Responses to Comments Received on Georgia's State Implementation Plan for Regional Haze (Second Planning Period)

On June 24, 2022, EPD issued a public notice requesting comments on the proposed revision to Georgia's SIP. A public hearing was held at 2:00 p.m. on July 25, 2022, via Zoom. Zoom is a free web conferencing platform that also allows participation by phone. The public comment period ended on July 26, 2022. Comments were received from EPA on July 25, 2022. EPA's comments and EPD's responses have been included in Appendix H of the Regional Haze State Implementation Plan (SIP). Public comments were received at the public hearing and during the comment period. A summary of the public comments received and EPD's responses are included in Appendix H of the Regional Haze SIP.

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1.0 U.S. Environmental Protection Agency (EPA)

Georgia EPD received the following comments from U.S. EPA regarding Georgia's prehearing draft Regional Haze SIP.

1.1 Georgia Pacific – Brunswick Cellulose Comment:

Georgia EPD received a comment from The U.S. Environmental Protection Agency (EPA) regarding Georgia Pacific – Brunswick Cellulose. Commenter states that the EPA recommends augmenting the discussion in paragraph 2 on page 217 to support the State's conclusion that existing sulfur dioxide measures at GP-Brunswick's No. 5 Recovery Furnace and No. 6 Recovery Furnace are not necessary for reasonable progress. The EPA will work with the State to address this comment.

Response:

Georgia EPD has augmented the SIP to support our conclusion that existing sulfur dioxide measures at GP-Brunswick's No. 5 Recovery Furnace and No. 6 Recovery Furnace are not necessary for reasonable progress. The additional information provided in the discussion includes: (1) the source's past implementation of its existing measures and its historical emission rates for 2016-2020, (2) the source's projected emissions and emission rate, and (3) any enforceable emissions limits or other requirements related to the source's existing measures. This facility has consistently implemented its existing control measures for the No. 5 and No. 6 Recovery Furnaces and has achieved, using those measures, a reasonably consistent emission rate. Appendix G-3e was added to include the current permit conditions for the No. 5 and No. 6 Recovery Furnaces (for reference only, not to be adopted into the SIP).

2.0 National Parks Service

Georgia EPD received the following comments from National Parks Service regarding Georgia's prehearing draft Regional Haze SIP.

2.1 Summary of June 22nd Consultation Comments:

The public review draft Georgia SIP did not address previous NPS input. A summary of the NPS conclusions and recommendations for improving the draft SIP are reiterated in this letter and documented in detail in our June 22, 2022, consultation comments. In summary, we recommend that EPD:

1. Document the impacts of Georgia-based emissions on visibility at Great Smoky Mountains National Park in Section 7 of the draft SIP.
2. Reconsider source selection decisions using different thresholds for the underlying area of influence analysis. This approach, first recommended to Georgia by the NPS on May 17, 2021, identifies six facilities for four-factor analysis.
3. Address NOx emissions in reasonable progress determinations.
4. Conduct or expand four-factor analyses exploring both sulfur dioxide (SO2) and nitrogen oxide (NOx) emission reduction opportunities for the six facilities identified by the NPS in our consultation feedback as follows:

    - Georgia Power Co. Plants Bowen and Wansley
        - Evaluate ways to optimize current pollution control equipment
        - Establish both SO2 and NOx emission limits reflective of the existing control capabilities
    - Georgia Power Co. Plant Scherer
        - Analyze options for improving SCR performance to reduce NOx emissions
    - International Paper Co. Temple Inland
        - Conduct four-factor analyses for SO2 and NOx emissions
    - Brunswick Cellulose LLC
        - Conduct a four-factor analysis for NOx emissions
    - International Paper Co. Savannah
        - Update the four-factor analyses to include NOx emissions

Response:

For a complete discussion of all of the NPS comments and Georgia EPD responses please see Section 2.0 in Georgia EPD's "Responses to FLM Consultation Comments Received on Georgia's Draft State Implementation Plan for Regional Haze (Second Planning Period)" located in Appendix H-4a.

3.0 Dr. Scott Presson

Georgia EPD received the following comments regarding Georgia's prehearing draft Regional Haze SIP.

3.1 Source Selection and Modeling Approach Comment:

Georgia EPD received both verbal and written comments from Dr. Scott Presson. The commenter stated in both written and verbal comments: I am Dr. Scott Presson, a resident of Gwinnett County here in Georgia. My family, friends, and I enjoy the outdoors, especially our national parks and wilderness areas. We need to protect the natural environment we depend on to work, live and play.

It is clear that industrial pollution affects the health of park visitors, wildlife, and neighboring communities, contributes to our worsening climate, and compromises our views with hazy skies. Paper mills, cement plants and coal plants are among the biggest emitters of air pollution.

As the responsible state agency, it is the responsibility of the Environmental Protection Division to ensure all sources of pollution are accounted for in its Regional Haze Implementation Plan and not just a few. Including only three sources as proposed doesn't meet the state's obligation to improve air quality for the Okefenokee, Wolf Island, and Cohutta Wilderness Areas. The three sources GA EPD selected for review, Plant Bowen, Brunswick Cellulose LLC, and International Paper Co Savannah, should be re-examined with a more rigorous modeling approach, as it appears that it was improperly concluded that little reductions in pollution is warranted for those facilities.

Additionally, the National Parks Conservation Association has identified at least 18 additional sources of pollution that should be reviewed. These facilities are: Ga Power Company - Plant Scherer; International Paper – Rome; Linerboard Mill; Georgia-Pacific Cedar Springs, LLC; Ga Power Company - Plant Wansley; Georgia-Pacific Savannah River Mill; Rayonier Performance Fibers, LLC; International Paper - Augusta Mill; PCA Valdosta Mill; C-E Minerals Plants 1, 2 and 6; Graphic Packaging Macon Mill; Weyerhaeuser NR Port Wentworth; Interstate Paper, LLC; Weyerhaeuser NR Company - Flint River Operations; Transcontinental Gas Pipeline Company, LLC - Compressor Station; Green Power Solutions of Ga, LLC; CEMEX Southeast, LLC; Pinova, Inc.; and Thermal Ceramics.

Despite the progress that EPD has made to date, not including other obvious industrial polluters is unacceptable. Please review these additional sources with more rigorous modeling for inclusion in the Implementation Plan. Thank you for the opportunity to comment on this important issue.

Response:

Georgia EPD has utilized an approach to source selection that complies with the Regional Haze Rule (RHR) and EPA guidance. Georgia EPD's approach does recognize the significant progress Georgia has and is expected to achieve in the future toward improving visibility in its Class I areas which is consistent with EPA's August 20, 2019, guidance. Regarding the selection of sources for analysis (Step 3), EPA states:

> Page 5, Table 1: *Select the emission sources for which an analysis of emission control measures will be completed in the second implementation period and explain the bases for these selections. For the purpose of this source selection step, a state may consider*

estimated visibility impacts (or surrogate metrics for visibility impacts), the four statutory factors, the five required factors listed in section 51.308(f)(2)(iv), and other factors that are reasonable to consider.

Page 9: "*A key flexibility of the regional haze program is that a state is not required to evaluate all sources of emissions in each implementation period. Instead, a state may reasonably select a set of sources for an analysis of control measures. The guidance that an analysis of control measures is not required for every source in each implementation period is based on CAA section 169A(b)(2), which requires each SIP to contain emission limits, schedules of compliance, and other measures as may be necessary to make reasonable progress, but …does not provide direction regarding the particular sources or source categories to which such emission limits, etc., must apply. Selecting a set of sources for analysis of control measures in each implementation period is also consistent with the Regional Haze Rule, which sets up an iterative planning process and anticipates that a state may not need to analyze control measures for all its sources in a given SIP revision. Specifically, section 51.308(f)(2)(i) of the Regional Haze Rule requires a SIP to include a description of the criteria the state has used to determine the sources or groups of sources it evaluated for potential controls. Accordingly, it is reasonable and permissible for a state to distribute its own analytical work, and the compliance expenditures of source owners, over time by addressing some sources in the second implementation period and other sources in later periods. For the sources that are not selected for an analysis of control measures for purposes of the second implementation period, it may be appropriate for a state to consider whether measures for such sources are necessary to make reasonable progress in later implementation periods.*"

The 18 sources identified by Dr. Presson were evaluated by Georgia EPD as part of our screening approach to identify the sources with the largest visibility impacts at Class I areas in Georgia and neighboring states. Consistent with the RHR, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. For each of the 18 sources, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, none of these facilities were selected for a four-factor analysis.

For Plant Bowen, Brunswick Cellulose, and International Paper-Savannah, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were evaluated with PSAT. PSAT results show that SO_2 facility contributions are above our screening threshold for sulfate, but NOx facility contributions are below our screening threshold for nitrate. Therefore, these facilities were selected for a SO_2 four-factor analysis but were not selected for a NOx four-factor analysis. Georgia EPD has re-examined our required SO_2 emissions controls for these facilities and remain confident that they are appropriate for inclusion in our long-term strategy.

4.0 Coalition of Environmental Groups

Georgia EPD received the following comments regarding Georgia's prehearing draft Regional Haze SIP.

4.1 Source Selection Comment:

Georgia EPD received the following comment from Elise Bennett (Center for Biological Diversity), Christian Hunt (Defenders of Wildlife), Dr. Treva Gear (Dogwood Alliance), Jennette Gayer (Environment Georgia), Jared Teutsch (Georgia Audobon), Brionté McCorkle (Georgia Conservation Voters), Lynn Snyder, (Georgia Women and Those Who Stand With Us), Rachael Thompson (Glynn Environmental Coalition), Anne Mellinger-Birdsong (Mothers & Others For Clean Air), Lilly Anderson (National Parks Conservation Association), Jonathan Andrew (National Wildlife Refuge Association), Susan Inman (One Hundred Miles), Chris Bertrand (Satilla Riverkeeper), Charline Whyte (Sierra Club), Jennifer Whitfield (Southern Environmental Law Center), and Antwon Nixon (Sowing Seeds Outside The Walls).

Commenters state: we write today out of a shared value for clean air and the public lands that are protected under the Clean Air Act's Regional Haze Rule. Georgia EPD has the opportunity right now to significantly improve its haze plan and reduce the amount of air pollution harming beloved spaces like Okefenokee, Wolf Island, and Cohutta Wilderness Area. Despite strides made toward cleaner air over the years, the state of Georgia still has much work to do. The proposed regional haze plan fails to adequately reduce pollution and ensure continued reasonable progress toward the goal of restoring naturally clean air in Class I areas. The plan also misses the mark in failing to consider the intersections of industrial haze pollution and existing environmental injustices. Overall, the plan falls short of the state's obligation to improve air quality for our parks, their visitors and local communities.

Despite the thousands of tons of controllable pollution from Georgia's industrial sources including coal-fired power plants, paperboard mills and pulp mills, and the many opportunities for cost effective controls, Georgia EPD improperly concludes that almost no new reductions in haze pollution are warranted. In its reliance on the Southeast regional planning organization (RPO) Visibility Improvement States and Tribal Association of the Southeast (VISTAS) work, Georgia EPD improperly selected only three facilities to review and wrongly excluded many large polluting facilities in the state. Furthermore, Georgia EPD failed to consider the harms of its industrial pollution on the Great Smoky Mountains National Park as well as nitrogen oxides and particulate matter emissions from the myriad polluting facilities across the state.

