



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R09-OAR-2025-0152; FRL-12584-01-R9]

Partial Approval and Partial Disapproval of Air Quality Implementation Plans; Hawaii; Regional Haze State Implementation Plan for the Second Implementation Period

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to partially approve and partially disapprove the regional haze state implementation plan (SIP) revision submitted by Hawaii on August 2, 2024, under the Clean Air Act (CAA) and the EPA's Regional Haze Rule (RHR) for the program's second implementation period. Hawaii's SIP submission is intended to address the requirement that states must periodically revise their long-term strategies for making reasonable progress towards the national goal of preventing any future, and remedying any existing, anthropogenic impairment of visibility, including regional haze, in mandatory Class I Federal areas. The SIP submission also addresses other applicable requirements for the second implementation period of the regional haze program. The EPA is proposing to approve the portions of Hawaii's submission relating to calculations of baseline, current, and natural visibility conditions, progress to date, the uniform rate of progress, reasonably attributable visibility impairment, progress report requirements, and monitoring strategy and other implementation plan requirements. The EPA is proposing to disapprove the long-term strategy, including the enforceable shutdown of several electric generating units at facilities on the islands of Hawaii and Maui. Additionally, we are proposing to disapprove the portions of the submission relating to reasonable progress goals and FLM consultation requirements.

DATES: Written comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R09-OAR-2025-0152

at <https://www.regulations.gov>. For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. For either manner of submission, the EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the “**FOR FURTHER INFORMATION CONTACT**” section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>. If you need assistance in a language other than English, or if you are a person with a disability who needs a reasonable accommodation at no cost to you, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

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SUPPLEMENTARY INFORMATION: Throughout this document, “we,” “us,” and “our” refer to the EPA.

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I. What Action is the EPA Proposing?

On August 12, 2022, the Hawaii Department of Health (HDOH) submitted a revision to its SIP, titled "Hawaii State Department of Health Regional Haze State Implementation Plan, Second Planning Period" to address regional haze for the second implementation period.¹ Then, on August 2, 2024,² HDOH withdrew its original SIP submission and simultaneously submitted a revised regional haze SIP submission, titled "Hawaii State Department of Health Regional Haze State Implementation Plan, Revision 1, Second Planning Period" (henceforth referred to as the "2024 Hawaii Regional Haze Plan" or "the Plan") for the second implementation period. HDOH made this SIP submission to satisfy the requirements of the CAA's regional haze program pursuant to CAA sections 169A and 169B and 40 CFR 51.308. For the reasons described in this document, the EPA is proposing to partially approve and partially disapprove the 2024 Hawaii Regional Haze Plan. Specifically, we are proposing to approve the elements of the 2024 Hawaii Regional Haze Plan related to requirements contained in 40 CFR 51.308(f)(1), (f)(4) through (6), and (g)(1) through (5) and to disapprove the elements of the 2024 Hawaii

¹ Letter dated August 11, 2022, from Elizabeth Char, Director of Health, Hawaii Department of Health, to Martha Guzman, Regional Administrator, EPA Region IX (submitted electronically on August 12, 2022).

² Letter dated August 2, 2024, from Kenneth Fink, Director of Health, Hawaii Department of Health, to Martha Guzman, Regional Administrator, EPA Region IX (submitted electronically on August 2, 2024).

Regional Haze Plan related to requirements contained in 40 CFR 51.308(f)(2), (f)(3), and (i)(2) through (4). We are proposing to disapprove these elements because Hawaii did not provide necessary assurances that the unconsented closures in the long-term strategy would not violate federal and possibly state law, as required by CAA section 110(a)(2)(E)(i). In particular, the EPA proposes to find that approval by the EPA of unconsented source closures, without just compensation, could violate the Takings Clause of the U.S. Constitution and possibly comparable provisions of state law, and that Hawaii has not provided the necessary assurances that such violations would not occur. The Plan included the enforceable shutdown of a combined six boiler units at the Kanoelehua-Hill and Kahului Generating Stations, on the islands of Hawaii and Maui, respectively, and the option to shut down several diesel engine generators at the Maalaea Generating Station on the island of Maui. However, Hawaiian Electric, the owner of these units no longer consents to their shutdown due to concerns that it would result in potential energy reserve shortfalls which would endanger grid reliability. Thus, the long-term strategy does not meet 110(a)(2)(E)(i) and does not meet 40 CFR 51.308(f)(2). In the absence of an approved long-term strategy, we also cannot approve the associated RPGs under 40 CFR 51.308(f)(3) or the FLM consultation requirements under 51.308(i)(2) through (4).

II. Background and Requirements for Regional Haze Plans

A detailed history and background of the regional haze program is provided in prior EPA proposal actions.³ For additional background on the 2017 RHR revisions, please refer to Section III. Overview of Visibility Protection Statutory Authority, Regulation, and Implementation of “Protection of Visibility: Amendments to Requirements for State Plans” of the 2017 RHR.⁴ The following is an abbreviated history and background of the regional haze program and 2017 RHR as it applies to the current action.

A. Regional Haze Background

³ See 90 FR 13516 (March 24, 2025).

⁴ See 82 FR 3078 (January 10, 2017),

In the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's mandatory Class I Federal areas, which include certain national parks and wilderness areas.⁵ CAA 169A. The CAA establishes as a national goal the “prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.”⁶

Regional haze is visibility impairment that is produced by a multitude of anthropogenic sources and activities which are located across a broad geographic area and that emit pollutants that impair visibility. Visibility impairing pollutants include fine and coarse particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) and their precursors (e.g., sulfur dioxide (SO₂), nitrogen oxides (NO_x), and, in some cases, volatile organic compounds (VOC) and ammonia (NH₃)). Fine particle precursors react in the atmosphere to form fine particulate matter (PM_{2.5}), which impairs visibility by scattering and absorbing light. Visibility impairment reduces the perception of clarity and color, as well as visible distance.⁷

To address regional haze visibility impairment, the 1999 RHR established an iterative planning process that requires both states in which Class I areas are located and states “the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility” in a Class I area to periodically submit SIP revisions to address such impairment.⁸

On January 10, 2017, the EPA promulgated revisions to the RHR, that apply for the

⁵ Areas statutorily designated as mandatory Class I Federal areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. CAA 162(a). There are 156 mandatory Class I areas. The list of areas to which the requirements of the visibility protection program apply is in 40 CFR part 81, subpart D.

⁶ CAA 169A(a)(1).

⁷ There are several ways to measure the amount of visibility impairment, i.e., haze. One such measurement is the deciview, which is the principal metric used by the RHR. Under many circumstances, a change in one deciview will be perceived by the human eye to be the same on both clear and hazy days. The deciview is unitless. It is proportional to the logarithm of the atmospheric extinction of light, which is the perceived dimming of light due to its being scattered and absorbed as it passes through the atmosphere. Atmospheric light extinction (b^{ext}) is a metric used for expressing visibility and is measured in inverse megameters (Mm⁻¹).

⁸ CAA 169A(b)(2). The RHR expresses the statutory requirement for states to submit plans addressing out-of-state class I areas by providing that states must address visibility impairment “in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State.” 40 CFR 51.308(d), (f). See also 40 CFR 51.308(b), (f) (establishing submission dates for iterative regional haze SIP revision); 64 FR 35714, 35768.

second and subsequent implementation periods.⁹ The reasonable progress requirements as revised in the 2017 rulemaking (referred to here as the 2017 RHR Revisions) are codified at 40 CFR 51.308(f).

B. Roles of Agencies in Addressing Regional Haze

Because the air pollutants and pollution affecting visibility in Class I areas can be transported over long distances, successful implementation of the regional haze program requires long-term, regional coordination among multiple jurisdictions and agencies that have responsibility for Class I areas and the emissions that impact visibility in those areas. To address regional haze, states need to develop strategies in coordination with one another, considering the effect of emissions from one jurisdiction on the air quality in another. Five regional planning organizations (RPOs),¹⁰ which include representation from state and tribal governments, the EPA, and Federal Land Managers (FLMs), were developed in the lead-up to the first implementation period to address regional haze. RPOs evaluate technical information to better understand how emissions from State and Tribal land impact Class I areas across the country, pursue the development of regional strategies to reduce emissions of particulate matter and other pollutants leading to regional haze, and help states meet the consultation requirements of the RHR.

The Western Regional Air Partnership (WRAP),¹¹ one of the five RPOs described above, is a collaborative effort of state governments, Tribal governments, and various Federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility, and other air quality issues in the western corridor of the United States. Member states (listed alphabetically) include: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. The

⁹ 82 FR 3078.

¹⁰ RPOs are sometimes also referred to as “multi-jurisdictional organizations,” or MJOs. For the purposes of this notice, the terms RPO and MJO are synonymous.

¹¹ See <https://www.wrapair2.org/>.

Federal partner members of WRAP are the EPA, U.S. National Parks Service (NPS), U.S. Fish and Wildlife Service (FWS), and U.S. Forest Service (USFS). There are also 468 federally recognized Tribes within the WRAP region.

III. Requirements for Regional Haze Plans for the Second Implementation Period

Under the CAA and EPA’s regulations, all 50 states, the District of Columbia, and the U.S. Virgin Islands are required to submit regional haze SIP revisions satisfying the applicable requirements for the second implementation period of the regional haze program by July 31, 2021. Each state’s SIP must contain a long-term strategy for making reasonable progress toward meeting the national goal of remedying any existing and preventing any future anthropogenic visibility impairment in Class I areas.¹² To this end, section 51.308(f) lays out the process by which states determine what constitutes their long-term strategies, with the order of the requirements in section 51.308(f)(1) through (f)(3) generally mirroring the order of the steps in the reasonable progress analysis¹³ and (f)(4) through (f)(6) containing additional, related requirements. Broadly speaking, a state first must identify the Class I areas within the state and determine the Class I areas outside the state in which visibility may be affected by emissions from the state. These are the Class I areas that must be addressed in the state’s long-term strategy.¹⁴ For each Class I area within its borders, a state must then calculate the baseline (five-year average period of 2000–2004), current, and natural visibility conditions (*i.e.* visibility conditions without anthropogenic visibility impairment) for that area, as well as the visibility improvement made to date and the “uniform rate of progress” (URP).¹⁵ The URP is the linear rate of progress needed to attain natural visibility conditions, assuming a starting point of baseline visibility conditions in 2004 and ending with natural conditions in 2064. This linear interpolation is used as a tracking metric to help states assess the amount of progress they are

¹² CAA 169A(b)(2)(B).

¹³ The EPA explained in the 2017 RHR Revisions that we were adopting new regulatory language in 40 CFR 51.308(f) that, unlike the structure in 51.308(d), “tracked the actual planning sequence.” 82 FR 3078, 3091.

¹⁴ 40 CFR 51.308(f), (f)(2).

¹⁵ 40 CFR 51.308(f)(1).

making towards the national visibility goal over time in each Class I area. Each state having a Class I area and/or emissions that may affect visibility in a Class I area must then develop a long-term strategy that includes the enforceable emission limitations, compliance schedules, and other measures that are necessary to make reasonable progress in such areas. A reasonable progress determination is based on applying the four factors in CAA section 169A(g)(1) to sources of visibility impairing pollutants that the state has selected to assess for controls for the second implementation period. Additionally, as further explained below, the RHR at 40 CFR 51.308(f)(2)(iv) separately provides five “additional factors”¹⁶ that states must consider in developing their long-term strategies.¹⁷ A state evaluates potential emission reduction measures for those selected sources and determines which are necessary to make reasonable progress. Those measures are then incorporated into the state’s long-term strategy. After a state has developed its long-term strategy, it then establishes RPGs for each Class I area within its borders by modeling the visibility impacts of all reasonable progress controls at the end of the second implementation period, i.e., in 2028, as well as the impacts of other requirements of the CAA. The RPGs include reasonable progress controls not only for sources in the state in which the Class I area is located, but also for sources in other states that contribute to visibility impairment in that area. The RPGs are then compared to the baseline visibility conditions and the URP to ensure that progress is being made towards the statutory goal of preventing any future and remedying any existing anthropogenic visibility impairment in Class I areas.¹⁸ There are additional requirements in the rule, including FLM consultation, that apply to all visibility protection SIPs and SIP revisions.¹⁹

A. Long-Term Strategy for Regional Haze

While states have discretion to choose any source selection methodology that is

¹⁶ The five “additional factors” for consideration in section 51.308(f)(2)(iv) are distinct from the four factors listed in CAA section 169A(g)(1) and 40 CFR 51.308(f)(2)(i) that states must consider and apply to sources in determining reasonable progress.

