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Michael Koerber  
Executive Director  
Midwest Regional Planning Organization  
2250 East Devon Avenue, Suite 250  
Des Plaines, Illinois 60018

Re: Comments on Interim White Paper – Source Category: Electric Generating Units

Dear Mr. Koerber:

Cinergy Corp., hereinafter referred to as “Cinergy”, submits the following comments related to the Midwest Regional Planning Organization’s (“MW RPO”) January 14, 2005 Interim White Paper on control measures for electric generating units (“EGU”).

Cinergy is one of the largest non-nuclear electric suppliers in the United States with 17,500 megawatts of electrical and combined heat and power plant generation that is either operational or under development. Capacity is provided by 13 baseload generating stations and 13 peaking plants. All except for one unit under Cinergy’s ownership and control stand to be affected by regulations that could be developed by the states in the MW RPO region. Cinergy also has extensive recent experience in evaluating the environmental and economic impacts of potential control measures such as those identified in the White Paper as well as years of construction and operation experience with SO<sub>2</sub> and NO<sub>x</sub> pollution controls.

Cinergy’s comments make the following points:

- 1) This is a concept paper of theoretical emission reductions and a wide range of real world practical constraints which must be considered before a formal decision is made have not been fully evaluated,
- 2) The various state agencies should take the lead in modeling control strategies for their local nonattainment areas rather than the MW RPO attempting first to identify new multi-state or national EGU reductions focused on solving local nonattainment problems,
- 3) The MW RPO has inappropriately taken analyses applicable to a 28-state region and assumed it applies equally to a 5 state region, rendering most of the assumptions and conclusions in the documents suspect, and
- 4) To proceed along the path of imposing more stringent requirements than CAIR, the MW RPO must conduct a more comprehensive study of the key risk factors and a rigorous analysis of what can realistically be accomplished by a specified deadline and what the costs – both monetary (to EGU's and their customers) and in terms of electricity availability and reliability – of those controls would be.

Cinergy recognizes that, as cited in the disclaimer, “this document represents an initial set of possible measures....[and]... the inclusion of a particular measure here should not be interpreted as a commitment or decision by any State to adopt that measure.” However, the language used throughout the document seems to advocate and endorse certain significant

emissions reductions strategies beyond those required under CAIR. We recommend that future versions of the White Paper espouse a more neutral position on future emission reduction options unless this document is to be considered a final policy document that all the Environmental Commissioners in the MW RPO have formally adopted.

The states in the MW RPO currently are conducting various preliminary evaluations of multi-state control strategies and their resulting air quality impacts. These controls include the final EPA CAIR provisions which were designed to address the contribution of EGU SO<sub>2</sub> and NO<sub>x</sub> emissions to inter-state transport for downwind 8 hour ozone and PM<sub>2.5</sub> nonattainment areas. As the Indiana Utility Group, of which Cinergy is a member, commented to IDEM on July 5 in response to Indiana's first notice of CAIR, we believe that the CAIR SIP development process should be used solely to address inter-state transport. As explained in more detail in the Indiana Utility Group comments the CAIR SIP - which is due in September 2006 - should not be confused or supplanted with a rule that is designed to solve Indiana, MW RPO or neighboring states residual nonattainment areas which have much later SIP submittal deadlines.

Further, use of such phases as "Beyond CAIR" or "CAIR Plus" result in unnecessary confusion between states, MW RPO and stakeholders as to purpose of CAIR rule and or additional reductions needed for attainment. Does "Beyond CAIR" mean that people don't like the final SO<sub>2</sub> and NO<sub>x</sub> requirements to address inter-state pollution and think CAIR caps and timeframes should be more stringent to deal with inter-state transport? Alternatively, do people mean by "Beyond CAIR" that only additional EGU controls should be considered when addressing emissions reductions needed for ozone and fine PM attainment plans? Or possibly

people mean by “Beyond CAIR” that after the impacts of CAIR are understood additional local emissions reductions from sources should be adopted to solve residual nonattainment areas? We encourage the MW RPO to clearly and unequivocally spell out the purpose of the document and refrain from using such phrases as “Beyond CAIR” unless they are clearly defined and understood by everyone.

