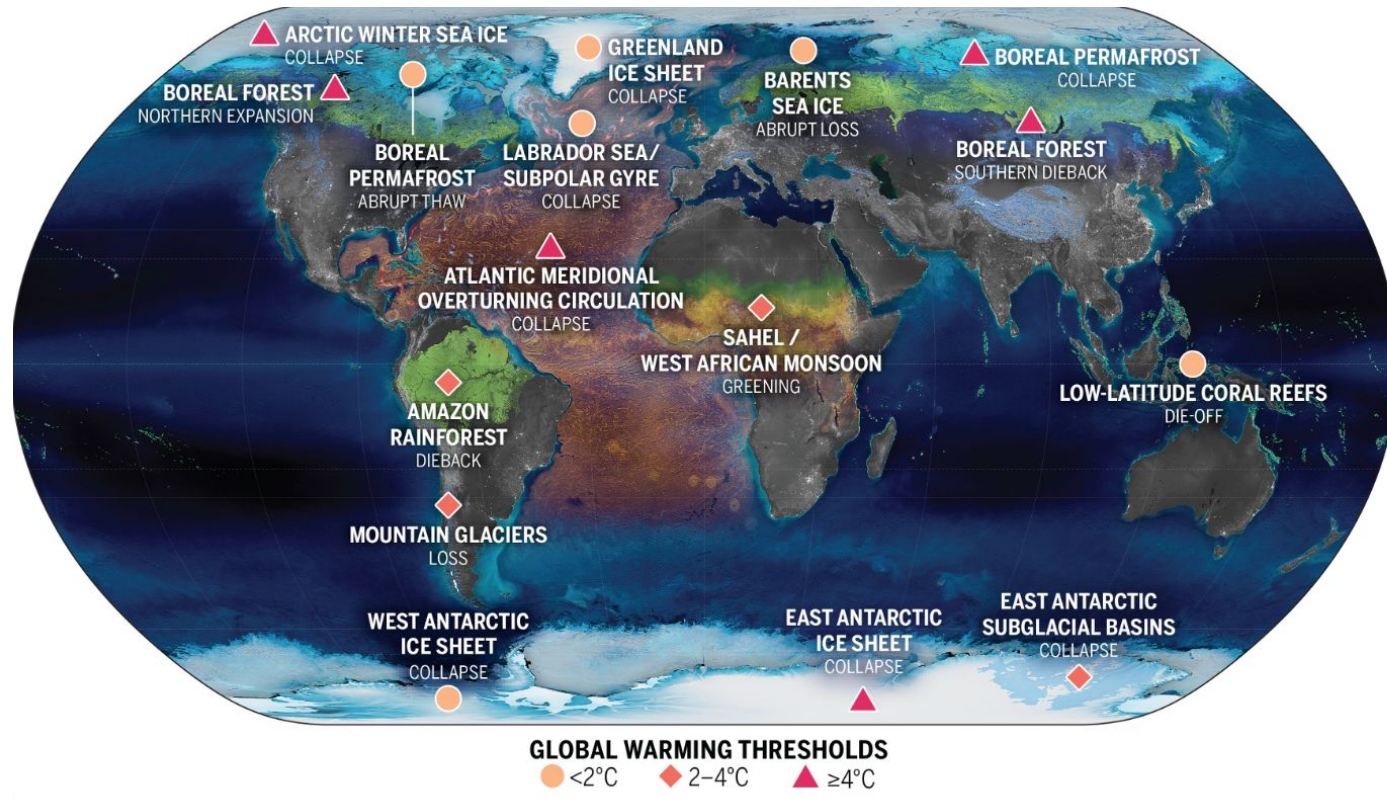
# Record surge of methane emissions

- Methane: >80x warming power of CO<sub>2</sub> over 10-20 years
- Majority of increase globally due to fracking in No America
- Gas stoves/leaks in homes cause cancer, asthma+

- Methane and NO<sub>x</sub> Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes <https://pubs.acs.org/doi/10.1021/acs.est.1c04707>
- <https://apnews.com/article/science-health-california-cancer-climate-and-environment-83c87000f5c52692431218842378a089>
- Oil field flaring emits nearly five times more methane than expected <https://www.kpcc.org/npr-news/2022-09-29/research-shows-oil-field-flaring-emits-nearly-five-times-more-methane-than-expectedhttps://insideclimatenews.org/news/24082022/methane-surge-greenhouse-gas/>
- Record surge in methane levels 'surprising and disturbing', say scientists, FT, Apr 7, 2021 <https://www.ft.com/content/a967f863-1bf8-448b-9448-b67540e80b4d>
- <https://news.cornell.edu/stories/2019/08/study-fracking-prompts-global-spike-atmospheric-methane>
- Howarth. *Biogeochemistry*. 2019 DOI: 10.5194/bg-16-3033-2019



# Global Tipping Points: Major loss of sea ice, melting permafrost, slowing of Atlantic current



Exceeding  $1.5^{\circ}\text{C}$  global warming could trigger multiple climate tipping points <https://www.science.org/doi/10.1126/science.abn7950>

World on brink of five 'disastrous' climate tipping points, study finds

<https://www.theguardian.com/environment/2022/sep/08/world-on-brink-five-climate-tipping-points-study-finds>

