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## A Zero-Emissions Future: Whither California?

Paul Cort\*

It was a splendid population - for all the slow, sleepy, sluggish-brained sloths stayed at home - you never find that sort of people among pioneers - you cannot build pioneers out of that sort of material. It was that population that gave to California a name for getting up astounding enterprises and rushing them through with a magnificent dash and daring and a recklessness of cost or consequences, which she bears unto this day - and when she projects a new surprise the grave world smiles as usual and says, "Well, that is California all over.

- Mark Twain, *Roughing It*

### I. Introduction

Two years ago, I outlined the legal tools available to California to move away from fossil fuel as a source of energy for both the transportation and electricity generation.<sup>1</sup> That thought piece grew out of an analysis prepared by the California Air Resources Board. It concluded that, for California's most polluted air basins to meet the then-applicable national ambient air quality standards,<sup>2</sup> as well as the state's greenhouse reduction goals, nearly all cars, trucks, trains, marine vessels, off-road equipment and other mobile sources would need to move away from combustion technologies to zero-emission technologies, such as battery and fuel cell electric drives.<sup>3</sup> The

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1. Paul Cort, *Getting to Zero: A Roadmap to Energy Transformation in California under the Clean Air Act*, 21 HASTINGS W.-NW. J. ENVTL L. & POL'Y 3, 52 (2015).

2. Since then, the U.S. Environmental Protection Agency (EPA) has adopted yet more stringent standards for ozone, making the emission reduction needs even greater. See National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65, 292 (Oct. 26, 2015) (codified at 40 C.F.R. § 50, 19).

3. CAL. AIR RES. BD., VISION FOR CLEAN AIR: A FRAMEWORK FOR AIR QUALITY AND CLIMATE PLANNING, 16 (June 27, 2012), <https://perma.cc/498H-98DE>.

electricity provided to these mobile sources would need to come from zero-emitting generation sources such as wind and solar.<sup>4</sup> The striking conclusion of the agency's analysis was that it would be the air quality standards, more than the greenhouse gas targets, that would drive the scale and pace of transformation.<sup>5</sup> Recognizing air pollution as the driver, the *Getting to Zero* article outlined the legal authorities and tools available under the Clean Air Act for California to mandate the transformation to zero-emissions.

The article noted, however, that achieving the radical transformation of our energy sources would require new, nontraditional approaches in the way that California exercised its Clean Air Act authority.

At the outset, California needs to adopt a new paradigm for "incrementalism." California's air agencies need to reorient the way they think about incremental improvements. Zero-emission technologies are fundamentally different than combustion technologies – they are not simply cleaner versions of existing combustion engines. As a result, instead of simply focusing on incremental improvements that make existing technologies cleaner, decision-makers need to work backwards from an all zero-emissions future and strive to incrementally expand the use of zero-emission technologies. This means mandating zero-emissions technologies in those sectors where it is now feasible, and expanding these mandates within those sectors and into other sectors as costs come down and the technology matures.

California also needs to "reembrace" technology-forcing regulations. The shift from one technology to a fundamentally different one requires a strong market signal that manufacturers will need to change business as usual. The Clean Air Act generally requires that regulations of mobile sources provide at least two to three years of lead time before new models are required to meet more stringent standards.<sup>6</sup> Signaling that the future will require zero-emissions will require even more long-term certainty for manufacturers to fundamentally change the way they power mobile sources. In addition, the courts have shown greater comfort upholding the feasibility of such transformational mandates when the agencies provide longer lead-times.<sup>7</sup> By adopting rules now with extended lead times, California can defend aggressive requirements while still providing market certainty.

Agencies must commit to action. To date, California air agencies have sought various legal strategies for "kicking the can down the road," and postponing adoption of regulations that might be politically unpopular.

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4. *Id.*

5. *See, e.g., Id.* at 19.

6. 42 U.S.C. § 7521(a)(3)(C) (2017); 42 U.S.C. § 7543(e)(2)(B)(ii) (2017).

7. *E.g., Natural Res. Def. Council v. EPA*, 655 F.2d 318, 327-36 (D.C. Cir. 1981).