Much technical work needs to be done to understand what if any future emissions reductions are needed by specific source sectors in individual states to demonstrate attainment with ozone and fine particulate NAAQS. Cinergy is concerned that the MW RPO White Paper unfairly concludes from the STAPPA analysis the efficacy of two very specific controls options on electric generating units beyond the current NO<sub>x</sub> SIP Call and anticipated CAIR rule requirements. It also assumes these controls are needed on a geographically large multi-state or even national basis in an attempt to create a one size fits all Midwest regional solution to fine particulate and ozone NAAQS attainment. Yet Cinergy does not believe that ozone and particulate nonattainment for a very few urban locations in the Midwest is a uniform problem demanding uniform solutions.

The states will have to rely on their own state-specific modeling for attainment demonstrations. MW RPO should, instead, focus its efforts on aiding the states’ activities, rather than trying to develop a broad super-regional EGU control strategy that has diminishing returns versus a more focused intra-state examination of nonattainment.

With respect to the Interim White Paper for control measures for EGUs, Cinergy offers these specific comments:

- Discussions within the document jump around erratically between the application of control measures over the five state MW RPO region, other RPO regions such as VISTAS, the CAIR region, and possibly even nationally (see table on page 8). For example, Table 1 – Control Measure Summary Page for EGU’s supposedly attempts to present emission reduction information for the five state MW RPO region based on control cost and timing information that was derived from EPA or other uncited data from a much larger region such as the CAIR region. This is a misapplication of how the cost and timing impacts of a cap and trade program are calculated. The basic economic theory behind cap and trade program establish that the marginal cost (in \$/ton) to control sources in a smaller region, such as a five state area, will be higher than the costs to control sources in a larger 28 state area. As such, the control costs cited in Table 1 and other sections of the White Paper are applied inconsistently and therefore are misleading. All the information in the White Paper should be presented in a consistent and integrated manner for a specific region whether it is for the five state MW RPO or some other geographic region.
- In the “Source Category Description” section on pages 1-2, we suggest adding a paragraph indicating the megawatt hours of electricity produced by coal-fired units as a whole and as a percentage as related to the other generation sources in the Midwest. Coal fired units generate the vast majority of the electricity produced in the Midwest and significantly tighter emission limits of those units will significantly impact electricity rates, as well as the economy of these states.

- In the “Candidate Control Measures” section, only the “Emission Control Technologies” bullet point is pertinent to the immediate goal of the state agency attainment SIP process. The other three bullets, although tangentially related to the subject matter, do not fall into the realm of activities that could be implemented within the SIP timeframe for controlling existing or new EGUs.
- The discussion of allocating CAIR SO<sub>2</sub> allowances found in the middle of page 7 should be corrected. CAIR does not allocate SO<sub>2</sub> allowances to each state and then each source. SO<sub>2</sub> allocations under CAIR are pre-determined by the 1990 Clean Air Act Title IV program and can not be changed.
- The derivation of the proposed STAPPA/ALAPCO EGU1 and EGU2 emission caps (page 7) is overly simplistic and an unrealistic application of the association’s principles to the EGU industry. Cinergy disagrees with the selection of the “BACT level for New Plants” limits as well as the “Retrofit BACT Levels” as “clearly reasonable” limits, and we believe such limits are an unrepresentative and unrealistic application to the real world fleet of existing EGU’s in the MW RPO region, as well as other states and nationally.
  - The selection and application of these emission limits to existing units completely ignores unit design, operation, fuel handling and a wide range of other site specific factors that must be factored into real world utility compliance planning decisions.

- Similarly, the manner in which they were applied uniformly over the nation using only 2001 heat input appear arbitrary. There is no discussion or consideration given to using a range of years nor is there an explanation why a future year (2010) grown heat input level was not chosen.
- Therefore, we believe that this derivation should be modified to account for the deficiencies noted above and the caps appropriately recalculated.
- The derivation of the proposed STAPPA/ALAPCO EGU1 and EGU2 implementation deadlines (page 7) is also overly simplistic and an unrealistic application of the timing of implementation of such control levels. Cinergy believes the speed of implementation cannot be ignored, as this White Paper has done.
  - Such factors as the unit design, pollution control retrofit difficulty, fuel characteristics and replacement power issues must be factored into real world utility compliance planning decisions. If emission reductions beyond CAIR are required, then pollution control retrofits will have to be applied to significantly more medium and small sized coal fired units. The speed at which utility companies make retrofit decisions for such units takes more time than for larger base load units since the operational and financial implications of such decisions are significantly different.
  - In addition it takes many more individual small units to equal the emissions reductions from one large single unit of equivalent MW size. Therefore the speed of regulatory implementation of such controls must be balanced with the practical

limits of retrofit difficulty, electrical reliability constraints or construction timelines of replacement power units. Any emissions reductions analysis that the MW RPO or individual states consider beyond CAIR must include such factors such as: 1) the cost of compliance retrofits, 2) the capability of existing pollution control equipment at that site to be upgraded, 3) the remaining useful life of the unit, 4) the availability of labor and materials and 5) the need for those units in that geographic location from a reliability perspective.

