II. EXPLANATION OF DECISIONS

In this Annex to the Grand Canyon Visibility Transport Commission Recommendations, the Western Regional Air Partnership (WRAP) provides details to the Environmental Protection Agency (EPA) regarding regional sulfur dioxide (SO_2) emissions milestones and a backstop trading program that would be triggered if the milestones are not met in future years. The details of the program are complex and inter-related. Decisions made regarding one element of the program may only be acceptable to the stakeholders that have participated in this process within the context of expectations for how other portions of the program would function. For this reason, the Annex needs to be viewed as an overall package, recognizing that the needs of various stakeholders have been balanced to achieve a program that all of the stakeholders can accept. Any future changes to the milestones and backstop trading program would need to be viewed within this context, recognizing that changing one element may have rippling effects throughout the entire program.

The Regional Haze Rule that was published on July 1, 1999 outlines two paths that States and Tribes may follow to address the impacts of regional haze on Class I areas within their jurisdiction. This Annex outlines the stationary source requirements that would be adopted by a State or Tribe if they choose to implement the Grand Canyon Visibility Transport Commission Recommendations. States and Tribes may also choose to address regional haze by adopting a different set of strategies under §308 of the rule. The submittal of the Annex by the WRAP does not commit any State or Tribe to adopt these provisions into their State or Tribal Implementation Plans (SIPs or TIPs). The States and Tribes in the Visibility Transport Region will work closely together over the next few years to finalize the complete package of strategies recommended by the Grand Canyon Commission, and will make final decisions by December 31, 2003 regarding their participation in the backstop trading program. Tribes are not bound by the same deadlines as the States, and may have the opportunity to join this program at a later date, although this is an unresolved issue pending legal review by EPA.

A. Sulfur Dioxide Milestones

The SO_2 milestones establish the environmental goals of this program. As long as regional emissions of SO2 from major stationary sources remain below these milestones, either through voluntary measures or through other Clean Air Act requirements, all of the reductions called for by this program will remain voluntary. However, if stationary source SO2 emissions are in excess of any of these milestones, the backstop trading program will be triggered to achieve the reductions and ensure future milestones are attained. The determination of milestone levels has thus been both critical and controversial.

After lengthy discussions, the WRAP has agreed to the following regional SO_2 milestones for stationary sources of SO2 emitting more than 100 tons per year:

Regional Sulfur Dioxide Milestones for Stationary Sources Emitting More than 100 TPY
(Tons Per Year)

Year	2003	2008	2013	2018
Maximum Milestone (Smelters In*)	720,000	715,000	655,000	510,000
Minimum Milestone (Smelters Out*)	682,000	677,000	625,000	480,000

* Two Western copper smelters (BHP San Manuel and Phelps Dodge Corporation Hidalgo) suspended operations in 1998 for economic reasons. As discussed in detail later in this document, the milestones have been established with a set-aside in the event that these smelters resume operation in the future.

✔ The 1990 GCVTC baseline was approximately 830,000 tons per year of SO_2.
✔ The initial GCVTC goal is a 13% reduction from the 1990 baseline in the first decade, equating to approximately 722,000 tons per year by 2000.

1. Milestone Requirements

a. 13% Reduction by 2000.

The Grand Canyon Commission committed to achieve a 13% reduction in regional sulfur dioxide emissions between 1990 and 2000.[1] The regional haze rule further requires that,

> The plan submission must include provisions requiring the monitoring and reporting of actual stationary source sulfur dioxide emissions within the State. The monitoring and reporting data must be sufficient to determine whether a 13 percent reduction in actual stationary source sulfur dioxide emissions has occurred between the years 1990 and 2000, and whether milestones required by section 51.309(f)(ii) have been achieved for the transport region. The plan submission must provide for reporting of these data by the State to the Administrator. Where procedures developed under section 51.309(f)(2) and agreed upon by the State include reporting to a regional planning organization, the plan submission must provide for reporting to the regional planning body in addition to the Administrator.[2]

Recent emission inventories show that the region should meet the 13% reduction level set forth in the Commission's Recommendation, and will probably exceed this goal. Regional SO2 emissions for the 1998/99 time period were approximately 652,000 tons of SO_2 (with operations at two smelters suspended during this period), which is an emission reduction of 22% from the 1990 baseline. It is important to note that the emission measurement technique for utilities has changed since 1990 due to the requirements of EPA's national acid rain program. Emissions in 1990 were measured using a mass-balance technique where the sulfur content of coal was

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[1] GCVTC Recommendations, June 1996, page 37.

[2] 64 FR 35770

measured, and then SO_2 emissions were calculated based on the amount of coal burned during that year. Emissions today are measured using continuous emission monitoring systems (CEMS). The CEMS typically measure higher emission levels due to a number of factors. It is difficult to quantify this "CEMS Bias," however, if it were calculated, the actual emission reduction from 1990 levels could be even greater than 22%.

The SIPs and TIPs that will implement the Annex provisions will not be submitted until 2003. The WRAP commits in the Annex to develop a regional emission inventory of SO_2 emissions from all stationary sources with emissions greater than 100 tons/year of SO_2 for the year 2000. The inventory will be collected and quality assured according to existing State and Tribal rules, and then compiled at the regional level by the WRAP's Emission Forum. The 2000 inventory will then be compared to the 1990 inventory to ensure that the 13% emission reduction goal has been achieved. The States and Tribes that participate in the backstop trading program will include this regional inventory as part of their Implementation Plan submittals in 2003.

b. Steady and Continuing Emission Reductions.

The Grand Canyon Visibility Transport Commission took a long-term view towards improving visibility in the 16 Class I Areas of the Colorado Plateau. The visibility modeling and emission reduction strategies were to be analyzed over a 50-year period from 1990 to 2040. The Commission developed the following definition of reasonable progress towards improving visibility:

> **Reasonable Progress**: Reasonable Progress refers to progress in reducing human-caused haze in Class I areas under the national visibility goal. The Clean Air Act indicates that "reasonable" should consider the cost of reducing air pollution emissions, the time necessary, the energy and non-air quality environmental impacts of reducing emissions, and the remaining useful life of any existing air pollution source considered for these reductions. The GCVTC Public Advisory Committee has developed the following definition: "Reasonable progress towards the national visibility goal is achieving continuous emission reductions necessary to reduce existing impairment and attain steady improvement of visibility in mandatory Class I areas, and managing emissions growth so as to prevent perceptible degradation of clean air days." [3]

The Commission also established objectives for the stationary source recommendations:

- to achieve significant reductions in sulfur dioxide emissions in the near term;
- to ensure reasonable progress toward the national goal through continuing decreases in sulfur dioxide emissions over the long term;
- to avoid increases of other visibility-reducing pollutants within the Transport Region as a whole from stationary sources.[4]

When EPA adopted §309 of the Regional Haze rule, specific requirements for the Annex were established to address the issue of reasonable progress.

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[3] Grand Canyon Visibility Transport Commission Report, June 1996, pages x-xi.

[4] Grand Canyon Visibility Transport Commission Report, June 1996, page 33.

> 309(f)(I) The annex must contain quantitative emission reduction milestones for stationary source sulfur dioxide emissions for the reporting years 2003, 2008, 2013 and 2018. The milestones must provide for steady and continuing emission reductions for the 2003 - 2018 time period consistent with the Commission's definition of reasonable progress, it's goal of 50 to 70 percent reduction in sulfur dioxide emissions from 1990 actual emission levels by 2040, applicable requirements under the Clean Air Act, and the timing of implementation plan assessments of progress and identification of deficiencies which will be due in the years 2008, 2013, and 2018.[5]

There are a number of principles that were used by the WRAP when deciding on the interim milestones to be included in the Annex.

- Visibility improvement to natural conditions is a long-range goal that is expected to take 60 years or more to achieve.

- The commitment to achieve a 13% reduction in SO_2 emissions by the year 2000 should not be undermined by future growth in the region.

- Early emission reductions, including the significant reductions that have occurred since 1990 should be considered.

- Reductions that have been legally committed to by the year 2000 should be captured in the milestones. Reductions that occur or are committed to after the year 2000 should occur under the milestones.

- The Commission strategies need to be viewed as a whole. There may not be steady progress in all categories at all times, and the overall package is needed to ensure that visibility improves on the Colorado Plateau.

- Flexibility at the beginning of the program is necessary to give a voluntary/ incentive-based program the opportunity to work.

- The utility industry is facing a number of uncertainties at this time. Regional haze BART for pollutants other than SO_2 will not be determined until approximately 2008 and the outcome of those negotiations will determine the future viability of some older facilities. The utility industry also is concerned that it is facing additional uncertainties from potential new controls for SO_2, NOx, PM, ozone, CO_2, mercury, and NSR reform. The timing of these is uncertain, but various mixes of controls under these programs may affect the economic viability of generating units. Additional uncertainty is caused by the fact that the industry is being deregulated at an uneven pace, bringing into question how costs for new pollution control will be addressed. Delaying a significant portion of the capital expenditures needed to comply with this program until after 2013 allows for all of these control requirements to be met in the most cost-effective manner possible.

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[5] 64 FR 35773

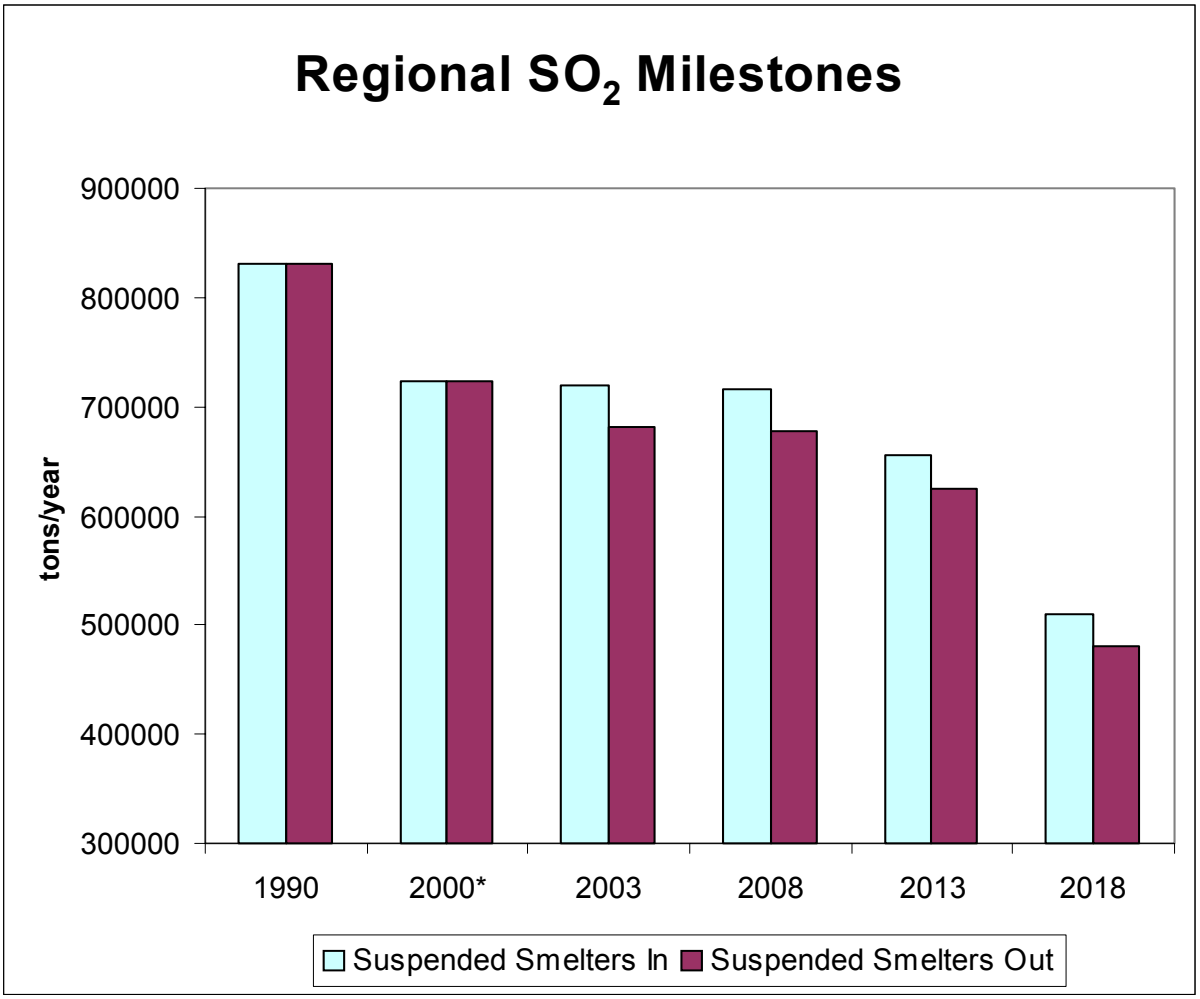
- Adequate emission reductions need to occur by the end of the planning cycle to meet the reasonable progress and regional haze BART requirements of the regional haze rule. A "down payment" is needed in the interim years to ensure continuing emissions decreases and so that all of the emission reductions are not left until the end of this long-range planning cycle. In addition, mechanisms are needed to ensure that the reductions planned by 2018 actually do occur, and to ensure that the region does not begin the next planning cycle significantly "in the hole".

