



Division of Air Pollution Control

Ohio's Regional Haze State Implementation Plan Recommendation

Agency Contact for this Package

Jennifer Hunter, Division of Air Pollution Control, (614) 644-3696,
jennifer.hunter@epa.state.oh.us

Ohio EPA held a public hearing in Columbus, OH on February 26, 2009, regarding the Regional Haze State Implementation Plan recommendations for the State of Ohio. This document summarizes the comments and questions received at the public hearing and during the associated comment period, which ended on February 26, 2009.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

General/Overall Concerns

Comment 1: We are interested in the Ohio Regional Haze SIP because Ohio sources have been shown to affect visibility in Forest Service Class I areas in the states of Vermont, New Hampshire, Missouri, Arkansas, West Virginia, and Virginia (see Table 14, Regional Air Quality Analyses for Ozone, PM2.5, and Regional Haze: Final Technical Support Document dated April 25, 2008, done by Lake Michigan Air Directors Consortium (LADCO) and included in your SIP. (USDA Forest Service)

Response 1: No response necessary.

Comment 2: Emission Inventories (Ohio SIP for Regional Haze p. 5-15)
The US Forest Service would like Ohio to commit to annually tracking emissions and reporting how the projected emissions compare to actual emissions in 2012 and 2018. (USDA Forest Service)

Response 2: Ohio EPA updated Section 12 of the SIP to include Ohio's commitment to periodically update its inventory. However, USEPA's Regional Haze Rule (RHR) does not require annual tracking and reporting of emissions as part of this SIP. Rather, the RHR requires a "commitment to update the inventory periodically" and an analysis of emission changes during the periodic reports process. Although Ohio EPA frequently reviews emissions reported to Ohio EPA on an annual basis, Ohio EPA believes it is reasonable to commit to 3-year updates as part of USEPA's Consolidated Emissions Reporting Rule (CERR) requirements and during the periodic reporting process.

Comment 3: Emission Inventories (Ohio SIP for Regional Haze p. 5-15)

The emission reductions in 2018 for Ohio appear to be rather impressive. Please clarify the reductions based on known projects (e.g. Clean Air Interstate Rule (CAIR), source retirements) versus those projected by the Integrated Planning Model. (USDA Forest Service)

The projected emissions reductions are based on "on-the-books" controls which should be elaborated upon in the long-term strategy section of the regional haze SIP. Specific listing of the other rule and requirements within the regional haze portion of the SIP provides linking mechanism so that changes in other programs require a review of the regional haze portion of the SIP as well. The long-term strategy should also contain a requirement for tracking and reporting on the progress of these programs to ensure that they fulfill the expected result of satisfying Ohio's obligation to contribute to reasonable progress a Class I areas influenced by the emissions from the State. (National Park Service and U.S. Fish and Wildlife Service)

Response 3: Emissions from electric generating units (EGUs) are based on the Integrated Planning Model as indicated on page 6 of the SIP. Page 59 of LADCO's Technical Support Document (TSD) identifies the known controls (on-the-books) included in the model for future projections:

A "base" control scenario was prepared for each future year based on the following "on the books" controls:

On-Highway Mobile Sources

- *Federal Motor Vehicle Emission Control Program, low-sulfur gasoline and ultra-low sulfur diesel fuel*
- *Inspection - maintenance programs, including IL's vehicle emissions tests (NE IL), IN's vehicle emissions*

testing program (NW IN), OH's E-check program (NE OH), and WI's vehicle inspection program (SE WI) – note: a special emissions modeling run was done for the Cincinnati/Dayton area to reflect the removal of the state's E-check program and inclusion of low RVP gasoline

- *Reformulated gasoline, including in Chicago-Gary,-Lake County, IL,IN; and Milwaukee, Racine, WI*

Off-Highway Mobile Sources

- *Federal control programs incorporated into NONROAD model (e.g., nonroad diesel rule), plus the evaporative Large Spark Ignition and Recreational Vehicle standards*
- *Heavy-duty diesel (2007) engine standard/Low sulfur fuel*
- *Federal railroad/locomotive standards*
- *Federal commercial marine vessel engine standards*

Area Sources (Base M only)

- *Consumer solvents*
- *AIM coatings*
- *Aerosol coatings*
- *Portable fuel containers*

Power Plants

- *Title IV (Phases I and II)*
- *NOx SIP Call*
- *Clean Air Interstate Rule*

Other Point Sources

- *VOC 2-, 4-, 7-, and 10-year MACT standards*
- *Combustion turbine MACT*

Other controls included in the modeling include: consent decrees (refineries, ethanol plants, and ALCOA)¹, NOx RACT in Illinois and Ohio², and BART for a few non-EGU sources in Indiana and Wisconsin.

Ohio EPA will update and include this listing in the long-term strategy section. The “Plan Revisions and Progress Reports”

¹ E.H. Pechan's original control file included control factors for three sources in Wayne County, MI. These control factors were not applied in the regional-scale modeling to avoid double-counting with the State's local-scale analysis for PM2.5.

² NOx RACT in Wisconsin is included in the 2005 basecase (and EGU “will do” scenario). NOx RACT in Indiana was not included in the modeling inventory.

section of the Regional Haze SIP contains a commitment to evaluate progress and will be updated with additional clarification based on comments consistent with the Regional Haze program requirements.

Comment 4: Emission Inventories (Ohio SIP for Regional Haze p. 5-15)

Please clarify whether the emissions inventory data in section 6 is the same as that used in section 7 for the modeling assessment. If not, please explain any differences between the data in Section 6 and the information provided in the LADCO summary reports referenced in Section 7. It is also important to understand any differences for future comparisons with actual emissions in 2012 and 2018 as discussed above. (USDA Forest Service)

The December 2008 SIP greatly expanded the discussion of emissions inventories and projections from the October 2008 draft. The State should clarify if these are the emissions reductions used by MWRPO in the assessment of visibility change referenced in Chapter 7 and explain any differences. (National Park Service and U.S. Fish and Wildlife Service)

Response 4:

Section 6's emissions inventories provide references to the data sources. The 2002 base year inventory data is intended to be actual emissions data (from point and area sources) and was obtained for USEPA's national emissions inventory (NEI). The 2005 emissions inventory is also based on actual emissions data (from point and area sources) as supplied to LADCO by Ohio EPA for the purpose of future year modeling. However, as indicated in the SIP, for 2005, on-road data (or mobile source emissions) was obtained again from USEPA's NEI. Future year projections for 2018 are derived by applying growth and control factors to the 2005 base year inventory as part of LADCO's modeling. LADCO's TSD and Base M Modeling Strategy report provide additional details on inventories and modeling protocols (links to both documents are included in the SIP). For the purpose of the modeling discussed in Section 7, LADCO used the 2005 inventory (Base M) for modeling that produced the results for the inventories in this SIP. The SIP document discusses both the 2002 (Base K) and 2005 (Base M) inventories although only the 2005 inventory was used for the future 2018 projections. Ohio EPA is clarifying this in Section 7.

Section 6.1, detailed nonpoint source emissions, was compiled from the 2002 NEI. As indicated in the text of Ohio EPA's SIP, fugitive dust and road dust nonpoint sources are included in the discussion under Section 6.1 but are not included in the 2002, 2005

and 2018 inventories. The purpose of which is to allow for consideration of fugitive particulate emissions in Ohio. These fugitive emissions should not be directly compared to the emissions projected in the LADCO modeling.

Comment 5: We appreciate the statement on page 34 that ODAPC will enforce all emissions limitations and control measures used to meet reasonable progress goals through this SIP action. We interpret this to mean that the overall emissions targets, noted on Pages 5 through 7, and the rules and measures establish to meet them, are enforceable as requirements for regional haze as well. (National Park Service and U.S. Fish and Wildlife Service)

Response 5: The Regional Haze program requires that emissions strategies themselves, used for visibility improvement in the Regional Haze SIP, must be implemented through an enforceable mechanism (e.g., rulemaking incorporated into the SIP such as Ohio's CAIR program, permits issued as draft and then final actions for BART sources, etc.). To further clarify, the RHR states:

“Some commenters expressed concern that the State would be subject to sanctions or enforcement actions in the event that a State fails to meet a reasonable progress target. As noted above, the reasonable progress goal is a *goal* and not a mandatory standard which must be achieved by a particular date as is the case with the NAAQS. Once a State has adopted a reasonable progress goal and determined what progress will be made toward that goal over a 10-year period, the goal itself is not enforceable. All that is “enforceable” is the set of control measures which the State has adopted to meet that goal.”

Comment 6: Area of Influence (Ohio SIP for Regional Haze p. 22-26)

We are pleased that Ohio adopted the work of the Midwest Regional Planning organization (MRPO) and listed the potentially impacted Class I areas in the SIP.
(USDA Forest Service)

We appreciate the statement in the SIP that ODAPC accepts the Midwest Regional Planning Organizations (MWRPO) assessments of baseline and the use of U.S. EPA defaults for natural conditions (page 4). We had raised the lack of this

acknowledgment as a major concern in earlier comments. (National Park Service and U.S. Fish and Wildlife Service)

Response 6: Thank you.

Comment 7: The December 2008 SIP does identify which Class I areas are affected by emissions from Ohio by summarizing contribution assessment work of the MWRPO, the Visibility Improvement State and Tribal Association of the Southeast (VISTAS), Mid Atlantic and North East Visibility Union (MANE-VU) regional planning organizations. The Ohio SIP must address all emissions which are “reasonable anticipated to cause or contribute to” visibility impairment in any Class I areas. We request a summary statement be added to this section that acknowledges Ohio’s responsibility for assisting in continued reasonable progress in the identified Class I areas. The area of influence information should also be used in the long-term strategy decision on what control strategies are appropriate for “reasonable progress” as noted below. (National Park Service and U.S. Fish and Wildlife Service)

Response 7: Based on comments received Ohio EPA will be expanding the Area of Influence, Long-Term Strategy and Reasonable Progress, and Anticipated Net Effect on Visibility Resulting from Projected Changes to Emissions Sections of the SIP document. We anticipate the changes will address the comment above.

