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July 8, 2016

Richard Corey, Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95184

Re: Comments in Response to 2030 Target Scoping Plan Update Concept Paper

Dear Mr. Corey:

On behalf of the Natural Resources Defense Council, and our more than 72,000 members in California, we appreciate the opportunity to comment on the 2030 Target Scoping Plan Update Concept Paper (“Concept Paper”) released on June 17, 2016. As the paper documents, California has made tremendous strides in developing and implementing a comprehensive strategy to combat climate change that has put the state on track to exceed AB 32’s target of reducing greenhouse gas emissions to 1990 levels by 2020. Emissions are down nearly 10% from their peak in 2004, even as California’s population and economy continue to grow. But achieving California’s mid- and long-term climate stabilization goals will require a substantially more aggressive policy platform to accelerate the pace and scope of reductions.

California began to lay the building blocks for that platform last year, led by Governor Brown’s executive order establishing the most ambitious statewide reduction target for 2030 in North America, the unveiling of “five pillars” to anchor the strategies needed to achieve that target, and the passage of Senate Bill 350 (de León and Leno). Yet other priorities remain outstanding. Short-lived climate pollutants, like the nearly 100,000 tons of methane released from the months-long leak at Aliso Canyon, must be curbed. Pathways to decarbonize buildings need more robust policy support to overcome persistent market and regulatory barriers. And to achieve both our climate goals and air quality standards, the state’s suite of tools to reduce petroleum dependence must be strengthened and extended.

As envisioned by AB 32, the Scoping Plan affords the ideal forum to outline the challenges and opportunities California faces in charting a path forward that can deliver on these priorities while serving as a model for others to follow. We look forward to working with staff and stakeholders at every step along the way.

I. Scoping Plan Strategy Development

a. An Integrated Framework

We support the shift in emphasis reflected in the Concept Paper from the original Scoping Plan's sector-by-sector approach to a more integrated and holistic framework for achieving California's climate goals. As the state's PATHWAYS modelling reveals, there are major cross-sector dependencies on the road to achieving California's 2050 climate goal.¹ For example, will zero-emissions vehicles rely primarily on hydrogen technology, with flexible hydrogen production eliminating the need for other storage, or on battery electric vehicles, which would require large amounts of storage to balance the grid? Another cross-sector dependency is the utilization of scarce biomass resources: if deployed to decarbonize buildings, where will low-carbon fuels for the transportation and power generation sectors come from? As the Concept Paper rightly recognizes, policy decisions in one sector will impact needs in others, which requires an integrated planning approach across all sectors of California's economy.

Likewise, we encourage ARB and the other state agencies involved in developing the Scoping Plan to apply the same approach to other goals that dovetail with California's climate strategies; in particular the significant efforts that will be needed to achieve local air quality standards in districts like the San Joaquin Valley and South Coast. More emphasis should be afforded to strategies that both reduce carbon and traditional air pollution to minimize regulatory costs and maximize public health, environmental justice, and other local co-benefits.

b. The Path To 2050

We strongly support the inclusion of least-cost pathways to 2050 as a foundational element in this 2030 Scoping Plan update. The decarbonization of buildings is a prime example of the critical need to consider long-term horizons when developing 2030 strategies. The PATHWAYS analysis shows that emissions from the direct use of fossil fuels for space and water heating in buildings will need to fall to *almost zero* by 2050 to achieve an economy-wide 80 percent reduction in emissions below 1990 levels.

Accordingly, achieving this goal will require making choices to avoid strategies that can meet the 2030 target but are incompatible with achieving California's 2050 target in an affordable or technically feasible manner. For example, what would be the cost of achieving 2050 building decarbonization objectives through either electrification, decarbonized gas, or a combination of both? If scarce supplies of sustainably-sourced decarbonized gas are used in buildings, how will 2050 objectives be achieved in other sectors such as aviation, heavy goods transportation, and power generation?

And if 2050 climate objectives require massive electrification of buildings, how can we minimize infrastructure investments that would become stranded before the end of their useful life, significantly increasing the cost of achieving 2050 targets, and potentially even putting them out of economic reach? What policies would be necessary to achieve a near complete transformation of the building appliance market over the next 30 years? We look forward to

¹ E3, "California PATHWAYS," https://ethree.com/public_projects/energy_principals_study.php

providing analysis and developing policy frameworks through the Scoping Plan process that can start to answer these important questions.

Finally, the electrification and decarbonized gas pathways each have implications in terms of short-lived climate pollutants: the deployment of electric heat pumps technology could increase fugitive emissions of high global warming potential refrigerants if not managed carefully, and the decarbonization of natural gas does not resolve the issue of leakage in the gas distribution network. We therefore strongly encourage ARB to take a long view in this Scoping Plan update and carefully emphasize strategies that have the potential to achieve 2050 climate objectives in the most cost-effective manner.

