UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region8

Ref: 8ARD

Bryce Bird, Director
Division of Air Quality
Department of Environmental Quality
P. O. Box 144820
Salt Lake City, Utah 84114-4820
bbird@utah.gov

Dear Mr. Bird:

Thank you for providing the U.S. Environmental Protection Agency with Utah's draft *Utah Regional Haze State Implementation Plan, Second Planning Period* for review, which the state shared with us by email on December 9, 2021. We completed an initial review of the draft state implementation plan (SIP) and are providing the enclosed comments. Please note that this is our initial review and that we will reach a final decision regarding the adequacy of the SIP revision only when we act through formal notice and comment rulemaking.

We appreciate the opportunity to comment on the draft SIP. We recognize the significant efforts made by the Utah Division of Air Quality (UDAQ) program staff in developing the draft SIP and their commitment to improving air quality and visibility impacts in Utah. If you have any questions, please feel free to contact me directly, or your staff may contact Clayton Bean at (303) 312-6143; bean.clayton@epa.gov.

Sincerely,

4/8/2022

X Carl Daly

Signed by: CARL DALY

Carl Daly
Acting Director
Air and Radiation Division

Enclosure

cc: Chelsea Cancino

Enclosure

EPA Comments on the draft *Utah Regional Haze State Implementation Plan, Second Planning Period*

1. *Overall Comment on Draft SIP and Our Review.* We thank Utah for their effort and work on this draft SIP to address Clean Air Act (CAA or the Act) Regional Haze requirements and provisions outlined in the Regional Haze Rule (RHR) found at 40 CFR 51.308. Please note that the comments below are not presented in order of importance. We look forward to continue working with the state as it finalizes its SIP submission.

2. *General Comment on Reasonable Progress.* The CAA, 42 USC section 7491(b)(2), requires that SIPs contain long-term strategies for making reasonable progress towards the national visibility goal. The Regional Haze Rule establishes a framework of periodic, comprehensive SIP revisions to implement this mandate. 40 CFR 51.308(f) requires that each periodic SIP revision contain a strategy for making reasonable progress for the applicable period. The increment of progress that is "reasonable progress" for a given implementation period is determined through the four statutory factors. 40 CFR 51.308(f)(2)(i). EPA has explained that reasonable progress cannot be determined prior to or independently from the analysis of control measures for sources. See 82 FR 3078, 3091-3 (Jan. 10, 2017). Please see also *Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period* (July 8, 2021; hereinafter "Clarifications Memo") p. 6. A state must determine what is necessary to make reasonable progress in the second implementation period by using the four factors to analyze control measures for sources. While progress made in the first implementation period, ongoing emission trends, and anticipated changes in emissions (including due to shutdowns, on-the-way controls, utilization, or other factors) may *inform* a state's regional haze planning process, <u>these circumstances alone do not satisfy a state's obligation to determine and include in its SIP the measures that are necessary to make reasonable progress</u>. EPA has concerns that the Utah's choice of control measures during this planning period do not equate to actual reductions in emissions. Further information regarding our concerns with the state's four-factor analyses are detailed throughout this comment letter. We encourage Utah to do all that it can during this planning period to make reasonable progress through quantifiable reductions in emitted pollutants in order meet the Regional Haze Rule and improve visibility in Class I areas.

   Relatedly, in section 6.A, Utah lists factors that must be considered when developing the long-term strategy. The list omits the central component of long-term strategies under 40 CFR 51.308(f)(2), which is that they must include the emission reduction measures that are necessary to make reasonable progress as determined through consideration and application of the four statutory factors. See Clarifications Memo at p. 6.

3. *General Comment on Equity and Environmental Justice.* We encourage Utah to consider whether the regional haze strategy articulated in the draft SIP will result in equity and environmental justice impacts or impacts on any potentially affected communities inside or outside the state. We also encourage Utah to describe any outreach to communities that may have environmental justice concerns that the state conducted (beyond sharing the draft SIP with the tribes located within Utah), the opportunities Utah has provided or plans to provide for communities to give feedback on its proposed strategy, and the consideration Utah gave environmental justice in its technical analyses. See Clarifications Memo at p. 16.

4. *General Comment on Non-Regional Haze Pollution Control Programs.* Utah must not rely solely on the non-regional haze air pollution control programs to automatically reject potentially cost-effective and otherwise reasonable controls during this second planning period. See Comment 26; Clarifications Memo at p. 13. Congress intended that the regional haze program provide for independent and additional protections beyond the NAAQS and PSD in appropriate circumstances. See H.R. Rep. 95-294 204 ("The current [NAAQS] are not adequate to protect visibility."), 205 ("[T]he mandatory class I increments of [the PSD program] do not adequately protect visibility in class I areas."), id. ("In light of the foregoing circumstances, the committee concluded that a separate approach [i.e., the visibility program] was necessary to control the visibility problem, in mandatory Federal class I areas.").