- Tribes strongly support an aggressive definition of reasonable progress and the achievement of BART-equivalent reductions as quickly as possible. At the same time, tribes need to ensure that tribal allocations provide a practical benefit, and that the trading program does not hamper economic development on tribal lands.

- Headroom is necessary to account for natural fluctuations in production and emissions, increased utilization of plants, data errors, and uncertainty in emission projections. In addition, new source growth needs to be accommodated. It is also anticipated that sources will manage their emissions below the milestone to ensure that the program is not accidentally triggered by an unexpected increase in emissions.

The milestones developed by the WRAP go steadily downward throughout the planning cycle, with the most significant reductions occurring between 2013 and 2018 (see Figure 1). It is important to note that the western United States is growing rapidly, and these milestones include significant growth in addition to emission reductions that have already been legally-committed to in the region. For example, utility emissions are projected to grow by approximately 50,000 tons over this time period due to increased utilization of existing plants and the construction of new plants to meet growing demand for electricity. This growth is offset by significant emission reductions from the Mojave Generating Station in Nevada and reductions from a number of power plants owned by Public Service Company of Colorado along the Front Range.

Figure 1.



* The emissions for 2000 shown on this graph represent the goal of a 13% reduction from 1990 emissions established by the GCVTC. It is important to note that the 1990 and 2000 emission levels are based on mass balance measurements for utilities, whereas the milestones for 2003 through 2018 represent CEM measurements. The overall difference between these measurement techniques has been the subject of much discussion and has not yet been definitively resolved.

While the milestones go steadily downward from 2003 to 2018, the WRAP deliberately chose to provide flexibility up front while requiring greater reductions in the last 5 years of the planning period. The WRAP believes that this is consistent with the definition of reasonable progress as envisioned by the Grand Canyon Commission. The overall reductions between 1990 and 2018 will be between 39% and 44% (depending on the future operations of the suspended copper smelters). This overall reduction provides significant progress towards meeting the Commission's goal of 50% to 70% emission reductions by 2040. In addition, by providing flexibility in the early years of the program there is a much greater potential to achieve these reductions in a cost-effective manner. The region may be able to benefit from strategies to attain the $PM_{2.5}$ and ozone standards, leading to a coordinated strategy as envisioned in the regional

haze rule for other areas of the country where regional haze plan submittal dates are tied to the nonattainment plans for $PM_{2.5}$. Other programs, such as the air toxics control requirements under Title III of the Clean Air Act may also help the region meet the emission reduction goals because the required control technology may also reduce SO_2. The Commission's definition of reasonable progress recognized that cost, as well as the other statutory factors described by section 169A of the Clean Air Act must be considered as part of the overall picture.

c. Greater Reasonable Progress than Regional Haze BART.

The regional haze rule contains an additional test for the regional SO_2 milestones. "The emission reduction milestones must be shown to provide for greater reasonable progress than would be achieved by application of best available retrofit technology (BART) pursuant to section 51.308(e)(2) and would be approvable in lieu of BART."[6]

Attachment D of the Annex contains a detailed demonstration of how the milestones developed by the WRAP provide for greater reasonable progress than BART for regional haze. The demonstration outlines the process that was used by the WRAP to estimate the emission reductions that would occur in the region if BART determinations were made for all applicable sources in the region. Additional considerations are also addressed such as the degree of visibility improvement anticipated to be achieved and the increased benefits achieved by including all large stationary sources of SO2 in the program.

The demonstration is included as an attachment in part to emphasize that the 2018 milestone is a negotiated, policy-driven number, and is not directly derived from emission inventory formulas. The WRAP's Committees and Forums have expended considerable effort over the last year to improve the emission inventory projections and to estimate the impacts of future control requirements. The data have informed the debate, and the intense effort to improve and understand the data was necessary for the stakeholders involved in the process to understand the impacts of various proposed milestone levels. However, there was also the recognition that the data will never be perfect, and that the question of greater reasonable progress than BART is a broader question that is also informed by other policy considerations.

There may be changes in the emission inventory estimates as the 2003 SIPs are developed. However, the WRAP has confidence that the milestones as defined in this Annex achieve the goals established by the Grand Canyon Visibility Transport Commission and the Regional Haze Rule. The milestones established in this Annex are not anticipated to change unless major differences in the underlying data that were used to develop the milestones are discovered during the development of the implementation plans due in 2003.

2. Provisions for Future Adjustments to the Milestones.

a. Suspended Smelters.

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[6] 64 FR 35773

There are currently two smelters in the region that have temporarily suspended operations due to economic considerations. The two smelters are the Phelps Dodge Corporation's Hidalgo smelter in New Mexico and BHP's smelter in San Manuel, Arizona. It is estimated that the smelters emit 22,000 tons and 16,000 tons of SO_2, respectively. Uncertainty arises from the fact that it is currently unknown whether these shutdowns will become permanent or whether the smelters will resume operation. If the smelter shutdowns are treated as temporary and the smelter emissions are included in the milestones but the smelters do not in fact resume operation, then this addition could inappropriately inflate the milestones. Conversely, if the shutdowns are treated as permanent and the emissions for these sources are not considered in the development of the milestones but the smelters resume operation, then this deduction could inappropriately under-represent the year 2000 emissions and milestones, leading to milestones that are too low.

The Annex contains provisions that recognize and address the unique uncertainty surrounding the two smelters that are shut down for economic reasons. The Annex is designed to neither over- nor under-estimate the smelter emissions or milestones in light of the uncertainty. The emissions from the two suspended smelters are not included in the milestone initially. However, the Annex contains provisions to automatically adjust the milestones upward in the event one or both smelters are brought back on line. The key elements of the proposed methodology are described below.

(i) Smelter Emissions Provisionally Excluded from Milestones. The emissions associated with the two smelters currently shut down for economic reasons are not initially included in the milestones to reflect that these emissions are not, in fact, occurring. At the same time, it is specifically acknowledged that the milestones will automatically be adjusted in the future to account for the emissions from these two suspended smelters if they resume operations. If either one of the smelters resumes operation, there would be an allocation to the smelters and an appropriate, automatic upward adjustment to the milestones. If these programmatic adjustments were not made and the backstop cap-and-trade program was triggered, the entire allocation for regional new source growth could be consumed by these smelters resuming operation.

(ii) Automatic Adjustment of Milestones Without SIP Revision. It is possible that the smelters could be brought back into operation within a year. The WRAP wants to ensure that the Annex and SIPs are structured to adjust the milestones in this event, without the need for further SIP revision. At the same time, there are a number of different circumstances in which the smelters could resume operations, each with different environmental consequences.

The Annex outlines the different circumstances in which an adjustment would be made to address startup of one or both smelters. These circumstances include the following scenarios:

> (1) startup of one or both smelters under circumstances that do not require new source permitting, and that reflect the best estimate of immediately past emissions levels,
>
> (2) startup of one or both smelters under circumstances that do not require new source permitting but result in significantly lower emissions because of an unforeseen development, and

(3) startup of one or both smelters under circumstances that require new source permitting where emissions may be equal to or less than past levels.

In the latter scenario, the new emissions level would be determined by the appropriate permitting authority. The determination as to whether or not a smelter needs to go through NSR will be based upon current EPA requirements.

(iii) Determining the Appropriate Emissions Amount to be Reinstated. In the event one or both smelters resume operations, it is critical to determine the appropriate emissions amount to be added to the milestones. The best estimate of annual emissions for these sources is based on their operations prior to shutdown (1997/98) as follows:

Phelps Dodge Corporation, Hidalgo Smelter	22,000 tons
BHP, San Manuel Smelter	16,000 tons

Making this determination now has several important policy advantages including basing it on more current data, rather than a determination many years from now looking back at potentially stale information. Further, because the best estimate of immediately past emissions represents the maximum amount that the milestones could be adjusted upward in the event the smelters resume operation, it helps define in advance for the regulated community and the public the bounds of the regional emissions cap.

At the same time, the level of emissions associated with the other potential smelter startup scenarios cannot be pinned down firmly at this time and will depend on a variety of unpredictable factors. The Annex outlines the considerations that the permitting authority will use to define the appropriate adjustment to the milestones under these different circumstances.

(iv) Ensuring the Smelter Contingency is Transparent to the Public and Regulated Community. The regional haze rule incorporates the recommendation of the Grand Canyon Visibility Transport Commission to provide for steady and continuing emission reductions. The WRAP believes that the evaluation of this requirement should take into account the uncertainty associated with the smelter emissions status. At the same time, the WRAP recognizes the concern those unfamiliar with the program may have if they perceive the milestones being adjusted upward during the middle of program implementation. Nevertheless, the WRAP believes the more straightforward approach is to recognize the current uncertainty surrounding the smelters and to craft a program that better tracks the real world conditions including the possibility that the shutdown may become permanent or that operations may resume.

(v) Smelter set-aside if one or more of the smelters don't resume operation. The copper industry has raised concerns that, unlike other industrial SO_2 sources in the region, it operates in a world market, making it difficult to pass on increased operating expenses. The additional cost incurred significantly effects their ability to be competitive in a world market. When the price of copper is low, the high-cost producers are the first to feel the effect. Since 1980 the copper industry has seen the loss of six smelters in the United States. A small portion of the lost smelter capacity has been made up by the remaining smelters. In the last two years, three smelters have gone on standby due to economic conditions. It is important to maintain the remaining smelter capacity as a part of the suspended smelters set-aside.

In 1990, the GCVTC and the IAS forecasted that the copper smelters in 2018 would have 78,000 tons of emissions. Within the GCVTC region, there are two smelters on economic standby. The most recent emissions from these smelters are 38,000 tons SO_2. The remaining operating smelters have current emissions of 48,000 tons, some 30,000 tons below the IAS forecast for 2018. This is a significant reduction over the forecast. In order to maintain the smelting capacity forecasted for the smelters within the region, the remaining smelters may decide to increase throughput to pick up some of the capacity lost if one or both of the smelters currently on standby don't come back up. Currently, these remaining smelters are not operating at 100% capacity. If these smelters increased throughput to a level that would not trigger NSR, the copper industry estimates that emissions would increase by a maximum of 13,600 tons SO_2. Therefore the Annex includes provisions for a 13,600 ton set-aside that could only be used to increase existing capacity. This set-aside will be available only if one or both of the suspended smelters do not resume operation. In addition, the set-aside may not be traded if the backstop trading program is triggered.

The following table identifies the preliminary facility-specific set-aside for each smelter to be used to maintain smelter capacity.

Company / Smelter	Baseline Level	Smelter-specific Set-aside
BHP San Manuel	16,000	1,500
Asarco Hayden	23,000	3,000
Phelps Dodge Chino	16,000	3,000
Phelps Dodge Hidalgo	22,000	4,000
Phelps Dodge Miami	8,000	2,000
Kennecott Salt Lake	1,000	100
TOTAL	**86,000**	**13,600**

This increase in emissions is not outside the NSR program and, if a smelter increases throughput through the addition of equipment, the smelter may be required to go through NSR. Also, this additional increase in emissions cannot be greater than that allowed in the individual smelter's permit and will not exceed the amount of the smelter set-aside. The SO_2 allowance in this set-aside cannot be traded in the market. It is the sole intent of these allowances to be used to make up some of the lost smelting capacity if one or both smelters don't come back up. If these allowances are used, the corresponding milestone will be increased by that amount not to exceed the amount in the set-aside.

b. State and Tribal Opt In/Opt Out Provisions

(i) Demonstration of Reasonable Progress. The GCVTC recognized that regional haze was a regional problem, and focused its technical and policy work on developing regional solutions.