Comment 8: Area of Influence (Ohio SIP for Regional Haze p. 22-26)

The New Hampshire SIP for Regional Haze lists Ohio as impacting both of their Class I areas: Great Gulf Wilderness and Presidential Range-Dry River Wilderness. Ohio indicates they impact Great Gulf but not the adjacent Presidential Range-Dry River, Forest Service Class I areas. As the Mid-Atlantic/Northeast Visibility Union (MANE-VU) analysis lumps the two Class I areas and New Hampshire lists Ohio as impacting both areas please include Presidential Range-Dry River as a “Yes” in the table on page 23. (USDA Forest Service)

Response 8: Based on a review of the MANE-VU contribution assessment report, it appears that the analyses looked at Great Gulf and given its proximity to Presidential Range-Dry River, an assumption was made if a state impacted Great Gulf, then it also impacted Presidential Range-Dry River. This is further supported in the New Hampshire SIP which states Great Gulf and Presidential Range -

Dry River share a single monitoring site. Each of the other MANE-VU Class I areas has its own monitoring site. Ohio EPA believes this is a reasonable assumption and will incorporate the requested change.

Comment 9: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

On page 35, Ohio indicates it does not significantly contribute to visibility problems in the upper Great Lakes, New Jersey, Maine or Missouri, which are areas where MRPO's analyses show that the uniform rate-of-progress "glide path" will not be achieved. However, page 36 displays predicted contributions above 2 percent (both in 2005 and 2018), which is the contribution threshold defined by MRPO. Further, the table on page 23 displays these same Class I areas as being impacted by emissions from Ohio. Please explain this discrepancy and further explain Ohio's rationale for considering these contributions to be insignificant. (USDA Forest Service)

Based on Ohio EPA's data and analysis presented in the SIP, the Forest Service concludes that Ohio emission sources have a significant effect on visibility within FS Class I areas in Missouri. These effects occur even when Ohio's contribution to Regional Haze is reduced in the future, as is projected to occur by 2018 (the table on page 36 shows the impacts are still projected to be greater than the 2 percent contribution threshold). Please provide additional justification for Ohio's decision that the existing "on-the-books" controls for Ohio sources represents its "fair share" of emissions reductions to meet the reasonable progress goals established by Missouri for its Class I areas. This discussion should specifically explain how the decision is supported by the Clean Air Act Reasonable Progress factor-analysis. Please also provide specific information regarding consultation with Missouri on impacts from Ohio's emission sources. (USDA Forest Service)

Response 9: Ohio EPA will be rephrasing the language in this section. To clarify, in most cases Ohio EPA believes the contribution from Ohio is small relative to other states. Ohio EPA also believes the significant reductions that are expected by 2018 from Ohio's predominant sources (e.g., EGUs) will provide satisfactory progress. Furthermore, over the next few years Ohio will be preparing for and implementing additional strategies to reduce both ozone levels and PM2.5 (and precursor) levels as a part of implementation of the new ozone and PM2.5 standards. It is our

intent to revisit and reevaluate our Regional Haze commitment during our next review period which will follow implementation of these new standards. In the meantime, Ohio believes we will continue to see the progress that will be needed under the Regional Haze program.

With respect to the MRPO contribution threshold of 2 percent; this level was not chosen as a level to determine significance of a contribution. Rather, the purpose of the 2 percent level was as a minimum threshold for including a state as a contributing state.

With respect to Missouri, Ohio EPA participated in multi-state consultation process regarding its Class I areas specifically in April and May of 2007 (see Appendix N of Missouri's Regional Haze SIP). With respect to Ohio's impact on Class I areas in Missouri, Ohio's SIP shows Ohio's contributions as follows:

Mingo: 9% in 2005 and is reduced to 6% by 2018.

Hercules-Glades: 7% in 2005 and is reduced to 4% by 2018.

As stated above, the MRPO contribution threshold of 2 percent is a minimum threshold for contributing and is not intended to indicate the significance of the contribution. Ohio maintains that existing "on-the-books" controls are representative of Ohio's "fair share" of reductions necessary for Missouri to meet its reasonable progress goals. This is further support by Missouri's SIP.

Missouri states in their Regional Haze SIP:

"Nine states, including Missouri, Arkansas, Kentucky, Illinois, Indiana, Ohio, Oklahoma, Tennessee and Texas, were identified as contributing to visibility in Mingo and/or Hercules Glades Class I areas. The modeling demonstration has shown that the emission reductions from these contributing states are sufficient to achieve RPGs in Missouri's Class I areas."

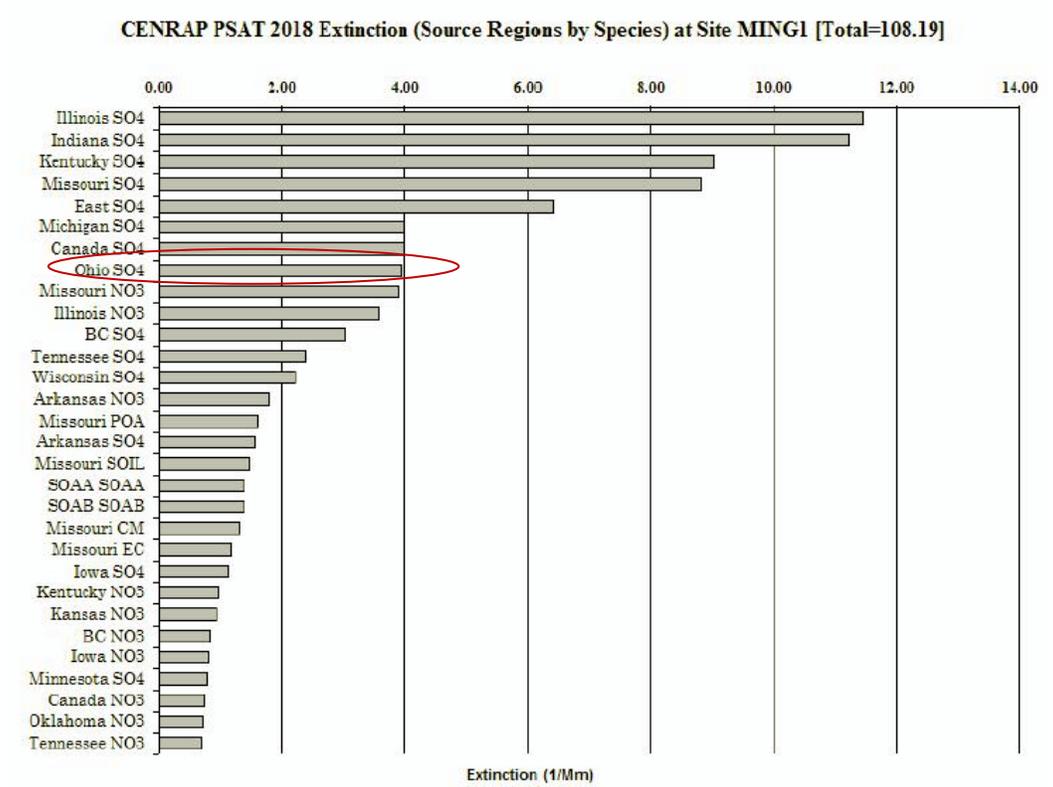
And

"Ongoing air pollution control programs ... are sufficient to meet the 2018 Uniform Rate of Progress for the Mingo and Hercules Glades Class I areas. These ongoing programs such as CAIR, BACT, or BART have been demonstrated to be very cost effective in reducing the visibility in Missouri's Class I areas."

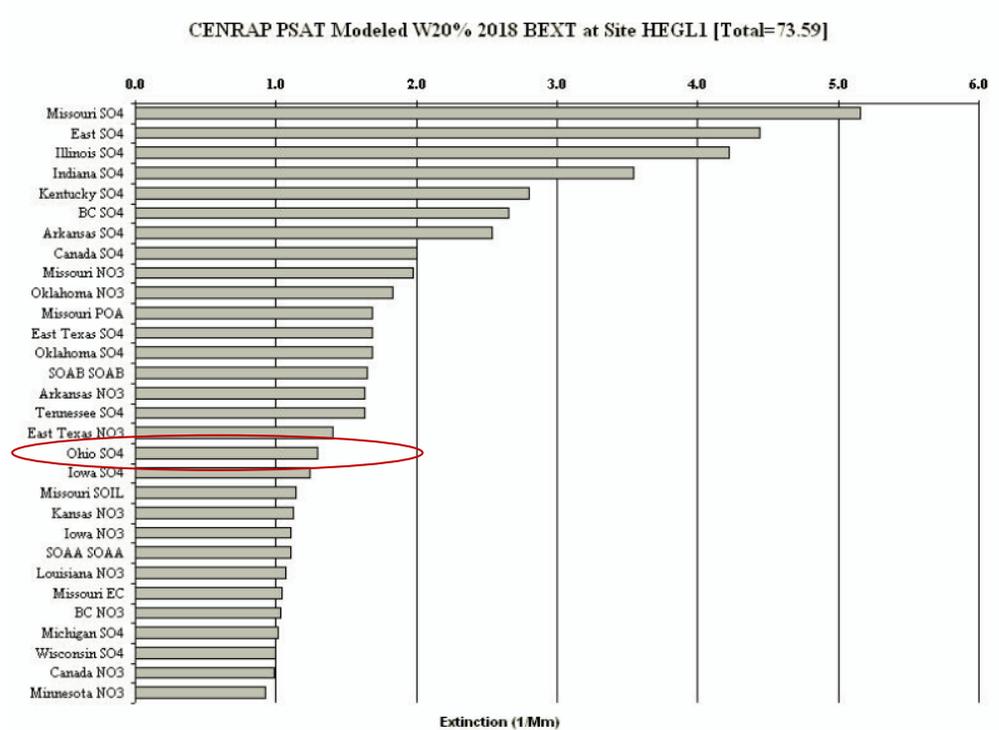
Appendix E of Missouri's SIP identifies Ohio contributing to Mingo and Hercules Glades with respect to sulfate but not nitrate.

