June 13, 2022

Liane Randolph
Chair
California Air Resources Board
1001 I St.
Sacramento, CA 95814

Comments submitted via California's system: ww2.arb.ca.gov/applications/public-comments

Re: Conservation Organizations' Comments on California's Proposed State Implementation Plan Regional Haze Round Two

Dear Ms. Randolph:

National Parks Conservation Association, Sierra Club, and Coalition to Protect America's National Parks ("Conservation Organizations") submit the following comments and attached technical reports regarding the California Air Resources Board's ("California" or "CARB") DRAFT California's Regional Haze Plan for the Second Implementation Period ("Proposed SIP"). We are disappointed that CARB failed to provide the extension requested to submit comments on the Proposed SIP. We also attach and incorporate by reference the following technical comments regarding California's Proposed SIP:

(1) A Review of California's Regional Haze State Implementation Plan, prepared by Joe Kordzi, dated June 2022 (attached as Ex. 1) ["Kordzi Report"];

(2) Technical Review of Visibility Modeling for the Second Round of Regional Haze State Implementation Plans: State of California, prepared by D. Howard Gebhart dated June 8, 2022 (attached at Ex. 2) ["Gebhart Report"];

(3) Oil and Gas Sector Reasonable Progress Four-Factor Analysis of Controls for Five Source Categories, prepared by Vicki Stamper and Megan Williams, dated March 6, 2020 (attached as Ex. 3) ["Stamper Report, March 2020"]; and

(4) Assessment of Cost Effectiveness Analyses for Controls Evaluated Four – Factor Analyses for Oil and Gas Facilities for the New Mexico Environment Department's Regional Haze Plan for the Second Implementation Period, prepared by Vicki Stamper & Megan Williams dated July 2, 2020 (attached as Ex. 4) ["Stamper Report, July 2020"].[1]

National Parks Conservation Association ("NPCA") is a national organization whose mission is to protect and enhance America's national parks for present and future generations. NPCA performs its work through advocacy and education, with its main office in Washington, D.C. and 24 regional and field offices. NPCA has over 1.5 million members and supporters nationwide, with more than 46,550 in California. NPCA is active nationwide in advocating for strong air quality requirements to protect our parks, including submission of petitions and comments relating to visibility issues, regional haze State Implementation Plans, climate change and mercury impacts on parks, and emissions from power plants, oil and gas operations and other sources of pollution affecting national parks and communities. NPCA's members live near, work at, and recreate in all the national parks, including those directly affected by emissions from California's sources.

Sierra Club is a national nonprofit organization with 67 chapters and more than 832,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club has long participated in Regional Haze rulemaking and litigation across the country in order to advocate for public health and our nation's national parks.

The Coalition to Protect America's National Parks ("Coalition") is a non-profit organization composed of over 2,100 retired, former and current employees of the National Park Service (NPS). The Coalition studies, speaks, and acts for the preservation of America's National Park System. As a group, we collectively represent over 40,000 years of experience managing and protecting America's most precious and important natural, cultural, and historic resources.

[1] These comments include other exhibits as noted herein, and links to these reports appear at the end of these comments in the list of exhibits.

As discussed in these comments, the Conservation Organizations have serious concerns regarding California's Proposed SIP[2] for the second implementation period. As discussed later in these comments, the National Park Service's ("NPS") and United Stated Forest Service's ("USFS") consultation comments to California echo many of the concerns raised in this letter.[3]

Moreover as discussed in these comments, California's assertions that no emissions controls are necessary because California is sufficiently controlling sources through other programs and is under the Uniform Rate of Progress ("URP") are misplaced.[4] EPA's Clarification Memo clearly debunked this assertion and explained that the "URP is a planning metric used to gauge the amount of progress made thus far and the amount left to make."[5] Contrary to the assertions made in California's Proposed SIP, EPA clarified that the URP "is not based on consideration of the four statutory factors and, therefore, cannot answer the

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[2] DRAFT California's Regional Haze Plan For the Second Implementation Period, (Draft Release Date May 13, 2022), https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/statewide-efforts/regional-haze#:~:text=The%20Board%20will%20consider%20approval%20of%20California%27s%20second,as%20how%20to%20submit%20comments%20to%20the%20docket, convenience link https://drive.google.com/file/d/1c1INsPipIDNIQwhG8ZzS4RcU7vpfpRdl/view?usp=sharing; DRAFT Appendices to California's Regional Haze Plan, (May 13, 2022), https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/statewide-efforts/regional-haze#:~:text=The%20Board%20will%20consider%20approval%20of%20California%27s%20second,as%20how%20to%20submit%20comments%20to%20the%20docket, https://drive.google.com/file/d/15rLRtlL7uyBkvtuL00APJysf8sQ8nSKX/view?usp=sharing.

[3] DRAFT Appendices to California's Regional Haze Plan, Appendix I, National Park Service Regional Haze SIP feedback for the California Air Resources Board, (April 11, 2022), at pdf 258 (NPS-1) – pdf 285 (NPS-28), ("NPS Formal Consultation Comments"), https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/statewide-efforts/regional-haze#:~:text=The%20Board%20will%20consider%20approval%20of%20California%27s%20second,as%20how%20to%20submit%20comments%20to%20the%20docket, convenience link https://drive.google.com/file/d/15rLRtlL7uyBkvtuL00APJysf8sQ8nSKX/view?usp=sharing; NPS Formal Consultation Call with the California Air Resources Board, https://drive.google.com/file/d/1fQBuqSqyLA1bmY_pHJHz5LOjyiXAiPpC/view?usp=sharing; DRAFT Appendices to California's Regional Haze Plan, Appendix I, Letter from Jennifer Eberlien, Regional Forester, Region 5, to Alicia Adams, Manager, Air Quality Planning and Science Division, California Air Resources Board, (April 8, 2022), at pdf 286 (1) – pdf 287 (2), ("USFS Consultation Comments"), https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/statewide-efforts/regional-haze#:~:text=The%20Board%20will%20consider%20approval%20of%20California%27s%20second,as%20how%20to%20submit%20comments%20to%20the%20docket, https://drive.google.com/file/d/15rLRtlL7uyBkvtuL00APJysf8sQ8nSKX/view?usp=sharing.

[4] Proposed SIP at 138 ("This comparison shows that 2028 RPGs for all of California's Class I areas are on or below the glidepath.)

[5] Memorandum from Peter Tsirigotis, Director, Office of Air Quality Planning and Standards, to Regional Air Division Directors Regions 1-10, "Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period," (July 9, 2019), at 15, https://www.epa.gov/visibility/clarifications-regarding-regional-haze-state-implementation-plans-second-implementation. ("2021 Clarification Memo").

question of whether the amount of progress made in any particular implementation period is "reasonable progress."'[6]

As detailed below, California's Proposed SIP will not result in reasonable progress towards improving visibility at the twenty-nine California Class I areas its sources impact, including:

- Agua Tibia Wilderness Area
- Caribou Wilderness Area
- Cucamonga Wilderness Area
- Desolation Wilderness Area
- Dome Land Wilderness Area
- Emigrant Wilderness Area
- Hoover Wilderness Area
- John Muir Wilderness Area
- Joshua Tree National Park
- Kaiser Wilderness Area
- Kings Canyon National Park
- Lassen Volcanic National Park
- Lava Beds Wilderness Area
- Marble Mountain Wilderness Area
- Minarets Wilderness Area
- Mokelumme Wilderness Area
- Pinnacles Wilderness Area
- Point Reyes Wilderness Area
- Redwood National Park
- San Gabriel Wilderness Area
- San Gorgonio Wilderness Area
- San Jacinto Wilderness Area
- San Rafael Wilderness Area
- Sequoia National Park
- South Warner Wilderness Area
- Thousand Lakes Wilderness Area
- Ventana Wilderness Area
- Yolla-Bolly-Middle-Eel Wilderness Area
- Yosemite National Park.

Despite the thousands of tons of controllable pollution from California's stationary sources including oil and gas refineries, cement kilns, and manufacturing plants, among others, and the many opportunities for cost-effective controls, California improperly concludes that almost no new reductions in pollution are warranted through this Proposed SIP and it failed to properly analyze potential

[6] 2021 Clarification Memo at 15.

controls using the Regional Haze Rule's four-factor analysis. Indeed, the Proposed SIP's Long Term Strategy merely contains a list of regulations that are either on the books or may be promulgated in the future. Additionally, the proposed SIP focused only on one pollutant – NOx – listing four existing and possible future mobile source regulations that would reduce NOx emissions statewide by just 40 tons per day (or 14,600 tons of NOx per year by 2028). Certainly given the number of stationary sources and numerous Class I area impacted, California can do better.

Stationary sources in California identified by NPCA as contributing to regional haze pollution in Class I areas include and likely meriting a Four-Factor Analysis are identified below, which were initially shared with CARB via a letter in June 2021 and are identified below in Table 1 on page 13.[7]

The CAA requirements for California's Regional Haze Plan present a significant opportunity to not only improve visibility at California's twenty-nine Class I areas, and other treasured Class I areas across the region, but to improve the air quality in communities across the state, including some of the most disproportionately affected by health harming pollution that can and must be abated. Despite the legal requirements necessary to ensure reasonable progress, California's Proposed SIP contains fundamental flaws and fails to propose any new emission reductions for its sources.

Our comments presented below identify these issues and offer detailed suggestions to ensure that the SIP California submits to EPA will be in line with the legal requirements of the CAA and federal regulations, and address visibility impairing emissions. In addition to the errors identified in the attached Kordzi Report and Gebhart Report, CARB must correct the following flaws:

1. CARB must obtain, analyze and make available to the FLMs and public key data that is required for the SIP. CARB's treatment of the Regional Haze

[7] *See* Letter from Mark Rose, Sierra Nevada Program Manager, National Parks Conservation Association, Bill Magavern, Policy Director, Coalition for Clean Air, Philip A. Francis, Jr., Chair, Coalition to Protect America's National Parks, Joshua Smith, Staff Attorney, Sierra Club, to Rebekka Fine, California Air Resources Board, (June 29, 2021), attached as Ex. 5, (NPCA, Coalition for Clean Air, The Coalition to Protect America's National Parks, and Sierra Club, wrote to request that CARB ensure California's upcoming SIP for the second round of the Regional Haze Rule was in full compliance with the Clean Air Act. The letter from the organizations identified the stationary sources of concern and expressed several concerns, including that CARB intended to conduct a Four-Factor Analysis on only one of the stationary sources; *see also* Letter from Mark Rose, Sierra Nevada Program Manager, National Parks Conservation Association, Bill Magavern, Policy Director, Coalition for Clean Air, Philip A. Francis, Jr., Chair, Coalition to Protect America's National Parks, Joshua Smith, Staff Attorney, Sierra Club, to Liane Randolph, Chair, California Air Resources Board, Martha Guzman, Pacific Southwest Regional Administrator, U.S. Environmental Protection Agency, (April 26, 2022), attached as Ex. 5, https://drive.google.com/file/d/17aGGM7rpDSmiKsTW9_TVKAKIJWBdHJQJ/view?usp=sharing.

Rule's FLM consultation requirements in Section 51.308(f)(2)(ii) is entirely perfunctory and does not satisfy the rule's requirements.

2. CARB has impermissibly exempted all but one stationary source from the Clean Air Act's Four-Factor Analysis based on the State's reliance on Assembly Bill 617.

3. CARB must not rely on the Western Regional Air Partnership's ("WRAP") modeled sulfate levels to exempt stationary sources from Four-Factor Analyses, which are biased low for California's Class I Areas and must include Four-Factor Analyses and enforceable emission limitations SO_2 pollution for visibility impairment. Additionally, many sources excluded by CARB with BARCT controls have additional controls available and CARB must ensure Four-Factor Analyses are conducted.

4. CARB failed to require the appropriate Four-Factor Analysis for the Collins Pine Company, and must revise that analysis and include enforceable emission limitations in the SIP for that source.

5. CARB must add requirements to the SIP for offroad mobile sources.

6. California's oil and gas sector contributes substantially to visibility impairment and must be mitigated through Four-Factor Analyses, determinations, and enforceable emission limitations. The State must revise and amend the Proposed SIP and provide the public an opportunity to comment on the revision before submitting to EPA.

7. The NPS's consultation recommended that California improve the Proposed SIP either by demonstrating how Assembly Bill 617 will achieve or by conducting full Four-Factor Analyses for a total 20 specific sources:

    - **Eight of the refineries** originally selected for four-factor review.
    - **Six cement plants** originally selected for four-factor review.
    - **Five woodwaste boiler** facilities originally selected for four-factor review.
    - **One chemical manufacturing** facility originally selected for four-factor review.[8]

8. CARB's proposed reliance on AB 617 means that CARB must ensure that complete Four-Factor Analyses (or the equivalent via AB 617) are completed for all the sources listed in Table 1 on page 13, including but not limited to enforceable emission limitations at sources that already have BARCT in place, including monitoring, recordkeeping and reporting.

[8] NPS Formal Consultation Comments at NPS-14.

9. CARB failed to—and must—evaluate the impacts of the Proposed SIP on environmental justice communities. Notably, AB 617 includes provisions for environmental justice considerations, which CARB did not discuss in the Proposed SIP.

As it currently stands, California's Regional Haze SIP does not meet the legal requirements of the Clean Air Act or federal regulations, and therefore cannot be approved by EPA. We urge CARB to revise the plan to address the fundamental flaws identified in these comments, the attached Kordzi and Gebhart Reports and other above referenced reports, which we incorporate in full in these comments.

Table of Contents

I. INTRODUCTION AND BACKGROUND

California is home to 29 Class I areas. These areas are iconic, treasured landscapes, and California is rich in these resources. Congress set aside these and other national parks and wilderness areas to protect our natural heritage for generations. These protected areas provide habitat for a range of wildlife species, provide year-round recreational opportunities for residents and visitors, and generate millions of dollars in tourism revenue. Because of these areas' designations as "Class I" under the Clean Air Act ("CAA" and "Act"), their air quality is entitled to the highest level of protection.

To improve air quality in our most treasured landscapes, Congress passed the visibility protection provisions of the CAA in 1977, establishing "as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in the mandatory class I Federal areas which impairment results from manmade air pollution."[9] "Manmade air pollution" is defined as "air pollution which results directly or indirectly from human activities."[10] To protect Class I areas' "intrinsic beauty and historical and archeological treasures," the CAA's regional haze program establishes a national regulatory floor and requires states to design and implement programs to curb haze-causing emissions within their jurisdictions. Each state must submit for EPA review a state implementation plan ("SIP") designed to make reasonable progress toward achieving natural visibility conditions.[11]

A regional haze SIP must provide "emissions limits, schedules of compliance and other measures as may be necessary to make reasonable progress towards meeting the national goal."[12] Two of the most critical features of a regional haze SIP are the requirements for installation of Best Available Retrofit Technology ("BART") limits on pollutant emissions *and a long-term strategy for making reasonable progress toward the national visibility goal*.[13] Although many states addressed the CAA's BART requirements in their initial regional haze plans, EPA's 2017 revisions to the RHR make clear that BART was not a once-and-done requirement. Indeed, states "will need" to reassess "BART-eligible sources that installed only moderately effective controls (or no controls at all)" for any additional technically-achievable controls in the second planning period.[14] The haze requirements in the CAA present an unparalleled opportunity to protect and restore regional air quality by curbing visibility-impairing emissions from a variety of polluting sources.

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[9] 42 U.S.C. § 7491(a)(1).
[10] 42 U.S.C. § 7491(g)(3).
[11] 42 U.S.C. § 7491(b)(2).
[12] 42 U.S.C. § 7491(b)(2).
[13] 42 U.S.C. § 7491(b)(2)(B); 40 C.F.R. § 51.308(d)(1)(i)(B).
[14] 82 Fed. Reg. 3,078, 3,083 (Jan. 10, 2017); *see also id.* at 3,096 ("states must evaluate and reassess all elements required by 40 CFR 51.308(d)").

Implementing the regional haze requirements promises benefits beyond improving views. Pollutants that cause visibility impairment also harm public health. For example, oxides of nitrogen ("NOx") are a precursor to ground-level ozone which is associated with respiratory disease and asthma attacks. NOx also reacts with ammonia, moisture, and other compounds to form particulates that can cause and/or worsen respiratory diseases, aggravate heart disease, and lead to premature death. Similarly, sulfur dioxide ("SO_2") increases asthma symptoms, leads to increased hospital visits, and can also form particulates. NOx and SO_2 emissions also harm terrestrial and aquatic plants and animals through acid rain as well as through deposition of nitrates, which in turn cause ecosystem changes including eutrophication of mountain lakes.

Unfortunately, the promise of natural visibility is unfulfilled because the air in most Class I areas, including in California's most treasured natural areas, remains polluted by industrial sources, including the sources identified below, which are covered in our comments.