We urge Georgia EPD to fully analyze for emission controls the other major polluting sources that were previously identified in stakeholder comments from the National Parks Conservation Association in the final haze plan. These include:

- Ga Power Company - Plant Scherer
- International Paper Company (Rome Linerboard Mill)
- Georgia-Pacific Cedar Springs, LLC
- Ga Power Company - Plant Wansley
- Graphic Packaging Macon Mill
- Weyerhaeuser NR Port Wentworth
- Interstate Paper, LLC
- Weyerhaeuser NR Company - Flint River Operations

- Georgia-Pacific Consumer Products LP (Savannah River Mill)
- Rayonier Performance Fibers, LLC1
- International Paper - Augusta Mill
- PCA Valdosta Mill
- C-E Minerals Plants 1, 2 and 6
- Transcontinental Gas Pipeline Company, LLC - Compressor Station
- Green Power Solutions of Georgia, LLC
- CEMEX Southeast, LLC
- Pinova, Inc.
- Thermal Ceramics

It is imperative that NOx emissions are considered and addressed from each of the sources that EPD analyzed as well as the aforementioned sources. It should also be noted that ten of the most egregious haze polluters are in areas where most of the population are people of color and already suffering environmental injustices of localized and chronic air pollution exposure. It is of vital importance that environmental justice considerations be considered, as communities of color are hurt first and worst when it comes to burdens like air pollution. Residents of Georgia are already dealing with the harms of chronic air pollution burdens. EPA's July 2021 Clarification Memo reinforces that equity and justice concerns should be considered in this round of haze planning. We ask that before finalizing this plan, Georgia EPD please take the time to correct these harmful oversights.

If left unchanged, the state's plan will not comply with the Federal Clean Air Act and the United States Environmental Protection Agency's (EPA) Regional Haze Rule as it does little to limit haze pollution and fails to help restore naturally clean air. It is stated in Georgia EPD's mission that it is your responsibility to pursue a sustainable environment that provides a foundation for a vibrant economy and healthy communities. The same pollutants causing hazy skies are detrimental to the health of communities in the area and the people who recreate in Georgia's public lands, boosting the state's tourism revenue during their visits. Please do not overlook this opportunity to improve air quality for future generations and protect the health of all who live here and enjoy Georgia's treasured public lands.

Response:

Georgia EPD has utilized an approach to source selection that complies with the Regional Haze Rule (RHR) and EPA guidance. Georgia EPD's approach does recognize the significant progress Georgia has and is expected to achieve in the future toward improving visibility in its Class I areas which is consistent with EPA's guidance documents.

The 18 sources identified in the comment letter were evaluated by Georgia EPD as part of our screening approach to identify the sources with the largest visibility impacts at Class I areas in Georgia and neighboring states. Consistent with the RHR, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. For each of the 18 sources, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, none of these facilities were selected for a four-factor analysis.

PSAT source apportionment modeling clearly demonstrates that contributions from Georgia's point source NOx emissions is insignificant and additional NOx controls would not be reasonable.

Specifically, the PSAT source apportionment modeling demonstrates that NOx emissions from all point sources (EGU + non-EGU) in Georgia contributes less than 1% of the total sulfate + nitrate light extinction at all Class I areas. Therefore, NOx emissions from individual EGU and non-EGU point sources in Georgia will contribute even smaller percentages to the total sulfate + nitrate light extinction. In addition, the PSAT results indicate that, on average, the reduction of one ton of SO_2 will have the equivalent benefit of reducing 30.7 tons of NOx at Cohutta Wilderness Area, 19.0 tons of NOx at the Okefenokee National Wilderness Area, and 19.2 tons of NOx at the Wolf Island National Wilderness Area.

Although sulfates have decreased and nitrates have slightly increased, sulfates are still the dominant visibility impairing species at the Cohutta Wilderness Area, Okefenokee National Wilderness Area, and Wolf Island National Wilderness Area. If sulfates continue to decrease and nitrates continue to increase in the future, it may be appropriate to consider NOx emission sources for reasonable progress analyses in Georgia's Regional Haze SIP for future planning periods.

The purpose of the Regional Haze Rule is to improve visibility in the Federal Class I Areas, not to look at health impacts from criteria pollutants in areas outside Class I areas. That is the purpose of the NAAQS. Georgia EPD has not identified any EJ communities living in any Federal Class I Areas whose visibility would be disproportionately impacted by Georgia EPD's selection of reasonable progress controls.

5.0 National Parks Conservation Association/Sierra Club Comments

Georgia EPD received a 70-page comment document, now incorporated as Appendix H-3a, from the National Parks Conservation Association (NPCA) and Sierra Club. This comment document includes some explicitly stated and delineated comments and some less defined comments. The document also contains an introduction and background information to accompany the comments. Georgia EPD has attempted to address every comment that was identified, and the Division has compiled the comments made by NPCA and the Sierra Club into this response along with where the comment can be found in the original document via a page number and the comment in quotation marks.

5.1 EPD Wrongly Exempted EGUs From Its Reasonable Progress and Four-Factor Analysis Comment:

Page 21 - "As recognized by EPD, "[a] state opting to select a set of its sources to analyze must reasonably choose factors and apply them in a reasonable way given the statutory requirement to make reasonable progress towards natural visibility." This step is crucial to meeting the RHR's mandate to eliminate anthropogenic sources of regional haze in our nation's Class I areas, and EPD must get it right in order to comply with its SIP obligations under the Act."

Page 22 - "EPD has failed to choose reasonable factors and reasonably apply them to a number of Georgia EGUs. As a result, EPD has improperly excluded EGUs from its reasonable progress and four factor analyses. Specifically, EPD failed to include four-factor analyses for the following large EGU sources of visibility impairing pollutants:

1. Georgia Power Company – Scherer
2. Georgia Power Company – Wansley
3. Green Power Solutions of Georgia, LLC"

Page 22 - "Because Plants Scherer and Wansley and Green Power Solutions' EGUs were excluded from a reasonable progress analysis based on flawed PSAT visibility contribution modeling results. EPD must require these facilities be subject to a reasonable progress analysis for SO2 (and NOx). Four-factor analyses should be conducted for these facilities not only for SO2, but for NOx as well."

Page 24 - This is especially important regarding Georgia Power Company's Plant Scherer given the National Park Service's comments on EPD's Proposed SIP:

The SCR systems on Units 1–3 are operating at 53%–74% control efficiency and achieving average annual emission rates of 0.12–0.15 lb/mmBtu. NPS review finds that Scherer Units 1–3 are not effectively controlled for NOx emissions. According to the CAMD database, the SCR units were installed between 2010 and 2013. The EPA Control Cost Manual (CCM) Chapter on SCR notes that modern SCR systems on "commercial coal-, oil-, and natural gas–fired SCR systems are often designed to meet control targets of over 90 percent" (down to 0.04 lb/MMBtu). This suggest[s] that the Scherer SCR systems have low performance in comparison to other similar units. The NPS recommends that GA EPD require an evaluation of the SCR systems for the Scherer units and investigate ways to improve performance and reduce NOx emissions.

Thus, EPD must revise its Proposed SIP to include Plant Scherer in its reasonable progress analysis and require a four-factor analysis for the plant."

Page 26 - "Green Power Solutions of Georgia, LLC is located in Laurens, approximately 168 km from Okefenokee National Wilderness Area. Green Power operates a biomass power plant that produces electricity for Georgia Power using several fuel sources including wood fuel. Green Power has a cumulative Q/d value of 27.1 based on 2017 emissions. According to NPCA's analysis, emissions from this source potentially impact 21 Class I areas, including Okefenokee, located approximately 110 miles from the source. It is a significant source of NOx (323 tons/year) and SO2 emissions (1,079 tons/year). Despite the source's significant NOx and SO2 emissions, EPD's Proposed SIP does not discuss this EGU at all, other than including it on Table 7-32, "SO2 Emissions Comparison Between 2017, 2018, 2019, and 2028." Georgia must include Green Power in its reasonable progress analysis or, at minimum, provide adequate justification for why it has not."

Response:

Georgia EPD has utilized an approach to source selection that complies with the Regional Haze Rule (RHR) and EPA guidance. Georgia EPD's approach does recognize the significant progress Georgia has and is expected to achieve in the future toward improving visibility in its Class I areas which is consistent with EPA's guidance documents.

Georgia Power-Plant Scherer, Georgia Power-Plant Wansley, and Green Power Solutions of Georgia were evaluated by Georgia EPD as part of our screening approach to identify the sources with the largest visibility impacts at Class I areas in Georgia and neighboring states. Consistent with the RHR, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. For each of these three sources, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, none of these facilities were selected for a four-factor analysis.

5.2 Potential Unit Retirement – Plant Scherer Comment:

Page 25 - "Georgia must appropriately address any potential unit retirements in this SIP. As it stands, it is unclear what, if any, emission reductions EPD accounts for in the Proposed SIP from their silence regarding Plant Scherer. Under EPA's guidance document for the second planning period, states cannot rely on a source's remaining useful life to avoid conducting a four-factor analyses unless the source has "an enforceable commitment to be retired or replaced by 2028." If EPD plans to rely on possible future retirements for any purpose in this regional haze SIP, those retirements must be clearly documented in the SIP, and the SIP must contain practically enforceable emission limitations reflecting the retirement. Even then, EPD is obligated to consider whether there are cost effective control measures that could be implemented in the meantime.

Therefore, Georgia must include Plant Scherer in its reasonable progress analysis or, at minimum, provide adequate justification for why it has not."

Response:
Georgia EPD did not assume any unit retirements at Plant Scherer when deciding whether it should undergo a reasonable progress analysis. For Plant Scherer, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, this facility was not selected for a four-factor analysis. As such, Georgia EPD will not be relying on Plant Scherer's retirement for improvements to regional haze, nor will the State be requiring the facility to add additional controls as the Stamper report suggests.

5.3 Potential Unit Retirement – Plant Wansley Comment:
Page 25 - "Georgia must appropriately address any potential unit retirements in this SIP. Regardless of whether Georgia Power Company plans to retire Plant Wansley, NPS "recommend[ed] that pending closures and/or reductions in utilization should be made federally enforceable under the haze SIP and occur within this regional haze planning period."

Page 26 - "The CAA requires that "[e]ach state implementation plan . . . shall" include "enforceable limitations and other control measures" as necessary to "meet the applicable requirements" of the Act. The RHR, under Section 51.308(d)(3) similarly requires each state to include "enforceable emission limitations" as necessary to ensure reasonable progress toward the national visibility goal. Consistent with EPA's past practice, the agency's regulations, and the requirements of the Act itself, EPD cannot simply decline to evaluate Wansley for reasonable progress unless the retirement is included as an enforceable measure. As NPS noted, "[u]nless a federally enforceable shutdown is required by 2028, we request that GA EPD establish emission limits for SO2 and NOx that reflect the capabilities of the emission controls currently installed on the Wansley units. For example, the CAMD data suggest that the Wansley EGUs could achieve a SO2 emission rate of 0.04–0.07 lb/mmBtu and a NOx emission rate of 0.06–0.07 lb/mmBtu." Therefore, Georgia must include Plant Wansley in its reasonable progress analysis or, at minimum, provide adequate justification for why it has not."