The emission projections, visibility modeling and economic modeling were developed at the regional level, and assumptions were made that may not be valid locally but were expected to balance out throughout the region as a whole. This is especially true for the stationary source recommendations. The back-stop trading program envisioned by the GCVTC would allow the market to find the most cost-effective emission reductions throughout the region rather than specifying reductions for each source in the region through a command-and-control program.

When EPA promulgated the regional haze rule in July 1999, western states and tribes were offered two options for complying with the rule. The first option was to implement the GCVTC recommendations, as outlined in section 309 of the rule, with a SIP submittal due in 2003. The second option was to develop a SIP by the year 2008 as outlined in section 308 of the rule that would demonstrate that the state was on a 60-year glide path to reach natural visibility conditions. The question is how to adapt the GCVTC recommendations for stationary sources to the possibility that:

- One or more states may choose to develop a SIP under section 308 of the rule instead of implementing the GCVTC regional strategies;

- States not currently participating in the WRAP may want to opt-in to the back-stop cap and trade program; and

- Tribes, which are not required to develop a TIP by a specific date, may wish to participate in the regional strategies at a later date.

Section 309(e) of the regional haze rule states:

> "Any Transport Region State may elect not to implement the Commission recommendations set forth in paragraph (d) of this section. Such States are required to comply with the time lines and requirements of section 51.308. Any Transport Region state electing not to implement the Commission recommendations must advise the other states in the Transport Region of the nature of the program and the effect of the program on visibility-impairing emissions, so that other States can take this information into account in developing programs under section 51.309."

This paragraph of the rule provides for the possibility that some of the GCVTC states may not chose to implement a SIP under section 309 of the rule, opting, instead, to submit a SIP under section 308. States that develop SIPs under section 308 are not required to complete their SIPs until approximately 2008, which is well after the deadlines established under section 309. These states will not be able to advise the other states in the region of the effect of their strategies until their SIPs have been adopted. The following paragraphs outline the approach followed by the WRAP to deal with the uncertainties associated with the diversity of potential approaches to complying with the stationary source requirements of the Regional Haze Rule, and to allow states and tribes to choose the best option for their individual situation.

First, the WRAP has developed the backstop trading program, and technical demonstrations based on full participation of the states and tribes in the transport region. (In actuality, very few tribes have major SO2 sources, but those few were included in the emissions inventory on which the milestones are based.) The strategies were developed on a regional level, and many of the individual elements, such as the 50%-70% emission reduction of SO_2 by the year 2040, would be difficult to apply to individual states and tribes.

Second, in the Annex and the 2003 SIPs, the WRAP will make the assumption that states and tribes that do not participate in the program will achieve emission reductions equivalent to BART for sources within their jurisdiction and other regional strategies of the GCVTC. Therefore, as long as the states and tribes that developed SIPS and TIPS under section 309 of the rule implement the regional strategies, then the overall goals of the Commission will be met.

However, at the time of the submittal of 2003 SIPs, the milestones will need to be adjusted to exclude emissions from non-participating states and tribes. The adjustment is important, because it would not be equitable to trigger a trading program based on the activities of states and tribes that are not participating in the program.

The allocation process described in Section III.D.7 of the Annex will be used to determine an estimated emission budget for each State and Tribe in the region for each of the milestone years. The budgets for each of the participating states and tribes will, when added together, equal the regional milestone. The portions of the budget that were retained at the regional level for tracking purposes will be addressed as follows:

> (A) Tribal Allocation. The 20,000 ton tribal allocation will be included in the milestone, and will not be affected by the number of states that participate in the program. The WRAP recognizes that this allocation may become a significant part of the milestone only if few states participate in the program. This concern is counter balanced by the recognition that a critical mass of states and tribes will be necessary to create an effective program. If this critical mass is not achieved, then states and tribes are unlikely to develop Implementation Plans under §309.

(B) New Source Set Aside. The new source set-aside will be divided proportionally using growth estimates that were used to estimate the magnitude of new source growth in the region. These estimates were based on state-specific growth projection. Although state specific projections will be used to adjust the set-aside in accordance with state participation, once adjusted, the new source set aside is regional.

Because the allocation methodology may not be fully consistent with the methodology used to determine the BART level emission reductions, if the allocation methodology is used as the basis for adjusting the milestones in the event that a state opts out of the program, it will be necessary to review the adjusted milestones that are applicable to those states remaining in the program to ensure that the greater reasonable progress than BART requirement is met for those states.

Finally, in the 2008 SIP review, the WRAP will re-evaluate the GCVTC strategies in light of the programs that have been developed by transport region states under section 308 of the rule. If these programs do not achieve the assumed emission reductions, the WRAP will evaluate the magnitude of the shortfall and, if necessary, make adjustments to the programs that were developed under section 309 of the rule in order to meet the goals of the GCVTC.

(iii) Best Available Retrofit Technology for Regional Haze. When estimating the regional emission reductions in the region due to the installation of Best Available Retrofit Technology (BART) for regional haze, the regional haze rule outlines a 2-step process. First, the states must complete "an analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each BART-eligible source within the State subject to BART." Second, the states must complete "an analysis of the degree of visibility improvement that would be achieved in each mandatory Class I Federal area as a result of the emission reductions achievable from all sources subject to BART located within the region that contributes to visibility impairment in the Class I area..."

The GCVTC identified the visibility transport region for the 16 Class I areas of the Colorado Plateau. This transport region consists of 9 states and 211 tribes. In order to complete the analysis of regional haze BART, the states and tribes need to estimate appropriate retrofit control technologies for all BART-eligible sources in the transport region, and assess the visibility improvement due to the installation of these technologies. This regional analysis needs to occur under both sections 308 and 309 of the rule. However, there will be a timing issue; the states that choose to develop a 309 SIP will need to complete the analysis by 2003 while those that develop a 308 SIP will not need to complete this analysis until 2008. The proposed solution to the timing problem is to complete an analysis of regional haze BART for all transport region states and tribes using a source category approach for the 2003 SIPs. These source category estimates may then need to be re-evaluated in the 2008 SIP review based on the regional haze BART determinations that are made by states that develop SIPs under §308 of the rule.

c. Individual Source Opt In. Applicability for the tracking program, and the backstop trading program is currently limited to sources with actual SO_2 emissions $\geq$100 tons/year. The WRAP recognizes that allowing additional sources to opt into the program may provide additional flexibility and may encourage innovative emission reduction strategies.

The details of how this process would occur have not been discussed by the WRAP's Committees and Forums, and will need further definition, but the WRAP felt that it was important to provide a placeholder for this issue in the Annex to ensure that the milestone language that was adopted into EPA's regional haze rule would not preclude adding opt-in provisions at a later date. The details of these provisions would need to be developed in consultation with EPA, and submitted as part of the State and Tribal Implementation Plans.

d. Changes due to Emission Measurement Techniques. There is the possibility that new emission measurement techniques may significantly change the accuracy of emissions measurements from a particular source category. These changes would be either paper increases or paper reductions that would not reflect an actual change in the operation of sources within the region, or the amount of SO2 that they are emitting. This may be a significant issue in the near-term as the WRAP begins to develop monitoring protocols for measuring emissions if the backstop trading program is triggered.

The Annex includes provisions for establishing a technical review process, in consultation with EPA, to address future changes in emission measurement techniques. Any changes to the milestones that are developed through this process would need to be accepted by all of the participating states and tribes, and would then be submitted to EPA as revisions to the applicable Implementation Plans. The details of this technical review process have not been discussed by the WRAP's Committees and Forums, but the WRAP felt that it was important to provide a placeholder for this issue in the Annex to ensure that the milestone language that was adopted into EPA's regional haze rule would not preclude making adjustments due to new measurement techniques at a later date.

e. Changes due to Periodic Audits and SIP/TIP Reviews. The states and Tribes will conduct periodic reviews and audits, as described in Section II.F.7 of this document. The WRAP's Committees and Forums have not discussed the details of these audits, and how they might lead to changes in the milestones. However, the WRAP felt that it was important to provide a placeholder for this issue in the Annex to ensure that the milestone language that was adopted into EPA's regional haze rule would not preclude any necessary adjustments at a later date.

f. Utility CEMS Adjustment Protocol for Interim Milestones. As currently crafted the WRAP interim milestones are based on utility emissions projections from 1999 as measured by the current CEMS test method. (Test Method 2). EPA has established several alternative test methods that will be available to utilities on a going-forward basis. These new emission measurement techniques are expected to lower emission level readings from utilities. To account for these changes in utility CEMS emission measurement techniques, the WRAP, working with EPA, will develop a protocol by the end of 2000 to adjust the interim milestones as necessary. This protocol will be submitted to EPA for approval as part of the changes to section 309 that incorporate the Annex.

The protocol must be designed to ensure that utility sources using new CEMS measurement techniques are identified through reporting requirements, and to ensure that the interim milestones are consistent with the new measurement techniques so that compliance is not affected by "paper" emission reductions or emissions increases. The WRAP's goal is to design the protocol in such a way that milestones can be adjusted without the need for SIP revisions.

The actual magnitude of the adjustments will be determined using a facility specific analysis of those facilities that actually adopt the new measurement methodologies. The CEMS measurement issue has already been addressed in the 2018 milestone and that milestone will not be affected by this protocol.

3. Measuring compliance.

a. Annual SO_2 Emissions Inventory. The goal of the stationary source program described in this Annex is to establish SO_2 milestones, and then use voluntary and incentive-based mechanisms to meet those milestones. A key element of this program is therefore a tracking system to ensure that the milestones are being met. The Annex contains provisions for participating States and Tribes to compile an annual SO_2 emission inventory from all sources within their jurisdiction with actual emissions of 100 tons/year or greater of SO_2. A regional inventory will then be developed for comparison to the applicable SO_2 milestones.

b. Averaging. The milestones are created to establish the overall environmental goals for the program. The tracking system is then designed to ensure that these goals are achieved and should trigger the backstop trading program if the voluntary component fails to provide the needed emission reductions. However, the tracking system should also contain provisions to ensure that the backstop trading program is not triggered solely due to data collection fluctuations, unusual weather conditions, etc. that are not indicative of a program failure. The Annex contains provisions to measure compliance with the milestones by using a three-year rolling average. Because this program does not begin until 2003, compliance in 2003 will be based on 2003 data only. Compliance in 2004 will be based on an average of 2003 and 2004 data. Compliance using a three-year rolling average will begin with the 2003-05 data.

These averaging provisions should help to smooth out the natural variations in actual emissions as described below.

(i) Weather Fluctuations. Electricity generation is affected by the weather conditions. In a wet year more hydro generation will occur. A hot summer or cold winter increases usage of air conditioning and heating. Unusual weather patterns can continue for several years before reverting back to “normal” conditions. These fluctuations are accommodated under the existing permits for these sources because they can legally operate up to their allowable emissions.

(ii) Cyclical Industries. Some industries in the region are affected by global markets which can cause emissions to fluctuate. Production, and therefore emissions, may fluctuate significantly from year to year. These fluctuations are accommodated under the existing permits for these sources because they can legally operate up to their allowable emissions.

(iii) Variable sulfur content in fuels and feedstock. The sulfur content in fuels and feedstock is not constant. While smelters and power plants are designed to operate

within an optimal range of sulfur content, there will be higher or lower SO_2 emissions depending on the natural variability of the ore or coal.

(iv) Unexpected Emissions. Unexpected emissions due to breakdowns or other unusual events could skew the emission inventory in a particular year.

The averaging provisions will provide an additional benefit. If emissions reductions are not meeting the established goals in one year, sources will have some lead time to implement additional voluntary measures to ensure that the three-year average remains below the milestones. Averaging smooths out the year-to-year fluctuations and shows trends (favorable or unfavorable) allowing for the region to plan ahead and correct the problem.

c. Special Provisions for the Year 2018.

(i) One-Year Average. While the averaging provisions are needed to address natural variations in actual emissions, the year 2018 needs to be treated in a different manner. The regional haze rule requires that the milestones provide greater reasonable progress than regional haze BART. This demonstration has been focused on the year 2018, to show that this test has been met by the end of the long-range planning period. The Annex contains provisions that require a direct comparison of actual emissions in the year 2018 to the 2018 milestone, without any additional averaging provisions, to ensure that the overall regional emission reductions achieve greater reasonable progress than regional haze BART.