¹⁷ 40 CFR 51.308(f)(2).

¹⁸ 40 CFR 51.308(f)(2)-(3).

¹⁹ 40 CFR 51.308(i)

reasonable, whatever choices they make should be reasonably explained. To this end, 40 CFR 51.308(f)(2)(i) requires that a state's SIP submission include "a description of the criteria it used to determine which sources or groups of sources it evaluated." The technical basis for source selection, which may include methods for quantifying potential visibility impacts such as emissions divided by distance metrics, trajectory analyses, residence time analyses, and/or photochemical modeling, must also be appropriately documented, as required by 40 CFR 51.308(f)(2)(iii).

Once a state has selected the set of sources, the next step is to determine the emissions reduction measures for those sources that are necessary to make reasonable progress for the second implementation period.²⁰ This is accomplished by considering the four factors—"the costs of compliance, the time necessary for compliance, and the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements."²¹ The EPA has explained that the four-factor analysis is an assessment of potential emission reduction measures (i.e., control options) for sources; "use of the terms 'compliance' and 'subject to such requirements' in section 169A(g)(1) can be read that Congress intended the relevant determination to be the requirements with which sources would have to comply to satisfy the CAA's reasonable progress mandate."²² Thus, for each source it has selected for four-factor analysis,²³ a state must consider a "meaningful set" of technically feasible control options for reducing emissions of visibility impairing pollutants.²⁴

The EPA has also explained that, in addition to the four statutory factors, states have

²⁰ The CAA provides that, "[i]n determining reasonable progress there shall be taken into consideration" the four statutory factors. CAA 169A(g)(1). However, in addition to four-factor analyses for selected sources, groups of sources, or source categories, a state may also consider additional emission reduction measures for inclusion in its long-term strategy, e.g., from other newly adopted, on-the-books, or on-the-way rules and measures for sources not selected for four-factor analysis for the second planning period.

²¹ CAA 169A(g)(1).

²² 82 FR 3078, 3091.

²³ "Each source" or "particular source" is used here as shorthand. While a source-specific analysis is one way of applying the four factors, neither the statute nor the RHR requires states to evaluate individual sources. Rather, states have "the flexibility to conduct four-factor analyses for specific sources, groups of sources or even entire source categories, depending on state policy preferences and the specific circumstances of each state." 82 FR 3078, 3088.

²⁴ 82 FR 3078, 3088.

flexibility under the CAA and RHR to reasonably consider visibility benefits as an additional factor alongside the four statutory factors.²⁵ Ultimately, while states have discretion to reasonably weigh the factors and to determine what level of control is needed, section 51.308(f)(2)(i) provides that a state “must include in its implementation plan a description of how the four factors were taken into consideration in selecting the measure for inclusion in its long-term strategy.”

As explained above, section 51.308(f)(2)(i) requires states to determine the emission reduction measures for sources that are necessary to make reasonable progress by considering the four factors. Pursuant to section 51.308(f)(2), measures that are necessary to make reasonable progress towards the national visibility goal must be included in a state’s long-term strategy and in its SIP. If the outcome of a four-factor analysis is that an emissions reduction measure is necessary to make reasonable progress towards remedying existing or preventing future anthropogenic visibility impairment, that measure must be included in the SIP.

The characterization of information on each of the factors is also subject to the documentation requirement in section 51.308(f)(2)(iii). The reasonable progress analysis is a technically complex exercise, and also a flexible one that provides states with bounded discretion to design and implement approaches appropriate to their circumstances. Given this flexibility, section 51.308(f)(2)(iii) plays an important function in requiring a state to document the technical basis for its decision making so that the public and the EPA can comprehend and evaluate the information and analysis the state relied upon to determine what emission reduction measures must be in place to make reasonable progress. The technical documentation must include the modeling, monitoring, cost, engineering, and emissions information on which the state relied to determine the measures necessary to make reasonable progress. Additionally, the

²⁵ See, e.g., Responses to Comments on Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 FR 26942, May 4, 2016), Docket Number EPA-HQ-OAR-2015-0531, U.S. Environmental Protection Agency at 186.

RHR at 40 CFR 51.3108(f)(2)(iv) separately provides five “additional factors”²⁶ that states must consider in developing their long-term strategies: (1) Emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment; (2) measures to reduce the impacts of construction activities; (3) source retirement and replacement schedules; (4) basic smoke management practices for prescribed fire used for agricultural and wildland vegetation management purposes and smoke management programs; and (5) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long-term strategy.

Because the air pollution that causes regional haze crosses state boundaries, section 51.308(f)(2)(ii) requires a state to consult with other states that also have emissions that are reasonably anticipated to contribute to visibility impairment in a given Class I area. If a state, pursuant to consultation, agrees that certain measures (e.g., a certain emission limitation) are necessary to make reasonable progress at a Class I area, it must include those measures in its SIP.²⁷ Additionally, the RHR requires that states that contribute to visibility impairment at the same Class I area consider the emission reduction measures the other contributing states have identified as being necessary to make reasonable progress for their own sources.²⁸ If a state has been asked to consider or adopt certain emission reduction measures, but ultimately determines those measures are not necessary to make reasonable progress, that state must document in its SIP the actions taken to resolve the disagreement.²⁹ Under all circumstances, a state must document in its SIP submission all substantive consultations with other contributing states.³⁰

B. Reasonable Progress Goals

Reasonable progress goals “measure the progress that is projected to be achieved by the

²⁶ The five “additional factors” for consideration in section 51.308(f)(2)(iv) are distinct from the four factors listed in CAA section 169A(g)(1) and 40 CFR 51.308(f)(2)(i) that states must consider and apply to sources in determining reasonable progress.

²⁷ 40 CFR 51.308(f)(2)(ii)(A).

²⁸ 40 CFR 51.308(f)(2)(ii)(B).

²⁹ 40 CFR 51.308(f)(2)(ii)(C).

³⁰ 40 CFR 51.308(f)(2)(ii)(C).

control measures states have determined are necessary to make reasonable progress based on a four-factor analysis.”³¹

For the second implementation period, the RPGs are set for 2028. RPGs are not enforceable targets.³² While states are not legally obligated to achieve the visibility conditions described in their RPGs, section 51.308(f)(3)(i) requires that “[t]he long-term strategy and the reasonable progress goals must provide for an improvement in visibility for the most impaired days since the baseline period and ensure no degradation in visibility for the clearest days since the baseline period.” RPGs may also serve as a metric for assessing the amount of progress a state is making towards the national visibility goal. To support this approach, the RHR requires states with Class I areas to compare the 2028 RPG for the most impaired days to the corresponding point on the URP line (representing visibility conditions in 2028 if visibility were to improve at a linear rate from conditions in the baseline period of 2000–2004 to natural visibility conditions in 2064). If the most impaired days RPG in 2028 is above the URP (i.e., if visibility conditions are improving more slowly than the rate described by the URP), each state that contributes to visibility impairment in the Class I area must demonstrate, based on the four-factor analysis required under 40 CFR 51.308(f)(2)(i), that no additional emission reduction measures would be reasonable to include in its long-term strategy.³³ To this end, 40 CFR 51.308(f)(3)(ii) requires that each state contributing to visibility impairment in a Class I area that is projected to improve more slowly than the URP provide “a robust demonstration, including documenting the criteria used to determine which sources or groups [of] sources were evaluated and how the four factors required by paragraph (f)(2)(i) were taken into consideration in selecting the measures for inclusion in its long-term strategy.”

C. Monitoring Strategy and Other State Implementation Plan Requirements

Section 51.308(f)(6) requires states to have certain strategies and elements in place for

³¹ 82 FR 3078, 3091.

³² 40 CFR 51.308(f)(3)(iii).

³³ 40 CFR 51.308(f)(3)(ii).

assessing and reporting on visibility. Individual requirements under this subsection apply either to states with Class I areas within their borders, states with no Class I areas but that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area, or both. Compliance with the monitoring strategy requirement may be met through a state's participation in the Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring network, which is used to measure visibility impairment caused by air pollution at the 156 Class I areas covered by the visibility program.³⁴

All states' SIPs must provide for procedures by which monitoring data and other information are used to determine the contribution of emissions from within the state to regional haze visibility impairment in affected Class I areas, as well as a statewide inventory documenting such emissions.³⁵ All states' SIPs must also provide for any other elements, including reporting, recordkeeping, and other measures, that are necessary for states to assess and report on visibility.³⁶

D. Requirements for Periodic Reports Describing Progress Towards the Reasonable Progress Goals

Section 51.308(f)(5) requires a state's regional haze SIP revision to address the requirements of paragraphs 40 CFR 51.308(g)(1) through (5) so that the plan revision due in 2021 will serve also as a progress report addressing the period since submission of the progress report for the first implementation period. The regional haze progress report requirement is designed to inform the public and the EPA about a state's implementation of its existing long-term strategy and whether such implementation is in fact resulting in the expected visibility improvement.³⁷ To this end, every state's SIP revision for the second implementation period is required to assess changes in visibility conditions and describe the status of implementation of all

³⁴ 40 CFR 51.308(f)(6), (f)(6)(i), (f)(6)(iv).

³⁵ 40 CFR 51.308(f)(6)(ii), (iii).

³⁶ 40 CFR 51.308(f)(6)(vi).

³⁷ 81 FR 26942, 26950 (May 4, 2016); 82 FR 3078, 3119.

measures included in the state's long-term strategy, including BART and reasonable progress emission reduction measures from the first implementation period, and the resulting emissions reductions.³⁸

E. Requirements for State and Federal Land Manager Coordination

CAA section 169A(d) requires that before a state holds a public hearing on a proposed regional haze SIP revision, it must consult with the appropriate FLM or FLMs; pursuant to that consultation, the state must include a summary of the FLMs' conclusions and recommendations in the notice to the public. Consistent with this statutory requirement, the RHR also requires that states "provide the [FLM] with an opportunity for consultation, in person and 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 [FLM] can meaningfully inform the State's decisions on the long-term strategy."³⁹ For the EPA to evaluate whether FLM consultation meeting the requirements of the RHR has occurred, the SIP submission should include documentation of the timing and content of such consultation. The SIP revision submitted to the EPA must also describe how the state addressed any comments provided by the FLMs.⁴⁰ Finally, a SIP revision must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.⁴¹

IV. The EPA's Evaluation of Hawaii's Regional Haze Submission for the Second Implementation Period

A. Background on the EPA's FIP for Hawaii in the First Implementation Period

The requirements for regional haze SIP revisions for the first implementation period are

³⁸ 40 CFR 51.308(g)(1) and (2).

³⁹ 40 CFR 51.308(i)(2).

⁴⁰ 40 CFR 51.308(i)(3).

⁴¹ 40 CFR 51.308(i)(4).

contained in 40 CFR 51.308(d) and (e).⁴² On October 9, 2012, the EPA issued a Federal Implementation Plan (FIP) to address these requirements for the State of Hawaii.⁴³ The EPA worked closely with the State in developing the FIP, which established an emissions cap of 3,550 tons of SO₂ per year from three specific oil-fired, electric utility boilers on the island of Hawaii beginning in 2018 to ensure that reasonable progress was made during the first planning period. Pursuant to 40 CFR 51.308(g), Hawaii was also responsible for submitting a five-year progress report as a SIP revision for the first implementation period, which it did on October 20, 2017.⁴⁴ The EPA approved the progress report into the Hawaii SIP on August 12, 2019.⁴⁵

B. Hawaii's Second Implementation Period SIP Submission

In accordance with CAA sections 169A and the RHR at 40 CFR 51.308(f), on August 2, 2024, HDOH submitted the 2024 Hawaii Regional Haze Plan to address its regional haze obligations for the second implementation period, which run through 2028. The State made its 2024 Hawaii Regional Haze Plan available for public comment for 30 days on November 27, 2023. No written comments were received by the closing date of the public comment period. Additionally, the State held a public hearing on April 19, 2024. HDOH received and responded to public oral testimonies and included the comments and responses to those comments in Appendix X to the 2024 Hawaii Regional Haze Plan.

The following sections describe the 2024 Hawaii Regional Haze Plan and provide the EPA's evaluation of Hawaii's submission against the requirements of the CAA and RHR for the second implementation period of the regional haze program.

C. Identification of Class I Areas

Section 169A(b)(2) of the CAA requires each state in which any Class I area is located or "the emissions from which may reasonably be anticipated to cause or contribute to any

⁴² 40 CFR 51.308(b).

⁴³ 77 FR 61478 (October 9, 2012). As the State of Hawaii failed to submit a regional haze SIP revision for the first implementation period, the EPA was required under the CAA to promulgate a FIP to fill this gap.

