

DATE: December 27, 2006 FILE REF: 4516-8

TO: Members of the Natural Resources Board

FROM: Scott Hassett, Secretary

SUBJECT: Background Memo for adoption of Order AM-03-06 creating Chapter NR 432 specifying the process of allocation of NO<sub>x</sub> allowances for the Clean Air Interstate Rule NO<sub>x</sub> Annual Trading Program and the NO<sub>x</sub> Ozone Season Trading Program.

## Introduction

On May 12, 2005, the United States Environmental Protection Agency (EPA) published the final version of the Clean Air Interstate Rule (CAIR) in Federal Register, 70 FR 25162. CAIR is a requirement to reduce the interstate transport of pollutants that significantly contribute to nonattainment of ozone and fine particles (PM<sub>2.5</sub>) pollution. The program is directed at reducing nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) emissions from the electric power sector across a 28-state region of the Eastern United States, including Wisconsin and the District of Columbia. The EPA is requiring these states to revise their state implementation plans (SIPs) to include control measures to reduce emissions of NO<sub>x</sub> and/or SO<sub>2</sub> before 2009 and again by the final compliance date in 2015.

Based on an assessment of the emissions contributing to interstate transport of air pollution and available control measures, EPA determined that achieving required reductions in the identified states by controlling emissions from power plants is highly cost effective.<sup>1</sup> The EPA developed a model cap and trade program for the states to achieve emission budget milestones set by CAIR.

CAIR is implemented in two phases. For NO<sub>x</sub>, Phase I is 2009-2014 and Phase II is 2015 and later. For SO<sub>2</sub>, Phase I is 2010-2014 and Phase II is 2015 and later. Across the 28-state CAIR region, EPA estimates reductions of NO<sub>x</sub> emissions at 53 percent of 2003 emissions in Phase I and 61 percent of 2003 emissions in Phase II. For SO<sub>2</sub>, the reductions will be 45 percent in Phase I and 57 percent in Phase II from 2003 SO<sub>2</sub> emission levels.

## Overview of CAIR Model Trading Program

The backbone of the CAIR program is the optional trading program administered by the EPA covering the emissions from electric generating units (EGUs) larger than 25 megawatt electrical (MWe). This program consists of three separate markets: annual SO<sub>2</sub> emissions, annual NO<sub>x</sub> emissions and ozone-season NO<sub>x</sub> emissions. The NO<sub>x</sub> markets create two separate compliance requirements – the annual market addresses PM<sub>2.5</sub> concerns and the seasonal market addresses ozone concerns. CAIR establishes a budget for emissions of NO<sub>x</sub> and SO<sub>2</sub> for each state affected by CAIR. The states are required to meet these budgets. EPA's preferred approach for states is to participate in the federal trading program administered by the EPA. If the state chooses to participate in the federal trading program, this budget is

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<sup>1</sup> The definition of a power plant covered under CAIR is: "a stationary, fossil-fuel-fired combustion turbine serving at any time, since the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale." Cogeneration plants are defined as "a cogeneration unit serving at any time a generator with nameplate capacity of more than 25 MWe and supplying in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale."

the number of allowances the state has the discretion to allocate to sources. EPA has provided one “model” approach for that allocation, but provides flexibility for states to allocate NO<sub>x</sub> allowances differently and still use the federal trading structures. If a state chooses not to adopt the trading program, it either has to demonstrate legally enforceable programs that will reduce emissions sufficiently to meet the prescribed budget or be subject to federal regulation under a federal implementation plan (FIP). (See 71 FR 25328 (April 28, 2006).)

#### **Annual SO<sub>2</sub> Emissions Market – Model Rule**

The SO<sub>2</sub> annual budget for Wisconsin is 87,264 tons in 2010 and 61,085 tons in 2015. The CAIR SO<sub>2</sub> trading program relies upon SO<sub>2</sub> allowances under Title IV of the Clean Air Act. Pre-2010 Title IV SO<sub>2</sub> allowances can be used for compliance with CAIR. Sulfur dioxide reductions are achieved by requiring sources to retire more than one allowance for each ton of SO<sub>2</sub> emissions. The emission value of an SO<sub>2</sub> allowance is independent of the year in which it is used rather it is based upon vintage year (i.e., the year in which the allowance is issued). Sulfur dioxide allowances of vintage 2009 and earlier offset one ton of SO<sub>2</sub> emissions (a retirement ratio of 1:1). Allowances of vintage 2010 through 2014 offset one-half (0.5) of a ton of emissions (a retirement ratio of 2:1). Allowances of vintage 2015 and beyond offset roughly one-third (0.35) of a ton of emissions (a retirement ratio of 2.86:1). The allowances for SO<sub>2</sub> have already been allocated in perpetuity under the Acid Rain Program. Other than the retirement ratios, there are no further restrictions on the use of banked SO<sub>2</sub> allowances.<sup>2</sup>

#### **Annual NO<sub>x</sub> Emissions Market – Model Rule**

The NO<sub>x</sub> annual budget for Wisconsin is 40,759 tons in 2009 and 33,966 tons in 2015. The CAIR NO<sub>x</sub> annual trading program relies upon CAIR NO<sub>x</sub> annual allowances allocated by the states. The NO<sub>x</sub> SIP call allowances (for years 2003-2008)<sup>3</sup> and CAIR NO<sub>x</sub> ozone season allowances (see below) cannot be used for compliance with CAIR's annual reduction requirement. Each state will have a share of the compliance supplement pool (CSP) that is comprised of 200,000 CAIR NO<sub>x</sub> annual allowances of vintage year 2009. Wisconsin's share of CSP allowances is 4,989 allowances. The state may distribute the CSP allowances based upon criteria for early reduction and extreme hardship. There are no restrictions on the use of the banked annual allowances or CSP allowances.

#### **Ozone Season NO<sub>x</sub> Emission Market – Model Rule**

The NO<sub>x</sub> ozone season budget for Wisconsin is 17,987 tons in 2009 and 14,989 tons in 2015. The CAIR NO<sub>x</sub> ozone season trading program relies upon CAIR NO<sub>x</sub> ozone season allowances allocated by the states. Pre-2009 NO<sub>x</sub> SIP Call allowances can be banked into the program and used by CAIR-affected sources for compliance with the CAIR NO<sub>x</sub> ozone season program. NO<sub>x</sub> SIP Call allowances will not be issued after 2008. Banked NO<sub>x</sub> SIP Call allowances cannot be

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<sup>2</sup> Banking of allowances allows a unit to reserve or “bank” an allowance for use in a future year. For example, a unit may be allocated allowances in 2009 that it may not use in 2009. Those allowances would be banked and would be available to the unit to use in future years for compliance.

<sup>3</sup> The NO<sub>x</sub> SIP call required a number of eastern states to submit state implementation plans to reduce NO<sub>x</sub> emissions to mitigate ozone transport in the eastern United States. Wisconsin was not required to submit a SIP. All of the states involved met the requirements by participating in the NO<sub>x</sub> Budget Trading Program administered by the USEPA.

used to meet the NO<sub>x</sub> annual emissions budget. There are no other restrictions on the use of banked allowances.

#### **Flexibility for States in Development of NO<sub>x</sub> Trading Programs**

For the most part, states have to implement the trading program as dictated by the EPA in the model rule. The USEPA explicitly gave states flexibility in determining the following aspects of the program:

- Development of NO<sub>x</sub> allocation methodologies provided allocation information is submitted to EPA in the required time frame. This includes:
  - Cost of allowance distribution
  - Frequency of allocations (permanent v. periodically updated)
  - Basis for distribution (heat-input v. power output)
  - Use of allowance set-asides and their size (new source, energy efficiency, development of IGCC, renewables or small units).
- Provisions that allow individual units not regulated under CAIR to opt-in to the trading program so long as the units comply with Part 75 monitoring requirements.

#### **“Abbreviated SIP” Option**

The EPA has created an “abbreviated SIP” option as an alternative to requiring a state to submit a full CAIR SIP. The abbreviated SIP allows the state the discretion in how to structure the allocation of NO<sub>x</sub> allowances while reducing the administrative burden on the state with respect to the implementation and administration of the other aspects of the trading program including all aspects of the SO<sub>2</sub> emission markets and the compliance aspects of the NO<sub>x</sub> annual and ozone season markets. These aspects are implemented and administered by the EPA.

### ***1. Why is this rule being proposed?***

This rule is being proposed to comply with the federal requirement promulgated in the Clean Air Interstate Rule (CAIR) to reduce emissions of SO<sub>2</sub> and NO<sub>x</sub> in order to address the issue of interstate ozone and fine particle pollution. Staff proposes to fulfill this requirement by participating in the federal trading programs for major EGUs and using the abbreviated SIP option.

The CAIR allows states to participate in the federal program and have the discretion to make some alterations to the NO<sub>x</sub> allocation structures in the CAIR trading programs for both the NO<sub>x</sub> annual market and the NO<sub>x</sub> ozone season market. The Department proposes that the state will submit an “abbreviated SIP” which will consist of the Department rules detailing the NO<sub>x</sub> allocation structure. All other aspects of the CAIR program, including the SO<sub>2</sub> annual market, will be implemented and administered by the EPA.

The Department is proposing to use the abbreviated SIP option for two major reasons. First, it allows a state the discretion of creating a NO<sub>x</sub> allocation structure that promotes environmental values in Wisconsin through the encouragement of the development of renewable energy, rewarding energy efficiency and promoting new generation. Additionally, it allows for the Department to craft a rule to offer additional compliance options, decrease compliance and energy costs and create a market that allow

Wisconsin energy producers to remain competitive with energy producers in surrounding states.<sup>4</sup> Second, it significantly limits the administrative burden for Wisconsin by establishing a rule that is primarily administered by the EPA.

## ***2. Summary of the rule***

The guiding principle for the development of the Department's proposed rule was to utilize the federal rule to the maximum extent except where there is explicit authorization for state discretion and there is a strong rationale for the exercise of that discretion. The rationale was based on creating a rule that:

- Provides for equal or better environmental protection;
- Is cost effective;
- Improves the ability of the emission market to determine the least cost emission reduction;
- Reduces the burden on the development of new generation;
- Promotes energy efficiency;
- Encourages renewable energy development;
- Simplifies the rule structure; and
- Reduces the administrative burden.

The proposed rule details the NO<sub>x</sub> allocation structure that would apply to both the annual and ozone season programs. Table 1 is a comparison of the NO<sub>x</sub> allocation structure for the FIP and the proposed rule.

The rationales for those state discretionary elements where staff proposes a different approach than the FIP or where the Department has have revised the public hearing draft are explained in the sections below.

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<sup>4</sup> It is particularly important for Wisconsin energy producers to remain competitive with the areas where there are the largest interfaces for transmission capacity. The three largest interfaces are Illinois with 875 MW, Minnesota with 279 MW and the Upper Peninsula of Michigan with 475 MW.

**Table 1: Comparison of the NO<sub>x</sub> Allocation Structure for the Federal Implementation Plan and the Proposed Rule**

	<b>Federal Implement ation Plan</b>	<b>Propo Rule</b>
<b>Allocation basis- existing units</b>	Heat input	Electri output
<b>Allocation basis- new units</b>	Electrical output	Electri output
<b>Data used for baseline</b>	Highest three years of five years of data	Highest three years of five ye of data
<b>Updating unit baseline</b>	Permanent, once established	2011 a every five ye thereaf
<b>Updating state total baseline to incorporate new units</b>	2011 and every year thereafter	2011 a every year thereaf
<b>Level of allocation</b>	Unit level	Unit le
<b>Reallocation</b>	2011 and every year thereafter	2011 a every year thereaf
<b>Length of allocation</b>	Initial 2009-2014 allowances allocated, then four years in advance of vintage yr starting in 2011	Initial 2009- 2014 allowa es allocat then fo years i advanc of vintage yr startin in 201
<b>Fuel weighting</b>	1.0 for Coal  0.6 for Oil	No fue weight

	0.4 for all others	
<b>New unit set-aside</b>	Phase I: 5% Phase II: 3%	Phase I: 7% Phase II: 7%
<b>Treatment of Renewable Energy</b>	No inclusion of renewable energy	New renewable units able to apply to the main allocation pool or baseline established
<b>Treatment of Energy Efficiency Projects</b>	No inclusion of energy efficiency projects	Energy efficiency addressed through output based allocations
<b>Treatment of Clean Coal Projects</b>	No preference	No preference
<b>Oversubscription of set-aside</b>	Pro-rata reduction	Pro-rata reduction
<b>Undersubscription of set-aside</b>	Re-distribution to the main allocation pool	Re-distribution to the main allocation pool
<b>Treatment of Combined Heat and Power units</b>	Boiler units: (Useful Thermal Output/ 0.8) + (Electric generation * 3,413	All units (Useful output 3.4 mmBtu MWh) (Electrical

<p><b>Compliance Supplement Pool</b></p>	<p>mmBtu/MWh)          Combustion Turbines:          (Useful thermal output/0.8)          +          (Electrical generation * 3,413 Btu/KWh)          Allocated based upon early reductions or extreme hardship</p>	<p>Generation Output          Allocation based upon early reductions or extreme hardship</p>
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For a comparison of NOx allocation structures in the Midwest states, see Appendix A.

