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Learning From California's Ambitious Climate Policy

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Introduction and summary

California has long been synonymous with effective climate policy. Beginning in 2001, the Golden State established its first voluntary emissions reporting program under Gov. Gray Davis (D). Subsequently, Gov. Arnold Schwarzenegger (R) built on this initial commitment to reducing emissions when the state passed the Global Warming Solutions Act of 2006—its landmark climate legislation.¹ California has gone on to propose and adopt progressively more ambitious goals that address emissions economywide, continuing through 2050. California has achieved this while simultaneously decoupling greenhouse gas (GHG) emissions from economic growth, which creates jobs, saves Californians money, reduces environmental inequities, and ensures that programs benefit disadvantaged communities.

Over the past two decades, California has continued to develop, implement, and iterate upon its climate commitments, creating one of the most comprehensive and responsive climate policy landscapes in the world. This wide-ranging strategy has resulted in policy innovations that run the gamut from direct regulations to inclusive interagency climate actions to a multijurisdictional carbon market.

There are a number of lessons, strengths, and challenges from the California model that can be adapted by the Biden-Harris administration as well as other states and governments across the country and around the world looking to address the climate crisis. Rather than focusing on any one particular policy, the authors of this report view these as broadly applicable principles that can be gleaned from many examples across California's climate programs.

Background

During the last four years, California went toe-to-toe² with the Trump administration over climate and environmental policy on almost every possible front. As co-founder of the United States Climate Alliance, We Are Still In, the Under2 Coalition, and America's Pledge, California worked alongside other states and cities to hold the line on climate progress during the Trump administration, helping keep the Biden-Harris administration within reach of achieving the emission reductions over the coming decade and beyond deemed necessary by the International Panel on Climate Change.

But California's climate efforts were not a reflexive or partisan response to former President Donald Trump. To the contrary, California's climate leadership has benefitted from bipartisan political support for decades, extending across the terms of Gov. Davis, Gov. Schwarzenegger, Gov. Jerry Brown (D), and Gov. Gavin Newsom (D). Climate action is popular in California: According to a 2019 study by the Public Policy Institute of California,³ 71 percent of California adults are in favor of the state's 100 percent renewable energy goal, and overwhelming majorities of Californians support requiring automakers to further reduce GHG emissions from new cars. The state has also decoupled its economic growth—it is the fifth-largest economy in the world—from GHG emissions, while bringing in \$3.4 billion in venture capital investment in clean technologies in 2019 alone.

California's climate policies are fundamentally a pragmatic response to the increasingly disastrous impacts⁴ of climate change the state is facing. These include sea level rise, coastal flooding and erosion, losses to the Sierra snowpack and threats to the state's water supply, and an increased risk of wildfires.⁵ Impacts from climate change damage the state's agricultural industry and cause biodiversity loss, ecosystem disruption, and significant public health impacts, particularly to the most vulnerable members of the population.

The state—where nearly 85 percent of the population is coastal—has already experienced almost eight inches of sea level rise in the last century;⁶ \$17.9 billion of residential and commercial buildings statewide could be inundated with a further 20-inch rise by 2050. California's agricultural industry—a \$39 billion sector that provides the United

States with almost half of all its fruits and vegetables—is being threatened⁷ by reduced winter chill hours, which will significantly affect key crops, including a projected 40 percent decline in avocado yields. In 2018 alone, California’s wildfire season cost an estimated \$148.5 billion in losses.⁸ Pollution causes 21,000 early deaths each year—seven times more than the state’s fatalities from car crashes—with Latino children 40 percent more likely than white children to die from asthma than white children.⁹

The increasing effects of climate change facing Californians are shared across the United States, driving home both the responsibility and moral imperative to act that underpins the Biden-Harris administration’s climate proposals. The Fourth National Climate Assessment,¹⁰ released by the Trump administration in 2018, found that the impacts of climate change are already being felt across the country and that without “substantial and sustained” climate action, “rising temperatures, sea level rise, and changes in extreme events [would be] expected to increasingly disrupt and damage critical infrastructure and property, labor productivity, and the vitality of our communities.”

With climate change setting unwelcome records¹¹ across the globe, experience-sharing from California can help the new administration as well as other states and local governments across the country act swiftly to address U.S. contributions to global climate change.

Recommendations

This report lays out a number of lessons from the California model that could be useful to the Biden-Harris administration that can be summarized as follows: Build a strong, science-based foundation for effective climate policy; be ambitious and aggressive in setting targets and policies; prioritize environmental justice; reflect on and adjust policies over time; and forge partnerships.