Response:
Georgia EPD did not assume any unit retirements at Plant Wansley when deciding whether it should undergo a reasonable progress analysis. For Plant Wansley, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, this facility was not selected for a four-factor analysis. As such, Georgia EPD will not be relying on Plant Wansley's retirements for improvements to regional haze, nor will the State be requiring the facility to add additional controls as the Stamper report suggests.

5.4 SO_2 Controls at Plant Bowen Comment:
Pages 27-29 - EPD identified only one Georgia EGU facility for which to evaluate additional SO2 controls for reasonable progress in its Class I Areas – Georgia Power Company's Plant Bowen (Units 1-4). EPD's conclusion in its Proposed SIP is that "Units 1-4 are fully controlled with wet FGD scrubber systems that are operated and maintained to optimize performance for not only SO2 emissions removal but also for other environmental compliance requirements, such as MATS mercury emissions limits and ELG selenium wastewater treatment." This erroneous conclusion stems from a flawed reasonable progress and four-factor analysis for the Plant Bowen in which

Georgia Power Company identified only three potential SO2 control technologies for evaluation: (1) coal switching to Powder River Basin (PRB) coal, (2) coal switching to Central Appalachian (CAPP) coal, and (3) replacing the current FGD scrubbers with dry FGD scrubbers. It did not evaluate upgrades or optimization of existing wet scrubber systems. As discussed below and in the attached expert report by Victoria R. Stamper, Georgia Power Company's reasonable progress and four factor analysis for Plant Bowen is inadequate and flawed.

- Control technology evaluation of switching to 100% PRB: Regarding Plant Bowen's control technology evaluation of switching to 100% PRB, PBR is much lower in sulfur content than Illinois Basin coal and typically has uncontrolled SO2 emission rates of 0.80 lb/MMBtu or lower. Victoria R. Stamper's report calculated a weighted average uncontrolled SO2 emission rate ranging from 3.99 lb/MMBtu to 4.17 lb/MMBtu over the past five years. In contrast, with existing wet scrubbers at each Plant Bowen unit, a switch to PRB could result in significant SO2 reductions. Although EPD claimed that a switch to PBR would result in a capacity derate of around 27% or greater, Georgia Power stated that "the level of unit capacity derate does not impact the annual SO2 emissions reduction since the analysis assumes that the 2019 baseline annual heat input is achievable at this derated unit capacity." Therefore, Samper's Report concludes that it "does not make sense to assume that a switch to 100% PRB coal would incur electricity purchase costs of $51 million per year while also assuming that the Plant Bowen units would increase operating time and electricity generation with a switch to PRB coal. By assuming the plant would burn the same heat input of coal with a switch to PRB coal by operating more hours but also assuming a 27% derating and the need to purchase electricity, there is a mismatch in the cost analysis." It is also not clear why Georgia Power "did not take the cost of purchasing electricity due to a derate as an operational expens[e], based on the current cost of purchasing electricity." Instead, Georgia Power apparently considered "the future cost of purchasing electricity as essentially a capital expenditure for which it assumed a 6.04% rate of return." In any case, EPD's stated costs of $6,424/ton of switching from IB to PBR coal to lower sulfur should be considered as cost effective: it is lower than the cost effectiveness thresholds being used by other states. Finally, Georgia Power did not quantify or assess the capital costs associated with eliminate the derate with the switch to PRB, which are likely much lower than the net present value of $709 million of the capacity penalty cost calculated by Georgia Power. Note that Georgia Power cites to Technical Appendix A1.3-1 of its October 2021 four-factor submittal for calculations and supporting documentation for these calculations, "but that Appendix does not appear to be a part of the publicly available four-factor analysis. Since this was the bulk of the cost of this control option, GEPD must make the underlying calculations publicly available for review."
- No SO2 exemption is needed for startup and shutdown: EPD proposed to require a 0.20 lb/MMBtu, 30-day average SO2 limit for each Plant Bowen unit with exemptions for startup and shutdown. As Stamper's analysis shows, (1) a 0.15 lb/MMBtu SO2 limit of is justifiable, and (2) no exemption is needed for 30-day average SO2 limit for startup and shutdown. Plant Bowen's units "should not be subject to a limit any higher than 0.17 lb/MMBtu, as each unit has consistently been able to comply with such a limit (including Unit 3 which met a 0.17 lb/MMBtu 30-day average SO2 emission rate

93% of the time over 2017-2021). Imposing a lower SO2 emissions limit than 0.20 lb/MMBtu would lock in the current SO2 emission rates and ensure the wet FGD systems are being properly operated and maintained."

- Reasonable progress requirements that ensure year-round operation of the SCR systems at each unit: EPD did not evaluate any NOx controls for Plant Bowen. Although the units are equipped with low NOx burners, separated overfire air, and SCR, "the units do not consistently reduce NOx emissions to the maximum extent practicable."

Further, switching from IB to PRB coal could result in significantly lower NOx emission rates: "a 46% decrease in NOx that could be realized at the Plant Bowen units from switching coals, assuming that the Bowen units' SCRs achieve the same level of NOx removal efficiency as they are currently achieving. Based on Georgia Power's assumption that 2019 emissions reflect 2028 projected emissions and assuming the switch to PRB coal would reduce NOx by 46%, 2,637 tons of NOx could be reduced per year with the coal switch. Taking into account both SO2+NOx reduced from switching to PRB coal (i.e., 7,482 tons of SO2 removed plus 2,637 tons of NOx removed), the cost effectiveness of switching to PRB coal would be $4,749/ton of SO2+NOx removed." According to NPS,

> It is not clear why GA EPD did not consider optimization of the existing wet scrubbers and instead evaluated replacement with dry scrubbers which typically have lower control efficiencies than wet scrubbers . . . NPS review of 2010–2021 CAMD emissions data indicates that SO2 and NOx emission rates have been generally increasing in recent years . . . We request that GA EPD establish emission limits for SO2 and NOx that reflect the capabilities of the emission controls currently installed. For example, the CAMD data suggest that the Bowen EGUs could achieve a SO2 emission rate of 0.04–0.07 lb/mmBtu and a NOx emission rate of 0.07 lb/mmBtu, annual emissions (at 0.07 lb/mmBtu) would be reduced by about 3,130 and 2,710 tons, respectively, from 2021 emissions.

As discussed below, however, EPD did not respond to NPS's request. As a result, EPD has neglected to require reasonable cost-effective controls on Plant Bowen for this second implementation period. To comply with the RHR and make reasonable progress toward improving visibility in Georgia and neighboring states' Class I areas, EPD must undertake an appropriate statutory four-factor analysis for this facility which actually assesses available reasonable control measures (e.g., optimization of equipment efficiency, equipment upgrades, etc.)

As mentioned above, despite the many opportunities for EPD to control NOx from its EGUs during this haze SIP implementation period, EPD failed to require that they prepare NOx four-factor analyses.

Response:

Consistent with the Regional Haze Rule, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. Georgia EPD followed EPA guidance and our

methodology for source selection. This facility was selected for a SO_2 four-factor analysis but was not selected for a NOx four-factor analysis. NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were evaluated with PSAT. PSAT results show that SO_2 facility contributions are above our screening threshold for sulfate, but NOx facility contributions are below our screening threshold for nitrate. Additional details can be found in Appendix E-7. For SO_2, Georgia EPD agrees with the four-factor analysis provided by Plant Bowen.

SO_2 emissions rates have historically varied for Plant Bowen even with the addition of the wet scrubbers in the late 2000's. Plant Bowen is permitted to burn any coal that has less than 3% sulfur by weight as described in their Title V permit. The overlying sulfur limit in Georgia Rule (g) ultimately gives the facility flexibility to choose different coals if they meet the sulfur limits set forth in their Title V permit. In 2014, Plant Bowen started transitioning from Central Appalachian (CAPP) coal to Illinois Basin (IB) coal which has a higher sulfur content. This resulted in increased emissions after the transition, which occurred in the 2014/2015 timeframe that the NPS noted in Figure 1 and 2 in their comments. In addition, Plant Bowen has moved from being a base load facility where load and emissions are very constant to more of a peaking facility. This change in operation resulted in higher emissions since the boilers are increasing or decreasing load depending on the demand. Emissions will be higher with this variability compared to a steady state condition.

Georgia Power provided additional discussion on the derating of the boilers at Plant Bowen if they completed a fuel switch from IB to Powder River Basin (PRB) coal. The following is from their letter dated August 8, 2022, and the entire document is contained in Appendix G-1e.

> The Sierra Club/NPCA comments conflate two distinct issues – generation and capacity. In simplistic terms, Georgia Power must meet the needs of its customers in two ways: 1) the Company must provide the amount of electricity demanded by customers at any given time through electricity generation; and 2) the Company must provide assurance of reliability in meeting potential peak loads by having adequate excess capacity on our system, also known as the reserve margin.
>
> In the Bowen FFA of the full switch to Powder River Basin (PRB) coal, the 27% derate was calculated based on the heat content of PRB coal (8,800 Btu/lb) in comparison to IB coal (12,002 Btu/lb). Therefore, PRB coal would provide 27% less total unit capacity than the same percentage of IB coal.
>
> The capacity penalty costs in the Plant Bowen FFA represented the costs to replace the derated unit capacity to meet the reserve margin required in the Southern Company system. The capacity penalty costs associated with the projected derate for coal switching to PRB coal were correctly accounted for as indirect capital costs in the Plant Bowen FFA because these costs are not simply operating costs to purchase electricity. As explained on page 16 of the Plant Bowen FFA:
>
> > Plant Bowen Units 1-4 provide capacity value by supporting system reliability and by avoiding costs associated with replacement capacity

> that would be required to meet customer peak demands and reserve margin requirements in the absence of such Plant Bowen units. Without these units, Georgia Power would have to procure short-term and long-term replacement capacity in order to restore Georgia Power and the Southern Company system to a comparable level of reliability that the system currently holds. The cost of replacement capacity in any year is assumed to be at either a market rate or the cost of new construction depending on whether Georgia Power has a projected capacity need in such year without Plant Bowen Units 1-4.
>
> Because the costs of replacement capacity and projected capacity needs in each year are based on trade secret information submitted to the Georgia Public Service Commission (GPSC) for the 2019 Georgia Power Integrated Resource Plan (IRP), this background information was appropriately submitted in the Plant Bowen FFA in the trade secret Technical Appendix B in documents B1.3-1a and B1.3.1b. Therefore, the information is protected from public disclosure as trade secret and confidential business information under applicable state and federal laws.

To continue to address the commenters statements on the capital costs included or not included by Georgia Power in the fuel conversion from IB coal to PRB, Georgia Power stated in the 4 Factor Analysis the basis for their analysis. Georgia EPD agrees with the analysis and conclusions. Georgia Power stated that specific items brought up by the commenter about capital costs to mitigate the derate as a result of switching coal types were omitted due to the high level of uncertainty in the specific estimates and the detailed engineering studies that would be required to fully estimate the costs associated with the needed equipment. As a result, Georgia Power submitted a more conservative estimate. If they had included these costs, it would only have increased the already high costs of switching to PRB coal.