One such strategy is to “commit” to undefined strategies for reducing emissions in the future. Thus, agencies will adopt “plans” that show how emissions will be reduced without specifying the regulations that will achieve those reductions. In addition to being contrary to the purpose and requirements of the Clean Air Act, this strategy does not provide the strong market signal that is necessary to achieve the transformation away from business-as-usual combustion technologies to the zero-emission technologies that all California agencies know will be required to meet air quality standards.

Such action must focus on mandates. The other practice California air agencies have used to avoid making the politically tough decisions is to try to use voluntary incentives (i.e., government subsidies) in lieu of regulatory mandates. This strategy can be useful in early demonstrations of new technologies, but it is neither sufficient as a legal matter under the Clean Air Act, which requires enforceable emission standards, nor as a strategy for providing the market certainty that is necessary to change the technology investment decisions of manufacturers. To achieve the change needed to meet air quality standards will require agencies to use voluntary incentive programs to supplement, not replace, mandatory requirements.

Finally, those mandates must be expanded to include infrastructure. The infrastructure to support today’s combustion technologies has had 100 years to grow and develop. More than being a fundamentally different power technology, zero-emission technologies will require a very different supporting infrastructure. Though the Clean Air Act requires consideration of strategies to make transportation more efficient and thus less polluting,<sup>8</sup> air agencies have traditionally focused on cleaning up combustion technologies without having to think about the supporting infrastructure. Mandating the transformation to a zero-emissions future will require new systems thinking, and using the transportation planning requirements of the Clean Air Act in novel ways in order to make transportation infrastructure agencies an active part of achieving a zero-emission future.

The changes in the world of energy and mobile sources since *Getting to Zero* was published have been dizzyingly rapid, with announcements of new breakthroughs and commitments to a zero-emission future coming almost daily. It seems timely, therefore, to revisit how California has progressed along its own path to zero-emissions.

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8. 42 U.S.C. § 7506 (2017).

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## II. How Are We Doing?

### A. Kernels of “New Incrementalism”

At the time of *Getting to Zero*, the California Air Resources Board had not revisited or finalized its 2012 Draft Vision for Clean Air analysis that provided the stark math of the emission reductions required to meet air quality standards and greenhouse gas goals.<sup>9</sup> The air agencies had made no commitments to achieving the level of transformation to zero-emitting technologies that the draft analysis demonstrated would be required.

Since then, however, the state’s regulatory agencies have become more and more open about the long-term transformation to zero-emissions that will be required. In April 2015, the California Air Resources Board released a discussion document describing strategies for addressing pollution from freight activities.<sup>10</sup> It announced the conclusion of its earlier analysis:

It is clear that in order to meet our public health mandates, climate goals, and economic needs, the transition to a less polluting, more efficient, modern freight transport system is a preeminent policy objective for the State of California – and will continue to be so for several decades to come. It will require us to make steady and continual progress in moving both domestic and international cargo in California more efficiently, with zero-emissions everywhere feasible, and near-zero-emissions with renewable fuels everywhere else.<sup>11</sup>

In its May 2016 Mobile Source Strategy document, the California Air Resources Board cited the draft 2012 Vision for Clean Air analysis and reiterated the need to incrementally expand the use of zero-emission technologies:

Near-term focused electrification and progress towards zero-emission technologies is critical to continue to reduce near-source exposure to air toxics, especially around freight hubs such as ports, rail yards, and distribution centers. These zero-emission technologies must play a growing role in reducing GHG emissions and petroleum use, particularly as these strategies are adopted by more jurisdictions. The strategy therefore includes actions to deploy zero-emission technologies across a broad spectrum of sources, including passenger vehicles, targeted truck and bus

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9. CAL. AIR RES. BD., VISION FOR CLEAN AIR: A FRAMEWORK FOR AIR QUALITY AND CLIMATE PLANNING 16 (June 27, 2012), <https://perma.cc/498H-98DE>.

10. CAL. AIR RES. BD., SUSTAINABLE FREIGHT: PATHWAYS TO ZERO AND NEAR-ZERO EMISSIONS (April 2015), <https://perma.cc/5VEU-ME72>.