While it may not be possible to adapt all of California’s subnational policy approach as a national climate policy applicable under the Biden-Harris administration, some aspects of the California experience are readily translatable and replicable. Others represent lessons learned for how the federal government can improve upon the California experience. California has benefited a great deal by learning from other states, provinces, and countries around the world, including Acre, Brazil; Baden-Wurttemberg, Germany; China; Mexico; and the European Union.

Build a strong, science-based foundation for effective climate policy

Building a solid foundation for effective climate policy requires employing the best available science, setting targets based on that science, and understanding and collecting data to gauge and report progress.

Provide the scientific foundation for policymaking

California’s Climate Change Assessments¹² and the state’s Indicators of Climate Change reports¹³ provide the scientific foundation for its policymaking. The reports look back at impacts in the state attributable to climate change and look ahead at expected impacts and key actions for resilience. The Biden-Harris administration has already begun to reinstate and advance federal climate change research to support science-based policymaking at the federal level. The administration should continue and expand this in both the “hard” and “soft” sciences to advance the country’s understanding of the intersections between climate and human behavior, institutions, society, and economic development.

For example, the administration has already moved to update the social cost of carbon on an interim basis.¹⁴ Moving forward, the federal government can further explore how to accurately reflect the cost of climate damages and an updated social cost of carbon that better aligns with life cycle impacts of decisions, inclusive of land use and downstream effects. The administration should also support state, local, and tribal policymaking efforts, including by ensuring that future National Climate Assessments provide information downscaled to subnational levels to support science-based target-setting at the local level. States typically rely on the National Climate Assessment to better understand the effects of climate change in their jurisdictions. While many states, including those in the U.S. Climate Alliance, have continued to conduct state-level assessments, states with smaller budgets and staff will need the federal government's support.

Set science-based climate targets

Since the 1970s, California has set a series of increasingly ambitious, science-based environmental policy targets. In 2018, Gov. Brown set a goal through Executive Order B-55-18,¹⁵ calling for the state to achieve carbon neutrality “as soon as possible, and no later than 2045,” exceeding the previous 2005 target of 80 percent reduction from 1990 levels by 2050 (Executive Order S-3-05). With each goal, California executive and legislative branch leadership relied on years of state-level climate assessments and indicators as well as commissioned models, external reports, and research across its university system to identify pathways for emission reductions grounded in data and cutting-edge science.¹⁶ The carbon neutrality mandate, for example, arose from scientific revelations that emissions from natural and working lands¹⁷ were significant and not previously accounted for and that, in light of a decreasing global carbon budget consistent with a 1.5 degrees Celsius scenario, the timeline for emission reductions needed to accelerate.

Root climate policies in reliable GHG emissions data and trends

California's annual statewide GHG emissions inventory is a critical tool for determining historical emissions trends and tracking the state's progress toward its GHG reduction goals. It is consistent with international and national GHG inventory practices and based on state, regional, and federal data sources as well as on specific emissions reports from the California Air Resources Board's (CARB's) Mandatory GHG Reporting Program (MRR). Having a robust and reliable set of emissions data for sources was critical in the development and implementation of California's cap-and-trade program, ensuring that emission reductions are authentic and verifiable. California's current GHG inventory builds on legislation passed by Gov. Davis in 2001, which created the California Climate Action Registry¹⁸ and AB 1803, which granted CARB responsibility to maintain a voluntary registry of GHG emissions.¹⁹

This landmark legislation marked the policy precedent that would later lead to the stricter requirements of MRR, facilitating the move from voluntary to mandatory emissions accounting. Current emissions reporting largely excludes emissions and sequestration from natural and working lands activities,²⁰ though California developed a separate inventory for natural and working lands in 2018.²¹ Natural and working lands emissions have proved more difficult to quantify with the same level of accuracy and precision as fossil energy and industrial emission sources. The Biden-Harris administration can improve upon California's example by ensuring that future GHG emissions data include a comprehensive accounting for activities in natural and working lands, which is all the more critical given the increasing emissions due to wildfires across the Western United States. Having reliable emissions data is the first step in setting emission reduction targets, which can then feed into federal programs designed to meet those targets.

Set ambitious and aggressive targets and policies while iterating on them continuously

Science-based targets are often criticized as too ambitious, unachievable, and detrimental to the economy. However, experience from California shows that, over time, what might have been seen as an impossible long-term target becomes eminently achievable. For example, at the time Gov. Brown's carbon neutrality executive order was released, the state had recently achieved its 2020 target of reducing emissions to 1990 levels four years early and was well on its way to meeting its 2030 target.²² The state's three largest investor-owned utilities were also on track to achieve a 50 percent renewable portfolio standard (RPS) goal by 2020—10 years ahead of schedule. In fact, based on the state's current emissions reduction trajectory, achieving the prior 80 percent reduction by the 2050 target would have implied a slowdown in the rate of emission reductions between 2030 and 2050.