In addition, Sierra Club stated that Georgia Power assumed increased electricity generation with the switch to PRB coal. Georgia Power's analysis shows higher operating hours on PRB coal because increased fuel usage would be needed to achieve the baseline heat input due to PRB having a lower heat content than IB Coal. In other words, it takes more tons of PRB coal to achieve the same heat input, and there are continued differences in the amount of electricity produced because of the differences in moisture content and boiler heat rates.

The concept of efficiency improvements for the existing scrubbers as another potential control option has been discussed and is encouraged by EPA's most recent 2021 guidance memo. Plant Bowen's Units 1-4 are equipped with Chiyoda Jet Bubbling Reactor (JBR) wet FGD scrubbers, in which the flue gas from the boiler flows down a large set of sparger tubes submerged into a limestone slurry in the scrubber vessel. The flue gas is forced through the slurry bath where SO_2 in the flue gas reacts with the limestone to form gypsum, effectively removing SO_2 from the flue gas stream before it exits the stack. The scrubbers are also critical to mercury control and MATS compliance, since the scrubber can capture mercury in the scrubber liquid or reagent, depending on how it is operated. For Plant Bowen's Units 1-4, scrubber operating parameters are optimized based on Georgia Power's operational experience to maintain SO_2 removal compliance, mercury removal compliance, and wastewater treatment requirements for both mercury and selenium, while

balancing the increased equipment wear and scrubber vessel scaling experienced at higher submergence levels and pH levels. The 2019 average SO_2 removal rate was 96.3% for Units 1-4 and reflects the level of oxidation needed to comply with all applicable regulatory requirements. In addition, Sierra Club/NPCA stated that the MATS SO_2 limit of 0.20 lb/MMBtu includes an exemption for startup and shutdown. This is incorrect. As was promulgated into the MATS rule in 40 CFR 63.10021 specifically in Table 3, EPA made it clear that periods of startup and shutdown are continuously regulated by the work practice standards. The hourly data submitted by Georgia Power supports the compliance margin requested. Georgia EPD is not proposing any additional scrubber upgrades or a lower compliance limit in the Regional Haze SIP.

The coal-fired boilers at Plant Bowen are subject to Georgia Rule (jjj) which limits NOx emissions during the ozone season. The facility is not required to operate the SCR systems year-round but can choose to operate them to optimize the removal of mercury.

5.5 NOx Emissions regarding Reasonable Progress Comment:

Page 33 - According to NPS, the fuel switch at this facility "will not address NOx emissions," and instead "recommends that Georgia conduct a four-factor analysis for NOx emissions for significant NOx-emitting units at the Brunswick facility . . . [T]he NPS does not support GA EPD's rationale documenting the final RP determination for Brunswick Cellulose, which states that 'Georgia is below the glidepath for the 2021-2028 period' and therefore, 'no add-on SO2 controls are deemed feasible.' . . . The NPS recommends revising this language in the draft SIP and identifying a cost threshold to clearly justify control determinations.

"Rather, NPS reiterated that the URP is not a 'safe harbor' to reject otherwise cost-effective controls and recommended "revising this language in the draft SIP and identifying a cost threshold to clearly justify control determinations."

Response:

While the RHR does provide prescriptive requirements at 40 CFR 51.308(f)(3)(ii)(A) and (B) regarding a state's obligations when a reasonable progress goal is established that is below the uniform rate of progress (glide path), it is not prescriptive regarding emissions reductions when reasonable progress goals are below the glide path. A state has the flexibility to select a reasonable set of sources for four-factor analysis.

Consistent with the Regional Haze Rule, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. Georgia EPD followed EPA guidance and our methodology for source selection. This facility was selected for a SO_2 four-factor analysis but was not selected for a NOx four-factor analysis. NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were evaluated with PSAT. PSAT results show that SO_2 facility contributions are above our screening threshold for sulfate, but NOx facility contributions are below our screening threshold for nitrate. Additional details can be found in Appendix E-7a.

Georgia EPD's determination of emissions reductions for reasonable progress was based on the four factors. At no point in the process did Georgia EPD base its decisions for source selection or emissions reductions from sources solely on the fact that monitoring data and/or modeling data are below the glide path.

5.6 International Paper Four-Factor Analysis Comment:

Page 34 - According to International Paper's 2022 four factor analysis, one of its four emission units, the No. 13 Power Boiler ("PB13") ceased burning coal in the 2015-2017 timeframe. Despite this fact, EPD's SIP proposes to require PB13 to remove coal as a permitted fuel as a reasonable progress measure because it would reduce SO2 emissions by 2,662 tons per year at no cost. Such reduction is misleading because International Paper has already ceased burning coal in PB13. Additionally, EPD's indication that are no costs associated with the cessation of burning coal ignores that International Paper installed "load bearing natural gas burners and possibly had associated costs, because the boiler did not previously burn natural gas."

Regarding International Paper – Savannah's SO2 control analysis for PB13, Victoria R. Stamper's attached report includes the following conclusions related to the company's inadequate, undocumented and unjustified cost analysis that would inflate the costs of controls:

- Unjustified, speculative, and vague 1.5 retrofit factor for CDS and DSI: International Paper assumed a 1.5 retrofit factor for CDS and DSI without justification, stating merely that "an engineering study has not been performed, space constraints exist, and production could be lost due to an extended Mill outage or unexpected delays." However, many CDS systems have a modular design which enables faster construction and minimizes plant downtime. As explained in Victoria Stamper's attached report, "[a] 1.5 retrofit factor has not been justified for installation of a circulating dry scrubber at PB13, and such a high retrofit factor would not be justified for installation of DSI;" further, a high retrofit factor for CDS systems is also unjustified "because CDS systems are known for their compact footprint."
- Overestimated onsite landfill expansion: The company included costs for an onsite landfill expansion for CDS and DSI "because the mill is currently restricted on the amount of lime product that can be sent to the offsite landfill being used." The company used costs based on a 2007 study to expand the plant's onsite landfill and scaled from 2007 to 2021 dollars. However, EPA's Control Cost Manual advises against escalating costs more than five years. Rather, EPA "recommends that current cost estimates be obtained rather than escalate costs over such a long timeframe if possible. Further, International Paper did not consider the possibility of increasing the amount of waste that can be sent to the offsite landfill being used or if another landfill could be used for scrubber or DSI waste, rather than expanding its onsite landfill."
- International Paper underestimated CDS SO2 removal efficiency and overstated DSI SO2 removal efficiency: The company assumed only 90% control of SO2, which is a very low SO2 removal efficiency to assume with a CDS. Regarding DSI, the company "assumed SO2 control of 65%, despite acknowledging that the documentation for the EPA's DSI retrofit costs state that 50% control of SO2 is the target SO2 removal efficiency at a boiler with an electrostatic precipitator (ESP) like PB13 is equipped

with." EPD must either require the company to revise its DSI cost analysis to reflect 50% control or to provide support for its 65% SO2 DSI control assumption.

- International Paper considered owners' costs and Allowance for Funds Used During Construction (AFUDC) in its cost effectiveness analyses of DSI and CDS: EPA has stated that owner's costs for activities related to engineering, management, and procurement are not consistent with the overnight cost method.
- Revised cost analyses are much lower and show that CDS would be very cost effective: Victoria's R. Stamper report shows that, revising several of the above deficiencies in International Paper's cost estimates, "CDS would be very cost effective at $3,300/ton and would result in significant reductions of approximately 3,900 tons per year of SO2 from PB13 . . . [N]either the energy or non-air environmental impacts nor the time to construct the controls would present a valid reason to exclude CDS from consideration as a reasonable progress measure. The life of a CDS is at least 20 years, and International Paper has also stated that the life of Power Boiler 13 is at least 20 years. Thus, the remaining useful life of the Power Boiler is also not a reason to dismiss the very cost effective control of CDS."

Response:

Georgia EPD affirms that the removal of coal as a fuel in PB13 at IP Savannah is reasonable progress. The facility is committing to permanently stop burning coal, thus assuring permanent emission reductions of SO_2 that contribute to haze in Class I areas. The costs associated with this specific option were not looked at in depth due to it being an obvious path forward to secure SO_2 emissions reductions.

In regard to the comments made from the Stamper report and NPCA/Sierra Club on the cost calculations done by IP Savannah, Georgia EPD finds the calculations to be accurate and agrees with the calculated cost estimates on the options evaluated (with the exception of the AFUDC cost for the CDS option which has been updated in the final SIP). The costs calculations provided give Georgia EPD the necessary information to thoroughly consider the cost of compliance as one of the factors to select reasonable progress goals.

To address the more specific comments made by the Stamper Report, Georgia EPD finds that using a retrofit factor of 1.5 is justified and falls within the expected range for an existing facility. In Section 5 of EPA's Control Cost Manual, Section 5, "SO_2 and Acid Gas Controls", it is stated in chapter 1.2.3.5 "Retrofit Factor" that:

> "Based on the information available at the time this chapter was prepared, the RF value should be between 0.7 and 1.3 for wet FGD systems and between 0.8 and 1.5 for dry FGD systems, depending on the level of difficulty. Costs for new construction are typically, though not for every instance, 20 to 30 percent less than for average retrofits for units of the same size and design. An RF of 0.77 is recommended for estimating capital costs for new construction."

Georgia EPD acknowledges that the line item of Allowance for Funds Used During Construction (AFUDC) costs are not to be included to be wholly consistent with the EPA's overnight cost method described in the Control Cost methodology. This has been updated in the final SIP (see

Table 7-35 "No.13 Power Boiler (PB13) Cost Summary") and cost estimates have been updated to represent this change. Note that this line item was only previously taken into account in the Dry Scrubber (CDS) option. See Appendix G-2d "Updated Table B-1: IP Savannah – No.13 Power Boiler: Capital and Annual Costs" for the updated cost table submitted by IP Savannah.

Georgia EPD has also taken into consideration the nonideal nature of converting 2007 to 2021 dollars from the 2007 study done by URS Corporation when considering costs for a landfill. However, Georgia EPD has determined that the calculations provided by the Company's contractor provide a good estimate of the associated landfill costs.

Addressing the efficiencies used for calculating SO_2 control with the Circulating Dry Scrubber and Dry Sorbent Injection options, Georgia EPD agrees with the efficiencies used by IP Savannah. The Division finds the efficiency factor of 65%, which was found by using EPA's calculator guidance, to be in the suggested ranges listed in the EPA's Control Cost Manual. In Section 5 "SO_2 and Acid Gas Controls," Chapter 1.2.1.3 "Other Designs" states,

> "Unlike the three other FGD systems, dry sorbent injection (DSI) is not a typical stand-alone, add-on air pollution control system but a modification to the combustion unit or ductwork. DSI can typically achieve SO_2 control efficiencies ranging from 50 to 70% and has been used in power plants, biomass boilers, and industrial applications (e.g., metallurgical industries)."

Regarding the efficiency factor used for the Circulating Dry Scrubber [CDS], Chapter 1.2.1.1 "Wet Flue Gas Desulfurization Systems" states this:

> "For the CDS system, the average installed cost for a CDS system capable of achieving greater than 90% sulfur removal was $81 million and the highest total installed costs reported to be $400 million."

While Georgia EPD acknowledges that some newer CDS systems can reach efficiencies up to 98%, it supports IP Savannah's choice to use 90% as an appropriate efficiency factor.

Georgia EPD also agrees that the 20-year lifespan choice is justified for both the DSI and CDS options.