11. *Id.* at 1.

applications, forklifts, transport refrigeration units, and airport ground support equipment.<sup>12</sup>

In July 2016, the California Air Resources Board, California Department of Transportation, California Energy Commission and Governor's Office of Business and Economic Development finalized a Sustainable Freight Action Plan announcing that the state's vision for a sustainable freight transport system was a system that "[t]ransport[s] freight reliably and efficiently by zero-emission equipment everywhere feasible, and near-zero emission equipment powered by clean, low-carbon renewable fuels everywhere else."<sup>13</sup>

The strategy of promoting zero-emission technologies by incrementally strengthening mandates and expanding those mandates to apply to other types of mobile sources was finally embraced in the State's air quality plan adopted in March 2017:

For passenger vehicles, the State SIP Strategy includes actions to increase the penetration of plug-in hybrid electric vehicles (PHEVs) and [zero-emission vehicles (ZEVs)], including battery-electric and hydrogen fuel cell electric vehicles. For heavy-duty vehicles, the State SIP Strategy calls for combustion engine technology that is effectively ninety percent cleaner than today's standards. The State SIP Strategy also includes targeted introduction of zero-emission technologies in heavy-duty applications that are suited to early adoption of ZEV technologies. Actions to promote ZEVs in these applications are important to foster further technology development so they become suitable for broader use in the future. . . . Similar actions are proposed for off-road sources, with a focus on deployment of ZEV technologies in smaller equipment types such as forklifts and airport ground support equipment.<sup>14</sup>

Indeed, the notion that state policies must incrementally expand the use of zero-emissions wherever possible has become so commonplace that it is easy to miss the significance of this paradigm shift. These various plans have now introduced commitments to expand zero-emission requirements to a variety of mobile sources including transit buses, airport shuttles, airport ground support equipment, cargo handling equipment, and forklifts.<sup>15</sup> These are groundbreaking commitments built upon the recognition that the end goal must be to "[e]lectrify everything," as Vox's

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12. CAL. AIR RES. BD., MOBILE SOURCE STRATEGY, 6-7 (May 2016), <https://perma.cc/H9VQ-GYK9>.

13. CAL. DEPT. OF TRANSP., SUSTAINABLE FREIGHT ACTION PLAN, ES-1 (July 2016), <https://perma.cc/5X7X-FJAY>.

14. CAL. AIR RES. BD., STATE AIR PLAN, 11 (Mar. 7, 2017), <https://perma.cc/T6S3-ZT5K>.

15. *See, e.g., id.* at 28.

David Roberts put it simply.<sup>16</sup> Unlike the rest of the country, the strategy in California now is not simply to make mobile source combustion cleaner, but to start with zero-emissions and incrementally grow the mandates for zero-emissions to greater and greater numbers of vehicles and applications. Electrified mobile sources become cleaner as the grid becomes cleaner; the grid becomes cleaner with growing contributions from renewable and other zero-emission sources of electricity.

### **B. Missing Market Signals: Leading from Behind**

While this paradigm shift is critically important and precedent setting for the world, it still reflects a level of tentativeness that undermines the strong market signal that is required to ensure success. By reiterating the general strategy as moving to zero-emissions “wherever feasible,” the state agencies have assumed a passive role in achieving this transformation.<sup>17</sup> There is no state plan that purports to achieve the rapid and extensive conversion from combustion to zero-emission technologies that the 2012 draft Vision analysis says is necessary to meet air quality and greenhouse gas emission reductions targets. The agencies seem content to lead from behind by requiring only what is currently feasible and not trying to drive the development and adoption of zero-emission technologies.

There are plenty of reasons to be confident that zero-emission technologies will develop on their own, but the refusal to adopt technology-forcing mandates means that development will continue to be driven by niche companies that lack the scale to bring prices down quickly. A host of recent reports conclude that the world is on the cusp of radical transformation away from combustion light-duty passenger vehicles:

Electric vehicles become price competitive on an unsubsidized basis beginning in 2025. Some segments will take longer, but by 2029 most will have reached parity with comparable internal combustion engine (ICE) vehicles[;]<sup>18</sup>

By 2040, 54% of new car sales and 33% of the global car fleet will be electric. Falling battery prices will bring price-competitive electric vehicles to all major light-duty vehicle segments before 2030, ushering a period of strong growth for electric powertrain vehicles[;]<sup>19</sup>

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16. David Roberts, *The Key to Tackling Climate Change: Electrify Everything*, VOX (Sept. 19, 2016), <https://perma.cc/5VEU-ME72>.

17. CAL. AIR RES. BD., SUSTAINABLE FREIGHT: PATHWAYS TO ZERO AND NEAR-ZERO EMISSIONS, 2 (Apr. 2015), <https://perma.cc/5VEU-ME72>.