Table 1. Sources Identified by NPCA that Warrant Four-Factor Analysis and Emission Limitations in the SIP[15]

Facility Name	County	Description	AB617 Expedited BARCT Facility	2017 NOX (tons)	2017 PM10-PRI (tons)	2017 PM25-PRI (tons)	2017 SO2 (tons)	2017 VOC (tons)
CEMEX CALIFORNIA CEMENT LLC	San Bernardino	Cement Manufacturing	YES	5419.7	915.8	494.7	569.1	365.0
MITSUBISHI CEMENT CORPORATION	San Bernardino	Cement Manufacturing	YES	1943.9	440.0	177.0	344.1	26.9
SHELL MARTINEZ REFINERY	Contra Costa	Petroleum Refineries	YES	916.5	768.6	640.2	1155.0	1176.8
LEHIGH SOUTHWEST CEMENT COMPANY	Santa Clara	Cement Manufacturing	YES	1207.7	42.6	28.7	1392.9	30.0
CALIFORNIA PORTLAND CEMENT CO.	Kern	Cement Manufacturing	YES	1531.0	304.0	49.8	502.3	22.0
SEARLES VALLEY MINERAL	San Bernardino	Potash, Soda, and Borate Mineral Mining	YES	1516.9	241.0	159.5	145.6	37.5
CALPORTLAND ORO GRANDE	San Bernardino	Cement Manufacturing	NO	1141.0	366.4	200.1	7.9	3.7
PHILLIPS 66 CARBON PLANT	Contra Costa	All Other Petroleum and Coal Products Manufac	YES	360.0	23.6	23.3	1463.8	0.1
CHEVRON PRODUCTS COMPANY	Contra Costa	Petroleum Refineries	YES	737.2	593.4	566.2	373.7	1343.1
TORRANCE REFINING COMPANY LLC	Los Angeles	Petroleum Refineries	NO	923.5	167.9	155.3	241.9	649.7
TESORO REFINING & MARKETING CO, LLC	Los Angeles	Petroleum Refineries	YES	661.0	280.9	238.7	339.4	492.2
CHEVRON PRODUCTS CO.	Los Angeles	Petroleum Refineries	YES	729.4	212.7	200.2	281.8	518.8
TESORO REFINING AND MARKETING CO, LLC	Los Angeles	Petroleum Refineries	YES	749.3	176.2	143.4	175.3	260.4
VALERO REFINING COMPANY - CALIFORNIA	Solano	Petroleum Refineries	YES	1013.1	102.1	101.9	95.1	323.1
LEHIGH SOUTHWEST CEMENT COMPANY	Shasta	Cement Manufacturing	YES	603.1	104.0	33.5	8.3	2.7
TESORO REFINING & MARKETING COMPANY LLC	Contra Costa	Petroleum Refineries	YES	359.7	289.2	265.8	343.7	875.6
PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	Los Angeles	Petroleum Refineries	YES	391.4	58.6	52.6	240.8	92.4
PHILLIPS 66 CO/LA REFINERY WILMINGTON PL	Los Angeles	Petroleum Refineries	YES	470.9	134.5	104.0	109.0	249.4
WHEELABRATOR SHASTA E.C.I.	Shasta	Hydroelectric Power Generation	NO	535.8	45.6	41.5	2.5	65.0
VITRO FLAT GLASS LLC	Fresno	Flat Glass Manufacturing	NO	384.9	16.6	16.2	59.0	0.9
TESORO REF & MKTG CO LLC,CALCINER	Los Angeles	Office Administrative Services	YES	261.0	23.1	10.1	375.5	2.1
ELEMENTIS SPECIALTIES - E HECTOR RD	San Bernardino	All Other Nonmetallic Mineral Mining	NO	1.1	662.5	258.6		0.0
GUARDIAN INDUSTRIES CORP	Fresno	Flat Glass Manufacturing	NO	313.0	15.2	12.0	146.7	36.9
COLLINS PINE CO	Plumas	Sawmills	NO	129.5	40.3	36.9	3.6	16.9
TAMCO	San Bernardino	Iron and Steel Mills and Ferroalloy Manufactu	YES	108.1	51.9	37.8	28.8	17.4
CEMEX - RIVER PLANT	San Bernardino	Cement Manufacturing	NO	76.3	231.7	107.8	5.5	4.0
BURNEY FOREST PRODUCTS	Shasta	Wood Container and Pallet Manufacturing	NO	189.7	25.8	23.6	3.7	7.9
KIRKWOOD POWERHOUSE	Alpine	Fossil Fuel Electric Power Generation	NO	9.8	0.4	0.4		0.0
PHILLIPS 66 COMPANY - SAN FRANCISCO REFINERY	Contra Costa	Petroleum Refineries	YES	217.8	77.1	70.6	367.5	247.6
SIERRA PACIFIC IND. - BURNEY	Shasta	Cut Stock, Resawing Lumber, and Planing	NO	156.9	28.5	24.9	1.7	42.7
ULTRAMAR INC	Los Angeles	Petroleum Refineries	YES	278.0	66.6	63.6	125.0	161.5
SIERRA PACIFIC INDUSTRIES	Plumas	Sawmills	NO	392.4	21.1	19.5	6.7	33.2
GRANITE CONSTRUCTION LEE VINING	Mono	Asphalt Paving Mixture and Block Manufacturin	NO	31.3	15.2	3.5	5.9	7.2
SYCAMORE LANDFILL INC	San Diego	Hazardous Waste Treatment and Disposal	NO	16.1	460.7	84.8	2.9	48.9
NATIONAL CEMENT CO	Kern	Cement Manufacturing	NO	173.6	274.0	56.2	24.8	10.3
SPECIALTY MINERALS, INC	San Bernardino	Crushed and Broken Limestone Mining and Quarr	NO	2.3	249.0	59.0	0.0	0.2
DESERT VIEW POWER	Riverside	Fossil Fuel Electric Power Generation	NO	188.5	13.7	13.2	47.7	7.1
HI-GRADE MATERIALS COMPANY - 29 PALMS	San Bernardino	Other Crushed and Broken Stone Mining and Quarrying	NO		63.0	16.4		0.0
CALIFORNIA STEEL INDUSTRIES INC	San Bernardino	Fabricated Pipe and Pipe Fitting Manufacturin	YES	125.5	16.0	14.6	1.0	16.9
NEW- INDY ONTARIO, LLC	San Bernardino	All Other Support Services	YES	136.7	19.2	17.3	1.2	50.2
LA CNTY SANITATION DISTRICT-PUENTE HILLS	Los Angeles	Solid Waste Landfill	NO	45.4	43.7	43.5	97.6	5.1
AMERICAN PERLITE COMPANY	Inyo	Ground or Treated Mineral and Earth Manufactu	NO	1.7	46.3	6.9	0.0	0.0
REDWOOD LANDFILL INC	Marin	Hazardous Waste Treatment and Disposal	NO	18.3	120.5	28.1	38.8	133.4
CALIFORNIA ENERGY COMPANY INC.	Inyo	Other Electric Power Generation	NO	35.1	174.6	112.7	0.0	0.0
AERA ENERGY LLC	Kern	Crude Petroleum and Natural Gas Extraction	YES	249.2	80.3	80.2	19.0	90.6
ORCUTT HILL IC ENGINES	Santa Barbara	Crude Petroleum and Natural Gas Extraction	NO	170.0	0.9	0.9	8.9	9.2
AMPINE: A DIVISION OF TIMBER PRODUCTS COMPANY	Amador	Reconstituted Wood Product Manufacturing	NO	62.6	294.7	244.4	0.2	155.1
SCG - BLYTHE	Riverside	Pipeline Transportation of Natural Gas	NO	351.8	8.7	8.7	0.2	27.6
CHEVRON USA INC	Kern	Crude Petroleum and Natural Gas Extraction	NO	113.2	87.9	87.9	83.9	95.3
CHEMTRADE WEST US LLC	Contra Costa	Natural Gas Liquid Extraction	NO	1.8	3.1	2.0	162.2	2.1
MT. LASSEN POWER	Lassen	Electric Power Distribution	NO	84.0	20.5	19.1	4.2	0.4
OMYA - MAIN PLANT	San Bernardino	Crushed and Broken Limestone Mining and Quarrying	NO	1.9	136.2	30.4	0.1	0.0
OWENS-BROCKWAY GLASS CONTAINER INC	Los Angeles	Glass Container Manufacturing	NO	96.3	24.4	20.4	49.8	3.3
LONG BEACH CITY, SERRF PROJECT	Los Angeles	Solid Waste Combustors and Incinerators	NO	268.7	13.1	9.3	13.9	9.5
PACIFIC GAS & ELECTRIC	Shasta	Pipeline Transportation of Natural Gas	NO	86.9	2.2	2.2	1.1	2.4

* Facilities in red indicate sources that were identified by NPCA, but not CARB.

[15] NPCA calculated Q using the 2017 NEI for non-EGUs and for power plants NPCA used 2019 AMDP (EPA Air Markets Data Program). This information is from the NPCA interactive map that provides users access to point and non-point source emissions data based on NPCA's assessment of publicly available information curated to identify sources and industrial sectors of concern to visibility in Class I area national parks and wilderness areas. The sources identified likely merit review by states to determine whether and what emission reduction options are feasible to

II. REQUIREMENTS FOR PERIODIC COMPREHENSIVE REVISIONS FOR REGIONAL HAZE SIPS

A. Clean Air Act and Regional Haze Rule

In developing its long-term strategy, a state must consider its anthropogenic sources of visibility impairment and evaluate different emission reduction strategies including and beyond those prescribed by the BART provisions. A state should consider "major and minor stationary sources, mobile sources and area sources." At a minimum, a state must consider the following factors in developing its long-term strategy:

> (A) Emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment;
> (B) Measures to mitigate the impacts of construction activities;
> (C) Emissions limitations and schedules for compliance to achieve the reasonable progress goal;
> (D) Source retirement and replacement schedules;
> (E) Smoke management techniques for agriculture and forestry management purposes including plans as currently exist within the State for these purposes;
> (F) Enforceability of emission limitations and control measures; and
> (G) The anticipated net effect on visibility due to projected changes in point, area, and mobile emissions over the period addressed by the long-term strategy.[16]

Additionally, a state "[m]ust include in its implementation plan a description of the criteria it used to determine which sources or groups of sources it evaluated and how the four factors were taken into consideration in selecting the measures for inclusion in its long-term strategy." States must also document the technical basis for the SIP, including monitoring data, modeling, and emission information, including the baseline emission inventory upon which its strategies are based. All

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achieve reasonable progress towards the restoration of natural visibility at Class I areas, and otherwise benefit progress toward clean air in all of our communities. The map lets one visualize the locations and details of emission sources, the level of emissions of different pollutants, and the Class I areas potentially affected by each source. The interactive map also provides information on emissions from oil and gas infrastructure such as wells, drilling rigs, compressor stations, pipelines, and refineries at the county level. Additional layers are available to visualize the 8-hour Ozone (2015) nonattainment areas as well as vulnerable populations by county density, including people of color and people living below the poverty line., https://npca.maps.arcgis.com/apps/MapSeries/index.html?appid=73a82ae150df4d5a8160a2275591e45d.

[16] 40 C.F.R. § 51.308(f)(2)(iv).

of this information is part of a state's revised SIP and subject to public notice and comment.

B. EPA's 2017 Revisions to the Regional Haze Rule

On January 10, 2017, the EPA revised the RHR to strengthen and clarify the reasonable progress and consultation requirements of the rule.

A state's reasonable progress analysis must consider the four-factors identified in the Clean Air Act and regulations. EPA's 2017 Revisions to the RHR made clear that states are to first conduct the required Four-Factor Analysis for its sources, and then use the results from its Four-Factor Analyses and determinations to develop the reasonable progress goals. Thus, the rule "codif[ies]" EPA's "long-standing interpretation" of the SIP "planning sequence" that states are required to follow:

- [C]alculate baseline, current and natural visibility conditions, progress to date and the [Uniform Rate of Progress ("URP")];[17]
- [D]evelop a long-term strategy for addressing regional haze by evaluating the four factors to determine what emission limits and other measures are necessary to make reasonable progress;[18]
- [C]onduct regional-scale modeling of projected future emissions under the long-term strategies to establish Reasonable Progress Goals ("RPGs") and then compare those goals to the URP line;[19] and
- [A]dopt a monitoring strategy and other measures to track future progress and ensure compliance.[20]

Thus, the RHR makes clear that a state must conduct Four-Factor Analyses and cannot rely on uniform rate of progress as an excuse for failing to perform the core functions of the law. Indeed:

> The CAA requires states to determine what emission limitations, compliance schedules and other measures are necessary to make reasonable progress by considering the four factors. The CAA does not provide that states may then reject some control measures already determined to be reasonable if, in the aggregate, the controls are projected to result in too much or too little progress. Rather, the rate of progress that will be achieved by the emission reductions resulting from all reasonable control measures is, by definition, a reasonable rate of progress. … [I]f a state has reasonably selected a set of sources

[17] 40 C.F.R. § 51.308(f)(1).
[18] 40 C.F.R. § 51.308(f)(2).
[19] 40 C.F.R. § 51.308(f)(3).
[20] 40 C.F.R. § 51.308(f)(6).

> for analysis and has reasonably considered the four factors in determining what additional control measures are necessary to make reasonable progress, then the state's analytical obligations are complete if the resulting RPG for the most impaired days is below the URP line. *The URP is not a safe harbor*, however, and states may not subsequently reject control measures that they have already determined are reasonable.[21]

Moreover, for each Class I area within its borders, a state must determine the uniform rate of progress—which is the amount of progress that, if kept constant each year, would ensure that natural visibility conditions are achieved in 2064.[22] If a state establishes reasonable progress goals that provide for a slower rate of improvement in visibility than the uniform rate of progress, the state must provide a technically "robust" demonstration, based on a careful consideration of the statutory reasonable progress factors, that "there are no additional emission reduction measures for anthropogenic sources or groups of sources" that can reasonably be anticipated to contribute to visibility impairment in affected Class I areas.[23]

Although many states addressed the Act's BART requirements in their initial regional haze plans, EPA's 2017 revisions to the RHR make clear that BART was not a once-and-done requirement. Indeed, states "will need" to reassess "BART-eligible sources that installed only moderately effective controls (or no controls at all)" for any additional technically-achievable controls in the second planning period.[24]

To the extent that a state declines to evaluate additional pollution controls for any source relied upon to achieve reasonable progress based on that source's planned retirement or decline in utilization, it must incorporate those operating parameters or assumptions as enforceable limitations in the second planning period SIP. The Act requires that "[e]ach state implementation plan . . . *shall*" include "enforceable limitations and other control measures" as necessary to "meet the applicable requirements" of the Act.[25] The RHR similarly requires each state to include "enforceable emission limitations" as necessary to ensure reasonable progress toward the national visibility goal.[26] Therefore, where the state relies on a source's plans to permanently cease operations or projects that future operating

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[21] 82 Fed. Reg. at 3,093 (emphasis added).
[22] 40 C.F.R. § 51.308(d)(1)(i)(B).
[23] 40 C.F.R. § 51.308 (f)(2)(ii)(A).
[24] 82 Fed. Reg. at 3,083; *see also id.* at 3,096 ("states must evaluate and reassess all elements required by 40 CFR 51.308(d)").
[25] 42 U.S.C. § 7410(a)(2)(A).
[26] *See* 40 C.F.R. § 51.308(d)(3) ("The long-term strategy must include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals established by States having mandatory Class I Federal areas.").

parameters (*e.g.*, limited hours of operation or capacity utilization) will differ from past practice, or if this projection exempts additional pollution controls as necessary to ensure reasonable progress, then the state "must" make those parameters or assumptions into enforceable limitations.[27]

In addition, the 2017 RHR revisions further clarified that regional haze SIPs meet certain procedural and consultation requirements.[28] The state must consult with the Federal Land Managers ("FLMs") and look to the FLMs' expertise of the lands and knowledge of the way pollution harms them to guide the state to ensure SIPs do what they must to help restore natural skies. The RHR also requires that in "developing any implementation plan (or plan revision) or progress report, the State must include a description of how it addressed any comments provided by the Federal Land Managers."[29]

Finally, the duty to ensure reasonable progress requirements are met for purposes of the SIP rests with the state. While the Western Regional Air Partnership ("WRAP") plays an important role in providing support in regional haze planning, the state is ultimately accountable for preparing, adopting, and submitting a compliant SIP to EPA. Further, as discussed more fully below, CARB has an obligation to make available to the public and cite to the technical support documentation it proposes to rely on and use as part of its SIP revision so that the public can review and comment.

C. EPA's 2021 Regional Haze Clarification Memorandum

On July 8, 2021, EPA issued a memo which additionally clarified certain aspects of the revised RHR and provided further information to states and EPA regional offices regarding their planning obligations for the Second Planning

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[27] 40 C.F.R. §§ 51.308(i); (d)(3) ("The long-term strategy must include enforceable emissions limitations, compliance schedules . . ."); (f)(2) (the long-term strategy must include "enforceable emissions limitations"); *see also* Memorandum from Peter Tsirigotis, Director, EPA Office of Air Quality Planning and Standards, to Regional Air Division Directors, Region 1-10, "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period," at 22 (Aug. 20, 2019), https://www.epa.gov/sites/production/files/2019-08/documents/8-20-2019_-_regional_haze_guidance_final_guidance.pdf ("2019 Guidance") ("in selecting sources for control measure analysis," the state may choose "not selecting sources that have an enforceable commitment to be retired or replaced by 2028"); *id*. at 34 (To the extent a retirement or reduction in operation "is being relied upon for a reasonable progress determination, the measure would need to be included in the SIP and/or be federally enforceable.") (citing 40 C.F.R. § 51.308(f)(2)); 2019 Guidance at 43 ("[i]f a state determines that an in-place emission control at a source is a measure that is necessary to make reasonable progress and there is not already an enforceable emission limit corresponding to that control in the SIP, the state is required to adopt emission limits based on those controls as part of its long-term strategy in the SIP via the regional haze second planning period plan submission.").

[28] For example, in addition to the RHR requirements, states must also follow the SIP requirements in 40 C.F.R. §§ 51.104, 51.102.

[29] 40 C.F.R. § 51.308(i)(3).

Period.[30] In particular, EPA made clear that states must secure additional emission reductions that build on progress already achieved, there is an expectation that reductions are additive to ongoing and upcoming reductions under other CAA programs.[31] In evaluating sources for emission reductions, EPA emphasized that:

> Source selection is a critical step in states' analytical processes. All subsequent determinations of what constitutes reasonable progress flow from states' initial decisions regarding the universe of pollutants and sources they will consider for the second planning period. States cannot reasonably determine that they are making reasonable progress if they have not adequately considered the contributors to visibility impairment. Thus, while states have discretion to reasonably select sources, this analysis should be designed and conducted to ensure that source selection results in a set of pollutants and sources the evaluation of which has the potential to meaningfully reduce their contributions to visibility impairment.[32]

Thus, it is generally not reasonable to exclude from further evaluation large sources or entire sectors of visibility impairing pollution.

Moreover, the Clarification Memo reiterates that the fact that a Class I area is meeting the Uniform Rate of Progress is "not a safe harbor" and does not excuse the state from its obligation to consider the statutory reasonable progress factors in evaluating reasonable control options.[33] In addition, the Clarification Memo makes clear that a state should not reject cost-effective and otherwise reasonable controls merely because there have been emission reductions since the first planning period owing to other ongoing air pollution control programs or merely because visibility is otherwise projected to improve at Class I areas.[34] Ongoing air pollution controls, otherwise improved visibility, and/or air modeling results must not be used to summarily assert that a state has already made sufficient progress and, as a result, no sources need to be selected or no new controls are needed regardless of the outcome of Four-Factor Analyses.[35] As noted above, the reasonable progress Four-Factor Analysis is the vehicle for identifying reasonable control measures, limitations, etc., necessary during this second implementation period, and a statutory Four-Factor Analysis must specifically include consideration of:

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[30] July 8, 2021 Memo from Peter Tsirogotis to Regional Air Directors, Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period at 3 ("2021 Clarification Memo"), https://www.epa.gov/visibility/clarifications-regarding-regional-haze-state-implementation-plans-second-implementation.
[31] 2021 Clarification Memo at 2.
[32] 2021 Clarification Memo at 3.
[33] 2021 Clarification Memo at 2.
[34] 2021 Clarification Memo at 13.
[35] 2021 Clarification Memo at 13.

1. Consider the costs of compliance,
2. The time necessary for compliance,
3. The energy and non-air quality environmental impacts of compliance, and
4. The remaining useful life of any potentially affected sources.[36]

Notably, Congress did not include visibility, modeling results, or emission inventories as one of these four statutory factors. Thus, to the extent a state relies on purportedly insufficient air quality benefits because of visibility, emission inventories, and/or modeled impacts from a source as a justification for refusing to require cost-effective emission reductions, the state's analysis is inconsistent with the CAA and the RHR.

