

California's lead climate and air quality agency published a comprehensive draft plan yesterday for how the state could reach its carbon neutrality goals by no later than 2045. The California Air Resources Board's (CARB) [Draft 2022 Scoping Plan Update](#) (Draft Plan) assesses both California's progress toward meeting its 2030 greenhouse gas (GHG) emissions reduction target (40% reduction from the 1990 level) established by [Senate Bill 32](#) (Chapter 249, Statutes of 2016), and a Proposed Scenario (as well as an evaluation of several alternative scenarios) for achieving the state's carbon neutrality target.

The Draft Plan demonstrates that the state is bringing everything to the fight against the climate crisis by providing an actionable plan to drastically reduce GHG emissions across all sectors in the state, while ensuring an equitable transition to carbon neutrality. The plan also offers a model for policy planning and analysis that other jurisdictions may want to consider.

[For full disclosure, prior to joining the Emmett Institute on Climate Change and the Environment at UCLA School of Law, I worked for CARB for more than a decade, although I did not have a role in writing the draft 2022 Scoping Plan Update. The views presented here are my own.]

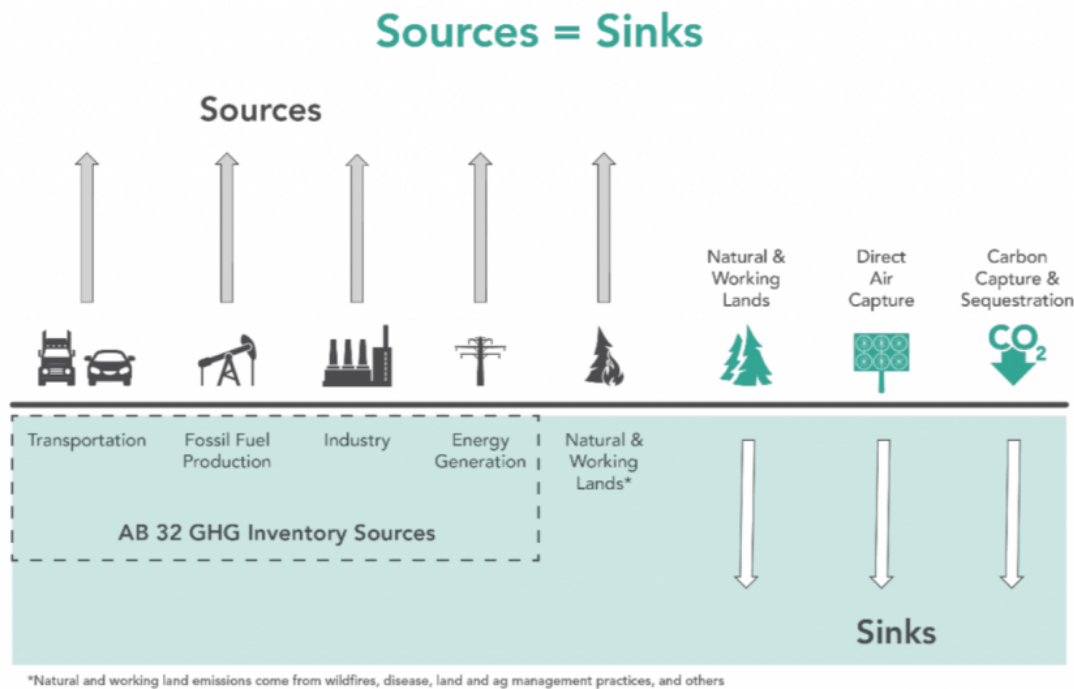
What is a Scoping Plan?

Pursuant to [Assembly Bill 32](#) (AB 32; Chapter 488, Statutes of 2006), CARB was tasked with developing a plan on or before January 1, 2009, that considers among other factors cost effectiveness, maximum technologically feasible GHG emission reductions, and "total potential costs and total potential economic and noneconomic benefits to California's economy, environment, and public health, using the best available economic models, emission estimation techniques, and other scientific methods." Health & Safety Code § 38561(d). CARB must update this plan at least once every five years. *Id.* at § 38561(h). The initial plan was approved in [2008](#), with the second in [2013](#), and the most recent iteration in [2017](#). Each of these plans provides a snapshot of the tools (e.g., incentives, regulations, and carbon pricing) that form the portfolio approach the state has adopted to achieve the 2020 GHG reduction target established by AB 32 (achieve the 1990 level of emissions by 2020), and later scenarios to achieve the 2030 target. Based on California's broad portfolio of measures, the state achieved the 2020 target [four years early](#).