18. BLOOMBERG NEW ENERGY FIN., ELECTRIC VEHICLE OUTLOOK 2017, 2 (July 2017), <https://perma.cc/9GVL-RKB5>.

19. *Id.*

[B]y 2022 we expect strict vehicle price/performance parity between internal combustion engine vehicles (ICEVs) and battery electric vehicles (BEVs);<sup>20</sup>

[W]e assume that the share of electric vehicles (EV) in new light vehicle sales will increase from below 10% to above 90% in a period of less than ten years in many regions;<sup>21</sup>

ICE vehicles [will be] eliminated from fleet by end of 2030s at the latest.<sup>22</sup>

These predictions have been supported by a rash of recent pronouncements from auto manufacturers that they plan to move away from traditional combustion technologies. Volkswagen,<sup>23</sup> Daimler,<sup>24</sup> Volvo,<sup>25</sup> BMW,<sup>26</sup> Jaguar Land Rover,<sup>27</sup> and, most recently, General Motors<sup>28</sup> have all announced plans to expand electric vehicle offerings, and ultimately move away from combustion-based technologies.

The two questions not answered by these predictions and pronouncements, however, are *where* this transformation will occur and whether it can be *accelerated* yet further? These analyses all assume no change to current policies and acknowledge that any such new policies could affect the speed and location of deployment. Recognizing this

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20. DNV-GL, ENERGY TRANSITION OUTLOOK 2017: EXECUTIVE SUMMARY, 16 (Sept. 2017), <https://perma.cc/K4QY-B5DJ>.

21. *Id.* at 12.

22. RETHINKX, RETHINKING TRANSPORTATION 2020-2030, 35 (May 2017), <https://perma.cc/TY99-ANXA>.

23. Kristen Korosec, *Volkswagon to 'Electrify' All 300 of its Cars and SUVs by 2030*, FORTUNE (Sept. 11, 2017), <https://perma.cc/TY99-ANXA>.

24. *Plans for more than Ten Different All-Electric Vehicles by 2022: All Systems Are Go*, DAIMLER, <https://perma.cc/Z24Q-LPZ7>.

25. Jack Ewing, *Volvo, Betting on Electric, Moves to Phase Out Conventional Engines*, N.Y. TIMES (July 5, 2017), <https://perma.cc/PDQ8-QKV4> (posting Volvo announcement that: "We are committed to electrification, so from 2019 all new Volvo car models will include an electric motor.").

26. *BMW Readies Mass Production of Electric Cars, 12 Models by 2025*, CNBC (Sept. 7, 2017), <https://perma.cc/JG2F-RTQ5>.

27. Costas Pitas, *All New Jaguar Land Rover Cars to Have Electric Option from 2020*, REUTERS (Sept. 6, 2017), <https://perma.cc/EZ2V-G4PB>.

28. David Welch, *GM Maps All-Electric Future With 20 Models Arriving by 2023*, BLOOMBERG (Oct. 2, 2017), <https://perma.cc/E2YU-F7L7> (pledging 20 all-electric vehicle models by 2023, and stating that "GM believes the future is all electric, a world free of automotive emissions.").



opportunity, many governments, including France,<sup>29</sup> Britain,<sup>30</sup> Norway,<sup>31</sup> India,<sup>32</sup> Netherlands,<sup>33</sup> and possibly even China,<sup>34</sup> have recently announced their intentions to win the race to zero-emissions by committing to a phase-out of the production and sale of fossil fuel combustion vehicles. Given California's recognition of what is necessary to meet basic health-based air quality standards in the State, its absence from this list is notable.

Even though an early adopter of zero-emission vehicle mandates and other standards that drove technical breakthroughs from the catalytic converter to reformulated gasoline, the California Air Resources Board has become openly resistant to technology-forcing standards. In its Advanced Clean Transit rulemaking, California Air Resources Board members have resisted mandating even small percentages of zero-emission buses.<sup>35</sup> This is despite the fact that there are several commercially available models, and it is indisputable that the price of these buses would drop significantly if production were scaled up to meet regulatory mandates. Notwithstanding the California Air Resources Board's cold feet, several local transit agencies, including LA Metro, the largest transit agency west of the Mississippi, have voluntarily committed to move to 100% zero-emission bus fleets.<sup>36</sup> Advocates hope this local leadership will strengthen the State agency's backbone to adopt mandates for the remaining transit agencies.