II. Scoping Plan Concepts

a. Correcting SB 350 Goals

We note at the outset that the Concept Paper misrepresents the energy efficiency goal in SB 350, which applies *statewide*, not just for existing buildings,² and omits the directive to electric utilities to develop transportation electrification programs at a scale that is consistent with meeting California’s long-term climate goals.³ These are foundational requirements in California’s 2030 climate plan that should be included in every concept moving forward.

b. Support Portfolio Model And Proposed Additional Concept

We support ARB’s approach to evaluate a series of different pathways to achieving the 2030 reduction target. As California has long embraced, there is no silver bullet to tackling climate change, or to balancing the essential criteria for an effective strategy rightly identified in the Concept Paper. Each pathway involves tradeoffs and uncertainties that require rigorous evaluation and transparent deliberation to ensure California’s ultimate strategy is informed by the best science and meaningful public engagement.

In this spirit, we propose that ARB revise and/or include an additional concept as it finalizes the scenarios in advance of the Draft Scoping Plan that combines both enhanced direct controls on industrial and mobile sources (per Concepts 2 and 3) and a strengthened cap-and-trade program (per Concept 1).

As the Concept Paper notes, extending the cap-and-trade program offers unique benefits, including: a firm and declining limit on emissions that is enforceable against individual emitters to ensure California complies with the 2030 reduction target, a platform to continue and expand upon linkages with other jurisdictions to foster collaboration and lower the barriers to increased climate action abroad, a mechanism by which to comply with the Clean Power Plan in a manner

² Cal. Pub. Res. Code § 25310(c)(1) (“On or before November 1, 2017, the commission...shall establish annual targets for *statewide* energy efficiency savings and demand reduction that will achieve a cumulative doubling of *statewide energy efficiency savings in electricity and natural gas final end uses of retail customers* by January 1, 2030.”) (emphasis added)

³ Cal. Pub. Util. Code §§ 740.12(a) and (b)

that can encourage other states to exceed their targets, and an existing funding source to make critical investments in clean energy infrastructure and in disadvantaged communities.

Securing these benefits is not incompatible with developing a strategy that puts greater emphasis on environmental justice and targeted strategies to reduce emissions in the industrial and transportation sectors. It also does not foreclose opportunities to improve the design and performance of the cap-and-trade program. Accordingly, we propose that ARB evaluate the combined concept outlined below.

Proposed Concept: Ambitious Complementary Policies with a Strengthened Cap-and-Trade Program

- SB 350 – by 2030
 - 50 percent RPS
 - Doubling of energy efficiency savings statewide
 - Accelerate widespread transportation electrification to reduce emissions 40 percent below 1990 levels
- Require large industrial sources to implement all cost-effective and technically feasible onsite reductions, with cost-effectiveness defined to include the full environmental and public health costs of pollution
- Increase in Low Carbon Fuel Standard – by 2030
 - Carbon Intensity reduction: at least 25 percent
- Mobile Source Strategy
 - 3.5-4.5 million zero emission and plug-in hybrid light duty electric vehicles sold cumulatively by 2030, equivalent to 33-40 percent of sales in 2030
 - Extension of light-duty vehicle tailpipe standards for model years 2026 and beyond
 - Medium and Heavy-Duty GHG Phase 2
 - Advanced Clean Transit: Up to 20 percent of new urban buses purchased beginning in 2018 will be zero-emission buses, ramping up to 100 percent of new sales in 2030.
 - Last Mile Delivery: Phase-in of zero-emission trucks for class 3-7 last mile delivery trucks starting in 2020. Zero-emission vehicles comprise 2.5 percent of new Class 3-7 trucks sales in local fleets starting 2020, increasing to 10 percent in 2025 and remaining flat through 2030.
- Implementation of currently proposed Short Lived Climate Pollutant Strategy – by 2030
 - 40 percent reduction in methane and hydrofluorocarbon emissions
 - 50 percent reduction in black carbon emissions
- Ambitious revision of 2035 SB 375 targets
 - Revise 2035 regional greenhouse gas targets for all required metropolitan planning organizations to aggressively reduce vehicle miles traveled and address the trajectory toward 2050 in their Sustainable Communities Strategies
- Draft California Sustainable Freight Action Plan
 - Deploy over 500,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
- Natural and Working Lands – by 2030
 - Each year, 500,000 acres of nonfederal forest lands included in restoration plans oriented towards forest health and carbon storage