5. *General Comments on Source Selection.* EPA compliments the state for choosing to select sources with a Q/d > 6 for four-factor analysis; this resulted in ten sources initially falling within that threshold. Subsequently, the state screened out four sources due to retirement, recent BACT analysis and pollution controls, revision of emissions inventories, and preemption of non-road vehicles/equipment; thus leaving six sources that underwent four-factor analysis. We encourage the state to employ our comments throughout this document on these six sources to inform their second planning period regional haze SIP development.

   Additionally, we recommend that Utah provide additional information and justification for declining to conduct four-factor analyses for the four excluded sources with Q/d > 6. Specifically, for the Lisbon Natural Gas Processing Plant we recommend the state provide evidence, including information on recent actual SO_2 emissions, supporting the statement that "actual emissions from the facility are more in line with the proper 2009 PTE of 111 tons." Absent evidence that the source has consistently achieved and will continue to achieve this lower level of emissions, Utah should conduct a four-factor analysis for the Lisbon Natural Gas Processing Plant. For the Kennecott Utah Copper LLC – Mine & Copperton Concentrator, we recommend Utah provide further explanation and justification of why it is reasonable to assume that a four-factor analysis would likely result in the conclusion that no further controls are reasonable consistent with section 2.3 of the Clarifications Memo. The existence of a recent BACT determination alone is not dispositive of the question of whether additional emission reductions are necessary to make reasonable progress under the regional haze requirements. For the Kennecott Utah Copper LLC – Power Plant Lab Tailings Impoundment, we recommend Utah provide further explanation on the meaning of "decommissioned" as it relates to Unit 4. The February 4, 2020, Approval Order indicates that Units 1-3 are prohibited to operate, yet Unit 4 is listed as voluntarily decommissioned without details on its ability to restart or prohibition on its operation. Finally, we recommend the state consider a requirement for the Intermountain Generation Station to consider whether any control measures are necessary to make reasonable progress after it has been converted to a natural gas combined cycle plant.

   We also recommend that Utah provide further explanation for not analyzing the sources identified by WRAP's weighted emissions potential (WEP) analysis. While many of the sources identified by the WEP analysis were picked up by Utah's Q/d analysis, there are several sources that were not, for example, the Chevron and Tesoro refineries, and the Kennecott smelter and refinery among others. As discussed above, for sources for which Utah is relying on "existing effective measures" as justification for not conducting a four-factor analysis, the state should provide additional explanation and justification consistent with section 2.3 of the Clarifications Memo.

6. *General Comment on Emissions Limit Tightening/Permit Revisions.* This comment is applicable to all ten selected sources. We recommend that for each selected source the state consider whether the source can achieve or is already achieving a lower emission rate using its existing measures. If a source is capable of operating or is already operating at a lower emission rate than assumed either (1) as the basis for not conducting a full four-factor analysis or (2) as the baseline for four-factor analysis, that lower rate should be analyzed as a potential control measure. That is, if a source is achieving or is capable of achieving a lower emission rate, the state should determine whether that lower rate is necessary to make reasonable progress. Similarly, we recommend UDAQ consider whether equipment upgrades, optimization, or retrofit for a source's existing controls might be reasonable. If either more efficient use of existing measures or equipment upgrades are potentially reasonable control options, we recommend the state either conduct a four-factor analysis including such options or explain why it is reasonable to forgo doing so. See Clarifications Memo at pp. 5 and 7. Lastly, we apprise UDAQ of the cobenefits of enacting these protective measures that may be realized for its nonattainment areas or overall air quality in general outside the context of regional haze (this should not be interpreted as an extra-statutory requirement).

7. *General Comment on Measures that are Necessary to Make Reasonable Progress*. Section 8.D states that "[t]he following sections contain UDAQ's determinations on what controls are necessary to make reasonable progress in this implementation period." As a general comment on making reasonable progress, EPA notes that measures that are necessary to make reasonable progress must be in the SIP, new measures are always necessary to make reasonable progress, and existing measures are necessary to make reasonable progress unless the state has affirmatively demonstrated that they are not necessary. See Clarifications Memo at pp. 8-10.

   Notwithstanding the source-specific comments throughout this comment letter and without pre-judging the ultimate control determination resulting from any particular four-factor analysis, UDAQ must include existing measures for the 10 selected sources in its SIP <u>unless it demonstrates that those existing measures are not necessary to make reasonable progress</u>. That is, if Utah concludes that no new measures are necessary to make reasonable progress for a source, it must include that source's existing measures in the SIP unless it makes a determination that those measures are not necessary to make reasonable progress. We recommend that Utah clarify whether any existing measure that it is relying on to make reasonable progress are in its SIP. This includes sources that are above Utah's designated source-selection threshold of Q/d > 6 but for which the state does not conduct a four-factor analysis on the basis of existing effective controls. See Clarifications Memo at p. 10.