Source Apportionment for the Mingo Class I Area

PSAT Model Source Apportionment



Attachment C – Source Apportionment Analysis
Source Apportionment for the Hercules Glades Class I Area
PSAT Model Source Apportionment



Missouri is the largest contributor as demonstrated above and Missouri states in its SIP that existing programs are sufficient for its state and the other contributing states. As further support, the largest contributions from Ohio for SO2 are identified in its SIP as: Conesville, Cinergy Beckjord and Killen. Two of these three facilities have already installed SO2 controls.

The RHR requires States with Class I areas to identify and analyze the “emissions measures that would be needed to achieve this amount of progress during the period covered by the first long-term strategy, and to determine whether those measures are reasonable based on the statutory factors. These factors are the costs of compliance with the measures, the time necessary for compliance with the measures, the energy and nonair quality environmental impacts of the compliance with the measures, and the remaining useful life of any existing source subject to the measures.”

The RHR requires states with emissions that may affect Class I areas in another state to develop a “long-term strategy” with measures “necessary to achieve the reasonable progress goals established by states having mandatory Class I Federal areas.” In

establishing this strategy, the states are required to included all “measures needed to achieve its apportionment of emission reduction obligations agreed upon” during the collaborative process. In developing the long-term strategy the states must consider “emission reductions due to ongoing air pollution control programs,” “measures to mitigate impacts of construction activities,” “emissions limitations and schedules for compliance to achieve the reasonable progress goal,” “source retirement and replacement schedules,” “smoke management techniques,” “enforceability of emissions limitations and control measures,” and “the anticipated net effect on visibility due to projected changes in...emissions over the period addressed by the long-term strategy.”

USEPA guidance also states:

“In determining reasonable progress, CAA §169A(g)(1) requires States to take into consideration a number of factors. However, you have flexibility in how to take into consideration these statutory factors and any other factors that you have determined to be relevant. For example, the factors could be used to select which sources or activities should or should not be regulated, or they could be used to determine the level or stringency of control, if any, for selected sources or activities, or some combination of both. The factors may be considered both individually and/or in combination. As noted in section 4.1, given the significant emissions reductions that we anticipate to result from BART, the CAIR, and the implementation of other CAA programs, these reductions may be all that is necessary to achieve reasonable progress in the first planning period for some States.”

Missouri’s SIP, as stated above, determined the “*emission reductions from these contributing states are sufficient to achieve RPGs in Missouri’s Class I areas*” based upon the RHR and USEPA guidance. In summary, Ohio believes the decision is supported by the Clean Air Act requirements including the reasonable progress factor-analysis approach.

Comment 10: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

We have concerns about the factor-analysis done by Ohio EPA (pages 29-31 and summarized on page 27). The discussion refers to an analysis done by MRPO (contained in Appendix F) which is based on an evaluation of four specific Class I areas

in the upper mid-west (Voyageurs, Boundary Waters, Isle Royale, and Seney). This factor-analysis may not be applicable to the other Class I areas impacted by emissions from Ohio sources, including the Missouri Class I areas discussed above. Further, the conclusions and statements within the text are not validated by the analysis. The analysis and past EPA cost figures actually appear to show that beyond “on-the-books” controls are justified and cost-effective. There are several assertions on page 27 highlighting why beyond “on-the-books” controls are not justified.

- “controlling beyond CAIR at this time cannot be justified because Ohio utilities are still in the process of installing controls for CAIR”,
- “[Industrial, Commercial and Institutional] ICI boiler controls are estimated to be a little more expensive than [electrical generating unit] EGU controls and have much less impact on visibility improvements than EGUs”, and
- “With the current bleak economic condition in Ohio, pursuing controls on these other sectors for haze reduction cannot be justified.”

These reasons are not relevant issues within a 5-factor analysis as prescribed by EPA and are not supported by the analysis. Please address beyond “on-the-books” within the 5-factors and provide the information supporting the analysis. Our understanding is that the costs presented within the “factor analysis” for beyond-on the-books-controls for EGUs are in the same range as those for other EPA regulations. (USDA Forest Service)

We recognize that most difficult process within the regional haze SIP development is addressing reasonable progress for all Class I areas affected by emissions from a State. On pages 28 through 37, the SIP reviews ongoing programs and assesses current and future contribution to visibility impairment as the basis for relying on on-the-books controls for this first regional haze plan. Much of the cost information noted in the SIP comes from the MWRPO reasonable progress analysis. That information was develop based on regional control options and focused on the Class I areas in the upper mid-west. The study may not reflect costs regarding additional controls for specific Class I areas outside of the

MWRPO. (National Park Service and U.S. Fish and Wildlife Service)

Response 10: Ohio EPA believes the factor analysis performed by EC/R regarding the MRPO Class I areas can, in many cases, be applied to other Class I areas. However, Ohio EPA will be revising this section to further address the commenters concerns.

Ohio EPA does wish to clarify that the factor analysis is required for setting reasonable progress goals for states with Class I areas. Ohio does not have any Class I areas. It is the responsibility of states shown to impact a Class I area in another state to document the technical basis, including modeling, monitoring and emissions information that the state is relying on to determine its apportionment of emission reduction obligations.

USEPA has clarified that “some States may conclude that control strategies specifically for protection of visibility are not needed at this time because the analyses may show that existing measures are sufficient to meet reasonable progress goals” and that USEPA is “requiring States to document their analyses, including any consultations with other States in support of their conclusions that further controls are not needed at this time.” [64 FR 35714]

Although additional control measures may appear cost effective, when a State with a Class I area sets a reasonable progress goal all of the following four factors are weighed together:

- Cost of compliance;
- Time necessary for compliance;
- Energy and nonair quality impacts;
- Remaining useful life of existing sources

USEPA does not set any “presumptive targets” and gives states the “flexibility in determining their reasonable progress goals based on consideration of all the factors.” As part of this reasonable progress analyses states must “identify and analyze the emissions measures that would be needed to achieve this amount of progress during the first long-term strategy, and to determine whether those measures are reasonable based on the statutory factors” and then consults with other states that area anticipated to contribute. If it is determined reasonable, the State should identify this amount of progress “as its reasonable progress goal for the first long-term strategy [2018], unless it determines that additional progress beyond this amount is also reasonable.” If that is the case, the

“state should adopt that amount of progress as its goal.” If a contributing State cannot agree with the State establishing the reasonable progress goal, “the State setting the goal must describe the actions taken to resolve the disagreement.” [64 FR 35714]

States without Class I areas do not set reasonable progress goals but rather participate, through consultation, with the State containing a Class I area(s) for which it potentially impacts. However, States without Class I areas and States with Class I areas do need to provide a long-term strategy covering the first long-term period. As part of the long-term strategy seven factors are considered, including:

- The anticipated net effect on visibility due to projected changes in emissions over the long-term period.

However, USEPA decided not to include the four factors identified above as a requirement for the long-term strategy because they are included as part of the reasonable progress factors.

As part of the long-term strategy, States like Ohio need to include “all measures necessary to obtain its share of the emissions needed to meet the progress goal” for the area.

Ohio continues to believe on-the-books controls in Ohio will provide for reasonable progress in the Class I areas for which Ohio significantly impacts. Additional information will be included in Ohio’s SIP to support this conclusion.

Comment 11: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

Please clarify Ohio’s response to MANE-VU’s “ASK” from 2007. Vermont and New Hampshire use emissions reductions from the ASK to show reasonable progress for the Class I areas in their states (Lye Brook, Great Gulf, Presidential Range-Dry River wilderness areas managed by FS). (USDA Forest Service)

Regional Consistency (Ohio SIP for Regional Haze p. 2-3)

There is an inconsistency in Regional Haze SIPs among states, for instance between Vermont and Ohio. Vermont assumes the MANE-VU ASK is being addressed by Ohio and VT includes the associated emission reductions while Ohio has not committed to these emission reductions. This could lead

to Class I areas within MANE-VU states not meeting reasonable progress goals set by those states. Consultation between Ohio and other states within MANE-VU that have asked for emissions reductions beyond “on-the-books” controls has not been resolved. (USDA Forest Service)

The SIP mentions the MANE-VU request for cooperation in assisting their states to meet what they consider to be reasonable progress regarding reductions in sulfur dioxide emissions. The MANE-VU request is directed at specific stacks located at coal-fired, electric generating facilities, and includes a general reduction target for SO₂ emissions from all point sources. The MANE-VU request acknowledges that their request could be met using a combination of electric utility reductions and other reductions. ODAPC should list reductions expected at the facilities identified by MANE-VU and calculate whether additional controls at other facilities meet the additional sulfur reduction targets noted in the MANE-VU request. (National Park Service and U.S. Fish and Wildlife Service)

Response 11: MWRPO’s analysis shows a less than 2% contribution from Ohio on New Hampshire’s Class I areas. The modeling shows that 62% of Vermont’s visibility impact comes from MANE-VU states in 2018 with an additional 8% from Pennsylvania. Ohio’s 2018 contribution comprises 3%. Ohio does not believe this is a significant contribution.