**a. Allocation Basis – existing units**

The proposed rule calculates existing unit baselines using generation output data instead of heat input as in the FIP. There are a number of reasons for using generation output instead of heat input in calculating the unit baselines.

Most of the benefit from instituting an output based allocation structure stems from rewarding energy efficiency. In a cap and trade program such as CAIR, this increased energy efficiency does not necessarily result in a reduction in emissions since the number of allowances (representing the number of allowable tons of NO<sub>x</sub> emissions) stays the same in the program. Instead, energy efficiency reduces the demand for the NO<sub>x</sub> allowances since an efficient unit will need fewer allowances for compliance and in turn reduces the price of the allowances in the market thereby reducing the cost of compliance for all units in the market. The allocation based upon generation output instead of heat input does not result in a reduction in the number of allowances available for compliance and therefore this does not create a rule that is more stringent than the federal rule.

Allocating to existing units based upon output simplifies the program structure by treating units the same regardless of when the unit commenced operation. Under the FIP, new units (commencing operation on or after January 1, 2001) receive allowances based on the unit's output whereas existing units receive allowances based on heat input. Treating units differently, based simply on the first date of operation, creates a market imperfection that affects the market's ability to accurately access the least cost control.

Using generation output as a basis for allocation ties the NO<sub>x</sub> emissions directly with the economic commodity – electricity. This direct tie better approximates the real cost of emissions to society and allows the market to more effectively determine the least cost control.

Although it was not the intent of the proposed rule, the effect of an output based allocation scheme is that units in Wisconsin's ozone nonattainment areas will receive a smaller allocation than under a heat input based scheme. Even though there is no guarantee how electric utilities will use their allowances, this may result in more NO<sub>x</sub> emission reductions in the nonattainment area meaning improved air quality in the area that most needs the emission reductions. The net result is a better environmental dispatch of the allowances for Wisconsin, even though the total state allocation stays the same.

The EPA argues that existing units should receive allocations based upon heat input because the historical generation data is uncertain and not subject to CEM reporting requirements like the historical heat input data. Although this is true, there are a number of sources of generation data that have been certified by the units for the Energy Information Administration, the Wisconsin Public Service Commission and the Clean Air Markets Division of the USEPA. Additionally, a number of states have successfully relied upon generation data for allocations under the NO<sub>x</sub> SIP call such as Massachusetts, Connecticut and New Jersey. Illinois is proposing to base its CAIR NO<sub>x</sub> allocations to existing units on output generation as well.

In summary, calculating existing unit baselines using generation output improves the trading program through encouraging energy efficiency, reducing cost of compliance and simplifying the market structure.

## **b. Updating of Unit Baseline**

Under the FIP, the unit baseline, once calculated, does not change. This means that an older plant will continue to receive allowances based on its historic heat input, even if operation declines over time or it is shut down. New plants, on the other hand, will always receive allowances based on their first few years of operation even if they operate at a higher level in the future. Often, the first five years of operation of new generating units are low operating years. This results in a bias towards older, less efficient units over the newer, more efficient units.

For existing units, unit baselines will be initially established using 2000-2004 data in 2007. Under the proposed rule, the unit baseline is updated first in 2011 and then every five years thereafter. Updating of the unit baseline is an important aspect of having a unit baseline based upon generation output. In a program that allocates based upon a permanent baseline there is no incentive with respect to allocations to change the unit's energy efficiency since it will not change the allocation. In an updating baseline system, a unit will be rewarded for energy efficiency upgrades. The rewards are based on the unit consuming less fuel to get the same amount of energy and not being penalized for a reduction in fuel consumption.

Updating a unit baseline results in rewarding those units that have installed energy efficiency technology with the benefits as discussed in Section I above as well as creating an emissions market that more accurately represents the market that is producing the economic good. An emission market that is a good representation of the current electric market means that there is less distortion in the market leading to a more efficient distribution of allowances to the least cost control.

The updated baseline keeps the allocations in line with the actual operation of the plants. It phases out allocations to plants that are no longer running and increases allocations to new plants as they provide increased generation to consumers.

The EPA argues that updating unit baselines will create an incentive for a plant in a competitive electricity market to run more in order to qualify for more allowances in the next allocation period and that this results in higher potential emissions and higher compliance costs. However, this "generation subsidy" is small compared to other components of operating cost and other imperfections in the electricity market tend to limit this effect. Furthermore, Midwest Independent Systems Operators (MISO), not the individual utility, dictates the volume of electricity generated.

Utilities have argued that updating the unit baseline will decrease needed certainty in the number of allowances they will receive in the allocation. Under the FIP, there is uncertainty in the number of allowances since the state baseline is updated with new unit data in 2011 and every year thereafter which will affect the size of an existing unit's proportional share of the main allocation pool. Additionally, under the proposed rule, the utilities will have the certainty of the allocations for 2009 – 2014 in 2007 and then starting in 2011, allocations four years in advance of the compliance year.

Another argument against an updating unit baseline structure is that it discourages utilities from retiring older units because the utilities will lose the allowances associated with this unit once it stops generating. First, allowing units that are not contributing an economic good to continue to receive allowances does not make economic sense since it is rewarding units simply because the units were operating prior to 2001.

Second, starting in 2011, the update occurs every five years which results in a retired unit continuing to receive allowances until the next update. A retired unit receives allowances until in an updating year it has no operating data in the past five years. Depending on when a unit is retired, the unit may get allowances for up to 12 years after it has retired.<sup>5</sup> This lag time between when a retired unit stops operating and when a retired unit stops receiving allowances would allow the utility to bank those allowances from the retired unit to use elsewhere for compliance. Therefore, a unit would receive allowances until, in an updating year, the unit had not generated electricity for five years.

### **c. Fuel Weighting or Fuel Adjustment Factors**

Under the proposed rule, fuel adjustment factors are not used. Fuel adjustment factors are used in the FIP to target allocation of allowance to the higher emitters. Essentially, the fuel adjustment factor acts as a subsidy for the higher emitting units. The adjustment bypasses the market mechanism that determines which unit is the most cost effective to control. By eliminating fuel weighting, the market incorporates the complex mix of variables, including unit efficiency, in determining which units should buy additional allowances from the market.

The elimination of the fuel adjustment factors reduces the distortions in the marketplace as discussed above. This allows the trading program market to do a more effective job of determining the most cost-effective compliance mix.

Fuel weighting allocates allowances with the highest factor for coal fired units, next highest for oil fired units and the lowest factor for natural gas fired units. This is directly opposite to the state energy priorities detailed in Wis. Stats. 1.12(4)(d).

### **d. Size of New Unit Set-Aside**

The size of the new unit set-aside is two percent higher in Phase I and four percent higher in Phase II than in the FIP. The major reasoning for setting the size of the new unit set-aside larger than the FIP is based upon the estimate of new generation growth of 2.5 percent developed by the Wisconsin Public Service Commission. Under this conservative estimate of growth, the staff determined that new generation in Wisconsin would need a 7 to 11 percent set-aside. A new unit set-aside that is large enough to accommodate all new units will reduce the uncertainty for new units associated with having to buy allowances from the market for operation. This results in a better environment for the development of new, more efficient, generation.

Additionally, under the proposed rule, if a new unit set-aside is undersubscribed (allowances left over after the application period), these leftover allowances are re-distributed to the main allocation pool. Therefore, if the new unit set-aside is too large in any year, the units in the main allocation pool receive the left-over allowances in time to use those allowances in that compliance year. Even though

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<sup>5</sup> The retired unit in the example receives allowances using the following reasoning: In 2011, unit baselines are updated using 2006-2010 annual data that will be used to calculate allocations for 2015-2019. For 2015-2019 allocations, the retired unit would receive all allowances based upon its unit baseline for 2006-2010 operating data even though it is no longer operating. In 2016, the next unit baseline updating year, the baseline for the unit would be determined using the most recent 5 years of data – 2011-2015. The 2016 updated baseline would be used to determine allocations for 2020-2024. If the unit had some operating data in 2011, it would receive minimal allowances in 2020 to 2024 based on the amount of electrical generation in 2011. The next unit update would occur in 2021 and would use 2015-2019 operating data. Since the unit would have no operating data for this time period it would no longer receive allocations. This means that a unit that is retired in 2011 would receive allowances until 2025.

the set-aside is larger than the federal rule, this does not constitute a state proposal that is more stringent than the federal rule. Because the unused allowances are redistributed to the main allocation pool, the number of allowances available for compliance is the same as in the federal version of the CAIR.

#### **e. Treatment of Renewable Units**

Under the proposed rule, new renewable units are eligible to receive allowances from the main allocation pool once the renewable unit establishes a baseline of five years of operating data.

Inclusion of new renewable units in the allocation structure encourages and rewards the development of renewable energy. This approach directly supports the mandates and goals of 2005 Wis. Act 141 that require electric generators to increase the percentage of renewable energy generated. Through the development of more renewable energy, the demand for allowances for compliance will decrease and will result in a decrease in the cost of an allowance.

Additionally, by having renewable units eligible for allowances, it creates a compliance option for EGUs. For instance, an EGU can develop a new renewable unit, receive the allowances associated with the generation from that renewable unit and use those allowances for compliance at another fossil fuel-fired unit. It will also provide additional financial incentives to develop new renewable generation.

#### **f. Treatment of Combined Heat and Power Units**

Under the FIP, thermal energy produced by combined heat and power units (CHPs) is adjusted using an assumed 80 percent efficiency rate for all units. Under the proposed rule, thermal energy is assumed to have a 100 percent efficiency rate like the efficiency rate used for electricity. CHPs have higher efficiency and lower emissions than traditional coal fired plants. The proposed rule uses the same methodology for all technologies and all fuels consistent with the approach for non-CHPs. This rewards the highly efficient generation associated with CHPs.

#### **g. Compliance Supplement Pool**

The FIP distributes the compliance supplement pool (CSP) to units that apply for the allowances based upon early emission reductions or based on extreme hardship using the criterion outline below. Only CSP allowances allocated in 2009 become part of the program. CSP allowances are allocated only in 2009 and can only be used for compliance in the NO<sub>x</sub> annual trading program.

Distribution based on Early Reduction – Under the FIP, a unit may apply for early reduction credits from the CSP if the following criteria are established:

- if the unit's average annual NO<sub>x</sub> emission rate from 2007 or 2008 is less than 0.25 lb/mmBtu;
- if the unit is included in a NO<sub>x</sub> averaging plan under the Acid Rain Program for such year;
- if the unit's NO<sub>x</sub> averaging emission rate for such year equal to or less than the actual weighted average NO<sub>x</sub> emission rate for the year before such year; and if the unit achieves NO<sub>x</sub> emission reduction in 2007 and 2008.

Distribution based on Extreme Hardship – The EPA's determination of extreme hardship is based on whether "the compliance with CAIR NO<sub>x</sub> emissions limitation for the control period in 2009 would create an undue risk to the reliability of electricity supply during such control period." The demonstration by the generator must include a showing that it would not be feasible for the owners and operators of the unit to:

- obtain a sufficient amount of electricity from other electricity generation facilities; or
- Obtain sufficient amount of CAIR NO<sub>x</sub> allowances to prevent such undue risk.

The proposed rule would utilize the federal structure for allocating CSP allowances. In the public hearing draft, the Department proposed the emission target level for early emission reduction credits at 0.15 lb/mmBtu instead of the 0.25 lb/mmBtu as in the federal rule. The Department received numerous adverse comments regarding this proposal (as well as comments suggesting a 0.11 lb/mmBtu emission target level). The adverse comments stated that this deviation from the federal structure would discourage, and potentially deter, early emission reductions. The Department concedes and has therefore changed the emission reduction target level to reflect that which is found in the federal rule.

### ***3. How this proposal affects existing policy.***

This proposal is consistent with existing state statutory policy for ozone rules under s. 285.11(6), Wis. Stats., to revise and implement state implementation plans for the purpose of prevention, abatement and control of air pollution in Wisconsin. It is also consistent with the energy priorities in Wis. Stats. 1.12(4)(d). The proposed rule interacts with the recently enacted 2005 Wis. Act 141 which established a requirement that utilities generate approximately 10% of their electricity using renewable resources by 2015. The proposed rule will grant allowances to the energy generated by renewable resources which will help defray the usually higher costs associated with renewable energy. Additionally, the NO<sub>x</sub> allocation structure does not create any requirements to develop new renewable energy – it simply rewards new development of renewable energy. See Appendix B for a discussion on the interaction between 2005 Wis. Act 141 and the proposed rule.

### ***4. Hearing Synopsis and Comment Summary***

Two public hearings were held on October 10, 2006 in Stevens Point and October 12, 2006 in Milwaukee. 11 people attended the hearings. We Energies and Wisconsin Utilities Association (joined by Dairyland Power) testified in opposition to the proposed rule structure. Sierra Club, Clean Wisconsin and Calpine Corporation testified in support of the proposed rule structure.