<https://insideclimatenews.org/news/06012023/antarctic-sea-ice-climate-change/>

Critical slowing down suggests that the western Greenland Ice Sheet is close to a tipping point <https://www.pnas.org/doi/10.1073/pnas.2024192118>



# Western US now in global warming-induced severe megadrought; worst in 1200 years

- **Threatens dustbowl & crop loss by as early as 2027 in CA**
- Severe drought likely to until at least 2030; Reservoirs lowest on record;
- 2015 cost ~\$2.7 billion and 20k lost ag jobs in California



<https://www.motherjones.com/environment/2014/02/california-drought-matters-more-just-california/>

<https://www.cnn.com/2022/05/07/us/california-water-shasta-oroville-climate/index.html> (Shasta, Oroville)

<https://ramanathan.ucsd.edu/>

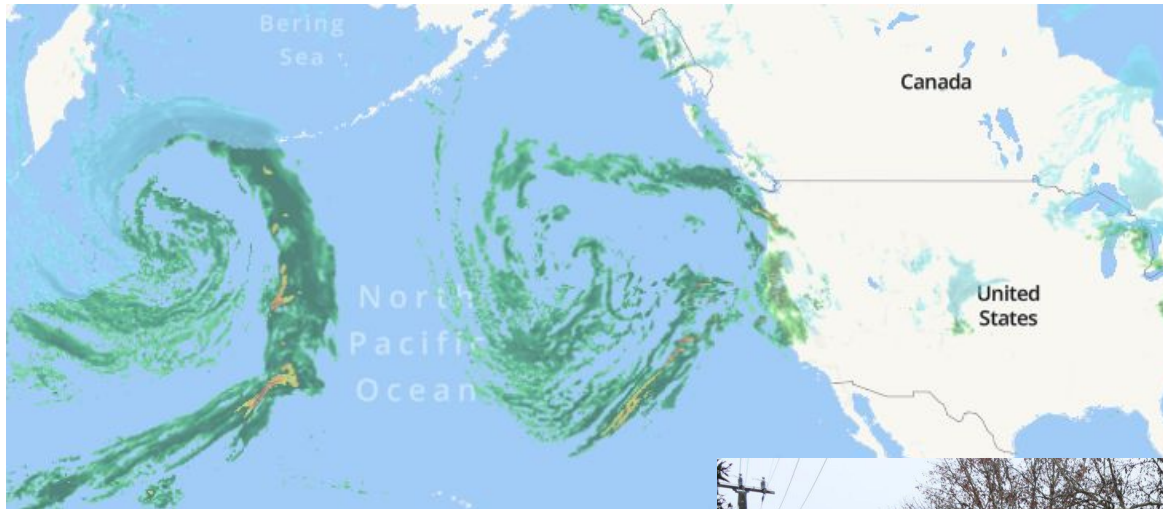
Williams et al *Nat. Clim. Chang.* (2022). <https://doi.org/10.1038/s41558-022-01290-z>

<https://www.latimes.com/environment/story/2022-02-14/western-megadrought-driest-in-1200-years>

<https://www.scientificamerican.com/article/drought-takes-2-7-billion-toll-on-california-agriculture/>



# Weather Whiplash Jan 2023: Drought to atmospheric rivers supercharged by climate change



Weather radar Jan 11 2023

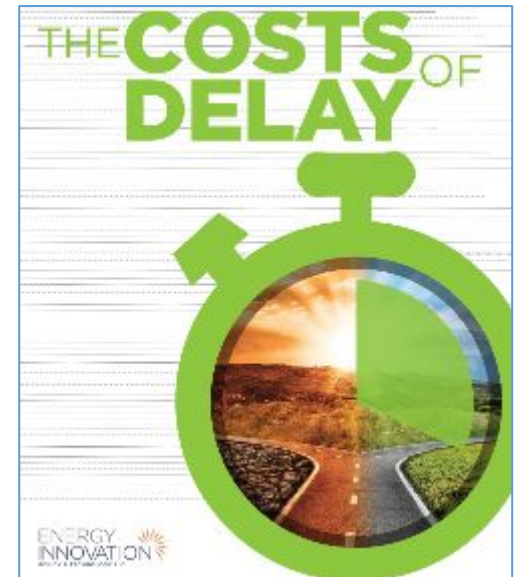


Credit: Unsplash/CC0 Public Domain



# Delayed climate action costs lives and dollars, bankrupting our future

- **Eliminating fossil fuel air pollution in bldgs. & transportation in CA = saves \$44 billion per year in improved health & avoid ~5,000 premature deaths**
- **Costs much less investing big today rather than waiting until 2030** *(For CA: est. \$47 billion/year now vs. \$110 billion/year starting in 2030 based on CA =14.6% of GDP)*
- **\$150 Billion in damages from 2018 CA wildfires but \$80 Billion invested in California generate ~725,000 jobs**



[https://energyinnovation.org/wp-content/uploads/2021/01/Cost\\_of\\_Delay.pdf](https://energyinnovation.org/wp-content/uploads/2021/01/Cost_of_Delay.pdf)

<https://www.ethree.com/new-e3-reports-quantify-the-health-benefits-of-reducing-fossil-fuel-use-in-california/> Jan 2022