As described in Ohio’s SIP, Ohio received a letter from MANE-VU on July 30, 2007 requesting a course of action for reasonable progress at their Class I areas. Ohio participated, along with other MRPO states, in consultations and discussions with MANE-VU and was provided a consultation summary by MANE-VU on August 6, 2007. Ohio EPA provided a response on October 3, 2007. In this response, Ohio requested additional information and work to be done before Ohio could properly respond to MANE-VU’s request. The MANE-VU ask consists of the following:

- Application of Best Available Retrofit Technology (BART)
- 90% (or greater) reduction in SO₂ emissions from each of the EGU stacks on MANE-VU’s list of 167 stacks (located in 19 states), which reflect those stacks determined to be reasonably anticipated to cause or contribute to visibility impairment in the MANE-VU Class I areas. *Note: the selection of the 167 stacks is based on 2002 emissions data.*

- 28% reduction in non-EGU (point, area, on-road, and off-road) SO₂ emissions relative to on-the-books, on-the-way 2018 projections
- Continued evaluation of other measures, including measures to reduce SO₂ and NO_x emissions from coal-burning facilities and promulgation of new source performance standards for wood combustion
- Further reduction in power plant SO₂ (and NO_x) emissions beyond the current Clean Air Interstate Rule program

Of the 167 stacks, 28 are from 14 sources in Ohio. Most of these stacks have post-combustion emission controls (i.e., scrubbers) installed since 2002.

More recent modeling has been done for MANE-VU (www.nescaum.org/topics/regional-haze/regional-haze-documents) for projecting visibility in 2018. As part of this modeling, they found “the uniform Rate is achieved and exceeded at all MANE-VU Class I sites.”

In MANE-VU’s May 13, 2008 2018 Visibility Projections document it further states:

MANE-VU received comments from several stakeholders and another RPO related to the fact that the modeling described in this report included control measures and emission reductions that went beyond currently existing regulations. Commenters suggested that since the CAIR program and other “on the books” or “on the way” measures are projected to achieve uniform rates of progress as previously modeled, additional reductions to both EGU and non-EGU sectors were unnecessary. As described below, there are two reasons why MANE-VU has chosen to include these measures in this modeling analysis.

First, while the results of the modeling described in this report suggest individual MANE-VU Class I areas will be able to meet or exceed uniform rates of progress by 2018, our current analysis also suggests that this would be difficult without including additional measures beyond implementation of CAIR. This result is due, in part, to our assumptions about the effectiveness of CAIR. We believe that it is appropriate for MANE-VU to take a conservative approach to estimating the potential for emissions reductions under the CAIR program. Therefore MANE-VU added EGU

emissions to estimate the impact of banking and trading under CAIR. Additional EGU reductions would be feasible with additional federal action to control EGU emissions (e.g., a third phase of CAIR), but MANE-VU does not believe that these reductions are likely to occur absent additional regulation.

MWRPO used USEPA’s approved IPM modeling and projections to project EGU emissions for 2018. Ohio EPA does not agree with MANE-VU’s “add back” due to the uncertainty of CAIR.

Further support is found in MANE-VU’s February 7, 2008 document entitled “[MANE-VU Modeling for Reasonable Progress Goals.](#)”

The following projections were made for 2018:

Table 5-2. Projected 2018 twenty percent worst day deciview goals for MANE-VU Class I areas under various control assumptions

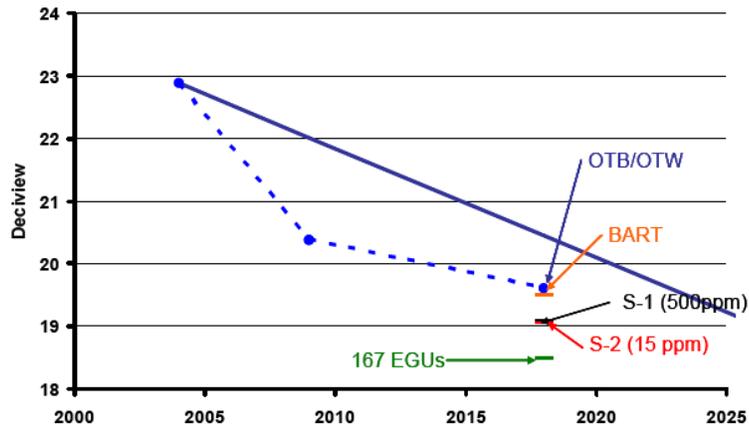
MANE-VU Class I Area	Baseline [2000-2004]	OTB/OTW [2018]	+BART	+S-1	+S-2	+167 EGUs
Acadia National Park, ME	22.89	19.62	19.51	19.10	19.05	18.50
Brigantine Wilderness, NJ	29.01	24.26	24.19	24.00	23.98	23.47
Great Gulf Wilderness, NH	22.82	18.81	18.74	18.62	18.61	18.43
Lye Brook Wilderness, VT	24.45	20.40	20.29	20.13	20.12	19.90
Moosehorn Wilderness, ME	21.72	18.59	18.50	18.20	18.16	17.80
Presidential Range – Dry River Wilderness, NH	22.82	18.98	18.90	18.78	18.77	18.59
Roosevelt-Campobello International Park, NB	21.72	18.58	18.49	18.19	18.15	17.79

Notes on Table 5-2:

1. Baseline values represent the 5-year average baseline conditions (dv) on the 20 percent worst days.
2. OTB/OTW represents the projected deciview goal due to all OTB/OTW measures.
3. Pluses indicate that the deciview goals assume implementation of all measures to the left of and including the column indicated.
4. BART reflects preliminary estimates of emissions reductions due to BART determinations. These determinations are still in the process of being conducted and thus are subject to change.
5. S-1 oil strategy assumes the adoption of 500 ppm distillate, 0.25 percent S for all No. 4 oil and 0.5 percent S for all No. 6 residual oil.
6. S-2 oil strategy assumes the adoption of 15 ppm distillate, 0.25 percent S for all No. 4 oil and 0.5 percent S for all No. 6 residual oil.
7. 167 EGU strategy benefits are based on net reductions after each of the 167 stacks is controlled to at least the 90 percent level and after the identified emissions reductions (beyond 2018 projections contained in the Base B emissions files) are redistributed among all other CAIR-eligible EGUs in the modeling domain.

As seen above, for Arcadia (the Class I area for which Ohio has the highest contribution in 2018 (4%)), a 4.39 deciview, or 19%, reduction is predicted based on on-the-book controls and restrictions on fuel sulfur content in the MANE-VU region. Adding additional controls incorporated into MANE-VU's Ask results in an additional 0.55 deciview, or 2%, change. Important to note; in all cases, including on-the-books control, the uniform rate of improvement is met at Arcadia as depicted graphically below in MANE-VU's document:

Figure 5-6. Visibility improvement relative to uniform rate of progress at Acadia National Park



The same results are seen in this document for all MANE-VU Class I areas.

Ohio EPA committed to continuing work with MANE-VU states but continues to believe that on-the-books controls, for this first planning period, represents reasonable progress. This is further supported by the additional information provided above.

As stated before, if a contributing State cannot agree with the State establishing the reasonable progress goal, “the State setting the goal must describe the actions taken to resolve the disagreement.” [64 FR 35714]. It appears the approach that Vermont and New Hampshire have taken is to assume other states, like Ohio, will implement the requested controls in their “Ask” without providing the additional information requested by Ohio and others and continuing the consultation process.

To assist in addressing comments regarding MANE-VU's “Ask”, Ohio EPA will be adding additional discussions in the SIP.

Comment 12: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

We request that Ohio provide language in their SIP linking the Regional Haze and New Source Review programs and continued FLM coordination between these programs. Currently there is no mechanism in the SIP to ensure that the emissions from new stationary sources or major modifications of existing sources will make reasonable progress toward the national visibility goal (40 CFR 51.307). This could be especially important for emissions from new sources that were not anticipated in 2018 emission inventories. (USDA Forest Service)

Coordination and Consultation (Ohio SIP for Regional Haze p. 3-4, 36)

As part of the SIP and the strategy to implement the SIP, we request that Ohio express its intent to improve consultation and coordination with all impacted FLMs, including the Forest Service. For example, the Forest Service did not receive your original draft plan dated September 9, 2008, until September 12 through a NPS colleague. We were made aware that the plan was being withdrawn prior to being able to provide comments on the plan. While we work closely with our counterparts in the Department of the Interior our comments were not addressed in this draft as stated on page 3-4 of Ohio's SIP. We also did not receive the current SIP until forwarded by the same NPS colleague. We are disappointed by this lack of coordination and consultation and are committed to improving this situation. (USDA Forest Service)

Coordination and Consultation (Ohio SIP for Regional Haze p. 3-4, 36)

Given the withdraw of the previous (September 2008) draft and significant changes made to the current draft of the SIP the FLM has not had 60 days to comment prior to the hearing to be held on February 26, 2009. Additionally, we request that Ohio provides FLM comments and Ohio's response to these comments to the public at or before the public meeting. (USDA Forest Service)

We provided the State informal comments on the draft regional haze SIP via email on October 15, 2008. Some of our concerns have been addressed by the SIP submitted to EPA in late

December. However, the SIP as submitted does not address all of the issues we raised in our informal comments. (National Park Service and U.S. Fish and Wildlife Service)

The EPA has addressed FLM consultation in its September 2006 Question and Answer (Q and A) document as follows:

Q - What are EPA's expectations and the basis for consultation requirements regarding formal consultative procedures? What constitutes effective FLM communication? Can it be assumed that if the FLM attends the RPO meetings and calls and doesn't raise any concerns it has no problems with a State's SIP?

A - "40 CFR 51.308(i) requires that States consult with FLMs before adopting and submitting their RH SIPs. These requirements are summarized as follows:

States must provide the FLM an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP. The State must also provide the opportunity for the FLMs to discuss their: (i) assessment of impairment of visibility in any Class I area; and, (ii) recommendations on the development of the RPG and on the development and implementation of strategies to address visibility impairment. Further, the State must include in the SIP a description of how it addressed any comments provided by the FLMs. Lastly, the SIP must provide procedures for continuing consultation between the State and FLMs on the implementation of 51.308, including development and review of SIP revisions and 5-year progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.