8. *General Comment on Ammonia Slip.* Throughout the draft SIP (and corresponding four-factor analyses), the state and multiple sources cite concerns that if a source is to implement NO_X controls (i.e., SNCR or SCR) then ammonia slip (unreacted ammonia reagent in the emissions plume) may negatively impact visibility or air quality via particulate matter generation. Four-factor analyses refer to ammonia slip as evidence to preclude controls as adverse impacts (i.e., particulate matter) of ammonia slip may outweigh NO_X reduction benefits. Regarding these claims to an increase of particulate matter, without quantifiable data we cannot positively determine the extent to which particulate matter increases may negate the overall decrease of NO_X emissions afforded by potential controls. Further, EPA notes that we have previously finalized numerous regional haze actions (see, e.g., Montana's FIP at 82 FR 42738, September 12, 2017) requiring NO_X controls optimized around ammonia slip. Therefore, EPA believes that rejection of NO_X controls on the basis (in whole or in part) of ammonia slip, requires technical documentation that would be evaluated by EPA for its reasonableness in light of previous regional haze actions.

9. *General Comment on The Uniform Rate of Progress.* The state's draft SIP explains how UDAQ chose the "2028OTBa2 w/o fire" modeled projection to "more accurately represent future emissions" which is reflective of its long-term strategy. EPA commends the state for its more conservative approach; however, we remind the state that the glidepath is not a "safe harbor" and a Class I areas' position below the glidepath cannot be a basis for justifying a particular set of controls or decision to not require controls. Instead, the uniform rate of progress is a planning metric used to gauge the amount of progress made thus far and the amount left to make. Because the uniform rate of progress is not based on the four statutory factors, being below the Uniform Rate of Progress cannot be used to determine whether the amount of progress made in any particular implementation period is "reasonable progress." See *Guidance on Regional Haze State Implementation Plans for the Second Implementation Period* (August 20, 2019; hereinafter "Guidance") at p. 50 and Clarifications Memo at p. 15; see also 82 FR at 3099. EPA is concerned that the state's choice of control measures (or lack thereof) may be based upon Class I areas' visibility conditions relative to their glidepaths. Previous statements made by the state and this SIP's proposed permitted emissions limits, with regard to maintaining current emissions, are also of concern in this context. It appears that the SIP relies on minimal reductions justified without technical documentation during this second planning period to avoid meaningful and actual emissions reductions that would benefit visibility. Consequently, EPA is concerned with some of the reasonable progress determinations of some selected sources and we emphasize our comments below for these selected sources and the lack of technical documentation to support the determinations made by UDAQ.

10. *General Comment on Upstream Oil and Gas Development (Area Sources*). The state has chosen not to select or evaluate Utah's significant oil and gas sources as an "area source." Nevertheless, the draft SIP indicates that 13,853 oil and gas wells are responsible for a significant (second largest source category of NO_X emissions after excluding on-road mobile sources) source of emissions (see Table 16, p. 63) in WRAP's RepBase2 (20%), 2028OTBa2 (17%) modeled scenarios and 2014v2 (15%) actual anthropogenic emissions. EPA recognizes that a majority of the oil and gas development in the Uinta Basin may be located on tribal lands; however, this should not preclude the state from an evaluation of potential upstream oil and gas control measures (e.g., NO_X pollution controls on pump jack engines, etc.) that could make or ensure reasonable progress during this second planning period, to which it has jurisdiction. The draft SIP notes potential forthcoming "new rules for the oil and gas industry to stay in compliance with the ozone NAAQS" yet no further information or details are provided. Does the state intend these rules to also control pollutant(s) for visibility purposes, and if so, how and to what degree will they benefit regional haze? Accordingly, we recommend that Utah reassess its omission of this large area source, by not evaluating NO_X controls for upstream oil and gas sources, or in the alternative, provide a technical basis for excluding NO_X emissions analysis of upstream oil and gas sources given the large NO_X emissions from these sources, and explain why not implementing additional controls on this sector fulfills the state's regional haze requirements.

11. *General Comment on Emissions Inventories.* The Regional Haze Rule requires an evaluation of a recent emissions inventory year as part of the source selection and control evaluation which would be consistent with the 2017 National Emissions Inventory (NEI) or newer. See 40 CFR 51.308(f)(2)(iii). Throughout the SIP, the state should clarify its analysis and specify which year NEI was used. If emissions data prior to the 2017 NEI was used, we request that UDAQ analyze and present updated 2017 emissions information to show that there are no additional sources that should have been selected and analyzed for controls, or for changes to its selected sources. UDAQ should also indicate whether any additional sources would be screened-in through Q/d by using 2017 NEI data. See Guidance at pp. 17-18.

12. *General Comment on SIP Structure.* EPA understands that the state has invested considerable time and effort for this SIP revision, which is lengthy and of considerable technical nature. However, EPA also notes that the public process is integral to the CAA and the RHR. We would ask the state to consider small changes to the structure of the SIP draft that may make it easier for the public to understand or follow. In some instances, due to the length and breadth of technical information and/or state/source communications, it may be beneficial to the public to have a brief summary preceding certain sections, include internal hyperlinks for ease to move within the document, or include external hyperlinking of documents. Specifically, we would also recommend the state fully explain in summary the rationale of its reasonable progress determinations. Such clarifying and plain non-substantive changes may help with understandability, readability, and accessibility for the public at large as they review UDAQ's regional haze SIP.