In addition, the Department received written comments from the following:

- Alliant Energy
- American Wind Energy Association (AWEA)
- Brent Sainsbury (Citizen)
- Business Council for Sustainable Energy (BCSE)
- Calpine Corporation
- Clean Wisconsin
- Local 2150 of International Brotherhood of Electrical Workers (IBEW 2150)
- James Dudley Cooper (Citizen)

- Madison Gas & Electric (MG&E)
- Manitowoc Public Utilities (MPU)
- Peter Taglia (Citizen)
- RENEW Wisconsin (RENEW)
- Shaunna Cook (Citizen)
- Sierra Club
- Steve Tesmer (Citizen)
- U.S. EPA
- We Energies
- Wisconsin Industrial Energy Group, Inc. (WIEG)
- Wisconsin Legislative Council Rules Clearinghouse (Legislative Council)
- Wisconsin Manufacturing and Commerce (WMC)
- Wisconsin Paper Council (WPC)

The comments and the staff's responses are summarized in Attachments C (Executive Summary) and D (Detailed Summary and Responses).

## ***5. Changes made to AM-03-06***

### **a. Plain language analysis of the rule**

In response to a comment from the Wisconsin Legislative Council Rules Clearinghouse, the statutory authority was limited to 285.11(1), Stats. and a more specific reference was made to 227.14(1m). Additionally, changes were made to the text of the plain language analysis to clarify the language.

### **b. Rule language**

A number of technical changes were made in response to comments from the EPA, MG&E, Calpine, Clean Wisconsin, Sierra Club, RENEW Wisconsin and Wisconsin Legislative Council Rules Clearinghouse. These include making the definitions substantively similar to the federal definitions, clarifications of calculation of unit baselines, when new units are eligible to receive allocations from the main allocation pool and correction of equations and units used in equations. One major change was to the definition of a cogeneration unit. The definition was changed to correspond to the federal definition.

The emission limit target rate for eligibility for early emission reduction credits from the compliance supplement pool was increased from 0.15 lbs/mmBtu to 0.25 lbs/mmBtu. This was changed in response to comments received and to reflect the level in the FIP.

### **c. Fiscal estimate**

There were no changes to the fiscal estimate.

## ***6. Has the Board dealt with these issues before? If so, when and why?***

Most recently the NRB adopted ch. NR 428 in 2000 regulating the emissions of NO<sub>x</sub> from certain EGUs in the state. The regulations became part of the 1-Hour Ozone Attainment Demonstration for southeastern Wisconsin and primarily involved operation and performance requirements for new and existing stationary sources above specified size thresholds. The new source requirements apply in 6 southeastern Wisconsin counties while an existing stationary source program applies to those same 6 counties plus Sheboygan County.

Prior to NR 428, the agency developed and held hearings on a regulation proposal addressing EPA's NO<sub>x</sub> SIP call (1997). The proposed NO<sub>x</sub> SIP call program incorporated a NO<sub>x</sub> emissions allocation and trading structure similar in general structure and approximate control level to the proposed Ozone Season NO<sub>x</sub> program addressed here. The call to Wisconsin for a NO<sub>x</sub> SIP to address both 1-hour ozone and 8-hour ozone interstate transport was withdrawn by EPA in 2000 pending resolution of litigation surrounding both the NO<sub>x</sub> SIP call and the new 8-hour ozone standard. It has not been reinstated to address the current 8-hour ozone standard because this CAIR SIP addresses the same issue.

The Department has historically addressed source-specific SO<sub>2</sub> emissions limitations for specific industrial facilities associated with monitored SO<sub>2</sub> nonattainment and has developed state regulations (NR 409) implementing both Wisconsin Acid Rain statutes and a federal Acid Rain control program. NR 417 and NR 418 regulate SO<sub>2</sub> emissions from the major electric generating units. The SO<sub>2</sub> allowance allocations associated with the federal acid rain program provide the credits further regulated under the CAIR SO<sub>2</sub> trading program. The SO<sub>2</sub> control portion of CAIR will initially be federally-administered under a federal implementation plan and are not addressed in this proposed rule.

### ***7. Who will be affected by the proposed rule? How will they be affected?***

The Department has identified 90 fossil-fuel fired electric generating units that may be affected by the CAIR in the state. All affected sources under the CAIR must comply with the requirements of the rules. This includes obtaining the necessary number of allowances for each compliance year to cover the emissions from the unit and with the monitoring, reporting, and recordkeeping requirements of the rules. The affected units may comply with the requirements 1) by installing pollution control devices; 2) by transferring excess allowances from other units in the utility's system or 3) by buying additional allowances from the market. Additionally, utilities that do not use all of a single unit's allowances may transfer those allowances to other units in its system or sell those excess allowances in the market.

Renewable units that generate electricity may also be impacted by the proposed rule. Under the proposed rule, a new renewable energy unit will be eligible to receive allowances that it then can sell in the allowance market to offset the higher costs often associated with the development of renewable energy.

### ***8. Information on environmental analysis***

An environmental analysis of the impact of the proposed rule revisions is not needed because these changes are considered to be a Type III action under s. NR 150.03(3), Wis. Adm. Code. A Type III action is one that normally does not have the potential to cause significant environmental effects, normally does not significantly affect energy usage and normally does not involve unresolved conflicts in the use of available resources.

### ***9. Final regulatory flexibility analysis***

Under Wisconsin law, none of the electric generating units that are impacted by the CAIR are a small business. CAIR imposes no reporting, compliance or performance standards on small businesses.

As part of the federal rule promulgation process, the EPA is required under the Regulatory Flexibility Act to consider potential impacts of proposed regulations on small entities. The small entity definition used

by EPA includes: (1) electric utilities that produces 4 billion kilowatt-hours or less; (2) a small governmental jurisdiction that is a government of a city, county, town, district, or special district of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. After considering the economic impacts of the rule on small entities, EPA has concluded that these rules will not have a significant economic impact on a substantial number of small entities and has determined that it is not necessary to prepare a regulatory flexibility analysis for this rule.

**APPENDIX A**  
**COMPARISON OF NO<sub>x</sub> ALLOCATION SCHEMES IN THE MIDWEST**

Allocation Basis	Set-Asides	Fuel	Fueled Weighting	Compliance Supplement	Rule schedule
Heat input	New sources	100%	100% Coal, 6	Hardship and	

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<sup>1</sup> Baseline period for unit used years 1998-2004 instead of 2000-2004. Change method to calculate output for new sources

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<sup>2</sup> Will have opt-ins and will allow aggregation of renewable projects.

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Heat input for existing output for new	% New sources: 5% RE: 15% for renewableables	Yes	Model Rule	N/A <sup>3</sup>
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<sup>3</sup> Recently, Minnesota decided to be regulated under the CAIR FIP for 2009 and is examining whether it will propose a state specific CAIR for the later years of the program. The information in the table represents Minnesota's last proposal before it decided to be regulated by the FIP for 2009.

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**APPENDIX B**  
**INTERACTION BETWEEN 2005 WIS. ACT 141 AND PROPOSED RULE**

DATE: December 19, 2006 FILE REF: AM-06-03

TO: Al Shea

FROM: Kevin Kessler

SUBJECT: Inclusion of Renewable Generation into CAIR NOx Allocation Structure and Interaction with 2005 Wis. Act 141.

The purpose of this memo is two fold. First, it is to detail the options explored by staff in including renewable generation into the CAIR NOx allocation structure. Second, it is to discuss the interaction between the inclusion of renewable generation into the CAIR NOx allocation structure and the recently enacted 2005 Wis. Act 141 ("Act 141") which increases the renewable portfolio standard for energy generators.

#### I. Rationale and Method for Inclusion of Renewables in CAIR NOx Allocation Structure

The federal Clean Air Interstate Rule ("CAIR") provides a model rule for states to follow in order to be a participant in the federal trading program. The model rule only allocations allowances to fossil fuel-fired electric generating units larger than 25 megawatts. It does not provide for the inclusion of renewable generation in the allocation of CAIR NOx allowances.

The federal rule does allow states discretion on how to allocate NOx allowances. One area of discretion allows states to include renewable generation in the CAIR NOx allocation structure. Staff determined that including renewable generation into the NOx allocation was consistent with the energy priorities detailed in Wis. Stat. 1.12(4), the Governor's recent P.O.W.E.R. ("Promoting our Wisconsin Energy Resources") initiative and the recently enacted Act 141.

Staff first introduced the idea of the inclusion of renewable generation at public information meetings held in March and April of 2006. Under this proposal, new renewable units would have applied to a renewable energy set-aside that would allocate allowances based upon the unit's generation.<sup>1</sup> The set-aside was proposed to be 3% of the state budget in 2009-2014 and 5% of the state budget in 2015 and later. Additionally, any left-over allowances in the set-aside would have been banked for applications by renewable units in later years.

Staff received some adverse comments stating that this proposal had the possibility of making the state structure more stringent than the federal structure since it was potentially removing allowances from the market for a period of time due to the banking of unused allowances.

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<sup>1</sup> This set-aside was initially proposed for both renewable and energy efficiency projects. Energy efficiency set-aside was dropped from consideration. Staff determined that generation efficiency would be rewarded through the use of the output based allocations. Having a set-aside for demand-side energy efficiency programs would result in a high administrative burden without much of an environmental pay-off at the CAIR level. Through conversations with other states, staff concluded that the demand side energy efficiency programs were very complex with respect to determining the number of allowances and the number of years a program is eligible.

Staff then determined that it would include renewable energy in a simplistic manner through a direct allocation of NOx allowances to new renewable units instead of having a set-aside. The direct allocation decreases the administrative burden because staff does not have to establish a process separate from the allocation of the main allocation pool, there is no tracking of the banked allowances and it would not result in a more restrictive rule than the FIP. Therefore, in the public hearing draft, the set-aside for renewable units was eliminated in favor of direct allocations to new renewable units based on generation. The proposed rule for adoption has retained this structure for including new renewables into the CAIR NOx allocations.

## II. Interaction between Inclusion of Renewable Generation in CAIR NOx Allocation Structure and 2005 Wis. Act 141

### A. Overview of Act 141

#### 1. Renewable Portfolio Standard

The law prior to Act 141 required electric utilities and rural electric cooperatives (termed "electric providers") to sell a minimum amount of electricity from renewable resources to their customers, reaching its highest level, 2.2% of all electricity sold at retail, in 2011. This policy is termed a "renewable portfolio standard" or "RPS." An electric provider that sells more than the required amount of renewable electricity creates credits, which the electric provider may bank for future use or sell.

Act 141 creates a more ambitious standard, requiring electric providers to increase the amount of renewable electricity they sell two percentage points above their current level by 2010 and six percentage points above their current level by 2015, with the goal that 10% of all electricity sales in Wisconsin be from renewable resources. It also allows an electric provider, a "wholesale supplier," (a wholesale entity that supplies electricity to municipal utilities or cooperatives), or a customer of an electric provider to petition the PSC for a one-year extension of a compliance deadline for any of several reasons. Act 141 also provides more detail regarding the trading of renewable resource credits.

Act 141 prohibits the PSC from imposing any requirement on an electric provider to fund or administer a renewable resource program that is in excess of the requirements of the RPS and the statewide programs.

#### 2. State Energy Policy

The law prior to Act 141 required the PSC to implement a priority list of energy sources in making all energy-related decisions and orders. Under Act 141, the PSC is prohibited in a proceeding in which an investor-owned electric utility or a wholesale supplier is a party, from imposing any requirement on the utility or wholesale supplier regarding:

- Energy efficiency, if both the PSC and the applicant have fulfilled all of their respective responsibilities with regard to the statewide energy efficiency and renewable resource programs.
- Renewable resources, if the PSC has fulfilled all of its responsibilities in administering the RPS and the applicant is in compliance with the RPS.

In addition, when reviewing a request for approval to acquire or construct an electric transmission facility, the PSC may not impose conditions on the utility or wholesale supplier.

## B. Interaction with Act 141 and the Proposed CAIR NOx Allocation Structure

The proposed rule structure for the allocation of CAIR NOx allowances provides for a direct allocation to renewable units that began operation on or after January 1, 2001 based on the amount of energy generation of the unit. Renewable units larger than 25 MW or a number of renewable units, in aggregate larger than 25 MW, are eligible.

Once a renewable unit has established five years of operating data, it can apply to the main allocation pool for allowances. The unit can apply for annual and/or ozone season allowances. It is not mandatory for renewable units to participate in the CAIR program. This aspect of the CAIR program was created to provide an incentive for development of new renewable units as well as a compliance option for those fossil fuel-fired units subject to CAIR.

The interaction between Act 141 and the proposed NOx allocation structure is complimentary. The more new renewable energy a generator develops the more allowances it would be eligible for in the main allocation pool. Renewable energy generators are not required to participate in CAIR. The proposed allocation structure does not violate the new restrictions in Act 141 that limit the PSC from requiring an electric provider to fund or administer a renewable resource program in excess of the RPS. First, Act 141 regulates the PSC not the DNR. Second, participating in the NOx allocation is not mandatory nor are there required levels of renewable generation. The inclusion of renewable energy exists as an option to electric generators. It will reward those that go beyond the minimum requirements of the RPS because they will generate more energy but it does not require generators to do so.