The Clarification Memo also instructs that, for sources that have previously installed controls, states should still evaluate the "full range of potentially reasonable options for reducing emissions," including options that may "achieve greater control efficiencies, and, therefore, lower emission rates, using their existing measures."[37] Moreover, "[i]f a state determines that an in-place emission control at a source is a measure that is necessary to make reasonable progress and there is not already an enforceable emission limit corresponding to that control in the SIP, the state is required to adopt emission limits based on those controls as part of its long-term strategy in the SIP via the regional haze second planning period plan submission."[38] This also means that so-called "on-the-way" measures, including anticipated shutdowns or reductions in a source's emissions or utilization, that are relied upon to forgo a Four-Factor Analysis or to shorten the remaining useful life of a source "*must* be included in the SIP" as enforceable emission reduction measures.[39]

Finally, the Clarification Memo confirms EPA's recommendation that states take into consideration environmental justice concerns and impacts in issuing any SIP revision for the second planning period.

In sum, EPA's 2021 Clarification Memo makes clear that the states' regional haze plans for the second planning period must include meaningful emission reductions to make reasonable progress towards the national goal of restoring visibility in Class I areas. The Clarification Memo confirms that California's efforts to avoid emission reductions—by asserting, for example, that reductions are not necessary because visibility has improved, because reductions are anticipated at some later date or due to implementation of another program, or because a source has some level of control—is at odds with California's haze obligations under the

[36] 42 U.S.C. § 7491(g)(1); 40 C.F.R. § 51.308(f)(2)(i).
[37] 2021 Clarification Memo at 7.
[38] 2021 Clarification Memo at 8.
[39] 2021 Clarification Memo at 8-9 (emphasis added).

CAA and the RHR itself. Indeed, "a state should generally not reject cost-effective and otherwise reasonable controls merely because there have been emission reductions since the first planning period owing to other ongoing air pollution control programs or merely because visibility is otherwise projected to improve at Class I areas."[40]

D. States Must Ensure the SIP Satisfies the Requirements of the Regional Haze Rule

The duty to ensure that a SIP satisfies the requirements of the RHR ultimately rests with the state, not the source.[41] If CARB, another state, or the FLMs identify a source as impacting visibility in a Class I area, thereby warranting a Four-Factor Analysis of potential reasonable progress controls, CARB must conduct such an analysis or provide an adequate demonstration that any emission reductions or controls would be futile to inform its reasonable progress determination.[42] In the future, should sources submit their own Four-Factor Analysis, CARB has an obligation to independently review that analysis. The state must not "rubber stamp" a source's analysis. If a source prepares an inaccurate, incomplete, or undocumented Four-Factor Analysis, the state (or air district) must either require the source to make the necessary corrections or make the corrections itself. Where a source is unwilling to conduct the required reasonable progress analysis, the responsibility must be met by the state.

E. Emission Reductions to Make Reasonable Progress Must be Included in Practically Enforceable SIP Measures

A state cannot rely on unspecified permit and other provisions as providing emission reductions necessary to ensure reasonable progress. The CAA requires states to submit implementation plans that "contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal" of achieving natural visibility conditions at all Class I Areas.[43] The RHR requires that states must revise and update its regional haze SIP, and the "periodic comprehensive revisions must include the "enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress as determined pursuant to [40 C.F.R. §§ 51.308](f)(2)(i) through (iv)."[44] As discussed below, all of these required measures are missed from CARB's Proposed SIP.

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[40] 2021 Clarification Memo at 13.
[41] 40 C.F.R. § 51.308(d).
[42] 2021 Clarification Memo § 2.2.
[43] 42 U.S.C. §§ 7491(a)(1), (b)(2).
[44] 40 C.F.R. § 51.308(f)(2); 40 C.F.R. § 51.308(d)(3)(v)(F) (Enforceability of emission limitations and control measures).

EPA issued regional haze guidance in 2019 and that guidance-further explains these emission limitation requirements:

> This provision requires SIPs to include enforceable emission limitations and/or other measures to address regional haze, deadlines for their implementation, and provisions to make the measures practicably enforceable including averaging times, monitoring requirements, and record keeping and reporting requirements.[45]

Thus, while the SIP is the basis for demonstrating and ensuring state plans meet RHR requirements, state-issued permits must complement the SIP.[46] In addition, to the extent that a state relies on any expected retirement, reduction in utilization, or reduction in emissions as a result of a permit provision in its reasonable progress analysis, those emission reductions *must* be included as enforceable emission limitations in the SIP itself.[47] Finally, reasonable progress requirements apply to all sources, and states must not rely on existing permits (*e.g.*, construction permits issued under Title I of the Act, operating permits issued under Title V of the Act) to allow sources to avoid the Four-Factor Analysis; there is no off-ramp for sources that hold permits.

III. CARB'S SIP FAILED TO INCLUDE THE REQUIRED DOCUMENTATION

The duty to ensure reasonable progress requirements are met for purposes of submitting a SIP to EPA rests with the state. The Regional Haze Rule makes clear, the *state* has a duty to conduct a "robust" analysis of potential reasonable progress controls, and must "document the technical basis, including modeling, monitoring, cost, engineering, and emissions information, on which the state is relying to determine the emission reduction measures that are necessary to make reasonable progress in each mandatory Class I Federal area it affects."[48]

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[45] Memorandum from Peter Tsirigotis, Director at EPA Office of Air Quality Planning and Standards, to EPA Air Division Directors Regions, "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period," EPA-457/B-19-003, at 42-43 (Aug. 2019), https://www.epa.gov/sites/production/files/2019-08/documents/8-20-2019_-_regional_haze_guidance_final_guidance.pdf. ("2019 Guidance") (While NPCA, Sierra Club and others filed a Petition for Reconsideration regarding EPA's issuance of the 2019 Guidance (attached as Ex. 6), https://drive.google.com/file/d/1JTT0KRTR6WOvnaNcZRYNVYb6-dA5OH7y/view?usp=sharing, they do not dispute the information in the Guidance referenced here regarding enforceable limitations, which cite to EPA's long-standing positions in the "General Preamble for the Implementation of Title I of the Act Amendments of 1990, 74 Fed. Reg. 13,498 (Apr. 16, 1992)).

[46] 74 Fed. Reg. at 13,568.

[47] 42 U.S.C. §§ 7410(a)(2), 7491(b)(2); *see also* 40 C.F.R. § 51.308(d), (f).

[48] 40 C.F.R. § 51.308(f)(2)(iii).

As part of its Proposed SIP revisions, CARB must not only follow the requirements in the RHR, but also the requirements for preparation, adoption and submittal of SIPs.[49] A state must first obtain and not "rubber stamp" what it receives from an air district. The state must review information it receives from an air district to ensure that necessary corrections are made and that information is accurate and complete *before* the start of the public notice and comment period. As discussed in the Kordzi Report,[50] this lack of basic documentation not only precluded the state, the FLMs, and any independent reviewer from verifying the information in CARB's Proposed SIP, but it was contrary to the Act and the RHR.[51]

As explained in the Kordzi Report the fundamental information missing from the Proposed SIP included the unit-level emissions from all of the thousands of non-EGU sources and information on how those units are presently controlled. While this information was requested from CARB, as of June 13, 2022, CARB had not responded with the information. Additionally, the Kordzi Report explained that because SIP appears to indicate that Assembly Bill (AB) 617 is being used as a reasonable progress control, or as a reason not to subject sources to Four-Factor Analyses, we asked whether any of the emission reductions projected to result from AB 617 were made federally enforceable in the SIP. Emission reductions that might be projected as a result of AB 617, are neither reflected in this Regional Haze SIP nor planned for inclusion in a future Regional Haze SIP. Indeed, this Regional Haze SIP does not quantify the emission reductions projected emission reductions from AB 617.

As the Kordzi Report concluded, CARB must therefore correct these fundamental failures in documentation in its SIP.[52] Unless these issues are addressed, California cannot satisfy Section 51.308(f) which requires "supporting documentation for all required analyses" and Section 51.308(f)(2)(iii) which requires that California "must document the technical basis, including modeling, monitoring, cost, engineering, and emissions information, on which the State is relying to determine the emission reduction measures that are necessary to make reasonable progress in each mandatory Class I Federal area it affects."[53]

[49] *See e.g.*, 40 C.F.R. §§ 51.100, 51.102, 51.103, 51.104, 51.105, and Appendix V to Part 51.
[50] Kordzi Report at ii-3.
[51] 2019 Guidance at 22.
[52] Kordzi Report at 3.
[53] Kordzi Report at 3.

IV. CARB USED A FLAWED SOURCE SELECTION METHODOLOGY, WHICH IDENTIFIED JUST ONE STATIONARY SOURCE AND MUST BE REVISED

States must identify sources for the Four-Factor Analysis and the screening threshold a state applies must ensure that the threshold is low enough to bring in most sources harming a Class I area. EPA's 2021 Clarification Memo emphasizes this requirement explaining that:

> [W]hile states have discretion to reasonably select sources, this analysis should be designed and conducted to ensure that source selection results in a set of pollutants and sources the evaluation of which has the potential to meaningfully reduce their contributions to visibility impairment.[54]

The RHR requires each state to submit a long-term strategy that addresses the regional haze visibility impairment resulting from emissions from within that state and for each mandatory Class I Federal area located outside the State that may be affected by emissions from the State.[55] Regarding a state's source selection methodology EPA's Guidance explained:

> Whatever threshold is used, the state must justify why the use of that threshold is a reasonable approach, *i.e.*, why it captures a reasonable set of sources of emissions to assess for determining what measures are necessary to make reasonable progress.[56]

As EPA has further explained:

- [I]t may be difficult to show reasonableness of a threshold set so high that an uncontrolled or lightly controlled source that is one of the largest contributors to anthropogenic light extinction at a Class I area is excluded;[57]
- [A] threshold that captures only a small portion of a state's contribution to visibility impairment in Class I areas is more likely to be unreasonable;[58] and

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[54] 2021 Clarification Memo at 3.
[55] 40 C.F.R. § 51.308(f)(2).
[56] 2019 Guidance at 19, citing 40 C.F.R. § 51.308(f)(2)(i)("The State must include in its implementation plan a description of the criteria it used to determine which sources or groups of sources it evaluated and how the four factors were taken into consideration in selecting the measures for inclusion in its long-term strategy.").
[57] 2019 Guidance at 19.
[58] 2021 Clarification Memo at 3.

- [A] threshold that excludes a state's largest visibility impairing sources from selection is more likely to be unreasonable.[59]

A. CARB Failed to Identify a Sufficient Number of Existing Emission Sources to Capture a "Meaningful Portion" of the Ongoing Visibility Impairment Emissions

Contrary to the requirement to meaningfully reduce, which requires that states comprehensively identify sources of human-caused visibility-impairing emissions across source categories, the methodology used in California's Proposed SIP clearly circumvents this requirement as it resulted in winnowing 42 stationary sources initially identified using the Q/d emissions-to-distance ratio of 5, based on further consideration of "device-level" emission inventories.[60] However, 24 of the 25 stationary emissions sources were later eliminated by CARB and only a *single* stationary emission source was carried forth to the four-factor emissions control analysis.[61] The single source reviewed under the four-factor analysis (Collins Pine Company) was in a location where the California BARCT requirements do not apply.[62] There are significant issues with California's Four-Factor Analysis of this source, which are discussed below.

1. CARB's Misplaced Reliance on "Effectively Controlled" Sources

California's Proposed SIP contains numerous errors in its analysis and its decision to exclude all but one stationary source from the Four-Factor Analysis requirement. First, the Proposed SIP explained that sources were excluded if "information about existing controls, planned controls, or planned operational changes indicated that a full four factor analysis would likely result in the conclusion that, for purposes of the regional haze program, reasonable controls are in place and no further reasonable controls are necessary at this time."[63] While not citing EPA's 2019 Guidance on "effectively controlled" sources, California's SIP reflects its approach to find that where it deems its sources are or will be reasonably controlled, no further reasonable controls are needed in this Proposed SIP. EPA's 2019 Guidance states that it may be reasonable for a state not to select an "effectively controlled source" for controls in its regional haze plan, but EPA was referring to sources which had pollution controls installed recently to meet a Clean

[59] 2021 Clarification Memo at 3.
[60] Gebhart Report at 2.
[61] Gebhart Report at 2, citing DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 154.
[62] Gebhart Report at 2.
[63] DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 154.

Air Act requirement for which there is a *low likelihood of technological advancement* in controls that could provide further reasonable progress.[64] Even for sources with recent pollution controls installed or that are otherwise effectively controlled, EPA's 2019 Guidance still requires that a state that does not select such a source for evaluation of controls to meet reasonable progress to "explain why the decision is consistent with the requirement to make reasonable progress, i.e., why it is reasonable to assume for the purposes of efficiency and prioritization that a full four-factor analysis would likely result in the conclusion that no further controls are necessary."[65] Moreover, SIPs that rely on the "effectively controlled" argument, must show that a Four-Factor Analysis would likely result in the conclusion that no further controls are necessary.[66]

Indeed, EPA has previously indicated that scrubber and SCR systems should be assessed for upgrades and that these upgrades are likely very cost-effective.[67] EPA's 2021 Clarification Memo underscores this point making clear that in evaluating reasonable progress for all sources, states should consider the "full range of potentially reasonable options for reducing emissions . . . [and] may be able to achieve greater control efficiencies, and, therefore, lower emission rates, using their existing measures."[68] Therefore, CARB must first subject the 24 sources to a Four-Factor Analysis under section 51.308(f)(2)(i) before it is able to determine whether

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[64] 2019 Guidance at 22.
[65] 2019 Guidance at 22.
[66] 2019 Guidance at 19; *see also* 2021 Clarification Memo at 5.
[67] *See, e.g.*, 40 C.F.R. § 51.308(f)(2)(i) (The State must evaluate and determine the emission reduction measures that are necessary to make reasonable progress by considering the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected anthropogenic source of visibility impairment."); *see also* 82 Fed. Reg. at 3088 ("Consistent with CAA section 169A(g)(1) and our action on the Texas SIP, a state's reasonable progress analysis must consider a meaningful set of sources and controls that impact visibility. If a state's analysis fails to do so, for example, by . . . failing to include cost-effective controls at sources with significant visibility impacts, then the EPA has the authority to disapprove the state's unreasoned analysis and promulgate a FIP.").

Even if a source has a limited remaining useful life, EPA's Guidance contemplates that states consider cost-effective operational upgrades. Regional Haze Rule Guidance § II.B.3(f) ("If a control measure involves only operational changes, there typically will be only small capital costs, if any, and the useful life of the source or control equipment will not materially affect the annualized cost of the measure."); *see also* 70 Fed. Reg. 39,103, 39,171 (July 6, 2005) (where EPA has made it a point in past actions to ensure that existing controls are examined to determine if they can be cost-effectively upgraded. For instance, the 2005 BART revision to the Regional Haze Rule devotes several paragraphs to specific potential scrubber upgrades it recommends be examined.); *see also* 81 Fed. Reg. 295, 305 (Jan. 5, 2016) (EPA also demonstrated that scrubber upgrades to a number of coal-fired power plants utilizing outdated and inefficient scrubber systems were highly cost-effective, and could achieve removal efficiencies of ninety-five percent which is near the ninety-eight to ninety-nine percent removal efficiencies of newly-installed scrubber systems.); *see also* 82 Fed. Reg. 3078, 3088 (Jan. 10, 2017) (EPA noted in its 2017 Regional Haze Rule revision, EPA disapproved Texas' four-factor analysis in part because "it did not include scrubber upgrades that would achieve highly cost-effective emission reductions that would lead to significant visibility improvements.").
[68] 2021 Clarification Memo at 7.

there are no emission reducing options available (including upgrades to existing controls).

2. CARB's Erroneous Reliance on Speculative and Undocumented Emission Reductions

Second, the Proposed SIP explained that it reviewed "operating permits" and "plans for additional emission controls" as well as "proposed changes."[69] Based on those reviews, CARB concluded that the existing and forthcoming permits would take care of what was needed for the regional haze program and that reasonable controls either are or would be in place and no further reasonable controls are necessary at this time.[70] California's undocumented and unaccounted for review of information contained in operating permits, plans and proposed changes and the brief summary information provided in the Proposed SIP is not equivalent to the information required under a Four-Factor Analysis.[71]

3. CARB Failed to Demonstrate that State BARCT is Equivalent to the Required Four-Factor Analysis

As the Kordzi Report explained, CARB decided that sources subject to State BARCT would not be subject to a Four-Factor Analysis.[72] BARCT is defined in California Health and Safety Code Section 40406 as an air emission limit that applies to existing sources and is the maximum degree reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.[73] The Proposed SIP lacked any discussion of how BARCT provided stationary source emission control benefits equal to or greater than the Four-Factor Analysis.[74] Although elsewhere the Proposed SIP noted that California views the implementation of BARCT level controls as equivalent to reasonable controls for regional haze planning purposes,[75] it failed to provide the detailed SIP documentation and emission limitations to support its conclusion. While BARCT levels controls are the *maximum* degree reduction achievable, it appears they *may* be equivalent controls determined as a result a Four-Factor Analysis. However, because the elements of BARCT have not been demonstrated to be the same as or greater than the elements as the regional haze Four-Factor Analysis elements – California failed to demonstrate that BARCT is equivalent to the Clean Air Act's

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[69] DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 154.
[70] DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 154.
[71] DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 158 – 183.
[72] Kordzi Report at 4.
[73] Proposed SIP at 78.
[74] Gebhart Report at 2.
[75] Proposed SIP at 79.

Four-Factor Analysis, it was unreasonable for California to rely on BARCT controls to exclude *all but one* source from the Four-Factor Analysis, absent the required source-specific equivalency demonstration.

4. Forthcoming Regulations That Will be Adopted by Air Districts Under AB 617, Have Not Been Demonstrated Equivalent to the Required Four-Factor Analysis

Forthcoming regulations that will be adopted by air districts under AB 617, have not been demonstrated equivalent to the required Four-Factor Analysis. The Proposed SIP explained that "State Assembly Bill (AB) 617 was signed into law in 2017 and expanded the scope of BARCT requirements."[76] While not citing to specific provisions in AB 617, the Proposed SIP pointed out several provisions and results of AB 617.

- First, that it required air districts review emission control technologies installed at industrial facilities subject to the State's Cap-and-Trade Program for greenhouse gas emissions.[77]

- Second, air districts were required to adopt an expedited BARCT implementation schedule by January 1, 2019 detailing the rules or rule revisions that will be developed for any source categories for which BARCT is not in place.[78]

- Third, industrial facilities subject to the AB 617 requirement must have BARCT in place by December 31, 2023.[79]

- Fourth, the Proposed SIP suggested that AB 617 "will have a measurable impact on reducing air pollution, including reduction of particulate matter and particulate matter precursors that impair visibility." [80]

The Proposed SIP neither included AB 617 in the proposed rulemaking docket nor cited the specific provisions of the new law when it made the above statements. Commenters located AB 617,[81] and were unable to identify the provisions in AB 617 the Proposed SIP referred to when it suggested that AB 617 would have a "measurable impact on reducing air pollution, including reduction of particulate matter and particulate matter precursors." Additionally, while AB 617 requires air

[76] Proposed SIP at 79.
[77] Proposed SIP at 79.
[78] These schedules were neither references nor included the Proposed SIP for the public to review.
[79] Proposed SIP at 79.
[80] Proposed SIP at 79.
[81] Assembly Bill No. 617, https://drive.google.com/file/d/19_ly7O24Yh0Jg43bGgEi3fGV6HemzAKS/view?usp=sharing.

districts to adopt rules or rule revisions for source categories for which BARCT is not in place, it does not include requirements to tighten emission limitations on existing sources. Existing sources are not covered by AB 617. Thus, unlike the RHR requirements that require review of emission controls at existing sources, AB 617 does not.

