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**BY EMAIL AND FEDERAL EXPRESS**

Ms. Lola Brown  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711

**Re: Comments of the 8-Hour Ozone SIP Coalition on the Houston/Galveston/Brazoria Ozone Nonattainment Area Stationary Source Control Strategy Planning Draft Initial Concept List.**

Dear Ms. Brown:

The 8-Hour Ozone SIP Coalition (the Coalition) appreciates the opportunity to provide initial comments on the Houston/Galveston/Brazoria (HGB) Ozone Nonattainment Area Stationary Source Control Strategy Planning Draft Initial Concept List (Concept List). The Coalition consists of: BASF Corporation; Enterprise Products Operating L.P.; Exxon Mobil Corporation; Lyondell Chemical Company; NRG Texas Power LLC; Shell Oil Company; and Valero Refining-Texas, L.P. The Coalition's refining, petrochemical, and electric utility members have been strong supporters of clean air improvements. The companies that comprise the Coalition have, by themselves, invested over \$2 billion in state-of-the-art emissions controls and production of clean fuels since 2001.

The Coalition supports the current control strategy evaluation process, and appreciates the opportunity to comment through an open stakeholder process on early drafts of control strategy information. Due to the expedited schedule for review, and the limited focus of the information provided on the concept list, these comments should be considered preliminary. They will be followed by more detailed technical review and comment in subsequent rounds.

As always, please contact me, or any member of the Coalition, if you have any questions regarding these comments, or if we can provide further information in development of the adopted SIP.

Sincerely,



Matthew L. Kuryla

## **Houston/Galveston/Brazoria 8-Hour Ozone Nonattainment Area Stationary Source Control Strategy Planning Draft Initial Concept List**

### **8-Hour Ozone SIP Coalition Comments**

The 8-Hour Ozone SIP Coalition (the Coalition) appreciates the opportunity to provide initial comments on the Houston/Galveston/Brazoria (HGB) Ozone Nonattainment Area Stationary Source Control Strategy Planning Draft Initial Concept List (Concept List). The Coalition consists of: BASF Corporation; Enterprise Products Operating L.P.; Exxon Mobil Corporation; Lyondell Chemical Company; NRG Texas Power LLC; Shell Oil Company; and Valero Refining-Texas, L.P. The Coalition's refining, petrochemical, and electric utility members have been strong supporters of clean air improvements. The companies that comprise the Coalition have, by themselves, invested over \$2 billion in state-of-the-art emissions controls and production of clean fuels since 2001.

The Coalition supports the current control strategy evaluation process, and appreciates the opportunity to comment through an open stakeholder process on early drafts of control strategy information. Due to the expedited schedule for review, and the limited focus of the information provided on the concept list, these comments should be considered preliminary. They will be followed by more detailed technical review and comment in subsequent rounds.

The Coalition's preliminary review of control strategy implementation timing and technical feasibility suggests several important points:

- A rigorous scientific evaluation of the potential of specific controls in reducing the region's 8-hour ozone levels, combined with complete technical feasibility and cost-effectiveness analyses, are absolutely necessary before any control strategies are selected for the region. The Coalition supports a thorough and open scientific process which allows for the full integration of the data collected in the Texas Air Quality Study II (TxAQS II) into modeling leading to control strategy determination.
- The point source sector has recently completed a major campaign to retrofit oxides of nitrogen (NO<sub>x</sub>) sources for the State Implementation Plan (SIP). This investment represents the most aggressive NO<sub>x</sub> reduction that is technologically and economically feasible on a broad-scale retrofit basis. These systems were designed to achieve the maximum practicable NO<sub>x</sub> reductions, and should not be arbitrarily changed by an administrative adjustment to the current NO<sub>x</sub> emission limits.
- The point source sector also has implemented stringent new monitoring and short-term and longer-term emission limits for sources of highly reactive volatile organic compounds (HRVOCs) over the past three years. Numerous additional regulatory and voluntary measures have been implemented by the state and industry which have not been fully accounted for in the SIP.