**APPENDIX C**  
**EXECUTIVE SUMMARY OF COMMENTS AND**  
**STAFF'S RESPONSE TO COMMENTS**

DATE: December 18, 2006

FILE REF: AM-03-06

TO: Al Shea

FROM: Kevin Kessler

SUBJECT: Executive summary of comments received on AM-03-06 Proposed NR 432 creating structure of allocation of Clean Air Interstate Rule NO<sub>x</sub> annual and ozone season allowances

The Natural Resources Board authorized public hearings on the proposed NR 432 at the August 2006 meeting. The public hearings were held on October 10, 2006 in Stevens Point and October 12, 2006 in Milwaukee. 11 people attended the hearings. We Energies and Wisconsin Utilities Association (WUA), joined by Dairyland Power testified in opposition to the proposed rule structure. Sierra Club, Clean Wisconsin and Calpine Corporation testified in support of the proposed rule structure.

In addition, the Department received written comments from the following:

- Alliant Energy
- American Wind Energy Association (AWEA)
- Brent Sainsbury (Citizen)
- Business Council for Sustainable Energy (BCSE)
- Calpine Corporation
- Clean Wisconsin
- Local 2150 of International Brotherhood of Electrical Workers (IBEW 2150)
- James Dudley Cooper (Citizen)
- Madison Gas & Electric (MG&E)
- Manitowoc Public Utilities (MPU)
- Peter Taglia (Citizen)
- RENEW Wisconsin (RENEW)
- Shaunna Cook (Citizen)
- Sierra Club
- Steve Tesmer (Citizen)
- U.S. EPA
- We Energies
- Wisconsin Industrial Energy Group, Inc. (WIEG)
- Wisconsin Legislative Council Rules Clearinghouse (Legislative Council)
- Wisconsin Manufacturing and Commerce (WMC)
- Wisconsin Paper Council (WPC)

Issue

Summary of Issue

In Support

Opposed

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The federal implementation plan (FIP) uses heat input to determine the unit baseline for units operating prior to January 1, 2001. For units that began to operate on or after January 1, 2001, the FIP uses energy output to determine unit baselines. Under the proposed rule structure all units, regardless of the date it

Clean Wisconsin, Sierra Club, RENEW, AWEA, BCSE, Calpine and Citizens

We Energies, WMC, WUA, and Dairyland

B.  
Updating  
unit  
baseline

began  
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would use  
energy  
output to  
calculate the  
unit  
baseline.

In the FIP,  
units that  
began  
operation  
prior to  
January 1,  
2001  
calculate  
unit baseline  
using 2000-  
2004 heat  
input data.  
Units that  
begin  
operation on  
or after  
January 1,  
2001  
calculate  
unit baseline  
using the  
first five  
years of  
energy  
generation  
data. This  
unit baseline  
remains  
fixed  
regardless  
of a unit's

Clean  
Wisconsin  
, Sierra  
Club,  
RENEW,  
BCSE and  
Calpine

We  
Energies  
, WMC,  
Alliant  
Energy,  
WUA  
and  
Dairyland

increase in  
generation,  
decrease in  
generation  
or  
retirement.

The  
proposed  
rule updates  
the  
baselines for  
all units in  
the main  
allocation  
pool starting  
2011. In  
2011, and  
every five  
years  
thereafter,  
all units that  
have five  
years of  
operating  
data (and  
are therefore  
eligible for  
allocations  
from the  
main  
allocation  
pool) update  
their unit  
baseline  
using the  
five most  
current  
years of

C.  
Fuel  
weighting

operating data.  
Fuel weighting (or "fuel adjustment factors") adjusts the baseline of a unit dependent on the primary fuel that it burns. In the FIP, the baselines are multiplied by 1.0 for coal-fired units, by 0.6 for oil-fired units and by 0.4 for all other fuels. The proposed rule does not use any adjustment based upon fuel.

Clean Wisconsin, Sierra Club, RENEW, BCSE and Calpine

We Energies, WMC, Alliant Energy, WUA and Dairyland

D.  
Auctions

The FIP does not include a provision for auctioning

Clean Wisconsin, Sierra Club, RENEW and

No comments in opposition

**II.  
Renewable  
energy**

of the NOx allowances but the federal rule does give the states the discretion to auction allowances in the CAIR state implementation plan. The proposed rule does not have a provision for auctioning of allowances.

The FIP only distributes allowances to fossil fuel-fired units. Although the FIP does not incorporate renewable generation into the CAIR NOx allocations

Citizens

Clean Wisconsin, Sierra Club, RENEW, AWEA, BCSE, MG&E and Citizens

received

We Energies, WMC, Alliant Energy, WUA and Dairyland

structure,  
the federal  
rule does  
give the  
discretion to  
the state to  
allocate  
NOx  
allowances  
to  
renewable  
units either  
through a  
set-aside or  
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direct  
allocations.  
Initially, the  
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had  
proposed,  
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series of  
public  
information  
meetings, to  
have a  
renewable  
energy and  
energy  
efficiency  
set-aside.  
Through  
comments  
received and  
more  
investigatio  
n, the  
Department  
proposed

that direct allocations to renewable units be made through the main allocation pool resulting in a simplistic scheme to include renewable units limiting both the state administrative burden as well as the burden on electric generators.

Commenters suggested the following changes:

- Allow new renewable units to receive allowances from the new unit set-aside.
- Allow existing renewable units to

obtain allowances.

- Create a set-aside for renewable energy and energy efficiency projects.

**III.  
New  
units**

Units that  
begin  
operation on  
or after  
January 1,

Comments  
from  
Clean  
Wisconsin  
, Sierra

2001 (referred to as "new units") do not receive allocations from the main allocation pool for 2009-2014 since these units do not have sufficient operating data for establishing a baseline for the initial allocation in 2007. For these new units, a set-aside is created that consists of both annual and ozone season allowances. The new units apply to the set-aside based on the unit's previous year or ozone

Club, RENEW, Citizens, MG&E and Calpine on recommended changes to the proposed rule structure for allocation to new units

season NOx emissions. Any allowances in the set-aside that have not been distributed to new units are distributed to units in the main allocation pool pro rata.

Commenters have suggested the following changes:

- Bank unused new unit set-asides.
- Change the allocation structure the allocation of new unit set-asides.

**IV.  
Cogeneration units**

The FIP discounts thermal energy provided by cogeneration units. The

Clean Wisconsin, Sierra Club, RENEW, BCSE and

No comments in opposition received

**V.  
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(CS  
P)**

proposed  
rule  
removes this  
discount and  
allocates  
allowances  
based on  
100% of the  
thermal  
energy  
generated.

The FIP  
allocates the  
CSP to units  
that have  
early  
reductions  
of NOx  
based upon  
a target  
emission  
rate of 0.25  
lbs/mmBtu.  
The public  
hearing  
draft  
lowered the  
target  
emission  
rate to 0.15  
lbs/mmBtu.

Calpine

Clean  
Wisconsin  
, Sierra  
Club,  
RENEW  
and  
Citizens

WIEG,  
We  
Energies  
, WMC,  
Alliant  
Energy,  
WUA  
and  
Dairyland

**VI.  
Opt-  
in  
prov  
ision**

The FIP gives the states the option to include industrial units into the structure of CAIR. Under this provision, industrial units that emit all emissions via a stack and monitor these emissions using part 75 monitoring requirements could obtain allowances from the allocation pools like an

WPC,  
WIEG and  
MG&E

No  
commen  
ts in  
oppositi  
on  
received

electric  
generating  
unit. This is  
called the  
"opt-in"  
provision  
since these  
units would  
have the  
choice on  
whether to  
opt-in to  
regulation  
under  
CAIR.

**VII.  
Use  
of  
Fede  
ral  
Rule**

A.  
Cons  
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betw  
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state  
and  
fede  
ral  
rule

The major concern with having consistency between state and federal rule is that the state rule should not result in a stricter standard than the federal rule.

WPC and  
WMC

B.  
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osed  
rule  
goes  
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nd  
EPA  
requi

The  
commenters  
were  
concerned  
that the  
proposed  
rule  
structure  
resulting in

IBEW  
2150 and  
WMC

requirements

requirements beyond those in the FIP.

C. Adopt the federal version of CAIR

The federal model rule was written to be used as a model for the states to follow. A number of states have deviated from the federal model rule including Illinois, Michigan and Minnesota.

IBEW 2150, WIEG, We Energies, MG&E, WUA and Dairyland

D.  
Goal  
of  
CAI  
R

WDNR's  
rule  
proposal  
fails to  
recognize  
the ultimate  
goal of the  
Federal  
CAIR  
program to  
prevent  
interstate  
transport of  
emissions at  
the regional  
level.

Alliant  
Energy

**VIII.  
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Issu  
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CAI  
R  
SIP

The  
commenters  
were  
concerned  
with the  
delay of the  
CAIR SIP.

WIEG,  
WMC and  
Alliant  
Energy



B.  
Cost  
of  
Prop  
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NR  
432

Calpine  
commented  
the emission  
reductions  
can be more  
cost-  
effectively  
achieved  
through

Calpine,  
WIEG,  
WMC,  
WUA and  
Dairyland

programs that update allowance allocations periodically, do not offer perpetual allocations to any facility, and do not differentiate allocation treatment based on the vintage of the affected facility.

The other commenters were concerned that the proposed rule structure would increase energy costs in Wisconsin and that these costs have not been properly examined.

C.  
Prop  
osed  
rule  
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The  
commenters  
are  
concerned  
that the  
proposed  
rule "drives  
energy  
policy."  
The  
commenters  
state that  
Wis. Act  
141 which  
increases  
renewable  
portfolio  
standards  
for electric  
generators  
governs the  
developmen  
t of new  
renewable  
generation  
and the  
inclusion of  
renewable  
energy in  
CAIR is  
unnecessary  
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WIEG,  
WUA,  
Dairyland  
and We  
Energies

D. State participation in CAIR emission trading program

We Energies supports the states participation in the CAIR emission trading program.

We Energies

E. DNR's proposed rule is not needed to meet

The commenters are concerned that the proposed rule is more stringent than necessary given that

WMC and WUA

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the majority  
of the  
nonattainme  
nt areas in  
Wisconsin  
are  
monitoring  
attainment  
based upon  
2004-2006  
data.

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Alliant  
Energy is  
concerned  
that the  
proposed  
rule  
structure is  
unnecessaril  
y complex  
and  
increases  
the  
administrati  
ve burden  
on the state  
and the

Alliant  
Energy

regulated entities.

G. Proposed rule is responsive to evolving energy markets

**IX. Data issues**

Calpine comments that the proposed rule structure implements allocation mechanisms that are responsive to evolving energy markets.

We Energies is concerned with using both net and gross generation data to calculate

Calpine

We Energies

**X.  
Green  
Tier**

unit  
baselines.  
MG&E is  
concerned  
that the way  
that the rule  
language is  
structure  
that it may  
not  
recognize  
those that  
have entered  
into an  
environmental  
cooperative  
agreement  
instead of a  
Green Tier  
agreement.  
Additionally  
, MG&E  
requested  
clarifying  
language to  
ensure that  
superior  
environmental  
performance  
was not  
limited to  
the list in  
the rule.

MG&E

**XI.  
Clarification**

MG&E  
requested  
clarification  
of some

MG&E

of  
rule  
lang  
uage

sections of  
the rule.

**XII.  
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nical  
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A.  
Inten  
tion  
of  
CAI  
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MPU is  
concerned  
that one of  
its units will  
be regulated  
under CAIR  
when CAIR  
is not  
intending to  
regulate  
those types  
of units.

MPU

B.  
Ther  
mal  
ener  
gy  
conv  
ersio  
n

Calpine  
commented  
that an  
energy  
conversion  
had the  
wrong units.

Calpine

C.  
Tech  
nical  
com

The  
Department  
received a  
number of

ments of EPA and Legislative Council

technical comments from the Environmental Protection Agency. Primarily, the comments dealt with ensuring consistency between the federal rule language and the state rule language. The Legislative Council also made some technical comments.

**APPENDIX D**  
**DETAILED SUMMARY OF COMMENTS AND**  
**STAFF'S RESPONSE TO COMMENTS**

DATE: December 18, 2006

FILE REF: AM-03-06

TO: Al Shea

FROM: Kevin Kessler

SUBJECT: Detailed Summary of Comments received on AM-03-06 Proposed NR 432 creating structure of allocation of Clean Air Interstate Rule NO<sub>x</sub> annual and ozone season allowances

The Natural Resources Board authorized public hearings on the proposed NR 432 at the August 2006 meeting. The public hearings were held on October 10, 2006 in Stevens Point and October 12, 2006 in Milwaukee. 11 people attended the hearings. We Energies and Wisconsin Utilities Association (joined by Dairyland Power) testified in opposition to the proposed rule structure. Sierra Club, Clean Wisconsin and Calpine Corporation testified in support of the proposed rule structure.