Over time, seemingly impossible targets become achievable

When California's first climate targets were initially announced, critics claimed the measures would tank the economy, drive industry out of the state, and increase costs for consumers. Yet California has consistently delivered on its science-based targets—often years ahead of schedule—while experiencing rates of economic growth that significantly outstrip those of other states that have not adopted similar policies. Of note is California's acceleration in meeting renewable and clean energy targets set by the legislature in 2018, which include RPS requirements of 33 percent renewables by 2020, 60 percent by 2030,

and 100 percent by 2045. A 2018 California Public Utilities Commission report²³ found that the state’s investor-owned utilities were on track to achieve 50 percent renewables by 2020, years ahead of schedule. The Biden administration has already committed to net-zero emissions by 2050 or earlier, with near- and mid-term targets to be determined.²⁴ Given that the International Panel on Climate Change suggests that leading jurisdictions such as the United States can and should get carbon neutrality goals earlier than mid-century, the administration should consider whether and how to move that goal up over time. Equally critical to long term goal setting are the establishment of interim targets, the structures required for implementation, as well as processes to track progress and course correct along the way as needed.

Plan for success—and enhanced ambition

California’s Scoping Plan—mandated by the Global Warming Solutions Act of 2006—outlines the state’s path forward to meet its emission reduction targets and provides both a critical process and document for building consensus and an action plan for how to achieve the aggressive targets set by the state.²⁵ A key feature of the Scoping Plan is that it must be updated by CARB every five years to allow California to continuously set stricter standards.²⁶ Through a combination of technical input, cross-agency cooperation, public hearings, and stakeholder feedback, the document is updated regularly and provides a roadmap for how the state will meet its goals based on up-to-date science, technology, community needs, political and social realities, etc.²⁷ Under the guidance of White House National Climate Advisor Gina McCarthy and working in coordination with the National Climate Task Force, the Biden-Harris administration could benefit from a similar process, coordinated at the highest level, to ensure success and sufficient ambition. A coordinated planning process across agencies and sectors offers a balanced mix of strategies that can minimize costs, maximize public health benefits, and create a greater level of certainty around meeting climate targets.

Use executive authority

California’s climate goals have often been established iteratively: first by executive order and later enshrined in legislation. Longer-term goals in particular have been set primarily through executive order and then codified through legislation. Many people think of the Global Warming Solutions Act—California’s landmark climate legislation—as the state’s first GHG target. In fact, Gov. Schwarzenegger actually set the state’s first GHG reductions target in 2005, the year before the act was passed, via Executive Order S-3-05.²⁸ This executive order set the goal of reducing GHGs to year 2000 levels by 2010, to 1990 levels by 2020, and 80 percent below 1990 levels by 2050²⁹ and applied to all executive branch agencies. The executive order also set forth a process for regularly checking in on the state’s progress toward achieving these targets,

but it did not specify how to do so. In a different vein, Gov. Newsom's Executive Order N-19-19 is an important example of how executive authority can drive groundbreaking policy work. In this instance, it is an example of how government agencies and pension funds can invest in ways that reduce climate risk as well as emissions.³⁰ As a result, the state is increasingly looking at itself as both an investor and asset manager and owner, and the state recently announced a new Advisory Group on Climate Risk Disclosure. The Biden-Harris administration can use executive authority to set policy North Stars and break new ground on climate for the next four years. It has already done so with the midcentury GHG target and may consider sector-specific objectives for major emitting sectors in the economy in the future. California also has had the advantage of continuity in environmental policy across gubernatorial administrations. This is a challenge the federal government must meet in instilling durable executive actions that will continue despite inevitable changes in leadership—and ideally that convert to or are complemented by legislation over time.