- Finally, over the past two years, refineries in the point source section have completed extensive retrofits to produce the clean gasoline and diesel that makes the federally-mandated mobile source reductions possible.
- No other emissions source sector in the region has implemented a level of reduction comparable to the point source campaign. No other region in the nation has a more stringent comprehensive control strategy for point source emissions.
- With implementation of the extensive point source emissions reductions, the emissions from mobile and area sources now contribute the majority of NOx and VOC emissions in the airshed. Effective controls to address these sources will be at least as important, and likely more cost effective, than further emissions controls on point sources.

**The Point Source Sector has Led the Region in Clean Air Improvements**

Improving air quality in the HGB has been the result of thorough and thoughtful application of the science, targeted regulations, and voluntary actions by citizens, businesses and government. However, by far the most extensive emission reductions have been from the point source sector. Some of the many programs that have been implemented by point sources in the HGB region over the past six years include:

- 2001-2007 80% NOx Reduction Program
- 2001-2005 Industry Voluntary Episodic Emissions Reduced
- 2002 HRVOC Reportable Quantities Lowered
- 2004 NOx CEM's
- 2004 Federal Cleaner Gasoline
- 2005 TX Low Emission Diesel (LED)
- 2005 HRVOC Flare, CT, Vent, Safety Valve Monitoring
- 2005 Voluntary Use of Newly Commercial VOC Gas Imaging Camera Begins
- 2006 HRVOC Hourly Limit Program Begins
- 2006 Federal On-Road Cleaner Diesel
- 2007 HRVOC Annual Cap & Trade Year 1
- 2007 Participation in DIAL and Other Cooperative Emissions Studies

**Ozone Reduction Potential, Technical Feasibility and Cost-Effectiveness Analyses Must be Rigorously Performed and Closely Linked**

The Coalition believes that a rigorous scientific analysis of the potential of specific controls in reducing the region's 8-hour ozone levels, combined with complete technical feasibility and cost-effectiveness analyses, are absolutely necessary before selecting control strategies for the region. These three analysis elements are closely linked, and should be considered in a holistic fashion as control strategies are evaluated.

The potential environmental impact of candidate control strategies on other pollutants and standards must also be analyzed. For example, extensive additional point source NO<sub>x</sub> controls would, in effect, mandate broader application of selective catalytic reduction (SCR) technology. Significant additional SCR installations would directionally increase ambient concentrations of fine particulate, and could drive the region into non-attainment with the ambient air standard for fine particulate.

The Coalition recommends that the TCEQ move to develop or contract for resources to collect and assimilate comprehensive data on the following elements in preparation for considering future control strategies.

***Ozone-Reduction Effectiveness:*** The purpose of conducting photochemical modeling and related analyses as the scientific basis for an attainment demonstration is to assess the ability of the region to attain the standard by the attainment date, and to test various control strategy alternatives with an eye toward developing the optimal suite of controls to effectively reduce ozone. Scarce resources must not be wasted on control strategies that do not have a firm scientific rationale underpinning their selection.

The Coalition supports the integration of the latest scientific and modeling analysis to ensure that ozone precursor reduction strategies are well-targeted. Under applicable EPA guidance for 8-hour attainment, each individual design value monitor is evaluated for the response of its relative reduction factor, an approach that relies less on across-the-board reductions and more on tailored strategies. Preliminary modeling information suggests that there are different emissions sources contributing to residual 8-hour nonattainment at different monitors in the HGB. Rigorous analysis of the causes of high ozone and the most effective control strategies at these monitors will be essential to developing a control strategy that will bring the region into attainment.

In close coordination with TCEQ staff, the Coalition is engaged in photochemical modeling of 2005 and 2006 episodes, along with multiple sensitivity studies that will provide essential information to enhance the effectiveness of specific control strategies to reduce 8-hour ozone in the HGB. For example, these sensitivity studies will provide insight into targeted control strategies that most effectively address the ozone emissions predicted to cause residual ozone nonattainment at design value monitors.

***Cost Effectiveness:*** In the rules that accompanied the past two SIPs, the TCEQ did not provide cost data. However, consideration of cost is a crucial factor that all stakeholders and decision-makers must have in order to make appropriate public policy choices. There are numerous factors to take into account in a cost effectiveness analysis. The following list reflects some preliminary issues that should be considered in the cost analysis.