In addition, the Department received written comments from the following:

- Alliant Energy
- American Wind Energy Association (AWEA)
- Brent Sainsbury (Citizen)
- Business Council for Sustainable Energy (BCSE)
- Calpine Corporation
- Clean Wisconsin
- Local 2150 of International Brotherhood of Electrical Workers (IBEW 2150)
- James Dudley Cooper (Citizen)
- Madison Gas & Electric (MG&E)
- Manitowoc Public Utilities (MPU)
- Peter Taglia (Citizen)
- RENEW Wisconsin (RENEW)
- Shauna Cook (Citizen)
- Sierra Club
- Steve Tesmer (Citizen)
- U.S. EPA
- We Energies
- Wisconsin Industrial Energy Group, Inc. (WIEG)
- Wisconsin Legislative Council Rules Clearinghouse (Legislative Council)
- Wisconsin Manufacturing and Commerce (WMC)
- Wisconsin Paper Council (WPC)

I. Allocations

A. **Use of energy output rather than heat input for determining unit baseline**

The federal implementation plan (FIP) uses heat input to determine the unit baseline for units operating prior to January 1, 2001. For units that began to operate on or after January 1, 2001, the FIP uses energy output to determine unit baselines. Under the proposed rule structure all units, regardless of the date it began operation, would use energy output to calculate the unit baseline.

1. **In Support**

Clean Wisconsin, Sierra Club, RENEW, American Wind Energy Association, Business Council for Sustainable Energy, Calpine and a number of citizens support allocations based upon energy output.



The reasons given for supporting an output based allocation structure include:

- Encourages energy efficiency.
- Simplifies allocation structure, treating all units the same regardless of fuel usage or date started operations.
- Energy efficiency has significant co-benefits in reducing other emissions especially greenhouse gases.
- Output is a neutral metric and will not choose any specific energy as a winner or a loser.
- Will lower cost of meeting CAIR caps.
- Increased economic activity in state for development of renewable and energy efficiency resources.
- Lower demand for fossil fuels which will contribute to lower fuel costs and improved state balance of payments.
- Basing allocations on heat input fails to recognize the substantial investment made over the last several years on efficient generating facilities by new entrants to the wholesale electric power market.<sup>10</sup>

## **2. In Opposition**

We Energies, WMC, WUA and Dairyland Power oppose using electrical output instead of heat input for calculating unit baselines.

The reasons given for using heat input are as follows:

- There is consistent and accurate data on heat input for all utilities in the Acid Rain Program.
- Using generation output will likely require utilities to develop new, more costly methods to measure gross MWhs, which creates incongruities and allocation inequities. No new technology or added costs would be required if the heat input method is used.
- Using an output based scheme provides disproportionately more allowances to certain natural gas units than to coal units, thereby unfairly affecting utility generation economics.
- The Department used a mix of gross and net MWh data sets to develop their output based allocation scheme, thereby creating an "apple and oranges" approach and allocation inequities. This would not be the case if the Department used the heat input allocation approach, which has been used for over a decade in the Acid Rain program.
- Utility operations are already driven towards improving generation efficiency due to economics and fuel costs.

## **3. Department Response**

The Department has obtained the generation output data from the Clean Air Markets Division (US EPA) or directly from the unit. The allocations proposed in the hearing authorization draft, both net generation and gross generation data was used. For the units that had net generation for the baseline calculation, the Department has obtained gross generation data directly from the unit for the allocations in the Board Order for adoption. Therefore, the proposed rule for adoption allocated 2009-2014 allowances using gross generation data across all units.

Potentially, there may be a future allocation that will have to rely on net generation for some units while the majority of the units would have their unit baseline calculated based on gross generation. Using net and gross generation has been deemed an "apples to oranges" approach for calculating unit baselines. This "apples to oranges" result is superior to the method used in the federal language. Under the FIP, the allocations to units operating prior to January 1, 2001 are based upon heat input data for the years 2000-2004. The allocations to units beginning operation on or after January 1, 2001 are based upon gross electrical output for the first five years of operation. Therefore, under the FIP, allocations will be based

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<sup>10</sup> Specifically Calpine stated: contrary to efficient practice, the USEPA's model rule provides an incentive to burn more fuel since allocations are based pro-rata on fuel burned during the baseline evaluation period. This is particularly troubling given the advanced age of many of the nation's existing power generating facilities – which have been in operation for 30 to 40 years or more and possess generating efficiencies that are substantially lower than newer facilities constructed in the last five to ten years. Wisconsin is home to a substantial number of older power generating facilities, with heat rates well in excess of 10.0 mmBtu/MWh and output-based emission rates in the range of 3.1 lb NO<sub>x</sub>/MWh of electrical output. By stark contrast, new combined cycle generating facilities, like several constructed in Wisconsin over the last few years, typically exhibit heat rates of approximately 7.0 mmBtu/MWh or less and NO<sub>x</sub> emission rates in the range of 0.08 lb/MWh. When combined with the inherently lower emission rates dictated by BACT requirements, these new facilities offer NO<sub>x</sub> emission rates that are more than 97 percent less (on a lb/MWh basis) than the existing fleet of old, inefficient and high-emission power plants.

upon both different basis (generation output v. heat input) and different years of operation. This will result in an allocation that is not representative of current energy generation.

One commenter suggested that heat input data is readily available for all utilities in the Acid Rain Program. This is true, but there are a number of units subject to CAIR that are not subject to the Acid Rain Program and therefore do not report data to the EPA's Acid Rain Program. The commenter did not suggest where the Department should obtain this data. For these units, the Department obtained gross generation data directly from the units.

The output based scheme allocates more allowances to the more efficient units. This results in natural gas units and cogeneration units receiving more allowances in the proposed state rule than in the federal rule and with the older, less efficient coal fired plants receiving less allowances than under the federal rule. It is unclear to the Department how allocating allowances to cleaner more efficient units would "unfairly affect utility generation economics."

## **B. Updating Unit Baseline**

In the FIP, units that began operation prior to January 1, 2001 calculate unit baseline using 2000-2004 heat input data. Units that begin operation on or after January 1, 2001 calculate unit baseline using the first five years of energy generation data. This unit baseline remains fixed regardless of a unit's increase in generation, decrease in generation or retirement of the unit.

The proposed rule updates the baselines for all units in the main allocation pool starting 2011. In 2011, and every five years thereafter, all units that have five years of operating data (and are therefore eligible for allocations from the main allocation pool) update their unit baseline using the five most current years of operating data.

### **1. In Support**

Clean Wisconsin, Sierra Club, RENEW, Business Council for Sustainable Energy and Calpine support the proposed allocation structure that updates the unit baselines every five years.

The reasons for supporting the updating provision are as follows:

- Results in lower emissions and greater energy production, compared to permanent allocation mechanisms.<sup>11</sup>
- Helps encourage lower-priced energy because producers will be willing to supply more energy at a given price if they receive an additional incentive of an updated allowance allocation for producing that energy.<sup>12</sup>
- Encourages continuous improvement in efficiency at every unit, and provides an allocation system that more accurately represents actual operation of the units.
- Decreases utility lobbying to government and changes utility market behavior to increase future allocations.
- This approach properly diverts emission allowances away from facilities that have reduced operation or been retired, and reallocates the emission allowances to facilities that continue to operate or increase operation over time.
- Permanent baselines will stifle new competitors that are interested in entering the power sector in Wisconsin, as well as those generators hoping to deploy new technology, such as integrated coal gasification (IGCC).
- The proposed rule represents a blended approach that balances the need for certainty and consistency regarding allocations for existing units, with the need for newer units to transition to the main allocation pool to fully and equitably participate in the CAIR program. The four-year delay between allocation and the compliance year allows sufficient planning time for affected sources to make educated decisions balancing the choice to implement emissions controls versus purchasing or selling allowances.
- Granting permanent allocations to any facility based on its age is an example of "grandfathering" that serves as an artificial protection from emission reduction obligations and a subsidy that shields such facilities from the true

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<sup>11</sup> Citing Economic Analysis of Alternative Methods of Allocating NOx Emission Allowances p. 3, ICF Consulting (Prepared for Acid Rain Division, Office of Air and Radiation, U.S. EPA) (Draft October 19, 1999).

<sup>12</sup> Citing Economic Analysis at p. 13.

costs and forces of a market-based compliance program, thereby undermining the fundamental premise of market-based emission reduction programs such as CAIR.

- The electricity market is subject to many forces, including fluctuating fuel prices, political pressures, and regulatory circumstances. Establishment of fixed operating baselines used to calculate permanent emission allowance allocations for “core units” or any other segment of the affected source population should be avoided. DNR’s proposed rule appropriately balances the needs of existing and new units to equitably participate in the NOx cap and trade program.
- The hybrid unit / state baseline allocation concept proposed by DNR, in combination with the four-year allocation delay, offers multiple benefits including incorporation of newly affected units, reduced pressure on the new source set aside pool, and responsiveness of the allocation mechanism to changing electric market conditions.

## **2. In Opposition**

We Energies, WMC, Alliant Energy, WUA and Dairyland Power oppose updating the unit baseline.

The reasons given for opposing the updating of the unit baseline are:

- It creates continuous regulatory uncertainty and it discourages utilities from retiring less efficient units.
- Part of the Department’s rationale used to support updating unit baselines is that EPA will be making updates to the total Wisconsin emission budget every five years anyway.<sup>13</sup> This rationale does not justify creating even more uncertainty.
- DNR should not be setting energy policy in the state by forcing older coal plants to shut down as their allocations get reduced because of the updating of the baseline.
- Adds an unnecessary level of complexity to the program by updating the baseline every five years.
- The Acid Rain program, which has been in place for more than a decade, is very effective at reducing SO2 emissions without updating the baseline.

## **3. Department Response**

Updating of the unit baselines every five years starting in 2011 does create some regulatory uncertainty. In contrast to what the commenter suggests, this uncertainty exists in the federal rule as well starting in 2011 with the state baseline being updated every year to incorporate new units. An existing unit’s proportional share of the main allocation pool may change every year in both the federal and the state allocation structure. Allocating allowances four years in advance of the compliance year allows the utilities sufficient amount of time to respond to the compliance requirements by installing emissions controls or buying allowances on the market.

Updating allowances does transition allowances away from retired units. There is no economic justification for allowing older units to have perpetual allowances simply because the unit starting operating prior to 2001. The proposed rule is structured so that a unit that is retired will continue to receive allowances for a number of years after it has been retired allowing that utility to shift the allowances from the retired unit that no longer needs the allowances for compliance to a new unit which has yet to establish its baseline.

Although the Acid Rain Program has acted as an excellent basis for developing a cap and trade program, the Department feels that the perpetual allocation aspect of the Acid Rain Program does not serve the state of Wisconsin well. The Public Service Commission has predicted that Wisconsin will undergo a growth in energy generation and is rapidly developing new cleaner forms of electricity generation. With fixed unit baselines, it would put these new sources at a competitive disadvantage and not appropriately allow the market to shift allowances to the least-cost alternative.

## **4. Suggested Changes**

**Suggested Change:** The updating approach could be improved by recalculating baselines more frequently like Illinois has proposed. Illinois has proposed to allocate allowances by generation output over the two prior years, and would be allocated three years in advance.

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<sup>13</sup> The commenter states that the state baseline in the FIP is updated every five years. It is actually updated yearly starting in 2011.

**Suggested Change:** DNR apply annual updates of the state-wide allowance baseline to the Phase I portion of the rule to include an opportunity for new sources that began operation in the mid-2000s timeframe to more quickly enter the main source allocation pool.<sup>14</sup>

**Department Response:** The Department is proposing to keep the updating structure as proposed in the hearing authorization draft. Updating the unit baseline more frequently would create an undue amount of administrative responsibilities with respect to little gained from the more frequent updating. Generation does not vary significantly on a two or three year average as suggested in the change so updating every year or two would result in insignificant changes to the unit baselines. The one result from updating more frequently would be to get new units into the main allocation pool quicker. This would be at the expense of retired units losing allocations sooner. The Department feels that the structure proposed balances the need for retired units to retain allowances for a period of time and new units to be incorporated into the main allocation pool quickly.

Annually updating allocations in 2009 to 2014 would involve administrative time as well as additionally uncertainty that the Department has tried to avoid. The Department has been informed by a number of utilities that the first phase of CAIR (2009 to 2014) will be the most difficult compliance target and therefore the Department has crafted the allocation structure to limit the amount of uncertainty for this phase.

### C. Fuel weighting

Fuel weighting (or "fuel adjustment factors") adjusts the baseline of a unit dependent on the primary fuel that it burns. In the FIP, the baselines are multiplied by 1.0 for coal-fired units, by 0.6 for oil-fired units and by 0.4 for all other fuels. The proposed rule does not use any adjustment based upon fuel.

#### 1. In Support

Clean Wisconsin, Sierra Club, RENEW, Business Council for Sustainable Energy, and Calpine support the proposed allocation structure that does not include fuel adjustment factors.