- It also does a disservice to the usefulness and seriousness of this White Paper to think that one can “back-calculate” interim caps and timeframes without any technical justification. Even if the MW RPO or individual states plan to conduct a more detailed analysis of interim caps and timeframes using a tool such as the Integrated Planning Model a separate technical analysis of the speed of implementation will be required since the IPM has no constraints on how quickly pollution control retrofits, or new generating units, can be installed. To the extent that the states individually or collectively seeks quicker and/or more stringent emissions reductions than CAIR, Cinergy recommends that the appropriate state agencies such as utility transmission and planning regulators, the EPA, and utility planners engaged in a analysis which accounts for the significant infrastructure issues associated with any potential new control levels. Especially if these new more stringent controls are only to be implemented in the Midwest where there is a higher proportion of coal fired generation.

- Therefore, we believe that this derivation should be modified to account for the deficiencies noted above and the timeframes appropriately recalculated.
- No discussion is provided why the EGU1 and EGU2 proposals are the only ones under consideration and it implies that the impacts between the two scenarios are linear; which is unlikely to be the case. If it is found that additional EGU controls are the more cost-effective when compared to certain other sectors then other emissions reductions steps less stringent than EGU1 or between EGU1 and EGU2 may be equally suitable. Including a wider range of EGU reductions for consideration would provide a richer understanding of both the air quality improvements to be expected as well as the impact to industry and cost to the public.
- The “Cost Effectiveness and Basis” section contains marginal cost estimates of SO<sub>2</sub> and NO<sub>x</sub> reductions taken from EPA’s CAIR analysis. As with other sections in the White Paper, the discussion jumps around between CAIR reductions, alternative limits and the geographic applicability of the alternative reductions. Because of this lack of internal consistency of caps and geography it is impossible to simply extrapolate the cost-effectiveness numbers as presented in this section. Consequently, the statement that these costs “represent the upper bound limits of cost-effectiveness for meeting the proposed caps” is untested and therefore false. Therefore we recommend that this section be reduced to only a discussion of the EPA CAIR cost effectiveness data until such time that a comparable or better technical analysis of the marginal costs of controls of the alternative caps has been conducted. Any analysis of the marginal costs of emissions

reductions must utilize a more robust and integrated examination of the impact on the EGU industry over the specific geographic region in question. In addition such an examination of costs must use the most accurate economic assumptions available over the range of units that will get controls. Cinergy has submitted extensive comments in mid-April to the MW RPO on environmental and economic factors that will impact the costs of complying with EGU 1 and EGU2 and strongly recommend that before any analysis is considered complete that at least a range of costs assumptions included Cinergy's data is considered. Attached a recommended list of issues that the states should include in their analysis of the cost effectiveness of EGU controls.

- Cinergy recommends that the MW RPO start a dialogue with stakeholders and ask for comment on the development of a range of cost metrics, other than just \$/ton, that could be considered when making decisions about future emission reductions from EGU's or other sectors. Many local nonattainment planning groups have discussed various methodologies to help them compare divergent emissions reductions and costs across various sectors. These discussions may help educate all parties on the relative impact of various policy options.
- The reliance on the Institute of Clean Air Companies' assertions in the "Timing of Implementation" section without a more detailed consideration of EPA's studies or the mentioning of the utility industry's contrasting comments filed under the CAIR and CAMR rulemakings undermines the credibility of the White Paper's claims. Cinergy

recommends that the next version of the White Paper devote considerably more attention to the issues and details around the timing of installing controls.