- The relative cost of various control strategies should be a key consideration in selecting control strategies.
- Due to the operation of markets or market-type systems among all major source categories in Texas (through the MECT, HECT, and TERP programs), a wealth of information is available to assess the actual current cost of control for various source categories. A common metric should

be developed that allows direct comparison of costs for various source categories. This metric should be a key criteria for selecting future controls.

- The incremental cost of reducing industrial NOx emissions (as reflected in the cost of NOx allowances in the marketplace) has increased significantly in recent years. The cost of recently traded perpetuity streams is approaching \$200,000/ton, well above the current cost of reductions from other source sectors. Preliminary member company assessments indicate that incremental costs could climb over \$250,000/ton in the event of a substantial additional NOx control program. Many businesses could not sustain these costs.
- When considering the cost of a control strategy, the total economic costs to a region (changes in employment, tax base, etc.) should be taken into consideration. These costs reach far beyond the vendor-quoted cost for a certain piece of control equipment. They include: considerations of cost and availability of skilled labor to install and operate control devices; the cost of disruptions to supply, and the resultant impact on the cost of manufactured materials, such as gasoline; and the cost of likely unit shutdowns due to additional regulatory requirements. These unit shutdowns impact employment both at the facility, and in the small business community.

**Technical Feasibility:** A SIP must consider technological and economic feasibility. As the U.S. Supreme Court observed in *Whitman v. American Trucking*, "[i]t would be impossible to [develop implementation plans] intelligently without considering which abatement technologies are most efficient, and most economically feasible—which is why we have said that 'the most important forum for consideration of claims of economic and technological infeasibility is before the state agency formulating the implementation plan.'"<sup>1</sup> The Texas Clean Air Act requires TCEQ to utilize practical and economically feasible methods toward achieving the purposes of the Act, and requires the Commission to consider practicability and economic reasonableness when issuing orders.<sup>2</sup> Therefore, under both federal and state law, TCEQ must consider practicability and economic reasonableness when preparing a SIP.

The following factors should be considered in evaluating the feasibility of methods for reducing NOx emissions before selecting control measures for the HGB SIP. Furthermore, these factors must be evaluated on the basis of experience of owners (who combined have spent over two billion dollars over the past five years installing and using NOx control technology) as opposed to vendor claims.

- Starting NOx emission level (pounds NOx per million Btu)
- Application size and economy of scale considerations
- Retrofit costs versus new design/equipment installation costs
- Safe operating conditions (like flame stability to prevent explosions)
- Process and stack temperature requirements which affects technology selection
- The degree to which actual performance meets design expectations over the life cycle of catalyst or equipment.
- Physical burner and combustion device geometry and burner size
- Fuel type quality and variability (Btu content;; level of hydrogen, ammonia, olefins; presence of catalyst poisons and plugging agents)

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<sup>1</sup> *Whitman v. American Trucking Ass'ns*, 531 U.S. 468, 470 (2001).

<sup>2</sup> TEX. HEALTH & SAFETY CODE §§ 382.011(b), 382.024 (Vernon 2005).

- Physical plant space limitation and other constructability issues (e.g. combustion equipment type and equipment availability)

### **Maximum Control Strategy Flexibility Afforded by EPA Guidance Should be Integrated**

Maximum consideration should be given to newer EPA guidance that allows states to credit reductions from new, voluntary, bundled, or traditionally difficult-to-quantify measures. Many of the measures listed on the current point, area, on-road and off-road strategies lists will rely on the flexibility contained in these guidance documents. Examples of recent EPA guidance documents affording greater flexibility include:

***Weight-of-Evidence Demonstrations:*** The Air Quality Management Work Group (AQM Work Group) of the Clean Air Act Advisory Committee (CAAAC) recently recommended that EPA modify its WOE guidance to promote demonstrations for both planning and implementation efforts.<sup>3</sup> The Work Group stated: “In order to move beyond the current approach of relying on air quality modeling, EPA . . . should modify its guidance to promote weight-of-evidence (WOE) demonstrations for both planning and implementation efforts. In particular, these demonstrations should reduce reliance on modeling data as the centerpiece for SIP/TIP planning, and should increase use of monitoring data and analyses of monitoring data, especially for tracking progress.”<sup>4</sup> The Work Group further noted that: “The current system is top-heavy on modeling for planning purposes (especially, the preparation of an attainment demonstration) and light on tracking progress. The NRC recommended that “a more useful approach would be to retain the attainment demonstration as a planning tool but to place greater emphasis on follow-up measures to track compliance and progress and on actions to be taken if compliance and progress are not satisfactory.”<sup>5</sup>