<https://www.federalreserve.gov/publications/files/financial-stability-report-20201109.pdf>

<https://www.nytimes.com/2020/09/08/climate/climate-change-financial-markets.html>

Wang, D et al. **Economic footprint of California wildfires in 2018.** *Nature Sustainability*, 2020 DOI: [10.1038/s41893-020-00646-7](https://doi.org/10.1038/s41893-020-00646-7)

<https://www.accuweather.com/en/weather-news/california-wildfires-will-cost-tens-of-billions-accuweather-estimates/612548>

Political Economy Research Institute [https://www.peri.umass.edu/images/CA-EconRecProgram-6-12-20\\_Final.pdf](https://www.peri.umass.edu/images/CA-EconRecProgram-6-12-20_Final.pdf)

World Resources Institute <https://www.wri.org/blog/2020/07/economic-benefits-climate-action-us>



# Oil and gas interests, utilities spent **\$30 million+** lobbying in CA 2021-2022 legislative session

Fossil fuel  
companies  
paid \$77.5  
million to lobby  
lawmakers  
over past 4  
years!

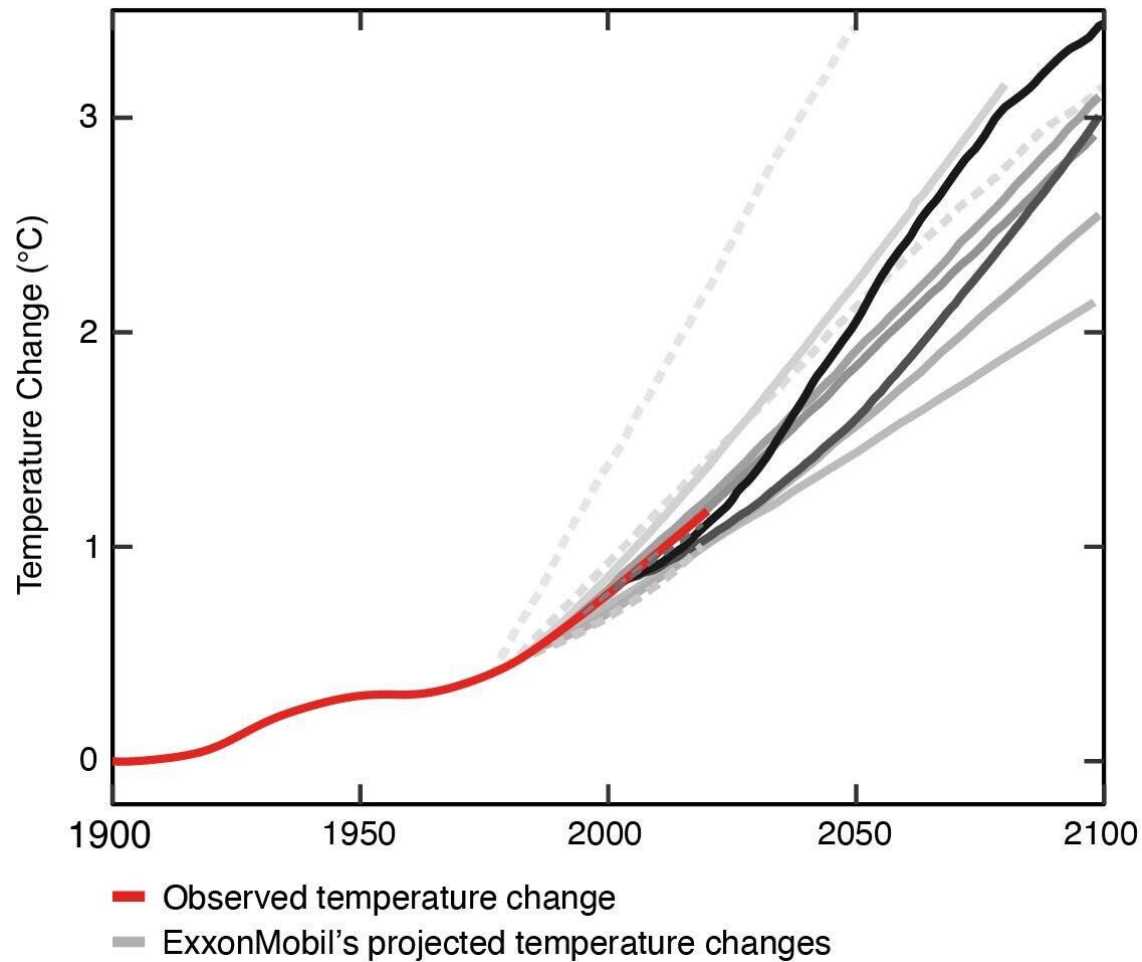


Photo by zhengzaishuru/iStock

<https://consumerwatchdog.org/news-story/oil-and-gas-industry-has-spent-over-30-million-2021-22-session-lobbying-ca-legislators>  
<https://www.dailykos.com/stories/2022/5/6/2096432/-Western-States-Petroleum-Association-spent-17-5-M-on-CA-lobbying-over-3-years-952-367-in-2022>  
<https://yaleclimateconnections.org/2020/01/fossil-fuel-political-giving-outdistances-renewables-13-to-one/>  
<https://www.sierraclub.org/sierra/bailout-billions-dollars-federal-covid-19-relief-money-flow-oil-industry>