The reasons given for supporting the elimination of fuel weighting are:

- Fuel weighting advantages dirtier generation methods, which emit more pollution per unit of heat input or per unit of energy output.
- Fuel weighting as proposed in the federal rule gives preference in allowance allocation to coal, then fuel oil and lastly to natural gas – which is exactly opposite of the legislative priorities in Wis. Stat. § 1.12(4).
- The rationale for fuel weighting given by the EPA does not apply to the proposed rule because of the updating provision. The EPA states that because of the one-time allocation based on pre-CAIR operating data, electricity producers have no incentive to change their behavior to select less-polluting electricity production options. Electricity producers can affect future allowance allocations, and therefore have an incentive to use more efficient and lower-polluting generating options.
- Reduction of allocations based on fuel type creates an artificial signal that shields the true cost of emission reductions from sources that have the largest proportion of emissions.

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<sup>14</sup> Allowing these new sources to enter the main pool during Phase I would provide the dual benefit of reducing out-of-pocket allowance costs for the newest and cleanest power generating plants in Wisconsin, as well as freeing-up new source pool allowances that could be made available for expected new coal fired sources, which will require significant allocation quantities. Based on internal analysis, Calpine estimates that the costs associated with market purchase of allowances necessary to comply with the proposed CAIR rule will exceed \$476,000 for our Riverside Energy Center facility alone during the Phase I period of 2009-2014. This figure represents costs driven exclusively by the requirement to purchase NOx allowances necessary to make up for shortfalls from the new source set aside pool. However, modifying the rule to allow for annual updates to the state allocation baseline beginning in Phase I will allow the Riverside Energy Center to receive a main source pool allocation beginning in 2013 and will reduce compliance costs by more than \$211,000, which would be incurred in just two years of operation from 2013 and 2014. At the same time, such a change would free nearly 80 tons of annual and approximately 26 tons of seasonal NOx allowances for use by other sources out of the new source set aside pool.

- With the cleaning burning fuel, the fuel adjustment factors included in the federal rule effectively require facilities to meet emission limits that are more stringent than those faced by coal-fired facilities. Elimination of fuel adjustment factors in DNR's rule will provide an equitable distribution of NOx allowances, allow affected sources to meet the same standard, and avoid artificial influences that would distort the cost of compliance.
- The free market should allow generators to find the most cost effective and efficient ways of controlling emissions across a fleet of sources. By imposing an artificial weighting scheme on allocations that purportedly reflects the inherent ability of affected sources to make reductions, the true cost of compliance for certain sources is subsidized as compared to other sources. Rather than letting economic and technical factors drive generators to the best and lowest cost decisions across all fuels and sources, the federal model rule has the effect of influencing fuel choice in generation by shifting the compliance burden away from coal-fired sources and toward those that use oil and natural gas.
- Fuel weighting tends to protect historically higher-emitting sources, many of which have not been required under other Clean Air Act programs to make pollution control upgrades and is particularly unfair to clean sources. This is especially true for new sources that have made a significant investment in pollution control in order to meet modern requirements (principally under the NSR program and the underlying BACT requirements).

## **2. In Opposition**

We Energies, WMC, Alliant Energy, WUA and Dairyland Power oppose the elimination of fuel weighting factors as proposed in the hearing authorization draft rule.

The reasons given for opposing the elimination of fuel weighting are as follows:

- The practical impact of this change is to provide a windfall to natural gas units at the expense of making emission reductions more costly for existing coal generation.
- This departure from the Model Rule creates winners and losers, and we believe it is better public policy to have the neutral consistency of the Model Rule.
- The elimination of fuel weighting has the impact of unfairly impacting utility generation economics by reducing the fuel diversity and energy supply mix within the state.
- WDNR elimination of fuel adjustment factors is unwarranted and interferes with Wisconsin energy policy development.
- The EPA evaluations in development of the CAIR did not find that applying fuel adjustment factors would distort credit markets. In fact, the EPA determined that applying fuel adjustment factors in issuance of allocations represented the equitable market-based approach to reflect the inherently higher emissions rate of coal-fired units and consequently the greater financial burden on these units to install controls.
- EPA also found that the use of fuel adjustment factors in the Model CAIR Trading Program allocation method would not result in changes to generators' choices for fuel efficiency.
- WDNR's statement on Wis. Stat. 1.12(4)(d) fails to include a proper analysis of how this deviation from the EPA Model CAIR Trading Program is cost-effective or technologically feasible given existing limitations of fuel supply and infrastructure within Wisconsin.

## **3. Department Response**

The use of fuel weighting factors as proposed in the federal rule is in direct contradiction to the energy priorities in Wis. Stats. 1.12(4)(d). Incorporating fuel weighting into the allocation structure would shift a higher number of allowances to the coal-fired units. This artificial shift to the coal fired plants reduces the effectiveness of the market being able to determine what the most cost effective control is. Fuel weighting subsidizes those emitters with higher emission rates and does not encourage the development of cleaner generation. Eliminating fuel weighting will encourage development of clean coal projects in addition to allowing lower polluting generation to receive unbiased allocations.

Fuel weighting is by its nature inexact, since it makes broad generalizations across fuel types. The elimination of fuel weighting allows the market to deal with the intricate nature of determining the least cost emission reductions. These variables include the volatile price of fuel, the price of pollution control devices, supply issues and electric demand. Since all of these variables are notoriously difficult to predict relying on fixed and highly simplified fuel adjustment

factors may distort the market. With the elimination of these factors, the market will be able to more appropriately and sophisticatedly approximate the least cost control and respond to unforeseen changes in the markets.

The purpose of eliminating fuel adjustment factors is to allow the market to accurately and without distortion distribute the allowances to the least cost generation. It allows the market to balance the raising costs of fuel with the cost of installing pollution controls.

#### **D. Auctions**

The FIP does not include a provision for auctioning of the NOx allowances but the federal rule does give the states the discretion to auction allowances in the CAIR state implementation plan. The proposed rule does not have a provision for auctioning of allowances.

##### **1. Suggested Changes**

**Suggested Change:** Clean Wisconsin, Sierra Club and RENEW recommend that the Department consider setting aside a portion of allowances to be auctioned to produce a revenue stream to help fund agency activities related to EGUs, including CAIR implementation, permitting and compliance.

**Suggested Change:** A number of citizens recommended auctioning some allowances to raise revenue for permitting and enforcement.

**Department Response:** Although an auction may raise additional funds for the Department, auctions have a high administrative cost as well as a high level of complexity. One of the overarching goals of the proposed rule is that it be relatively simplistic. Adding an auction would add a level of complexity that could not be justified by the minimal amount of revenue raised. Additionally, this proposal would require legislation creating the statutory authority for the Department to hold an auction and use the resulting revenue for program expenses.

#### **II. Renewable Energy**

The FIP only distributes allowances to fossil fuel-fired units. Although the FIP does not incorporate renewable generation into the CAIR NOx allocations structure, the federal rule does give the discretion to the state to allocate NOx allowances to renewable units either through a set-aside or through direct allocations. Initially, the Department had proposed, through a series of public information meetings, to have a renewable energy and energy efficiency set-aside. Through comments received and more investigation, the Department proposed that direct allocations to renewable units be made through the main allocation pool resulting in a simplistic scheme to include renewable units limiting both the state administrative burden as well as the burden on electric generators.

##### **1. In Support**

Clean Wisconsin, Sierra Club, RENEW, AWEA, Business Council for Sustainable Energy, MG&E and a number of citizens support the proposed allocation of allowances to new sources of renewable energy from the main allocation pool once the unit has established a baseline.

The following reasons were given in support of providing direct allocations to new renewable units:

- Allowance allocation to renewable units will encourage investment in and development of clean, renewable energy sources.
- As additional renewable generation comes online, either for state RPS compliance or other goals, there will be displacement of marginal conventional generation and the associated emissions. This will create additional value under the CAIR program in Wisconsin, as the needed emission reductions to achieve state-specific CAIR goals will be reduced due to the displaced emissions.
- This regulatory structure will provide benefits to Wisconsin including: lower costs of meeting the CAIR caps; collateral reduction of non-capped pollutants; increased economic activity in the state for the development of

renewable and efficiency resources and reduced demand for fossil fuels, contributing to lower fuel costs and improved state balance of payments.

## **2. In Opposition**

We Energies, WMC, Alliant Energy, WUA and Dairyland Power oppose the inclusion of renewable energy for allocations in proposed rule.

The reasons given for the opposition to the proposed inclusion of renewables are:

- Renewable allocations would not occur until five years after the renewable sources become operational. This delayed financial incentive would not motivate construction of additional renewables.
- Renewable allocations result in additional transactional costs associated with transferring allocations back to fossil generation units. This only adds to the complexity of the program and increases the costs of reducing emissions.
- Establishes energy policy in the state.
- The WDNR's evaluation has incompletely discussed the impact of this rule proposal on existing policy. Under Item (3) "How this proposal affects existing policy" the WDNR's response only references existing state statutory policy for ozone rules (s. 285.11(6) Wis. Stats.). This section does not address the new Wisconsin Energy Efficiency and Renewable Resources Legislation (SB 459) signed on March 17, 2006.
- We are concerned that the WDNR has not consulted with the PSCW regarding the impact and interaction of these state rules.
- Additional administrative burden of tracking not only CAIR emission credits for renewables, but also the Chapter 118 RRCs.
- The Department suggests that inclusion of renewables will provide for another compliance strategy alternative to the Wisconsin CAIR rule, but this is misleading as the primary driver for Wisconsin utilities in renewable energy planning will be the Chapter 118 requirements.

## **3. Department Response**

Allowing renewable units to receive allowances from the main allocation pool will create a financial incentive for developing renewable units and make renewable energy more competitive. This is an important environmental goal because renewable energy is a low or non-emitter of pollutants and will reduce the amount of NOx produced in Wisconsin per MWh. Although the form of the incentive does not offset the initial start up costs of a renewable unit and the incentive will be delayed until the renewable unit has five years of operating data, this incentive will decrease the cost of renewable energy and make it more competitive with fossil fuel-fired generation.

Inclusion of renewable energy in the allocation structure the Department does not create energy policy, as suggested. Instead, it follows the energy priorities detailed in Wis. Stats. 1.12(4)(d). The proposed rule structure also does not contradict the RPS standards that were recently enacted – it actually compliments the development of additional renewable units. Under 2005 Wis. Act 141, a utility is required to develop additional renewable energy by 2015. This additional renewable energy will result in additional allowances that can be used to help with compliance at CAIR units. Under the federal rule, the Wisconsin utilities would not receive any allowances from the development of new renewable units necessary to comply with 2005 Wis. Act 141 and either have to buy allowances on the market or install pollution control devices to reduce emissions.

A generator is not required to include renewables in the CAIR allocation calculation. If a facility determines that the administrative burden outweighs the gains from requesting allowances from the main allocation pool, it does not have to participate. This is simply one option that will be available for generators and it is not mandatory that they participate.

Additionally, the inclusion of new renewable generation will assist both renewable units and fossil-fueled units in staying competitive with Midwest states. A majority of the Midwest states are proposing some method of inclusion of renewable generation into the CAIR structure. See Appendix A of this Memo for a comparison of CAIR NOx allocation structures in the Midwest states.

#### 4. Suggested Changes

**Suggested Change:** Allocate allowances from the new unit set-aside to new energy efficiency projects and new renewable energy generation, as well as allow existing renewable energy generation to receive allocations from the main allocation pool.

**Department Response:** The Department is proposing to keep the allocation structure the same. DNR proposed excluding new renewable projects from the new unit set-aside to reduce the pressure on the new unit set-aside and to reduce the compliance costs for new fossil-fueled fired units. It is correct that renewable units could use the new unit set-asides to off-set the cost of start-up. But, new fossil-fueled fired units have compliance costs in the first year of operation in addition to the high costs of start-up. The Department encourages both the development of renewable energy and the development of new cleaner and more efficient fossil fuel-fired units. By allowing only the new fossil fuel-fired units to apply to the new unit set-aside this will decrease the cost of compliance in the initial years of operation for the cleaner, more efficient fossil fuel units.

The Department is proposing to include new renewables unit in allocations from the main allocation pool only because this is meant to create an incentive to develop renewable generation and to offset the costs of development of new renewable units. Allowing existing renewable units to receive allowances would serve this objective.

**Suggested Change:** Clean Wisconsin, Sierra Club, RENEW and citizens recommend the creation of a renewable/ energy efficiency (RE/EE) set-aside. Allowances should be allocated to RE/EE projects that are not already required by 2005 Act 141. The allowance pool for RE/EE projects should be significantly larger. DNR should adopt a RE/EE program as part of the SIP rules that matches or exceeds the 15% proposed by Minnesota and 12% proposed by Illinois.<sup>15</sup>

**Department Response:** The proposed rule incorporates both renewable energy and generation efficiency into the allocation structure. Renewables units are allowed to receive allowances from the main allocation pool based upon their generation. Generation efficiency is rewarded through the allocation of allowances based upon generation output instead of heat input. The Department determined that rewarding demand side energy efficiency projects would be very difficult to do in the structure of the CAIR allocations and would involve a high number of staff hours. Additionally, a set-aside for renewables would have the same administrative requirements. Therefore, adding a set-aside for renewables and generation efficiency adds administrative requirements and complexity to the CAIR structure. The Department has determined that in keeping the structure as is, this will allow for the inclusion of both renewable energy and energy efficiency without additional administrative burden to the Department or added complexity to the rule structure.