Commenters appreciate the legislative package has the potential to support CARB's efforts to meet the State's requirements to implement the Clean Air Act Four-Factor Analyses provisions. Moreover, while commenters are theoretically supportive of the State's proposed approach to use AB 617 as the vehicle to meet the Four-Factor Analyses requirements for some of its sources. Unfortunately, the SIP submittal deadline, which California has been well aware of, does not match up with the timelines in AB 617, which California has also been aware of since July 2017. Therefore, California must revise and renotice the Proposed SIP and ensure that:

- **Four-Factor Analyses (or the equivalent via AB 617) are completed for all the sources listed in Table 1 on page 13**, including but not limited to enforceable emission limitations at sources that already have BARCT in place, including monitoring, recordkeeping and reporting.

- **The air district's rules include emission limitations on visibility impairing pollutants, including but not limited to SO_2**. As discussed above, the Proposed SIP failed to address SO_2.

- **The air district's rules (or CARB's SIP measures if the air districts fail to act) must be submitted to EPA as SIP measures.** Regional haze SIP measures must be submitted and approved by EPA.

  CARB's Proposed SIP does not currently include any proposed enforceable SIP measures for stationary sources. Instead, CARB explained in its Proposed SIP that:

  > Stationary facilities implementing new control measures to meet the expedited BARCT requirements of AB 617 will have measures in place prior to 2028, the end of the second implementation period for regional haze purposes, and measures will be enforceable under State law and local rules and permits.[82]

  The Proposed SIP will have its measures effective as a matter of State law and local rules and permits, not federal law. As proposed, California's plan is inadequate, the new control measures adopted by the air districts to

[82] Proposed SIP at 79.

meet the RHR Four-Factor Analysis requirements must go through the SIP notice and comment process and be submitted to EPA for its review and action and be enforceable under federal law.

In conclusion, for the sources listed in Table 1 on page 13, CARB must ensure that complete Four-Factor Analyses (or the equivalent via AB 617), including enforceable emission limitations, monitoring, recordkeeping and reporting are included in a revised Proposed SIP and then renotice its SIP.

5. California's Environmental Quality Act Notice of Preparation Filing is Not an Off-Ramp to the Required Four-Factor Analysis

As discussed in the Kordzi Report, CARB must not rely on filing of a California Environmental Quality Act (CEQA) Notice of Preparation (NOP) as an off-ramp to the requirement for a source to prepare the Four-Factor Analysis.[83] Under California law, an NOP is a preparatory step in requesting state agency approval of various changes in operations. Therefore, it was unreasonable for California to rely on filing NOPs submitted by sources as an off-ramp to the regional haze Four-Factor Analysis requirements because there is neither a guarantee of any future action by the source nor a final action by the state.[84]

Furthermore, the Kordzi Report pointed out CARB's error in exempting entire sources from the Four-Factor Analysis because in many instances only a portion of the source was subject to change.[85] It is important and an absolute necessity to review individual unit emissions and controls, because wholesale facility changes like the ones highlighted in the Kordzi Report do not necessarily mean that the individual units (*e.g.*, boilers, furnaces, FCCU, etc.) that would have received Four-Factor Analyses would be dismantled.[86] It is quite possible—even likely— these individual units would simply be repurposed, which would not change their status with regard to a regional haze Four-Factor Analysis.[87]

If permits have indeed been surrendered and enforceable commitments can be included in the SIP to guarantee an applicable unit-level source is not operating or will not operate, then those guarantees must be included in the Proposed SIP and the source in question can be excluded. Otherwise, these sources must be treated like any other source and subjected to Four-Factor Analyses.[88]

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[83] Kordzi Report at 7.
[84] Kordzi Report at 7, citing CARB's excluding the Tesoro refinery Appendix G at 159; *see also* CARB's decision to exclude the entire Phillips 66 carbon plant and refinery from four-factor analyses, based on a NOP to implement the Rodeo Renewed Project, *id.* at 168.
[85] Kordzi Report at 7.
[86] Kordzi Report at 7.
[87] Kordzi Report at 7.
[88] Kordzi Report at 7.

B. CARB Must Correct Numerous Errors Discussed in Its Proposed SIP

The Proposed SIP contains numerous fundamental flaws that CARB relied on to exclude sources from the required Four-Factor Analysis. In addition to conducting the Four-Factor Analysis for these sources, the below errors must be corrected before submitting the Proposed SIP to EPA. For example:

- Emission limitations must be enforceable at all times and in the SIP, exemptions from controls during SSM events must be removed.
- Retirements must be memorialized as enforceable in the SIP.
- Emission limits that only exist in Title V operating permits, the permits can expire and must be in the SIP.
- Sources subject to outdated Consent Decrees must be re-examined as there are likely more stringent emission control options available.
- Pending projects to decommission units must be memorialized in the SIP.[89]

V. CARB MUST INCLUDE ENFORCEABLE EMISSION LIMITATIONS FOR SO_2 POLLUTION FOR VISIBILITY IMPAIRMENT

EPA's expectation regarding the pollutants considered for source selection and control strategy analysis for the second planning period is that "each state will analyze sulfur dioxide (SO_2) and nitrogen oxide (NOx) in selecting sources and determining control measures."[90] Moreover, "[a] state that chooses not to consider at least these two pollutants in the second planning period should show why such consideration would be unreasonable, especially if the state considered both these pollutants in the first planning period."[91] CARB unreasonably omitted SO_2 in its Q/d calculations in screening sources and thus from its Proposed SIP.

A. Sulfate Extinction is Significant at California's Class I Areas

As the Gebhart Report explained, CARB attempted to justify its choice to focus only on NOx emission controls in part based on its evaluation of the existing visibility impairment at California's Class I areas. The visibility monitoring data from the Interagency Monitoring of Protection Visual Environments (IMPROVE)

[89] DRAFT California Regional Haze Plan for the Second Planning Period – Appendix G (Stationary Source Screening), at pdf 158 – 183.
[90] 2021 Clarification Memo at 4, citing 2019 Guidance at 12.
[91] 2021 Clarification Memo at 4-5.

presented by CARB purported to show that the existing light extinction at California's Class I areas is presently dominated by nitrate extinction.[92]

Gebhart's Report further noted that, while acknowledging that nitrate extinction may exceed sulfate extinction at many of California's Class I areas, the size of the nitrate extinction component does not equate to CARB's conclusion that sulfate extinction is unimportant.[93] The sulfate extinction is still a significant contributor to visibility impairment and as Gebhart's Report explained, should have been addressed by CARB in the current planning phase.[94] "For example, California's Draft regional haze SIP shows that sulfate extinction is generally in the range of 10-20% of the overall contribution to visibility impairment at California's Class I areas, while at the REDW1 IMPROVE monitor, the sulfate contribution is on the order of 30%."[95] CARB cannot simply ignore a pollutant causing up to 30% of the visibility impairment at one of its Class I areas and still claim that it is meeting the legal requirement to address a "meaningful portion" of the visibility impairment.

Furthermore, the data in the Proposed SIP also show that current SO*2* emissions are expected to *increase* going forward to the end of the current planning period (2028).[96] The Clean Air Act requires that based on the 2028 emission projections in the Proposed SIP, California is one of only two states within the WRAP that show SO_2 emission increases. Also, California's 2028 SO_2 emissions will rank third among the various WRAP states. CARB's proposal to defer SO_2 emission controls to future planning periods is not only misguided, it fails to meet the Act's "prevention of future visibility impairment" requirements"[97] since SO_2 emissions are projected to increase from current levels during the current planning period. CARB must revise its SIP and include enforceable emission limitations on SO_2 to ensure that the Act's requirement are met.[98]

As the Gebhart Report concluded, the above data and analysis lead to the reasonable conclusion that SO_2 emission controls have the potential to be effective

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[92] Gebhart Report at 3, citing DRAFT California Regional Haze Plan for the Second Planning Period – Appendix C (Description of California's Mandatory Federal Class I Areas).
[93] Gebhart Report at 3.
[94] Gebhart Report at 3.
[95] Gebhart Report at 3, citing DRAFT California Regional Haze Plan, Figure 5-5.
[96] Gebhart Report at 3, citing National Park Service (NPS) Feedback for the California Air Resources Board, April 11, 2022 - Table 3.
[97] 42 U.S.C. § 7491(a).
[98] As the Gebhart Report further explained, "It is also evident from closer review of the supporting data that sulfate extinction plays a greater role than acknowledged by California in its Draft regional haze SIP. The National Park Service (NPS) has presented IMPROVE monitoring data for the period 2015-19 which demonstrates that sulfate extinction on the most-impaired days actually exceeds nitrate extinction at thirteen (13) of the seventeen (17) California IMPROVE monitors. Gebhart Report at 3, citing National Park Service (NPS) Feedback for the California Air Resources Board, April 11, 2022 - Table 4." *Id.* at 3.

at improving visibility conditions at Class I areas across California.[99] However, the Proposed SIP failed to consider such controls in the second-round strategies to improve regional haze and as such, CARB's regional haze program falls short of the legal requirement to address a "meaningful portion" of the ongoing visibility impairment.[100]

B. CARB Must Not Rely On WRAP's Modeled Sulfate Levels, Which Are Biased Low for California Class I Areas

The Proposed SIP relied in part of the visibility modeling efforts conducted by WRAP and WRAP's visibility modeling used the Comprehensive Air Quality Model with Extensions (CAMx) and was conducted by a WRAP contractor (Ramboll).[101] As the Gebhart Report noted, a very important part of the CAMx modeling effort is the Model Performance Evaluation (MPE) where the modeling results are compared against actual measurements for the important visibility impairment constituents, such as sulfate and nitrate.[102] The MPE provides data on whether the CAMx modeling results for any particular visibility constituent are biased and also indicates the direction and magnitude of any such bias.

The Gebhart Report explained three areas of significant concern identified with the MPE:

- For California's Class I areas the CAMx MPE demonstrated that the modeled sulfate concentrations are biased low for California's non-coastal Class I areas.[103]

- The Ramboll CAMx July 2020 MPE summary provided time-series chart that documented a consistent and significant sulfate underprediction bias in the CAMx results at the SEQU1 IMROVE monitor.[104]

- The Ramboll CAMx MPE summary for the "most-impaired days" showed a significant sulfate underprediction bias for CAMx at both SEQU and AGTI IMPROVE monitors.[105]

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[99] Gebhart Report at 3.
[100] Gebhart Report at 3.
[101] Gebhart Report at 4, citing DRAFT California Regional Haze Plan for the Second Planning Period – Appendix F (Modeling Scenarios References).
[102] Gebhart Report at 4.
[103] Gebhart Report at 4, citing Summary of WRAP-WAQS 2014v2 CAMx Model Performance Evaluation, Ramboll Updated July 2020.
[104] Gebhart Report at 4, citing Summary of WRAP-WAQS 2014v2 CAMx Model Performance Evaluation, Ramboll Updated July 2020, at 15.
[105] Gebhart Report at 4, citing Summary of WRAP-WAQS 2014v2 CAMx Model Performance Evaluation, Ramboll Updated July 2020, at 108-109.

Furthermore, the CAMx modeling biases with respect to sulfate underprediction was also noted in technical comments provided by NPS, noted in both the Gebhart and Kordzi Reports.[106] The NPS review of the CAMx MPE indicated that sulfate concentrations were underestimated by CAMx at six (6) of the eight (8) IMPROVE monitoring sites used to represent visibility conditions at California's Class I areas. At the SEQU1 IMPROVE monitor which represents both Sequoia National Park and Kings Canyon National Park, the sulfate concentrations were underestimated in CAMx by approximately a factor of three. CARB ignored these and other NPS consultation comments.

CARB should have not relied upon the biased CAMx modeling results from its RPO as part of the technical basis for excluding consideration of SO_2 emission controls in the Proposed SIP.[107] Ultimately it is the responsibility of states to submit the approvable SIP to EPA. The CAMx modeling bias leads to an incorrect conclusion that sulfate concentrations are not important contributors to visibility impairment in California. However, the actual sulfate measurements taken at IMPROVE monitors California's Class I areas demonstrate otherwise and indicate that controls on SO_2 emission sources are necessary for California to achieve reasonable progress toward visibility improvement.

VI. MANY SOURCES EXCLUDED BY CARB HAVE ADDITIONAL CONTROLS AVAILABLE

As detailed in the Kordzi Report, it was completely unreasonable for CARB to assert that of the dozens of excluded facilities comprising hundreds of individual sources, *none* have any available cost-effective controls or upgrades/optimizations to their existing controls.[108] CARB wrongly excluded all of these facilities and must provide either:

(1) Much better documentation for its assertions on a unit-by-unit basis, or

(2) Complete four-factor analyses for all of them.[109]

Furthermore, as the Kordzi Report stated, for a number of additional sources not individually reviewed (*e.g.* , Sierra Pacific Industries, Wheelabrator Shasta) existing SNCR controls should have been examined to determine if they could be optimized or cost-effectively upgraded to SCR systems.[110] In other cases (*e.g.*,

[106] Gebhart Report at 4, citing National Park Service (NPS) Feedback for the California Air Resources Board, April 11, 2022 - Table 5; *see also* Kordzi Report at 7-8, citing National Park Service comments at pdf 264 of Appendix I.
[107] Gebhart Report at 4.
[108] Kordzi Report at 9.
[109] Kordzi Report at 9.
[110] Kordzi Report at 9.

Chevron Richmond, Shell Martinez, Valero Refining, California Steel, Chevron El Segundo, New Indy Ontario, Phillips 66 Carson and Wilmington, Tesoro, and Torrance) it is impossible to provide a meaningful review of CARB's exclusion due to the complexity of the facilities coupled with a complete lack of data and information concerning the multitude of potential sources.[111] CARB failed to provide a complete listing of the individual units, their historical emissions and how they are currently controlled. As the Kordzi Report indicated, it is extremely unlikely that all of these dozens of units are presently being controlled optimally.[112]

Finally, the Kordzi Report explained that, the mere fact that a source is fitted with the most stringent type of control, for instance SCR, is no guarantee that source is in fact operating that control optimally.[113] In a number of cases (*e.g.*, furnaces and turbines at Chevron Richmond; a turbine/boiler at Shell Martinez; turbines, furnaces or boilers at Valero, etc.), CARB merely noted the presence of these controls and wrongly concluded no further review to determine if cost-effective upgrades and/or optimizations were available was required.[114] Experience in reviewing a number of SIPs has demonstrated that frequently, optimal performance of these top tier control systems is not attained due to lax permitting limits and/or the failure of the permitting agency to requires performance testing.[115]

Despite the shortcomings in CARB's disclosure of the required documentation in its Proposed SIP, the Kordzi Report offered detailed comments on the following eight sources. All of which clearly refute CARB's conclusions that no Four-Factor Analyses are need for these sources. As the Kordzi comments reflect, our support is for the most effective control that satisfy the required Four-Factor Analysis.

A. Desert View Power

The Kordzi Report explained that on page 163 of Appendix G, CARB stated that the 47 MW Desert View Power Plant is located within the South Coast AQMD, which includes the South Coast Air Basin and the Coachella Valley, which includes areas that are designated as extreme and severe nonattainment for the 2008 and 2015 Ozone NAAQS.[116] CARB stated that the boilers are equipped with ammonia injection to control NOx. More information concerning this facility is required for three reasons. First, because this source does not report its emissions to EPA's Air Markets Programs Data, CARB must include its historical emissions in its SIP so

[111] Kordzi Report at 9.
[112] Kordzi Report at 9.
[113] Kordzi Report at 9.
[114] Kordzi Report at 9.
[115] Kordzi Report at 9.
[116] Kordzi Report at 9.

they can be properly evaluated. Without this data, the public cannot assess CARB's determination.[117]

Second, the Kordzi Report also explained that CARB must investigate potential upgrades and/or optimizations to this existing NOx control. EPA has long indicated that upgrades to existing controls can be expected to be very cost-effective. For example, although concerned with scrubber upgrades, the BART Rule went into extensive detail into the subject, as did the Texas FIP.[118] More recently, EPA's Clarification Memo provided the following admonition to states:

> The four factors are used to assess and choose between emission reduction measures for sources of visibility impairing pollutants. A reasonable four-factor analysis will consider the full range of potentially reasonable options for reducing emissions. The August 2019 Guidance lists examples of different types of control measures that states may consider in their four-factor analyses for sources.[119]

As the Kordzi Report noted, in addition to add-on controls and other retrofits, the Guidance also listed emission reductions through improved work practices; upgrades or replacements for existing, less effective controls; and year-round operation of existing controls.[120] Thus, CARB must assess upgrades and/or optimizations to this control.

Third, the Kordzi Report also explained that CARB must investigate the replacement of this control with SCR and noted that Sierra Pacific Industries and Wheelabrator Shasta have similar wood-fired boilers fitted with SNCR and must likewise be properly reviewed for cost-effective upgrades/optimization opportunities to their SNCR systems or replacement with SCR systems. CARB must conduct complete Four-Factor Analyses and ensure the most effective emission limitations are established in the SIP.

B. Lehigh Southwest Cement Company

The Kordzi Report explained that on page 168 of Appendix G, CARB indicated that the Lehigh Southwest Cement Company is located within the Bay Area AQMD, and controls the source's NOx emissions through the use of SNCR and excluded it from consideration "because a full four-factor analysis would likely

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[117] The NPS Consultation Comments indicate this source is under EPA's jurisdiction. CARB should clarify this issue.
[118] 70 Fed. Reg. 39171 (July 6, 2005); *see also* 82 Fed. Reg. 912, 930, 938 (Jan. 4, 2017) (Texas BART FIP proposal, which conducted extensive cost determinations for scrubber upgrades).
[119] 2021 Clarification Memo at 7.
[120] Kordzi Report at 10, citing 2019 Guidance at 29-30.

result in the conclusion that, for the purposes of the regional haze program, no further reasonable controls are necessary." CARB failed to provide an adequate basis for excluding this source and must review this source for the installation of SCR.