Give regulators room to allow adaptability

The Global Warming Solutions Act is relatively short and succinct. At around 10 pages in length, it granted CARB broad authority to develop regulations and market mechanisms to meet the act's specified emissions targets but left it to the agency's technical experts to elaborate on the details of implementation, rather than having these negotiated politically. Allowing expert agencies broad ability to work out details through a robust, public rule-making process gives policies the necessary durability to meet ambitious climate commitments yet the flexibility to iterate continuously and check back where appropriate, such as with the legislature of California. This broad approach set the mandate for regulators (in partnership and coordination with nonregulatory agencies) to do the detailed work needed for an effective, science-based climate strategy. One caveat to this approach at the federal level depends on the likelihood of the U.S. Supreme Court overturning *Chevron U.S.A. v. Natural Resources Defense Council*, which determined that when a legislative delegation to an administrative agency on a particular issue or question is implicit, a court may not substitute its own interpretation of the statute for a reasonable interpretation made by the administrative agency.³¹ The Supreme Court has recently placed limitations on *Chevron*, indicating the court's willingness to further limit the power of regulating agencies to interpret broad legislation. With comprehensive climate legislation at the federal level likely under debate in the coming months, the Biden-Harris administration could signal to Congress that any potential legislation should provide the broadest possible framing and explicit, broad authority for regulators, while ensuring that agencies are well-staffed and resourced to implement it.

Iterate continuously

In Gov. Brown's first two terms in office in the 1970s, he ushered in energy efficiency regulations and catalyzed a boom in renewable energy projects—many on federal lands—contributing to nearly flat per capita energy usage from that time up until today.³² The state's building codes and appliance standards, for example, were designed to be iterative. Under Title 24, signed by Gov. Brown in 1978, California's building code ratchets up automatically every three years, growing tighter each time.³³ The success of refrigerator performance standards is another key example: California set the first-ever efficiency standards in 1978 under Gov. Brown, which were improved upon in 1980 and 1987 before consensus standards were adopted by the U.S. Department of Energy.³⁴ New refrigerators today consume nearly 85 percent less electricity³⁵ compared with those of 40 years ago. Renewable energy targets have similarly been improved upon over the years. In Gov. Brown's second two terms, a 20 percent RPS quickly burgeoned to 33 percent, then 50 percent, and then 100 percent.³⁶ This was possible because the state's climate policies created a sufficiently large market that moved beyond single-year stop-start incentive programs, and toward long-term incentives and mandates that provided certainty in the market. This in turn allowed companies to invest, scale, and cut costs to become competitive. These trajectories have foreshadowed the state's successes with other environmental policies that are in place today. California has learned to build in mechanisms for continuous iteration, improvement, and “ratcheting up” of ambition over time, including audits³⁷ that offer policy critiques to improve outcomes. Creating a sustained, reliable climate strategy has in turn created big enough clean technology markets for the state to become an incubator of whole new industries. The Biden-Harris administration can do the same, focusing not only on quantitative targets but also on a sustained and reliable policy landscape and continuous improvement.

A timeline of executive action on climate change in California

California governors have signed a number of executive orders throughout the years, laying the foundation for the state's comprehensive climate platform. These include:

- **S-07-04** established the 14-agency Climate Action Team led by the California Environmental Protection Agency.³⁸
- **S-3-05** set a series of goals to reduce GHG emissions to 80 percent below 1990 levels by 2050 and a process for checking the state's progress toward meeting those goals.³⁹
- **S-06-06** established targets for increased use of biomass waste resources for transportation fuels and electricity.⁴⁰
- **S-01-07** led to the creation of the Low Carbon Fuel Standard, which drives down the carbon intensity of transportation fuels and is one of the most critical policies for reducing emissions from California's transportation sector.⁴¹
- **S-13-08** directed the California Resources Agency to develop a climate adaptation strategy on sea level rise.⁴²
- **S-14-08** increased the state's RPS to 33 percent by 2020.⁴³
- **B-16-12** set the goal of 1 million zero-emission vehicles (ZEVs) in California by 2020.⁴⁴
- **B-30-15** set the interim goal of reducing emissions to 40 percent below 1990 levels by 2030.⁴⁵
- **B-48-18** laid out a set of transportation decarbonization targets, including 1.5 million ZEVs on the road by 2025 and 5 million ZEVs by 2030.⁴⁶
- **B-55-18** called for the state to achieve carbon neutrality by no later than 2045.⁴⁷
- **N-19-19** tasked the powerful California Department of Finance with creating a framework to align the state's climate goals with its asset management and investment policies, including leveraging its transportation and pension investments and purchasing power to be consistent with reducing climate risk and emissions.⁴⁸
- **N-79-20** requires all new vehicles sold in California to be zero-emission by 2035.⁴⁹
- **N-82-20** conserves 30 percent of the state's land and coastal water by 2030 to fight species loss and ecosystem destruction.⁵⁰

Executive orders can be a good way to establish long-term (midcentury) targets and have been used effectively to set short- and medium-term targets as well—often paving the way for legislation. In addition to setting emissions targets, executive action plays a critical role in terms of setting policy North Stars for sector-specific goals on everything from transportation to investment, power sector decarbonization, and adaptation.