**Suggested Change:** MG&E recommends that the definition of owner should be modified to include owners of renewable resources. This should be modified to include CAIR renewable units.

**Department Response:** The proposed rule language has been modified to include CAIR renewable units in the definition of owner and operation. Additionally, the process for identification of a representative for CAIR renewable units as well as the process for a CAIR renewable unit to apply to the main allocation pool has been clarified.

#### III. New Units

Units that begin operation on or after January 1, 2001 (referred to as "new units") do not receive allocations from the main allocation pool for 2009-2014 since these units do not have sufficient operating data for establishing a baseline for the initial allocation in 2007. For these new units, a set-aside is created that consists of both annual and ozone season allowances. The new units apply to the set-aside based on the unit's previous year or ozone season NOx emissions. Any

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<sup>15</sup> Renewable energy and energy efficiency will create jobs and economic security for Wisconsin. According to EPA guidance, if all states set-aside five percent of their allowances for RE/EE projects, the 28-state CAIR region would see annual savings of \$5 billion in consumer energy bills and \$150 million in air quality compliance costs, while creating 40,000 jobs.

allowances in the set-aside that have not been distributed to new units are distributed to units in the main allocation pool pro rata.

The size of the new unit set-aside in the FIP is 5% of the state budget for the years 2009-2014 and 3% of the state budget for the years 2015 and later. The size on the new unit set-aside in the proposed rule is 7% of the state budget in all years.

#### 1. Suggested Changes

**Suggested Change:** Clean Wisconsin, Sierra Club, RENEW and citizens recommend that unused set-aside be banked for future use instead of redistributed. The following reasons were given:

- Banking these credits for future use will extend the utility of this program by accounting for future expected growth in the electric generation industry in the state.
- By redistributing unused credits to the main allocation pool, the set-aside does not support lower emitting sources as well as it could.
- Banking unused new unit credits will strengthen the set aside program and continue to assist new, lower-emitting units during growth in the energy industry.

**Department Response:** Banking unused new unit set-aside allowance may potentially result in a state program that is more stringent than the federal program and would not be allowed under Wis. Stat. 285.11(6).

**Suggested Change:** MG&E comments that the proposed rule is not clear as to how a new unit would receive allocations in its first and second year of operation.

**Department Response:** The Department has added some clarifying language to the proposed rule.

**Suggested Change:** Calpine requests that DNR revise the methodology for allocation of new source set aside allocations to one based on potential emissions of the affected source, subject to pro-rata adjustments. This methodology would provide the opportunity for a new generating facility to immediately obtain an allowance allocation for its first CAIR control period.

**Department Response:** The Department is proposing to retain the structure of allocating the new set-aside allowances as proposed. Allocations based on potential to emit may result in new sources receiving allocations from the new unit set-aside that are not needed for compliance. Additionally, it would increase the likelihood that the new unit set-aside would be over-subscribed.

#### IV. Cogeneration Units

The FIP discounts thermal energy provided by cogeneration units. The proposed rule removes this discount and allocates allowances based on 100% of the thermal energy generated.

#### 1. Comment

Clean Wisconsin, Sierra Club, RENEW, Business Council for Sustainable Energy and Calpine support the proposed treatment of thermal energy from cogeneration units.

The reasons given for the support of this provision include:

- The proposed rule correctly counts thermal energy at 100% since cogeneration units have higher efficiency and lower emissions than traditional coal plants. The EPA model rule assumes 100% efficiency for electric generation, but only 80% efficiency for the portion that is used as steam heat. This has the absurd result of discriminating against cogeneration facilities, which should be encouraged because of the superior efficiency of such plants.
- Cogeneration is the most readily available and widely applicable form of energy efficiency for the power and thermal generation sectors, and its application greatly contributes to emission reductions as well as energy savings.

## 2. Department Response

The proposed rule includes this provision.

## 3. Suggested Changes

**Suggested Change:** Wisconsin Paper Council notes that the definition of "cogeneration unit" in NR 432 differs from the federal rule definition. If the Department modifies the rule to use the federal definition, we urge the Department to coordinate closely with EPA regarding a potential inadvertent problem in the EPA definition relating to the ability of certain biomass boilers to meet the efficiency standards included in the federal definition. Resolution of this issue must be consistent between state and federal regulations.

**Department Response:** The Department has made the change in the proposed rule to match the federal definition. The federal definition for co-generation has to be used since it affects the applicability section of the CAIR trading program. The EPA has informed the Department that in order to participate in the federal trading program, the applicability section must be the same as the applicability section in the federal implementation plan.

With respect to biomass boilers, no specific boiler has been brought to the attention of the Department. If this becomes an issue, the Department will work with the unit to determine if it can be rectified through a separate rule making process.

## V. Compliance Supplement Pool

The FIP allocates the CSP to units that have early reductions of NO<sub>x</sub> based upon a target emission rate of 0.25 lbs/mmBtu. The proposed rule for hearing authorization lowered the target emission rate to 0.15 lbs/mmBtu.

### 1. In Support

Clean Wisconsin, Sierra Club, RENEW and a number of citizens support reducing the definition of early reductions necessary to qualify for early emission reduction allowances from the compliance supplement pool from the model rule proposal of 0.25 lbs/mmBtu to 0.15 lbs/mmBtu.

### 2. In Opposition

WIEG, We Energies, WMC, Alliant Energy, WUA and Dairyland Power oppose the Department's lowering of the emission limit threshold for early emission credits from the compliance supplement pool.

The reasons given for this opposition are:

- The restrictions will discourage investments in pollution control technology at a time when the emissions are higher and potential environmental benefits from are the greatest.
- This proposal will ultimately harm the ratepayers of the utilities that acted in good faith and moved forward ahead of the deadlines.
- There is no rationale offered for why the Department is proposing to limit these early reduction credits. We find this proposal to be contrary to the Department's overall policy of encouraging early emission reductions to accelerate associated environmental benefits.
- The early reduction credits have a market value and withholding them has the impact of increasing the cost of emission reductions.
- This element also effectively discourages participation in voluntary, pro-active programs such as Green Tier.
- The WDNR suggests that a 0.15 lb/mmBtu baseline for measurement of early NO<sub>x</sub> reductions is appropriate, because this represents the level in the NO<sub>x</sub> state implementation plan (SIP) call rules and also the EPA modeled 2009 emission rate for the federal CAIR program. Unfortunately, both of these points fail to justify the use of a 0.15 lb/mmBtu baseline for early NO<sub>x</sub> reductions since: (1) Wisconsin is not regulated under the NO<sub>x</sub> SIP call rules; and, (2) EPA CAIR modeling assumes NO<sub>x</sub> emissions higher than 0.15 lb/mmBtu prior to 2009 and uses this value as the end point for first phase compliance under the Model CAIR Trading Program.
- Lack of acknowledgement by the Department of the investments made in early NO<sub>x</sub> reductions.

### 3. Department Response

The Department agrees with the comments in opposition and is changing the rule to reflect the emission target level given in the federal rule of 0.25 lbs/mmBtu to give full credit to early emission reductions.

### 4. Suggested Changes

**Suggested Change:** Change the emission target level from the proposed level of 0.15 lbs/mmBtu to 0.11 lbs/mmBtu to reflect the level achievable with modern combustions controls.

**Suggested Change:** Unused CSP allowances should be retired at the end of the year as being proposed in Illinois.

**Department Response:** The Department has considered lowering the early reduction target level as suggested. The Department feels that lowering the emission target level will penalize those units that have made early reductions which is not the intent of the CSP allowances. Given the short time span for installation of controls, a lower emission reduction target will not encourage further reductions since the installation of controls has already been determined for 2007 and 2008.

The comments suggest retiring CSP allowances at the end of each year. CSP allowances are only available in the year 2009. The draft rule as it is proposed retires unused CSP allowances at the end of 2009.

**Suggested Change:** Allow early emission reductions prior to 2007 and those emission reductions registered on the Voluntary Emission Reduction Registry to receive allowances from the CSP.

**Department Response:** The allocation of early emission reduction allowances from the CSP is done based on reductions in 2007 and 2008 only. Those emission reductions performed before these years are outside the scope of this rule.

## VI. Opt-in Provision

The FIP gives the states the option to include industrial units into the structure of CAIR. Under this provision, industrial units that emit all emissions via a stack and monitor these emissions using part 75 monitoring requirements could obtain allowances from the allocation pools like an electric generating unit. This is called the "opt-in" provision since these units would have the choice on whether to opt-in to regulation under CAIR.

### 1. Comment

Wisconsin Paper Council, WIEG and MG&E support the inclusion of an opt-in provision for the following reasons:

- It may make economic sense for some paper companies to opt-in to the CAIR rule.
- This potential cost-saving option should be provided to Wisconsin companies.

### 2. Department Response

The Department investigated whether opt-in units could be incorporated into the structure of the rule. Unfortunately, as a prerequisite to participating in the federal trading program, the EPA has determined that states that incorporate opt-in units must do so using the exact language in the model rule and the federal implementation plan. The structure of allocations to opt-in units would not work within the structure of the proposed allocation structure. Therefore, the Department has determined that opt-in units will not be included at this time. There is the potential that through negotiations with the EPA that opt-in units may be added at a later date through a separate rule making process.

## VII. Use of Federal Rule

### A. Consistency between state and federal rules

#### 1. Comments

Wisconsin Paper Council and WMC oppose the proposed rule because it differs from the federal regulations. They cite the following reasons for the opposition:

- To the extent that the state regulations differ from federal regulations, there must be a sound policy basis and the differences should not impose additional costs on Wisconsin companies that would not be borne by similar companies in other states.
- The changes to the federal rule structure have the potential to increase costs for Wisconsin utilities and businesses that purchase electricity from these utilities, WPC is not aware that these potential cost increases have been quantified, either by the Department or by the utility industry.
- DNR efforts to deviate from the federal CAIR rule will unnecessarily add compliance costs that drive up already escalating energy costs for Wisconsin citizens.
- These costs make Wisconsin businesses less competitive with competitors in other states.

## **2. Department Response**

The federal model rule was written to be used as a model for the states to follow. A number of states have deviated from the federal rule. Most importantly, the three states that Wisconsin generators compete with – Illinois, Michigan and Minnesota – may all deviate from the model rule. This means in order for our generators to stay competitive with the surrounding states, Wisconsin must have a rule that allows for the inclusion of renewables. Illinois, which is the largest importer of energy into Wisconsin, is basing allocations on generation output, is not distributing the CSP, has a 30% set-aside, and is including renewables in the allocation structure.

The deviation from the federal model rule will not result in additional costs to the utilities as a whole since the allocation structure does not reduce the number of allowances available for compliance. It is not stricter than the federal model rule for the exact same reason. Additionally, although the proposed rule structure results in a different distribution of allowances, it distributes the same number of allowances as under the FIP and does not restrict interstate trading and there should not result in a significant cost differential at the state level.

## **B. Proposed rule goes beyond EPA requirements**

### **1. Comment**

Local 2150 of the International Brotherhood of Electrical Workers (IBEW 2150) and WMC do not support a CAIR rule that exceeds the requirements of the Clean Air Act for the following reasons:

- Emission rules that go beyond the EPA's requirements may place Wisconsin at an unfair disadvantage regarding compliance with clean air rules.
- Additional regulatory restrictions imposed by state government will only prove harmful to the state's economy while providing little or no difference on air quality.
- The state's industries and utilities will have unfair restrictions attached to their costs of doing business. These state imposed rules will cost workers their jobs in a Wisconsin economy that is trying to grow its manufacturing base and provide reliable and affordable power.
- The proposals being offered to date by the DNR, including the draft CAIR rule, substantially exceed the requirements of the Clean Air Act and what is needed to meet the ozone standard. With full compliance with the 8-hour ozone standard close at hand, the draft CAIR rule provisions that exceed or deviate from the federal CAIR rule are clearly unwarranted and inconsistent with well established state policies.
- DNR has no authority to exceed the requirements of the Clean Air Act when developing ozone programs.
- DNR proposals that are inconsistent with EPA's rules or policies are not in conformity with Wisconsin statutes. In addition, DNR rules that impose emission reductions beyond those reductions required to meet federal air quality standards have the same effect as promulgating air quality standards that are more restrictive than federal standards.

### **2. Department Response**

The proposed rule does not go beyond the federal version of CAIR. The same numbers of allowances are available for compliance under the state version as under the federal version.

As described above in the response in section VII A, a state specific program will allow Wisconsin generators to remain competitive with generators from surrounding states.

## **C. Adopt the federal version of CAIR**

### **1. In Support**

IBEW 2150, WIEG, We Energies, MG&E, WUA and Dairyland Power support adopting the federal version of the Clean Air Interstate Rule.