Recent EPA guidance acknowledges this recommendation and suggests a greater role for WOE: “The procedure we recommend for estimating needed emission reductions differs from that in past guidance for ozone in two major respects (U.S. EPA, 1996c). First, we recommend a modeled attainment test in which model predictions are used in a relative rather than absolute sense. Second, the role of the weight of evidence determination, when used, has been expanded. That is, these results can now be used as a rationale for concluding that a control strategy will meet the NAAQS, even though the modeled attainment test is not quite passed.”<sup>6</sup>

***Reactivity-Based Approaches:*** In addition, EPA recently released interim guidance encouraging states to develop reactivity-based approaches to SIP development in areas with persistent ozone

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<sup>3</sup> See *Recommendations to the Clean Air Act Advisory Committee*, Air Quality Management Work Group, Phase I and Next Steps, January 2005 (“AQM Work Group Recommendations”), available at <http://www.epa.gov/air/caaac/pdfs/report1-17-05.pdf>. In June 2004, the CAAAC formed the AQM Work Group. The AQM Work Group’s task was to assess the recommendations made by the National Research Council (“NRC”) of the National Academies in its 2004 report, *Air Quality Management in the United States*. The CAAAC charged the Work Group with outlining concrete steps that could promote change in the directions recommended by the NRC. Recommendations at B-73.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> Draft Final Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS, Office of Air and Radiation, EPA, dated February 17, 2005, at 2.3.

nonattainment problems.<sup>7</sup> Houston/Galveston's HRVOC cap and trade program is cited as a positive example of effective reactivity-based control strategy development.<sup>8</sup> CARB's paint/coatings rule, focusing on product formulations, is cited as an additional example.<sup>9</sup>

**"Bundled" SIP Measures:** EPA guidance now allows quantification of SIP credit for groups, or "bundles," of smaller control measures.<sup>10</sup> The performance of an overall "bundle," not the effectiveness of individual measures, is considered for SIP evaluation purposes.<sup>11</sup> Examples recently proposed for approval include voluntary use of no-or-low-VOC paints by state and local governments, use of auxiliary power units by locomotives and renewable energy purchases by local government agencies.<sup>12</sup> Bundled measures cannot exceed nine percent of the overall SIP reductions (six percent from voluntary mobile source programs).<sup>13</sup> The memorandum also outlines in Appendix B a general list of "Basic Requirements for Emissions Reduction Measures to Achieve Federal Approval in the SIP," requiring measures to be (1) surplus, (2) enforceable, (3) quantifiable, (4) permanent, (5) satisfy anti-backsliding requirements and (6) adequately supported by state resources.<sup>14</sup>

**Emerging and Voluntary Measures:** The AQM Work Group encouraged EPA to support state efforts to implement innovative measures by producing enhanced flexibility.<sup>15</sup> A 2004 EPA guidance mitigates the six approvability criteria for emerging and voluntary measures. "Many States are finding it difficult to find and implement emission reductions that meet the requirements to receive federal approval of emission reductions for a SIP. This policy addresses emission reduction strategies that do not meet the enforceability or quantification requirements in the standard way. States may be able to claim certain emission reduction strategies for SIP purposes even though they are: Not quantified with as much certainty as usual if the State agrees to periodic evaluations of the actual emissions reductions and meets other obligations as explained below in Section C. For the purposes of this policy, emission reduction strategies that do not have the same high level of certainty as a traditional measure for quantification are referred to as "emerging measures;" Not directly enforceable against the source if the State retains enforceable responsibility for the reduction and meets other obligations as explained in Section D. For the purpose of this policy, emission reduction strategies that are not enforceable against individual sources are called 'voluntary measures.'"<sup>16</sup> As a "presumptive" (*i.e.*, nonbinding) limit, an area may claim up to six percent of the incremental reductions for ROP, RFP, or attainment demonstration purposes.<sup>17</sup> The State must commit to a program evaluation, and prompt correction of any shortfall.<sup>18</sup>

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<sup>7</sup> EPA, *Interim Guidance on control of Volatile Organic Compounds in Ozone State Implementation Plans*, August 25, 2005, available at <http://www.epa.gov/ttn/oarpg/t1/meta/m27601.html>.