As the Kordzi Report explained, SCR has been technically proven and available for installation on cement kilns for at least 25 years.[121] For example, in its BART review memo, the Pennsylvania Department of Environmental Protection concluded that SCR was technically feasible for the Evansville Kilns 1 and 2.[122] Moreover, according to the U.S. EPA's Air Pollution Control Cost Manual, SCR is technically feasible for cement kilns:

> Today, SCR has been successfully implemented at seven European cement plants in Solnhofer, Germany (operated from 2001 until 2006), Bergamo, Italy (2006), Sarchi, Italy (2007), Mergelstetten, Germany (2010), Rohrdorf, Germany (2011), Mannersdorf, Austria (2012), and Rezatto, Italy (2015).[123]

SCR has in fact been installed on a number of cement kilns.

- For example, SCR was required by a consent decree at the Lafarge Joppa plant in Illinois.[124] As Lafarge itself noted in its 2014 annual report, SCR "installed at Joppa plant reduced NOx by up to 80%."[125]

- The Lafarge Holcim[126] cement plant in Midlothian, TX also installed SCR with a reported efficiency of at least 70%.[127]

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[121] *See* "NOx Control Technologies for the Cement Industry Final Report, EPA-457/R-00-002, (Sept. 2000), https://www3.epa.gov/airquality/ctg_act/200009_nox_epa457_r-00-002_cement_industry.pdf, *see also* Assessment of NOx Emissions Reduction Strategies for Cement Kilns - Ellis County Final Report, (July 14, 2006), https://www.tceq.texas.gov/assets/public/implementation/air/sip/agreements/BSA/CEMENT_FINAL_REPORT_70514_final.pdf

[122] DEP Lehigh Evansville Cement plant BART review memo, at 9, http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=1483512&DocName=14%20-%20APPENDIX%20C2%20-%20PADEP%20BART%20REVIEW%20MEMO%20LEHIGH%20EVANSVILLE.PDF%20%20%3Cspan%20style%3D%22color%3Agreen%3B%22%3E%3C%2Fspan%3E%20%3Cspan%20style%3D%22color%3Ablue%3B%22%3E%3C%2Fspan%3E

[123] Control Cost Manual, Section 4 - NOx Controls, Chapter 2 Selective Catalytic Reduction, (June 2019), at pdf 6.

[124] *See* https://www.epa.gov/enforcement/lafarge-north-america-inc-clean-air-act-settlement.

[125] *See* the Annual Report, Registration Document, Lafarge 2014, page 141. https://www.lafargeholcim.com/sites/lafargeholcim.com/files/atoms/files/03232015-press_publication-2014_annual_report-uk.pdf

[126] Lafarge and Holcim have recently merged.

[127] *See* https://www.midlothianmirror.com/news/20170718/holcim-makes-environmental-improvements-with-new-regulation-updates.

- Also, the Texas Commission on Environmental Quality issued a report concerning the application of SCR systems at a number of cement kilns.[128]

Thus, it was unreasonable for CARB to conclude that a Four-Factor Analysis would likely result in the conclusion that no further controls are necessary. CARB must require that the Lehigh Southwest Cement Company perform a Four-Factor Analysis for the installation of SCR and include stringent emission limitations in the SIP.

Moreover, consistent with the Kordzi Report recommending a Four-Factor Analysis, as the NPS Consultation Comments explained, which CARB ignored:

> This facility is subject to a 2019 U.S. EPA Consent Decree limiting NO_x emissions to 1.95 lbs /ton clinker with combustion controls or SNCR within 24 months of the effective date of the consent decree. The Consent Decree also limits SO_2 to 0.4 lb/ton clinker based on "kiln inherent scrubbing." The NPS requests that California provide information on current emissions, what type of fuel is burned, production rate, and existing controls and control efficiencies for NO_x and SO_2. These data are needed to support the SIP conclusion that no further controls are necessary. The NO_x emission limit at Lehigh Southwest Cement Company is higher than average among the California cement kilns. Because 2017 NO_x and SO_2 emissions result in Q/d values of 8.6 and 6.5, respectively, at Lassen Volcanic National Park, the NPS recommends four-factor analyses for both pollutants.[129]

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

C. Cal Portland Mojave Plant

The Kordzi Report explained that on page 172 of Appendix G, CARB indicates that the Cal Portland Mojave Plant is located within the Eastern Kern Air Pollution Control District, which includes areas that are designated as severe and moderate nonattainment for the 2008 and 2015 Ozone NAAQS. CARB stated that the kiln is fitted with SNCR. CARB also stated that the district's Rule 425.3: Portland Cement Kilns (Oxides of Nitrogen) applied and concluded that the SNCR is BARCT-level stringency. As with the Lehigh Southwest Cement Company, SCR

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[128] Assessment of NOx Emissions Reduction Strategies For Cement Kilns - Ellis County Final Report, TCEQ Contract No. 582-04-65589 Work Order No.05-06, Prepared by: ERG, Inc., Prepared for: Texas Commission on Environmental Quality, (July 14, 2006), https://www.tceq.texas.gov/assets/public/implementation/air/sip/agreements/BSA/CEMENT_FINAL_REPORT_70514_final.pdf.

[129] NPS Consultation Comments at 23-24.

is technically feasible, demonstrated, and must be considered in a Four-Factor Analysis.

Also, CARB's blanket position that SNCR on cement kilns is BARCT conflicts with the CARB Clean Air Act's definition of BARCT, which CARB reproduced on page 78:

> BARCT is defined in California Health and Safety Code Section 40406: …as an air emission limit that applies to existing sources and is the maximum degree reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

Because SCR is a more efficient and more stringent level of control than SNCR, it and not SNCR, is "the maximum degree reduction achievable." Because CARB considered SCR in its Proposed SIP, it has not actually taken into account the "environmental, energy, and economic impacts by each class or category of source." Although its evaluation (somewhat similar to a Four-Factor Analysis but not equivalent) is specific to each source, CARB cannot make such *pro forma* declarations particularly considering that SCR has in fact been installed on other cement kilns.

The NPS Consultation Comments also recommended a Four-Factor Analysis on this source:

> NPS review of this facility finds that the Consent Decree limit is 1.7 lb NO_x/ton clinker with lime injection. Plant NO_x and SO_2 limits are above average. Because 2017 NO_x emissions result in a Q/d value of 6.8 at Sequoia and Kings Canyon National Parks, the NPS recommends that addition of SCR be considered in a four-factor analysis.[130]

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

D. Cemex Black Mountain Quarry

The Kordzi Report explained that on page 173 of Appendix G, CARB indicated that the Cemex Black Mountain Plant is located within the Mojave Desert AQMD, which includes areas that are designated as severe nonattainment for the 2008 and 2015 Ozone NAAQS. CARB stated that the facility has two coal-fired kilns and is subject to the expedited BARCT requirements of AB 617 and a 2009 U.S. EPA consent decree, the latter requiring a NOx limit of 1.95 lbs/ton of clinker which was the 2008 best available control technology (BACT)/lowest achievable emission rate (LAER) limit. The consent decree CARB referenced but did not cite, and did not

[130] NPS Consultation Comments at NPS-22.

in fact specify the technology that must be installed to achieve that NOx limit.[131] CARB did not state what NOx control technology is even installed, but a review of the facility's Title V permit indicates it is SNCR.[132] Thus, like the Lehigh Southwest and Cal Portland facilities, CARB must require that a Four-Factor Analysis be performed that includes consideration of SCR.

The NPS's Consultation Comments were consistent with that of the Kordzi Report, where the

> NPS request[ed] that California provide information on the type of coal burned, production rate, and existing controls and control efficiencies for NO_x and SO_2 at this facility. These data are needed to support the SIP conclusion that no further controls are necessary. NPS review finds that the Consent Decree limits SO_2 to 0.35 lb/ton of clinker. Because 2017 NO_x and SO_2 emissions result in Q/d values of 63 and 6.6, respectively, at Joshua Tree National Park, the NPS recommends that four-factor analyses be conducted for both pollutants.[133]

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

E. Mitsubishi Cement

The Kordzi Report explained that on page 173 of Appendix G, CARB indicated that the Mitsubishi Cement Plant is located within the Mojave Desert AQMD, which includes areas that are designated as severe nonattainment for the 2008 and 2015 Ozone NAAQS. CARB stated that the kiln is subject to Rule 1161 – Portland Cement Kilns, and that "District staff indicate that the most reasonable available controls are in place at the facility." On that basis, CARB concluded Mitsubishi Cement should be excluded from further consideration because a full Four-Factor Analysis would likely result in the conclusion that no further controls are necessary. CARB did not indicate what controls are fitted to the kiln. It was not evident from an examination of the facility's Title V permit and the 2019 Preliminary Determination/Decision - Statement of Basis that any retrofit NOx controls were installed.[134] Thus, CARB has no basis to conclude that a Four-Factor Analysis would likely result in the conclusion that no further controls are necessary. Again, like the Lehigh Southwest, Cal Portland, and Cemex Black Mountain

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[131] *See* https://www.epa.gov/sites/production/files/documents/cemexca-cd_0.pdf
[132] *See* https://www.mdaqmd.ca.gov/home/showdocument?id=2612.
[133] NPS Consultation Comments at NPS-22.
[134] *See* https://www.mdaqmd.ca.gov/home/showpublisheddocument/9248/637816568612000000, and https://www.mdaqmd.ca.gov/Home/Components/Calendar/Event/1359/48?selsta=1&sortn=EName&sortd=desc&toggle=all&smview=cate&alpha=E.

facilities, CARB must require that a Four-Factor Analysis be performed that includes consideration of SCR, and in this case, SNCR as well.

The NPS's Consultation Comments were consistent with that of the Kordzi Report, where the

> NPS request[ed] that California provide information on the type of fuel that is burned, production rate, and existing controls and control efficiencies for NO_x and SO_2 at this facility. These data are needed to support the SIP conclusion that no further controls are necessary. NPS review finds that the NO_x emission limit for Mitsubishi Cement is the highest among the California cement kilns. Because 2017 NO_x and SO_2 emissions result in Q/d values of 39.7 and 7.0, respectively, at Joshua Tree National Park, the NPS recommends four-factor analysis for both pollutants.[135]

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

F. Cal Portland Oro Grande

The Kordzi Report explained that on page 174 of Appendix G, CARB indicated that the Cal Portland Oro Grande Cement Plant is located within the Mojave Desert AQMD, which includes areas that are designated as severe nonattainment for the 2008 and 2015 Ozone NAAQS. CARB stated that the kiln is subject to Rule 1161 – Portland Cement Kilns, and that "[p]er district staff, this facility has the most reasonable controls already in place." On that basis, CARB concluded that the Cal Portland Oro Grande facility should be excluded from further consideration because a full four-factor analysis would likely result in the conclusion that no further controls are necessary. CARB did not indicate what controls are in fact fitted to the kiln. It was evident from an examination of the facility's Title V permit and the 2018 Preliminary Determination/Decision - Statement of Basis that any retrofit NOx controls have been installed.[136] Thus, CARB had no basis to conclude that a Four-Factor Analysis would likely result in the conclusion that no further controls are necessary. Again, like the Lehigh Southwest, Cal Portland, Cemex Black Mountain, and Mitsubishi facilities, CARB must require that a four-factor analysis be performed that includes consideration of SCR, and in this case, SNCR as well.[137]

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[135] NPS Consultation Comments at NPS-22.

[136] See http://mdaqmd.ca.gov/home/showdocument?id=2628; *see also* https://www.mdaqmd.ca.gov/Home/Components/Calendar/Event/1235/205?sortn=EDate&npage=3&toggle=all.

[137] NPS Consultation Comments at NPS- 22 echoed those in the Kordzi Report ("NPS requests that CARB provide information on the type of fuel burned, production rate, and existing controls and control efficiencies for NO_x and SO_2 at this facility. These data are needed to support the SIP

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

G. Searles Valley Mineral

The Kordzi Report explained that on page 174 of Appendix G, CARB indicates that the Searles Valley Mineral Plant is located within the Mojave Desert AQMD, which includes areas that are designated as severe nonattainment for the 2008 and 2015 Ozone NAAQS. CARB stated that the facility operates two coal-fired steam boilers (each with a 1,025 MMBtu/hr heat output rating), one natural gas-fired steam boiler (418 MMBtu/hr heat output rating), and one natural gas-fired package steam boiler (126.58 MMBtu/hr heat output rating). The boilers account for about 80 percent of NOx emissions at the facility. CARB stated that the smallest boiler complies with a BACT emission limit of 9 ppmv and that all the boilers are subject to Rule 1157.1 BARCT Requirements for Boilers and Process Heaters Outside the FONA, which was adopted in 2019 to meet the AB 617 expedited BARCT requirements. CARB noted that the three larger boilers are required to be in compliance with this new rule by 2023. Based on this information, CARB excluded Searles Valley Mineral from further consideration because a full Four-Factor Analysis would likely result in the conclusion that no further controls are necessary. Again, CARB did not state what retrofit controls, if any, are present on these boilers. An examination of the facility's Title V permit appeared to indicate that none of the boilers have any type of post combustion NOx controls.[138] Industrial boilers are commonly fitted with SNCR or SCR NOx controls. Thus, CARB has no basis to conclude that a four-factor analysis would likely result in the conclusion that no further controls are necessary. CARB must require that a four-

conclusion that no further controls are necessary. The NO_x emission limit for Cal Portland Oro Grande is higher than average among the California cement kilns. Because 2017 NO_x emissions result in a Q/d value of 7.1 at Joshua Tree National Park, the NPS recommends four-factor analysis for NO_x.")

[138] *See* http://www.mdaqmd.ca.gov/home/showdocument?id=854.

factor analysis be performed that includes consideration of SCR and SNCR for these boilers.[139]

CARB must conduct a complete Four-Factor Analysis and ensure the most effective emission limitations are established in the SIP.

VII. CARB FAILED TO REQUIRE THE APPROPRIATE FOUR-FACTOR ANALYSIS FOR THE COLLINS PINE COMPANY

The RHR specifically identifies four statutory factors which must be considered in evaluating potential emission control measures to make reasonable progress for California's Class I visibility goals: (1) cost of compliance; (2) time necessary for compliance; (3) energy and non-air quality environmental impacts of compliance; and (4) remaining useful life of any existing source subject to such requirements.[140] CARB identified one source that was subject to the Four-Factor Analysis – the Collins Pine Company, which operates a wood products and cogeneration facility in Plumas County.

As summarized in the Kordzi Report, clean lumber, clean hogged fuel, wood fuel, and yard waste are burned in the Keeler cogeneration boiler to produce steam and generate electricity to power the sawmill operations.[141] The boiler typically operates year-round and has a heat input capacity of 242 MMBtu/hr.[142] The boiler is the source of all NOx emissions at the facility. The boiler does not currently have any post-combustion NOx emission controls in place. The facility is located only 12 km from the Caribou Wilderness Area.[143] Issued identified with CARB's Four-Factor Analysis for the source are as follows.

A. CARB Failed to Include Consideration of Technically Feasible Controls

CARB must require consideration of Flue Gas Recirculation (FGR) on the existing boilers at the Collins Pine Company because as the Company's expert stated, "[t]he Chester boiler is suitable for flue gas recirculation."[144] Collins erroneously excluded FGR from consideration claiming it is difficult to retrofit on

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[139] The NPS's Consultation Comments at 22 echoed those in the Kordzi Report ("NPS requests that CARB provide information on what 2023 facility-wide NO_x and SO_2 projected emissions are based upon the requirements adopted in 2019. NPS review finds that 2017 NO_x emissions result in a Q/d value of 13.6 at Sequoia and Kings Canyon National Parks and recommends, four-factor analyses for NO_x. SO_2 four factor analysis is unnecessary because Q/d < 5 at NPS Class I areas. ")

[140] 40 C.F.R. § 51.308(f)(2)(i).

[141] Kordzi Report at 14.

[142] Kordzi Report at 14.

[143] Kordzi Report at 14.

[144] *See* Appendix A of the Collins Report at pdf 239.

existing boilers and would only result in 15% to 20% NOx reduction during the summer when the wood moisture content is the lowest, and could be expected to perform poorer during other parts of the year when the wood moisture content is higher.[145] Controls should only be excluded on the basis of technical feasibility and these issues do not relate to technical feasibility.[146] Because these issues relate to the cost-effectiveness ($/ton) of the control and are properly considered in that portion of the four-factor analysis and CARB must consider FGR as technical feasible at this source.

Second, CARB also wrongly excluded consideration of SCR controls. As discussed in the Kordzi Report, CARB's support of Collins' arguments are without merit, including: (1) its assertion that alkali metals can poison catalyst and (2) that the temperature of the exhaust existing the PM control device is too low.[147] Indeed, as the Kordzi Report explained, there is absolutely nothing in the SIP to support these statements. To the contrary, the 'recent report [included as an exhibit to these comments] explores this issue in detail as it relates to North Dakota lignite EGUs, and includes citations to many successful examples of SCR on sources that burn fuels that contain alkali and/or alkaline earth metals, including wood-fired boilers."[148]

As the Kordzi Report further explained, in particular, the California DTE Stockton EGU, which burns biomass, has been fitted with an SCR system for many years and consistently controls NOx to a level below 0.04 lbs/MMBtu on an annual average basis.[149] Therefore, to the extent that alkali and/or alkaline earth metals do poison SCR catalyst, this is not a technical feasibility issue, but rather a maintenance issue and should be included in the SCR cost-effectiveness calculation as such.[150]

CARB's concern that the exhaust temperature is too low for successful SCR operation is also undocumented, and in fact unfounded.[151] First, CARB must require that Collins provide documentation that the temperature of the exhaust after exiting its ESP is in fact 417 degrees F as claimed.[152] Second, low temperature catalyst is available and exhaust gas reheat is a proven option and is discussed in

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[145] Kordzi Report at 14.
[146] Kordzi Report at 14.
[147] Kordzi Report at 14.
[148] Kordzi Report at 14, citing A Review of the Record Concerning the Technical Feasibility of Selective Catalytic Reduction on North Dakota Lignite Electric Generating Units, prepared by Joe Kordzi and Ranajit Sahu, Consultants, on behalf of National Parks Conservation Association and Sierra Club, (Oct. 2020), attached as Ex. 1, https://drive.google.com/file/d/1pXOtNAbyuYGPDFOQc3kYtjqTbjr1Ibwj/view?usp=sharing.
[149] Kordzi Report at 14.
[150] Kordzi Report at 14.
[151] Kordzi Report at 14.
[152] Kordzi Report at 14.

the Control Cost Manual.[153]This is not a technical feasibility issue, but in this case a capital and operational cost issue and must be included in the SCR cost-effectiveness calculation as such.[154]

B. CARB Must Correct the Source's Low SNCR Control Efficiency Estimate

As explained in the Kordzi Report, Collins' claims regarding residence time in the boiler required for effective control cannot be verified.[155] Moreover, the resident time calculation Collins uses is simplistic and does not consider all relevant parameters.[156] For instance, the Electrical Power Research Institute (EPRI) SNCR Technical Report states that "[t]he flue gas residence time between each boiler elevation is a function of the boiler volumetric flow rate, average flue gas temperature over the defined control volume, and the boiler dimensions at the HVT measurement locations."[157] Collins' expert does not consider those parameters. EPRI provides a calculation for boiler residence time as part of its SNCR design approach:[158]

> Residence Time (s) = Boiler Depth at Injector Elevation (ft) * Boiler Width (ft) * Height Between Two HVT Measurement Elevations (ft) * (3600 s / hr) / [Flue Gas Flow Rate (wscf/ hr) * (T avg (F) + 460) / (528 R)]

Consequently, the Kordzi Report explained that there is some doubt as to the accuracy of Collins' residence time claim and CARB must seek verification.[159]

As noted above, the Collins' SNCR residence time calculation does not appear to consider all relevant parameters and is therefore suspect.[160] Even if its assertion of a 0.2 second residence time is accurate, SNCR industry experience indicates significant NOx control. Collins' estimate of a NOx control of 25% in its SNCR cost-effectiveness calculation is unreasonably low and a value of 40% appears to be a more reasonable, but still conservative estimate. Use of a higher SNCR efficiency could be possible but considering the NOx inlet, would further increase the

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[153] Control Cost Manual, Section 4 - NOx Controls, Chapter 2 Selective Catalytic Reduction, (June 2019), at pdf 34.
[154] Kordzi Report at 14.
[155] Kordzi Report at 16.
[156] Kordzi Report at 16.
[157] Kordzi Report at 16.
[158] Kordzi Report at 16, citing EPRI, SNCR Guidelines Update, Technical Report, 100474, (Nov. 2004), at 4-11, https://www.epri.com/research/products/000000000001004727
[159] Kordzi Report at 16.
[160] Kordzi Report at 16.