Georgia EPD's overall selection of reasonable controls have not changed following our in-depth review of the comments received from the Sierra Club, NPCA, and the Stamper Report regarding cost calculations.

5.7 NOx Controls at IP Savannah on PB 13 Comment:

Page 35 - Finally, EPD did not evaluate any NOx controls for PB13. EPD must evaluate NOx controls for PB13 to achieve reasonable progress. NPS also stated that "Georgia did not address the 1,300 tons/year of NOx emissions (2017 NEI) for this source. The NPS recommends updating the four-factor analyses to consider NOx emissions."

Response:
Consistent with the Regional Haze Rule, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. Georgia EPD followed EPA guidance and our methodology for source selection. This facility was selected for a SO_2 four-factor analysis but was not selected for a NOx four-factor analysis. NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were evaluated with PSAT. PSAT results show that SO_2 facility contributions are above our screening threshold for sulfate, but NOx facility contributions are below our screening threshold for nitrate. Additional details can be found in Appendix E-7a.

5.8 Elimination of 15 Sources from Analysis Comment:
Page 36 - Due to EPD's unreasonably high source selection threshold and erroneous methodology, the agency eliminated the following fifteen sources from the four-factor analysis requirement. We ask EPD to conduct a four-factor analysis for each of these facilities and propose a reasonable progress determination – including enforceable emission limitations in the SIP – that will reduce visibility impairing emissions from this set of sources.

Response:
Georgia EPD has utilized an approach to source selection that complies with the Regional Haze Rule (RHR) and EPA guidance. Georgia EPD's approach does recognize the significant progress Georgia has and is expected to achieve in the future toward improving visibility in its Class I areas which is consistent with EPA's August 20, 2019, guidance. Regarding the selection of sources for analysis (Step 3), EPA states:

> Page 5, Table 1: *Select the emission sources for which an analysis of emission control measures will be completed in the second implementation period and explain the bases for these selections. For the purpose of this source selection step, a state may consider estimated visibility impacts (or surrogate metrics for visibility impacts), the four statutory factors, the five required factors listed in section 51.308(f)(2)(iv), and other factors that are reasonable to consider.*
>
> Page 9: *"A key flexibility of the regional haze program is that a state is not required to evaluate all sources of emissions in each implementation period. Instead, a state may reasonably select a set of sources for an analysis of control measures. The guidance that an analysis of control measures is not required for every source in each implementation period is based on CAA section 169A(b)(2), which requires each SIP to contain emission limits, schedules of compliance, and other measures as may be necessary to make reasonable progress, but …does not provide direction regarding the particular sources or source categories to which such emission limits, etc., must apply. Selecting a set of sources for analysis of control measures in each implementation period is also consistent with the Regional Haze Rule, which sets up an iterative planning process and anticipates that a state may not need to analyze control measures for all its sources in a given SIP revision. Specifically, section 51.308(f)(2)(i) of the Regional Haze Rule requires a SIP to include a description of*

the criteria the state has used to determine the sources or groups of sources it evaluated for potential controls. Accordingly, it is reasonable and permissible for a state to distribute its own analytical work, and the compliance expenditures of source owners, over time by addressing some sources in the second implementation period and other sources in later periods. For the sources that are not selected for an analysis of control measures for purposes of the second implementation period, it may be appropriate for a state to consider whether measures for such sources are necessary to make reasonable progress in later implementation periods."

The commenter referenced the following 15 facilities: International Paper Company (Rome Linerboard Mill) - Temple Inland; Georgia-Pacific Cedar Springs, LLC; Georgia-Pacific Consumer Products LP (Savannah River Mill); Rayonier Performance Fibers, LLC; International Paper - Augusta Mill; PCA Valdosta Mill; C-E Minerals Plants 1, 2 and 6; Graphic Packaging Macon Mill; Weyerhaeuser NR Port Wentworth; Interstate Paper, LLC; Weyerhaeuser NR Company - Flint River Operations; Transcontinental Gas Pipeline Company, LLC - Compressor Station; CEMEX Southeast, LLC; Pinova, Inc.; and Thermal Ceramics.

All 15 facilities were evaluated by Georgia EPD as part of our screening approach to identify the sources with the largest visibility impacts at Class I areas in Georgia and neighboring states. Consistent with the RHR, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. For each of the 15 sources, NOx and SO_2 facility contributions to visibility impairment on the 20% most impaired days at Class I areas in Georgia and neighboring states were below our screening thresholds for both sulfate and nitrate. Therefore, none of these facilities were selected for a four-factor analysis.

5.9 <u>EPD's Interstate Consultations Comment:</u>

Page 43 - Georgia EPD received a comment regarding EPD's Interstate Consultations. Commenter states at a minimum, Georgia has an obligation to document and describe the actions taken to follow up with Florida, North Carolina, South Carolina, and Tennessee, and resolve any disagreement regarding the need for a four-factor analysis.

Page 45 - Georgia EPD received a comment regarding EPD's Interstate Consultations. Commenter states it does not appear, however, that any of those states responded to Georgia's requests. Moreover, there is nothing in the record indicating that Georgia followed up with those states to resolve whether additional reductions are necessary at any of those facilities to ensure reasonable progress for Georgia's Class I areas. Consequently, the Proposed SIP is incomplete on its face. Georgia must ensure that Florida, North Carolina, South Carolina, and Tennessee conduct the requested four-factor analyses, or provide a robust technical analysis of its own, demonstrating that no additional controls at any of those out-of-state facilities are reasonable. At a minimum, Georgia has an obligation to document describe the actions taken to follow up with Florida, North Carolina, South Carolina, and Tennessee, and resolve any disagreement regarding the need for a four-factor analysis.

Response:
The Interstate Consultation process is detailed in Section 10.1 of the Regional Haze SIP. As Georgia is a part of the VISTAS project, all southeastern states have been in constant contact during the development and submittal of Regional Haze SIPs. All consultation letters are contained in Appendix F and contain responses from Florida, North Carolina, South Carolina, and Tennessee. The states of Florida, North Carolina, South Carolina, and Tennessee were made aware that our prehearing SIP was out for comment. If any of those states did not agree with our four-factor analyses, they would have provided comments to us. In addition, Georgia was made aware that the prehearing SIPs for Florida, North Carolina, South Carolina, and Tennessee were out for comment. Since Georgia did not disagree with their four-factor analyses, Georgia EPD did not provide any comments to those states.

5.10 EPD's Interstate Consultations Comment:
Page 44 - Georgia EPD received a comment regarding EPD's Interstate Consultations. Commenter states Georgia must request that Pennsylvania require Keystone to evaluate additional cost-effective control measures, such as upgrades and/or system optimizations, emission limitations, available during this implementation period. In addition, Georgia must ensure that any cost effectiveness claims are supported and documented in order to determine their accuracy.

Response:
In 40 CFR §51.308(f)(2)(ii), the RHR states that the "State must consult with those States that have emissions that are reasonably anticipated to contribute to visibility impairment in the mandatory Class I Federal area to develop coordinated emission management strategies containing the emission reductions necessary to make reasonable progress." As Georgia is a part of the VISTAS project, Appendix F-2e contains the letter drafted by VISTAS to the PA Bureau of Air Quality which is dated June 22, 2020. Pennsylvania Bureau of Air Quality requested that Keystone complete a reasonable progress analysis and determined that no additional controls are needed in order for Pennsylvania to meet their Regional Haze reasonable progress goals. Georgia EPD agrees with this determination.

5.11 EPD's Interstate Consultations Comment:
Page 45 - Georgia EPD received a comment regarding EPD's Interstate Consultations. Commenter states Georgia must ensure that Ohio conduct four-factor analyses for SO2 and NOx and consider all technically and economically feasible control options in order "to secure meaningful reductions in visibility impairing pollutants that build on the significant progress states have already achieved."

Response:
In 40 CFR §51.308(f)(2)(ii), the RHR states that the "State must consult with those States that have emissions that are reasonably anticipated to contribute to visibility impairment in the mandatory Class I Federal area to develop coordinated emission management strategies containing the emission reductions necessary to make reasonable progress." Georgia EPD reviewed the information submitted by Ohio EPA. Ohio EPA concluded that no technically feasible control measures were identified for SO_2 control at the Gavin Power Plant beyond existing wet FGD systems. For the Zimmer Power Station, Ohio EPA is requiring the permanent shutdown of the coal-fired boilers by no later than January 1, 2028. Georgia EPD agrees with these determinations.

5.12 EPD's Consultation with the FLMs Comment:

Page 46 - Georgia EPD received a comment regarding EPD's Consultation with the FLMs. Commenter states because the FLMs' role is to manage their resources - including air quality - EPD must meaningfully consider and adapt its SIP measures to reflect comments and suggestions from the FLMs.

Response:

The RHR at 40 CFR 51.308(i)(2) requires states to provide FLMs an opportunity for consultation at a point early enough in the stated LTS development so that information provided by the FLM can meaningfully inform the state's decisions on the LTS. Both VISTAS and the state of Georgia provided multiple opportunities for the FLM to provide information regarding the development of Georgia EPD's LTS. The VISTAS states, including Georgia, participated in national conferences and consultation meetings with other states, RPOs, FLMs, and EPA throughout the SIP development process to share information. VISTAS held calls and webinars with FLMs, EPA, RPOs and their member states, and other stakeholders (industry and non-governmental organizations) to explain the overall analytical approach, methodologies, tools, and assumptions used during the SIP development process and considered their comments along the way. A detailed list of these meetings and calls can be found in Section 10.2 of the SIP.

Beginning in January 2018, VISTAS held the first of several formal consultation calls with EPA and the FLMs to review the methodologies used to evaluate source lists for four-factor analyses. The development of AoIs for each Class I area with the HYSPLIT model was presented to identify source regions for which additional controls might be considered and that are likely to have the greatest impact on each Class I area. Additionally, information was shared on how states identified specific facilities within the AoIs to be tagged by the CAMx photochemical model to further identify impacts associated with those facilities on each Class I area. Based on the results of these two analyses, each state agreed to evaluate reasonable control measures for sources that met or exceeded individual state thresholds for reasonable progress analyses. Each state would consider sources within their state and would identify sources in neighboring states for consideration.

On June 14, 2022, Georgia EPD and NPS had a conference call to discuss the NPS comments on the draft SIP. EPA, FS, and FWS were also on the call. On June 22, 2022, the NPS sent their written comments to Georgia EPD. On June 22, 2022, the FS sent their written comments to Georgia EPD. The FWS did not send any written comments to Georgia EPD. The complete set of NPS and FS comments are included in Appendix H-1. Georgia EPD meaningfully considered these comments and responded to the FLM comments in the FLM Response to Comments document (Appendix H-4a).

5.13 EPD's Consultation with the FLMs Comment:

Page 50 - Georgia EPD received a comment regarding EPD's Consultation with the FLMs. Commenter states to comply with the letter and purpose of the regulation, EPD must meaningfully evaluate, respond to, and incorporate changes to its Proposed SIP in response to the FLMs' consultation comments and provide the public an opportunity to comment.

…Although Georgia should have consulted with the Fish and Wildlife Service (FWS) under the U.S. Department of Interior, and although the Proposed SIP states that "[t]he FLMs were involved

in the preparation of this regional haze SIP," and that "[d]ocumentation of the formal comments made by the FLMs and GA EPD's response appears in Appendix H – Public Hearing Comment Summary and Agency Responses," FWS's response is not contained in Appendix H. Only USDA Forest Service and NPS responses are attached.