13. *General Comment on Internal References to SIP Sections.* Certain referenced sections in the SIP do not correlate to the actual sections. We realize these references may not align due to multiple draft versions of the SIP and the length of time during SIP development. It may be advantageous to review all internal section references to ensure that references direct the public reader to the appropriate sections. We recommend the following internal references should be fixed for the public comment version (we are unsure if this list is comprehensive):

    - The draft SIP incorrectly lists the control determination for US Magnesium's Rowley Plant Riley Boiler at section 8.D.6. See pp. 84 and 210. The correct section should read as section 8.D.5. The reasonable progress determination on p. 217 also incorrectly refers to the four-factor analysis and summary at section 7.B.7.
    - The draft SIP incorrectly lists the control determination for Sunnyside's four-factor analysis and summary as 7.B.6. It should read as section 7.C.4. See pp. 165 and 217.
    - The draft SIP incorrectly lists the control determination for the Graymont Cricket Mountain Plant at section 7.B.4. It should read as section 7.C.2. See pp. 116 and 217.
    - The draft SIP incorrectly lists the control determination for the Ash Grove Leamington Cement Plant at section 7.B.3. It should read as section 7.C.1 See pp. 110 and 217.

14. *Section 6.A.2, Utah Sources Identified by Downwind States That Are Reasonably Anticipated to Impact CIAs, p. 73*. Based on its analysis of source apportionment and weighted emission potential results provided by the Western Regional Air Partnership (WRAP), Utah concludes that "emissions from Utah do not significantly impact visibility at CIAs in other states." However, Utah is a relatively large contributor to U.S. anthropogenic sulfate and nitrate light extinction at Class I areas in some other states. For example, Utah emissions, and in particular EGU emissions, are the largest contributor to U.S. anthropogenic sulfate and nitrate extinction at Maroon-Bells-Snowmass Wilderness, West Elk Wilderness, Eagles Nest Wilderness, and Flat Tops Wilderness (WHRI1 IMPROVE monitor) in Colorado.[1] Given the relatively large potential of sources in Utah to impair visibility, we recommend that the state reassess whether its emissions impact visibility impairment in Class I areas in other states. In addition to the information presented for sulfate and nitrate impacts individually, the total impairment from Utah emissions sources should be summed.

15. *Section 6.A.2, Sources as Insignificant Contributors to Downwind Visibility Impairment, p. 73.* The RHR requires that states submit a long-term strategy that addresses visibility impairment for all

[1] Based on WRAP state-sector source apportionment results available in the Technical Support System at https://views.cira.colostate.edu/tssv2/Express/ModelingTools.aspx.

Class I areas *within* the state and for each Class I area located *outside* the state that may be affected by that state's emissions. See 40 CFR 51.308(f)(2). The state asserts and the draft SIP narrative infers that Utah's nitrate and sulfate impacts as a portion of U.S. anthropogenic extinction "may seem high" but when scaled as a fraction of the total nitrate and sulfate impacts, that "Utah's impacts drop markedly." The draft SIP appears to convey that the state's contributions are insignificant when looked at as a proportion of the whole. Although UDAQ does not characterize its scale of impact beyond the aforementioned statement (or define what a "high" impact might be), the draft SIP seems to infer that visibility impacts could fall below some sort of a significance threshold of impact at Class I areas. A state should consider a source's visibility impact relative to *that state's* total contribution to visibility impairment at a Class I area. Clarifications Memo at pp. 3-4. To that end, we encourage UDAQ to reassess its sources' visibility impacts, and to evaluate potential visibility benefits from controlling those sources' emissions, relative to Utah's contribution to visibility impairment at a Class I area.

16. *Section 7.C.3, PacifiCorp's Hunter and Huntington Power Plants Four-Factor Analysis Summary and Evaluation*. In the draft SIP, Utah rejects the Reasonable Progress Emission Limits (RPELs; for NO_X and SO_2 combined) proposed by PacifiCorp for the Hunter and Huntington power plants. Instead, based on the state's four-factor analyses, UDAQ proposes mass-based emission limits for NO_X only at each facility. As such, in this letter the EPA comments on the mass-based emission limits proposed by UDAQ, and not on the multipollutant RPELs proposed by PacifiCorp. However, we do observe that actual combined NO_X plus SO_2 emissions (since 2014) are already below the proposed RPELs for each facility. Thus, it does not appear that that the RPELs would provide *real* emission reductions even though there are other available options for reducing actual emissions of both SO_2 and NO_X at these facilities. As such, we agree with UDAQ's position related to the PacifiCorp proposed RPELs.