- More infill and revitalization of urban core areas, related to SB 375 target setting revisions
- Ambitious land preservation policies
- Increase habitat acreage protected or restored
- Improve the forest carbon inventory
- Cap-and-Trade Program with a 5 percent annual cap decline⁴
 - Set cap below updated forecast of 2020 covered emissions
 - Lower offset usage limit to 3-4 percent, consistent with RGGI
 - Eliminate transition assistance factors in allocation formulas to rely more on auctioning
 - Require consignment of allowances allocated to EDUs
 - Close resource shuffling safe harbors
 - Retire existing allowances in Allowance Price Containment Reserve in advance of post-2020 program and designate unsold allowances at auction into the reserve

Consistent with California’s current model, this approach enhances the state’s portfolio of performance standards to drive transformation across the major emitting sectors of the economy and accelerate progress toward reaching attainment with federal air quality standards. But it retains the cap-and-trade program as a ‘backstop’ to ensure California achieves the 2030 limit and maintains a market signal for businesses and consumers to take advantage of additional low-cost reduction opportunities.

Direct Reductions at Industrial Sources

Specifically, this concept includes a new reduction requirement on large industrial emitters, which are the largest stationary sources of both carbon and traditional air pollution in California and are overwhelmingly sited in disadvantaged communities. Requiring on-site reductions at these facilities through enhanced energy efficiency improvements was proposed as a measure in the original Scoping Plan, but has not moved forward beyond an aggregate assessment of reduction potential collected from a series of mostly self-audits.⁵

Yet significant reduction pathways in California’s industrial sector remain untapped. As a Tetra Tech and NRDC study found in 2013, modest adoption of just five carbon reduction technologies by California crude oil production facilities and refineries would reduce 3.0-6.6 million metric tons of carbon pollution annually.⁶ If adopted across the board, the full potential of these technologies would reduce 20 million metric tons annually – with corresponding significant reductions in toxic and criteria emissions. As air districts like the South Coast backtrack on their commitment to public health and air quality, ARB should step forward and act on its prior commitment to require large stationary sources to adopt energy efficiency and other on-site upgrades that will drive both GHG and co-pollutant reductions. Environmental justice and equity demand that the industrial sector contribute its fair share towards meeting the 2030 target.

⁴ More detail on these recommendations will be provided in comments on the post-2020 cap-and-trade program rulemaking.

⁵ See “Energy Efficiency and Co-Benefits Assessment for Large Industrial Sources - Regulatory Activities,” at <http://www.arb.ca.gov/cc/energyaudits/energyaudits.htm>.

⁶ Tetra Tech, Inc. “Carbon Reduction Opportunities in the California Petroleum Industry,” 2013 available at: <https://www.nrdc.org/sites/default/files/california-petroleum-carbon-reduction-IB.pdf>.

Updated SB 375 Targets

This concept also places a greater emphasis on aggressive SB 375 regional targets. Transportation planning and land use decisions made a half century ago to this day impact our urban landscapes and, to a considerable extent, our daily vehicle miles traveled (VMT). The need to revise and aggressively intensify regional SB 375 targets to make coordinated land use and transportation decisions in the Sustainable Communities Strategies an effective strategy to help achieve California's 2030 target is accordingly urgent. Transportation and land use planning require long range time horizons and those decisions impact mobility and VMT for decades. Cities and regions will need time and resources to implement the current set of targets, and need clear signals *now* that much more ambitious plans will be required of them. Nationally, the US Department of Transportation is currently considering in its rulemaking process whether to add greenhouse gas reduction targets to regional planning requirements. USDOT will look to California and this crucial next step as a national model.

In the last few years, California has seen a proliferation of transportation innovations that improve mobility and can be tailored to help reduce VMT. NRDC's forthcoming study of the climate impacts of transportation network companies is one example of new information and tools that cities and regions will use to move beyond the existing targets and current suite of implementation tools in this rapidly evolving sector. Updated SB 375 targets, as recognized in the Concept Paper, is a complementary measure distinct from passenger vehicle fleet electrification, and as such MPOs should be required to meet aggressive SB 375 targets based on VMT reduction, and not rely on mode shift to electric vehicles as a strategy to meet their targets. As we have already seen in cities actively supporting bicycle, pedestrian, transit and infill strategies, reducing reliance on automobiles for everyday mobility brings about a host of quality of life improvements that our communities, and especially our disadvantaged communities, deserve.

Thank you for considering these comments. We look forward to engaging with staff and stakeholders to develop a 2030 Scoping Plan that builds on California's exemplary climate and clean energy leadership.

Sincerely,



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