# Exxon Knew– since the 1970s....



<https://www.science.org/doi/10.1126/science.abk0063> Jan 2023

<https://www.politico.com/news/2023/01/12/exxonmobil-scientists-study-climate-change-global-warming-00077483>

Jan 12, 2023



# Non-linear difference between 1.5C and 2C warming

**"For every increment of global warming, changes in extremes become larger"**

<https://www.reuters.com/business/cop/whats-difference-between-15c-2c-global-warming-2021-11-07/>  
<https://ieep.eu/news/more-than-half-of-all-co2-emissions-since-1751-emitted-in-the-last-30-years>  
<https://insideclimatenews.org/news/15092021/global-warming-james-hansen-aerosols/>



**The climate reality  
is outpacing policy.**

**Some leaders are  
now stepping up**



# New International & National Climate Targets....

- ✓ **EUROPEAN UNION:** Cut GHGs by at least 57% by 2030 from 1990
- ✓ **UK:** Cut GHGs 68% by 2030 from 1990 levels; 100% ZEV sales by 2030; 100% clean electricity by 2035
- ✓ **DENMARK:** 70% GHG cut below 1990 by 2030; **Copenhagen-** carbon neutral by 2025
- ✓ **RHODE ISLAND:** 100% GHG free electricity by 2030
- ✓ **WASHINGTON STATE:** 100% ZEV car sales by 2030
- ✓ **CITY of LOS ANGELES:** 97% GHG free electricity by 2030, 100% by 2035
- ✓ **PRESIDENT BIDEN**
  - Cut GHGs 50% below 2005 by 2030
  - 100% GHG free electricity by 2035

<https://www.euronews.com/green/2022/11/15/not-backtracking-eu-climate-chief-announces-updated-emissions-goal-at-cop27> Nov 15, 2022

<https://www.theguardian.com/environment/2020/dec/03/uk-vows-outdo-other-major-economies-emissions-cuts-by-2030> Dec 3, 2020

<https://www.cbsnews.com/news/uk-ban-new-gasoline-diesel-cars-vehicles-by-2030-boris-johnson-green-industrial-revolution/> Nov 18 2020

<https://www.axios.com/eu-carbon-emissions-target-cut-2030-climate-063fa943-1af8-471f-a798-590bba10c7c4.html> Dec 11, 2020

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)32290-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32290-X/fulltext) December 2, 2020

<https://www.utilitydive.com/news/la-approves-100-clean-energy-by-2035-target-a-decade-ahead-of-prior-goal/605980/> Sept 2 2021

<https://joebiden.com/wp-content/uploads/2020/07/UNITY-TASK-FORCE-RECOMMENDATIONS.pdf> July 8, 2020

<https://www.nytimes.com/2020/07/14/us/politics/biden-climate-plan.html> Feb 1, 2021



# The nation and the world are looking to California to lead for a climate-safe future





**But California is behind:**  
Must accelerate state goals for a  
**Carbon Negative, Equity-Positive**  
**2045 is too late for carbon neutrality**





**Need more aggressive, equitable policies  
& accelerated timelines in CA now!**



## **Climate-Safe California**

### **Campaign for Rapid Decarbonization**

[www.theclimatecenter.org](http://www.theclimatecenter.org)

Endorse here: [www.climatesafeca.org](http://www.climatesafeca.org)

**GOAL: By 2025, CA will have enacted the bold policies required by science to dramatically cut emissions, start drawdown and secure resilient communities for all by 2030, inspiring global action**





# Guiding principles for Climate-Safe CA targets, policies and programs

- 1- Based on the **latest science**
- 2- Ensure a **just transition** for fossil fuel workers
- 3- Prioritize **climate justice** and equal access to climate solutions





# WE HAVE THE SOLUTIONS, JUST NEED THE POLITICAL FOR CARBON NEGATIVE, EQUITY POSITIVE

## 1. Accelerate the phase-out of fossil fuel development, production, refinement and use

- 3x deployment of renewables; increase storage 8x
- Electrify transit and buildings (eg heating, appliances)