Prioritize environmental justice

In California, like the rest of the country, communities of color are disproportionately burdened⁵¹ by pollution. In census tracts scoring in the top 10 percent of the state's CalEnviroScreen⁵² tool—a first-of-its-kind effort to aggregate population and pollution burden data—89 percent of the residents are people of color.⁵³ Black and Latino populations are overrepresented in these highly affected communities, while white residents are overrepresented in the least-burdened communities. California was one of the first places in the country to codify environmental justice work in statute,⁵⁴ and the state has one of the most extensive policy landscapes in the country targeted specifically at environmental justice issues. This is thanks in large part to the hard work and advocacy efforts of the environmental justice community and grassroots groups in particular.

At the same time, California's efforts to prioritize environmental justice have not been perfect, and environmental injustices persist across the state. Work continues—both in government agencies and by advocates—to improve the state's approach and fully address environmental justice in all policies. There are concerns that climate policies have been insufficiently centered on equity and environmental justice in California, and the state's cap-and-trade program has often been at the heart of this debate.⁵⁵ The state's efforts to prioritize environmental justice remain a work in progress and will require more resources and focused tools. While California offers valuable lessons, fundamental changes must also occur to address environmental justice concerns more fully. The Biden-Harris administration has already demonstrated a strong commitment to centering their climate work on equity and environmental justice, hopefully creating a virtuous cycle that will, in turn, inspire and accelerate state and local efforts to do the same.

Design and center climate policies on equity, justice, and human dignity

The Global Warming Solutions Act—commonly known as AB 32—required CARB to “consult with the environmental justice community” and to “convene an environmental justice advisory committee” (EJAC) that included nominations from environmental justice groups. However, many environmental justice advocates have expressed concerns about whether and how recommendations from the EJAC have been addressed—particularly around local air pollution and fundamental opposition from some groups to cap-and-trade. Subsequent legislation sought to center environmental justice concerns⁵⁶ within California's climate mitigation efforts, including through the expenditure of revenue from the state's cap-and-trade program⁵⁷ and creation of more targeted tools to reduce harmful pollution in local communities.⁵⁸ While California has not always gotten it right, efforts to design and center climate policies on equity, justice, and human dignity have continued over time. Federal proposals and approaches should learn from California's challenges while also preparing for their own. In addition, while the Biden-Harris administration has already committed to including equity and environmental justice as a central tenet, California's experience shows that this is only the first step, and that it is critical to ensure meaningful consultation with affected groups from the inception of any policy through implementation so that concerns are taken seriously and translated into meaningful policy change.

Prioritize sincere stakeholder and community engagement

Collaborative and effective stakeholder and community engagement requires time and focus from staff across multiple departments and geographic areas. In California's implementation of the CalEnviroScreen tool and the California Climate Investments (CCI) program,⁵⁹ state staff held meetings and hearings at multiple points and locations throughout California through the development and update of the policies.

Meeting locations and times were selected to maximize community member attendance. Staff performed extensive outreach to increase meaningful community engagement. To create comfortable environments for participation, meetings emphasized roundtable discussions with limited presentations from state and local officials. State and local representatives shared tables with community members so that community members and other stakeholders had a direct line to government. Staff published responses that reflected more than 1,000 oral and written comments and questions from these meetings.⁶⁰ The large investment in transparent, meaningful public input built trust in the state's ability and commitment to execute and allowed for modifications that improved the programs. Also critical was participants' ability to see that their comments changed the process and the outcomes; the adoption of linguistic isolation as an indicator in CalEnviroScreen was the direct result of a comment made at one of the many public meetings held.⁶¹ The Biden-Harris administration can invest in meaningful community and stakeholder engagement to inform both the work of the proposed White House Environmental Justice Advisory Committee and in support of broader climate policy and rulemaking efforts across the whole of government. This process should identify and prioritize community and local values such that resulting policies reflect and respond to the lived experiences of the communities being served. One key measure of success should be that communities can see their comments change both processes and outcomes. Policy choices should include measurable actions—with metrics of progress reported back regularly to the communities served—to ensure communicated needs continue to be met.