This is a formal consultative process. The basis for requiring written consultation procedures is 40 CFR 51.308(i)(4). To satisfy this requirement, States should contact the FLMs to ensure their input to the RH SIP process is solicited and documented. While effective FLM consultation relies on both parties (States and FLMs) communicating early and often, the State is only required to meet the provisions of 40 CFR 51.308(i) and is not responsible if a FLM chooses not to participate in the either the RPO activities or the SIP development and review process. In such cases, the State should document its outreach efforts to the FLM." (USDA Forest Service)

All State SIPs for regional haze protection must address the goal of protecting the 20 percent best visibility days at Class I areas potentially affected by emissions from within the State. We request Ohio to recognize, in the regional haze SIP, the requirements of full consultation with the federal land managers for review of visibility impacts required by New Source Review and Prevention of Significant Deterioration (NSR/PSD) programs. Given the long range effect major sources can have on visibility, the regional haze rules should establish a policy that ODAPC will consult with federal land managers, for all sources subject to NSR/PSD requirement, early in the permitting process.

We are also concerned that Ohio EPA's current approved SIP is deficient with respect to visibility protection under New Source Review, because it lacks Federal Land Manager (FLM) notification and consultation procedures that are identified in federal EPA regulations (see 40 CFR 52.21(p) and 40 CFR 51.307) for new sources of air pollution that may impact mandatory federal Class I areas. Specifically, the procedures do not establish a process by which FLM notification should occur, including what information should be submitted for FLM review, when this information should be submitted, and when FLM concerns and agency responses should appear in a public notice. The FLMs are charged with an "affirmative responsibility" under the Clean Air Act (CAA) to protect the air quality related values (AQRVs), including visibility, in Class I areas that we manage. This responsibility places the utmost importance on the FLMs receiving necessary and timely information from the state air regulatory agencies, such as Ohio EPA, in order to make an informed determination.

Regardless of what OH DAPC has currently established in their SIP under OAC 3745-31 for New Source Review, the visibility SIP required by 40 CFR 51.307 must at a minimum incorporate the FLM consultation procedures found in the federal regulation for the purposes of visibility protection. Our position on this issue has been documented in detail in our comment letters on several recent PSD permitting actions in Ohio. Therefore, we ask that you consider these comments and take action to rectify the procedures established under the Ohio SIP so that it may enable, rather than impede, an appropriate role for the FLM as provided by the CAA. (National Park Service and U.S. Fish and Wildlife Service)

Response 12: Ohio EPA addressed the FLM coordination requirements in Section 3 of Ohio's SIP:

“Ohio will continue to coordinate and consult with the FLMs during the development of future progress reports and revisions of this plan, as well as during the implementation of programs having the potential to contribute to visibility impairment in the mandatory Class I areas. This includes coordination with the FLMs during new source review (NSR) of sources that may impact Class I areas.”

The new source review requirements for sources wishing to locate or expand in Ohio are contained in Chapter 3745-31 of Ohio's Administrative Code. Ohio has a SIP approved NSR program that meets the federal requirements for new source review. Ohio does not feel any additional clarification is necessary in the Regional Haze SIP regarding NSR. However, it is worth noting that Ohio EPA will be making amendments to Chapter 3745-31 regarding FLM coordination on NSR actions. Once the rulemaking is completed, Ohio EPA will be submitting its NSR regulations for a revision of its NSR SIP requirements. Ohio EPA urges the FLMs to participate in the public comment process related to the rulemaking action.

Ohio EPA apologizes for the confusion regarding our first 2008 draft. Ohio EPA's SIP Section has recently acquired several new staff and management. The Section's new manager has ensured that FLM coordination will occur smoothly on all Regional Haze related matters in the future. Significant effort was made to ensure a complete list of FLM staff whom should receive documentation has been identified.

Ohio EPA did provide an initial draft in September of 2008. Comments were given to Ohio EPA on October 15, 2008. On October 30, 2008 Ohio EPA indicated to FLM staff that we would not be submitting the SIP at this time in order to address comments. As a result of comments, Ohio EPA provided a second, much improved draft, on December 29, 2008. USEPA had informed Ohio that deficiency letters for failing to submit on time were impending for all states who had yet to submit their SIPs. This was discussed with FLM staff and Ohio requested any comments on the second draft quickly. However, FLM staff indicated they were currently reviewing a significant number of SIPs. Ohio committed that if the FLM staff could not review and comment on Ohio's second draft before it was necessary for Ohio to submit its SIP, Ohio would commit to reviewing and addressing

comments from the FLM staff during the forthcoming public comment period. Ohio then submitted its Regional Haze SIP on December 31, 2008. We understand FLM staff believe because there were such significant changes between the first and second draft that they were not afforded 60 days of comment.

Comment 13: **One other major concern is that the modeling that Ohio EPA is relying upon here doesn't include any proposed new sources in Ohio. One that's most obviously apparent, of course, is the AMP-Ohio generating station proposed for Meigs County. Those new sources will impact visibility - assuming they're built - they will impact visibility. They will impact other things in Class I areas -- Dolly Sods, Shenandoah, other various areas east of here. They need to be factored into the plan. I would also add that Ohio EPA, in general, should be addressing those Class I impacts when the permitting process for those new sources takes place. (Nachy Kanfer, representing Sierra Club)**

Response 13: The modeling conducted by LADCO and other states' RPOs does account for new sources. Projecting new source growth is a more challenging aspect for modeling future emissions, especially when considering the lengthy planning periods being forecasted by the models. Additional information regarding growth factors incorporated into Ohio's modeling for the various sectors, including EGUs can be found in EH Pechan's "Development of 2005 Base Year Growth and Control Factors for Lake Michigan Air Directors Consortium (LADCO)" final report at: http://www.ladco.org/reports/technical_support_document/references/ladco_2005_base_yr_growth_and_controls_report_final.pdf.

Ohio EPA, as part of new source review, does address impacts on Class I areas. Please refer to the following Ohio Administrative Code rule applicable to attainment areas:

3745-31-17 – "Attainment provisions - additional impact analysis" at <http://www.epa.ohio.gov/portals/27/regs/3745-31/3745-31-17f.pdf>.

This rule requires that any new source being proposed in an area designated as attainment must provide an analysis of all possible impairment to visibility.

Whereas for new sources in nonattainment areas; they must obtain offsets that provide for a positive net air quality benefit as required under the following rule:

3745-31-22 – “Nonattainment provisions - conditions for approval”
 at
<http://www.epa.ohio.gov/portals/27/regs/3745-31/3745-31-17f.pdf>.

It should also be noted that the specific facility in question raised by the commenter, AMP-Ohio generating station in Meigs County, will not be constructed in the future.

Comment 14: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

Page 27 states that ICI boiler controls are more expensive and less effective than controls on EGUs. However this conflicts with statements on page 30 “...ICI controls were slightly less expensive than control for EGUs on a \$/deciview basis...” Please clarify these statements and the metrics associated with them. (USDA Forest Service)

Response 14: As can be seen in the following table from the EC/R factor analysis document; the cost of control per ton of emissions is greater (more expensive) for ICI boilers compared to EGUs.

Table 6.1-1. Estimated Cost Effectiveness for Potential Control Measures in Terms of Emission Reductions

Emission category	Control strategy	Region	Average Cost effectiveness (\$/ton)		
			SO2	NOX	NH3
EGU	EGU1	3-State	1,540	2,037	
		9-State	1,743	1,782	
	EGU2	3-State	1,775	3,016	
		9-State	1,952	2,984	
ICI boilers	ICI1	3-State	2,992	2,537	
		9-State	2,275	1,899	
	ICI Workgroup	3-State	2,731	3,814	
		9-State	2,743	2,311	

However, control of EGUs has a higher positive impact on deciview estimations compared to control of ICI boilers as depicted in the following table:

Table 6.5-2. Estimated Visibility Impacts of Potential Control Strategies

Strategy and region		Estimated visibility improvement on the 20% worst-visibility days in 2018 (deciviews)						
		Boundary		Waters	Voya-geurs	Isle Royale	Seney	Average
EGU	EGU1	3-State	SO2	0.30	0.12	0.44	0.41	0.32
			NOX	0.07	0.05	0.06	0.04	0.06
		9-State	SO2	0.77	0.35	0.84	1.01	0.74
			NOX	0.18	0.24	0.15	0.12	0.17
	EGU2	3-State	SO2	0.46	0.21	0.52	0.46	0.41
			NOX	0.12	0.08	0.09	0.07	0.09
		9-State	SO2	0.87	0.40	0.96	1.18	0.85
			NOX	0.26	0.30	0.23	0.19	0.24
ICI boilers	ICI1	3-State	SO2	0.065	0.035	0.067	0.055	0.055
			NOX	0.074	0.048	0.026	0.023	0.043
		9-State	SO2	0.090	0.047	0.092	0.109	0.084
			NOX	0.098	0.070	0.048	0.058	0.068
	ICI Workgroup	3-State	SO2	0.105	0.055	0.107	0.088	0.089
			NOX	0.095	0.061	0.034	0.030	0.055
		9-State	SO2	0.145	0.075	0.148	0.176	0.136
			NOX	0.114	0.082	0.056	0.067	0.080

And by viewing the following table you can see that the cost per visibility improvement (\$million/deciview) is greater for EGU control compared to ICI boiler control.

Table 6.5-3. Summary of Visibility Impacts and Cost Effectiveness of Potential Control Measures

Emission category	Control strategy	Region	Pollutant	Average estimated visibility improvement for the four Midwest Class I areas (deciviews)	Cost effectiveness (\$/ton)	Cost effectiveness per visibility improvement (\$million/deciview)		
EGU	EGU1	3-State	SO2	0.32	1,540	2,249		
			NOX	0.06	2,037	2,585		
		9-State	SO2	0.74	1,743	2,994		
			NOX	0.17	1,782	2,332		
	EGU2	3-State	SO2	0.41	1,775	2,281		
			NOX	0.09	3,016	3,604		
		9-State	SO2	0.85	1,952	3,336		
			NOX	0.24	2,984	4,045		
		ICI boilers	ICI1	3-State	SO2	0.055	2,992	1,776
					NOX	0.043	2,537	1,327
9-State	SO2			0.084	2,275	2,825		
	NOX			0.068	1,899	2,034		
ICI Workgroup	3-State		SO2	0.089	2,731	1,618		
			NOX	0.055	3,814	1,993		
	9-State		SO2	0.136	2,743	3,397		
			NOX	0.080	2,311	2,473		

Comment 15: Reasonable Progress Goals and Long Term Strategy (Ohio SIP for Regional Haze p. 26-35)

The section discussing Ohio’s share of emission reductions appears to imply that Ohio needs reductions in other states to meet its own “fair share” of emission reductions (p. 28 section 10.2). *“Ohio has determined that its fair share of emission reductions needed to meet reasonable progress constitutes on-the-books controls and other controls that upwind states*

will implement, but that are not yet in place.” Please clarify this sentence as 40 CFR 51.308(d)(3) does not allow for the use of another State’s emission reductions to be accounted for in Ohio’s fair share of emission reductions. (USDA Forest Service)

Response 15: Ohio EPA will rephrase the statement. The intent was that emission reductions that are being achieved, or will be achieved, by Ohio and other states constitutes reasonable progress.