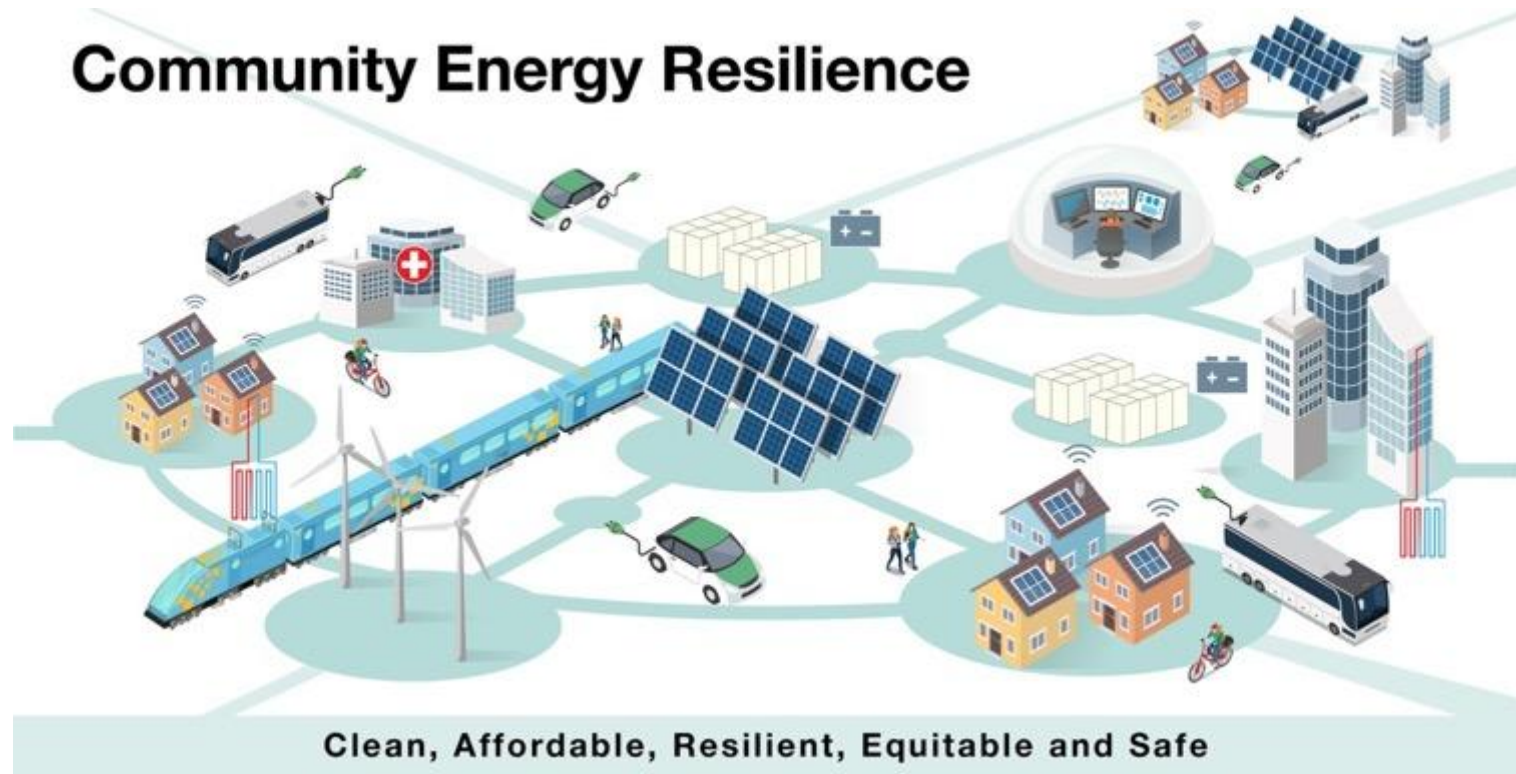
## 2. Scale-up protection /conservation of nature and natural carbon sequestration

## 3. Invest in community resilience engaging with communities, prioritizing frontline communities

## 4. Fund climate action with \$12-20 billion/year and leverage much more in private sector investments



# Electrifying everything: requires creating a decentralized and integrated power grid



**1000s of microgrids-- local electricity systems, linked over the “macro grid”**



# How electric cars can keep California's power on without more natural gas

By Ellie Cohen

July 28, 2022

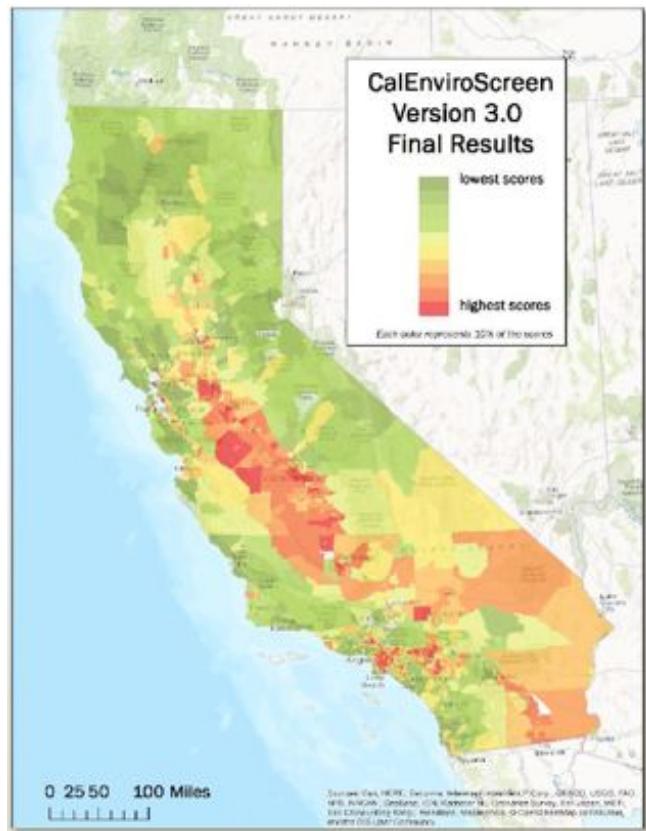
*Per CA Energy Commission:*

- 1 million EVs now = 10 GW electricity;
- 5 million EVs by 2030 = 50 GW
- Peak demand in early September heatwave = 52 GW