⁴⁴ Letter dated October 20, 2017, from Virginia Pressler, Director of Health, Hawaii Department of Health, to Alexis Strauss, Acting Regional Administrator, EPA Region IX.

⁴⁵ 84 FR 39754 (August 12, 2019).

impairment of visibility” in a Class I area to have a plan for making reasonable progress toward the national visibility goal. The RHR implements this statutory requirement at 40 CFR 51.308(f), which provides that each state’s plan “must address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State,” and (f)(2), which requires each state’s plan to include a long-term strategy that addresses regional haze in such Class I areas.

The EPA concluded in the 1999 RHR that “all [s]tates contain sources whose emissions are reasonably anticipated to contribute to regional haze in a Class I area,”⁴⁶ and this determination was not changed in the 2017 RHR. Critically, the statute and regulation both require that the cause-or-contribute assessment consider all emissions of visibility impairing pollutants from a state, as opposed to emissions of a particular pollutant or emissions from a certain set of sources.

Hawaii has two Class I Federal areas within its borders: the Hawaii Volcanoes National Park and the Haleakala National Park. For the second implementation period, WRAP and the State performed technical analyses to help assess source and state-level contribution to visibility impairment and the need for interstate consultation. As detailed in Chapter 5 of the 2024 Hawaii Regional Haze Plan, HDOH used a Q/d screening tool developed from work led by WRAP and Ramboll as a surrogate for the visibility impact of sources on the Class I Federal areas within the state.⁴⁷ Based on this initial screening, HDOH identified seven facilities on the islands of Oahu, Maui, and Hawaii with a Q/d greater than or equal to 10. HDOH requested that the owner of each identified facility develop and submit a four-factor analysis to HDOH. Following this initial Q/d screening, WRAP provided a weighted emissions potential/area of influence (WEP/AOI)

⁴⁶ 64 FR 35714, 35721.

⁴⁷ “Q/d” is emissions (Q) in tons per year (tpy), typically of one or a combination of visibility-impairing pollutants, divided by distance to a class I area (d) in kilometers. The resulting ratio is commonly used as a metric to assess a source’s potential visibility impacts on a particular class I area.

analysis to further screen facilities. In addition to emissions and distance, the WEP/AOI analysis accounted for meteorological data such as wind patterns and the specific light extinction contribution of nitrate and sulfate particulates. This WEP/AOI analysis showed that the sources on the island of Oahu that did not rank high (less than one percent contributors for nitrate and sulfate pollution from all point sources examined)⁴⁸ in their potential to affect visibility in the Class I areas. As a result, HDOH excluded all the examined sources on Oahu from requiring a four-factor analysis. Ultimately, based on the WEP/AOI analysis, HDOH determined that the sources required to conduct four-factor analysis were only the electric plants on the islands of Hawaii and Maui and the Mauna Loa Macadamia Nut Corporation Plant on the island of Hawaii.⁴⁹

With regard to Hawaii's contribution to visibility impairment at out-of-state Class I areas, the 2024 Hawaii Regional Haze Plan states that that emissions from within the State are not reasonably expected to affect Class I areas in other states because the nearest states to Hawaii with Class I areas, Alaska and California, are over 2,000 miles away. The State's reasoning is consistent with the EPA's reasoning for including Hawaii (as well as Alaska and the Virgin Islands) in the RHR, which was based on the potential of emissions within the State to contribute to visibility impairment at Class I areas within the State, rather than at any out-of-State areas.⁵⁰ Other remote territories, such as Puerto Rico, were not included in the RHR "because their distance from any Class I area significantly exceed the distance that their emissions could be expected to be transported in order to contribute to visibility impairment in any Class I area."⁵¹ As discussed in further detail below, the EPA is proposing to find that Hawaii has submitted a regional haze plan that fails to meet the requirements of 40 CFR 51.308(f)(2) related to the development of a long-term strategy. However, this determination is not based on any failure of

⁴⁸ 2024 Hawaii Regional Haze Plan, Chapter 5.10

⁴⁹ Id. Chapter 5.0

⁵⁰ 64 FR 35714, 35720. See also 77 FR 31692, 31713 (May 29, 2012) (explaining the same in the context of the EPA's proposed FIP for Hawaii in the second planning period).

⁵¹ Id.

the state to identify Class I areas that may be affected by emissions from the state.

D. Calculations of Baseline, Current, and Natural Visibility Conditions; Progress to Date; and the Uniform Rate of Progress

Section 51.308(f)(1) requires states to determine the following for “each mandatory Class I Federal area located within the State”: baseline visibility conditions for the most impaired and clearest days, natural visibility conditions for the most impaired and clearest days, progress to date for the most impaired and clearest days, the differences between current visibility conditions and natural visibility conditions, and the URP. This section also provides the option for states to propose adjustments to the URP line for a Class I area to account for visibility impacts from anthropogenic sources outside the United States and/or the impacts from wildland prescribed fires that were conducted for certain, specified objectives.⁵²

In the 2024 Hawaii Regional Haze Plan, HDOH used visibility data from IMPROVE monitoring sites for baseline, current, and natural visibility conditions. The HAVO1 IMPROVE monitor started operation at the Hawaii Volcanoes National Park in 1998, and visibility monitoring at the Haleakala National Park visibility was tracked by both the HALE1 monitor from 1990 until 2012 and the HACR1 monitor from 2007 onward.

On August 5, 2021 the EPA issued the “Recommendations for the HALE1-HACR1 IMPROVE Monitoring Site Combination and Volcano Adjustment for Sites Representing Hawaii Class I Areas for the Regional Haze Rule” (“2021 Hawaii Visibility Data Adjustment Memo”)⁵³ to build upon the December 2018 “Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program,”⁵⁴ and the June

⁵² 40 CFR 51.308(f)(1)(vi)(B).

⁵³ EPA Office of Air Quality Planning and Standards, “Recommendations for the HALE1-HACR1 IMPROVE Monitoring Site Combination and Volcano Adjustment for Sites Representing Hawaii Class I Areas for the Regional Haze Rule,” available at https://www.epa.gov/system/files/documents/2021-08/white_paper_for_regional_haze_hi_volcano_adjust_final.pdf (August 5, 2021).

⁵⁴ EPA Office of Air Quality Planning and Standards, “Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program,” available at <https://www.epa.gov/visibility/technical-guidance-tracking-visibility-progress-second-implementation-period-regional> (December 20, 2018).

2020 “Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program” and associated Technical Addendum.⁵⁵ The purpose of the 2021 Hawaii Visibility Data Adjustment Memo was to combine the visibility data for the HALE1 and HACR1 monitoring sites representing the Haleakala National Park into a single continuous data set, and to attempt to account for episodic volcanic events affecting both Hawaii Class I areas. The combination of visibility data for the HALE1 and HACR1 monitoring sites was necessary because the default EPA methodology for determining the 20 percent most-impaired days for the 2000–2004 baseline period relies on a complete visibility data set for 2000–2014, whereas the individual sites each cover only a portion of that period.

The 2021 Hawaii Visibility Data Adjustment Memo also provides an approach for determining the 20 percent most impaired days for the baseline, most recent, and natural visibility conditions for both Hawaiian Class I Areas, and was intended to account for episodic volcanic events. This approach is similar to the approach that the EPA’s 2018 Visibility Tracking Guidance recommended for estimating episodic carbon from wildfires, and episodic fine soil and coarse matter from dust storms, but also applied to sulfate. The sulfate adjustment involves first identifying the 95th-percentile 24-hour ammonium sulfate extinction value for each year between 2000 and 2014 and selecting the year with the lowest value for each IMPROVE site. This value then serves as a threshold above which daily ammonium sulfate extinction is considered to be episodic natural extinction for the impairment calculations. The remainder, non-episodic or routine extinction, is then split into routine natural and anthropogenic portions, with the help of established long-term averages for routine natural extinction.⁵⁶ The anthropogenic part is used to

⁵⁵ EPA Office of Air Quality Planning and Standards, “Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program,” available at <https://www.epa.gov/visibility/memo-and-technical-addendum-ambient-data-usage-and-completeness-regional-haze-program> (June 3, 2020).

⁵⁶ EPA’s 2018 Visibility Tracking Guidance, p.6, the “NC-II” estimates of natural visibility conditions. The starting point for those estimates was a set of concentrations for the eastern and for the western portions of the continental US, and do not include any volcano effects.

select the most impaired days. Once the days are selected, total haze deciview (dv) is computed (including anthropogenic, routine natural, and episodic natural portions) for computing 2014-2018 baseline visibility and for projecting to the 2028 RPGs. Even with these adjustments, ammonium sulfate extinction remains relatively high for both sites and the dominant component of the overall extinction on the 20 percent most-impaired days. Given the relatively lower anthropogenic SO₂ emissions inventory for the state and the low sulfate concentrations predicted for these sites in the EPA's Regional Haze modeling for Hawaii,⁵⁷ it appears that, even with the additional adjustments, the 20 percent most-impaired days include a substantial contribution from ammonium sulfate resulting from volcanic emissions. This result likely emerged because the adjustment method was a variant of EPA's 2018 Visibility Tracking Guidance approach, which was intended to screen out episodic wildfire and dust storm events rather than ongoing events with emissions over many years. Because the Kilauea Volcano had continuous eruption events between 1983 and 2018,⁵⁸ volcanic emissions contribute to sulfate extinction in every year, and often on days below the 95th percentile. Therefore, days with relatively high volcanic sulfate contributions remain even after the adjustment procedure. Additionally, volcanic emissions do not divide as neatly into discrete episodes as wildfires and dust storms typically do, so the days remaining after the adjustment procedure do not necessarily have both relatively large anthropogenic impairment and a relatively low natural contribution. Accordingly, the impacts of the volcano could not be fully screened out using this methodology. Furthermore, to date, no alternative methodology has been developed that is able to fully screen out the volcanic impacts and thus isolate the visibility impairment caused by anthropogenic air pollution. Therefore, the levels of baseline and current total haze on the 20 percent most-impaired days at both of Hawaii's Class I (and particularly Hawaii Volcanoes) include the effects of both anthropogenic and volcanic SO₂/sulfate emissions. Changes in visibility over the years would

⁵⁷ Technical Support Document for EPA's Updated 2028 Regional Haze Modeling for Hawaii, Virgin Islands, and Alaska. EPA-454/R-21-007, August 2021, pp. B-6 and B-7.

⁵⁸ 2024 Hawaii Regional Haze Plan, p.1.

then mostly reflect year-to-year variation in the overwhelming natural volcanic contribution, rather than increases or decreases in the much smaller anthropogenic emissions.⁵⁹ This would affect the comparison of current to baseline conditions, the calculation of the URP, and the assessment of whether the RPG is above or below the URP.

Using updated dv values from the 2021 Hawaii Visibility Data Memo, HDOH provided estimates of baseline, current, and natural visibility conditions, as well as the progress to date, differences between current visibility conditions and natural visibility conditions and the URP for each of the state's Class I areas in Chapter 3 of the 2024 Hawaii Regional Haze Plan. A summary of Hawaii's visibility conditions and URPs is also presented in Table 1 of the Plan. Hawaii did not adjust the URPs to account for international anthropogenic impacts nor for the impacts of wildland prescribed fires.

The Hawaii Volcanoes National Park 2000–2004 baseline visibility conditions are 4.06 dv on the 20 percent clearest days and 15.60 dv on the 20 percent most impaired days.⁶⁰ Natural visibility conditions, as estimated by the EPA in the 2021 Hawaii Visibility Data Adjustment Memo, are 2.20 dv on the 20 percent clearest days and 6.62 dv on the 20 percent most impaired days for Hawaii Volcanoes National Park. The current visibility conditions, which were based on 2015–2019 monitoring data, were 3.50 dv on the clearest days and 16.31 dv on the most impaired days, which were 1.30 dv and 9.69 dv greater than the natural conditions on the respective sets of days. The progress to date, subtracting current conditions from baseline conditions, yields a 0.56 dv improvement for the 20 percent clearest days and -0.71 dv deterioration for the 20 percent most impaired days. HDOH calculated an annual URP of 0.15 dv per year needed to reach natural visibility on the 20 percent most impaired days by 2064. HDOH also indicates that the visibility improvement needed to maintain the URP from the baseline to

⁵⁹ The Statewide Emissions Inventory tables in section 4.1 of the 2024 Hawaii Regional Haze Plan show SO₂ emissions estimates for years ranging from 2005 to 2028 where volcanic emissions are one or even two orders of magnitude greater than that the SO₂ emissions estimates attributed to point sources.