- If the EGU1 and EGU2 policies discussed in this document are to be modeled in IPM then a full discussion of the specific final set of assumptions used in IPM should be included in the White Paper or a similar document dedicated to that issue. The document should also be made available to stakeholders for review and comment.
- If EGU1 or EGU2, or any other alternative limits are only to be implemented on a 5 state MW RPO basis, then a new section of the White Paper should discuss how the program will interact with the CAIR SO<sub>2</sub> and NO<sub>x</sub> trading regime. In other words;
  - does the policy result in simply reduced SO<sub>2</sub> and NO<sub>x</sub> allocations for EGUs within the 5 states, but allows those states to purchase allowances from outside the region; or,
  - does it not allow trading with the outside states at all; or,
  - is trading with outside states allowed, but requires that the 5-state caps still be met? If this last bullet is correct, then are allowances brought in from outside states brought in at a reduced transfer ratio?
  - Will individual state allowances be subject to a higher surrender ratios
- The White Paper's discussion of alternative NO<sub>x</sub> reductions (caps) leave the question open whether they are on an annual basis only. If the MW RPO is going to model the impact of a tighter NO<sub>x</sub> cap, either in IPM or CAM<sub>x</sub>, then the implications of maintaining the summer ozone season CAIR cap or a tighter cap should be discussed.
- The White Paper doesn't discuss how the EGU's existing bank of SO<sub>2</sub> Title IV allowances will be treated under the alternative MW RPO caps. Will companies be allowed to fully bank 2007 and earlier vintage allowances (similar to CAIR), or will banked allowances also be impacted?

- The White Paper does not discuss how state specific mercury reduction requirements that are more stringent than the EPA rule impact SO<sub>2</sub> and NO<sub>x</sub> reductions either geographically or temporally.
- All major sections of the report along with associated tables and figures in the White Paper should be individually labeled and identified.

### Conclusion

Cinergy appreciates the opportunity to provide comments on the MW RPO's Interim White Paper on EGU controls. We look forward to working with the MW RPO and individual states to take the necessary steps to conduct the economic and air quality modeling for the Midwest to address attainment of the ozone and PM<sub>2.5</sub> NAAQS after CAIR is implemented. Cinergy has extensive experience in the economic modeling of environmental policies and would welcome the opportunity to discuss these comments in more detail at your convenience. If you have any questions, please feel free to contact me.

Sincerely,

Manager of Environmental Analysis

cc: Kathy Watson, IDEM  
Bob Hodanbosi, OEPA

**A Complete Engineering Cost Estimate for Unit/Plant Level Retrofit of Pollution Control Equipment Should Include:**

- ❑ Equipment Process Capital
  - Typically composed of vendor quotes for specific material and labor costs for system installation such as
    - Steel structures
    - Primary system components such as FGD module or SCR reactor box
    - New stack if needed
    - Initial SCR catalyst or baghouse bags
    - Necessary auxiliary support systems such as pumps and piping systems
    - Reagent and waste unloading and handling
    - Waste treatment.
    - Instrumentation, monitoring, and controls
- ❑ Balance of Plant Capital
  - Often left out of estimates, this includes plant modifications necessary for the operation of the equipment; material and labor costs
    - Draft system upgrades (ID fans) for higher pressure capacity
    - Interconnecting ductwork and support structure
    - Electrical system upgrades (transformers, switchyard modifications, primary voltage conductors)
    - Waste landfill or ash pond development
    - Control system upgrades
- ❑ Retrofit Difficulty Factor
  - Increased consumable material, construction equipment, and labor costs depending on the difficulty of construction
    - Preparatory site work needed to “clear a path”
    - Uncommon construction equipment fees such as large or multiple crane rentals and earth-moving equipment
    - Productivity adjustments for labor costs for constrained work spaces
  - Increased process capital depending on the difficulty of construction
    - Long or odd ductwork runs (also affects ID fans)
    - Difficult interconnecting tie-ins to the unit
    - Asbestos Abatement
  - Usually retrofit costs are higher for older units, and stations with multiple units
- ❑ General facilities (roads, structures, out-buildings, security)
- ❑ Initial reagents and commissioning
  - FGD lime or limestone pile
  - SCR ammonia tanks
  - Performance acceptance testing, materials and labor
- ❑ Initial spare parts inventory
- ❑ A&E construction management and design fees
- ❑ Owner’s indirect costs
  - Project management and coordination
  - Engineering analysis
  - Economic analysis
- ❑ Project contingency
- ❑ Allowance-for-Funds-Used-During-Construction expense
- ❑ Identification of year basis of the dollars, and recommended escalation rates for converting to other year’s dollars
- ❑ System electrical reliability implications if the unit is retired