# California Must Prioritize Communities That Suffer Most from Air and Water Pollution, Power Outages and Lack of Access to Climate Solutions





# Community Energy Resilience: Progress!

- Catalyzed the new state **Community Energy Resilience Initiative**, initially leveraging \$170m in federal funds
- Secured ~\$3 billion for residential solar and storage, demand flexibility
  - \$900m for residential solar and storage (CPUC SGIP program) with 70% for lower income households & \$30 million to support community engagement in CPUC decision making
  - \$995m for CA Energy Commission
  - \$1 billion for DER in Diablo Canyon bill (authorized only)
- What's next: bidirectional charging, standardized public chargers





# THE SACRAMENTO BEE

**California could lead the nation in natural carbon removal. This bill would do just that.**

BY CRISTINA GARCIA AND ELLIE COHEN SPECIAL TO THE SACRAMENTO BEE

UPDATED MAY 10, 2022 10:50 AM



California has long been a leader in climate solutions and environmental justice, but we've fallen behind. For the last several years, oil and gas lobbyists have stalled meaningful climate legislation in our state. This must be the year we summon the political will to put bold ideas into action. TONY OVERMAN *Olympian file photo*



Only have a minute? Listen instead

Powered by [Trinity Audio](#)

00:00



03:48

California has long been a leader in climate solutions and environmental justice, but we've fallen behind. For the last several years, [oil and gas lobbyists have stalled meaningful climate legislation](#) in our state. This must be the year we summon the political will to put bold ideas into action.



# Passed Natural Carbon Sequestration: Progress!

- Governor Newsom signed into law (*AB 1757*)
- **Requires that state set ambitious goals for natural carbon sequestration** for 2030, 2038 and 2045
- Establishes an independent advisory board
- Established CA Natural Resources Agency as lead
- Requires that emissions reductions are not double counted
- Organized 80 groups in support





# Los Angeles Times

## California can do better than carbon neutrality by 2045



The Huntington Beach Generating Station includes a natural gas generator that began operation in 2020. (Allen J. Schaben / Los Angeles Times)

BY DANIEL KAMMEN  
MAY 17, 2022 3 AM PT

It's against this backdrop that the California Air Resources Board (CARB) last week released [a draft of our state's scoping plan](#), a blueprint for combating climate change that will guide California's policy for years. Despite the stakes for Californians, and although [my research](#) indicates the state could actually become carbon *negative* by 2030, the draft proposal would delay reaching carbon neutral until 2045. The barriers to a target of 2030 are political, not technical.

The draft plan calls for investment in *new* fossil fuel electricity resources, and it relies on unproven and costly carbon capture technologies that would lock in fossil fuel pollution. Adopting this approach would be lazy, nonsensical and racially unjust. During the current 45-day period for public review of the plan, California has the chance to choose a smarter path.



# Governor Newsom heard us: ordered Air Resources Board to evaluate pathways to carbon neutrality by 2035, 10 years ahead of current law

July 9, 2021



<https://www.gov.ca.gov/2021/07/09/governor-newsom-holds-virtual-discussion-with-leading-climate-scientists-on-states-progress-toward-carbon-neutrality/>

Also asked CPUC to establish a more ambitious greenhouse gas emissions target for electricity procurement by 2030



# Governor Newsom- additional climate policy progress in 2022



CEO Elle Cohen and Governor Gavin Newsom at historic climate bill signing ceremony, September 2022.

- ✓ **Codified ZEV sales only by 2035**
- ✓ **Passed \$54 Billion for climate action over next 5 years**
- ✓ **Codified statewide carbon neutrality goal & 85% GHG cuts by no later than 2045**
- ✓ **Established a setback distance of 3,200 feet from oil and gas wells for schools, health facilities, homes**
- ✓ **Set GHG-free electricity targets of 90% by 2035**

**NOT PASSED:** Ramp up our 2030 climate ambition for greenhouse gas emissions reduction target from 40% to 55% below the 1990 level by 2030.



# 2022 CA Climate Scoping Plan to achieve carbon neutrality by 2045....

**2045 is too late; too much reliance on failed CCS and unproven/costly DAC**



<https://ww2.arb.ca.gov/news/carb-approves-unprecedented-climate-action-plan-shift-worlds-4th-largest-economy-fossil-fuels>  
<https://www.globalelr.com/2022/12/carb-adopts-final-2022-scoping-plan/>



# Growing the movement

## Climate Policy Summit 2022



## Convening



## Grassroots Power Building (C3 & C4)



TOLA ORGANIZING ACADEMY

TRAMUTOLA  
Political Strategists

the  
climate  
center



# We have the solutions and technologies today!





# Positive Tipping Points



Simon Sharpe, Timothy M. Lenton. **Upward-scaling tipping cascades to meet climate goals: plausible grounds for hope.** *Climate Policy*, 2021; 1 DOI: [10.1080/14693062.2020.1870097](https://doi.org/10.1080/14693062.2020.1870097)

<https://www.reuters.com/business/autos-transportation/tesla-pushes-norways-ev-sales-new-record-2021-10-01/>