⁶⁰ Tables 3.0-4 and 3.1-2 in the 2024 Hawaii Regional Haze Plan depict the baseline, natural, and current most impaired day and clearest day visibility in dv, adjusted for volcanic episodic activity, for the HAVO1 monitoring site. Table 3.2-2 depicts the 2028 and 2064 URP for the 20 percent most impaired days.

2028 is 3.60 dv. As noted above, the estimate of natural conditions recommended in the EPA’s 2018 Visibility Tracking Guidance does not include volcanic emissions, so the estimate is very likely too low. The estimated URP would then be too large, i.e., the glidepath from baseline conditions to natural conditions declines more steeply than it should.

The Haleakala National Park has 2000–2004 baseline visibility conditions of 2.18 dv on the 20 percent clearest days and 7.84 dv on the 20 percent most impaired days.⁶¹ Natural visibility conditions, as estimated by the EPA in the 2021 Hawaii Visibility Data Adjustment Memo, are -0.12 dv on the 20 percent clearest days and 4.22 dv on the 20 percent most impaired days for Hawaii Volcanoes National Park. The current visibility conditions, which are based on 2015–2019 monitoring data, were 0.48 dv on the clearest days and 7.27 dv on the most impaired days, which are 0.60 dv and 3.05 dv greater than the natural conditions on the respective sets of days. The progress to date, subtracting current conditions from baseline conditions, yields a 1.70 dv improvement for the 20 percent clearest days and 0.57 dv improvement for the 20 percent most impaired days. HDOH calculated an annual URP of 0.06 dv per year needed to reach natural visibility on the 20 percent most impaired days by 2064. HDOH also indicates that the visibility improvement needed to maintain the URP from the baseline to 2028 is 1.44 dv.

Table 1. Visibility Conditions and Uniform Rate of Progress, in deciviews (dv)

Class I Area	20% Clearest Days				20% Most-Impaired Days				Maintain URP		
	Baseline	Current	Natural	Difference	Baseline	Current	Natural	Difference	dv per year	total dv (baseline to 2019)	total dv (baseline to 2028)
Hawaii Volcanoes National Park	4.06	3.50	2.20	1.30	15.60	16.31	6.62	9.69	0.150	2.25	3.60
Haleakala National Park	2.18	0.48	-0.12	0.60	7.84	7.27	4.22	3.05	0.06	0.9	1.44

Source: 2024 Hawaii Regional Haze Plan Tables 3.0-1 and 3.0-2.

The EPA is proposing to find that the 2024 Hawaii Regional Haze Plan meets the requirements of 40 CFR 51.308(f)(1) related to the calculations of baseline, current, and natural

⁶¹ Tables 3.0-4 and 3.1-2 in the 2024 Hawaii Regional Haze Plan depicts the baseline, natural, and current most impaired day and clearest day visibility in dv, adjusted for volcanic episodic activity, for the HALE1 monitoring site. Table 3.2-2 depicts the 2028 and 2064 URP for the 20 percent most impaired days.

visibility conditions; progress to date; differences between current visibility conditions and natural visibility conditions; and the URPs for the second implementation period. However, as previously noted, due to limitations in the current methodologies for screening out the effects of volcanic emissions, the estimated levels of baseline and current visibility conditions at both of Hawaii's Class I areas are not able to adequately identify anthropogenic emissions impacts and continue to include the impact of volcanic emissions.

E. Long-Term Strategy for Regional Haze

Each state having a Class I area within its borders or emissions that may affect visibility in a Class I area must develop a long-term strategy for making reasonable progress towards the national visibility goal.⁶² After considering the four statutory factors, all measures that are determined to be necessary to make reasonable progress must be in the long-term strategy. In developing its long-term strategies, a state must also consider the five additional factors in section 51.308(f)(2)(iv). As part of its reasonable progress determinations, the state must describe the criteria used to determine which sources or group of sources were evaluated (i.e., subjected to four-factor analysis) for the second implementation period and how the four factors were taken into consideration in selecting the emission reduction measures for inclusion in the long-term strategy.⁶³

The requirements of section 51.308(f)(2)(ii) provide that states must consult with other states that have emissions that are reasonably anticipated to contribute to visibility impairment in a Class I area to develop and coordinate emission management strategies containing the emission reductions measures that are necessary to make reasonable progress. Section 51.308(f)(2)(ii)(A) and (B) require states to consider the emission reduction measures identified by other states as necessary for reasonable progress and to include agreed upon measures in their SIPs. Section 51.308(f)(2)(ii)(C) speaks to what happens if states cannot agree on what measures are necessary

⁶² CAA 169A(b)(2)(B).

⁶³ 40 CFR 51.308(f)(2)(iii).

to make reasonable progress.

Section 51.308(f)(2)(iii) requires that the emissions information considered to determine measures necessary to make reasonable progress include information on emissions for the most recent year for which the state has submitted triennial emissions data to the EPA (or a more recent year), with a 12-month exemption period for newly submitted data.

The following sections summarize how the 2024 Hawaii Regional Haze Plan addresses the requirements of 40 CFR 51.308(f)(2) long-term strategy for the second planning period.

1. Determination of Which Pollutants to Consider

To evaluate which pollutants had the greatest impact at Hawaii's Class I areas, HDOH examined the pollutant composition that resulted in the light extinction measured at in-state IMPROVE sites from 2014–2018 and compared the relative impact of the different pollutants on visibility conditions over that time.⁶⁴ HDOH noted that, on both the most impaired and the clearest days, ammonium sulfate is by far the primary contributor to visibility impairment at the Class I areas in the state. Measured on the most impaired days, it contributes 75 percent and 87 percent of the light extinction measured at the Haleakala National Park and Hawaii Volcanoes National Park, respectively. SO₂ emissions are a necessary precursor to the formation of sulfate species, and thus sources of SO₂ are considered when evaluating the potential source of visibility impairing sulfate pollution. In Hawaii, the Kilauea Volcano located within the Hawaii Volcanoes National Park is the greatest natural source of non-anthropogenic SO₂ emissions, while point sources that combust fuel oil are the greatest anthropogenic emitters of SO₂. Most of these anthropogenic point sources are power plants located on the islands of Hawaii, Oahu, and Maui. In considerably less magnitude, ammonium nitrate was identified to contribute 5.4 percent and 1.4 percent of the light extinction on the most impaired days at the Haleakala National Park and the Hawaii Volcanoes National Park, respectively. Similar to SO₂ with sulfates, NO_x emissions are a precursor to the formation of nitrate species. Point sources that combust fuel oil are also the

⁶⁴ 2024 Hawaii Regional Haze Plan, pp. 17–25.

major anthropogenic emitters of NO_x. Coarse mass is reported by the IMPROVE network as the difference between particulate matter with an aerodynamic diameter of 10 microns (PM₁₀) and PM_{2.5}, and was identified as contributing to 6 percent and 5.8 percent of the light extinction on the most impaired days for Haleakala National Park and Hawaii Volcanoes National Park, respectively. Anthropogenic sources of coarse mass include fugitive dust from unpaved roads, aggregate processing, and construction activities. Because coarse mass is not commonly included in emissions inventories, states generally use PM₁₀ as a surrogate for coarse mass. Finally, organic mass was identified as contributing 4.9 percent and 3.6 percent to the most impaired days at the Haleakala National Park and the Hawaii Volcanoes National Park, respectively. Sources of organic mass include, agricultural burning, wildfires, oil combustion, and international transport. Based on this analysis, HDOH selected SO₂, NO_x, and particulate matter as the pollutants of primary concern for source screening during the second planning period in order to maximize the possible benefits of potential control measures.

2. Source Selection

Hawaii used the Q/d method to identify sources that are reasonably expected to contribute to visibility impairment at any Class I area. Specifically, HDOH used a Q/d threshold of 10 (combined NO_x, SO₂, and PM₁₀ emissions) based on the 2014 National Emissions Inventory Version 2 to measure sources' potential contributions to visibility impairment for control evaluation.⁶⁵ This screening methodology identified ten point sources. However, HDOH screened out three of these sources from further analysis for the following reasons: the AES Hawaii LLC Cogeneration Plant was permanently shut down as of August 2022; and the Honolulu International Airport and the Kahului Airport on the island of Maui are not under the State's jurisdiction to develop emissions controls, since the vast majority of their emissions are from aircraft.⁶⁶ The Q/d analysis eventually resulted in HDOH's preliminary selection of seven

⁶⁵ For facilities with multiple emissions units/processes, the facility location was based on the emission unit/process with the highest Q.

⁶⁶ 2024 Hawaii Regional Haze Plan, pp. 56–58.

point sources for four-factor analysis, shown in Table 2.

Table 2: Point Sources Selected for Four-Factor Analysis using Q/d Analysis

Point Source	Location	Q (TPY)	d (km)	Q/d	Class I Area
Kalaeloa Partners, L.P. Plant	Oahu	6,216	201.9	30.91	1.) Haleakala NP
Hawaiian Electric Company - Kahe Power Plant	Oahu	13,968	206.11	67.77	1.) Haleakala NP
Hawaiian Electric Company - Waiau Power Plant	Oahu	5,828	328.98	42.46	2.) Hawaii Volcanoes NP
Hawaii Electric Light Company - Kanoiehua-Hill Power Plant	Oahu	5,828	190.89	30.53	1.) Haleakala NP
Hawaii Electric Light Company - Kanoiehua-Hill Power Plant	Hawaii	2,519	318.39	18.31	2.) Hawaii Volcanoes NP
Hawaii Electric Light Company - Kanoiehua-Hill Power Plant	Hawaii	2,519	147.01	17.13	1.) Haleakala NP
Hawaii Electric Light Company - Puna Power Plant	Hawaii	623	25.69	98.07	2.) Hawaii Volcanoes NP
Hawaii Electric Light Company - Puna Power Plant	Hawaii	623	23.01	27.09	1.) Haleakala NP
Maui Electric Company - Kahului Power Plant	Maui	2,177	26.49	82.20	1.) Haleakala NP
Maui Electric Company - Kahului Power Plant	Maui	2,177	176.82	12.31	2.) Hawaii Volcanoes NP
Maui Electric Company - Maalaea Generating Station	Maui	3,508	25.52	110.18	1.) Haleakala NP
Maui Electric Company - Maalaea Generating Station	Maui	3,508	169.61	16.57	2.) Hawaii Volcanoes NP

Source: 2024 Hawaii Regional Haze Plan, Table 5.7-1

HDOH further refined this list of seven point sources considered for four-factor analysis using the results of a WEP/AOI analysis, conducted by WRAP.⁶⁷ The WEP/AOI analysis showed that point sources near the Hawaii Class I areas had the greatest potential to contribute to visibility impairment on the most impaired days from 2014 to 2018, rather than those on separate islands. Therefore, while initially selected for four-factor analysis using the Q/d ranking, the Kalealoa Partners L.P., Kahe, and Waiau Power Plants on the island of Oahu did not meet the WEP/AOI analysis criteria for the potential to contribute to visibility impairment at the Class I areas on the islands of Maui and Hawaii. Therefore, these sources were excluded from consideration under the four-statutory factors during the second planning period. However, the WEP/AOI analysis also identified that the Mauna Loa Macadamia Nut Plant on the island of Hawaii and the HC&D Camp 10 Quarry on Maui were high ranking among sources with the greatest potential to contribute to visibility impairment from ammonium nitrate emissions at the Class I areas. The Mauna Loa Macadamia Nut Plant was selected for four-factor analysis. Although the facility ranked high, the WEP/AOI model predicted the HC&D Camp 10 Quarry accounted for approximately one percent of the total ammonium nitrate contribution at Haleakala National Park, and considering the other screened-in sources selected for control analysis

⁶⁷ Details of the WEP/AOI analysis are summarized in Section 5.10 of the 2024 Hawaii Regional Haze Plan.

accounted for approximately 98% of the total ammonium nitrate contribution, HDOH excluded the HC&D Camp 10 Quarry from further evaluation. Therefore, between the Q/d and WEP/AOI analysis, five point sources were selected for four-factor analysis:

1. Hawaiian Electric Light Company – Kanoelehua-Hill Power Plant
2. Hawaiian Electric Light Company – Puna Power Plant
3. Maui Electric Light Company – Kahului Power Plant
4. Maui Electric Light Company – Maalaea Power Plant
5. Mauna Loa Macadamia Nut Corporation Plant

3. Four-Factor Analyses

The State evaluated potential control measures based on four-factor analyses provided by the facilities identified in the screening process. When preparing their four-factor analyses, selected facilities considered potential emissions controls such as device retrofits, fuel switches/mixing with lower SO₂, NO_x, and PM₁₀ emissions, operating restriction on hours and fuel input, emission limits, and unit shutdowns.

a. Cost of Compliance

To determine cost of compliance, HDOH followed the methodologies in the EPA's Air Pollution Control Cost Manual.⁶⁸ The State adjusted the control costs estimates provided by the facilities by applying an 8.25 percent prime interest rate and adjusting for cost/total combined tons of pollutant removed, estimated equipment life remaining, retrofit factor, and the additional construction costs associated with Hawaii and Maui Islands. The resulting cost effectiveness values of available controls for the Kanoelehua-Hill Power Plant, the Puna Power Plant, the Kahului Power Plant, the Maalaea Power Plant, and the Mauna Loa Macadamia Nut Corporation Plant, are summarized in Tables 3-7 of this document.