Normalized Stoichiometric Ratio (NSR) and potentially cause excessive ammonia slip.[161] CARB must investigate this as part of a proper Four-Factor Analysis.[162]

As the Kordzi Report explained, using a 40% SNCR efficiency would reduce Collins' NOx inlet from 0.124 lbs/MMBtu to 0.074 lbs/MMBtu.[163] The latter figure is not unusual, at least in comparison to SNCR performance of coal-fired boilers as the following table indicates:[164]

[161] Kordzi Report at 16.
[162] Kordzi Report at 16.
[163] Kordzi Report at 16.
[164] Kordzi Report at 16, citing https://ampd.epa.gov/ampd/.

Table 2. Examples of Coal-Fired Boiler SNCR Performance

Facility Name	Unit ID	Year	Operating Time	No. of Months Reported		Avg. NOx Rate (lb/MMBtu)
Northside	2A	2021	7101.1	12		0.0338
Northside	2A	2018	4308.23	12		0.0421
Northside	2A	2020	4759.72	12		0.053
Northside	1A	2017	4762.04	12		0.0557
Northside	2A	2017	3239.46	12		0.0557
St. Nicholas Cogeneration Project	1	2018	8304.01	12		0.0566
St. Nicholas Cogeneration Project	1	2020	8289.87	12		0.0569
St. Nicholas Cogeneration Project	1	2019	7836.7	12		0.0582
St. Nicholas Cogeneration Project	1	2017	7942	12		0.0582
Archer Daniels Midland Co.	FBC9	2017	8369.08	12		0.0587
Archer Daniels Midland Co.	FBC9	2019	8367.42	12		0.0595
Archer Daniels Midland Co.	FBC9	2018	8086.04	12		0.0599
Northeastern Power Company	31	2017	4196.33	12		0.06
St. Nicholas Cogeneration Project	1	2021	8166.87	12		0.0602
Archer Daniels Midland Co.	FBC9	2021	6728.75	12		0.0604
H L Spurlock	3	2021	7495.25	12		0.0621
H L Spurlock	4	2021	7769.5	12		0.0621
Virginia City Hybrid Energy Center	2	2017	6409.18	12		0.0621
H L Spurlock	4	2020	5893.71	12		0.0623
Mt. Carmel Cogeneration	SG-101	2017	8296.57	12		0.0627
Mt. Carmel Cogeneration	SG-101	2020	1430.91	12		0.0628
Northside	1A	2018	7824.6	12		0.0628
Virginia City Hybrid Energy Center	1	2021	2774.21	12		0.0633

Virginia City Hybrid Energy Center	1	2017	6382.78	12		0.0633
Virginia City Hybrid Energy Center	2	2021	1848.04	12		0.0642
H L Spurlock	4	2018	6329.45	12		0.0649
Mt. Carmel Cogeneration	SG-101	2018	7461.39	12		0.0652
Archer Daniels Midland Co.	FBC9	2020	7994.83	12		0.0653
H L Spurlock	4	2019	5796.25	12		0.0656
H L Spurlock	3	2020	7275.85	12		0.0657
Northside	1A	2021	1514.8	12		0.0659
H L Spurlock	4	2017	5906.07	12		0.066
H L Spurlock	3	2018	7265.19	12		0.0661
Northside	2A	2019	1789.78	12		0.0662
H L Spurlock	3	2017	6960.65	12		0.067
Virginia City Hybrid Energy Center	1	2018	5640.95	12		0.0678
Northside	1A	2020	7419.66	12		0.0684
Virginia City Hybrid Energy Center	2	2018	5601.93	12		0.0685
Northside	1A	2019	8007.02	12		0.0686
Sandow Station	5A	2017	7897.16	12		0.0699
H L Spurlock	3	2019	6107.93	12		0.0703
Sandow Station	5B	2017	7756.6	12		0.0709
Mt. Carmel Cogeneration	SG-101	2019	2627.95	12		0.0731
Marion	123	2019	7994.04	12		0.0744
Virginia City Hybrid Energy Center	2	2019	3832.07	12		0.0757
Marion	123	2018	7929.87	12		0.0767
Virginia City Hybrid Energy Center	1	2020	1590.71	12		0.0769
Ebensburg Power Company	31	2020	7356.42	12		0.0775
Virginia City Hybrid Energy Center	1	2019	2047.15	12		0.0779
Herbert A Wagner	2	2017	1551.12	12		0.0782
Ebensburg Power Company	31	2021	5228.27	12		0.0784
Spiritwood Station	1	2020	8208.4	12		0.0785
Northeastern Power Company	31	2018	4448.34	12		0.0786

Virginia City Hybrid Energy Center	2	2020	3557.88	12		0.0805
River Valley	1A	2017	7945.28	12		0.0812
River Valley	1B	2017	7764.56	12		0.0814
River Valley	2B	2017	7378.13	12		0.0816
Marion	123	2017	7780.48	12		0.083
River Valley	2A	2017	7582.3	12		0.0837
Kimberly-Clark Tissue Company	35	2017	7820.25	12		0.0848
Indian River	4	2019	836.27	12		0.0855
Indian River	4	2017	1842.29	12		0.0874
Kimberly-Clark Tissue Company	35	2018	8357.75	12		0.0875
Marion	123	2020	5819.69	12		0.0899

The above table only presents units that list coal as the sole primary fuel, and are equipped with NOx combustion controls (which initially lower the NOx inlet) and an SNCR system. As can be seen, there are many examples of coal-fired boilers fitted with SNCR systems that consistently achieve a low NOx floor and there is no reason to believe that the Collins' boiler would not be able to perform similarly.

C. CARB Must Correct the Source's Inflated SNCR Cost-Effectiveness Figure

CARB must correct Collins' cost-effectiveness calculation of $11,149/ton for SNCR, which is inflated and unsupported for the following reasons. Collins escalated its capital cost figure from 1999, to 2019 using the Chemical Engineering Plant Cost Index (CEPCI).[165] The CEPCI is indeed the correct escalation to use in regional haze cost-effectiveness calculations, but as the Control Cost Manual indicates, it is not appropriate to escalate costs from 1999 using the CEPCI or any other index, as that time period is far outside the time window suitable for escalation, which is usually regarded as five years.[166] Collins selected an average of the outdated capital cost figures (*i.e.*, Collins' figure of $1,700/MMBtu/hr was selected by averaging $900/MMBtu/hr to $2,500/MMBtu/hr).[167] Thus, CARB must require that Collins obtain a new cost figure, preferably from a vendor or other documentable source.[168]

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[165] Kordzi Report at 22.

[166] Kordzi Report at 22, citing Control Cost Manual Section 1 Chapter 2, Cost Estimation: Concepts and Methodology, (Nov. 2017), "Escalation with a time horizon of more than five years is typically not considered appropriate as such escalation does not yield a reasonably accurate estimate;" *see also* Vatavuk, W., Updating the CE Plant Cost Index, Chem. Eng., at 62-70 (Jan. 2002).

[167] Kordzi Report at 22.

[168] Kordzi Report at 22.

D. CARB Must Correct the Source's Improper SNCR Inputs

As summarized in the Kordzi Report, before revising the revising the cost-effectiveness calculation, numerous corrections were made to the improper SNCR inputs including the following five.

- Collins assumed a 20-year equipment life, and for the reasons explained in the Kordzi Report, a 30-year equipment life is used.

- Collins assumed an interest rate of 3.25%, which was the Bank Prime Rate at the time of its analysis. The Bank Prime Rate has since increased to 4.0%, which is used in the revised analysis.[169] Use of the higher interest rate has the effect of increasing (higher $/ton) the cost-effectiveness, but it was nevertheless included in the revised cost-effectiveness calculation.

- Collins included capital charges for the reagent storage tank and its construction/installation. Use of a reagent storage tank and costs for its construction is common to all SNCR systems. Therefore, Collins' inclusion of these additional charges is likely double counting, since they should be a part of the SNCR capital cost figure (noted issues with that figure aside) it assumed. The revised cost-effectiveness calculation, which uses the Control Cost Manual's SNCR spreadsheet, also inherently assumes these charges so they are not separately included.

- Collins assumed an additional annual electricity charge to heat the urea tank. As this charge is not a part of the Control Cost Manual SNCR spreadsheet it was deleted.

- Collins' did not consider the plant elevation. The Control Cost Manual SNCR spreadsheet does consider the plant elevation, which considering the Collins Pine approximate elevation of 4,561 feet (obtained from Google Earth Pro), multiplies the capital cost by a factor of 1.18.[170]

- Collins' assumed SNCR efficiency of 25% was changed to 40%.

One change was not made, but must be rectified by CARB and that is the issue explained regarding the "[p]erformance test dated September 15 & 16, 2020 by Environmental Technical Services, Inc." However, this figure does not agree with its figure of annual NOx emissions of 129 tpy and its hours of operation of 8,592, which

[169] *See* https://www.federalreserve.gov/releases/h15/.
[170] *See* Control Cost Manual, Section 4 - NOx Controls, Chapter 1 Selective Noncatalytic Reduction, Revised (April 25, 2019), Equation 1.29.

would result in an annual NOx average of 0.124 lbs/MMBtu.[171] These figures must be in agreement as they are both used in the cost-effectiveness calculation. Use of the lower NOx inlet actually has the effect of increasing (higher $/ton) the cost-effectiveness, but it was nevertheless included in the revised cost-effectiveness calculation.

E. Revised SNCR Cost-Effectiveness Calculation

The Kordzi Report used the Control Cost Manual SNCR spreadsheet to calculate a revised SNCR cost-effectiveness calculation. Because this spreadsheet is based on the use of coal, fuel oil, or natural gas, the following adaptations and assumptions were employed for the use of wood fuel:

- Assume lignite as the fuel, but adjust to wood heating characteristics. Of the choices for coal (bituminous, subbituminous, lignite), lignite results in the highest cost-effectiveness figure, which is again a conservative choice.
    - Use the calculated HHV of 8,740 Btu/lb for the wood burned, based on Collins' figures.[172]
    - Estimate the actual annual fuel consumed (which Collins' does not disclose) based on the spreadsheet's calculation of the max annual fuel consumption (which assumes the boiler's heat input and the HHV) multiplied by the ratio of the number of hours the boiler runs/yr to 8,760 hours.
    - Make the ash disposal cost rate (which assumes costs for coal ash) zero.
- Use the same inputs Collins used (with the corrections noted above), along with a calculated NSR based on equation 1.17 of the SNCR portion of Control Cost Manual.

[171] The Kordzi Report explained, (129 tons NOx/yr) x (2,000 lbs/ton) x (yr/8,592 hr) x (hr/242 MMBtu) = 0.124 lbs NOx/MMBtu. Note that Collins assumes the 8,592 hours/year run time, as opposed to 8,760 hours in a full year.

[172] The Kordzi Report explained, Collins stated the HHV of the wood is 17.48 MMBtu/ton: (17.48 MMBtu/ton) x (ton/2,000 lbs) x (1,000,000 Btu/MMBtu) = 8.740 Btu/lb.

The following is a summary of the revised urea-based SNCR cost-effectiveness calculation for Collins Pine:

Table 3. Revised Collins Pine SNCR Urea-Based Cost-Effectiveness Calculation

Fuel type	Coal	
Retrofit factor	1	
MW rating	242	MW
HHV	8,740	Btu/lb
Annual MWh output	242,553,776	MWh
Net plant heat input rate (NPHR)	10	MMBtu/MW
Desired SNCR efficiency	40	Percent
NOx inlet	0.124	lb/MMBtu
NOx outlet	0.0744	lb/MMBtu
Reagent	Urea	
Plant elevation	4,561	feet
Desired dollar-year	2020	
Interest rate	4	Percent
Equipment life	30	years
Total Capital Investment (TCI)	$3,282,361	
Direct Annual Costs (DAC)	$253,117	
Indirect Annual Costs (IDAC)	$191,198	
Total Annual Costs (TAC) = DAC + IDAC	$444,314	
NOx removed	53	tons/year
Cost-effectiveness	**$8,451**	**$/ton**

As can be seen from the above, Collins' SNCR cost-effectiveness estimate of $11,149/ton, is greated inflated.

EPA's Control Cost Manual SNCR spreadsheet can also be used to calculate the cost-effectiveness of an ammonia-based SNCR system, which is inherently more cost-effective, as the following indicates:

Table 4. Revised Collins Pine SNCR Ammonia-Based Cost-Effectiveness Calculation

Fuel type	Coal	
Retrofit factor	1	
MW rating	242	MW
HHV	8,740	Btu/lb
Annual MWh output	242,553,776	MWh
Net plant heat input rate (NPHR)	10	MMBtu/MW
Desired SNCR efficiency	40	Percent
NOx inlet	0.124	lb/MMBtu
NOx outlet	0.0744	lb/MMBtu
Reagent	Ammonia	
Plant elevation	4,561	feet
Desired dollar-year	2020	
Interest rate	4	Percent
Equipment life	30	years
Total Capital Investment (TCI)	$3,282,361	
Direct Annual Costs (DAC)	$102,622	
Indirect Annual Costs (IDAC)	$191,198	
Total Annual Costs (TAC) = DAC + IDAC	$293,819	
NOx removed	53	tons/year
Cost-effectiveness	**$5,589**	**$/ton**

The only change made to the previous SNCR cost-effectiveness calculation was to switch the reagent from urea to ammonia. As can be seen from the above analysis, using the same input parameters used by Collins, with some reasonable corrections, results in an SNCR cost-effectiveness figure that is about half of that calculated by Collins Pine.

VIII. CALIFORNIA'S OIL AND GAS SECTOR CONTRIBUTES SUBSTANTIALLY TO VISIBILITY IMPAIRMENT AND MUST BE MITIGATED THROUGH FOUR-FACTOR ANALYSES, DETERMINATIONS, AND ENFORCEABLE EMISSION LIMITATIONS

The RHR requires that states must evaluate major and minor stationary sources or groups of sources, mobile sources, and area sources.[173] While, CARB's

[173] 40 C.F.R. § 51.308(f)(2)(i).

Proposed SIP fails to break down NOx emissions from by industry sector, according to California's Department of Conservation, the Geologic Energy Management Division (CalGEM) has jurisdiction over more than 242,000 wells, including nearly 101,300 defined as active or idle oil producers.[174] Thus, there is no question that the oil and gas industry account for a sizable portion of the NOx emissions. The Proposed SIP failed to include Four-Factor Analyses and emission limitations for these emitting area (nonpoint) oil and gas sources. Despite the significant contribution of NOx emissions from the oil and gas sector, CARB's Proposed SIP indicated that its "long-term strategy for regional haze is focused on emission reductions from mobile sources"[175] and merely explained that the source apportionment work was limited "[d]ue to time and budget constraints."[176]

The Act and implementing regulations require that states have adequate resources and authority, indeed states are required to certify to EPA in each SIP submission and periodically for infrastructure SIPs that they have such resources and authorities.[177] If CARB lacks the resources necessary to develop a complete [and potentially approvable] SIP, then it must follow in the footsteps of Montana as it did for the first round of regional haze SIPs and notify EPA that CARB will defer to EPA's development and implementation a regional haze FIP on their behalf.[178]

CARB cannot rely on its misplaced claim that it lacks resources to avoid addressing the oil and gas sector in its Proposed SIP; the oil and gas sector is a significant contributor to regional haze pollution in California and thus the haze SIP is the instrument where reductions must be required and secured in the current planning period. A plan to "kick the can down the road" is simply not acceptable and CARB must give sufficient consideration of and include enforceable emission reduction measures for area sources.

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[174] California's Department of Conservation, CalGEM, Oil and Gas, https://www.conservation.ca.gov/calgem/Pages/Oil-and-Gas.aspx#:~:text=While%20California%20is%20a%20top,active%20or%20idle%20oil%20producers (last visited June 13, 2022).

[175] Proposed SIP at 62.

[176] Proposed SIP at 61.

[177] 42 U.S.C. §§ 7410(a)(2)(J), 7410(a)(2)(D)(i), 7410(a)(2)(D)(ii), 7410(a)(2)(E)(i); 40 C.F.R. part 51, Appendix V; *see, e.g.,* EPA's application of Act's requirements when Wyoming asserted it lacked authority to impose RP requirements, 79 Fed. Reg. at 5,032.

[178] 77 Fed. Reg. 23,988 (April 20, 2012) (EPA's proposed FIP, explained that "[o]n June 19, 2006, Montana submitted a letter to us signifying that the State would be discontinuing its efforts to revise the visibility control plan that would have incorporated provisions of the Regional Haze Rule. The State acknowledged with this letter that EPA would make a finding of failure to submit and thus promulgate additional federal rules to address the requirements of the Regional Haze Rule, including BART. In response to the State's decision EPA made a finding of SIP inadequacy on January 15, 2009 (74 Fed. Reg. 2,392), determining that Montana failed to submit a SIP that addressed any of the required regional haze SIP elements of 40 CFR 51.308."); 77 Fed. Reg. 57,864 (Sept. 18, 2012) (EPA's final FIP).

CARB has a legal duty to perform the Four-Factor Analyses and include emission limitations in this planning period for the thousands of well sites – along with the other oil and gas area source categories – that emit thousands of tons of NOx emissions every year in California. Indeed the Regional Haze Rule provides for regulation of groupings of sources, and area sources in particular, not just major and minor sources alone.