Comment 16: As another example, on page 35, right -- this document, this is the Regional Haze SIP by the way. We are talking about the locations that are most highly impacted by Ohio sources - such as Dolly Sods, for example, in West Virginia - and the document shows satisfactory progress. Well, the term "satisfactory" is subjective of course. Ohio EPA should be aiming to show that there is maximum progress allowed by the -- that can be achieved under the Regional Haze Rule, under BART controls. (Nachy Kanfer, representing Sierra Club)

Response 16: The commenter is referring to the following statement:

“The locations most highly impacted by Ohio sources, such as Dolly Sods in West Virginia, Mammoth Cave in Kentucky, and Shenandoah Valley and James River in Virginia, show satisfactory progress. “

Ohio EPA should clarify that Ohio’s intent is to demonstrate that Ohio believes it has accounted for its fair share of reductions needed for these areas. As discussed previously in Ohio’s response to comments and as will be clarified in the SIP document, other than the MANE-VU “Ask”, other states with Class I areas are in agreement with Ohio EPA’s approach for our fair share of emission reductions needed in these areas. MANE-VU’s “Ask” has also been discussed in other responses to comments in this document and will also be clarified in the SIP document.

USEPA’s RHR did not intend that states develop programs that achieve the 2064 goal within the first planning period (up to 2018). Rather, this first SIP is intended to provide strategies for the initial implementation period extending to the year 2018. USEPA states that “achieving the national visibility goal will require a substantial, long-term program. Accordingly, the Regional Haze program requires the periodic review by each State of whether “reasonable progress” is being achieved and revisions of implementation plans as needed to continue progress toward the national visibility goal.”

Ohio EPA, because of the lack of Class I areas within the state, is not required to set “reasonable progress goals.” USEPA states they interpret ““long-term strategy” as the control measures that are needed to ensure reasonable progress, together with a demonstration that those measures will provide for reasonable progress during the 10 to 15 year period.”

USEPA has clarified that “some States may conclude that control strategies specifically for protection of visibility are not needed at this time because the analyses may show that existing measures are sufficient to meet reasonable progress goals” and that USEPA is “requiring States to document their analyses, including any consultations with other States in support of their conclusions that further controls are not needed at this time.” [64 FR 35714]

This is the determination that Ohio EPA has made and believes it does provide for the necessary improvements for the first planning period. Upon a review of progress in the future, Ohio EPA may determine additional measures may be necessary in order to continue or progress improvement. This will all be a part of the process for this long-term program.

Comment 17: Wildland Fire (Ohio SIP for Regional Haze p. 13, 33-34)

We are pleased to see that Ohio will be developing a Smoke Management Program. The Forest Service would like to assist in the development of such a program. (USDA Forest Service)

We recognize that prescribed fire and wild fire are not currently a major portion of visibility impairment at Class I areas affected by emissions from Ohio. We appreciate the ODAPC’s efforts to develop a smoke management program. We encourage ODAPC to include Class I areas as sensitive receptors when assessing smoke impacts under the future program and to require best management practices to reduce impacts when sensitive receptors are affected. (National Park Service and U.S. Fish and Wildlife Service)

Response 17: No response necessary.

Comment 18: Wildland Fire (Ohio SIP for Regional Haze p. 13, 33-34)

We agree that smoke from wildfires and prescribed fires is not a significant emission source for Ohio or a contributor to

regional haze in downwind Class I areas at this time. (USDA Forest Service)

Response 18: No response necessary.

Comment 19: Let me start with, first, a sort of general observation that Ohio EPA's Regional Haze Plan is -- it's a plan that proposes, basically, to comply with another program - that being the Clean Air Interstate Rule - and not much beyond that. It does require the installation of controls on one facility in Ohio but Ohio EPA should really be taking further steps. It should be requiring controls on existing electric generating units, of which there are many in Ohio including many very polluting ones, and other sources and addressing proposed sources as well, including the AMP-Ohio generating station. And that is in order -- if we really are to achieve all of the public health benefits, the air quality benefits, visibility benefits and obviously our national parks, that really full compliance with this Regional Haze Program, the Regional Haze Rule, can achieve.

So first I would point out that Ohio EPA is really acknowledging that it's only seeking to do the bare minimum here. For example, on page 20 there's a sentence while Ohio has made the decision that CAIR will suffice for their control. You know, there's no acknowledgment, there's no real awareness that the State should not simply be aiming for a bare minimum but should be working to achieve the maximum reductions in air emissions especially air emissions that reduce visibility in Class I areas. (Nachy Kanfer, representing Sierra Club)

Response 19: Ohio EPA disagrees that CAIR is a "bare minimum." The CAIR program, and its impending replacement (the Transport Rule) is projected to account for significant reductions in pollutants of concern for Regional Haze. For example, in Ohio alone it is projected that CAIR will result in emissions of NO_x and SO₂, declining between 2002 and 2018 by 63% and 62%, respectively.

Comment 20: Secondly, I would say that it is inappropriate to use CAIR in general as an excuse for not engaging in plant specific control. CAIR is a cap and trade program that allows decreases and increases in emissions across an area of 28 states, right, that are covered. BART and other programs require plant specific controls. So, its inappropriate to avoid BART obligations by simply claiming that BART eligible EGUs

and BART eligible other sources that are not EGUs will be made to comply with CAIR. That's not a sufficient excuse. (Nachy Kanfer, representing Sierra Club)

Response 20: In USEPA's implementation guidelines for BART [40 CFR 39104], it is recognized that the CAIR program will result in reductions in emissions for SO₂ and NO_x within the 28 eastern States of 70% and 60%, respectively. To achieve these reductions, EGUs have installed plant specific controls to reduce SO₂ and NO_x emissions. The guidelines provide a detailed discussion of USEPA's analysis and conclusion that for EGUs, CAIR will provide for greater reductions than if BART were required.

Additionally, as clarified in the revised Regional Haze SIP, USEPA proposed a replacement to the CAIR program, the Transport Rule, on July 6, 2010. [75 FR 45210] Upon finalization, it will further assist states in addressing their obligations regarding regionally transported pollution by providing reductions in NO_x and SO₂ emissions in 2012 and 2014. It also addresses many of the concerns raised by the Court's remand in regards to the cap and trade portion of the CAIR program.

Comment 21: I would also say that looking at various answers on pages 27 and 31, there are these statements, right, controlling EGUs beyond CAIR control levels would have the most effect on visibility improvement. And again, modeling indicated that significant beyond-CAIR reductions from EGUs - especially for sulfur dioxide - would be the most effective control for improving visibility. The plan fails to justify not requiring those beyond-CAIR controls. Ohio EPA should be evaluating on a plant-by-plant basis whether plant-specific BART controls are justified at each of these 37 EGUs identified on page, I believe it was - sorry - page 20 here. It lists all the electric generating stations in Ohio and -- yes, Ohio EPA should be justifying its decision to not establish BART controls on each one of these. (Nachy Kanfer, representing Sierra Club)

Response 21: As discussed in the response above and as will be clarified in the SIP document, Ohio EPA believes additional control for EGUs is not warranted during this first planning period. While the SIP document indicates control of EGUs would be the "most" cost-effective method for improving visibility, the document does not necessarily imply it is cost-effective for this first planning period. Ohio EPA has established its long-term strategy for its fair share of

emissions reductions necessary as a part of the reasonable progress goals set by those areas with Class I areas.

The commenter is referring to the list of the BART-EGUs in Ohio that were not subjected to extensive BART analysis or modeling because of Ohio's decision to adopt USEPA's option that CAIR will suffice for BART at EGUs. Therefore, per the response above, additional justification is not required for why BART is not established for these sources.

Comment 22: Verification and Contingencies (Ohio SIP for Regional Haze p. 37)

There is uncertainty regarding how CAIR might be modified in the future by EPA in response to the recent court decisions. The number, size and location of new EGU and non-EGU sources between now and 2018 are also unknown. How will the SIP address this uncertainty and respond if in 2012 and/or 2018 conditions are quite different from those predicted?