HDOH set a cost effectiveness threshold of \$6,800/ton of pollutant removed. HDOH

⁶⁸ Chapters of the EPA Air Pollution Control Cost Manual are hosted at the following website:
<https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution>.

considered controls with cost-effectiveness values at, below, or slightly above this threshold to be cost-effective for Hawaii emissions sources evaluated under the four-factor analysis in the regional haze second planning period.

Table 3: Four-Factor Analysis for the Kanoelehua-Hill Power Plant

Unit	Description	Primary Fuel	Control Measure & Cost per Ton
Hill 5	14 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	Enforceable shutdown by December 31, 2028
Hill 6	23 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	
CT-1	11.6 MW Combustion Turbine	Fuel Oil No.6 with 2.0% maximum sulfur content	Operated on a limited basis in 2017, and therefore a four-factor analysis was not conducted for the unit. Another round of screening for four-factor analysis will be revisited in the third regional haze planning period.
D-11	2.75 MW DEG	Ultra-low sulfur diesel (ULSD)	Operated on a limited basis in 2017, and therefore a four-factor analysis was not conducted for the unit. Another round of screening for four-factor analysis will be revisited in the third regional haze planning period.
D-15	2.75 MW DEG	ULSD	
D-16	2.75 MW DEG	ULSD	
D-17	2.75 MW DEG	ULSD	

Table 4: Four-Factor Analysis for the Puna Power Plant

Unit	Description	Primary Fuel	Control Measure & Cost per Ton
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Boiler	15.5 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	<ul style="list-style-type: none"> • Fuel switch to ultra-low-sulfur diesel (ULSD) with 0.0015% sulfur content - \$6,014/ton of SO₂, NO_x, and PM₁₀ • Boiler Combustion Controls (Low NO_x burner (LNB) with overfire air/flue gas recirculation) - \$19,109/ton of NO_x • Selective catalytic reduction (SCR) for Boiler - \$43,254/ton of NO_x • SCR + Combustion Control for Boiler - \$39,793/ton of NO_x • Selective non-catalytic reduction (SNCR) for Boiler - \$36,345/ ton of NO_x • SNCR + Combustion Controls - \$44,417/ ton of NO_x • Wet Scrubber for Boiler - \$39,352/ton of PM₁₀ • Wet Electrostatic Precipitator (ESP) for Boiler - \$583,295/ton of PM₁₀
CT-3	23 MW Boiler	Fuel Oil No.4 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • CT-3 was considered a limited use unit based on its operation in 2017, and therefore a four-factor analysis was not conducted for this unit.

Table 5: Four-Factor Analysis for the Kahului Power Plant

Unit	Description	Primary Fuel	Control Measure & Cost per Ton
K-1	5.0 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	<ul style="list-style-type: none"> • Boilers K-1, K-2, K-3, K-4 are required to shut down by December 31, 2028, and is therefore not subject to a four-factor analysis.
K-2	5.0 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	
K-3	11.5 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	
K-4	11.5 MW Boiler	Fuel Oil No.6 with 2.0% maximum sulfur content	

Table 6: Four-Factor Analysis for the Maalaea Power Plant

Unit	Description	Primary Fuel	Control Measure & Cost per Ton
M1	2.5 MW DEG	ULSD	<ul style="list-style-type: none"> • Fuel Injection Timing Retard

			<ul style="list-style-type: none"> (FITR) - \$5,328/ton of NO_x • FITR + CEMS - \$12,430/ton of NO_x • Tier 4 Replacement - \$37,758/ton of NO_x • SCR - \$40,396/ton of NO_x
M2	2.5 MW DEG	ULSD	<ul style="list-style-type: none"> • FITR - \$9,186/ton of NO_x • Tier 4 Replacement - \$62,314/ton of NO_x • SCR - \$69,251/ton of NO_x
M3	2.5 MW DEG	ULSD	<ul style="list-style-type: none"> • FITR - \$5,328/ton of NO_x • FITR + CEMS - \$12,430/ton of NO_x • Tier 4 Replacement - \$37,689/ton of NO_x • SCR - \$40,395/ton of NO_x
M4	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$9,267/ton of NO_x • Diesel Particulate Filters (DPFs) - \$51,828/ton of PM₁₀ • Fuel switch to ULSD with 0.0015% maximum sulfur content - \$10,347/ton of SO₂
M5	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR for M5 - \$9,056/ton of NO_x • DPFs - \$65,963/ton of PM₁₀ • Fuel switch to ULSD with 0.0015% maximum sulfur content - \$10,347/ton of SO₂
M6	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$12,250/ton of NO_x • DPFs - \$65,953/ton of PM₁₀ • Fuel switch to ULSD with 0.0015% maximum sulfur content - \$10,347/ton of SO₂
M7	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$7,753/ton of NO_x • DPFs - \$60,466/ton of PM₁₀ • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M8	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$14,373/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M9	5.6 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$8,624/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M10	12.5 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$6,258/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂

M11	12.5 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$7,174/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M12	12.5 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$7,256/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M13	12.5 MW DEG	Diesel Fuel Oil No.6 with 0.4% maximum sulfur content	<ul style="list-style-type: none"> • SCR - \$7,020/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
X1	2.5 MW DEG	ULSD	<ul style="list-style-type: none"> • SCR - \$106,612/ton of NO_x
X2	2.5 MW DEG	ULSD	<ul style="list-style-type: none"> • SCR - \$105,025/ton of NO_x
M14	20 MW Combustion Turbine	Diesel Fuel Oil No.2 with 0.4% maximum sulfur content and 0.0015% average nitrogen content	<ul style="list-style-type: none"> • SCR - \$11,060/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M16	20 MW Combustion Turbine	Diesel Fuel Oil No.2 with 0.4% maximum sulfur content and 0.0015% average nitrogen content	<ul style="list-style-type: none"> • SCR - \$9,579/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M17	20 MW Combustion Turbine	Diesel Fuel Oil No.2 with 0.4% maximum sulfur content and 0.0015% average nitrogen content	<ul style="list-style-type: none"> • SCR - \$12,314/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂
M19	20 MW Combustion Turbine	Diesel Fuel Oil No.2 with 0.4% maximum sulfur content and 0.0015% average nitrogen content	<ul style="list-style-type: none"> • SCR - \$14,224/ton of NO_x • Fuel switch to ULSD with 0.0015% maximum sulfur content \$10,347/ton of SO₂

Table 7: Four-Factor Analysis for the Mauna Loa Macadamia Nut Corporation Plant

Unit	Description	Primary Fuel	Control Measure & Cost per Ton
Main Boiler	35.7 MMBtu/hr	Biomass/Used Oil	<ul style="list-style-type: none"> • The Main Boiler committed to an enforceable shutdown by December 31, 2026, and is therefore not subject to a four-factor analysis at this time.
Backup Boiler	14.7 MMBtu/hr	ULSD	<ul style="list-style-type: none"> • Economizer - \$61,615/ton of NO_x • Low NO_x Burner for Backup Boiler - \$8,208/ton of NO_x • SCR for Backup Boiler - \$22,652/ton of NO_x
DEG 1	460 kW	ULSD	<ul style="list-style-type: none"> • SCR - \$11,167/ton of NO_x

			<ul style="list-style-type: none"> • Tier 4 Replacement for DEG 1 & DEG 2 - \$11,167/ton NO_x
DEG 2	460 kW	ULSD	<ul style="list-style-type: none"> • SCR - \$7,525/ton NO_x • Tier 4 Replacement for DEG 1 & DEG 2 - \$11,167/ton NO_x

b. Remaining Useful Life

To further evaluate potential emission reduction measures for the selected stationary sources, HDOH took into consideration the remaining useful life of the units at each source. Determining the remaining useful life involves collecting information on how long the source will remain in operation and the lifetime of the potential control measures.

In accordance with the EPA’s Control Cost Manual, HDOH used 30 years for the remaining useful life for retrofitting boilers with SCR and wet scrubber systems at the power plants and 20 years for the remaining useful life for all other control equipment, with the exception of units for which HDOH established enforceable shutdown dates. HDOH also did not factor remaining useful life for fuel switching as it does not require capital investments in new equipment.

Specifically, at Maalaea Generating Station, the source’s owner, Hawaiian Electric provided SCR cost tables factoring a proposal to shut down DEGs M10 and M11 by December 31, 2032 (remaining useful life of 5 years after installation of controls) and December 31, 2037, for M7, M12, and M13 (remaining useful life of 10 years after installation of controls). The years selected for shutdown would render SCR control costs ineffective for each unit based on the updated \$6,800/ton of pollutant threshold set by the State, and as all shutdown dates would occur after the second implementation period, the associated emissions reductions were not considered when calculating 2028 RPGs. The SIP required Hawaiian Electric to commit to these enforceable shutdowns if SCR controls are not operational by December 31, 2027, for DEGs M7 and M10-M13. Similarly, Hawaiian Electric proposed an enforceable shut down date of December 31, 2028, for Boilers Hill 5 and Hill 6 at the Kanoelehua-Hill Power Plant and Boilers K-1, K-2, K-3, and K-4 at the Kahului Power Plant and excluded them from further emissions control

evaluation on the basis of their remaining useful life. The Mauna Loa Macadamia Nut Corporation committed to an enforceable shutdown of December 31, 2026, for its main boiler, but plans to replace this unit with a new boiler following the shutdown.

c. Time Necessary for Compliance

Based on information collected in the four-factor analyses for each facility, the State determined the following amounts of time necessary to implement regional haze control measures:

- Four years from permit issuance for switching fuel for the Puna Generating Station Boiler to ULSD. (Permit Amended August 10, 2022, therefore, fuel switch is required by August 10, 2026.)
- December 31, 2027, for installing FITR on M1 and M3 at Maalaea Generating Station
- December 31, 2027, for installing SCR for M7 and M10 through M13 at Maalaea Generating Station. These units may also shut down by the following dates as an alternative option to installing SCR:
 - December 31, 2037, for M7;
 - December 31, 2030, for M10 and/or M11;
 - December 31, 2032, for M10 or M11 if one of these units is shut down by 2030 or installs SCR, and
 - December 31, 2037, for M12 and M13.
- December 31, 2026, for the main boiler at the Mauna Loa Macadamia Nut Corporation Plant. The main boiler will be replaced with another unit after the existing unit is shutdown.

d. Energy and Non-air Environmental Impacts

Based on information collected in the Hawaiian Electric four-factor analyses for their facilities, the State determined the following energy and non-air environmental impacts:

- Fuel Switching – There are no energy and non-air quality environmental impacts of compliance for fuel switching.
- Circulating Dry Scrubber (CDS) – CDS systems require electricity to operate the ancillary equipment. In addition, solid waste streams are generated that require disposal.
- DPFs – There are no energy and non-air quality environmental impacts of compliance for adding DPFs.
- SCR and SNCR – These control systems require electricity to operate the ancillary equipment. SCR and SNCR can potentially cause environmental impacts related to storage of ammonia. These control systems can also release unreacted ammonia, known as ammonia slip.
- Wet ESPs – ESPs apply energy for removing particulate from the exhaust stream of the emissions source. Wet ESPs generate wastewater streams that must be treated onsite or sent to a wastewater treatment plant. The wastewater treatment process will generate filter cake that would likely require landfilling.
- Wet Scrubbers – Wet scrubbers require energy to force exhaust gases through the scrubber and generate wastewater streams that would need to be treated.

Similarly, based on information provided by the Mauna Loa Macadamia Nut Corporation Plant, the State determined the following energy and non-air environmental impacts:

- LNB – Electrical usage is increased by installing three horsepower combustion air fans to accommodate LNB.
- SCR – Electrical usage increases due to an increase in combustion air motor horsepower to accommodate pressure drop from installing SCR.