What is Carbon Neutrality?

The Draft Plan defines carbon neutrality as balancing the net flux of GHG emissions from all sources and sinks. This figure from the Draft Plan is helpful in illustrating what this means

(see page 22 of the Draft Plan):



2022 Scoping Plan Update

As with past scoping plan processes, CARB - along with sister agencies, advisory committees, and other stakeholders - organized more than a dozen public workshops, released draft analyses and modeling results, reports and presentations, and repeatedly solicited comments and input from all interested parties. Throughout this [process](#), CARB framed the work of the Scoping Plan by specifying the [parameters](#) that the plan would need to meet. Specifically, each scenario assessed in the plan must (1) be consistent with existing legislative mandates and executive orders, (2) meet GHG reduction goals, and (3) work in concert with existing and emerging air quality programs.

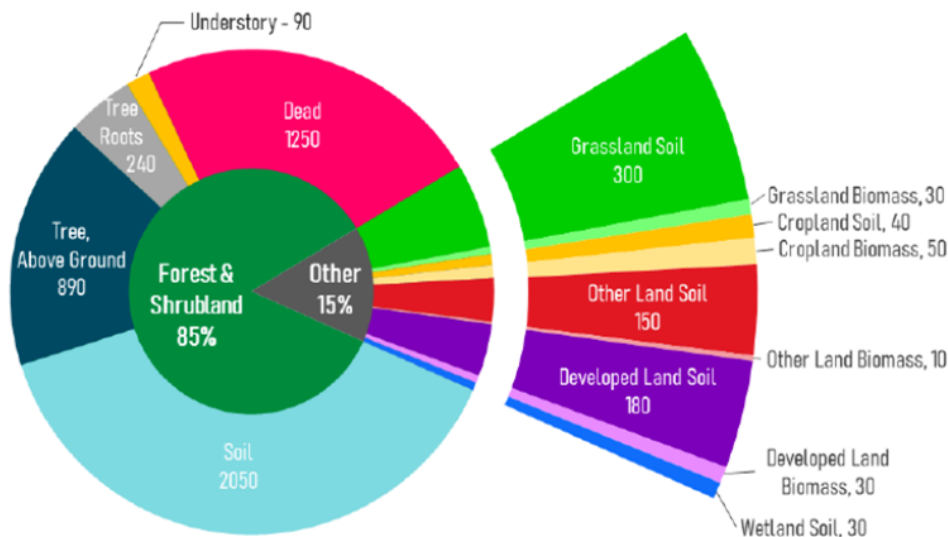
The Draft Plan analyzes four alternative scenarios to accomplish all of this and provides detailed analysis identifying trade-offs for each scenario, balancing factors including benefits, costs, minimizing leakage, and technological feasibility. In the draft, CARB staff recommends a Proposed Scenario (Alternative 3) that is expected to ensure the state achieves its 2030 reduction target, as well as achieving carbon neutrality by no later than 2045 through actions that will result in a 91% reduction in petroleum by 2045 (from 2022 levels), a lower cost to the economy than the other alternatives assessed, and significant health benefits compared to the reference business-as-usual scenario. CARB [describes](#) this

Proposed Scenario as the “most economically and technologically feasible route to carbon neutrality, including providing equity-based solutions focused on affordability and job preservation.”

The Proposed Scenario also pairs dramatically reducing fossil emissions with climate smart management actions to enhance natural and working land (NWL) ecosystem functions and improve resilience and achieve more stable carbon sequestration, as well as carbon capture and sequestration and direct air capture technologies. With respect to NWL in particular, CARB staff determined that the Proposed Scenario, when compared to the alternatives assessed, “provides the best balance of carbon stock outcomes, GHG emission reductions, increased pace/scale of climate action, costs and economic impacts, implementation feasibility, and co-benefits from land management across the NWL landscapes.” (Draft Plan at 55).

NWL activities in the Proposed Scenario include treating 2-2.5 million acres of overstocked forests, grasslands, and shrublands annually to restore ecosystem health and resiliency, reduce wildfire emissions, and improve water quantity and quality. This would represent an approximate 10x increase from current activity levels. Additional actions include increasing healthy soil practices (a 5x increase), increasing organic agriculture (a 2x increase), increasing (by 20% annually) investments in urban forests, and increasing wetland restoration and desert protections. Figure 1-9 from the Draft Plan gives a good sense of scale for existing carbon stocks.