Empower staff who are leading on environmental justice issues

Building effective and meaningful environmental justice policies requires empowering staff to lead on environmental justice issues as well as recruiting and hiring multilingual staff who are from the communities being served. By cultivating partnerships and empowering staff with local knowledge and community expertise, the government is better positioned to identify specific community values and needs, targeting policies and investments to meet them. California has significantly increased the number of staff focusing on environmental justice over time, so that there are now environmental justice leads at the deputy secretary level at the California Environmental Protection Agency; in the executive office at CARB and throughout that agency; and across a number of other agencies, boards, and departments, including the state's regional air districts. The Biden administration has already committed to a whole-of-government approach to embedding climate action across its work⁶² and could likewise benefit from embedding staff with environmental justice expertise and backgrounds across a wide array of agencies.

Fund equitable climate action

Since its launch in 2013, proceeds from California’s cap-and-trade program have been reinvested under the CCI program⁶³ in furtherance of the state’s climate goals. This includes investments that reduce GHGs while also delivering economic, environmental, and public health benefits for Californians, particularly in the most disadvantaged communities. CCI has resulted in \$12.7 billion in appropriated funds⁶⁴ through 2020, with \$6.3 billion in implemented projects and 55 percent—\$3.5 billion—benefiting priority populations. Programs range from affordable housing and active transportation to low-income weatherization, training and workforce development, safe drinking water, and wildfire response and readiness. CalEnviroScreen, as well as state and federal data, targets revenues to priority communities. A recent Center for American Progress report, “Mapping Environmental Justice in the Biden-Harris Administration,” describes in detail the history of CalEnviroScreen’s development as well as its use to target investments and other program benefits to disadvantaged communities.⁶⁵ In addition to setting a minimum threshold for investment in disadvantaged communities, California has also established funding programs specifically geared to benefit disadvantaged communities, notably the Transformative Climate Communities (TCC) program. The Biden administration has similarly committed to creating a “government-wide Justice40 Initiative” that will facilitate the delivery of 40 percent of overall benefits of “relevant federal investments to disadvantaged communities.”⁶⁶

Center climate solutions in communities—particularly the most disadvantaged
In California, a number of specific programs have been designed for disadvantaged communities, including the TCC program,⁶⁷ which funds community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California’s most disadvantaged communities. A newer program called Partners Advancing Climate Equity (PACE)⁶⁸ provides technical assistance and capacity-building resources to support community leaders. The Governor’s Office of Planning and Research (OPR) has also issued guidelines for cities and counties to use in developing land use planning that require jurisdictions within disadvantaged communities to incorporate environmental justice goals, policies, and programs.⁶⁹ These programs are excellent models for the new administration to consider for achieving measurable, neighborhood-level benefits—and exemplify how to center climate solutions in disadvantaged communities and ensure that they have the necessary resources, technical support, and capacity to provide ongoing program support.

Sow institutional change

Shifting policies to comprehensively include, plan for, and target environmentally just outcomes requires adaptation in staffing, mission, and accountability. Under SB 535, funds from California’s cap-and-trade program were specifically allocated for

investment in disadvantaged communities.⁷⁰ This initial investment led to further climate policies that included investment requirements in disadvantaged communities, primarily as part of funding, and began ingraining an institutional commitment to environmental justice. California’s Health in all Policies⁷¹ program, technical assistance support,⁷² and cross-agency engagement in the Government Alliance on Race and Equity⁷³ seek to embed environmental justice, health, and equity expertise and thinking in 17 departments and agencies.⁷⁴ Partnerships between state agencies and expert third-party organizations strengthened CCI’s technical assistance programs by aligning efforts across agencies to promote an understanding of the full suite of programs available under CCI.⁷⁵ Technical assistance bolstered the capacity of CCI programs to meet community needs through engaging outside expertise and translated throughout other cross-agency, equity-based programs. Additionally, the state’s focus on the just transition of the state’s workforce to prepare for shifts in work types and locations due to climate impacts through the high-road training partnerships⁷⁶ effort will provide benefits to vulnerable communities. In the first year of the Biden-Harris administration, institutional change will be critical. New and existing hires—including staff in the White House and the Council on Environmental Quality as well as high-ranking officials at the U.S. Environmental Protection Agency and other agencies charged with implementing the administration’s climate agenda—must receive regular racial equity and inclusion training and embed environmentally just principles in all their work. Equity training and environmental justice policies must be coupled with meaningful, ongoing budgetary investments in programs. Budgets for programs must reflect that environmental justice is essential to climate action and ensure durability across federal administrations to continue sowing long-term change. Creating lasting institutional change is a matter of ongoing process and commitment rather than one-off solutions or short-term fixes.

Take a whole-of-government approach and communicate about it effectively

California has taken an approach to reducing GHG emissions that integrates work across agencies and programs, ensures a whole-of-government approach to climate change, and implements a broad, economywide suite of complementary policies that tackle emission sources from multiple angles.