(ii) Penalty Provisions. The milestones developed by the WRAP delay the most significant emission reductions until the end of the 15 year long-range planning period, with a "down payment" in the year 2013 to ensure that there is continuing progress. The utilities are facing a number of uncertainties due to deregulation, new source review reform, BART for NOx and PM (due in 2008 SIPs), as well as other potential regulatory requirements. As a result, they do not want to make significant capital expenditures until after 2013 when they expect to have a better understanding of the total set of requirements. Environmental groups have expressed concern that: 1) the program provide for interim air quality progress through sound interim milestones, and 2) excessive deferral of emission reductions to the end of the planning period may mean that we get to that point only to find that the emission reductions are too great to occur in such a short time, leading to a large non-compliance problem, or even a back-tracking from the commitments made in the SIPs.

The WRAP has included provisions in the Annex to ensure that the 2018 milestone would in fact be achieved. The suggested method for doing so is a penalty mechanism. Under this penalty approach, if the 2018 regional milestone was not met, each source would compare their actual emissions in 2018 with their 2018 allowance allocation. The source would then be assessed a financial penalty for each ton of SO_2 that was emitted above its allocation, as well as a mitigation penalty in the form of a reduced allocation in the future. The concept is that sources that had "done their part" to reduce emissions would not be penalized.

(iii) 2013 SIP Review.

§309(d)(10) of the regional haze rule outlines the requirements for the 5-year SIP reviews. The following paragraphs deal specifically with an assessment of the effectiveness of the control strategies:

> §309(d)(10)(I)(F) [The progress reports must contain at a minimum the following elements:] An assessment of whether the current implementation plan elements and strategies are sufficient to enable the State, or other States with mandatory Federal Class I areas affected by emissions from the State, to meet all established reasonable progress goals.
>
> §309(d)(10)(ii)(B) If the State determines that the implementation plan is or may be inadequate to ensure reasonable progress due to emissions from sources in another State(s) which participated in a regional planning process, the... State must also collaborate with the other State(s) through the regional planning process for the purpose of developing additional strategies to address the plan's deficiencies.

Therefore, the assessment of progress towards meeting the regional emission targets must include a backward-looking review of progress to date, as well as a forward-looking view of the region's expected emissions for the remainder of the planning period. By the time the 2013 SIP review is completed, the states and tribes in the region should have a good emission inventory projection for the year 2018. Sources that are planning to install new pollution control equipment will most likely have begun the permitting process for the equipment, or will be far enough in the planning process to commit to making the reductions by the year 2018.

The program will include five year State Implementation Plan (SIP) reviews, with an option for a 2013 trigger of the program. The purpose of the optional trigger is to insure that regardless of whether the milestone is met in 2013, the targeted emission reductions actually occur by the 2018 milestone date, as agreed to in this program and as required by the regional haze regulations. This 2013 trigger option will be implemented by consensus of those states and tribes that have implementation plans under Section 309. Implementation of the early trigger will be based on a demonstration that available data indicates compliance with the 2018 milestone will not be achieved. Data used to make this forecast includes projected or actual emission levels for 2013, and projected remaining emission reductions available in the region through 2018. Even so, there are provisions for individual source penalties if the 2018 milestone is eventually exceeded.

d. Special Provisions for Mohave Emissions for 2003-2006

When the interim milestones where first recommended by the WRAP's IOC, there was an undiscovered error in the baseline emissions projection for utilities. The error was that controls planned for the Mohave Electric Generating Station in 2006 were incorrectly assumed to be in place in 2003. Therefore, the WRAP has included a correction for this error that will be used when measuring compliance with the milestones for 2003 through 2006.

Consistent with the recommendations of the GCVTC, for the purposes of evaluating compliance with the interim milestones, prior to installation of the SO2 controls required by the end of 2006 in the Consent Decree for Grand Canyon Trust v. Southern California Edison (District of Nevada CV-S-98-00305-LDG, dated December 15, 1999), emissions from the Mohave Generating Station will be calculated using an SO2 emission rate of 0.15 pound per million BTU of coal input. This emission rate is consistent with the maximum allowable emission rate effective in 2006 under the Consent Decree. These calculated emissions for Mohave will be substituted for the actual emissions in 2003, 2004, 2005, and on a prorated basis for 2006 (i.e., for any part of 2006 prior to the installation of the controls) for the purpose of determining compliance with the interim milestones.

B. Reasonably Attributable BART and Geographic Enhancements.

The purpose of the "reasonably attributable visibility impairment" (RA visibility impairment) program is to address "hot spots" in the WRAP region until 2018, the date when all BART ends assuming the 2018 milestone is satisfied. During this period, there will be no restrictions on Federal Land Manager (FLM) "certification of impairment," when it is found that sulfates are not decreasing in Class I areas. FLM recommendations to the states regarding causes of RA visibility impairment will only focus on stationary sources controlling less than 85 percent of SO_2 emissions located within 100 miles of the Class I area in question. Prior to the issuance of any certification letter containing recommendations to the state on source controls, the FLM's will consult with the states and those sources implicated under this program, in order to determine what SO_2 emission control plans are already planned by 2018.

Also, there will be no restrictions on subsequent state determination of reasonable attribution of impairment during the RA visibility impairment program duration. However, the states intend for this program to address impairment that is reasonably attributable to a particular source, rather than to address that source's general contribution to haze level visibility impairment. The states recognize that a BART action for RA visibility impairment may have a coincidental impact on regional haze, but addressing regional haze is not the purpose of the RA visibility impairment program. In order to clarify some of these distinctions, the WRAP states plan to develop guidance that addresses the distinction between reasonably attributable visibility impairment and regional haze visibility impairment. Feedback from interested parties is requested on the content of state guidance related to reasonable attribution.

Also, there will be no restrictions on state analysis and determinations of BART for an effected source. Three options for remedy are provided in cases where "certification" is executed and a

finding of reasonable attribution is made. First, BART retrofit controls can be required on the sources to which the impact has been attributed. As a second alternative, states can apply controls to other sources. Finally, as under current law, sources and states may negotiate a BART "off ramp" in advance of certification, which entails installation and operation of emission controls, or includes other restrictions such as limitations on the purchase of allowances, that satisfies BART for the source.

C. Other Class I areas.

It is the intention of the states and participating tribes to demonstrate in the 2003 Implementation Plans, that the milestones and backstop trading program will satisfy the "greater reasonable progress than BART" requirements, and any other reasonable progress requirements for additional Class I areas through 2018. This demonstration will apply to all sources of sulfur dioxide participating in that program. The work plan and resources needed to make this demonstration in the 2003 implementation plans will be identified and provided by the WRAP. Class I areas beyond the original 16 will be addressed in the Annex, even if only to identify the process and procedures to address this issue in the 2003 implementation plans.

Further, the states must evaluate other sources and pollutants in order to demonstrate reasonable progress for additional Class I area. Although it is their intent to do so, the states and tribes recognize that it may not be practicable to satisfy the additional Class I area requirements for all other sources of anthropogenic emissions besides stationary sources (e.g., mobile and area source sectors), and for all species of visibility impairing pollutants from stationary sources (e.g., NO_x and PM), by the 2003 deadline. States have the option of addressing these additional issues later, in a 2008 SIP.

D. Allocations.

The Annex outlines a methodology for allocating SO_2 allowances to stationary sources characterized by emissions of 100 or more tons of SO_2 per year, and also explains the timing of various draft source-specific allocations based on this methodology. This methodology describes the procedures that participating Transport Region States and Tribes will use in assigning facility-specific allocations in their SIPs and TIPs. There are several key elements to the methodology, including:

- Compliance with the trading program would be assessed annually beginning five years after the program trigger determination.

- Allowance allocations would occur in five-year increments four years in advance of first availability for compliance through the end of the first planning period of 2018 (see example timeline for more detail).

- The Tribal and new source set-asides will remain at the regional level, whereas, the allocations to existing sources will be dispersed proportionately to the States and Tribes for distribution via their SIPs/TIPs. States and Tribes will use the agreed-upon formula for allocating credits.

- Each tonnage amount associated with a set-aside will be an annual provision to the set-aside (for example, a 20,000 ton set-aside for the Tribes means 20,000 tons apportioned to the Tribes every year once allocations under the trading program begin).

- Renewable energy allocations will be distributed from the reducible portion of emissions and be administrated on a regional level.

It should be noted that this allocation procedure would only be used in the event the voluntary reductions are not sufficient to meet the projected milestones.

1. Timing. The following paragraphs explain the timing and duration of allocations under the trading program. For further clarification, an example based on a hypothetical trigger is included following the description.

As required by the regional haze regulations, the initial allocation of SO_2 allowances for the trading program will occur twelve months following the program trigger, allowing sources several years to incorporate allocation information into planning for compliance. (Note that sources would have had approximate allocation estimates associated with each milestone in the Annex and a more accurate – but still approximate – estimate by the time the 2003 SIPs are due. See Projected Results section for more information.) This initial allocation will span a period of five years, beginning with the year in which compliance with the trading program is first required. The Regional Haze Rule requires compliance with the milestone within five years. Subsequent allocations will occur every five years, beginning five years after the initial allocation. As a result, sources will always have a minimum of five years of allocations for planning purposes. Additionally, the methodology will remain unchanged through the allocation

periods, providing an additional degree of certainty.

Hypothetical Timeline

2008 Three-year regional emissions averages exceed corresponding average of associated three milestones

2009 Determination of exceedance and trigger of backstop trading program (RHR requires triggering within twelve months of determination)

2010 Allocations distributed to sources contributing to the trigger for the first five years of the trading program (2014 - 2018). Sources are not collectively required to reduce their emissions until the start of the trading program in 2014. Official trading may begin as soon as allowances are allocated.

2014 Compliance with the trading program is required (RHR requires compliance within five years of the trigger determination)

2015 Allocations distributed to sources for the next five years of the trading program (2019 - 2023)

....and so on.

A five-year allocation means that new sources will receive allowances from the new source set-aside for a finite amount of time before they are folded into the standard allocation process, and receive their floor as existing sources. For example, a source entering the program in 2014 under the scenario above would receive allocations from the new source set-aside for only the years 2014 - 2018, since that source would be incorporated into the next region wide allocation which would occur in 2015 for the years 2019 through 2023. This is explained further in the new source piece of the following section.

Sources that retire will maintain possession of their full allocation for that allocation time period. During the following allocation periods, they will receive their floor allocation through the life of the program. For example, a source retiring in 2014 under the scenario above would maintain possession of allowances allocated in 2010 for the period 2014 - 2019, but will only receive the floor portion of their allocations distributed in 2015 for the next allocation period.

2. State and Tribal Budgets. The States and Tribes are the regulatory authority for the backstop trading program, and the program is designed to function as a cooperative agreement between independent, sovereign entities. This has implications for the process used to distribute allowances for the backstop trading program. Allowances cannot be distributed to sources by a regional entity such as the WRAP because the regulatory authority is retained by the states and tribes. The best way to handle this type of program is to establish budgets for each participating state and tribe. The state and tribal budgets will be calculated from the facility level, using the allocation formulas described in this section. The states and tribes will then distribute the allowances to sources within their jurisdictions using the same formulas. In the case of regional set-asides (the new source and tribal set asides), different mechanisms may be established to reconcile the need to recognize state and tribal sovereignty with the regional nature of these allowances.

3. Distribution Order. Allowances under the emission cap will be distributed according to the following order:

- 20,000-ton Tribal allocation
- 9,000-ton new source set-aside
- California RECLAIM Program (4,977 tons in 2000-2002 and 3,462 tons in 2003 for the life of the program). These credits will be a subset of the existing source pool for the state of California, and, hence, will not consume any extra allowances from the total pool.
- Floor allocations to existing sources
- Renewable energy allocation
- Early reduction bonus allocations
- Reducible allocations to existing sources

4. Regional Set-Asides. The regional set-aside will be made up of two components: the Tribal allocations and the new source allocations. Both will be administered on a regional level.

a. Tribal allocation. Once the trading program is triggered, 20,000 tons each year will be distributed directly to tribal interests as directed by the tribes, and will be used by the tribal community as they wish. The methodology for redistributing the 20,000 tons among the tribes in the region will determined by the tribes in consultation with EPA. Attachment F discusses some of the considerations for determining the methodology, and presents a conceptual proposal.