We would also like Ohio to consider contingency measures or procedures for unexpected or unforeseen circumstances; e.g., future emissions are not reduced to the same degree or in the same geographic area as projected, or emission inventories are incorrect or flawed. Are there adaptive management or increased review strategies which could be implemented in those situations? (USDA Forest Service)

The Long Term Strategy and Reasonable Progress section of the December 2008 SIP is greatly improved from the previous draft. We appreciate the discussion of EPA's Clean Air Interstate Rule (CAIR) and understand that the majority of Ohio's long-term strategy relies on reductions expected from implementation of that rule. We note that the recent court ruling on CAIR still leaves large uncertainty regarding the magnitude and location of emissions reductions to be implemented under that program. We request that ODAPC acknowledge this uncertainty regarding the emissions projections for its sources and that the SIP commit the State to re-examine actual and future emissions changes in the mid-term review required by the regional haze rule. At that time if in-state emissions for 2018 are likely to fall short of projections adopted in this plan, the ODAPC must initiate plan revisions for the long-term strategy. Ohio could list possible measures, such as those found cost-effective under the MWRPO reasonable progress assessment, conducted by EC/R Incorporated for consideration in future SIP revisions, should

anticipated reductions from on-the-books programs fall short of established goals. (National Park Service and U.S. Fish and Wildlife Service)

Response 22: It is difficult, at this time, to determine how Ohio EPA will respond during the interim review and comprehensive review periods. Ohio EPA is currently beginning planning processes for exploring emission reduction measures to meet the new ozone and PM2.5 standards. Ohio anticipates that strategies developed for these standards will have a positive impact on Regional Haze and allow for greater improvements in the future. Ohio also anticipates USEPA's final promulgation of the CAIR replacement, the Transport Rule, in 2011 will address the uncertainties in CAIR based on the proposed Transport Rule. Ohio EPA believes the Transport Rule, when finalized, will be a more aggressive program than CAIR, providing substantial NOx and SO2 reductions across the east and in Ohio specifically.

Ohio EPA does not believe it is necessary, nor is it required, for contingency measures to be incorporated into the Regional Haze SIP. The interim review period was incorporated as part of the Regional Haze program precisely to allow for a mid-course review to ensure progress has been made and continues as planned for during the submittal. The program provides for additional measures, such as revising the SIP within 1-year or re-instating the regional planning process, if there is a substantial increase in emissions or a deficiency in plan implementation.

Ohio has committed to the interim and comprehensive review requirements in our SIP.

Comment 23: Coordination and Consultation (Ohio SIP for Regional Haze p. 3-4, 36)

Also, coordination should occur during SIP revisions (including reasonable progress reports) and at steps necessary to address adequacy of the SIP. (USDA Forest Service)

The SIP should contain provisions for ongoing coordination and consultation with the Federal Land Managers on any future SIP revisions and reporting. The Federal Land Managers are committed to supporting State progress and will inform the State of our ongoing monitoring and assessment activities. While much of this coordination has been

accomplished through the Regional Planning Organizations (RPOs), the future of RPOs is uncertain and a specific statement of the tasks to be coordinated on will provide better assurance that all States and Federal Land Managers will be kept up to date over the long implementation period of these rules. (National Park Service and U.S. Fish and Wildlife Service)

Response 23: As stated above, Ohio EPA addressed the FLM coordination requirements in Section 3 of Ohio's SIP:

“Ohio will continue to coordinate and consult with the FLMs during the development of future progress reports and revisions of this plan, as well as during the implementation of programs having the potential to contribute to visibility impairment in the mandatory Class I areas. This includes coordination with the FLMs during new source review (NSR) of sources that may impact Class I areas.”

Ohio EPA is committed to continue coordination with the FLMs.

Comment 24: **Best Available Retrofit Technology (BART) (Ohio SIP for Regional Haze p. 16-22)**

We have concerns about the initial analysis to determine sources subject to BART. The “screen-out” analysis done by LADCO specifies that it uses the Q/D metric for its analysis (where Q should equal the sum of tons per year of SO₂ + NO_x + PM¹⁰ + H₂SO₄), but in fact a metric of L/D was used (where L = tons per year of SO₂ + NO_x). The change in numerator values could result in fewer emission sources being considered as subject to BART. Please address whether additional sources would have been considered had the Q/D metric been applied instead of L/D. (USDA Forest Service)

Through interaction with the MWRPO and the ODPAC over the last year, we have reviewed the air quality modeling performed to assess sources subject to BART. We agree with ODAPC's conclusion that only the P. H. Glatfelter facility is subject to BART. (National Park Service and U.S. Fish and Wildlife Service)

Best Available Retrofit Technology (BART) (Ohio SIP for Regional Haze p. 16-22)

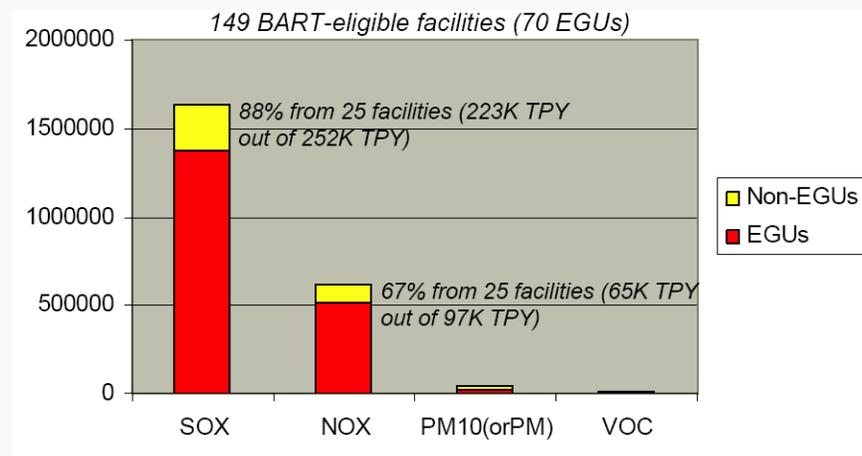
Our understanding of EPA direction is that particulate matter (PM) emissions from EGU sources should be considered in the BART analysis for the regional haze SIP. In a September, 2006 Question and Answer (Q and A) document the EPA wrote: “States subject to and participating in the CAIR cap and trade program for SO₂ and NO_x are allowed to treat the CAIR requirements for EGUs as a substitute for the application of BART controls per 40 CFR 51.308(e)(4). This does not mean EGUs are exempt for SO₂ and NO_x, only that CAIR satisfies the BART requirement for those pollutants. The remaining visibility pollutants to consider for determining BART-eligible sources are PM, and, using judgment, VOCs, and ammonia. For PM, the July 6, 2005, final BART rule at 70 FR 39160 notes PM₁₀ may be used an indicator for PM in this step of the determination and thus, PM₁₀ can be used for the exemption modeling.” – Our review indicates the proposed OH Regional Haze SIP is counter to EPA direction. (USDA Forest Service)

With respect to the decision to accept CAIR as Best Available Retrofit Technology (BART) for electric utilities, we point out that Ohio still needs to address particulate matter (PM) emissions from EGU sources in the BART analyses for the regional haze SIP. (National Park Service and U.S. Fish and Wildlife Service)

Response 24: PM was not included in the denominator because of the relatively small quantities involved and the lack of impact on visibility determined through modeling.

LADCO performed an analysis of 149 BART eligible sources in the LADCO states' area and found that PM emissions were insignificant and; therefore, excluded PM from the analysis.

BART-Eligible Sources: Emissions (tpy)



This determination was made based on the approach provided by USEPA in the BART Guidelines. Under a cumulative modeling approach, modeling of total visibility impacts from all BART-eligible sources in a given state can be used to show that they collectively do not cause or contribute to visibility impairment in a Class I area. This approach was used to assess the likelihood that VOC and PM emissions will not cause or contribute to visibility impairment. Specifically, CAMx was run with all point source VOC and PM emissions eliminated (“zeroed-out”) to assess the contribution of these species to visibility impairment. The model results show that these emissions do not contribute to visibility impairment (i.e., less than a 0.5 dv impact in any Class I area). Because the VOC and PM emissions from just the BART-eligible sources are much less than those from all point sources, the visibility impact of these emissions from the BART-eligible sources will be much less than 0.5 dv in any Class I area. Thus, these emissions can be excluded from BART review. In addition, ammonia emissions can be excluded from BART review, given that these emissions from the BART-eligible sources are relatively small (i.e., ammonia emissions from all point sources make-up only 1% of the total ammonia emissions in the region).

Ohio EPA will be revising the SIP document to provide additional information regarding the exclusion of PM emissions.

H₂SO₄ was not a pollutant identified in the guidelines. Other than considering NO_x, SO₂ and PM, USEPA identified “states may use their best judgment to determine whether VOC or ammonia emissions are likely to have an impact on visibility.” Ohio EPA and

LADCO determined VOC and ammonia emissions did not warrant inclusion.

To further illustrate the lack of need to consider PM emissions from EGUs, Ohio EPA performed a series of Calpuff runs for a large Ohio power plant (the Stuart Station in Adams County) according to the same protocol followed by LADCO.

The following stack parameters and emission rates (averaged over actual hours of operation) were taken from our 2005 emissions inventory:

Location:	83/41/38 long.;	38/38/10 lat.
Height:	800 ft.	
Temp.:	290 F	
Velocity:	117.6 ft/sec	
SO ₂	3848.65 g/s	
NO _x	889.695 g/s	
PM ₁₀	110.937 g/s	
PM _{2.5}	85.699 g/s	

First, the model was run with the above –listed quantities of SO₂, NO_x, and PM_{2.5}, and it was discovered that the most-strongly impacted Class 1 area (as measured by days above threshold) was the Shenandoah National Park in year 2003. Then, a series of runs were made zeroing-out each species in turn; then, a series of one-pollutant only runs. The results were as follow:

	Days above Threshold (Shenandoah NP, 2003)
Base:	97
No PM _{2.5}	95
No NO _x	86
No SO ₂	20
SO ₂ only	85
NO _x only	19
PM _{2.5} only	0

We particularly wish to note that the source, if it emitted PM_{2.5}, only, would cause zero days above threshold. Reviewing the detailed results, we find zero days for all other Class 1 areas and all years (2002, 2003, 2004). Thus, the exclusion of PM from BART consideration for the EGU category is a reasonable interpretation of the “cause or contribute” language in the Haze Rule defining “subject to BART.”

Our use of “L/D” instead of “Q/D” to describe the ratio was a typographic error. We did not intend to create a new definition for the letter “L.” We will correct this in the final document.