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29. Jack Ewing, *France Plans to End Sales of Gas and Diesel Cars by 2040*, N.Y. TIMES (July 6, 2017), <https://perma.cc/P5CR-P37S>.

30. Stephen Castle, *Britain to Ban New Diesel and Gas Cars by 2040*, N.Y. TIMES (July 26, 2017), <https://perma.cc/PA8B-E3HE>.

31. Jess Staufenberg, *Norway to 'completely ban petrol powered cars by 2025'*, INDEPENDENT (June 4, 2016), <https://perma.cc/VC5W-M9CT>.

32. Harriet Agerholm, *India to make every single car electric by 2030 in bid to tackle pollution that kills millions*, INDEPENDENT (May 1, 2017), <https://perma.cc/TTW7-CBBP>.

33. Jess Staufenberg, *Climate change: Netherlands on brink of banning sale of petrol-fuelled cars*, INDEPENDENT (Aug. 18, 2016), <https://perma.cc/98DZ-3SCQ>.

34. *China Fossil Fuel Deadline Shifts Focus to Electric Car Race*, BLOOMBERG (Sept. 10, 2017), <https://perma.cc/BQ96-LJTO>.

35. E.g., CAL. AIR RES. BOARD, MEETING, 189-90 (Feb. 18, 2016), <https://perma.cc/N6QF-E7NN> (Transcript of Board Hearing on Advanced Clean Transit Rule) (Board Member Sperling arguing that "contrary to what someone said, the buses are inherently unsuited to battery – to use of batteries").

36. CAL. AIR RES. BOARD, BATTERY AND FUEL CELL ELECTRIC BUSES IN CALIFORNIA (Sept. 2017), <https://perma.cc/2MAJ-XZM5> (map); LA METRO, STRATEGIC PLANNING FOR METRO'S TRANSITION TO ZERO EMISSION BUSES (July 20, 2017), <https://perma.cc/3UEY-U83U> (Attachment C).

This pattern of the California Air Resources Board waiting for others to demonstrate feasibility instead of adopting standards that might actually spur technology development is becoming the new norm. Even in the light-duty vehicle sector that by all accounts is primed for transformation to zero-emissions, the agency has been reluctant to outline a broader plan for actually ending the use of fossil fuels.<sup>37</sup> This abdication of leadership promises to undermine not only the ability of the State to meet its air quality and greenhouse gas targets, but also the speed of the global transformation away from fossil fuels.<sup>38</sup>

Instead of adopting technology-forcing mandates, the California Air Resources Board, along with other local air agencies, continue to rely on subsidies to encourage voluntary development of zero-emission technologies. The 2017 State Air Plan is an extreme example of how far the agencies are willing to go to avoid actual regulatory mandates. The Plan, as noted above, broke important ground by outlining a list of zero-emission rules that the State would pursue, but the plan simultaneously undermined any strong market signal by refusing to commit to any level of emission reductions let alone any specific equipment or vehicle targets for these rules.<sup>39</sup> These rules, while signaling a vague commitment to zero-emissions, provide no certainty that there will be a significant market for zero-emissions vehicles or equipment.

With straight faces, California Air Resources Board staff proposed a State air plan that relies on finding \$1 billion per year in funding that does not currently exist. The plan assumes air agencies will find enough money to subsidize the replacement of over 70,000 cars and over 15,000 trucks per year in the South Coast Basin.<sup>40</sup> To put this in perspective, a good year for the South Coast car scrappage program is 2,600 vehicles.<sup>41</sup> Despite

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37. Ryan Beene and John Lippert, *California Considers Following China With Combustion-Engine Car Ban*, BLOOMBERG (Sep. 26, 2017), <https://perma.cc/H84R-TDH2>.

38. *Id.* (“If a [California] ban were implemented, automakers from General Motors to Toyota Motor Corp. would be under new pressure to make electric vehicles the standard for personal transportation in the most populous U.S. state, casting fresh doubts on the future of gasoline- and diesel-powered autos elsewhere.”).