<sup>8</sup> *Id.* at 12.

<sup>9</sup> *Id.* at 12-13.

<sup>10</sup> Guidance on Incorporating Bundled Measures in a State Implementation Plan, Memorandum from Steve Page to Air Division Directors, August 16, 2005, available at [www.epa.gov/ttn/oarpg](http://www.epa.gov/ttn/oarpg).

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 39.

<sup>13</sup> *Id.* at 8.

<sup>14</sup> *Id.* at 24-25.

<sup>15</sup> See AQM Work Group Recommendations at B-66.

<sup>16</sup> EPA, *Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)*, September 2004.

<sup>17</sup> *Id.* at 9.

<sup>18</sup> *Id.* at 12, 17.

**Enforceable Commitments:** An enforceable commitment is a promise or commitment to adopt a rule in the near future.<sup>19</sup> States have used commitments to adopt further emissions controls as part of the states' overall attainment demonstration control strategies, when the existing control measures fail to reduce emissions to the extent that will be required to demonstrate attainment. EPA supports the use of enforceable commitments "that are limited in scope, where circumstances exist that warrant the use of such commitments in place of adopted measures."<sup>20</sup> EPA approved the use of enforceable commitments in the HGB 1-hour SIP and has stated elsewhere in the *Federal Register* that circumstances in the Houston area warrant the consideration of enforceable commitments.<sup>21</sup> Federal courts have upheld EPA's practice of accepting enforceable commitments as part of an overall control strategy.<sup>22</sup>

### **Broad-Scale NOx Reductions Beyond Those Currently Being Implemented Are Not Feasible**

The Coalition understands that none of the items on the Concept List have been quantitatively reviewed for legal enforceability, technological feasibility, or cost-effectiveness for implementation in the HBG area. The level of investment undertaken by the point source sector over the past seven years represents the most aggressive NOx reduction that is technologically and economically feasible on a broad-scale retrofit basis. These systems were designed to achieve the maximum practicable NOx reductions, and should not be arbitrarily changed by an administrative adjustment to the current NOx emission limits. In subsequent rounds of comment, the Coalition looks forward to a detailed analysis of these issues.

### **Reductions in Volatile Organic Compounds**

The significant and expanding use of the IR camera should be properly recognized and credited. This analysis should be completed before additional VOC control strategies on specific equipment types are contemplated, resulting in far more effective rulemaking. The camera first can be used to assess the need for additional rulemaking, show the specific equipment types or components that may need additional regulation, and assist in a determination of the appropriate format for additional regulations—i.e. traditional command and control, cap and trade, monitoring, or company-specific agreements, that would be most effective and efficient in reducing emissions.

### **Conclusion**

The members of the 8-Hour Ozone SIP Coalition are strong supporters of clean air improvements. The Coalition supports the current control strategy evaluation process, and appreciates the opportunity to comment. We look forward to supplying more information and data on several key points:

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<sup>19</sup> Approval and Promulgation of Implementation Plans; California-Ozone 1994 SIP; Final Rule, 62 *Fed. Reg.* 1150, 1155-56 (1997).

<sup>20</sup> 67 *Fed. Reg.* 5170, 5186 (Feb. 4, 2002).

<sup>21</sup> *Id.* at 5186.

<sup>22</sup> See, e.g., *Environmental Defense v. EPA*, 369 F.3d 193, 209 (2d Cir. 2004).

A rigorous scientific evaluation of the potential of specific controls in reducing the region's 8-hour ozone levels, combined with complete technical feasibility and cost-effectiveness analyses is essential to SIP decision-making.

The level of investment undertaken by the point source sector over the past seven years represents the most aggressive NOx reduction that is technologically and economically feasible on a broad-scale retrofit basis. These systems were designed to achieve the maximum practicable NOx reductions, and should not be arbitrarily changed by an administrative adjustment to the current NOx emission limits.

Finally, with implementation of the extensive point source emissions reductions, the emissions from mobile and area sources now contribute the majority of NOx and VOC emissions in the airshed. Effective controls to address these sources will be at least as important, and likely more cost effective, than further emissions controls on point sources.