# LA City Council voted unanimously to ban new & phase out existing oil & gas wells

January 26, 2022

*Sampling of other regional efforts:*

- LA County & Culver City— *oil & gas well phase out*
- 50+ cities *ban gas hookups; gas powered lawn equipment*
- Oakland/Fresno— *clean car initiatives*
- San Joaquin Valley— *AB2550 to meet 1997 air quality standards*
- Marin City --*Clean Energy Microgrids with bi-directional EVs*
- San Luis Obispo- *Diablo Canyon Just Transition*
- SF Bay Area— *Carbon Farming*
- Petaluma- *new gas station ban*



STAND-LA:

Physicians for Social Responsibility-LA  
Communities for a Better Environment  
Black Women for Wellness  
Esperanza Community Housing Corporation  
Redeemer Community Partnership  
Holman United Methodist Church  
Strategic Concepts in Organizing & Policy- LA  
Liberty Hill



# New IRA federal funds- up to \$14k/household: accelerating clean energy transition

## Homeowners:

- **Energy efficiency tax credits**
  - up to \$3,200 tax credit annually to lower the cost up to 30%
  - heat pumps, heat pump water heaters, insulation, doors and windows, electrical panel upgrades, home energy audits and more
- **Residential Clean Energy credit**
  - a 30% income tax credit for clean energy equipment, such as rooftop solar, wind energy, geothermal heat pumps and battery storage through 2032, down to 22% for 2033 and 2034.

## Builders:

- Extends Section 45L Tax Credit for Energy Efficient New Homes thru 2032
- For homes and units acquired on or after January 1, 2023, the base level tax credit for home builders is specifically tied to ENERGY STAR certification for single-family, manufactured, and multifamily homes.

## Commercial Building Owners:

- Extends energy efficiency deduction under Section 179D in 2021.
- For buildings that increase their energy efficiency by at least 25% with bonuses for higher efficiency improvements.

[https://www.energystar.gov/about/federal\\_tax\\_credits](https://www.energystar.gov/about/federal_tax_credits) Dec 30 2022

<https://www.kiplinger.com/taxes/605081/ev-tax-credit-inflation-reduction-act-2022-changes> Nov 29 2022

<https://www.cbsnews.com/news/inflation-reduction-act-joe-biden-climate-energy-home-upgrades/> Sept 2022

<https://www.wri.org/insights/inflation-reduction-act-benefits> Aug 2022



# Equitable transition for oil and gas works away from fossil fuels is affordable and achievable in California

- 59,200 workers directly employed by the oil and gas
- 2 out of 3 likely able to move into new jobs without retraining
- Est. high end cost for 20k workers to transition: \$70m/year