These allowances acknowledge that Tribal lands are predominantly undeveloped and, thus, would not receive allowances under a scheme incorporating only past emissions as a basis for allocation rights. As stated on page 35 of the GCVTC recommendations, the program should "ensure that all allocations to Tribal lands, rural areas and relatively undeveloped areas (e.g., clean air corridors) are of practical benefit."

The 20,000 tons included in the targets help assure that Tribes will be treated equitably under the trading program and not excluded from the opportunity to develop industry on Tribal lands. This allocation does not represent a cap on emissions from Tribal lands, as Tribes may also acquire allowances by other means. For example, existing sources on Reservations which opt into the program would receive allowances according to the provisions of the general allocation scheme. In addition, Tribes have the option of regulating SO_2 emissions under §308.

b. New source set-aside. Given the nature of the applicability requirements for the trading program, there will be two different categories of new sources, or sources not included in the initial applicability, for purposes of this discussion: (1) sources that commenced operation after the program trigger years and are characterized by a PTE of 100 tpy or greater, or that were modified after the program trigger years and are characterized by a PTE of 100 tpy or greater (those sources lacking operating data on which to base allocations, or, in the case of modified sources, at least do not have data that can serve as a basis for prescribing future allocations); and (2) sources not covered by the first category that emit 100 or more tons of SO2 in any year after the program trigger year (those sources for which operating data is available to provide a basis for allocations). The first category will be referred to as "truly new sources" and the latter category will be referred to as "existing new sources". Both of these groups will receive allocations from the new source set-aside, but based on different criteria:

- **Truly new source**: the lower of the NSPS or permitted emission rate for the source multiplied by the maximum design heat input if the source is a utility, or by the maximum hours of operation or equivalent measure if the source is not a utility. Since these sources receive an allocation based on maximum assumptions, they will be required to surrender allowances in addition to those needed to cover emissions following each control period; these sources will be required to surrender allowances to account for the actual, as compared to the maximum, utilization of the unit.

- **Existing new source**: the lower of the NSPS or permitted emission rate for the source multiplied by the average heat input of the higher two of the last three years if the source is a utility, or by the average hours of operation or equivalent measure of the higher two of the last three years if the sources is not a utility.

New sources will be required to request an allocation from the applicable State or Tribe according to the above criteria. The number of years for which a source receives an allocation from the new source set-aside will be dependent on the timing of the trigger of the trading program, but since allocations will occur every five years, a new source will be included in the standard allocation process as an existing source no later than nine years after first entering the program. New sources will be thus gradually incorporated into the floor as allocations are updated over time.

Any allowances remaining in the new source set-aside in any year will be carried over for potential use by new sources in the following year until such time that the regional five-year allocation process occurs. In conjunction with allocations every five years, any allowances remaining in the new source set-aside will be carried over to the next five-year allocation period to be used by new sources. Use of these allowances will be subject to the banking and management provisions of the trading program.

Though the new source set-aside is intended to be large enough to ensure that it is not depleted of allowances to distribute for a given year, it may be over-subscribed if growth exceeds projections for a given period. In the event that the allocations needed for new sources coming into the region exceed the number of allowances available in the new source set-aside, new sources not covered must purchase allocations from the market. The idea behind this strategy is to minimize the barriers to new sources coming into the region – since new sources will be subject to NSR, they will be highly controlled and have had their visibility impact highly mitigated – while maintaining all new source growth within the cap.

It should be noted that the new sources on Tribal lands will also have access to the new source set-aside.

The new source set-aside shall consist of 27,000 tons of allowances, parceled out in increments of 9,000 tons, with one allotment issued at the beginning of each five year period (2003, 2008 & 2013). The set aside will be available to new sources on a "first come - first served" basis, with allocated allowances available for sources to use each year of their subsequent existence. Should allowances available in any one period be fully expended, new sources subsequently entering the program during that period will have to buy allocations from the market until such time as

another allotment of new source allowances is made. Thus, the program would continue to be based on a "first come - first served" priority. This arrangement will ensure that the set-aside will be distributed over the life of the program, giving new sources that come on line later in the program the opportunity to receive allocations without having to purchase them from existing sources.

All new sources that come into existence after 2003 will utilize allowances first from this new source pool, even though they would not formally be allocated those allowances until such time as the backstop trading program is triggered. Thus in 2008, if a hypothetical value of 12,000 tons of SO_2 happened to already have been used up by new sources coming into the region since 2003, then there would be 6,000 tons left for new sources at that time (9,000 tons issued in 2003, plus 9,000 tons issued in 2008, minus the 12,000 tons already used by new sources).

A 1,000 ton source entering the program in 2014 under the "Hypothetical Timeline" cited earlier in this section, would apply to the new source set-aside for 1,000 allowances each year for the years 2014 - 2018 (at which time the source would be folded into the floor as an existing source). Were no other sources to enter the program that year, 14,000 tons of new source allowances would be carried over to the next year (6,000 tons left over in 2008, plus 9,000 tons issued in 2013, minus 1,000 tons from this latest new source).

During the 2008 SIP review, the States and Tribes will evaluate the new source set-aside to determine if it is meeting its objective. At that time, adjustments to the set-aside can be made.

5. Distribution to Existing Sources. The remaining regional allowances will be distributed to existing sources as described below. The distribution to existing sources is composed of two portions: floor and reducible allocation, as further explained below.

a. Floor. There will be two components of the “floor allocation” – an allocation for the California RECLAIM program, and source specific floor allocations for non-RECLAIM sources. A “floor” level will be provided to all sources with the intention of ensuring each has sufficient allowances to operate were the source highly controlled. This floor portion of the allocations will remain constant through the program; though overall allocations will decrease every year in conjunction with decreasing milestones. The resulting allocations must be less than or equal to the relevant portion of the State’s or Tribe’s trading program budget. Should these calculations result in allocations greater than the State’s or Tribe’s trading program budget, then the allocations must be proportionately decreased at existing sources to result in a level of allocations equal to the state trading program budget.

> **(i) California RECLAIM Program.** SO_x stationary source facilities in the South Coast Air Basin that emit 4 tons per year or greater, including new sources, are already captured in RECLAIM, a declining cap market trading program. Between 1994 and 2003, the program will achieve a reduction of roughly 80% of all permitted stationary source emissions of SO_x in the South Coast Air Basin. SO_x emissions will be capped at their 2003 level. New SO_x sources who qualify for the RECLAIM program must apply LAER and offset any remaining emissions by purchasing credits in the RECLAIM market. Therefore, new SO_x sources are not expected to contribute to any emissions

increase in the programmatic allocation. For this reason, new sources that fall into the RECLAIM program will not be subject to this provision of the allocation methodology, but will be contained within the RECLAIM "source category." As indicated, RECLAIM facilities are not expected to contribute to any increase in the annual programmatic allocations for SO_x sources in the South Coast. However, should the RECLAIM program fail to achieve required SO_x reductions, the South Coast SIP will be revised to correct any deficiencies. It should be noted that the total RECLAIM Program allocations are less than those that the sources would have received under the MTF methodology.

The following methodology will be used to address the California RECLAIM Program: (1) assign each specific RECLAIM facility a zero allowance; and (2) include a new line item for the California RECLAIM program equal to the aggregated SO_x emissions for the RECLAIM Program as of 2003. The RECLAIM program has a higher cap that exists prior to 2003. Details regarding this earlier cap are not included because the backstop trading program would not be triggered prior to the year 2003, even under the worst-case scenario. Since the RECLAIM Program is already a cap and trade program that allows trading within the RECLAIM universe, no other actions would be necessary; i.e., the RECLAIM allocation would be a stand-alone program. If at any point a market program for regional haze is triggered, the RECLAIM facilities would continue to operate according to the State regulations that apply to these sources. In turn, the SO_x market trading program would account for these RECLAIM emissions in the baseline as the "floor" with no reducible portion; the regional allocations would be adjusted accordingly so that there would be no double counting from what has been assumed in the California baseline. It should be noted that the California RECLAIM allocation is a subset of the total California allocation.

The RECLAIM allocations will be given to the California RECLAIM program for their management and distribution.

(ii) Existing source-specific floors. The floor allocation for existing sources which will be divided into two industry sector categories: Utility Sources and Non-Utility Sources. This allocation will be determined on a facility-by-facility basis and then aggregated into sectors. The division of the floor allocation into these two industry sectors will in no way restrict trading of credits across both sectors.

b. Non-utility source-specific floors. To provide each source with its "floor" allocation, apply BACT, BART or LAER as appropriate to each source, and multiply that level of control by the appropriate measure of a source's operation as determined by averaging the higher of two of the three latest years of data at the time the calculation is performed. This floor determination will be made on a source by source, as opposed to a category, basis, as necessary. For some of the larger sources, the floor has been well defined but, for others, the States will have to determine them prior to the 2003 SIP.

c. Utility source-specific floors. The Utility Sector has been working diligently to resolve the floor determination. They currently have two floor determinations under consideration. The methodology for these two approaches is as follows:

The **control efficiency option** uses a floor at a control efficiency of 85 percent. Those units

operating at this level receive allocations that enable them to operate at an 85 percent capacity factor or their year 2000 capacity factor, whichever is greater. For the remaining units, their uncontrolled emissions are calculated, then the 85 percent control efficiency is applied to each of those units and finally their allocations are shaved to meet the allocations level.

The **emissions rate option** is similar to the control efficiency option but uses a floor set at the emissions rate of .271 lbs/mmbtu. The emissions rate option captures changes in coal quality and other variables that may impact total emissions. The floor rate is based on a calculation of projected emissions for the 2003 milestone and using the average heat rate for all units over the 1996-99 time period. As in the first option, units emitting at or below the emission rate receive allocations enabling them to operate at an 85 percent capacity factor or their year 2000 capacity factor, whichever is greater. The remaining allocations are then redistributed to those with emission rates above the level of .271 lbs/mmbtu.

d. Reducible allocations. From the reducible portion of the allocations, both renewable energy allocations and early reduction credits will be awarded. The remainder of the reducible portion will then be allocated to existing sources.

> **(i) Renewable energy allocations.** Renewable energy sources were defined by the Pollution Prevention Forum and, for the purpose of allocation, those sources will be eligible for incentive allocations. The following is the definition of renewable energy developed by the Pollution Prevention Forum: "Renewable energy" means electricity generated by non-nuclear and non-fossil low or no air emission technologies using resources that are virtually inexhaustible, reduce haze, and are environmentally beneficial. The term includes electricity generated by wind energy technologies; solar photovoltaic and solar thermal technologies; geothermal technologies; technologies based on landfill gas and biomass sources, and new low-impact hydropower that meets the Low-Impact Hydropower Institute criteria. Biomass includes agricultural, food and wood wastes. The term does not include pumped storage or biomass from municipal solid waste, black liquor, or treated wood.
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> Eligible renewable energy resources that begin operation after October 1, 2000 will receive 2.5 tons of SO2 allocations per megawatt of installed nameplate capacity per year. A source beginning operation prior to the trigger will receive its SO2 allowances as part of the initial allocation. The allocation will be retroactive back to the time of initial operation. Sources beginning operation after the program begins will be awarded allowances for each year of operation at the time of the five-year allocations (including retroactive coverage of prior year operations). Thus there will not be a set-aside in advance -- allocations will be awarded in conjunction with the five-year allocations, coming from the reducible portion of existing source emissions. It is presumed that the amount of renewable allowances will be small in relation to the overall size of the program. An emitting eligible renewable energy source would receive allowances from the new source set-aside and an additional 2.5 allowances per MW of capacity from the reducible portion of the allocations.
>
> **(ii) Source-specific early reduction bonus allocations.** To provide an incentive as well

as additional flexibility for sources, a system is being proposed for awarding of bonus allocations for sources reducing their emissions prior to the imposition of any reduction requirements or below their floor allocations. These allocations would be issued as allowances to meet compliance requirements under the backstop trading program.

To protect the integrity of the emissions milestones, early reduction bonus allocations should come from the pool of "reducible" allocations. It is acknowledged that this approach would place more pressure on other sources to reduce emissions after the market is triggered. Regardless, sources would be aware of this at the time of the trigger, and, therefore, five years prior to compliance requirements to plan accordingly. Although sources would receive a somewhat smaller allocation across the board for the first year of compliance, these allowances will be available to sources, either through the pursuit of early reductions, or through the market.