    EPA has concerns with the reasonableness of a determination maintaining status quo emissions levels to constitute reasonable progress when there are technologically feasible and potentially cost-effective control measures that actually reduce emissions and may be reasonable to require. Utah cites uncertainty with regard to *future* utilization at Hunter and Huntington to justify not requiring SCR but does not adequately justify why it is unreasonable to reduce emissions based on the sources' *current* operation. See also Comment 18 below. We do not find this result to be well reasoned or supported by the RHR or the Act, which requires that SIPs contain strategies for making reasonable progress towards eliminating anthropogenic visibility impairment in Class I areas. In the Clarifications Memo, EPA explained that we "intend[ ] the second planning period of the regional haze program to secure meaningful reductions in visibility impairing pollutants that build on the significant progress already achieved," and that "we expect states to undertake rigorous reasonable progress analyses that identify further opportunities to advance the national visibility goal consistent with the statutory and regulatory requirements." Clarifications Memo at p. 2. Consequently, we implore UDAQ to consider revisions to its SIP for Hunter and Huntington power plants that ensure reasonable progress will reduce visibility impairment during this planning period through *real* emissions reductions rather than merely capping allowable annual emissions above recent actuals.

17. *Section 7.C.3, PacifiCorp's Hunter and Huntington Power Plants Four-Factor Analysis Summary and Evaluation*, *pp. 135 and 137.* The draft SIP states that "[b]ecause each of the Hunter units already have the specific, effective control technologies in place for controlling SO_2 emissions that EPA identified in its Guidance, PacifiCorp has not provided an analysis for additional equipment or retrofits to further control SO_2." However, the draft SIP should provide additional analysis to support

this conclusion, including the control efficiency currently being achieved with the SO_2 scrubbers. To support any technical finding, analysis needs to be provided even if the technical finding supports the status quo. We expect that any scrubber system installed to meet CAA requirements since 2007 can achieve a control effectiveness of 95 percent or higher. However, as indicated in the PacifiCorp analysis, there may be cost-effective opportunities to further increase scrubber efficiency, even when operating at high efficiencies. This comment also applies to the Huntington units.

Additionally, PacifiCorp's analysis of its RPELs seems to indicate that cost effective SO_2 emission reductions can be achieved at each of the Hunter units through increased scrubbing. For example, at Hunter 1, PacifiCorp's RPEL analysis indicates that SO_2 emissions could be reduced to 0.032 lb/MMBtu at a cost of $301,000. Using the average of the annual heat input and SO_2 emissions from 2015-2019, this equates to a reduction of 570 tons/year and a cost effectiveness of $528/ton.[2] As explained in section 3.2 of the Clarifications Memo, states should consider if sources are able to achieve greater control efficiencies, and therefore lower emission rates, using their existing measures. If so, those lower emission rates should be analyzed under the four-factor analysis to determine if the lower rate is necessary to make reasonable progress. Clarifications Memo at p. 7. Accordingly, we recommend that UDAQ consider these emission reductions in its four-factor analysis for Hunter. This comment also applies to the Huntington units where PacifiCorp's analysis of its proposed RPELs also seems to indicate that cost effective SO_2 emission reductions are available.

18. *Section 7.C.3, PacifiCorp's Hunter and Huntington Power Plants Four-Factor Analysis Summary and Evaluation*, *p. 159.* In its four-factor analyses for Hunter and Huntington, UDAQ initially uses actual operations and emissions data taken from a 2015-2019 baseline that is consistent with the 2028 projected emissions.[3] However, UDAQ then provides a sensitivity analysis showing that at utilization levels much lower than in the 2015-2019 baseline, cost effectiveness values for SCR would be much higher (draft SIP at pp. 163-164). From the sensitivity analysis, UDAQ concludes that "[g]iven this uncertainty and the wide variability in cost-effectiveness estimates at various utilization levels, UDAQ finds installation of SCR not to be cost-effective at any of the five units at Hunter and Huntington at this time."

    The 2019 Guidance states that "[t]he projected 2028 (or the current) scenario can be a reasonable and convenient choice for use as the baseline control scenario for measuring the incremental effects of potential reasonable progress control measures on emissions, costs, visibility, and other factors." The Guidance also states that "[g]enerally, the estimate of a source's 2028 emissions is based at least in part on information on the source's operation and emissions during a representative historical period." Guidance at p. 29. EPA subsequently clarified that "reasonable bases for projecting that future emissions will be significantly different than past emissions are enforceable requirements and energy efficiency, renewable energy, or other similar programs, where there is a documented commitment to participate and a verifiable basis for quantifying changes in future emissions." Clarifications Memo at p. 12. For cases in which a state has projected significantly lower emissions due to unenforceable utilization assumptions and those projections are dispositive of the four-factor

[2] 2015-2019 average heat input = 28,482,643 MMBtu/yr. 2015-2019 average SO_2 emission rate = 0.072 lb/MMbtu. $301,000 / ((0.072 lb/MMBtu – 0.032 lb/MMBtu) x 28,482,643 MMBtu/yr x 1 ton/2000 lb)) = $528/ton.