In addition to tighter controls on the emitting units, CARB can regulate the use and operation of non-road engines, such as regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel. The state SIP could include restrictions on the hours, days of operation, and/or how many drill rigs operate in a field. CARB must consider and include such enforceable limitations in its SIP. Furthermore, CARB cannot rely on existing and forthcoming EPA's oil and gas regulations because they only address controls on new sources, and this RH SIP must address emissions from *existing* oil and gas sources.

CARB must revise its Proposed SIP to evaluate and require statewide NOx requirements for upstream oil and gas sources given the large NOx emissions from this source sector. As documented in the technical report containing comprehensive Four-Factor Analyses for the oil and gas sector, there are numerous opportunities for technically feasible and cost-effective control of oil and gas area sources, which are summarized below.[179] As a review of the technical report will find, a number of the controls cited in the report are from the California air districts. The regulation by California air districts compelling important reductions in certain areas in the State or for certain sources clearly shows the opportunities readily available within California to further its reach to help address haze at Class I areas throughout the State.

[179] Stamper Report, March 2020, at ES-2; *see also* Stamper Report, July 2020.

Summary of Cost Effective Control Options for Air Emissions Sources of the Oil and Gas Sector

SOURCE CATEGORY	NOx POLLUTION CONTROL	NOx COST EFFECTIVENESS ($/TON)	PERCENT NOx REMOVAL, AND EMISSION RATES	OTHER POLLUTION CONTROLS
Natural Gas (NG)-Fired RICE Compressors	Replace with Electric Compressors	$1,228–$2,766/ton (2011 $)	100% Removal of NOx and All Other Pollutants	Power Compressors with Renewable Energy
NG-Fired RICE Rich Burn >50 hp	Nonselective Catalytic Reduction (NSCR) and Air Fuel Ratio Controller (AFRC)	$44–$3,383/ton (2009$)	94–98% 11–67 ppmv 0.16–1.0 g/hp-hr	VOC Controls integrated into NSCR.
NG-Fired RICE Lean Burn >50 hp	Low Emission Combustion (LEC)	$47–$941/ton (2001$)	87–93% 75–150 ppmv 1.0–2.0 g/hp-hr	Oxidation Catalyst for VOC Emissions
	Selective Catalytic Combustion (SCR)	$628–$13,567/ton (1999$–2001$)	90–99% 11–73 ppmv 0.15–1.0 g/hp-hr	
NG-Fired Combustion Turbines	SCR (alone or with Dry Low NOx Combustion)	$566–$13,238/ton (1999–2000$)	80–95+% 3-15 ppmv	Oxidation Catalyst for VOC Emissions
	Dry Low NOx Combustion	$208–$2,140/ton (1999$–2000$)	80–95% 9-25 ppmv	
Diesel-Fired RICE	Use Electric Engines and Tier 4 Gen Sets --- OR Replace Older Engines w/ Tier 4	$564–$9,921/ton (2010$)	94% 0.5 g/hp-hr --- 49%–96% 0.3-3.5 g/hp-hr	Catalytic Diesel Particulate Filter For PM (81%-97.5% control) Use of Ultra-Low Sulfur Diesel Fuel
	Replace w/ NG RICE	Implemented by several companies	85–94%	
	Retrofit with SCR	$3,759–$6,781/ton	90%	
Heaters/Boilers >20 MMBtu/hr	Ultra-Low NOx Burners (ULNB)	$545–$3,270/ton (2018$)	93% 6 ppmv	Other Options: Lower heater-treater temperatures Install insulation on separators
	SCR	$1,025–$6,149/ton (2018$)	97% 2.5 ppmv	
Heaters/Boilers >5 and ≤20 MMBtu/hr	ULNB	$727–$5,232/ton (2018$)	93% 6 ppmv	
Heaters/Boilers ≤5 MMBtu/hr	Replacement of Heater with New Unit with ULNB	$4,055-$10,809/ton (2005$)	82–89% 9-20 ppmv	

Note: The range of cost effectiveness for each control reflects a range of capacities of emission units and also reflects a wide range of operating hours per year. Refer to the report for more details.

IX. CONSERVATION ORGANIZATIONS SUPPORT CARB'S INCLUSION OF MOBILE SOURCE REGULATIONS IN ITS HAZE SIP, BUT REQUEST ADDITIONAL CONTROLS BEYOND EXISTING AND PLANNED SIP PROGRAMS

The Conservation Organizations strongly support a SIP strategy that includes mobile source regulations in the Regional Haze SIP to provide a roadmap to other states in future RH rounds. Based on CARB's Four-Factor Analyses, the Proposed SIP only included CARB's existing Heavy-duty low NOx Omnibus rules, Advanced Clean Trucks rule, Heavy-duty Inspection and Maintenance rule, and planned Advanced Clean Cars II rule. The Proposed SIP relied entirely on existing or planned efforts to address NOx through state/NAAQS programs is not enough. The state is required to identify additional measures specific to haze, as EPA recently explained in comments to Utah on its draft RH SIP.[180] For example, the State must add requirements to the SIP for offroad mobile sources.

X. CARB'S CONSULTATION PROCESS WAS FUNDAMENTALLY INADEQUATE

Congress required that EPA's regulations must require each applicable implementation plan for a State in which any mandatory Class I Federal area is located to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal.[181] The Act further requires states to determine the measures necessary to make reasonable progress by considering the four factors,[182] while Congress set the national goal as preventing future and remedying existing anthropogenic visibility impairment in all Class I areas.[183] Thus, "Congress was clear that both downwind states (*i.e.*, "a State in which any [mandatory Class I Federal] area . . . is located) and upwind states (*i.e.*, "a State the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area") must revise their SIPs to include measures that will make reasonable progress at all affected Class I areas."[184]

In order to achieve this objective, states are obligated to consult with each other to ensure measures to achieve reasonable progress for each state's visibility

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[180] Letter from Carl Daly, Acting Director, Air and Radiation Division, EPA Region 8, to Bryce Bird, Director, Division of Air Quality, Department of Environmental Quality, (April 8, 2022), at 5. (attached as Ex. 8), https://drive.google.com/file/d/1LboHI3Ru-wqozsoMHY77iPMFeMgJz-OO/view?usp=sharing.
[181] 42 U.S.C. § 7491(b)(2).
[182] 42 U.S.C. § 7491(g)(1).
[183] 42 U.S.C. § 7491(a)(1).
[184] 82 Fed. Reg. 3078, 3094 (Jan. 10, 2017).

impairing emissions contributes to the goal of restoring natural visibility across all Class I areas. "This consultation obligation is a key element of the regional haze program. Congress, the states, the courts and the EPA have long recognized that regional haze is a regional problem that requires regional solutions. *Vermont v. Thomas*, 850 F.2d 99, 101 (2d Cir. 1988)."[185] Congress intended this provision of the Clean Air Act to "equalize the positions of the States with respect to interstate pollution," (S. Rep. No. 95-127, at 41 (1977)) and EPA's interpretation of this requirement accomplishes this goal by ensuring that downwind states can seek recourse from EPA if an upwind state is not doing enough to address visibility transport.[186]

In developing a long-term strategy for regional haze, EPA's regulation 40 C.F.R. § 51.308(f)(2) requires that a state take three distinct steps: consultation; demonstration; and consideration. Specifically, the regulation requires:

> (ii) The State *must consult* with those States that have emissions that are reasonably anticipated to contribute to visibility impairment in the mandatory Class I Federal area to develop coordinated emission management strategies containing the emission reductions necessary to make reasonable progress.
> (A) The State *must demonstrate* that it has included in its implementation plan all measures agreed to during state-to-state consultations or a regional planning process, or measures that will provide equivalent visibility improvement.
> (B) The State *must consider* the emission reduction measures identified by other States for their sources as being necessary to make reasonable progress in the mandatory Class I Federal area.[187]

The RHR also requires that the

> [P]lan revision … must provide procedures for continuing consultation between the State … on the implementation of the visibility protection program required by this subpart, including development and review of implementation plan revisions and progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in mandatory Class I Federal areas.[188]

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[185] *Id*. at 3085.
[186] *Id*. at 3085.
[187] 40 C.F.R. § 51.308(f)(2) (emphasis added); *see also*, 64 Fed. Reg. 35,765, 35,735 (July 1, 1999) (In conducting the four-factor analysis, EPA explained that "…the State must consult with other States which are anticipated to contribute to visibility impairment in the Class I area under consideration … any such State must consult with other States before submitting its long-term strategy to EPA.").
[188] 40 C.F.R. § 51.308(f)(4).

In its 2017 amendments to the RHR EPA explained that "states *must* exchange their four-factor analyses and the associated technical information that was developed in the course of devising their long-term strategies. This information includes modeling, monitoring and emissions data and cost and feasibility studies."[189] In the event of a recalcitrant state, "[t]o the extent that one state does not provide another state with these analyses and information, or to the extent that the analyses or information are materially deficient, the latter state should document this fact so that the EPA can assess whether the former state has failed to meaningfully comply with the consultation requirements."[190]

A. CARB Must Adapt Its SIP to Meaningfully Address and Incorporate Comments from the Federal Land Managers

The Clean Air Act and the Regional Haze Rule require states to consult with the Federal Land Managers ("FLM")—the National Park Service ("NPS") and/or the U.S. Forest Service ("USFS") and/or the U.S. Fish and Wildlife Service ("USFWS")—that are responsible for overseeing the Class I national parks or wilderness areas impacted by a state's sources.[191] Specifically, the state "must provide the Federal Land Manager with an opportunity for consultation, in person at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the Federal Land Manager can *meaningfully inform* the State's decisions on the long-term strategy."[192] The "consultation must be early enough for state officials to meaningfully consider the views expressed by the FLMs."[193] The rule further requires states to provide for "continuing consultation" between the state and the Federal Land Manager, and to meaningfully address the FLM's comments in the Proposed SIP.[194] Thus, the FLM consultation process is not a mere box checking exercise; instead, it is a mandatory, iterative process, requiring the state to meaningfully consider and incorporate into the SIP the concerns of the agencies responsible for managing the Class I resources impacted by pollution from the state.

As noted previously, the FLMs' comments on the Proposed SIP were, in many respects, similar to the concerns raised above and in the attached technical reports of Kordzi and Gebhart. The USFS expressed concern with CARB's decision to exclude SOx emissions and control strategies from the SIP. Particularly in light of the fact that anthropogenic SOx emissions remain a potential source of precursors of ammonium sulfate impacting Class I Wilderness in California at numerous sites

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[189] 82 Fed. Reg. at 3088 (emphasis added).
[190] 82 Fed. Reg. at 3088 (emphasis added)
[191] 42 U.S.C. § 7491(d); 40 C.F.R. § 51.308(i)(2).
[192] 40 C.F.R. § 51.308(i)(2). (emphasis added).
[193] EPA, Responses to Comments at 445, Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 Fed. Reg. 26942 (May 4, 2016), Docket No. EPA-HQ-OAR-2015-0531 (Dec. 2016) ("Regional Haze Rule Revision Response to Comment").
[194] 40 C.F.R. § 51.308(i)(2); Regional Haze Rule Revision Response to Comment at 445.

managed by the USFS.[195] Additionally, the National Park Service raised 28-pages of extensive concerns about CARB's pre-publication SIP. For example, the NPS made the following recommendations:

- California include SO_2 point source emissions in source selection and Four-Factor Analyses.[196]

- California can improve the SIP by providing additional emission unit documentation or conducting Four-Factor Analyses as warranted for sources screened from analysis based on AB 617.[197]

- The NPS review found that SNCR and SCR may both be technically feasible and are both likely cost-effective for reducing NOx emissions at the Collins Pine Chester Facility. The NPS recommends that California require the most stringent technically feasible, cost-effective controls identified through four-factor analysis to reduce haze causing emissions in this planning period [for the Collins Pine Chester Facility].[198]

Additionally, while CARB included the NPS's written comments in the Draft Appendices, it failed to include the NPS's PowerPoint Slides that were used during the Formal Consultation Call with CARB on April 7, 2022. Commenters include that important information as one of the exhibits to these comments.[199]

In response to these FLM concerns, CARB refused to make *any* substantive adjustments to its long-term strategy. For example, CARB's response to the NPS's comments ignored EPA's direction indicating that "there is no requirement for states to select a certain number of sources or percentage of emissions during this planning period."[200] CARB's response to the NPS's comment to control SO_2 and other sources appears to pass the buck to air districts, which are not responsible for development and submittal of the SIP to EPA. CARB's response to the NPS's concerns on neglecting SO_2 indicated its focus on NOx emission was based on "science." As clearly documented in the Gebhart Report, it was not. CARB also offered that it relied on its authority to regulate NOx emissions from mobile source engines given its authority under the Clean Air Act, and thus decided to ignore emissions from all but one stationary source during this planning period. Regarding the NPS comment that CARB collect the emission data inventory data, which was

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[195] USFS Consultation Comments at 2.
[196] NPS Consultation Comments at 2.
[197] NPS Consultation Comments at 2
[198] NPS Consultation Comments at 2-3
[199] NPS Formal Consultation Call with the California Air Resources Board (CARB), PowerPoint Slides, (April 7, 2022), (attached as Ex. 9), https://drive.google.com/file/d/1fQBuqSqyLA1bmY_pHJHz5LOjyiXAiPpC/view?usp=sharing.
[200] DRAFT Appendices, Appendix I, at 244.

echoed in the Kordzi Report, CARB suggests its web-based facility search engine tools and summary tables contain emission inventory for large source. However, information from those web-based systems fails to provide what is necessary for a Four-Factor Analysis. CARB further defers to permitting by local air districts, which is inappropriate since it is CARB, not the air districts, which is the agency responsible for preparation and submittal of the information required in the SIP. CARB's providing "[s]ummary tables for the refineries, cement plans, and other combustion sources" that were made available via CARB's regional haze website[201] failed to meet the RHR and SIP regulatory requirements.

Finally, the NPS's consultation recommended that CARB improve the Proposed SIP either by demonstrating how AB 617 will achieve or by conducting full Four-Factor Analyses for a total 20 sources:

- CARB complete a Four-Factor Analysis or provide additional documentation for **eight of the refineries** originally selected for four-factor review.[202]

- CARB complete a Four-Factor Analysis or provide additional documentation for **six cement plants** originally selected for four-factor review.[203]

- The NPS recommends Four-Factor Analysis or additional documentation for **five woodwaste boiler** facilities originally selected for four factor review.

- The NPS recommends CARB complete a Four-Factor Analysis or provide additional documentation for **one chemical manufacturing** facility originally selected for four factor review.

CARB's response initially explained that this SIP's focus is on NOx and mobile sources, ignoring the NPS's stationary source concerns. CARB's response continued with that all the sources but the woodwaste boiler are subject to AB 617, and that there will be requirements enforceable under State law and local permit conditions for the other sources.[204] Furthermore, CARB explained to the NPS that it is "reasonable to conclude that a full four factor analysis would likely find no further controls are necessary at this time for purposes of regional haze" for the woodwaste boilers.[205]

CARB's response to the FLMs—essentially ignoring their requests and recommendations—is arbitrary and unreasonable. CARB may not simply reject all requests, regardless of whether CARB or the local air districts implement the

[201] DRAFT Appendices, Appendix I, at 250.
[202] USFS Consultation Comments at 2.
[203] USFS Consultation Comments at 2.
[204] Draft Appendices, Appendix I, at 251.
[205] Draft Appendices, Appendix I, at 251.

stationary source program. Moreover, CARB's so-called reliance on "science" to focus only on NOx is misguided, as the Gebhart Report clearly demonstrates a close examination of all the science shows SO_2 emissions are also impacting visibility impairment and must be part of the emission reduction equation during this planning period. Furthermore, the NPS's request for CARB to ensure that its SIP contains a minimum of 20 Four-Factor Analyses is more than reasonable. In sum, CARB must revise its SIP and respond to the FLM's comments, or explain how the agency's refusal to require any substantive emission reductions comports with the Regional Haze Rule and its guidance, and will ensure reasonable progress.

B. CARB Did Not Satisfy Its Continuing SIP Consultation Obligations with the FLM's in the Proposed SIP

Notably missing from CARB's Proposed SIP are the SIP procedures required by the RHR for continuing consultation between CARB and the FLMs for its sources impacting on the Class I areas, which is particularly important given the concerns expressed by the FLMs.[206]

C. CARB Did Not Satisfy its Interstate Consultations Requirements

CARB's interstate consultation is incomplete and the Proposed SIP fails to satisfy the requirements in 40 C.F.R. § 51.308(f)(2). As an initial matter it is important to point out that the brief summary information provided in the Proposed SIP demonstrates that emissions from California sources contribute to visibility impairment at the following neighboring states:

- At **Oregon's Class I areas**, mobile sources are projected to account for **31 to 42 percent** of the portion of portion of light extinction from California sources.[207]

- At **Nevada Class I areas**, mobile sources are projected to account for **32 percent** of the portion of portion of light extinction from California sources.[208]

[206] 40 C.F.R. § 51.308(i)(4) (The plan (or plan revision) must provide procedures for continuing consultation between the State and Federal Land Manager on the implementation of the visibility protection program required by this subpart, including development and review of implementation plan revisions and progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in mandatory Class I Federal areas.).
[207] Proposed SIP at 66.
[208] Proposed SIP at 66.

- At **Arizona Class I areas**, mobile sources are projected to account for **22-47 percent** of the portion of portion of light extinction from California sources.[209]

On pages 140-141 of the Proposed SIP, CARB summarized its interstate consultation efforts, and explained that it participated in the WRAP's efforts and workgroups and meetings. However, no meeting minutes or work products were provided as part of the Proposed SIP demonstrating how the meetings met the requirements of 40 C.F.R. § 51.308(f)(2). The Proposed SIP provided a link to a website, but the public must not have to navigate a complex website to understand how a particular state met distinct factual regulatory requirements. Indeed, the regulation requires that CARB "*must demonstrate* that it has included in its implementation plan all measures agreed to during state-to-state consultations or a regional planning process, or measures that will provide equivalent visibility improvement."[210] The RHR also requires that "[a]ll substantive interstate consultations must be documented."[211] CARB's Proposed SIP lacks this required documentation for the public to review and comment on.

Furthermore, CARB failed to share any information or communication that documented its interstate consultation, instead provided the following list of the six state-to-state regional haze "consultation meetings" and state locations:[212]

- December 18, 2019 (Arizona)
- January 31, 2020 (Nevada)
- April 14, 2020 (Oregon)
- November 3, 2020 (Oregon)
- December 15, 2020 (Nevada)
- September 21, 2021 (Arizona).[213]

The Proposed SIP explained that:[214]

> During these consultations, staff discussed potential contributions to neighboring states, the results of technical analyses, strategies planned for carrying out the reasonable progress analyses, and strategies for achieving emission reductions for the current planning period. Neither party involved in these consultations identified, requested, or agreed to any measures during the consultation meetings.

[209] Proposed SIP at 67.
[210] 40 C.F.R. § 51.308(f)(2)(ii)(A).
[211] 40 C.F.R. § 51.308(f)(2)(ii)(C).
[212] Proposed SIP at 141.
[213] Proposed SIP at 141.
[214] Proposed SIP at 141.