…EPD's Proposed SIP fails to include either a summary, the actual comments from NPS or the USDA Forest Service, or a response. Thus, the public lacks access to and has not been provided an opportunity to review and comment on those comments.

Response:
Georgia EPD has been engaged with the FLMs for multiple years as part of the VISTAS project and received detailed feedback from the NPS and other FLMs throughout 2021 (see Appendix F). We feel that substantive engagement has occurred to meaningfully inform our long-term strategy. Also, Georgia EPD understands that the NPS would have preferred to have their comments addressed prior to putting our Regional Haze SIP out for public comment. However, this was prohibited due to the timeline set forth by EPA. On April 7, 2022, the Environmental Protection Agency (EPA) made the following announcement related to Visibility and Regional Haze:

> "On April 7, 2022, EPA announced its intent to make findings that certain states have failed to submit regional haze implementation plans for the second planning period. The EPA intends to issue these findings by August 31, 2022. States wishing to avoid inclusion in the Findings of Failure to Submit should submit their second planning period SIPs by August 15, 2022."

Georgia EPD fully intends to submit our Regional Haze SIP by the above deadline to avoid receiving a Finding of Failure to Submit. All comments will be taken into consideration and any appropriate response revisions to the Regional Haze SIP will be incorporated into the final SIP submittal.

Georgia EPD sent consultation letters to all three FLM agencies on April 22, 2022, and provided all of the Appendices along with the draft SIP. On June 22, 2022, only NPS and Forestry Services provided written comments. Fish and Wildlife attended the conference call held by NPS but did not submit comments to Georgia EPD. All FLMs also received notification of the prehearing submission when Georgia EPD published the draft Regional Haze SIP. The commenter incorrectly states that "EPD's Proposed SIP fails to include…the actual comments from NPS or the USDA Forest Service." These comments were contained in Appendix H of EPD's proposed SIP. In addition, all FLM comments and EPD's responses to comments will be included in Appendix H of the final Regional Haze SIP.

5.14 EPD's Long-Term Strategy Comment:
Pages 50-51 - Georgia EPD received a comment regarding EPD's long-term strategy. Commenter states Georgia's draft long-term strategy sets reasonable progress goals, which it termed "rate of progress" goals, based on the VISTAS modeling results before and in lieu of conducting the required reasonable progress four-factor analyses – and it has impermissibly reversed the order of the requirements. The RPGs are not to be developed before the four-factor analyses but as a result of the four-factor analyses. EPD must first conduct the four-factor analyses, determine measures

for reducing visibility impairing emissions based on the Act's four-factor analysis, and then use the results to develop revisions to the RPGs.

Response:
According to the EPA's "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period" (2019):

> *At the time a state (or an RPO on behalf of a state) is prepared to model the impacts of states' LTSs, the outcome of some final state decisions on emission control measures may not be known. That modeling will, therefore, be based on known decisions and possibly also on anticipated decisions. Because the air quality modeling to calculate RPGs is resource intensive and time consuming, EPA does not always expect the modeling to be repeated after a subsequent change in the content of a state's own LTS, after a new determination by another state that an emission control measure is necessary to make reasonable progress, or after another state decides contrary to expectations that a measure is not necessary to make reasonable progress.*

The RPGs contained in this Regional Haze SIP are representative of all known control measures necessary to make reasonable progress.

5.15 VISTAS Emission Inventories and Modeling Comment:
Pages 51-52 - Georgia EPD received a comment regarding public review and comment on the VISTAS Emission Inventories and Modeling. Commenter states as part of its Proposed SIP, EPD must not only follow the requirements in the RHR, but also the requirements for preparation, adoption and submittal of SIPs. EPD has an obligation to make transparent and cite to (and provide weblinks to) the technical support documentation it proposes to rely on and use as part of its SIP revision (e.g., such regional planning organization technical analyses) and provide the public with the opportunity to comment on such analyses. Thus, EPD must cite to and provide weblinks to the VISTAS' documentation and analysis for all the emissions information, monitoring and modeling.

Response:
Georgia EPD has met all the requirements of 40 CFR 51.102 for a public hearing for the Regional Haze SIP. Georgia EPD posted the public notice on Georgia EPD's website on June 24, 2022. The public hearing notice included a weblink to the draft SIP, as well as all of the Appendices that were part of the SIP including Emission Inventory reports (Appendix B) and Modeling reports (Appendix D and Appendix E) pertaining to the VISTAS project. The public hearing was held July 25, 2022. The end of the public comment period was July 26, 2022. The comment period satisfied the 30-day requirement in the rule. There is no separate requirement for a public notice and comment period specifically for the emissions inventory and modeling. As detailed in Section 10.2 of the SIP, the VISTAS states participated in national conferences and consultation meetings with other states, RPOs, FLMs, and the EPA throughout the SIP development process to share information. VISTAS held calls and webinars with FLMs, EPA, RPOs and their member states, and other stakeholders (industry and non-governmental organizations) to explain the overall analytical approach, methodologies, tools, and assumptions used during the SIP development process and considered their comments along the way.

5.16 Long Term Emission Reductions Comment:

Page 55 - Georgia EPD received a comment regarding long term emission reductions. Commenter states the SIP fails to include practically enforceable emission limitations reflecting the retirements, operational, or process changes, or installation of air pollution controls. Thus, the public has no assurance that Georgia's 2028 emission inventory projection upon which EPD's reasonable progress goals are based will be realized. EPD must not rely on these alleged emission reductions for purposes of the RH SIP unless there are enforceable provisions in the SIP. Further, to enable the public to evaluate these assumed (but not required) emission reductions and increases, EPD must provide a baseline emissions inventory for these various source categories and sources where it has failed to do so.

Response:

Georgia's 2028 emissions inventory is a projection based on the best available information at the time of the analysis. Georgia EPD is incorporating permit conditions that were selected for reasonable progress into the SIP. EPD has provided a baseline inventory for all source categories in Appendix B.

5.17 Emission Trading Comment:

Page 56 - Georgia EPD received a comment regarding emission trading. Commenter states EPD's proposal to rely on existing emission trading programs and upcoming EPA actions is misplaced. Regarding EGUs covered by CSAPR and the other emission trading programs, EPD should not rely on that program to drive emission reductions for several reasons. Contrary to the RHR requirements that emission limitations apply for the entire year, the CSAPR requirements only apply during the ozone season. EPD fails to quantity the amount of reductions from these trading programs, indeed its Proposed SIP admits that EPA's CSAPR Update does not even apply to Georgia sources. Therefore, it is impermissible for EPD to suggest it will rely on emission reductions from a program that does not have sources within its State.

Response:

Georgia EPD considered CSAPR, and other existing emissions trading programs as required by 40 CFR 51.308(d)(3)(v)(A), which requires states to consider emission reductions due to ongoing air pollution control programs in developing its LTS. Although the most recent CSAPR Update requirements do not directly impact Georgia sources, they will impact emissions in neighboring sources that contribute to visibility impairment in Georgia's Class I areas. Therefore, it is appropriate to rely on emission reductions from this program.

5.18 Visibility Comment:

Pages 56-57 - Georgia EPD received a comment regarding visibility as a fifth factor to decide reasonable progress controls. Commenter states EPD must not rely on visibility to exclude emission reducing measures from a source that would otherwise be required to do so under the four statutory factors.

Response:

Georgia EPD did not use visibility as a fifth factor to decide reasonable progress controls. However, it should be noted that EPA's 2021 Guidance states, "EPA has interpreted the CAA and RHR as allowing states to consider visibility alongside the four statutory factors when determining

the emission reduction measures that are necessary to make reasonable progress. We have explained that:

> While the CAA lists the four reasonable progress factors, it is silent as to whether states or the EPA may consider other, additional factors. This final rule neither requires nor prohibits states from considering visibility when making reasonable progress determinations. . . . However, a state that elects to consider an additional factor such as visibility benefit must consider it in a reasonable way that does not undermine or nullify the role of the four statutory factors in determining what controls are necessary to make reasonable progress."

5.19 Glide Path Comment:

Page 58 - Georgia EPD received a comment regarding EPD's reliance on the "Glide Path" and its methodology to adjust the RPGs for Class I areas within Georgia. Commenter states EPD's suggestion that the RPGs being under the glide path is a safe harbor in [*sic*] inappropriate.

Response:

Georgia EPD has made factual statements in the SIP about the RPGs being significantly below the glide path at all Georgia Class I areas. However, Georgia EPD has neither suggested nor stated that "RPGs being under the glide path is a safe harbor." At no point in the process did Georgia EPD base its decisions for source selection or emissions reductions from sources solely on the fact that monitoring data and modeling data are below the glide path.

5.20 Prevention of Future Impairment of Visibility Comment:

Page 59 - Georgia EPD received a comment regarding prevention of future impairment of visibility. Commenter states EPD must analyze future emission inventory projections, explain what these emissions sources are within the state and discuss the programs it has in place to address any potential future increases in emissions. Importantly, EPD must evaluate the measures that may be needed to prevent any currently projected future increases in visibility-impairing emissions from these source categories. Moreover, as EPD develops permit modifications for existing sources and permits for new sources, it must take regional haze implications into consideration - these requirements must be discussed and committed to in the State's SIP, which EPD has not done.

Response:

Georgia's emissions inventory includes emissions for a baseline year, emissions for the most recent year for which data are available and estimates of future projected emissions. Georgia updates its inventory annually for large point sources and triennially for smaller point sources. Georgia's PSD permitting program requires the applicant to evaluate the projects impact on nearby Class I areas (located within 300 km of the project site). Class I project impacts include various modeling approaches suitable for estimating pollutant concentrations at Class I areas including the individual and cumulative impacts of the proposed and/or existing sources on Class I PSD Increments, air quality related values (AQRVs), and visibility.

5.21 Cost Effectiveness Threshold Comment:

Page 60 - Georgia EPD received a comment regarding cost effectiveness threshold. Commenter states we strongly encourage EPD to take into consideration that states like Colorado and Oregon recently indicated that they are each "using $10,000 per ton of regional haze pollutant as the nominal cost threshold to determine cost effective control strategies for Round 2 RP.

Response:

Georgia EPD did not set a specific cost per ton threshold, but rather analyzed each facility to determine whether a given control measure is cost-effective based on the EPA's Control Cost Manual, the 2019 Regional Haze Guidance, and a historical range of cost/ton values. Specifically, Georgia EPD reviewed an Excel spreadsheet assembled by Arkansas DEQ that compared the cost of compliance for SO_2 and NOx in dollars per ton for various types of industrial emission units (e.g., EGU Boiler, Industrial Boiler, Kiln, Smelter, All Non-EGU). The spreadsheet was updated with the addition of VISTAS data (Appendix G-4) and presents the maximum and minimum cost/ton and various statistical percentile values (98^{th}, 95^{th}, 90^{th}, 85^{th}, 80^{th}, 75^{th}, 70^{th}, and 65^{th}). While Georgia EPD did not pick a specific cost/ton threshold, it should be noted that in all cases where Georgia EPD determined that a control cost was "not cost effective" or "cost effectiveness was not reasonable," the cost was above the 98^{th} percentile values listed in the Arkansas DEQ spreadsheet.