A source would earn early bonus allocations, beginning as early as 2003, if its emissions are less than that source's 2018 allocation, prior to triggering of the market. A source would be eligible for bonus allocations based on each year that actual measured emissions are below their 2018 allocation or floor.

Allocations are more abundant at earlier stages in the program. As a result, the use of an earlier year as the basis for awarding bonus allocations creates the potential for some sources to earn credits as a result of environmental or market factors as opposed to making permanent emissions reductions. Incentives for all sources to reduce emissions may not be present until the 2013 to 2018 time period. Using interim milestones creates a sliding scale that may make enough bonus allocations available to result in paper reductions but actual emissions increases, creates an added burden for tracking allowances and emissions, and could reduce public confidence in the program. Reliance on 2018 as the benchmark directly ties the early credits to the operative legal standard, which is to achieve, by 2018, greater reasonable progress than would have resulted from the installation and operation of BART. This may help ensure the 2018 milestone is met if the program has not already been triggered at that time.

(e) Existing Source Bonus Allowance. In cases where the source undergoes modifications and the State or Tribe is required to issue an updated operating permit to reflect the changes (either in process technology or emission controls), the source and state should identify these emission reductions and begin tracking them at that time. Sources that are making reductions without going through formal permitting should notify the permitting authority at the time the reduction effort is initiated. Regardless, within 90 days after formal notification that the backstop cap-and-trade program has been triggered, all sources wishing to receive early reduction bonus allocations would be required to submit requests for bonus allocations to the appropriate State or Tribe for certification. States and Tribes will certify the emissions reductions that can be credited toward bonus allocations as equal to the sum of tons below the 2018 allocation for that source for every year emissions were below the 2018 allocation. The annual bonus allocations will be equal to the certified total tonnage, divided by 10, and available for ten years, beginning with the first compliance year. The Administrator must then reallocate the reducible portion of the allocations pool, pro rata, to each source, after subtracting the total amount of bonus

allocations from the reducible pool. All bonus allowances awarded will be available for use in the first year in which compliance is required. Any allowances not used for compliance in the first year of the program will be carried over as banked allowances just as would be the case with any other allowance banked under the program.

Example: Partially controlled source X, with a 2018 allocation of 6,000 tpy, installs new scrubbers that began operating on January 1, 2005, reducing its allowable emissions rate to 6,000 tpy. It is determined in 2011 that the milestone was exceeded in 2009. The source operated at 4,800 tpy all years from 2005 through 2009, accumulating a total of 6,000 tons for use as bonus allocations. Beginning in 2016, the first compliance year, source X receives its regular allocation for each year plus 600 tpy bonus allocations for up to 10 years. If this was the only source receiving bonus allocations, the reducible pool of allocations would have 600 tons less each year and be redistributed on a pro rata basis to all sources operating above their floor allocations, including source X, if its floor was less than 6,000 tpy.

(f) New source bonus allocations. New facilities are a special case since they generally will receive a floor allocation consistent with their operating permit limits. In the case of a new facility where the permit limits (and thus the floor allocation) is above the actual emissions, and no "actual" reduction in emissions has taken place, no early reduction bonus allocations would be available. An exception to this would be made if the source changes its permit limit downward to reflect a long-term commitment to operate at a reduced emission limit that will also cause its actual emissions to decrease. In this case, the bonus allocation for the new source would be limited to the lesser of the actual or permitted emission reduction.

(g) Verification of reductions. Early reductions must be real, surplus and quantifiable. Since reductions would be based on the allocation for each source in the absence of a standard emission rate or other requirement, sources must verify that reductions represent actual control measures and not shifts in utilization to other sources. Further, reductions must be monitored according to prescribed protocols. Since it appears that monitoring and reporting before and after the trading program begins will be identical for utility sources, but potentially different for non-utility sources, non-utility sources seeking early reduction credits would need to follow post-trigger monitoring and reporting protocols in order to qualify for bonus allocations.

> **(i) Source-specific reducible allocations.** These are the emissions in excess of a source's floor and will be reduced over time to meet the milestones. The reducible allocations will be distributed on a regional basis, and not by Industry Sector categories. However, distribution to sources in the utility and non-utility sector will utilize different historic data to determine each source's relative contribution to emissions in the State or Tribe: 1996 and 1998 emissions for non-utility sources, and 1995 - 1999 emissions for utilities.

6. Allocation Estimates for Individual Sources. Preliminary results of the application of the methodology explained in this report will be provided based on existing sources and the milestones established in the Annex. More refined estimates will be provided in the 2003 SIPs. To provide these preliminary results for the 2003 SIPs, the allocations will be estimated based

on the sources that were in existence in 1996 and 1998 for non-utilities and 1999 for utilities.

The individual source allocations for actual distribution under the trading program will not be finalized until the trading program is triggered, since applicability is dependent upon the sources involved in triggering the program.

7. Enforcement Actions. Should a source be subject to an enforcement action, that source's emissions shall be limited to the appropriate level prescribed by that action, and the allocation methodology will acknowledge that limitation by limiting the source's allowances accordingly.

E. Description of Backstop Trading Program Elements

This section of the report delineates the elements of the Western Emissions Budget Trading Program (WEB Trading Program or WEB Program). It is important that many of these key elements be identical across the region in order to ensure a viable and effective trading program with low transaction costs and minimum administrative costs. Consistency in key elements will ensure trading and compliance can occur seamlessly and equitably in achievement of program goals. The WRAP used existing programs such as the Acid Rain SO_2 trading program, the OTC NOx Budget Program, and the SIP call NOx Budget Trading Program, which operate similarly in terms of several of these elements, as a template for the backstop trading program. Therefore, the decisions below reflect basic tenets of programs already operating successfully and/or sanctioned by EPA. Further, they provide consistency for those sources in the backstop trading program already covered by the Acid Rain Program.

1. Applicability

The sources to which the backstop trading program will apply are all those stationary sources in participating states and tribes that emit SO_2 in an amount greater than or equal to 100 tons per year. The 100 ton cut-off will be assessed at the plant level to correspond with the methodology used in the 1990 emissions inventory. Among the source types covered by this definition are utility and industrial boilers, refineries, smelters, pulp and paper mills, cement and lime kilns, and all of the other source categories listed in Section 169(g)(7) of the Clean Air Act. Basing applicability on actual emissions instead of the more traditional assessment of potential to emit (PTE) raises several concerns. Following are these concerns as well as the WRAP's decisions as to how to address them:

- ❑ Basing applicability on actual emissions requires determining the baseline year for inclusion in the program. The backstop trading program uses the program trigger years as the baseline for applicability. Since all sources at or over 100 tpy at the time the program is triggered have to be brought into the program, using an earlier set of years as the applicability baseline would just label more sources as "new" as opposed to "existing" sources for applicability and allocations purposes. Using the program trigger years is not in conflict with the allocation methodology, which incorporates recent emissions in the late 1990's into distribution of the reducible allowances, since applicability and determination of allocations do not need to be identical.

- ❑ There are some sources that will emit less than100 tons at the start of the program, and then increase their emissions at a later date. These sources will be brought into the program during the five year SIP reviews. EPA's Proposed Consolidated Emissions Reporting Rule, published on May 23, 2000, requires emission reporting from smaller stationary sources of SO_2 with emissions between 100 tons/year and 2,500 tons/year every three years (sources currently are required to report annually). In recognition that inventories for smaller sources therefore may not be available annually, applicability for these sources will be determined as part of the five-year SIP review process. There will not be many sources affected by this issue and their emissions will not significantly affect overall regional emissions. The milestones will not be affected by the addition of

these sources in five-year intervals.

- ❑ The SO_2 emissions of some sources may fluctuate above and below the 100 ton/year cut off, which could make it difficult to include program requirements in permits, and to have a stable measure of the sources that are in the program. Therefore, the program includes applicability provisions to ensure that any source that exceeds the 100 tpy threshold (either at the start or at any future date after the program is triggered) will be included and will remain in the program thereafter. Sources exceeding the threshold after the program begins will be folded into the program in conjunction with the five year SIP reviews. Should a source be allowed to take a permit limitation below 100 tons per year to exempt from the program, the milestones will be adjusted downward accordingly.

- ❑ The applicability of new sources cannot be assessed based on actual emissions, because these sources have not yet begun operations. Therefore, applicability for new sources will be based on their permitted level of emissions. If a new source is permitted to emit 100 tons or more of SO_2, then the source will be included in the program.

- ❑ A modification to an existing source raises similar issues because emission changes due to the modification will not be known for several years. Therefore, applicability for modified sources will be based on their new permitted level of SO_2 emissions.

- ❑ Finally, basing applicability on actual emissions raises the concern that all BART-eligible sources may not be included, since BART-eligibility is determined based on PTE of 250 tpy, and there could be such a source which emits less than 100 tpy. As a result, the applicability definition is extended to all BART-eligible sources. It is not anticipated that many, if any, sources will fall into this category.

2. Monitoring and Reporting

Sources participating in a cap-and-trade program must be able to accurately and consistently account for their emissions. According to the Draft Economic Incentive Program (EIP) Guidance, the cap-and-trade EIP must require capped sources to use the best available monitoring techniques. This is because the monitoring and reporting needed to demonstrate compliance with an emissions cap and to support an emissions trading market are very different from the monitoring and reporting necessary to support many traditional programs. Compliance for many traditional programs can be confirmed by a simple demonstration that an affected source is operating at or below the applicable emissions rate. With emissions caps and trading, the monitoring methods must be able to quantify the total amount of emissions created by a source so that compliance can be determined and so that allowances can be created consistently and fairly. The ability to trade allowances creates an economic interdependence between the participating sources in a market-based program; allowing sources to use less-certain measurement techniques or quantification procedures could introduce uncertainty into this program.

For program success, it is necessary to ensure that a WEB SO_2 allowance actually represents one ton of SO_2 emissions, and that one ton of reported emissions from one source is equivalent to a

ton of emissions reported from another source. This establishes the integrity of WEB allowances and instills confidence in the market mechanisms that provide covered sources with flexibility in compliance. Accurate and consistent monitoring and reporting ensure that compliance can be determined quickly and equitably, and that the buyers and sellers in the market can determine the value of what they are trading. Therefore, the system efficiency, as well as the environmental performance, is dependent on comparable emissions measurement requirements for all sources.

In addition, a monitoring and reporting system must be consistent from state to state and source to source. These requirements may differ from existing state requirements which were, in most cases, developed to support other programs. This system must provide all the data needed to determine compliance with a mass emissions trading program, meaning that WEB sources will have to report mass emissions. In order to ensure that all emissions are accounted for, sources also must be able to provide emissions data on a continuous basis.

The specific monitoring and reporting requirements necessary for the WEB Trading Program apply to two distinct groups: utilities and remaining source categories.

a. Utilities:

Utilities will be required to continue monitoring and reporting in accordance with 40CFR Part 75 for purposes of the regional haze trading program. Utilities have already installed and currently operate Part 75 continuous emissions monitoring systems (CEMs) for purposes of the Acid Rain Program, and thus are already monitoring and reporting emissions with a high level of accuracy. The high level of accuracy achievable with CEMs must be replicated to the greatest extent possible with other source types to maintain the credibility of the trading program and the value of allowances.

b. Remaining Source Categories:

Monitoring: The remaining source categories will be monitored in accordance with existing practices, with the addition of conservative elements to achieve a level of accuracy comparable with 40CFR Part 75. The wide variety of sources potentially included in the WEB Trading Program requires that we incorporate alternative monitoring requirements for those sources for which Part 75 is not readily applicable or feasible, including smelters, refineries, lime plants and cement kilns, industrial boilers, pulp and paper, and potentially additional categories. These sources currently report emissions based on CEMs under 40CFR Part 60, source testing, mass balance, or emission factors proven to be representative of operations. Existing monitoring methodologies, as well the RECLAIM protocols for SO_2, will need to be reviewed as these have been working for a number of years and have received EPA approval. It is essential that the quantification methods for the trading program reflect actual emissions to ensure the integrity of the program.

Several difficulties associated with such requirements need to be addressed, including: providing a means of assuring that emission factors will be sufficiently stringent and

representative of actual emissions; quantifying fugitive emissions; and verifying that post combustion controls are operating properly.

Reporting: The reporting for the non-utility sector needs to be comparable to Part 75. *As a result, the applicability of Part 75 to the non-utility sector needs to be evaluated. If Part 75 is not found to be applicable, something comparable will need to be developed.*

The monitoring and reporting protocols for the non-utilities remain largely conceptual and require further research, definition, and discussion.