In summary it appears that CARB representatives met with representatives of the neighboring states on at least six different occasions, had consultations, talked about results of technical analysis, and strategies, and despite the significant projected impacts from California sources, CARB's Proposed SIP indicated that:

> Neither party involved in these consultations identified, requested or agreed to any measures during the consultation meetings.[215]

In other words, *none* of the representatives from the neighboring states, including Oregon and Arizona where up to nearly half of the emissions come from California sources, asked that CARB include *additional* specific enforceable measures in its SIP.

CARB's Proposed SIP neither explained who attended these consultation meetings nor included meeting minutes in the SIP docket. Thus, the public cannot confirm that the state representatives at the consultations meetings had authority to speak for their state to identify, request, or agreed to certain measures. The public was also not provided with any actual details about what was actually discussed at the six meetings.

Finally, while mobile sources account for much of the light extinction, California's stationary and area sources also contribute to light extinction at the neighboring states. As discussed above, CARB has thus far failed to develop Four-Factor Analyses for stationary and area sources and therefore, has likely not shared information regarding controls for those sources with the other states. Therefore, CARB could not have consulted with the other states about the results of technical analysis and strategies for area and stationary sources.

Furthermore, given CARB's knowledge of its significant contribution to the neighboring states' Class I areas, and its lack of enforceable measures in the Proposed SIP, that is sufficient in itself to compel action by CARB to establish procedures in its SIP for continuing consultation between California Oregon, Nevada and Arizona. Thus, CARB's interstate consultation SIP is incomplete and cannot be approved. CARB must amend its Proposed SIP to include provisions that explain how it intends to continue continuous consultation with the impacted states.

[215] Proposed SIP at 141.

XI. CARB MUST ANALYZE ENVIRONMENTAL JUSTICE IMPACTS OF ITS REGIONAL HAZE SIP, AND MUDT ENSURE ITS SIP WILL REDUCE EMISSIONS AND MINIMIZE HARMS TO DISPROPORTIONATELY IMPACTED COMMUNITIES

CARB has both state and federal obligations to meaningfully consider and advance environmental justice in its regional haze SIP. CARB's website explains that "[a] clean and healthy environment is a fundamental right for all California residents"[216] and that "California is committed to racial equity and environmental justice as a fundamental part of all it does, including programs that reduce exposure to pollutants and improve the quality of life in California communities facing environmental and economic challenges."[217]

Furthermore, as explained on CARB's Environmental Justice website,

> AB 617 seeks to ensure that all Californians benefit equitably from our State's air quality and climate efforts, especially those who live in the areas of California most severely impacted by air pollution.[218]

Despite the Proposed SIP discussing and relying extensively on AB 617, it failed to mention the environmental justice provisions of the 2017 legislation.

Thus, despite CARB's website explanation that the agency "is committed to prioritizing environmental justice in everything that we do"[219] … the Proposed SIP entirely failed to take environmental justice communities into consideration as it developed plans for California's 29 Class I areas.

A. CARB Completely Ignored the Environmental Justice Communities Impacted by California's Polluting Sources

Sources that harm the air in our treasured Class I areas are also located in environmental justice areas across the State. In general, California has very high EJ markers nearly everywhere based on people of color and some areas with low income. For example, the air pollution burden in California is a significant issue in areas such as Los Angeles and the San Joaquin Valley communities, among others, which experience negative Ozone and PM2.5 episodes like no other areas in the county and are where many of the sources. The cities in the United States that were most polluted by year-round particle pollution were all in California, with Bakersfield topping the list, followed by the Fresno-Madera-Hanford area, Visalia, the San Jose-San Francisco-Oakland area and Los Angeles. About 20.3 million people live in these areas.[220] These California sources must be subjected to the required Four-Factor Analyses and the SIP must include enforceable emission limitations.

By evaluating the vulnerable communities and counties impacted by these sources, we believe CARB will identify emission-reducing options that if required will improve air quality and help achieve reasonable progress in this round of regional haze rulemaking. Historically, conservation and environmental work has concerned itself with protecting nature from people and has thus "siloed" its work (*e.g.*, mainstream conservation vs. environmental justice.) While this siloed approach has led to the protection of many vulnerable habitats, it ignores the reality that people live in concert with and are a part of nature; to protect one and not the other is a job half done. By considering viewshed protection and environmental justice at the same time, we can collectively begin to dismantle the silos that exist in conservation and environmental work and chart a new path forward.

B. CARB Can Facilitate EPA's Consideration of Environmental Justice to Comply with Federal Executive Orders

There are specific legal grounds for considering environmental justice when determining reasonable progress controls. Under the CAA, states are permitted to include in a SIP measures that are authorized by state law but go beyond the minimum requirements of federal law.[221] Ultimately, EPA will review the Final Haze Plan that submits, and EPA will be required to ensure that its action on

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[216] California Air Resources Board, Environmental Justice, https://ww2.arb.ca.gov/our-work/topics/environmental-justice, attached at Ex. 7, https://drive.google.com/file/d/1DKL435p5NQzS-p6xoampNaUMf86VcBlV/view?usp=sharing.
[217] California Air Resources Board, Environmental Justice, https://ww2.arb.ca.gov/our-work/topics/environmental-justice, attached as Ex. 7, https://drive.google.com/file/d/1DKL435p5NQzS-p6xoampNaUMf86VcBlV/view?usp=sharing.
[218] California Air Resources Board, Environmental Justice, https://ww2.arb.ca.gov/capp-cag.
[219] California Air Resources Board, Environmental Justice, https://ww2.arb.ca.gov/our-work/topics/environmental-justice, attached as Ex. 7, https://drive.google.com/file/d/1DKL435p5NQzS-p6xoampNaUMf86VcBlV/view?usp=sharing.
[220] *See*, Air quality report finds a sharp uptick in pollution, with these Central CA cities among hardest-hit, CNNWire, Jen Christensen, (April 21, 2022), (American Lung Association's State of the Air 2022 report), https://abc30.com/fresno-air-quality-index-most-polluted-california-cities-pollution-report-american-lung-association/11777036/#:~:text=The%20cities%20that%20were%20most,people%20live%20in%20these%20areas .
[221] *See Union Elec. Co v. EPA*, 427 U.S. 246, 265 (1976) ("States may submit implementation plans more stringent than federal law requires and . . . the Administrator must approve such plans if they meet the minimum requirements of s 110(a)(2)."); *Ariz. Pub. Serv. Co. v. EPA*, 562 F.3d 1116, 1126 (10th Cir. 2009) (citing *Union Elec. Co.*, 427 U.S. at 265) ("In sum, the key criterion in determining the adequacy of any plan is attainment and maintenance of the national air standards . . . 'States may submit implementation plans more stringent than federal law requires and [ ] the [EPA] must approve such plans if they meet the minimum [CAA] requirements of § 110(a)(2).'"); *BCCA Appeal Group v. EPA*, 355 F.3d 817, 826 n.6 (5th Cir. 2003) ("Because the states can adopt more stringent air pollution control measures than federal law requires, the EPA is empowered to disapprove state plans only when they fall below the level of stringency required by federal law.")

CARB's Haze Plan addresses any disproportionate environmental impacts of the pollution that contributes to haze. Executive Orders in place since 1994, require federal executive agencies such as EPA to:

> [M]ake achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations"[222]

On January 27, 2021, the current Administration signed "Executive Order on Tackling the Climate Crisis at Home and Abroad."[223] The new Executive Order on climate change and environmental justice amended the 1994 Order and provides that:

> It is the policy of [this] Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; … protects public health … delivers environmental justice …[and that] … [s]uccessfully meeting these challenges will require the Federal Government to pursue such a coordinated approach from planning to implementation, coupled with substantive engagement by stakeholders, including State, local, and Tribal governments.[224]

CARB can facilitate EPA's compliance with these Executive Orders by considering environmental justice in its SIP submission.

C. CARB Ignored EPA's Regional Haze Guidance and Clarification Memo, Which Directs States to Take Environmental Justice Concerns and Impacts Into Consideration

EPA's 2021 Clarification Memo directs states to take into consideration environmental justice concerns and impacts in issuing any SIP revision for the second planning period.[225] EPA's 2019 Regional Haze Guidance for the Second Planning Period specifies, "States may also consider any beneficial non-air quality environmental impacts."[226] This includes consideration of environmental justice in keeping with other agency policies. For example, EPA also pointed to another agency program that states could rely upon for guidance in interpreting how to apply the non-air quality environmental impacts standard:

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[222] Exec. Order No. 12898, § 1-101, 59 Fed. Reg. 7,629 (Feb. 16, 1994), as amended by Exec. Order No. 12948, 60 Fed. Reg. 6,381 (Feb. 1, 1995).
[223] Exec. Order No. 14008, 86 Fed. Reg. 7,619 (Jan. 27, 2021).
[224] Exec. Order No. 14008 at § 201.
[225] 2021 Clarification Memo at 16.
[226] 2019 Guidance at 49.

> When there are significant potential non-air environmental impacts, characterizing those impacts will usually be very source- and place-specific. Other EPA guidance intended for use in environmental impact assessments under the National Environmental Policy Act may be informative, but not obligatory to follow, in this task.[227]

Additionally, a collection of EPA policies, guidance and directives related to the National Environmental Policy Act ("NEPA") is available at https://www.epa.gov/nepa/national-environmental-policy-act-policies-and-guidance. One of these policies concerns Environmental Justice.[228] CARB should consider these sources of information in conducting a meaningful environmental justice analysis.

D. EPA has a Repository of Directives and Material Available for CARB to Use in Considering Environmental Justice

In addition to the NEPA guidance directives referenced above, EPA provides a wealth of additional material.[229] The most important aspect of assessing Environmental Justice is to identify the areas where people are most vulnerable or likely to be exposed to different types of pollution. EPA's EJSCREEN tool can assist in that task. It uses standard and nationally consistent data to highlight places that may have higher environmental burdens and vulnerable populations.[230]

E. EPA Must Consider Environmental Justice When it Reviews and Takes Action on CARB's SIP

As occurred in the first planning period, if a state fails to submit its SIP on time, or if EPA finds that all or part of a state's SIP does not satisfy the Regional Haze regulations, then EPA must promulgate its own Federal Implementation Plan ("FIP") to cover the SIP's inadequacy. Should EPA promulgate a FIP that reconsiders a state's Four-Factor Analysis, it is completely free to reconsider any aspect of that state' analysis. The two Presidential Executive Orders referenced above require that federal agencies integrate Environmental Justice principles into their decision-making. EPA has a lead role in coordinating these efforts, and recently EPA Administrator Regan directed all EPA offices to clearly integrate

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[227] 2019 Guidance at 33.

[228] *See* EPA, "EPA Environmental Justice Guidance for National Environmental Policy Act Reviews," https://www.epa.gov/nepa/environmental-justice-guidance-national-environmental-policy-act-reviews.

[229] *See* EPA, "Learn About Environmental Justice," https://www.epa.gov/environmentaljustice/learn-about-environmental-justice.

[230] *See* EPA, "EPA EJSCREEN: Environmental Justice Screening and Mapping Tool, Additional Resources and Tools Related to EJSCREEN," https://www.epa.gov/ejscreen/additional-resources-and-tools-related-ejscreen.

environmental justice considerations into their plans and actions.[231] Consequently, should EPA promulgate a FIP for California sources, it has an obligation to integrate Environmental Justice principles into its decision-making. The non-air quality environmental impacts of compliance portion of the third factor, is a pathway for doing so.

F. CARB Must Consider Environmental Justice Under Title VI of the Civil Rights Act

As EPA must consider Environmental Justice, so must CARB and all other entities that accept Federal funding. Under Title VI of the Civil Rights Act of 1964, "no person shall, on the ground of race, color, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity…". CARB has an obligation to ensure the fair treatment of communities that have been environmentally impacted by sources of pollution. That means going beyond the flawed analysis conducted and ensuring "meaningful involvement" of impacted communities; environmental justice also requires the "fair treatment" of these communities in the development and implementation of agency programs and activities, including those related to the SIP.

CARB must conduct a thorough analysis of the current and potential effects to impacted communities from sources considered in the SIP as well as those sources identified by commenters and other stakeholders but not reviewed by CARB. By not conducting this analysis and including the benefits of projected decline in emissions to these communities in their determination of the included emission sources, CARB is not fulfilling its obligations under the law. Moreover, the state is making a mockery of Title VI by not using the SIP requirements to bring about the co-benefits of stronger reductions measures and reduce harms based on continued emissions.

G. CARB's Lack of any Effort on Environmental Justice is Wholly Inadequate to Protect People Living in Environmental Justice Communities in California Affected by California's Sources

CARB's Proposed SIP lacks any consideration of environmental justice. CARB failed to consider any sources that impact the environmental justice communities. Moreover, CARB's Proposed SIP failed to include enforceable emission limitations for the polluting sources that impact the environmental justice communities. Consistent with the legal requirements, government efficiency, and

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[231] *See* EPA News Release, "EPA Administrator Announces Agency Actions to Advance Environmental Justice, Administrator Regan Directs Agency to Take Steps to Better Serve Historically Marginalized Communities," (April 7, 2021), https://www.epa.gov/newsreleases/epa-administrator-announces-agency-actions-advance-environmental-justice.

the year's on injustice these communities have been subjected to from California's sources, we urge CARB to fully and meaningfully consider all sources that impact the environmental communities. In establishing emission limitations in its SIP, CARB must reduce impacts at *both* the Class I areas and environmental justice communities.

XII. CONSERVATION ORGANIZATIONS URGE CARB TO DEVEOP AN AMMONIA EMISSION INVENTORY AND ADVANCE OPTIONS TO REDUCE AMMONIA EMISSIONS

In preparation for the regional haze planning period, the Conservation Organizations urge CARB to develop an emission inventory and advance options to reduce ammonia emissions from the agriculture sector. While ammonia is a pollutant that impairs visibility in Class I areas, the Proposed SIP did not consider ammonia emissions from this source sector.

CONCLUSION

We appreciate CARB's consideration of these comments and request that CARB reject the current Proposed SIP and take time analyze controls for SO_2, conduct proper Four-Factor Analyses for stationary sources (or the equivalent via AB 617), include additional controls for stationary sources, make controls federally enforceable, and investigate additional mobile source controls. Please do not hesitate to contact us with any questions.

Sincerely,

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Enclosures

List of Exhibits

(1) A Review of California's Regional Haze State Implementation Plan, prepared by Joe Kordzi (June 2022), https://drive.google.com/file/d/1N1YzAUfDTRd3onLZ-CaLB709xt77Pd1V/view?usp=sharing.

> Including files: Collins Pine 40% ammonia SNCR CCM cost-effectiveness.xlxs, https://drive.google.com/file/d/1cw_O-GjqKe-o0WhskZ-PNDBSOxBi6sAf/view?usp=sharing, Collins Pine 40% urea SNCR CCM cost-effectiveness.xlxs, https://docs.google.com/spreadsheets/d/1amiypWOMbIOYDNdXywjroCLOzK7_jCKM/edit?usp=sharing&ouid=105569735349349454603&rtpof=true&sd=true, and EGU emissions.xlsx, https://docs.google.com/spreadsheets/d/1e2JewEXP-nrttfo-CDsp6_qsv8O1D6PY/edit?usp=sharing&ouid=105569735349349454603&rtpof=true&sd=true; and A Review of the Record Concerning the Technical Feasibility of Selective Catalytic Reduction on North Dakota Lignite Electric Generating Units, prepared by Joe Kordzi and Ranajit Sahu, (Oct. 2020), https://drive.google.com/file/d/1pXOtNAbyuYGPDFOQc3kYtjqTbjr1Ibwj/view?usp=sharing.

(2) Technical Review of Visibility Modeling for the Second Round of Regional Haze State Implementation Plans: State of California, prepared by D. Howard Gebhart (June 8, 2022), https://drive.google.com/file/d/1X2DDCgi1FJO2Yt__cQtN2TN92YwMED5j/view?usp=sharing; D. Howard Gebhart Resume, https://drive.google.com/file/d/1HtESYzw5U4x6fNB6kDeZDDnHwEBdJJ4y/view?usp=sharing.

(3) Oil and Gas Sector Reasonable Progress Four-Factor Analysis of Controls for Five Source Categories, prepared by Vicki Stamper and Megan Williams, (March 6, 2020), https://drive.google.com/file/d/1Arw8l3QYwIyYxo8eAU8O2Fy2Oz-klmiR/view?usp=sharing.

(4) Assessment of Cost Effectiveness Analyses for Controls Evaluated Four – Factor Analyses for Oil and Gas Facilities for the New Mexico Environment Department's Regional Haze Plan for the Second Implementation Period, prepared by Vicki Stamper & Megan Williams (July 2, 2020), https://drive.google.com/file/d/1ig9bSW1AR42ytVqaCnJQopxqA_m8Iko3/view?usp=sharing.

(5) Letter from Mark Rose, Sierra Nevada Program Manager, National Parks Conservation Association, Bill Magavern, Policy Director, Coalition for Clean Air, Philip A. Francis, Jr., Chair, Coalition to Protect America's National Parks, Joshua

Smith, Staff Attorney, Sierra Club, to Liane Randolph, Chair, California Air Resources Board, and Martha Guzman, Pacific Southwest Regional Administrator, U.S. Environmental Protection Agency, (April 26, 2022); Appendix A, Coalition Letter to CARB, (June 29, 2021); Appendix B, Coalition Letter to CARB, (Feb. 22, 2021), https://drive.google.com/file/d/17aGGM7rpDSmiKsTW9_TVKAKIJWBdHJQJ/view?usp=sharing.

(6) "Petition for Reconsideration of Guidance on Regional Haze State Implementation Plans for the Second Implementation Period," submitted by National Parks Conservation Association, Sierra Club, Natural Resources Defense Council, Coalition to Protect America's National Parks, Appalachian Mountain Club, Western Environmental Law Center and Earthjustice, to former EPA Administrator Andrew Wheeler (May 8, 2020), https://drive.google.com/file/d/1JTT0KRTR6WOvnaNcZRYNVYb6-dA5OH7y/view?usp=sharing.

(7) California Air Resources Board, Environmental Justice, Website Screenshot, https://ww2.arb.ca.gov/our-work/topics/environmental-justice, https://drive.google.com/file/d/1DKL435p5NQzS-p6xoampNaUMf86VcBlV/view?usp=sharing.

(8) Letter from Carl Daly, Acting Director, Air and Radiation Division, EPA Region 8, to Bryce Bird, Director, Division of Air Quality, Department of Environmental Quality, (April 8, 2022), https://drive.google.com/file/d/1LboHI3Ru-wqozsoMHY77iPMFeMgJz-OO/view?usp=sharing.

(9) NPS Formal Consultation Call with the California Air Resources Board (CARB), PowerPoint Slides, (April 7, 2022), https://drive.google.com/file/d/1fQBuqSqyLA1bmY_pHJHz5LOjyiXAiPpC/view?usp=sharing.