4. Control Determinations

Hawaii's control measure determinations, including the specific permit conditions submitted to the EPA for approval into the Hawaii SIP by incorporation by reference, are

summarized in Table 8 of this document. These permit conditions include the relevant shutdown dates, emissions limitations, compliance dates, and monitoring, recordkeeping, and reporting requirements to ensure the enforceability of the associated emissions limitations. Some emissions controls are included in the 2028 RPGs, and HDOH estimated the emissions reductions to be: 610 tpy NO_x, 2,351 tpy SO₂, 65 tpy PM₁₀ for controls selected for Hawaii Island Sources and 2,444 tpy NO_x, 2,221 tpy SO₂, 84 tpy PM₁₀ for controls selected for Maui Island Sources. HDOH indicated that the State’s calculations of 2028 RPGs does not include the anticipated emissions reductions from the shutdown of the main boiler at the Mauna Loa Macadamia Nut Corporation Plant as it was uncertain what amount of NO_x reduction will occur from the boiler replacement.⁶⁹

Table 8: Hawaii Regional Haze New Control Measure Determinations

Source	Unit	Control	Pollutant	Compliance Deadline	Relevant Permit Conditions
Kanoelehua-Hill Power Plant	Boiler Hill 5	Shutdown	NO _x , SO ₂ , PM ₁₀	December 31, 2028	Permit Amendment for Covered Source Permit (CSP) No. 0234-01-C Special Condition No. C.1
	Boiler Hill 6	Shutdown	NO _x , SO ₂ , PM ₁₀	December 31, 2028	Permit Amendment for CSP No. 0234-01-C Special Condition No. C.1
Mauna Loa Macadamia Nut Corporation Plant	Main Boiler	Shutdown ^a	-	December 31, 2026	Permit Amendment for CSP No. 0317-01-C Permit Conditions C.1 and C.2
Puna Power Plant	Puna Boiler	Fuel Switch to ULSD	NO _x , SO ₂ , PM ₁₀	August 10, 2026	Permit Amendment for CSP No. 0235-01-C Permit Conditions C.1 and C.2
Kahului Power Plant	Boiler K-1	Shutdown	NO _x , SO ₂ , PM ₁₀	December 31, 2028	Permit Amendment for CSP No. 0232-01-C Special Condition No. C.1
	Boiler K-2	Shutdown	NO _x , SO ₂ , PM ₁₀	December 31, 2028	Permit Amendment for CSP No. 0232-01-C Special Condition No. C.1
	Boiler K-3	Shutdown	NO _x , SO ₂ ,	December 31,	Permit Amendment for

⁶⁹ Appendix V “Regional Haze Adjusted Reasonable Progress Goals” to the 2024 Hawaii Regional Haze Plan, pp. 8-11.

			PM ₁₀	2028	CSP No. 0232-01-C Special Condition No. C.1
	Boiler K-4	Shut down	NO _x , SO ₂ , PM ₁₀	December 31, 2028	Permit Amendment for CSP No. 0232-01-C Special Condition No. C.1
Maalaea Generating Station	DEG M1	FITR	NO _x	December 31, 2027	Permit Amendment for CSP No. 0067-01-C Permit Condition C.2
	DEG M3	FITR	NO _x	December 31, 2027	Permit Amendment for CSP No. 0067-01-C Permit Condition C.2
	DEG M7	SCR or Shutdown	NO _x	December 31, 2027 for SCR OR December 31, 2037 for shut down	Permit Amendment for CSP No. 0067-01-C Permit Condition C.3
	DEG M10	SCR or Shutdown	NO _x	December 31, 2027 for SCR OR December 31, 2030 for shut down ^b	Permit Amendment for CSP No. 0067-01-C Permit Condition C.4
	DEG M11	SCR or Shutdown	NO _x	December 31, 2027 for SCR OR December 31, 2030 for shut down ^b	Permit Amendment for CSP No. 0067-01-C Permit Condition C.4
	DEG M12	SCR or Shutdown	NO _x	December 31, 2027 for SCR OR December 31, 2037 for shut down	Permit Amendment for CSP No. 0067-01-C Permit Condition C.5
	DEG M13	SCR or Shutdown	NO _x	December 31, 2027 for SCR OR December 31, 2037 for shut down	Permit Amendment for CSP No. 0067-01-C Permit Condition C.5

Source: 2024 Hawaii Regional Haze Plan, p. 97, and Appendix X to the 2024 Hawaii Regional Haze Plan

^a The main boiler will be replaced with another unit after existing unit is shut down. The replacement unit will be subject to a four-factor analysis or effective controls determination.

^b If either DEG M10 or M11 installs SCR by December 31, 2027, or shuts down by December 31, 2030, the deadline to shut down date the remaining unit is then December 31, 2032.

5. Additional Long-Term Strategy Requirements

Pursuant to 40 CFR 51.308(f)(2)(iv)(A), Hawaii detailed the existing and ongoing State

and Federal emission control programs that contribute to emission reductions through 2028.⁷⁰ These programs include the State's: Renewable Portfolio Standards, Energy Efficiency Portfolio Standard, Greenhouse Gas Rules, along with other ongoing federal programs. Additionally, the State highlighted Hawaii Administrative Rules that mitigate the impacts of construction activities as required by 40 CFR 51.308(f)(2)(iv)(B).⁷¹

Pursuant to 40 CFR 51.308(f)(2)(iv)(C), source retirements and replacement schedules are addressed in the 2024 Hawaii Regional Haze Plan. In accordance with Hawaiian Electric's 2023 "Integrated Grid Plan" to meet the 100% renewable portfolio standard goal by 2045,⁷² HDOH anticipates that numerous generating units will be replaced with sources of renewable energy.⁷³

Regarding the consideration of smoke management practices required by 40 CFR 51.308(f)(2)(iv)(D), HDOH explained that the State does not have a smoke management plan. Instead, planned open burning is regulated under the Hawaii Administrative Rules 11-60.1, Subchapter 3.⁷⁴

The State also considered the anticipated net effect of projected changes in emissions as required by 40 CFR 51.308(f)(2)(iv)(E) by discussing the process and criteria used to select point sources of anthropogenic emissions of NO_x, SO₂, and PM₁₀ with the greatest potential impact on visibility impairment on Class I areas in Hawaii, and further describes how sources were evaluated using statutory factors to characterize and determine what control measures are necessary to make reasonable progress over the second planning period.⁷⁵

6. Conclusion

The EPA reviewed the state's long-term strategy for compliance with the applicable requirements of the CAA and the RHR. The state included in the Plan a description of the criteria

⁷⁰ 2024 Hawaii Regional Haze Plan, Chapter 7.1 and 7.2.

⁷¹ Id. Chapter 7.3.

⁷² Executive Summary of the Hawaiian Electric "Integrated Grid Plan," May 2023.

⁷³ Tabulated in Table 7.4-1 of the 2024 Hawaii Regional Haze Plan.

⁷⁴ Refer to Appendix O of the 2024 Hawaii Regional Haze Plan.

⁷⁵ Chapter 7.5 of the 2024 Hawaii Regional Haze Plan.

it used to determine which sources it evaluated and how the four factors were taken into consideration in selecting the measures for inclusion in its long-term strategy. As previously noted, during development of the Plan, Hawaiian Electric agreed to enforceable shutdowns at several EGUs in order to exclude these units from further evaluation. However, on August 25, 2025, representatives of Hawaiian Electric (“the Company”) sent a letter to the Regional Administrator for EPA Region 9, stating that:

. . . the Company was forced under the SIP to accept enforceable retirement deadlines for units the Company plans to retire, due the high costs of controls and fuels switches. However, these retirement deadlines are no longer acceptable because of potential negative impacts to generation reliability due to actual or potential cancellations and delays in replacement generation projects that were planned by independent power producers.⁷⁶

The Company then explained that 115 MW of planned generation had been cancelled on the island of Hawaii, meaning that, “grid reliability will be at risk in 2029 following the retirement of the Kanoelehua-Hill boilers.” In addition, the Company similarly noted that 20 MW of planned generation had been cancelled for Maui, and thus “a delay to the shutdown of the Kahului boilers and Maalaea generating units would reduce reliability risks,” if there were delays with additional replacement generation projects on Maui.⁷⁷ Citing Adequacy of Supply Reports dated January 30, 2025 for Hawaiian Electric Light Company and Maui Electric Company, the Company stated that “retirement of the generating units as required by the SIP deadlines will create higher probability of energy reserve margin shortfalls that increase risk to reliability on both islands.”⁷⁸ The Company also emphasized that “each island must be entirely self-sufficient and cannot rely on power by wire transmission from other jurisdictions as is common in the continental United States to address reliability emergencies.” Thus, Hawaii’s long-term strategy includes source closures that are now opposed by the sources’ owner

⁷⁶ Letter dated August 29, 2025, from Karin Kimura, Director, Environmental Division, Hawaiian Electric, to Josh F.W. Cook, Regional Administrator, EPA Region 9, pp. 1–2.

⁷⁷ Id. at 3.

⁷⁸ Id.

(hereinafter “forced” or “unconsented” closures). As detailed in the paragraphs below, the EPA proposes to find that these unconsented closures are inconsistent with CAA section 110 because the State has not provided necessary assurances that these measures would not violate state or federal law as required by CAA section 110(a)(2)(E)(i). We are also relying on and incorporating the arguments set forth in the EPA’s final action disapproving the Colorado Regional Haze Plan for the Second Implementation Period,⁷⁹ and the EPA’s final action partially disapproving the California Heavy-Duty Vehicle Inspection and Maintenance Program to the extent applicable to this proposed partial approval and partial disapproval of the Plan.⁸⁰

CAA section 110(a)(2)(E)(i) provides that state plans must provide “necessary assurances” that the State “is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof.” The best reading of this provision is that the EPA may not approve a SIP revision that risks violating federal or state law in the course of implementation and for which the state has not provided necessary assurances that there will be no such violation. This reading is consistent with the EPA’s independent obligation to follow Federal constitutional and statutory law and with the structure of CAA section 110 as a whole, which sets out detailed requirements for state plans and for the EPA’s review of such plans. The EPA proposes to find that approval by the EPA of unconsented source closures, without just compensation, could violate the Takings Clause of the U.S. Constitution and possibly comparable provisions of state law, and that Hawaii has not provided the necessary assurances that such violations would not occur.⁸¹

Although the application of the Takings Clause is necessarily fact-specific, EPA approval of an unconsented source closure could constitute a *per se* taking or a total or partial regulatory taking without just compensation. The EPA notes that there is a lack of controlling precedent on application of the Takings Clause to approval of unconsented source closures under CAA section

⁷⁹ 91 FR 3048 (January 26, 2026).

⁸⁰ Available at <https://www.epa.gov/system/files/documents/2026-01/pre-pub-frl-12606-02-r9-hd-im-final-nfrm.pdf>.

⁸¹ U.S. Constitution amendments V, XIV; *see also* Hawaii Constitution article I, section 20.

110 because states typically do not require such unconsented closures.⁸² U.S. Supreme Court precedent suggests, however, that the EPA's approval of such forced closures could amount to a *per se* taking. In *Cedar Point Nursery v. Hassid*, 594 U.S. 139 (2021), the U.S. Supreme Court explained that government action that appropriates property “is no less a physical taking because it arises from a regulation.” Particularly relevant here, the Court applied the *per se* bar on uncompensated takings in *Horne v. Department of Agriculture*, 576 U.S. 351 (2015), to a complex regulatory regime that required regulated parties to set aside a portion of their output to achieve governmental aims. The EPA proposes to conclude that Hawaii has not provided the necessary assurances required by CAA section 110(a)(2)(E)(i) that approval of the submitted closure provisions would not result in uncompensated *per se* takings in violation of Federal and possibly state law.

Relatedly, a total regulatory taking could occur if the closure would fully deprive the source owner of all economic use of the land under the standard described in *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1116 (1992). A partial regulatory taking could occur if the closure inflicted a significant economic impact upon the source owner, undermined distinct, investment-backed expectations, and shared characteristics with actions conventionally regarded as government takings. These factors and how courts should balance them are detailed in *Penn Central Transp. Co. v. New York City*, 438 U.S. 104, 123 (1978), and subsequent cases. While the EPA proposes to find that the Hawaii SIP must be disapproved because the state has failed to provide necessary assurances that a *per se* taking will not result from EPA approval of the forced unconsented closures, the state also has an obligation to provide necessary assurances that a partial or total regulatory taking will not occur.

Furthermore, although it is not a basis for disapproval in this instance, we find that Hawaii’s long-term strategy did not adequately consider the energy impacts associated with EGU closures. More specifically, we find Hawaii did not sufficiently assess the closures’ impacts on

⁸² As previously noted, at the time that Hawaii adopted the closures at issue here, they were not unconsented.

maintaining grid reliability and Hawaiian Electric’s ability to meet energy demand. This finding is supported by documentation from Hawaiian Electric regarding risk to energy availability and grid reliability due to source closures incorporated into Hawaiian long-term strategy.