3. Trading Policies and Procedures

Though the Western Emissions Budget Trading Program has several unique characteristics, including its backstop nature and focus on visibility, the policies and procedures for trading allowances under this program reflect the standard practices proven under existing trading programs, such as the Acid Rain Program and the OTC NOx Budget Program. Fundamental to program operation is that an allowance at one source in one state is equivalent to an allowance at another source in another state, that both represent one ton of sulfur dioxide emissions, and that each ton can be exchanged evenly. This enables the transfer of allowances between parties to occur quickly and without need for review or assessment.

Each source in the trading program will be required to appoint an Authorized Account Representative (AAR) as the individual authorized to represent the owners and operators of the source in all matters pertaining to the WEB Trading Program. Only an AAR can request transfers of allowances to or from an account in the trading program. To enact an allowance transfer, a WEB Program AAR will simply submit an Allowance Transfer Form to the administrator of the WEB Allowance Tracking System. The transfer form will be standard across the program and will include the account numbers identifying the transferor and transferee accounts; the associated AARs; a specification by serial number of each SO_2 allowance to be transferred; the printed name and signature of the AAR of the transferor account and the date signed; and a certification statement stating that the AAR is making the submission on behalf of the owners and operators of the WEB sources or the parties with an ownership interest in the allowances in the account.

Transfer requests will be processed by the WATS Administrator in order of receipt, but no later than 5 days of receiving a transfer, except in the case of transfers of allowances available for compliance during the compliance determination period. A transfer is recorded in the WATS by deducting the specified allowances from the transferor account and adding them to the transferee account. The Administrator will then notify the AARs for each of the accounts, as well as make the information publicly available.

4. Permitting

The trading program will directly affect permitting requirements because it will be implemented

through state and tribal permits for individual sources. Each source covered by the trading program will be required to have a WEB program permit, which will be a portion of that source's operating permit, and will contain provisions for operation of the trading program.

a. General. The WRAP approach is based on the NOx Budget Trading Program under the NOx SIP call, which has already been designed to work with existing permitting programs:

- For those sources already holding a title V operating permit, the WEB Program portion of the permit will be administered in accordance with the State or Tribe's title V operating permits regulations under 40 CFR part 70 or 71.

- For WEB sources such as synthetic minors (i.e., a source not initially brought in by the applicability requirements, but that later emits in excess of the cut-off) that hold non-title V federally enforceable permit, the WEB Program portion of the permit will be administered in accordance with the regulations promulgated to administer this permit.

- For sources that do not have a federally enforceable permit, either because a permit has not yet been issued or because a source is too small, the SIP or TIP will be the federally enforceable mechanism.

As a result, most of the new program permit administration matters will defer to permitting programs already established by each state. Matters such as permit issuance, revisions and reopening, public participation, and state and EPA review will all defer to already established state permitting programs. The only new requirements with respect to permitting matters will be the application information, contents, and effective date of the initial permit for the trading program, as delineated below.

Incorporating the WEB Program requirements into an existing permit is likely to require a significant modification. In accordance with the Title V guidelines, a permit would require reopening and public review if the permit has more than three years remaining before renewal in the five year issuance cycle. Otherwise the new requirements could be incorporated at the time of renewal with public comment at that point.

b. Contents: The permit for each source will be required to contain the applicable trading program requirements, including the requirement that each source must hold sufficient SO_2 allowances to account for SO_2 emissions by the allowance transfer deadline for each control period and specifying the penalties in accordance with E.6.f. below if the sources do not. As in other trading programs, the allocation, transfer or deduction of allowances will be incorporated into the permit automatically, and not require a revision or reopening.

c. Application and Effective Date of Initial Permit: Each AAR will be responsible for submitting a WEB Program permit application to obtain a formal permit revision prior to participating in the program. This is fully separate from the permit requirements for purposes of regional tracking required for all potential WEB sources prior to the trigger. WEB sources included in the initial trading program applicability will be required to submit a permit application no later than 18 months before compliance with the trading program is required;

sources not included in the program until after compliance requirements have already begun will face similar requirements based on the timing of commencement of operations or exceedance of the 100 tons per year benchmark, as applicable.

5. Banking

Generally speaking, the addition of banking will impart additional flexibility and encourage early emission reductions, allowing sources to create reductions beyond required levels and "bank" the unused allowances for later use. However, the presence of banking allows higher emissions in later years as banked emissions are used. EPA's draft guidance for trading programs (EIP Guidance) requires consideration of the possible negative impacts of banking:

Draft EIP Guidance requirements for including banking:

- ❑ Demonstrate that emission spiking is not likely to occur.
- ❑ Include safeguards to prevent spiking commensurate with the probability that spiking will occur.
- ❑ Assure that banking will not interfere with attainment or maintenance of the NAAQS or reasonable progress requirements.

The visibility goal established by Congress focuses on long-term results and progress towards improving visibility rather than establishing a specific standard that must be met every year. The WRAP believes that use of banked emissions in future control periods is consistent with the overall goal. Banking will encourage early reductions, and the downward trend of the milestones will ensure that progress is achieved over the long term. In addition, banking will increase the flexibility for sources in the region allowing the visibility goal to be met in the most cost-effective manner.

While the incentive provided by banking is important, the WRAP also believes that it is appropriate to include a management system ("flow control") which would constrain the use of some or all banked allowances in the future. The management system is similar to that used by the NOx SIP call.

- "Flow Control" provisions will limit the amount of banked allowances that may be used without constraints during a given control period. Flow control provisions will discourage the "excessive use" of banked allowances whenever an amount of more than a given percentage (10% in the NOx programs) of the overall multi-state trading program budget is banked, without establishing any absolute limits.

- Sources will maintain the option to use their banked allowances, albeit at a reduced rate, even in the event that the flow control restrictions are activated.

This management system was chosen to maintain the advantages of banking while protecting the integrity of the milestones established by the Annex.

6. Annual Reconciliation

The annual reconciliation or compliance certification process in a cap-and-trade program entails a comparison of allowance account balances for each source (composed of each source's allocations as supplemented or depleted by allowance transfers) with the monitored emissions data for each source on an annual basis. Explained below are the components of the annual reconciliation process.

a. Allowance Transfer Deadline: The allowance transfer deadline in the WEB Program will mirror the deadline in the Acid Rain Program, set at 60 days after the control period ends on December 31, or March 1 of each non-leap year and February 29 of each leap year. This is the date by which each source's compliance account must hold sufficient allowances to cover that source's emissions for the previous control period. The deadline provides sources with a window of time between the end of the control period on December 31 and the beginning of the compliance determination period in order to ensure they have sufficient allowances to cover emissions for that control period. Also by this deadline, each Authorized Account Representative (AAR) would submit a compliance certification report (as explained later in this section) to the state in which their sources are located.

b. Allowance Transfer Freeze. The trading program will institute an allowance transfer freeze following each compliance period, beginning with the allowance transfer deadline and continuing until the WEB Allowance Tracking System Administrator has made all deductions from each source's compliance account for compliance. During this time there will be a freeze on the transfer of any allowances eligible for use in the compliance process (meaning that no allowances from the current or a previous year could be transferred into or out of a compliance account during this period). The length of this freeze on transfers will be determined by the length of the compliance determination process, which will be most impacted by the amount of time needed by the States and Tribes to quality assure the emissions data and submit it to the

Emissions Tracking System for comparison with the allowance holdings.

c. Compliance Certification Report. The trading program will require that each AAR submit a compliance certification report to the relevant state for each source in each compliance period. This report will be standard across all participating states will certify that each source demonstrates compliance with the applicable requirements of the trading program (i.e., that emissions data has been recorded and submitted as required, that each source holds sufficient allowances in its compliance account as of the allowance transfer deadline, that all the SO_2 emissions from the source were monitored or accounted for as required, etc.). Also in this report, the AAR can specify the serial numbers of the allowances to be deducted from each source's compliance account for the control period if the AAR does not wish allowances to be deducted based on a predetermined default methodology.

d. Allowance and Emissions Data Finalization. In order to perform the annual reconciliation process, the Tracking Systems Administrator is in need of both final allowance data and final emissions data. The allowance holdings for each source will be considered final after all of the allowance transfer requests submitted by the allowance transfer deadline have been processed. Finalization of the emissions data is the time and resource intensive component of the compliance determination process. Since States and Tribes will remain the authority on their sources' emissions data for purposes of the trading program, once all the covered sources report their emissions as required, each S State and Tribe will be responsible for quality-assuring and finalizing data for use in the annual reconciliation process. This is different from other existing programs such as Acid Rain and the OTC NOx Budget Program where the entity that finalizes the data (EPA) is the same entity that performs annual reconciliation. States and Tribes should anticipate added burdens for quality assurance as compared to current practices since monitoring and reporting for compliance with the trading program will occur more frequently and with greater precision than under current practices. Further, additional time will be required for submission of the data to the Tracking Systems Administrator for use in the compliance process, and the quality checks to ensure the data is entered properly.

e. Allowance Deductions for Compliance. Since all allowances across the WEB Trading Program will be equivalent, each representing one ton of sulfur dioxide emissions, one allowance will be retired for every one ton of SO_2 emitted by a source in a control period (note that this may not always be the case with banked allowances, which management provisions may dictate represent less than one ton of emissions in some circumstances). Allowances will be deducted until the number deducted equals the number of tons of SO_2 emissions for the source in that control period, or until no more allowances are available. Deductions will occur from a source's compliance account in the order in which allowances were placed in the account, beginning with current year allowances. If an AAR wishes allowances to be deducted in any other order than this default manner, he or she may identify by serial number the allowances to be deducted in conjunction with the compliance certification process. If a source does not hold sufficient allowances in its compliance account as of the allowance transfer deadline, enforcement action and penalties will be applied as described below.

f. Penalties: Recognizing the critical nature of the incorporation of automatic and stringent penalties to provide sufficient disincentives for noncompliance in the trading program, the

Annex includes the following penalty provisions:

> Excess emissions:
>
> - 2-for-1 offset ratio (automatic surrender of 2 future-year allowances for every 1 ton of excess emissions)
>
> AND
>
> - A financial penalty of $5,000 (indexed to inflation from the year 2000) for each ton emitted in excess of allowance holdings. This penalty is based on a projected range of prices for WEB allowances multiplied by a factor of three to four to ensure an appropriate compliance incentive.
>
> Failing to comply with other program requirements: (such as monitoring and reporting requirements)
>
> - Establish penalties in conjunction with CAA civil and criminal penalties. Accordingly, it *can* be a violation each and every day of the averaging period (365 days), with the associated monetary penalties. Note that though a state will have the authority to impose the maximum penalties allowable under the CAA (or the state's maximum statutory authority if it is some lesser amount), the state will not be required to impose penalties in this amount, since the magnitude of such penalties may need to be tailored to the particular case.

g. State Verification of Compliance: States and Tribes will be responsible for enforcement in the backstop trading program, and will have the right to verify compliance by whatever means necessary. Further, the States and Tribes will report to EPA annually on the compliance status of their sources.

7. Auditing and Evaluation

The regional haze regulations require that the SIP submission include provisions for implementation plan assessments of the trading program in 2008, 2013, and 2018. Additionally, EPA's draft Economic Incentive Program Guidance requires that a program evaluation be performed a minimum of every three years and submitted to EPA. The purpose of this evaluation is to determine the overall effects of the program on emissions, as well as measurement of other aspects of program performance, such as reduced costs. Specific evaluation procedures need to be included in the SIP, including procedures that make the public aware that the program is being evaluated and give the public opportunity to assist in program evaluation. With respect to banking, the EIP also recommends annual evaluation of the inter-temporal effects and inclusion of a commitment to develop and implement reconciliation procedures if the program is not meeting its emission reduction goals.

In acknowledgment of these requirements, the Tracking Systems Administrator will be required

to provide annual reports to the States, Tribes, sources, EPA, and the public that detail the results of the compliance process, including the level of compliance, the use of banked emissions, and a source by source accounting of allocations compared to emissions. Evaluation components should also include a confirmation of emission reporting accuracy and review of allowance transfer and use by sources in the program (both geographically and temporally). Assessments will also gauge the consistency of the compliance results with requirements of the haze rule. This analysis should occur on both a local and regional level. In addition, a third party audit under the supervision of the WRAP should occur. Should the audit result in a need for revisions, each State and Tribe could consider the recommended revisions in consultation with the WRAP and propose program revisions accordingly.