39. CAL. AIR RES. BOARD, REVISED PROPOSED 2016 STATE STRATEGY FOR THE STATE IMPLEMENTATION PLAN, 60 (Mar. 7, 2017), <https://perma.cc/S9ZN-9FV4> (Table 8) (declining to quantify emission reductions for various zero-emission rule proposals).

40. *Id.* at 56 and 82.

41. SOUTH COAST AQMD, OLD VEHICLE SCRAPPING, <https://perma.cc/V4DT-26HJ> (see graph, Rule 1610: Vehicles Observed, Accepted and Rejected, All Scrappers Combined).

recognizing the proposal as “faith-based planning,” the Board approved the plan – though the Board did adopt a resolution requiring staff to report back in one year on its progress in identifying funding and achieving its voluntary targets.<sup>42</sup>

There is little question that this so-called “plan” will fail to bring the Los Angeles and San Joaquin Valley air basins into compliance with national air quality standards. In theory, the federal Environmental Protection Agency should reject these unenforceable promises to achieve voluntary emission reductions, but that seems unlikely under the current federal administration that is even more opposed to regulation than the state. Litigation may be able to force a new plan with more regulatory commitments, but it seems clear that, without a legislative mandate, the state and local air agencies will continue to demand little more than business as usual.

California has adopted a number of bills that have been important in driving progress to date. Most recently, S.B. 350 accelerated the state’s renewable portfolio standard to require that 50% of the State’s electricity sales come from renewable sources by 2030.<sup>43</sup> In addition, the legislation requires the California Public Utilities Commission to direct utilities to adopt programs “to accelerate widespread transportation electrification . . . .”<sup>44</sup> The investor-owned utilities have responded by proposing over \$1 billion in investments in charging and other infrastructure to support electrification of a variety of mobile sources from cars to buses to equipment at marine terminals and airports.<sup>45</sup>

This year, the legislature will consider S.B. 100, which would accelerate the renewable portfolio standard yet more to require 60% renewables by 2030 and establish a planning goal of 100% carbon-free energy by 2045. But similar mandates are needed on the mobile source side. The Charge Ahead Initiative (S.B. 1275), adopted in 2014, established a goal of 1,000,000 zero-

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42. CAL. AIR RES. BOARD, RESOLUTION 17-7 (Mar. 23, 2017), <https://perma.cc/85PZ-Q35T>.

43. *Id.* (describing history of escalating RPS legislation); S.B. 350, 2015-2016 Reg. Sess. (Cal. 2015) (SB350 follows in a series of legislative updates to the renewable portfolio standards that have advanced statutory deadlines and adopted more aggressive targets.).

44. CAL. PUB. UTIL. CODE § 740.12(b) (West 2017).

45. *E.g.*, Application of Southern California Edison Company (U 338-E) For Approval Of Its 2017 Transportation Electrification Proposals (Jan. 20, 2017), <https://perma.cc/3MSM-UWVJ>. See also IOU applications in the California Public Utility Commission proceedings on transportation electrification, A.17-01-020 (SDG&E), A.17-01-021 (SCE), and A.17-01-022 (PG&E). See also CAL. PUB. UTIL. COMM’N, S.B. 350 APPLICATIONS, <https://perma.cc/52K7-HVTE> (summary table).

and near-zero-emission passenger vehicles on the road by 2023.<sup>46</sup> This legislation is due for a refresh to reflect the developments in fully zero-emission vehicles, to establish yet more aggressive targets beyond 2023, and to add targets for other types of zero-emission mobile sources.<sup>47</sup> Without this direction from the State legislature, it seems unlikely that State agencies will do more to outline their own bold vision, even though this is exactly what is required to comply with Clean Air Act planning obligations.

### **C. Infrastructure Planning Continues to Lack Vision**

The final recommendation from *Getting to Zero* was to rethink how to use Clean Air Act authorities in order to make transportation planning part of the solution by promoting the transformation to zero-emissions. There has been little progress on this front.

Evidence shows that transportation planning matters for the adoption of zero-emission vehicles.<sup>48</sup> Yet the State transportation agencies continue to take a mostly passive role, focusing instead on a “fix it first” strategy that promotes congestion relief as its primary means for reducing vehicle emissions. Planners see their job as building roads for any type of vehicle to use, and lack the vision to think about alternative actions that might support transportation electrification.