The 2024 Hawaii Regional Haze Plan partially addressed the “energy and nonair quality environmental impacts of compliance” statutory factor by describing the nonair quality impacts of specific controls options. However, because Hawaii lacked material information about grid reliability, later provided to the EPA by Hawaiian Electric, we find that the State did not appropriately weigh the energy impacts of the closure measures in its long-term strategy. Nonetheless, despite the shortcomings in Hawaii’s analysis of grid reliability concerns, the EPA recognizes that our prior statements may have generated a reliance interest that led to how Hawaii developed its SIP revision.⁸³ For example, the EPA’s 2019 Guidance provided a limited scope of considerations generally involved under the “energy and non-air quality factor,” which did not include grid reliability. It was reasonable for Hawaii to rely on the interpretation provided in that guidance. Therefore, recognizing Hawaii’s reliance interest in the EPA’s prior representations, the EPA is not determining that Hawaii’s limited consideration of grid reliability is a reason to disapprove the source closures.

Finally, the EPA also proposes that the forced source closure contained in this portion of the State's submission are inconsistent with the structure of CAA sections 110 and 169A, which do not expressly contemplate forced closures as a means to achieve compliance. In this context, we are referring to a source closure opposed by the source in question that would be made federally enforceable as a result of a SIP approval.

We are seeking comment and proposing that the best reading of the phrase “other control measures, means, or techniques” does not encompass the authority to force a source to close, or to close on timeframe not agreed to by the owner/operator. This proposal is supported by reading the terms “measures” and “means” in context and informed by the surrounding statutory terms,

⁸³ See, e.g., *Kentucky v. EPA*, 123 F. 4th 447, 467-71 (4th Cir. 2025).

including the parenthetical phrase discussing market-based incentives that contemplate ongoing operations. “Measures” and “means” must also be “necessary or appropriate” to meet applicable CAA requirements. As noted above, the EPA is proposing that unconsented closures are neither “necessary” under the circumstances here nor otherwise required by the CAA, and that such closures are not “appropriate” when they could amount to an uncompensated taking in violation of federal and state law. The EPA seeks comment on this interpretation.

CAA section 169A similarly does not contemplate use of unconsented closures as part of the regional haze program. The statute provides that state plans must contain “emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress,” including through the use of “retrofit technology” and long-term strategies. Consistent with the interpretation of CAA section 110 proposed above, the EPA proposes that the best reading of the statute does not require or authorize the use of forced source closures to attain the statutory goals listed in CAA section 169A. The EPA seeks comment on this interpretation as well.

In summary, Hawaii did not provide necessary assurances that the unconsented closures in the long-term strategy would not violate federal and possibly state law, as required by CAA section 110(a)(2)(E)(i). Thus, the long-term strategy does not meet this CAA requirement and does not meet 40 CFR 51.308(f)(2). Under CAA section 110(k)(3), the EPA cannot approve a plan revision or a portion thereof, unless it meets all applicable plan requirements. Therefore, we are proposing to disapprove Hawaii’s long-term strategy.

F. Reasonable Progress Goals

Section 51.308(f)(3) contains the requirements pertaining to RPGs for each Class I area. Because Hawaii is host to Class I areas, it is subject to both section 51.308(f)(3)(i) and, potentially, to (ii). Section 51.308(f)(3)(i) requires a state in which a Class I area is located to establish RPGs—one each for the most impaired and clearest days--reflecting the visibility conditions that will be achieved at the end of the implementation period as a result of the emission limitations, compliance schedules and other measures required under paragraph (f)(2)

to be in states' long-term strategies, as well as implementation of other CAA requirements. The long-term strategies as reflected by the RPGs must provide for an improvement in visibility on the most impaired days relative to the baseline period and ensure no degradation on the clearest days relative to the baseline period. Section 51.308(f)(3)(ii) applies in circumstances in which a Class I area's RPG for the most impaired days represents a slower rate of visibility improvement than the uniform rate of progress calculated under 40 CFR 51.308(f)(1)(vi). Under §51.308(f)(3)(ii)(A), if the state in which a mandatory Class I area is located establishes an RPG for the most impaired days that provides for a slower rate of visibility improvement than the URP, the state must demonstrate that there are no additional emission reduction measures for anthropogenic sources or groups of sources in the state that would be reasonable to include in its long-term strategy. Section 51.308(f)(3)(ii)(B) requires that if a state contains sources that are reasonably anticipated to contribute to visibility impairment in a Class I area in *another* state, and the RPG for the most impaired days in that Class I area is above the URP, the upwind state must provide the same demonstration.

HDOH estimated RPGs starting with the selection of the 20 percent Most Impaired Days and the EPA modeled projection to 2028, followed by three adjustment procedures: scaling of EPA modeling results to reflect emissions controls, an adjustment to reflect the presence of volcanic SO₂ emissions, and normalization of the RPG to better reflect the EPA tracking guidance-recommended calculation of dv .⁸⁴ To calculate RPGs for 2028, HDOH began with projected visibility conditions for 2028 from WRAP's TSS website. These initial 2028 visibility conditions were based on photochemical modeling conducted by the EPA to project Class I visibility conditions on the 20 percent most impaired days and the 20 percent clearest days for 2028 in Alaska, Hawaii, and the Virgin Islands using the Community Multiscale Air Quality

⁸⁴ Hawaii Regional Haze Plan, Appendix V. An annotated spreadsheet replicated the Appendix V RPG calculations is included in the docket for this rulemaking.

model.⁸⁵ Input files for the modeling included hourly emission estimates, meteorological data, and boundary concentrations to create modeled simulations of visibility for a 2016 base year case, a 2028 case, and 2028 U.S anthropogenic emissions zero-out model run. The modeling did not include emissions from volcanoes. The IMPROVE data were screened to remove days with episodically high concentrations due to natural sources, so that the 20 percent most impaired days better reflected anthropogenic impairment, following the 2021 Hawaii Visibility Data Adjustment Memo, described and cited above. However, as previously noted, even these adjusted values include some volcanic impacts and thus the 2028 projections for the twenty percent most impaired days also include such impacts. The PM predictions from the 2016 and 2028 EPA model simulations were used to project 2014–2018 IMPROVE visibility data to 2028 following the approach described in the EPA’s ozone, PM_{2.5}, and regional haze modeling guidance.⁸⁶

As described in more detail in Appendix V to the 2024 Hawaii Regional Haze SIP, HDOH adjusted the WRAP TSS 2028 projections to reflect the impact of enforceable regional haze control measures adopted in the long-term strategy (Kahului Generating Station – boiler shutdowns, Kanoelehua-Hill Generating Station – boiler shutdowns, Maalaea Generating Station – DEG retrofits with FITR and SCR, and Puna Generating Station – boiler fuel switch to ultralow sulfur diesel).

HDOH’s adjusted RPGs for its Class I areas (represented by the IMPROVE monitor), from appendix V of the 2024 Hawaii Regional Haze Plan are shown in Table 9 of this document, along with baseline conditions and the 2028 URP (for the most-impaired days) and initial 2028 model projections from Tables 8-2-1 and 8-3-1 of the Plan.

Table 9 – Hawaii Baseline Conditions, Adjusted URP and 2028 RPGs

⁸⁵ “Technical Support Document for EPA’s Updated 2028 Regional Haze Modeling for Hawaii, Virgin Islands, and Alaska.” EPA-454/R-21-007, August 2021. This original modeling projected 2028 from IMPROVE data for 2014-2017, but the WRAP TSS has the model outputs reprocessed to project 2028 from 2014-2018 IMPROVE data.

⁸⁶ Memorandum dated November 29, 2018, from Richard Wayland, Director, Air Quality Assessment Division, to Regional Air Directors, Regions 1-10, Subject: “Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze.”

Class I area	Site	20% Most-impaired days			20% Clearest days	
		2000-2004 Baseline	2028 URP	2028 RPG	2000-2004 Baseline	2028 RPG
Haleakala National Park	HALE1	7.8	6.4	6.5	2.2	0.4
Hawaii Volcanoes National Park	HAVO1	15.6	12.0	15.1	4.1	3.2

Source: 2024 Hawaii Regional Haze Plan, Tables 8-2-1 and 8-3-1, and Appendix V, Tables V-1 and V-2

As described in Section IV.E.6 of this document, we are proposing to disapprove Hawaii’s long-term strategy under 51.308(f)(2). Section 51.308(f)(3)(i) specifies that RPGs must reflect “enforceable emissions limitations, compliance schedules, and other measures required under paragraph (f)(2) of this section.” We commend Hawaii for setting reasonable progress goals in an effort to meet the requirements of 51.308(f)(3). However, in the absence of an approved long-term strategy, we cannot approve the associated RPGs.

We also note that for this planning period, both Class I areas within Hawaii have RPGs for the 20 percent most impaired days that provide for a slower rate of visibility improvement than the URP by 2028.⁸⁷ Specifically, the HALE1 IMPROVE monitor at the Haleakala National Park is projected to be 0.1 dv above the URP in 2028, and the HAVO1 IMPROVE monitor at the Hawaii Volcanoes National Park is projected to be 3.1 dv above the URP in 2028. Section 51.308(f)(3)(ii) of the Regional Haze Rule requires that if a state adopts an RPG for the most impaired days that provides for a slower rate of improvement in visibility than the uniform rate of progress, i.e., if the RPG is above the URP glidepath, it must include within its SIP submission an assessment of the number of years it would take to attain natural visibility conditions if visibility improvement were to continue at the rate of progress selected by the state as reasonable for the implementation period. Based on the visibility measured for the most

⁸⁷ 2024 Hawaii Regional Haze Plan, Chapter 8.2 and 8.3.

impaired days between 2004 and the 2028 RPGs, the State calculated that it would take 409 years to reach the natural visibility level at the Hawaii Volcanoes National Park and 67 years to reach the natural visibility level at the Haleakala National Park. As previously stated in section IV.F, despite adjustments intended to screen out the influence from volcanic emissions, the influence remains to an unknown extent within the calculated 2028 projections for the twenty percent most impaired days. As a result, there is uncertainty in the projection of the URP.

The Regional Haze Rule also requires that states with Class I areas and any other states with sources affecting that area make a “robust demonstration” that there are no additional emissions reduction measures for sources that may reasonably be anticipated to contribute to visibility impairment that would be reasonable to include in the long-term strategy. The robust demonstration requires an analysis to ensure there are no additional emissions reduction measures that would be reasonable to include in the long-term strategy. HDOH asserts that it has already conducted a source selection and control measures analyses in such a manner that addresses the requirements of 40 CFR 51.308(f)(3)(ii). Specifically, HDOH cites its four-factor analyses in Chapter 6 and associated appendices of the 2024 Hawaii Regional Plan as constituting the required robust demonstration for selecting reasonable regional haze control measures in accordance with the applicable provisions of the RHR. Because we are proposing to find that Hawaii has not met the requirements of 51.308(f)(2), we also propose to find that it has not satisfied 51.308(f)(3)(ii).

In sum, we propose to disapprove the RPGs in the Plan as not meeting the requirements of 40 CFR 51.308(f)(3).

G. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(f)(6) specifies that each comprehensive revision of a state’s regional haze SIP must contain or provide for certain elements, including monitoring strategies, emissions inventories, and any reporting, recordkeeping and other measures needed to assess and report on visibility. A main requirement of this subsection is for states with Class I areas to submit

monitoring strategies for measuring, characterizing, and reporting on visibility impairment.

Compliance with this requirement may be met through participation in the IMPROVE network.

Chapter 9.1 of the 2024 Hawaii Regional Haze Plan states that Hawaii is relying on the continued availability of the IMPROVE program in meeting the monitoring operation, collection, and reporting requirements for measuring visibility impairment in its Class I areas.

Section 51.308(f)(6)(i) requires SIPs to provide for the establishment of any additional monitoring sites or equipment needed to assess whether reasonable progress goals to address regional haze for all mandatory Class I Federal areas within the state are being achieved. To satisfy this requirement, the State commits to work with IMPROVE, the EPA, and FLMs to ensure that representative monitoring continues for its Class I areas. HDOH asserts that the visibility data for Haleakala National Park and Hawaii Volcanoes National Park are adequate for assessing the RPGs and no additional monitoring sites are necessary at this time.