[3] The 2015-2019 annual average NO_X emissions for Hunter and Huntington vary slightly form the 2028 NO_X emission projections which are based on actual emissions and operations data from 2016-2018. The 2015-2019 actual annual average NO_X emissions for Hunter were 10,103 tons/year, while the 2028 projection is 9,992 tons/year. Similarly, the 2015-2019 actual annual average emissions for Huntington were 5,793 tons/year, while the 2028 projection is 6,083 tons/year. Non-EGU emissions are not included in these emission values.

analysis, EPA recommends two possible approaches: (1) the state may adopt a utilization limit corresponding to the assumption of future use, or (2) the state could perform a four-factor analysis using recent historical utilization. *Id.* This is particularly imperative where the assumption is controlling in the outcome of a four-factor analysis.

Here, UDAQ departs from the Guidance by not providing a reasonable technical basis to project that 2028 emissions will differ significantly from historical emissions, such as enforceable requirements or a documented commitment to participate in an energy efficiency, renewable energy, or other such programs. Guidance at p. 29, Clarifications Memo at p. 12. UDAQ's explanation indicates that the assumption of lower utilization is dispositive of its control determination, and the only basis the state has provided for its projections of future utilization is that the electricity generation industry is experiencing significant change and uncertainty. This rationale is not consistent with the types of reasonable bases for projecting significant changes in utilization laid out in the Guidance and Clarifications Memo. Unless UDAQ intends to enforceably limit Hunter and Huntington's utilization consistent with its assumptions of *future* utilization, the state should justify its control determination based on an assumption of projected 2028 NO_X emissions (or in this case, actual average 2015-2019 historical emissions).

19. *Appendix H – Part H Language for Enforcement of Reasonable Progress Determinations, New H.23(b)*. Three successive NO_X ton per year emission limits (12-month rolling) are identified for Hunter, with the last emission limit, applicable on January 1, 2028, equal to the 2028 WRAP projection of 10,001tons/year. Please explain and provide the technical documentation detailing the basis for the other two emission limits of 10,514 tons/year (no applicability date given) and 10,257 ton/year (applicable on January 1, 2025). How do these successive emission limits for future years align with the determination that it is not *currently* reasonable to require additional emission reductions from Hunter?

20. *Appendix H – Part H Language for Enforcement of Reasonable Progress Determinations, New H.23(c)*. Three successive NO_X ton per year emission limits (12-month rolling) are identified for Huntington, with the last emission limit, applicable on January 1, 2028, equal to the 2028 WRAP projection of 6,091 tons/year. Please explain and provide the technical documentation detailing the basis for the other two emission limits of 6,210 tons/year (no applicability date given) and 6,151 ton/year (applicable on January 1, 2025). How do these successive emission limits for future years align with the determination that it is not *currently* reasonable to require additional emission reductions from Huntington?

21. *Appendix H – Part H Language for Enforcement of Reasonable Progress Determinations, New H.23(b) and New H.23(c).* All NO_X ton per year emission limits are given on an annual basis (12-month rolling total). No short-term limits have been chosen for these power plants to make reasonable progress although short-term emissions limits are commonly imposed as power plants control measures. Such limits may reduce the likelihood of excess emissions impacting Class I areas during periods of high electricity demand days (peak load days). Please explain the rationale for not incorporating short-term limits into the Part H permit revisions.

22. *Intermountain Generation Station, p. 218.* Throughout the draft SIP, the coal-fired unit retirement date for Intermountain Generation Station (IGS) is listed as December 31, 2027. On page 218, the year is incorrectly listed as 2017.

23. *Section 7.A.2, Intermountain Generation Station Coal-fired Unit Retirement, Enforceable Measures.* Section 110(a) of the CAA (42 USC section 7410(a)) requires that SIPs contain enforceable emissions limitations and other control measures, means, or techniques relied on, as well as a program for the enforcement of the measures. Additionally, CAA Section 169A(b)(2) requires Regional Haze SIPs "...to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national [visibility] goal specified in subsection (a)..." Therefore, any emission limits or other control measures relied on by UDAQ to make reasonable progress must be accompanied by SIP provisions to ensure that the emission limits or other control measures are enforceable. Guidance at p. 42. See also 40 CFR 51.308(f)(2). Appendix A – Part H Language for Enforcement of Reasonable Progress Determinations, New H.23(a), of the draft SIP details the retirement of IGS Units 1 and 2 by December 31, 2027. Although the Part H language details the cessation of operation and closure of Units 1 and 2 in "Condition A," "Condition B" allows a one-year gap before IGS is required to request recission of the Title V operating permit. More closely aligning the permit recission date to the SIP closure date (see also Comment 24) could be more reasonable in this situation. EPA recommends these dates more closely align, or in the alternative we ask the state to explain its rationale for a one-year gap requiring the owner/operator to request rescission of the Title V operating permit by January 31, 2028.