Comment 25: Best Available Retrofit Technology (BART) (Ohio SIP for Regional Haze p. 16-22)

We have concerns about the BART control options and the methodology used to reach a conclusion. The standard approach to determining BART control options is that it should primarily be an engineering determination not an air quality modeling exercise. A BART limit is defined as “an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction...”. With regard to the P.H. Glatfelter facility, please clarify why one of two higher performing control options (90% removal) should not be considered BART as opposed to the 60% removal proposed by the company. Our understanding is the cost per ton for each of the final three control options are essentially equivalent for sulfur dioxide. (USDA Forest Service)

We have serious concerns with the BART determination for the Glatfelter facility. The determination that the least total cost engineering option as BART does not correctly consider the visibility improvement factor. Neither the SIP language on pages 21-22 nor Appendix G provides sufficient assessment of the trade-off between total cost and degree of visibility improvement. On a dollar per ton of emissions reduced basis, the three engineering solutions are essentially equal, yet the high levels of control eliminate all days of impact greater than five percent of extinction change while the minimal control, chosen by the ODAPC as BART, still results in multiple days at multiple Class I areas of impacts above the contribution threshold. Given equal removal efficiency costs, the option with the greatest improvement in visibility should be selected. Using an air quality model to back-calculate a BART emission limit violates the intent of the BART determination, which should be primarily an engineering determination. This is especially true when all BART control options have equivalent cost per ton emission reductions. (National Park Service and U.S. Fish and Wildlife Service)

And, finally, let me just point out that -- this isn't really my area of expertise, but looking at the non-EGU source, this Glatfelter facility, Ohio EPA has really failed to justify why they're not requiring maximum reduction of SO2 emissions. We have these three possibilities of control technologies, and they are capable of 90 percent, 90 percent and 60 percent removal of SO2 respectively. The company, unsurprisingly, chooses the 60 percent removal and Ohio EPA concurs. Well, that -- there's really no justification of that written in the plan. We believe, Sierra Club believes, that ninety percent removal of SO2 is best available and should be achieved through that -- either one of those two control technologies. (Nachy Kanfer, representing Sierra Club)

Response 25: USEPA recommended in the BART guidelines that states “use CALPUFF as a screening application in estimating the degree of visibility improvement that may reasonably be expected in order to inform the BART determination.” USEPA further clarifies “states make a BART determination based on the estimates available for each criterion, and as the CAA does not specify how the State should take these factors into account, the States are free to determine the weight and significance to be assigned to each factor. CALPUFF accordingly is an appropriate application for use in combination with an analysis of the other statutory factors, to inform decisions related to BART.”

Upon further review, Ohio EPA concurs that 60% control of SO2 emissions does not adequately address BART for P.H. Glatfelter. Therefore, it was decided that 90% control of SO2 is appropriate as BART. Ohio EPA and P.H. Glatfelter have worked together extensively, in conjunction with consultation between USEPA and the FLMs, to develop an appropriate BART strategy that achieves a 90% reduction in SO2 emissions. P.H. Glatfelter will implement an alternative program to BART as allowed under 40 CFR 51.308(e)(2). An alternative BART measure must achieve greater reasonable progress than would be achieved through the installation and operation of BART (90 percent SO2). This approach includes installing control technology sufficient to achieve greater than BART SO2 removal on boiler numbers B002 and B003 or permanently shutting down the boiler(s). Controlling both boilers at 90 percent would have resulted in limiting SO2 emissions to 24,931 pounds per day. Under this alternative the boilers will be limited to emitting 24,930 pounds per day. Ohio EPA has incorporated this requirement into a federally enforceable permit as discussed and included in the revised Regional Haze SIP.

Comment 26: We also caution that the current assessment of visibility effects at from the Glatfelter facility with the 60 percent reduction scenario did not appear to include impacts from condensable particulates that may be substantially greater than those from the filterable particulates modeled. For several years we have posted recommendations on our website for speciating particulates using EPA emission factors. In order for ODAPC to exempt the Glatfelter facility from BART, it must show that that Glatfelter’s impacts do not exceed the visibility exemption thresholds when all visibility impairing emissions are modeled appropriately. The documentation included with the SIP does not make such a showing. Even if such a demonstration is successful, establishment of emissions limits needed to remove the Glatfelter facility from consideration for BART must address these emissions. (National Park Service and U.S. Fish and Wildlife Service)

Response 26: As discussed in the comment and response above, LADCO performed an analysis of 149 BART eligible sources in the LADCO states’ area and found that PM emissions were insignificant and; therefore, excluded PM from the analysis. Specifically, CAMx was run with all point source PM emissions eliminated (“zeroed-out”) to assess the contribution of these species to visibility impairment. The model results show that these emissions do not contribute to visibility impairment (i.e., less than a 0.5 dv impact in any Class I area). Because the PM emissions from just the BART-eligible sources are much less than those from all point sources, the visibility impact of these emissions from the BART-eligible sources will be much less than 0.5 dv in any Class I area. Thus, these emissions can be excluded from BART review.

We do not believe the lack of condensable particulates in this modeling would change the outcome for Glatfelter, especially in light of the alternative BART option selected as discussed above. Also note, both of the Glatfelter boilers are controlled for particulate emissions by an electrostatic precipitator.

In addition, USEPA guidance does not require PM condensable input into modeling: “after the “selected” 2005 emissions inventory was compiled, EPA reviewed the PM emissions data for completeness. *Ideally*, five species of PM should be reported: PM10-Primary (PM10-PRI), PM2.5-Primary (PM25-PRI), PM10-Filterable (PM10-FIL), PM2.5-Filterable (PM25-FIL), and PM-Condensable (PM-CON). At the very least, PM10-PRI and PM25-

PRI are required as inputs for emissions modeling.”
http://www.epa.gov/ttn/chief/net/2005_nei_point.pdf

Comment 27: The SIP identifies the Overfire Air and Sorbent Injection System (OASIS) as BART (page 21 of 37). OASIS is one technology that was evaluated in the Engineering Analysis process. Glatfelter is prepared to accept that the emission levels achieved by OASIS can serve as BART; however, as indicated in Appendix D, Glatfelter should be permitted to select alternative technologies or strategies that achieve emission levels equivalent or better than levels based on the control capabilities of OASIS. (P.H. Glatfelter)

Response 27: Ohio EPA agrees and will amend the SIP to clarify that a specific technology will not be required but rather a specific reduction.

Comment 28: The source can take voluntary emissions limits to reduce its impact below the threshold that triggers BART assessment. However, those emissions limits are not BART. In addition those emissions limits should be met more quickly than the five year implementation period for a BART-determined limit. Such an approach also needs recognize that reasonable progress requirements would likely require review additional emission reductions at that source, since such emissions reductions are likely very cost-effective compared with the alternatives. (National Park Service and U.S. Fish and Wildlife Service)

We request that ODAPC revise the Glatfelter BART determination to be 90 percent control. If ODAPC does not revise the BART determination, it could establish emissions limits that removes the source from BART consideration now, but leaves it subject to review for reasonable progress in the future. (National Park Service and U.S. Fish and Wildlife Service)

Response 28: A restriction on emissions option was not explored and Ohio EPA does not intend to explore this option at this time.

With respect to the alternative to 90% control, please see the previous comment’s response above.

Comment 29: The SIP identifies (page 22 of 37) the demonstration of compliance with the daily emission limitation by December 31, 2012. On July 6, 2005, US EPA published Appendix Y of 40 CFR Part 51 “Guidelines for BART Determinations under the

Regional Haze Rule”. Section V Enforceable Limits/Compliance specifies that compliance limits are required no later than five years after EPA approves the Regional Haze SIP. The Regional Haze SIP was due by December 17, 2007; however, Ohio EPA submitted their Regional Haze SIP on December 31, 2008, and US EPA has up to one year to approve Ohio’s SIP. This would give Glatfelter only up to three years to attain compliance with these new limits. This would be less time than the SIP provides for electric generating units to meet BART requirements by complying with EPA’s Clean Air Interstate Rule (“CAIR”), which phases in tighter emission limits for a higher-emitting range of sources by the year 2015.

In addition, the US EPA is expected to impose additional requirements that may also impact these sources and the selection of appropriate control technology. One such regulation is the vacated Industrial Boiler MACT (40 CFR Part 63, Subpart DDDDD). That regulation will likely impose emission control requirements for a range of hazardous pollutants which could very well affect the cost or effectiveness of the BART controls if those controls are not designed to reflect the ultimate Boiler MACT requirements as well.

Given the delay in the submittal and approval of the SIP, and the uncertainty of US EPA’s response as well as potential future upcoming regulations such as the Boiler MACT rule, it is impossible to adequately design, order, and install control equipment by the date suggested. Glatfelter urges Ohio EPA to require compliance no earlier than the full five (5) years after US EPA approval, as afforded by Appendix Y. That schedule would still be well within the 2018 timeframe set out for SIP reassessment. (P.H. Glatfelter)

Response 29: Ohio EPA has concern with the BART Guidelines and the potential for delay in USEPA approving Regional Haze SIPs for the various states. However, after consideration of the regulatory requirements and this comment Ohio EPA will revise the requirement to provide for implementation of the controls by December 31, 2014. This will assure reductions are achieved during the first planning period regardless of when USEPA reviews and acts on the SIP submittal.

Comment 30: As mentioned in the Long Term Strategy (page 27 of 37), the current bleak economic condition in Ohio precludes justifying additional haze reductions covering a range of additional

sources. The economic conditions in Ohio and across the United States are unprecedented. When Glatfelter submitted its BART Engineering Analysis to the Ohio EPA in the fall of 2007, the economic conditions were quite different. Due to these unfortunate and impactful economic times, Glatfelter's Cost Impact Evaluation and Financial Analyses included in the Engineering Analysis (Appendix G) must be reconsidered. Glatfelter should be given the opportunity to reevaluate the cost impact and resubmit the reevaluation for consideration. (P.H. Glatfelter)

Response 30:

Ohio EPA recognizes the current economic conditions and how fluctuations in economic conditions can occur over time. Ohio EPA and P.H. Glatfelter have worked together extensively since this comment was submitted. Additional economic analyses have been conducted and both parties have agreed on a control option as discussed in the previous comments and responses.

END