Section 51.308(f)(6)(ii) requires SIPs to provide for procedures by which monitoring data and other information are used in determining the contribution of emissions from within the state to regional haze visibility impairment at mandatory Class I Federal areas both within and outside the state. HDOH highlights Chapter 3, Chapter 5, Chapter 6, and Chapter 7 of the 2024 Hawaii Regional Haze plan as describing the procedures by which the relative impact of emissions on Class I areas in the state are assessed. Chapter 4 described the procedures used to produce the statewide emissions inventory of pollutants reasonably anticipated to cause or contribute to visibility impairment in Hawaii's Class I areas.

Section 51.308(f)(6)(iv) requires the SIP to provide for the reporting of all visibility monitoring data to the Administrator at least annually for each Class I area in the state. HDOH notes that, while the agency does not directly collect or handle IMPROVE data, it will remain a part of the WRAP program and participate in the exchange of IMPROVE information for developing and updating the WRAP TSS.

Section 51.308(f)(6)(v) requires SIPs to provide for a statewide inventory of emissions of

pollutants that are reasonably anticipated to cause or contribute to visibility impairment, including emissions for the most recent year for which data are available and estimates of future projected emissions. It also requires a commitment to update the inventory periodically. HDOH asserts that Hawaii, with support from WRAP, shows a statewide inventory of emissions that can be reasonably expected to cause or contribute to visibility impairment in Class I areas. Hawaii commits to updating statewide emission periodically, and these updates will be used for Hawaii's tracking of emission changes, trends, and evaluation of whether reasonable progress goals are being achieved along with other regional analyses. The updates will occur every three years on the same schedule as the triennial reporting required by the EPA's Air Emissions Reporting Rule (AERR) in 40 CFR Part 51 Subpart A.

The EPA proposes to find that Hawaii has met the requirements of 40 CFR 51.308(f)(6) as described in the preceding paragraphs, including through its continued participation in the IMPROVE network and the WRAP RPO and its ongoing compliance with the AERR. We also propose to find that no further elements are necessary at this time for Hawaii to assess and report visibility pursuant to 40 CFR 51.308(f)(6)(vi).

H. Requirements for Periodic Reports Describing Progress Towards the Reasonable Progress Goals

Section 51.308(f)(5) requires that periodic comprehensive revisions of states' regional haze plans also address the progress report requirements of 40 CFR 51.308(g)(1) through (5). The purpose of these requirements is to evaluate progress towards the applicable RPGs for each Class I area within the state and each Class I area outside the state that may be affected by emissions from within that state. Sections 51.308(g)(1) and (2) apply to all states and require a description of the status of implementation of all measures included in a state's first implementation period regional haze plan and a summary of the emission reductions achieved through implementation of those measures. Section 51.308(g)(3) applies only to states with Class I areas within their borders and requires such states to assess current visibility conditions,

changes in visibility relative to baseline (2000–2004) visibility conditions, and changes in visibility conditions relative to the period addressed in the first implementation period progress report. Section 51.308(g)(4) applies to all states and requires an analysis tracking changes in emissions of pollutants contributing to visibility impairment from all sources and sectors since the period addressed by the first implementation period progress report. This provision further specifies the year or years through which the analysis must extend depending on the type of source and the platform through which its emission information is reported. Finally, section 51.308(g)(5), which also applies to all states, requires an assessment of any significant changes in anthropogenic emissions within or outside the state have occurred since the period addressed by the first implementation period progress report, including whether such changes were anticipated and whether they have limited or impeded expected progress towards reducing emissions and improving visibility.

Section 51.308(f)(5) specifies that a progress report submitted as part of a comprehensive regional haze SIP revision must address the time period since the most recent progress report. Hawaii submitted its first planning period progress report to the EPA on October 20, 2017, which presented data analysis for the period of 2011 through 2015.⁸⁸ The EPA finalized its approval of the first planning period progress report on August 12, 2019.⁸⁹

The 2024 Hawaii Regional Haze Plan describes the status of Federal and State measures in the long-term strategy from the first implementation period for reducing visibility impairing pollution and provided a table of emissions reductions achieved throughout the State due to continued measures controlling SO₂ emissions at oil-fired plants on the island of Hawaii: Kanoelehua-Hill and Puna, to 3,550 tons of SO₂ beginning in 2018.⁹⁰ The EPA proposes to find that Hawaii has met the requirements of 40 CFR 51.308(g)(1) and (2) because the Plan describes the measures included in the long-term strategy from the first implementation period, as well as

⁸⁸ 84 FR 39754.

⁸⁹ Id.

⁹⁰ 2024 Hawaii Regional Haze Plan, Chapter 9.2.

the status of their implementation and the emissions reductions achieved through such implementation.

The 2024 Hawaii Regional Haze Plan also included summaries of the visibility conditions and the trend of the 5-year averages through 2018 at Class I area in the State.⁹¹ As shown in Table 1 of this document, the Plan included the 5-year baseline (2000–2004) visibility conditions for the clearest and most impaired days. The 2024 Hawaii Regional Haze Plan also included the current 5-year status (2014-2018) for the clearest and most impaired days. The Plan also tabulated the visibility metrics levels at Hawaii Class I areas, including the 5-year rolling average for the clearest and most impaired days.⁹² The EPA therefore proposes to find that Hawaii has satisfied the requirements of 40 CFR 51.308(g)(3).

Pursuant to 51.308(g)(4), Hawaii provided a summary of emissions of NO_x, SO₂, PM₁₀, PM_{2.5}, VOCs, and NH₃ from all sources and activities, including from point, nonpoint, non-road mobile, and on-road mobile sources, for the time period from 2005 through 2017 and projected emissions for 2028 in the 2024 Hawaii Regional Haze Plan.⁹³ In its analyses of the Statewide emissions inventory, HDOH discussed the changes in emissions by source or activity and demonstrated significant decreases in emissions across all pollutants except for a minor five percent increase in PM_{2.5} emissions from 2005 to 2017. Therefore, the EPA is proposing to find that the 2024 Hawaii Regional Haze Plan satisfies requirements of 40 CFR 51.308(g)(4) and 40 CFR 51.308(g)(5) by providing emissions information for NO_x, SO₂, PM₁₀, PM_{2.5}, VOCs, and NH₃ broken down by type of source. The emissions data in the SIP submission support the assessment that anthropogenic haze-causing pollutant emissions in Hawaii have decreased during the reporting period and that changes in emissions have not limited or impeded progress in reducing pollutant emission and improving visibility.

I. Requirements for State and Federal Land Manager Coordination

⁹¹ Id. Tables 9.2-2 and 9.2-3.

⁹² Id. Tables 3.1-1 and 3.1-2.

⁹³ Id. Chapter 4.

Section 169A(d) of the Clean Air Act requires states to consult with FLMs before holding the public hearing on a proposed regional haze SIP, and to include a summary of the FLMs' conclusions and recommendations in the notice to the public. In addition, section 51.308(i)(2)'s FLM consultation provision requires a state to provide FLMs with an opportunity for consultation that is early enough in the state's policy analyses of its emission reduction obligation so that information and recommendations provided by the FLMs' can meaningfully inform the state's decisions on its long-term strategy. If the consultation has taken place at least 120 days before a public hearing or public comment period, the opportunity for consultation will be deemed early enough. Regardless, the opportunity for consultation must be provided at least sixty days before a public hearing or public comment period at the state level. Section 51.308(i)(2) also provides two substantive topics on which FLMs must be provided an opportunity to discuss with states: assessment of visibility impairment in any Class I area and recommendations on the development and implementation of strategies to address visibility impairment. Section 51.308(i)(3) requires states, in developing their implementation plans, to include a description of how they addressed FLMs' comments.

HDOH provided a draft of their 2024 Hawaii Regional Haze Plan to the NPS, FWS, and the USFS on June 7, 2023.⁹⁴ Additionally, NPS Interior Regions 8, 9, 10, and 12, and several national park units in Hawaii hosted a consultation meeting to discuss the regional haze submittal. From the review of the 2024 Hawaii Regional Haze Plan, the FLMs requested that HDOH specify additional requirements for the Maalaea Generating Station and Mauna Loa Macadamia Nut Corporation Plant. Specifically, a permit condition stipulating that HDOH and the EPA are notified when the Maalaea Generating Station chooses a control measure for M7 and M10-M13 and when the Mauna Loa Macadamia Nut Corporation Plant provides an effective controls demonstration or conducts a four-factor analysis for the boiler replacement was requested. HDOH amended the relevant permits and the 2024 Hawaii Regional Haze SIP to

⁹⁴ Id. Chapter 9.5.

address these comments.

On November 27, 2023, Hawaii provided public notice on the draft SIP submission and associated permits and offered to hold a public hearing on January 19, 2024.⁹⁵ HDOH notified the public, other interested parties, FLMs, and the EPA. The State accepted written public comment on the 2024 Hawaii Regional Haze Plan for thirty days, until December 26, 2023. The State later held a public hearing on April 19, 2024, in person and virtually, to receive oral testimonies on the 2024 Hawaii Regional Haze Plan and its appendices, and those testimonies and the State's responses are provided in Appendix X of their plan.

However, as explained above, because the EPA is proposing to disapprove certain elements of the Plan, namely the long-term strategy under 51.308(f)(2) and the reasonable progress goals under 51.308(f)(3), the EPA is also proposing to disapprove the Plan with respect to the FLM consultation requirements under 51.308(i). While Hawaii did take administrative steps to provide the FLMs the requisite opportunity to review and provide feedback on the state's initial draft plan, the EPA cannot approve the requirements under 51.308(i) because Hawaii's consultation was based on a SIP revision that did not meet the required statutory and regulatory requirements of the CAA and the RHR, respectively. In addition, if the EPA finalizes the partial approval and partial disapproval of the Plan, as proposed in this document, in the process of correcting the deficiencies outlined above with respect to the RHR and statutory requirements, the state (or the EPA in the case of an eventual FIP) will be required to again satisfy the FLM consultation requirement under 51.308(i). Therefore, we are proposing to disapprove the Plan with respect to the requirements under 40 CFR 51.308(i) as outlined in this section.

V. Proposed Action

The EPA is proposing to partially approve and partially disapprove the 2024 Hawaii Regional Haze Plan. Specifically, the EPA is proposing approval for the portions of Hawaii's 2022 SIP submission relating to 40 CFR 51.308(f)(1): calculations of baseline, current, and

⁹⁵ Id. Chapter 9.6.

natural visibility conditions, progress to date, and the uniform rate of progress; 40 CFR 51.308(f)(4): reasonably attributable visibility impairment; 40 CFR 51.308(f)(5) and 40 CFR 51.308(g): progress report requirements; and 40 CFR 51.308(f)(6): monitoring strategy and other implementation plan requirements. The EPA is proposing disapproval of portions of the 2024 Hawaii Regional Haze Plan relating to 40 CFR 51.308(f)(2): long-term strategy; 40 CFR 51.308(f)(3): reasonable progress goals; and 40 CFR 51.308(i): FLM consultation.

Under section 179(a) of the CAA, final disapproval of a submittal that addresses a requirement of part D, title I of the CAA or is required in response to a finding of substantial inadequacy as described in CAA section 110(k)(5) (SIP Call) starts a sanctions clock. The Plan was not submitted to meet any of these requirements. Therefore, if finalized, this partial disapproval would not trigger any offset or highway sanctions clocks. Disapproving a SIP submission also establishes a two-year deadline for the EPA to promulgate a FIP to address the relevant requirements under CAA section 110(c), unless the EPA approves a subsequent SIP submission that meets these requirements.

VI. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to review state choices, and approve those choices if they meet the minimum criteria of the Act. Accordingly, this proposed rulemaking proposes to partially approve and partially disapprove state law as meeting federal requirements and does not impose additional requirements beyond those imposed by state law.

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of

Management and Budget (OMB) for review.

B. Executive Order 14192: Unleashing Prosperity Through Deregulation

This action is not expected to be an Executive Order 14192 regulatory action because this action is not significant under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because this action does not impose additional requirements beyond those imposed by state law.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities beyond those imposed by state law.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. This action does not impose additional requirements beyond those imposed by state law. Accordingly, no additional costs to state, local, or Tribal governments, or to the private sector, will result from this action.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Coordination With Indian Tribal Governments

This action does not have Tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian Tribe has demonstrated that a Tribe has jurisdiction, and will not impose substantial direct costs on Tribal governments or preempt Tribal law. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. Therefore, this action is not subject to Executive Order 13045 because it merely proposes to partially approve and partially disapprove state law as meeting federal requirements. Furthermore, the EPA's Policy on Children's Health does not apply to this action.

I. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Particulate matter, Sulfur oxides.

Dated: February 5, 2026.

Michael Martucci,

Acting Regional Administrator, Region IX.