That said, there have been some flickers of new thinking. The ZEV Action Plan notes the need for transportation agencies to take steps to support transportation electrification;<sup>49</sup> the most recent California Transportation Commission Guidelines included transportation

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46. CAL. HEALTH & SAFETY CODE § 44258.4(b) (West 2017).

47. See Kate Galbraith, *California could ban gasoline cars – if automakers don't beat state to it*, S.F. CHRON. (Oct. 8, 2017), <https://perma.cc/WG4W-9UD6> (reporting that State Assembly member Phil Ting, D-San Francisco, plans to introduce a bill that would ban new vehicles that run on gasoline or diesel after 2040).

48. David Weikel, *Law expanding HOV access to plug-in cars drives higher sales, UCLA study says*, L.A. TIMES (Nov. 10, 2015), <https://perma.cc/V3US-MXG2>; GOVERNOR'S INTERAGENCY WORKING GROUP ON ZERO-EMISSION VEHICLES, ZEV ACTION PLAN: A ROADMAP TOWARD 1.5 MILLION ZERO-EMISSION VEHICLES ON CALIFORNIA ROADWAYS BY 2025, 8-13 (2013), <https://perma.cc/QYH5-64VU>.

49. GOVERNOR'S INTERAGENCY WORKING GROUP ON ZERO-EMISSION VEHICLES, ZEV ACTION PLAN: AN UPDATED ROADMAP TOWARD 1.5 MILLION ZERO-EMISSION VEHICLES ON CALIFORNIA ROADWAYS BY 2025, 23-24 and 29 (2016), <https://perma.cc/88NV-N974>.

electrification as a priority;<sup>50</sup> and the Sustainable Freight Action Plan outlines a series of commitments to study infrastructure needs.<sup>51</sup> These high-level conversations, however, need to trickle down to the local transportation planning organizations and be translated into actual projects included in local transportation plans. More could be done to promote such action. For example, the California Air Resources Board could assign emission reduction budgets to local planning organizations that would require widespread electrification. The California Air Resources Board, again, seems unlikely to adopt such an aggressive approach without legislative direction.

### **III. Sluggish-Brained Sloths or Pioneers?**

There is plenty of reason for optimism that the transformation away from fossil fuels is within reach. And there is still the sense that if we can do something as bold as end the use of fossil fuels, California will lead the way. But it is naïve to think that entrenched interests will be overcome without determined state action that provides market certainty and builds out the supporting infrastructure required for a zero-emission future.

Fossil interests continue to lobby aggressively not to be left behind. Whether lobbying to share in subsidies for advanced technologies,<sup>52</sup> or opposing investment in electrification,<sup>53</sup> the fossil industry has recognized the existential threat posed by noncombustion, zero-emissions technologies, and has no intention of embracing this inevitable future.

If California does not resist these efforts, the zero-emissions future will not begin here. This is a problem because this state's air quality and greenhouse gas reduction imperatives require acceleration of zero-emissions technologies – not just business as usual, and certainly not the slow walk envisioned by the fossil industry. Achieving that acceleration is not a question of authority. State agencies have more than adequate

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50. CAL. TRANSP. COMM'N, 2017 REGIONAL TRANSPORTATION PLAN GUIDELINES FOR METROPOLITAN PLANNING ORGANIZATIONS, 5-6 (2017), <https://perma.cc/9P9P-XERG>.

51. GOVERNOR EDMUND G. BROWN JR., CAL. SUSTAINABLE FREIGHT ACTION PLAN, C-9 through C-33 (2016), <https://perma.cc/JSY8-CSMN>.

52. E.g., CAL. NATURAL GAS VEHICLE COALITION, LEGISLATION WATCH UPDATE (Oct. 10, 2017), <https://perma.cc/JG4V-TDQ8> (highlighting bills to allow natural gas vehicle access to HOV lanes and to secure incentive funds for natural gas vehicles).

53. E.g., Protest of Southern California Gas Company (U 904 G) To The Application Of Southern California Edison Company (U 338-E) For Approval Of Its 2017 Transportation Electrification Proposals (Jan. 20, 2017), <https://perma.cc/N2UH-YDAV>.

authority to compel the required transformation. The change required is in the *way* state agencies approach these problems and use their authorities. Such change, however, is easier said than done, and it is clear that such changes require political leadership to embrace the pioneering spirit that has always been part of California's makeup.