24. *Section 7.A.2, Intermountain Generation Station, Anticipated Shutdown and Four-Factor Analysis Avoidance, p. 93.* UDAQ has chosen to *not* require a four-factor analysis from IGS. The draft SIP states, "Though the coal-fired units are expected to cease operation by mid-2025, Utah is establishing a firm closure date of no later than December 31, 2027, to ensure that the coal-fired units at IGS will not continue to operate beyond the end of the second planning period." The RHR gives states latitude that they may consider when determining whether to select a source for four-factor analysis. EPA generally views a state's conclusion to forego four-factor analysis based on upcoming retirement as a de facto determination that the shutdown *is what is necessary* to make reasonable progress for that source. If a state is relying on anticipated source shutdowns as part of its long-term strategy for making reasonable progress, Utah must then make these planned retirements enforceable in the SIP. This includes reliance on shutdowns both to forgo a four-factor analysis and to shorten the remaining useful life of a source in conducting a four-factor analysis. Clarifications Memo at p. 10; see also Guidance at pp. 20 and 34. Utah's draft SIP indicates that IGS is "expected" to shut down in mid-2025; however, the state has not included documentation from the source that this is a surety (e.g., a commitment to retire and/or convert to an alternate fuel source). In order to be in compliance with the requirements of Sections 110(a) and 169A of the CAA, and the RHR; Utah needs either an enforceable unit shutdown during the planning period to avoid a four-factor analysis or Utah will need to conduct a four-factor analysis. Additionally, we strongly recommend the state revise the operating permit and draft SIP with respect to the enforceable retirement of IGS to reduce or remove the "flexibility" afforded it.

    Further, upon the anticipated IGS shutdown and possible conversion to alternate fuel sources, EPA strongly recommends that UDAQ require IGS to submit a four-factor analysis, post-conversion, determining whether any measures are necessary to make reasonable progress during this planning period. We note that sources subject to best available control technology (BACT) are not automatically exempt from source selection or four-factor analysis, nor are such sources in a "safe harbor" from RHR requirements (including four-factor analysis) by virtue of BACT.

25. *Section 7.C.5, US Magnesium Enforceable Emissions Limits.* Sections 169A and 110(a) of the CAA (42 USC section 7410(a)) requires that SIPs contain enforceable emissions limitations and other control measures, means, or techniques relied on, as well as a program for the enforcement of the measures. Therefore, any emission limits or other control measures relied on by UDAQ to make reasonable progress must be accompanied by SIP provisions to ensure that the emission limits or other control measures are enforceable. Guidance at p. 42. See also 40 CFR 51.308(f)(2). The operating permit for the US Magnesium's Rowley Plant lacks NO_X and SO_2 emission limits for its emissions sources, namely, the turbines and duct burners; the chlorine reduction burner; the Riley boiler; and the numerous diesel engines for the solar ponds. EPA advises the state to (1) modify the existing permit to reflect numerical NO_X and SO_2 emissions limits, and (2) include such enforceable limits as part of this SIP revision in addition to the provisions at New H.23(d) at Appendix A. See also Comment 23. Finally, EPA notes that these permit limits under the RHR may also realize benefits to the adjacent ozone and PM2.5 nonattainment areas outside the context of regional haze.

26. *Section 7.C.5, US Magnesium Solar Pond Pump Engines.* If UDAQ determines that no additional (i.e., new) measures are necessary to make reasonable progress for a particular source, the state must then determine whether the source's existing measures are necessary to make reasonable progress. See section 4 (pp. 8-12) of the Clarifications Memo for information on determining when a source's existing measures are necessary to make reasonable progress. Generally, a source's existing measures are needed to prevent future emission-rate increases and are thus needed to make reasonable progress. If UDAQ concludes that the existing controls at a selected source are necessary to make reasonable progress, UDAQ must adopt emissions limits based on those controls as part of its long-term strategy for the second planning period and include those limits in its SIP (to the extent they do not already exist in the SIP). See also our remarks (Comment 25) on US Magnesium's permit limits. Alternatively, if UDAQ can demonstrate that the source will continue to implement its existing measures and will not increase its emission rate, it may be reasonable for the state to conclude that the existing controls are not necessary to make reasonable progress. Such a demonstration should be supported by documentation such as the data and analysis described in the Clarifications Memo. If the state can demonstrate that the source's existing measures will consistently achieve the emission rate into the future, the emission limits may not need to be adopted into the long-term strategy and SIP. We recommend that Utah clearly state its determination for each source and explain whether it is including either existing or new emission limits for each source in the long-term strategy and SIP (or whether emission limits already exist in the SIP). See Guidance at p. 43; Clarifications Memo at pp. 8-9.

    The Rowley Plant emission sources include 30 or 31 solar pond diesel engines (there is a discrepancy on the number of engines between pp. 191 and 200). This large group of sources is the second largest source of emissions at the Rowley Plant. After analysis, the state rejected reasonable progress control measures based on the cost of SCR for the group of engines. The draft SIP states, "[US Magnesium] believes that reasonable progress compliant controls are already in place, and any additional controls are unnecessary." EPA does not agree with this conclusory determination made by US Magnesium. While these engines are controlled under 40 CFR part 63, Subpart ZZZZ requirements, that does not necessarily mean that no further emission reductions would be reasonable to require pursuant to a regional haze four-factor analysis. See Clarifications Memo at p. 5.