Employ complementary policies

California’s climate policies are a suite of complementary, sector-based strategies that collectively drive down statewide emissions while meeting other statewide goals, such as improving transit access, housing stocks, and natural resource protection. In its first

Climate Change Scoping Plan, California adopted complementary policies in part because the state already employed numerous energy sector strategies; additionally, international standards generally followed a sector-based policy approach.⁷⁷ As an early adopter of a comprehensive climate strategy, the state created individual programs with measurable, reportable, and verifiable emission reductions, acceptable to both the state legislature and the public.⁷⁸ In the transportation sector, for example, California employs a comprehensive set of complementary policies that include the Low Carbon Fuel Standard, sustainable community development approaches, the Advanced Clean Cars program, sustainable freight strategies, and more.⁷⁹ The benefit of these complementary and overlapping policies is that they are able to work together to tackle decarbonization of a particular sector from a number of different angles. In addition, having multiple approaches—rather than just one—made California’s approach robust to legal challenge. When considering how to meet the Build Back Better agenda’s climate goals, the Biden-Harris administration can similarly employ complementary policies, increasing the potential for success and buttressing against potential legal challenges to individual proposals.

Implement cross-sectoral policy tools

At the same time, California’s sector-focused approach previously struggled to accommodate natural and working lands policies or land use implications of policy decisions—an area that requires a more integrated, cross-cutting, and cross-sectoral approach. Recognizing that California climate policy has multiple objectives—including improving air quality, supporting economic growth, and advancing equity and environmental justice—and that policies are not exclusively focused on reducing carbon at the lowest cost, the state has moved toward more integrated and cross-sectoral approaches in some areas. As the Biden-Harris administration considers its ambitious nationwide approach, it can also consider where a suite of complementary policy tools makes sense and where cross-sectoral strategies might be better suited—e.g., natural and working lands.

Embed climate leadership throughout government to seed lasting change

California has long undertaken climate policy as a whole-of-government effort. The Newsom administration has established a climate cabinet and senior-level climate-focused officials—typically at the deputy or assistant secretary level—create a cross-agency network and culture to prioritize climate action not only within environmental agencies but also in those dedicated to health, transportation, business development and innovation, labor, food, and agriculture, etc. The state coordinates climate action through the 14-agency Climate Action Team (CAT), established in Executive Order S-3-05 and led by the California Environmental Protection Agency. Sub-CAT teams with narrower membership, such as an international engagement group and an energy-focused group,

ensure that proposed cross-agency policies, action plans, and/or memoranda can be realized across government. Similarly, the Integrated Climate Adaptation and Resilience Program provides a central clearing house of information to support decision-makers at the state, regional, and local levels who are planning and implementing adaptation and resilience projects. It also brings together a Technical Advisory Council of local government, practitioners, scientists, and community leaders.⁸⁰ As noted in Part II of the January 27, 2021 Executive Order on Tackling the Climate Crisis at Home and Abroad,⁸¹ the White House has similarly established a cross-agency task force to coordinate climate work. It will be important to establish specific cross-agency working groups to set and track targets, share best practices, and coordinate cost- and time-efficient climate action.

Communicate effectively

Effective and approachable communication can help the public, elected officials outside of the executive branch, and affected stakeholder groups see and hear the results of policies to make them less opaque and more tangible. For example, subprograms of the CCI program hold public events to launch electric car shares or crush older cars, community bike rides to introduce a bike-share program, and neighborhood events to celebrate affordable housing development openings. Websites display individual stories of the benefits of climate action. Partners in civil society groups host meetings, webinars, and events to share progress and connect individual action with statewide success. Together, strong partnerships and regular communications with clear, identifiable branding or symbology can help create a positive feedback loop that builds public understanding of and support for climate policy.

California Climate Investments public launch event examples

CCI publishes a series of profiles on its website of projects launched through its program. Some of the highlighted events include:

- The Pauma Band of Luiseño Indians launched a project with funding for on-farm practices including compost application, hedgerow installation, no-till, and a transition from row crops to trees. This investment in soil health improves long-term productivity and natural sequestration⁸²
- A \$1.3 million CalRecycle grant will help establish a new glass recycling facility in Victorville that will produce recycled glass in a way that reduces GHG emissions.⁸³
- The Urban Wood Rescue, a multibenefit program administered by the Sacramento Tree Foundation, repurposes dead trees into useful lumber.⁸⁴

Forge partnerships

Since its earliest days of climate action, California has sought to partner both beyond its borders and with various levels of the U.S. government. In part, the state undertakes partnerships in recognition of the global nature of climate change—California’s emissions represent less than 1 percent of global GHG emissions, thus collective goals and resources can produce greater collective emission reductions. That said, even major emitters cannot on their own solve the issue. Partnership matters if America wants to address climate change successfully.