Georgia EPD also noted that substantial reductions in SO_2 and NOx emissions occurred in Georgia and other VISTAS states between 2008 and 2020. Those reductions were not part of the four factors that were considered for each control option, but the Georgia EPD continues to believe that the decrease in emissions provides additional weight of evidence for the use of a lower cost threshold compared to other parts of the country. The following table presents the SO_2 and NOx emissions reductions between 2008 and 2020 for the VISTAS states.

VISTAS States, Change in SO_2 and NO_X Emissions, 2008 to 2020						
	SO_2 Emissions (tons)		NO_X Emissions (tons)		% Change	
State	2008	2020	2008	2020	SO_2 Emissions	NO_X Emissions
AL	357,547	3,278	112,614	13,753	-99.1%	-87.8%
FL	263,952	15,259	153,466	29,632	-94.2%	-80.7%
GA	514,539	6,940	105,894	13,328	-98.7%	-87.4%
KY	344,356	37,977	157,847	28,605	-89.0%	-81.9%
MS	65,236	2,629	41,918	13,237	-96.0%	-68.4%
NC	227,030	9,823	54,652	21,502	-95.7%	-60.7%
SC	157,618	4,962	42,916	8,056	-96.9%	-81.2%
TN	208,069	9,349	85,543	6,849	-95.5%	-92.0%
VA	125,985	1,507	43,017	7,068	-98.8%	-83.6%
WV	301,574	31,787	97,331	28,474	-89.5%	-70.7%

Georgia EPD cannot assess the reasons that specific cost thresholds were selected by Colorado and Oregon. However, the overall VISTAS SO_2 reductions were much higher (i.e., the VISTAS

states started with much higher emissions), and we believe that the comparison supports our conclusion above, that a lower cost threshold is reasonable for Georgia. The following table presents the SO_2 and NOx emissions reductions between 2008 and 2020 for the states identified by the commenter.

States Identified by Commenter, 2008 to 2020 Change in SO_2 and NO_X Emissions						
	SO_2 Emissions (tons)		NO_X Emissions (tons)		% Change	
State	2008	2020	2008	2020	SO_2 Emissions	NO_X Emissions
CO	56,721	9,082	62,312	16,736	-84.0%	-73.1%
OR	11,376	2,632	9,638	2,535	-76.9%	-73.7%

5.22 Enforceable SIP Measure Comment:

Page 61 - Georgia EPD received a comment regarding enforceable SIP measure. Commenter states underscoring this requirement of enforceability, reasonable progress goals (RPGs) adopted by a state with a Class I area must be based only on emission controls measures that have been adopted and are enforceable. Thus, if EPD has relied on any proposed retirements or operation changes as part of its long-term strategy to ensure reasonable progress, the agency must, at a minimum, make those retirement decisions federally enforceable with compliance deadlines for retirement by the end of the second planning period.

Response:

Georgia EPD has consulted with EPA Region 4 to determine which emissions limits must be made permanent and enforceable as part of the Regional Haze SIP. All emission controls deemed necessary for reasonable progress have been submitted as permit revisions in this Regional Haze SIP.

5.23 NOx Controls Comment:

Page 61-62 - Georgia EPD received a comment regarding NOx controls. Commenter states EPD's Proposed SIP does not consider controls on nitrate contributions from point sources at Class I Areas. EPD must require complete and fully documented four-factor NOX analyses for the sources discussed in these comments (Plant Bowen, International Paper – Savannah, Plant Scherer, Plant Wansley), independently review the analyses, filling in gaps where necessary, and then establish practically enforceable emission limitations in the SIP reflecting reasonable progress controls.

Response:

Consistent with the Regional Haze Rule, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. Both SO_2/sulfate and NOx/nitrate were evaluated in the source section approach. However, no NOx/nitrate sources were selected for a reasonable progress analysis because no facilities exceeded the NOx/nitrate screening thresholds.

PSAT source apportionment modeling clearly demonstrates that contributions from Georgia's point source NOx emissions is insignificant and additional NOx controls would not be reasonable. Specifically, the PSAT source apportionment modeling demonstrates that NOx emissions from all

point sources (EGU + non-EGU) in Georgia contributes less than 1% of the total sulfate + nitrate light extinction at all Class I areas. Therefore, NOx emissions from individual EGU and non-EGU point sources in Georgia will contribute even smaller percentages to the total sulfate + nitrate light extinction. In addition, the PSAT results indicate that, on average, the reduction of one ton of SO_2 will have the equivalent benefit of reducing 30.7 tons of NOx at Cohutta Wilderness Area, 19.0 tons of NOx at the Okefenokee National Wilderness Area, and 19.2 tons of NOx at the Wolf Island National Wilderness Area.

Although sulfates have decreased and nitrates have slightly increased, sulfates are still the dominant visibility impairing species at the Cohutta Wilderness Area, Okefenokee National Wilderness Area, and Wolf Island National Wilderness Area. If sulfates continue to decrease and nitrates continue to increase in the future, it may be appropriate to consider NOx emission sources for reasonable progress analyses in Georgia's Regional Haze SIP for future planning periods.

5.24 Lack of Adequate Resources Comment:

Page 62 - 63 - Georgia EPD received a comment regarding a lack of adequate resources. Commenter states EPD's apparent assertion that it lacks the time, personnel, and funding resources to develop a complete regional haze SIP does not excuse it from the Act's requirements. Alternatively, if EPD finalizes its proposed determination that it lacks the resources necessary to develop a complete [and potentially approvable] SIP, then it must follow in the footsteps of Montana and notify EPA that Georgia will defer to EPA's development and implementation a regional haze FIP on their behalf.

Response:

Georgia EPD does not assert that it lacks the time, personnel, and funding resources to develop a complete Regional Haze SIP. In fact, Georgia EPD is confident that is has developed a complete and fully approvable Regional Haze SIP. EPA's August 20, 2019, guidance states that "a State is not required to evaluate all sources of emissions in each implementation period" and "it is reasonable and permissible for a state to distribute its own analytical work, and the compliance expenditures of source owners, over time by addressing some sources in the second implementation period and other sources in later periods." Georgia EPD's approach to source selection for reasonable progress analysis resulted in a reasonable number of total sources (17) and Georgia sources (3). This is a reasonable number since they address a significant portion of Georgia's contribution to visibility impairment in Class I areas and includes Georgia's largest visibility impairing sources.

5.25 Environmental Justice Comment:

Page 64 - Georgia EPD received a comment regarding Environmental Justice. Commenter states EPD has both state and federal obligations to meaningfully consider and advance environmental justice in its regional haze SIP. Unfortunately, the Proposed SIP's summary of what an environmental justice analysis entails falls short of these commitments.

Response:

The purpose of the Regional Haze Rule is to improve visibility in the Federal Class I Areas, not to look at health impacts from criteria pollutants in areas outside Class I areas. That is the purpose of the NAAQS. Georgia EPD has not identified any EJ communities living in any Federal Class I

Areas whose visibility would be disproportionately impacted by Georgia EPD's selection of reasonable progress controls.

5.26 Significant Flaws in VISTAS Regional Haze CAMx Modeling and Methods Comment:
Page 19-20 - "Significant Flaws in VISTAS Regional Haze CAMx Modeling and Methods". As explained in the May 12, 2021, letter to the Air Division Directors of the VISTAS states, NPCA commissioned an expert modeler to better understand the VISTAS approach and found fundamental flaws in the VISTAS modeling inputs and methods as well as the modeling approach recommended to Southeastern states. Yet, EPD followed the VISTAS approach in its Proposed SIP, and thus, as explained below and in the attached expert exhibits incorporated by reference to our comments, Georgia's Proposed SIP fails to comply with the state's obligations under the CAA and RHR.

Response:
Georgia EPD disagrees with the commenter that fundamental flaws exist in the VISTAS modeling inputs and methods. VISTAS modeling inputs and methods followed the steps and recommendations listed in EPA's "Modeling Guidance for Demonstrating Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze" (2018), "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period" (2019), and "Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period" (2021).

5.27 Sulfate Concentrations in the Southeast U.S. Comment:
Page 19 - Inaccurately reflects sulfate concentrations in the Southeast U.S. Would excuse heavy sulfur dioxide (SO_2) polluters from review.

Response:
Although model performance for sulfate at each Class I area is biased low on the 20% most-impaired days, the model performance statistics for sulfate are reasonable for regulatory modeling. Additionally, the future year sulfate concentrations are not based on the absolute modeled values, but instead the model is applied in a relative sense through calculation of relative response factors (RRFs). The RRF is the relative change in sulfates between the base year modeled value and future year modeled value. The future year sulfate concentrations are then estimated by multiplying the base year actual monitored value by the RRF. Factors causing bias in the base case will also affect the future case; therefore, using the modeling in a relative sense resolves any problems posed by the underprediction of sulfates, and will not lead to an under-estimation of source contributions.

5.28 Electric Generating Unit Emission Profiles Comment:
Page 20 - Used Electric Generating Unit (EGU) emission profiles from 2011 to project the EGUs emissions in 2028, inaccurately assuming that EGUs will operate in 2028 as they did in 2011. Would fail to identify EGUs that must be analyzed for emission reductions because the model results do not accurately reflect the actual/most recent EGUs' contributions to visibility impairment.

Response:
As outlined in subtask 3.1.2 of the VISTAS Work Plan, hourly emission files were created consistent with the temporal distribution of EPA's 2011el modeling platform for EGUs that report

continuous emissions monitoring (CEM) data to EPA. The main purpose of this step was to ensure that emissions simulated in 2028 occur in the same timelines as the emissions were simulated in the 2011 modeling, preventing fabricated emissions increases or decreases between the two years simply as a result of the temporal profile. This same approach is consistent with the approach in EPA's "Technical Support Document (TSD) Preparation of Emissions Inventories for the 2016v1 North American Emissions Modeling Platform," March 2021, p. 170.

5.29 Used Outdated Monitoring Data Comment:

Page 20 - Used outdated monitoring data that does not represent the dramatic shift in nitrate contribution to visibility impairment in the Southeast over the last 5-10 years. This shift was not reflected in future predictions. Would erroneously exclude problematic sources from review and avoid emission controls for large NOX emitting sources because the modeling inputs failed to properly identify EGUs and other point sources with large NOX emissions as contributing to Class I area visibility impairment.

Response:

According to EPA's "Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM2.5 and Regional Haze," November 2018, p. 151-152:

> "…the observed base period visibility data should be linked to the base modeling year. Similar to the ozone and PM2.5 attainment tests, the 5-year ambient data period should be centered about the base modeling year.

The 2011 modeling platform was the most recently available modeling platform when the VISTAS project began in December 2017. Therefore, EPA's modeling guidance requires the species-specific RRFs be applied to the 2009 – 2013 IMPROVE measurements when projecting RPGs for 2028. EPA's modeling guidance does not allow the use of more recent IMPROVE measurements (e.g., 2015-2019) in combination with a 2011 modeling base year. The modeling contained in Georgia's Regional Haze SIP followed the detailed procedures contained in EPA's modeling guidance for determining speciated light extinction values in 2028. In addition to modeling, GA EPD examined the recent monitoring data. NOx contributions to visibility impairment can vary from year to year. According to Figure 7-44, the NOx contributions to visibility impairment at the Cohutta Wilderness Area have increased from 1.7% in 2001 to 5.4% in 2019 on the most impaired days. According to Figure 7-45, the NOx contributions to visibility impairment at the Okefenokee National Wilderness Area have increased from 4.2% in 2000 to 5.9% in 2019 on the most impaired days. Unfortunately, monitoring data does not provide information on source contributions (e.g., mobile vs. point sources) or the benefits that would result if NOx emissions were to be reduced.