    Additionally, although these engines are controlled through other ongoing air pollution control programs, Utah must not rely solely on the non-regional haze air pollution control programs to

automatically reject potentially cost-effective and otherwise reasonable controls during this second planning period. See Clarifications Memo at p. 13 and Comment 4 concerning non-regional haze pollution control programs.

EPA recommends that the state fully evaluate these sources. EPA requests that Utah clarify and clearly describe UDAQ's evaluation and conclusion of the four-factor analysis as it relates to these solar pond diesel engines since no such state evaluation is included in the draft SIP. We cannot determine the state's position and what, if any, control measures (including emissions limits) Utah believes may be necessary for these engines to make reasonable progress unless the demonstration shows otherwise. The source and the state have also failed to provide documentation on these engines or their operation. For each selected source, and for each emission unit evaluated, the four-factor analysis should identify the baseline control scenario, and associated emissions and emissions limits (lb/MMBtu, tons/year, lb/ton, etc., depending on unit type) used in the analysis. Further guidance regarding these issues can be found on pp. 29-30 of our 2019 Guidance, respectively. See also 40 CFR 51.308(f)(2)(iii).

The state should provide appropriate documentation of all this information, including with citations to regulatory and technical documents. We specifically recommend that the SIP narrative identify existing emission limits and where those limits are located (e.g., in the SIP, in a federal and/or state permit, in a consent decree). In addition, we recommend that the SIP narrative discuss how these limits compare to the baseline emissions used in the four-factor analyses. Furthermore, due to the number of engines, and their potential age and operating efficiency, replacement with more efficient engines or electrification should be considered also. EPA notes that control of these engines under the RHR may also realize benefits to the adjacent Northern Wasatch Front Nonattainment Area outside the context of regional haze.

27. *Section 7.C.5, US Magnesium Technical Infeasibility of SCR.* US Magnesium's four-factor analysis and the draft SIP describe the infeasibility of NO_X combustion controls (i.e., SCR, dry low NO_X, and water or steam injection) on the turbine and duct burners at the Rowley Plant without any documented technical analysis. Although the turbine and duct burners are the largest source of NO_X emissions at the facility (813 tpy), the state has determined that no emissions controls are required. Rejection of all controls based on infeasibility without documented technical analysis would be arbitrary, not well reasoned, and is contrary to the RHR at 51.308(f)(2)(iii). EPA advises the state to consider the National Park Service's (NPS) comments directed especially at the *feasibility* of SCR (or any other feasible controls) at the Rowley Plant's turbine and duct burner, and we recommend that the state update its four-factor analysis to include documented technical analysis of NO_X combustion controls such as SCR given the additional information regarding feasibility of NO_X combustion controls provided by the NPS. Again, we note that emissions controls under the RHR may also realize benefits to the adjacent Northern Wasatch Front Nonattainment Area outside the context of regional haze.

28. *Section 7.C.4, Sunnyside Cogeneration Facility Water Rights.* Sunnyside's four-factor analysis and the draft SIP describe the infeasibility of wet and dry SO_2 scrubbing based on the exceedance of allotted and the unavailability of water rights. Sunnyside states that additional water consumption needed for these control measures would become an undue burden on the source, water rights are not available for these control measures, dry scrubbing controls are infeasible with their limestone injection technologies, and consequently no further evaluation was investigated. Sunnyside four-factor analysis summarily rejects SO_2 scrubbing controls without providing cost analysis or documentation of water costs to the state verifying these claims related to water shortages. EPA

requests the state provide appropriate and verifiable documentation from the source as to the infeasibility of SO_2 emission controls based on these points.

29. *Section 7.C.4, Sunnyside Cogeneration Facility Rejection of Controls.* Sunnyside's four-factor analysis indicate that SO_2 and NO_X controls are not cost effective or feasible. The state concurs on Sunnyside's analysis and the draft SIP rejects all control measures for the facility. EPA advises the state to consider the NPS comments directed especially at Dry Sorbent Injection (DSI) SO_2 controls (or any other feasible controls) in relation to the four-factor analysis, and we recommend that the state review and update its four-factor analysis given the additional information provided by the NPS.

    EPA further notes that the source used a 20-year (not a 30-year) remaining useful life, not based on an enforceable shutdown, and a 7% interest rate without proper justification. The source also cites (without relevant reference) information from the Office of Management and Budget as its basis for using a 7% interest rate. The relevant portion of EPA's Air Pollution Control Cost Manual[4] (CCM) indicates instead that "...input to analysis of rulemakings, assessments of private cost should be prepared using firm-specific nominal interest rates if possible, or the bank prime rate if firm-specific interest rates cannot be estimated or verified." Without a firm-specific nominal interest rate, Sunnyside's four-factor analysis should use the bank prime rate for its cost calculations instead. CCM at Section 2, Chapter 1, p. 16.

[4] *See* https://www.epa.gov/sites/default/files/2017-12/documents/epaccmcostestimationmethodchapter_7thedition_2017.pdf.