Figure 1-9: Carbon stocks in natural and working lands



See Tables 2-2 and 2-3 of the Draft Plan for the full scope and scale of actions included in the Proposed Scenario.

Analytical process

The [process](#) under which this Scoping Plan is developed is bar none the most comprehensive, public, transparent process there is - spanning multiple years, dozens of public workshops and webinars, several informational and formal Board hearings, discussions with the California legislature, [meetings](#) of the Environmental Justice Advisory Committee, and ultimately, incorporation of much of the public feedback and comments.

In addition, each Scoping Plan is required to undertake various types of legal, economic, and technical analyses. These include analyses required by [AB 197](#) (Chapter 250, Statutes of 2016) of the estimated social costs (avoided economic damage) of measures considered, cost per ton, and estimated air quality benefits of a policy ([AB 197 measures](#)); public health and economic impacts analyses (macro, household, and jobs); and [environmental analysis](#) pursuant to the California Environmental Quality Act. The Draft Plan continues these assessments, but at an even greater level of detail than in previous plans.

The 2022 Scoping Plan Update also includes an unprecedented level of detailed analysis,

modeling, and transparent [documentation](#) of modeling results to truly show the challenges and opportunities we must address in our NWLs **at the same time** as we continue to drive down fossil emissions. The NWL work in this Draft Plan sets a new bar on scientific analysis for assessing multiple landscapes at state-wide scale.

International implications

One of California's biggest climate leadership mantels is its engagement with partner jurisdictions to develop and export policies. The manner in which the Scoping Plan has been developed and the analysis it includes should provide a useful framework for other jurisdictions to assess what can and must be done in their territories.

The plan highlights examples of how California has bolstered, leveraged, and started the types of cross-jurisdictional engagements and partnerships that are critical for addressing the climate crisis. These include the [Zero Emission Vehicle Alliance](#), the [Under2Coalition](#), the [U.S. Climate Alliance](#), bilateral relationships with states/provinces and countries, and the [Governors' Climate and Forests \(GCF\) Task Force](#). (Draft Plan at 19-21.) As I have reported on [previously](#), the GCF Task Force secretariat will be transitioning to the Emmett Institute on Climate Change and the Environment at UCLA School of Law starting in July 2022.

These engagements already serve as important policy laboratories for developing, implementing, and testing emission reduction activities at jurisdiction scale; and the Draft Plan may provide a useful model for other jurisdictions to similarly assess drivers of emissions and a mix of opportunities and actions to achieve significant emissions reductions. This may also serve as a model for how to attract and direct smart, climate-focused finance.

Next Steps

California's portfolio approach to addressing climate change has decreased emissions while the economy has grown. This plan seeks to ensure that progress continues through the necessarily steeper and more ambitious actions that are needed to achieve carbon neutrality. The Draft Plan is currently out for public comment and will go before the CARB Board for consideration on June 23, 2022, and for final approval at the end of the year.

Once finalized, California will continue its enormous efforts of addressing GHG emissions in the world's 5th largest economy by assessing existing programs and regulations for updates or revisions, and then by continuing with their successful implementation. For any jurisdiction, this is a Herculean task. For much of the world, the capacity to conduct this

type of analytical work and then to implement it may even feel like a Sisyphean undertaking. But that is where California's approach of engaging and creating partnerships, sharing lessons, and learning from others is so key. As the final chapter of the Draft Plan - aptly titled "Challenge Accepted" - notes:

"We must build partnerships with academic institutions, private industry, and others to support and accelerate the transition to carbon neutrality. Ultimately, the success of the 2022 Scoping Plan update will be measured by our ability to implement the actions modeled in the Proposed Scenario at all levels of government and society. This will depend on a mix of legislative action, regulatory program development, incentives, institutional support, workforce and business development, education and outreach, community engagement, and research and development and deployment. Optimizing this mix will help to ensure that clean energy and other climate mitigation strategies are clear, winning alternatives in the marketplace and in communities—to promote equity, drive innovation, and encourage consumer adoption. Bold institutional action will catalyze continued research and push private investment to create jobs and bring innovative ideas to reality." (Draft Plan at 215.)

It is, of course, important to state that no plan is perfect. And this plan does not purport to be. But it has clear goals - meet the law, get steep reductions, benefit households and jobs and minimize economic impacts. And pursuant to AB 32, CARB must continue to assess progress along the way and update the plan at least once every five years.

To the hard-working civil servants and partners who have developed this plan, kudos. And keep it up. What you are doing is of immense import to the world!