PSAT source apportionment modeling clearly demonstrates that contributions from Georgia's point source NOx emissions is insignificant and additional NOx controls would not be reasonable. Specifically, the PSAT source apportionment modeling demonstrates that NOx emissions from all point sources (EGU + non-EGU) in Georgia contributes less than 1% of the total sulfate + nitrate light extinction at all Class I areas. Therefore, NOx emissions from individual EGU and non-EGU point sources in Georgia will contribute even smaller percentages to the total sulfate + nitrate light extinction. In addition, the PSAT results indicate that, on average, the reduction of one ton of SO_2 will have the equivalent benefit of reducing 30.7 tons of NOx at Cohutta Wilderness Area, 19.0

tons of NOx at the Okefenokee National Wilderness Area, and 19.2 tons of NOx at the Wolf Island National Wilderness Area.

Although sulfates have decreased and nitrates have slightly increased, sulfates are still the dominant visibility impairing species at the Cohutta Wilderness Area, Okefenokee National Wilderness Area, and Wolf Island National Wilderness Area. If sulfates continue to decrease and nitrates continue to increase in the future, it may be appropriate to consider NOx emission sources for reasonable progress analyses in Georgia's Regional Haze SIP for future planning periods.

5.30 Used High Thresholds and Unnecessary Filters to Select Sources Comment:
Page 20 - Used high thresholds and unnecessary filters to select sources to analyze for emission reducing measures. Would result in an unreasonably low number of industrial sources selected by each state for an emission control reasonable progress four-factor analysis.

By relying on the flawed VISTAS modeling to select which polluting sources to review for emission reductions, the Southeastern states are poised to ignore hundreds of significant emission sources. According to NPCA's analysis, by solely relying on the VISTAS' approach, Georgia:

- Selected only three of the numerous point sources affecting Class I areas for four-factor analyses. In contrast, the Federal Land Managers identified three additional major industrial facilities in Georgia that degrade visibility in at least 23 Class I areas. And as noted above, EPD should reevaluate the sources listed in Table 1, based on their Q/d contribution to Class I areas;
- Failed to require any further emission reduction measures from facilities which did submit a four-factor analysis;
- Ignores the fact that many of these major sources are where many people live below the poverty line.

EPD must revise its SIP to the extent it proposes to rely on VISTAS modeling and other flawed assumptions discussed in the May 12, 2021, letter and in these comments and incorporated expert reports.

In the Proposed SIP, EPD relied on the VISTAS approach, explaining that, for Class I areas in Georgia, a total of seventeen facilities exceeded the ≥1.00% PSAT threshold for sulfate only, but only three of these facilities (i.e., Georgia Power's Plant Bowen, International Paper (IP) Savannah, and Brunswick Cellulose) are located in Georgia. EPD requested four-factor analyses from those three facilities for the reduction of SO2 emissions. There are numerous issues with EPD's source selection methodology. For example:

- EPD does not provide a reasoned basis for using a 1.00% PSAT threshold for selecting facilities, and its assertion that "…the VISTAS screening approach results in a reasonable number of sources that can be evaluated…" is incorrect as it only identifies three sources in Georgia.
- As discussed below, EPD's reply to the FLM's criticism of its source selection strategy is inadequate.

- Would allow electric generating units in Georgia to continue to emit more than 18,009 tons per year of NOX and 12,200 tons per year of SO2, dirtying the air in our national parks and wilderness areas and communities.

Response:
Consistent with the Regional Haze Rule, Georgia followed a process (documented in Sections 7.5 and 7.6) to narrow the list of sources required to perform a four-factor analysis. In so doing, Georgia EPD relied on the latest available tools (i.e., AoI and PSAT) to understand source impacts on visibility impairment in each Class I area. Georgia EPD evaluated PSAT source apportionment results for ten individual VISTAS states and groups of states in neighboring Regional Planning Organizations (MANE-VU, LADCO, and CENRAP). In addition, PSAT source apportionment results were evaluated for 87 individual facilities (located in both VISTAS and non-VISTAS states) to determine their contribution to visibility impairment in all Class I areas in the Eastern U.S. Based on Georgia EPD's analysis of the largest contributors to visibility impairment, 17 facilities were identified to evaluate additional controls for reasonable progress for Georgia's Class I areas. Table 7-29 contains the Georgia facilities selected for a four-factor analysis, Table 7-30 contains the VISTAS facilities (not including Georgia) selected for a four-factor analysis, and Table 7-31 contains the non-VISTAS facilities selected for a four-factor analysis. Georgia EPD feels that the number of total sources (17) and Georgia sources (3) that were selected is reasonable since they will address a significant portion of Georgia's contribution to visibility impairment in Class I areas and includes Georgia's largest visibility impairing sources.

5.31 Reference Tennessee SIP Appendix G-2f Comment:
Page 43 - Although the Proposed SIP references "Tennessee['s] conclusions in Appendix G-2f", where "TDEC-APC… concluded that reasonable progress for Eastman Chemical Company the permanent shutdown of B-83 Boilers 18, 19, and 20 and the installation of permanent dry sorbent injection (without upgrading the existing ESPs) on Boilers 23 and 24," this attachment was not provided to the public.

Response:
The information the commenter referenced can be found in Appendix G-2f of Tennessee's Regional Haze SIP (submitted to EPA on February 23, 2022).

5.32 SIP Fails to Ensure LTS and Control Measures are Enforceable Comment:
Page 53 - Setting aside that fundamental defect, the Proposed SIP also fails to ensure that its so-called long-term strategy emission limitations and control measures are legally and practically enforceable, as required of any SIP under the CAA. Moreover, EPD improperly attempts to take credit for the following emission reductions without specifically quantifying those reductions or including any mechanism to ensure that they are enforceable in practice.

1. Power plant retirements or emission reductions must be clearly documented and federally enforceable. It is unclear what emission reductions, if any, EPD accounts for in the Proposed SIP from EGU retirements or fuel switches. Any such operational changes the state relies on to ensure reasonable progress, must be clearly documented and made permanent and enforceable.

2. EPD cannot rely on consent decree requirements for emission controls and monitoring without including those terms in the SIP. Additionally, as discussed elsewhere in these comments, where coal-fired units are re-powered with natural gas, Georgia must include those planned operational changes as binding provisions of the SIP.
3. Documentation to support alleged reductions from EPA programs must be included. Enforceable requirements from an existing EPA program must be fully documented, with specifics including projected emissions to be reduced through implementation of each program through 2028 as relevant to Georgia's sources and sectors.
4. Future emission reductions must be known. EPD suggests that "further reductions may be necessary at certain point sources" to comply with the 2010 SO2 NAAQS. EPD cannot rely on such speculative, unquantified, and unenforceable emission reductions to demonstrate reasonable progress.
5. Documentation to support alleged reductions from state programs must be contained, including documentation the program is in the SIP. Georgia Rule 391-3-1-.02(2)(sss) "Multi- Pollutant Control for Electric Utility Generating Units" and North Carolina Clean Smokestacks Act.
6. SIP does not include provisions to address anticipated emission increases. The Proposed SIP fails to quantify airport emissions, its impacts or include provisions monitoring or limiting those emissions.

Response:
If an emissions source is not necessary for reasonable progress, the LTS is not required to include emission limits for that source in the SIP. Georgia EPD is incorporating all permit conditions that are necessary for reasonable progress into the SIP. Georgia EPD is not accounting for any EGU retirements or consent decree requirements for reasonable progress. Documentation of emission reductions from EPA programs is included in EPA's TSD entitled, "Documentation for the EPA's Preliminary 2028 Regional Haze Modeling," October 2017. For the 2010 SO_2 NAAQS, Georgia EPD has removed the phrase "and further reductions may be necessary at certain point sources" from the SIP. Emission reductions from State programs are not required to be in the SIP unless they are necessary for reasonable progress. The Georgia SIP quantifies 2011 and 2028 airport emissions, but additional controls at airports are not necessary for reasonable progress.

5.33 Title V Permit Terms and Conditions Comment:
Page 63 - There is no assurance that Title V permit terms and conditions will be permanent since they may lapse. It is not enough that the Title V permits are reviewable by U.S. EPA, Title V permits are not part of the SIP and approved through EPA's SIP process. Finally, Title V sources must not hold such permits if they contain permit terms and conditions that conflict with the SIP and CAA requirements.

Response:
Georgia EPD is incorporating all permit conditions that are necessary for reasonable progress into the SIP. Georgia EPD does not issue permits that contain conditions that conflict with the SIP or CAA requirements.

6.0 Georgia Power Company

Georgia EPD received the following comments from Georgia Power Company regarding Georgia's prehearing draft Regional Haze SIP.

6.1 IRP Update Comment:

Georgia EPD received a comment from Georgia Power. Commenter states as indicated in Georgia EPD's proposed Regional Haze SIP, Georgia Power is in the middle of the triennial integrated resource planning (IRP) process required by the Georgia Public Service Commission. As part of this process, the Commission was considering the remaining useful life of the coal-fired power plants currently in operation. In its IRP, Georgia Power requested approval of the planned retirement of Plant Bowen Units 1 and 2, Plant Scherer Unit 3, and Plant Wansley Units 1 and 2. The Georgia Public Service Commission voted on the 2022 Integrated Resource Plan on July 21, 2022, approving the retirement of Plant Wansley Units 1 and 2 by August 31, 2022, and Plant Scherer Unit 3 by December 31, 2028, and deferring the approval of the proposed 2027 retirement of Plant Bowen Units 1 and 2 to be re-assessed in the 2025 IRP process. The Commission order will be issued in the coming weeks. Since the Plant Bowen Four-Factor Analysis (FFA) did not account for a specific retirement date and conservatively evaluated a 30-year remaining useful life, the Commission's deferral does not impact the outcome of the Regional Haze analysis completed by Georgia Power for Plant Bowen Units 1-4.

Response:

Comment is noted and will not impact the contents of Georgia's Regional Haze SIP.

6.2 Error in Cost Table Comment:

Georgia EPD received a comment from Georgia Power. Commenter states Georgia Power has also identified a typographical error in the Plant Bowen FFA updated in October 2021 in response to comments to Georgia EPD. While the analysis and the calculated cost effectiveness of $6,424 was updated throughout the FFA, the assumed annual cost for switching to PRB coal of $48,059,482 was updated in the supporting calculations table in Technical Appendix Table A1.1 but not in Table 5. No calculations were affected by this typographical error, and Georgia EPD correctly included the total annual costs of $48,059,482 in the Georgia Regional Haze SIP draft Section 7.8.2, Table 7-36. Thus, this correction only impacts the "Georgia Power - Plant Bowen Four Factor Analysis" attachment in Appendix G-1b. Georgia Power will submit updated public and trade secret versions of the Plant Bowen FFA this week.

Response:

The updated Four Factor Analysis is located in Appendix G-1b. No calculations were affected by this typographical error; therefore, this will not impact the contents of Georgia's Regional Haze SIP.