8. Environmental Justice

Though environmental justice (EJ) is an important issue to address in the development of any trading program, the MTF believes that Western Emissions Budget Trading Program will not raise EJ-related concerns, primarily for the following reasons: 1) the trading program includes only SO_2, and not any air toxics, which seem to be the particular focus of such concerns; and 2) SO_2 emissions are additionally controlled by the SO_2 NAAQS, which prevent SO_2 concentrations in any given area from exceeding a level determined to be harmful to health. Further, the trading program is a backstop measure not anticipated to be utilized. Should concerns arise (i.e., through the incorporation of banking, which EPA has indicated may be such a cause for concern), individual States and Tribes can look at possible EJ ramifications as they develop their implementation plans.

9. Integration with Other Programs

The interaction of the WEB Trading Program with other existing programs needs to be clearly delineated in order to clarify requirements for sources covered by the program as well as to assure regulators that requirements of all existing programs continue to be met. For example, EPA's draft Economic Incentive Program guidance (EIP guidance) requires that if a cap-and-trade program covers sources with RACT requirements, the rule must address the overlay onto sources with RACT limits, and that NSR requirements may not be lifted by the adoption of an EIP. Generally, the trading program must contain limitations not allowing the use of emission reductions to meet NSPS, BACT, LAER, NSR offset requirements, or Title IV Acid Rain Requirements.

Generally speaking, the Western Emissions Budget Trading Program will be a completely stand-alone program. Allowances from this program will not be fungible with allowances or offsets in any other programs, except as explained below.

a. Title IV: The WEB Trading Program is similar to the Acid Rain Program under Title IV in that many of the affected sources are utilities, and that the program is characterized as an SO_2 cap-and-trade program. Thus, utilities under the WEB Program will have two different sets of SO_2 allowances, one for use in compliance with the Acid Rain Program and one for use in

compliance with the WEB Program. Though the allowances are not fungible between the two programs for the sake of the integrity of their respective caps, reductions in one program may be redeemable as reductions in the other program. For example, allocations to western sources under the WEB Trading Program will presumably be smaller than allocations for these same sources under the Acid Rain Program. Therefore, if sources reduce their emissions to emit less than their allocated level in the WEB program, they will generate allowances to trade in the WEB program as well as an even larger amount of allowances to trade in the Acid Rain Program due to the difference in allocation levels. As a result, shifts in emissions may occur from sources in the WEB Trading Program towards other sources in the Acid Rain Program. However, since the Acid Rain Program is a capped market system, allowing only emissions of a set level across the nation, this shift of emissions will not affect the integrity of the environmental goals of that program.

b. RECLAIM: There is also an overlap with sources already covered by the RECLAIM program. Again, affected sources will hold allowances or credits for compliance with each distinct program. These allowances or credits will only be redeemable consistent with the applicable requirements of the programs.

c. NSR Requirements: NSR requirements will continue to apply to sources in the region (as a separate requirement) both within and outside of the trading program. We do not at this time recommend provisions for interface of the trading program and the NSR offsets program. In accordance with the example set by the OTC NOx Budget Program in the Northeast, the only way a source in the trading program will be impacted by the production of offsets will be when a source transfers emission reductions as offsets to a source outside the program. In this case, the source in the program should be subject to deduction of allowances. This is because if the source inside the program were to continue to receive the same amount of allocations after selling off some or all of those allocations to a source outside the program, emissions within the cap would remain the same and those outside the cap would be increased, thus impacting regional emissions. New sources in the region that are included in the trading program would need both allowances and offsets to operate, as also practiced under the OTC program.

d. RACT Limits and Other Permitted Requirements: While the trading program will require that each source have enough allowances to cover emissions released, this requirement will not have any impact on any permitted emission limitation for that source due to RACT requirements or any other existing requirements. Depending on the circumstances, a source may have more allowances than it is permitted to emit, or may be given fewer allowances than it is permitted to emit. In the former case, the source could sell its allowances on the open market for a profit. In the latter case, the source could either reduce emissions or could purchase additional allowances to cover its emissions. In no case would a source legally be allowed to operate above its permitted emission limit.

F. Trading Program Administration

This section covers emissions and allowance tracking as well as account structure and representation for the WEB Trading Program. The program is very similar to existing programs such as the OTC NOx Trading Program and the Acid Rain SO_2 trading program. Therefore, the

decisions below reflect tenets of programs already operating successfully.

Both the WEB Allowance Tracking System and the WEB Emissions Tracking System will be centrally run databases tracking program activity and compliance across the region. Both systems will be run by a contractor hired through and managed by the WRAP. This will enable maintenance of program authority in the West and can ensure avoidance of any potential conflict of interest. The databases will most likely be based on the EPA prototypes used in the Acid Rain Program. The role of the contractor serving as the data systems administrator will be limited to tracking and providing information, as all regulatory authority for the program will by maintained by the states and tribes.

1. Emissions Tracking System

The WEB Emissions Tracking System (WETS) will be the official centralized database for the source-specific emissions information as monitored and reported in accordance with program specifications. This system will be populated via state and tribal submissions of annual quality-assured data for all sources in the program. During the compliance process, the emissions information in WETS will be reconciled with the allowance data in the Allowance Tracking System to determine compliance. The compliance information will then be transmitted back to the states and tribes who retain all regulatory authority for the program.

2. Allowance Tracking System

The WEB Allowance Tracking System (WATS) will be an electronic record keeping and reporting system serving as the official database for all allowance use and transfers within this program. Each allowance will be assigned a unique serial number. Each allowance serial number shall also indicate the year in which that allowance is first available for use in the compliance process.

a. Information tracked:

- ❑ Allowances allocated to each WEB source;
- ❑ Allowances held in each account;
- ❑ Accounts established for each WEB source to determine compliance;
- ❑ Accounts opened by individuals or entities, upon request, which are not used to determine compliance;
- ❑ Allowance transfers between accounts; and,
- ❑ Deductions of allowances for compliance purposes.

b. Types of accounts:

- ❑ One compliance account for each WEB source. These accounts are automatically created for each source in WATS, and will be allocated allowances as determined by the allocation methodology at the start of the program.
- ❑ General accounts for any person of group wishing to hold or transfer allowances: these accounts are not a part of the compliance process.

c. Account Representation

As previously noted, there will be an Authorized Account Representative (AAR) who is authorized to represent the owners and operators of each WEB source at a source in matters pertaining to the WEB Trading Program. Each WEB source will be required to have an AAR selected by the owners and operators of the source and all WEB sources at the source. Each source may also have an Alternate AAR who may act on behalf of the primary AAR. The AAR's responsibilities include: holding and transferring allowances and submitting permit applications, monitoring plans, certification applications, emissions data and compliance reports as required by the program. Each submission under the WEB Trading Program will be submitted, signed, and certified by the AAR for the relevant WEB source.

In order to appoint an AAR for a source covered by the program, an Account Certificate of Representation Form, which constitutes an agreement of representation, must be completed and submitted to the State or Tribe in which each WEB source is located. This form will be standard across the WEB Trading Program and will include identification of the WEB source, contact information for the AAR and any alternate, a list of owners and operators of the WEB source, a statement certifying that the owners and operators are bound by the actions of the AAR, and the signatures of the AAR and alternate.

In order to appoint an AAR for a general account that is not relevant to the compliance process, the party seeking to open a general account must name the AAR and alternate on the request form, which includes a statement certifying the role of the AAR.

G. Benefits of a Backstop Cap-and-Trade Program

The GCVTC recommendations for stationary sources approached this category of sources in a non-traditional manner. Rather than establishing emission limits for individual sources, the GCVTC recommended establishing 5-year emission targets for SO_2 emissions in the region. If the targets were not met voluntarily, then a backstop regulatory program, preferably an emissions cap and incentive-based market trading program, would be implemented. Several key underlying principles were the foundation of this recommendation:

- ❏ The Commission expected that implementation of existing CAA requirements in combination with source retirements and modernization would provide on-going significant emission reductions throughout the region.
- ❏ Long-term emission targets would provide an incentive for businesses to incorporate voluntary emission reductions into their business plans. Incentives, including the ability to avoid a regulatory program, would be a powerful motivator.
- ❏ The establishment of targets would allow the region to benefit from the most cost-effective emission reductions either through voluntary measures, other regulatory drivers, or if necessary through a cap-and-trade regulatory program.

The GCVTC preference for an incentive-based trading program should a regulatory program be deemed necessary was based on the fact that "earlier studies showed that a regional cap and trade

program is the most cost-effective way to deal with regional haze."[7] As explained in the preamble to the regional haze rule, there are several advantages associated with a regional trading approach as compared to source-specific BART requirements:

> First...[a cap-and-trade program] provides flexibility to participating states in deciding whether to purchase credits or to implement on-site emission reduction strategies, while being designed to achieve an equivalent level of emissions...Second, trading allows sources to assess the costs of control technology, alternative fuels, and process changes across a broad array of sources and source categories. Thus, a trading program typically will result in a lower cost per ton of pollutant reduced than a program which mandates plant-specific technological control. For example, EPA's experiences in the Acid Rain Program have shown that sulfur dioxide reductions achieved through market-based programs in the electric utility sector continue to be quite cost-effective, in the $170 - 320 per ton range. A program which allows broader trading among sources in other industrial categories as well would likely lead to even greater cost effectiveness for individual sources.

Generally speaking, a cap-and-trade program can result in benefits to both affected sources and to the environment by harnessing the incentives of the free market to reduce pollution. Due to the monetary award associated with avoided emissions in a market system, pollution prevention becomes more cost effective and innovations in less-polluting alternatives and control equipment are encouraged. The capping of total emissions in a region ensures achievement of the established environmental goal (the cap), while still allowing economic growth through the development of new sources or the increased use of existing sources. Further, the flexibility imparted to sources through the use of a market system can allow the establishment of a more ambitious environmental goal than would otherwise be possible – and the achievement of this goal is assured through the presence of the cap, enforced by an accordingly limited supply of allowances. Even in the presence of a more ambitious environmental goal, the cost of compliance can be markedly less than command-and-control, since sources have a host of compliance options to choose from.

Market-based systems to control SO_2 are already in existence, in the aforementioned national Acid Rain Program and the RECLAIM program in the South Coast Air Basin, centered in Los Angeles. These programs offer working examples of effective, efficient market programs, and the MTF has taken their design into account in the development of the Western Emissions Budget Trading Program (WEB Trading Program) put forth in this document. The MTF has also considered the similar design of both new and existing NOx cap-and-trade systems in the eastern US.

The Grand Canyon Commission expected that a backstop trading program would be more cost-effective than a traditional command-and-control program. However, there are many aspects of a trading program that will influence the effectiveness of the market approach, including the overall level of the targets, the number and diversity of sources participating in the

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[7] GCVTC Recommendations, June 1996, page 89.

program, and the flexibility provisions within the program itself. The Initiatives Oversight Committee (IOC), the committee under the WRAP responsible for oversight of the MTF, commissioned an economic analysis to assess the impacts of the program set forth in this Annex and the related cost savings as compared to a command-and-control approach. This analysis examined the effect of the backstop program on the overall economy of the region, the effect on individual states and tribes, and the effect on specific industrial sectors. In addition, the analysis projects the location of emissions to help project whether trading is an effective solution to the visibility problem, or whether trading may result in concentrations of emissions leading to increased visibility degradation in specific Class I areas.

H. Next Steps

1. Critical Mass Needed to Implement a Viable Trading Program

The Annex has been developed based on the Grand Canyon Visibility Transport Commission recommendations, which assumed that all of the states and tribes in the transport region would participate in the program. The regional haze rule establishes two paths for states: implement the Commission recommendations, including the backstop trading program under §309; or develop an independent plan under §308. An important issue still to be addressed is the effect on the trading program if one or more states and tribes do not choose to participate. Will there be enough sources or enough diversity in the program to create a viable market? Will the administrative costs of the program be justifiable with a smaller group of states and tribes? To address these questions, the WRAP needs to evaluate the economics of the program, and determine the critical mass that is needed to create a viable program.

2. Completion of Draft Documentation Submitted with the Annex.

Some of the documentation that is submitted with the Annex is still in draft form. The WRAP has made a good faith effort to complete these documents, and intends to finalize these attachments by December 31, 2000.

Model Rule
Trading Program MOU
MOU between States, Tribes and FLMs