International cooperation opens up opportunities to multiply impact

In the lead-up to the 2015 Paris Agreement, California built the Under2 Coalition, which has since grown to more than 200 state and regional governments from around the world. As part of the agreement, these subnational governments committed to reduce emissions in line with a 2 degrees Celsius future (the group subsequently aligned with 1.5 degrees Celsius following the language included in the Paris Agreement).⁸⁵ Within this coalition, California has partnered with and provided support to other jurisdictions in China, Mexico, Brazil, and many others looking for technical guidance and support to meet their commitments.⁸⁶ States such as California and those in the U.S. Climate Alliance stand ready to continue these sorts of efforts in cooperation with the new administration.

States can be key partners for the federal government

The American Recovery and Reinvestment Act (ARRA) of 2009 coincided with increases in California’s Renewables Portfolio Standard from 20 percent to 33 percent, making California’s rich solar and wind energy resources a key area for development of renewable energy and transmission projects. Over several years, federal and state partners met weekly to understand, prioritize, and permit renewable energy projects that met rigorous state and federal environmental standards, qualifying for and receiving ARRA funds while meeting California’s RPS. The joint effort produced the first-ever one-year National Environmental Policy Act process—an often-lengthy environmental review process required by the federal government—and catalyzed the Desert Renewable Energy Conservation Plan—a 20 million-plus acre planning process to designate the least costly areas for energy development.⁸⁷ Key state and federal relationships emerged from the process that sustain fruitful partnerships to this day both within the energy sector and beyond. Working together on tangible, time-bound projects can produce critical environmental benefits. The Biden-Harris

administration could establish regional or state teams across federal and state agencies to hasten the accomplishment of key cross-sectoral climate targets, such as western forest resilience, regional grids, or coordinated electric and hydrogen vehicle charging infrastructure. Additional federal incentives could spur and support the development of such teams.

State-to-state partnerships in the United States are key

Under the Trump administration, states developed partnerships on climate action at an unprecedented level. The bulk of this cooperation has taken place under the auspices of the U.S. Climate Alliance⁸⁸ and has included everything from broad target-setting, to specific technical cooperation on short-lived climate pollutants, to engagement with other countries. These state-to-state partnerships provide a critical foundation for action that the Biden-Harris administration can and should build upon as they look to develop a comprehensive approach to tackle the issue at every level of government.

Vertical integration of climate action from the federal to state and local levels must become the norm

The California Governor’s Office of Planning and Research provides a central conduit for guidelines, technical assistance, and coordination with and for state partners and local communities with a focus on land use, climate resilience, and community and high-road economic development. OPR has a unique and important role to play in California’s climate agency ecosystem. Specifically, it serves as an interface with and addresses the needs and concerns of communities at the substate (regional, county, and local) level. In turn, it interfaces with the rest of the government and helps expand capacity for climate action, technical assistance, and partnerships statewide. Within OPR sits the California Strategic Growth Council (SGC), which serves as a clearing-house and coordinating point for regional and local governments across California and is focused on the state’s most disadvantaged communities.⁸⁹ Its mission is to “coordinate and work collaboratively with public agencies, communities, and stakeholders to achieve sustainability, equity, economic prosperity, and quality of life for all Californians.”⁹⁰ SGC implements its mission through four key activities: making investments in infrastructure and conservation programs; conducting outreach and providing technical assistance to support communities seeking to access these investments; and leading and supporting integrated policy initiatives that align with SGC’s mission. The National Climate Task Force—or an agency tasked by them—could serve a similar role, establishing best practices and expectations to be shared and met across agencies with seemingly disparate missions. Additionally, establishing a senior member of the White House staff as a “focal point” would give states and other subnational entities clear points of contact for coordinating and augmenting their climate ambitions. Finally, having a clear focal point providing investments, outreach, capacity-building, and support to the country’s most disadvantaged communities will be critical.

Conclusion

The California model shows that climate action can be a political, economic, and social winner—a policy objective that begets its own success. The broad principles and lessons learned on effective climate leadership, gleaned from California’s experience and outlined in this report, could apply to the Biden-Harris administration and state and local governments seeking to act on climate. This examination offers domestic and international actors the opportunity to gain insights into which aspects of the California approach are appropriate to tailor to their purposes and which can provide a basis for lessons learned as they chart their own course.

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