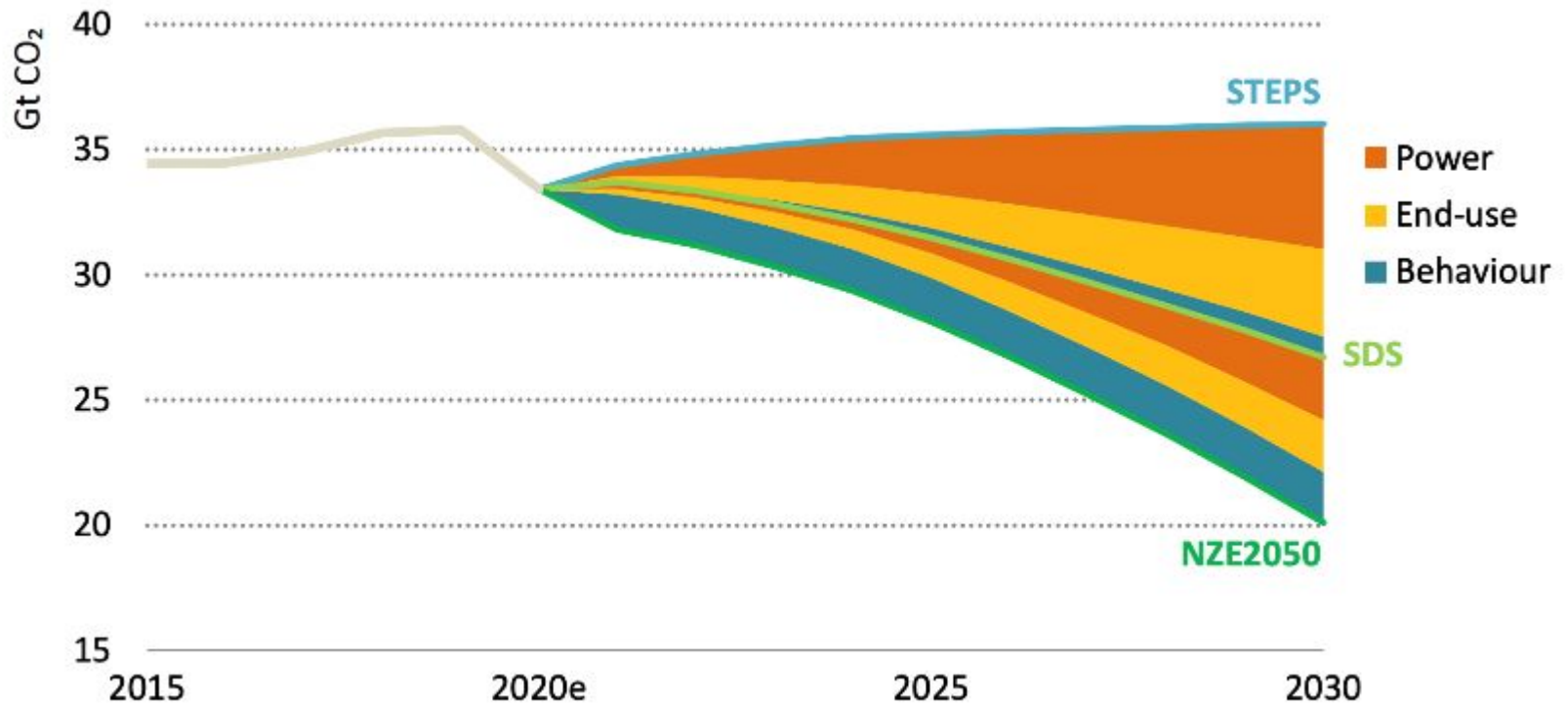


<https://www.sacbee.com/news/politics-government/capitol-alert/article270554447.html> Jan 2023  
<https://thegepi.org/wp-content/uploads/2023/01/GEPI-CA-Oil-Gas-Workers-Report.pdf> Jan 2023



# SOLAR NOW CHEAPEST ELECTRICITY GLOBALLY

CO<sub>2</sub> emissions from coal-fired power stations  
projected to decline by 75% between 2019 and 2030



<https://www.carbonbrief.org/solar-is-now-cheapest-electricity-in-history-confirms-iaea> Oct 13 2020

[U.S. renewable energy consumption surpasses coal for the first time in over 130 years](https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_es1a) May 28 2020

<https://pvbuzz.com/renewables-produce-more-electricity-than-coal/> Apr 27 2020

[https://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.php?t=epmt\\_es1a](https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_es1a)



# Cheaper to build renewables than to operate fossil fuel power plants

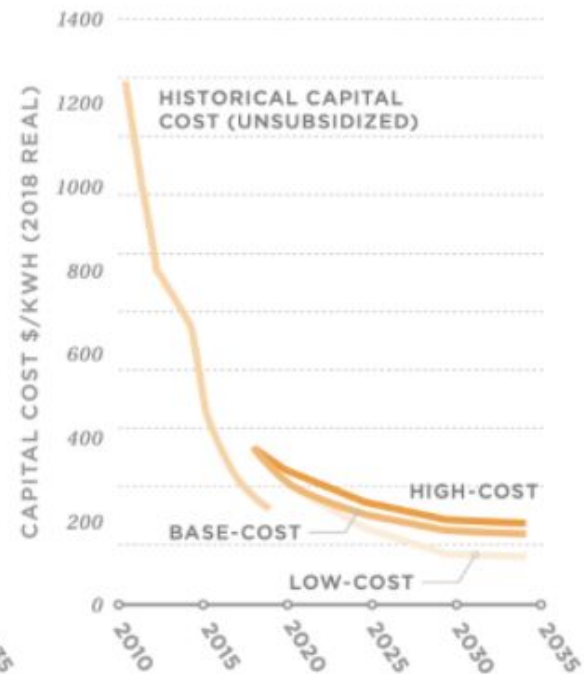
WIND LCOE



SOLAR LCOE



BATTERY STORAGE CAPITAL COST



**Now cheaper to build renewables than to operate fossil fuel power plants**



# Exxon no longer on the Dow, past peak oil production (BP), and....

- **Royal Dutch Shell**- ordered by court to dramatically cut its emissions (45%) by 2030
- **Chevron**- 61% of shareholders demanded emissions cuts
- **ExxonMobil**- two activist shareholders elected to board for first time



*It's clear that the arguments that many have been making for a decade have finally sunk in at the highest levels: there is no way to evade the inevitable mathematics of climate change. Photograph by Erik McGregor / Sipa / Alamy*

<https://www.cnbc.com/2020/08/25/exxon-mobil-replaced-by-a-software-stock-after-92-years-in-the-dow-is-a-sign-of-the-times.html><https://www.forbes.com/sites/feliciajackson/2020/09/17/past-the-peak-a-new-reality-for-oil/?sh=b2d3fcd5fe2d>  
<https://www.newyorker.com/news/annals-of-a-warming-planet/big-oils-bad-bad-day>



# “Green finance goes mainstream”

WSJ 5/22/21

- >\$5 billion in bonds and loans to fund green initiatives are now issued every day
- Two biggest U.S. banks pledged \$4 trillion in climate-oriented financing over the next decade





# Climate Prosperity

**“Climate Change is the largest wealth-creation opportunity of our lifetime.”**

**--Jigar Shah, Dept. of Energy**

Jigar Shah founded SunEdison

- pioneered “no money down solar”
- unlocked a multi-billion-dollar solar market
- Created the largest solar services company worldwide

<https://www.energy.gov/lpo/person/jigar-shah>





**Governments & policymakers  
are like sailboats. They go nowhere without  
wind. We are the wind in their sails!**





# CA first state to reach net negative emissions

Kickstarts nation & world into equitable climate action

December  
2030





# Thank you!



[www.theclimatecenter.org](http://www.theclimatecenter.org)

[ellie@theclimatecenter.org](mailto:ellie@theclimatecenter.org)