The reasons given for adopting the federal version of CAIR include:

- It would help keep Wisconsin businesses competitive. Going beyond the federal CAIR mandate will increase costs and drive up the price of energy in state.
- "Wisconsin only" regulations will put our industry at a competitive disadvantage and could lead to job losses. By considering a rule that goes beyond the federal CAIR rule, the Department is creating additional regulatory uncertainty and therefore will be pushing electric rates even higher.
- The federal allocations have been the only reliable information available for utility compliance planning and construction scheduling since March 2005.
- WDNR has not qualified the economic burdens that may be associated with these differences.
- Wisconsin should expedite issuance of the federal CAIR rules by adopting the U.S. EPA's recommended model regulatory framework for the state of Wisconsin.
- While the Department has made several improvements to make the state-level rules proposed today closer to U.S. EPA's Model program, the technical inconsistencies that remain are significant and represent major issues to future energy supply planning in Wisconsin.
- State-level regulations are also an issue for utilities serving consumers in adjoining states.
- Adopting the federal model trading rule provides utilities with the regulatory certainty to maximize savings for customers related to labor, construction, materials and technology acquisition costs – an important consideration given the compressed timeframe for compliance.

### **2. In Opposition**

Calpine opposes the adoption of the federal rule. Recognizing that states may want to adopt alternative methods for allocation, the USEPA has provided the flexibility for state-level air quality authorities to develop alternative CAIR implementation approaches. Calpine supports the alternatives included in the draft rule, many of which are specifically aimed at encouraging the development of low and non-emitting power generation, energy efficiency and other clean energy goals. Such mechanisms will provide synergistic benefits that will assist Wisconsin in achieving local non-attainment goals, which will not be achieved from CAIR-specific reductions alone, as well as promoting improved fuel efficiency in power generation and helping to maintain affordable electricity rates for Wisconsin's consumers.

### **3. Department Response**

The proposed rule does not go beyond the federal version of CAIR. The same numbers of allowances are available for compliance. The Department has determined that there will be no significant difference in costs at the state level. There has been no evidence presented that the state rule will be more expensive to implement than the federal rule.

One comment is concerned that by going with a state specific rule that this will create difficulties for utilities that have interests in other states. This may be a concern if the adjoining states were all going with the federal model rule. But, out of the five adjoining states, only Iowa has chosen to use the federal model rule. Minnesota has opted to be regulated under the FIP for 2009 but is still examining the possibility of a state specific regulatory scheme. Even if Wisconsin went with the federal model rule, there would still be inconsistencies between adjoining states.

## **D. Goal of CAIR**

### **1. Comment**

Alliant Energy believes that the WDNR's rule proposal fails to recognize the ultimate goal of the Federal CAIR program to prevent interstate transport of emissions at the regional level. The CAIR program is not intended to micro-manage emissions at the local level, as will essentially be the end result of the WDNR's proposed state rule package. Alliant

believes that this is in the best interest of all parties to simply and efficiently implement the EPA Model CAIR Trading Program, as this approach will provide for clean air while allowing utilities to comply with emission reductions in the most cost-effective manner possible using streamlined administrative requirements.

## **2. Department Response**

The proposed rule does not limit the distribution or the trading of allocations. The Department has determined that the proposed structure allows for the state to tailor the CAIR program to suit Wisconsin's policy goals as well as creating a simplistic program and one that has low administrative costs.

## **VIII. Implementation Issues**

### **A. Delay of the CAIR SIP**

#### **1. Comment**

WIEG, WMC and Alliant commented that the delay of the CAIR rule will increase the compliance costs, drive up the price of energy in the state and heighten reliability risks.

#### **2. Department Response**

The delay of the rule has been unfortunate. There have been a number of factors that have contributed to the delay. First, the Department is tied to the release of guidance and regulatory documents from the EPA and these documents have been slow in coming. For instance, the release of the "final" CAIR occurred May 12, 2005. Through discussions with the EPA, the Department understood the potential of an abbreviated SIP option. This was not fully explained until the release of the Federal Implementation Plan on April 28, 2006. This delay hindered the Department's ability to fully analyze what was the best course of action for the Department.

Even with this delay, the Department is on target to meet the abbreviated SIP deadline of March 31, 2007.

### **B. Cost of Proposed NR 432**

#### **1. Comments**

- Calpine states that experience has shown the emission reductions can be more cost-effectively achieved through programs that update allowance allocations periodically, do not offer perpetual allocations to any facility, and do not differentiate allocation treatment based on the vintage of the affected facility. This is because new facilities, which offer lower emission rates due to compliance with Best Achievable Control Technology (BACT) requirements under New Source Review and Prevention of Significant Deterioration (NSR/PSD) programs, tend to operate at higher utilization rates due to their superior thermal efficiencies. Such is the case with the NO<sub>x</sub> SIP Call Program, where emissions have been reduced in an efficient and cost-effective manner in the majority of participating states. Concurrently, these states also have seen an increase in development, construction and operation of new, clean and efficient power generating plants.
- WIEG, WMC, WUA and Dairyland are concerned that the cost of the proposed rule has not been properly quantified and that the proposed rule will increase energy costs, placing Wisconsin at a significant disadvantage.

#### **2. Department Response**

The proposed rule is not more stringent than the federal rule because the same number of allowances are available under the FIP and the proposed rule. Additionally, the proposed rule does not limit interstate trading. As indicated by Calpine, the proposed rule structure has the potential to even decrease compliance costs.

### **C. Proposed rule drives energy policy**

#### **1. Comments**

WIEG, WUA, Dairyland and We Energies are concerned that the proposed rule drives energy policy.

- The Department is promoting is fuel switching away from coal-fired generation toward natural gas-fired generation and renewable sources such as wind. Becoming more dependent on natural gas and renewable energy is almost certain to drive up electricity rates and should therefore be given a vigorous cost analysis.
- State policy regarding energy efficiency and renewables generally falls under the Public Service Commission and Chapter 196.

## **2. Department Response**

The proposed rule does not drive energy policy – it follows the energy priorities laid out in Wis. Stats. 1.12(4)(d). Additionally, the rule is written from a pollution reduction policy approach and uses energy efficiency and renewable energy as a pollution reduction option. Although this overlaps with energy use, it is clearly pollution reduction and prevention as the primary goal in a cost-effective manner.

## **D. State Participation in the CAIR Emission trading program**

### **1. Comment**

We Energies supports the Department's proposal to participate in the CAIR emission trading program for the following reasons:

- The national cap and trade program provides an opportunity to reduce emission from our generating units in the most cost effective manner possible.
- Having the option of purchasing emission allowances to supplement unforeseen shortfalls is a valuable complement to the company's proactive emission reduction plan.
- Having the option of "trading on the margin" is important to cover any potential impacts of forced outages or other unexpected operational events.
- Participating in the federal program offers an administrative savings to the Department since EPA would administer all of the emissions tracking, reporting and verification functions.
- Participating in the national trading program also streamlines regulatory requirements. States that opt into the federal program facilitate a consistent program structure and consistent compliance requirements for utilities like We Energies doing business in multiple states. This reduces the utility staff time necessary to comply with program administrative tasks, and allows companies to more easily incorporate compliance activities into their environmental management systems and standardize emission software and databases.

### **2. Department Response**

The Department is participating in the federal trading program as indicated.

IX. DNR's Proposed Rule Is Not Needed to Meet the Ozone Standard

**1. Comment**

WMC and WUA comments that DNR acknowledges that their proposal to allocate allowances based on generation output was done to effect more NOx emission reductions in the non-attainment areas and thereby improve Wisconsin's air quality and that the Department is using CAIR as part of its SIP for the 8-hour ozone standard.

**2. Department Response**

In the background memo for hearing authorization, the Department did state that the proposed rule had the effect of allocating less allowances in the nonattainment area resulting in additional environmental benefits. The impact of output based allocations had this effect but it was not the purpose of the basis for allocations.

X. Regulatory Complexity and Administrative Burden

**1. Comment**

Alliant comments that it believes the proposed rule will make the rule significantly more complex to implement. This complexity and associated administrative burden cannot be justified when equally valid approaches are readily available today at no incremental cost.

**2. Department Response**

The additional complexity and administrative burden that is associated with the proposed rule over the FIP is justified by rewarding generation efficiency, encouraging the development of renewable energy and an allocation structure that provides for equal or better environmental protection.

XI. Proposed Rule Is Responsive to Evolving Energy Markets

**1. Comments**

- Calpine comments that the proposed rule implements allocation mechanisms that are responsive to evolving energy markets. The use of historical operational baselines that are fixed in time perpetuates the market distortions arising from traditional regulation. This result occurs whether a fixed time period is used as an initial baseline for long term allocations or whether a particular period in a unit's operational history is used.
- In Wisconsin, the vertical and horizontal market power of regulated utilities constrains economic dispatch of new plants owned and operated by independent generators. This limitation undermines the ability of new market entrants to fully utilize units during the initial periods of operation. As a result, a baseline determined on an initial operation period may not properly reflect the long-term operational profile of a given source and therefore will not yield appropriate air quality benefits. Shifts in fuel pricing, availability, transmission system constraints, transition to deregulated, customer-responsive wholesale markets, and other factors likely will result in changes to the operating profiles of generating facilities and, correspondingly, to emission reduction demands for Wisconsin.
- An environmental control program that is market-based should be designed in a way that can adapt to shifting market forces without imparting artificial signals to the market. DNR's proposed CAIR rule would implement this type of adaptable and responsive program.

**2. Department Response**

The proposed rule includes these provisions.

XII. Data Issues

**1. Comment**

We Energies is concerned with the mix of gross and net data used for calculating unit baselines for the following reasons:

- Using this mix of data conflicts with the intention of rewarding more efficient generations and creates inequities.
- The output based allocation methodology is not really rewarding energy efficiency, but rather making winners out of those units whose allocations are based on gross generation data, and losers out of those whose allocations are based on net generation data.
- Alliant Energy believes that the heat input data is superior since it is based on continuous emission monitoring (CEM) stack flue gas data measurements. This is most representative of real-time operating conditions affecting actual emissions. The CEM data is subject to EPA-approved QA/QC methods. The gross output data (MW-hr) reported to EPA is supplemental information and consists of a simple meter reading that is not subject to standardized QA/QC or certification as are the CEMS.

## 2. Department Response

See Department Response in section I.A.

## XII. Green Tier

### 1. Comments

- MG&E is concerned that some may improperly argue that the wording of the proposed rule limits Green Tier participation to only those benefits and examples of "superior environmental performance" specifically enumerated in the rule. MG&E recommends that the rule be clarified to acknowledge that Green Tier participation is not so limited.
- MG&E also believes that sources which are participating in the Environmental Cooperation Pilot Program should be entitled to negotiate regulatory flexibility, incentives or innovative techniques that would otherwise be available under Wis. Stat. § 299.80.
- The definition of "CAIR renewable unit" is restricted to electric generating facilities which serve a generator with a nameplate capacity greater than 25 MW. The generation capacity of multiple "CAIR renewable units" can be combined in order to meet this 25 MW threshold, but only if done pursuant to the Environmental Results ("Green Tier") Program (Wis. Stat. § 299.80). A utility's ability to aggregate renewable resources should not be restricted simply because it chose to participate in the pilot program for the modern Green Tier legislation.

### 2. Department Response

The Department has modified the proposed rule language to address these concerns.

## IIXV. Clarification of Rule Language

### 1. Comment

MG&E states that the proposed rule is confusing with regard to the data that must be used for calculating a unit's baseline at each five year interval and as to when a CAIR regulated source must possess sufficient allowances to demonstrate compliance for a particular year on emissions.

### 2. Department Response

The Department has modified the proposed rule language to address these concerns.

## IXV. Technical Comments

### A. **Intention of CAIR to Include Frame 5 Combustion Turbines**

#### 1. Comment

Manitowoc Public Utility comment that it did not believe that it is the intent of the CAIR program to include frame 5 combustion turbines like the unit installed at the MPU Custer Energy Center. This unit is permitted to operate at a

maximum of 24.5 MW and as such no CEMS were required. The unit was installed for peaking service and is further restricted to operate less than 194 hours per month (12-month rolling average). The generator is rated for more than 25 MW but the turbine would not have the capability to even deliver that amount of power unless ambient temperatures were less than 20 degrees Fahrenheit.

**2. Department Response**

This comment is being addressed through discussions and an applicability determination with the US EPA.

**B. Thermal energy conversion**

**1. Comment**

Calpine indicated that the label related to the thermal energy conversion incorrectly refers to the 3.4 factor in the units of MWh per mmBtu. In fact, the correct units for the conversion factor are mmBtu/MWh. Aside from this minor correction, Calpine recommends that DNR maintain the proposed mechanism for including thermal energy generated by CHP and cogeneration facilities in the total output calculation used for allocation of allowances under an output-based allocation system without additional modification.

**2. Department Response**

The Department has made this correction in the proposed rule language.

**C. Technical Comments of EPA and Legislative Council Rules Clearinghouse**

**1. Comments**

The Department received a number of technical comments from the Environmental Protection Agency. Primarily, the comments dealt with ensuring consistency between the federal rule language and the state rule language.

**2. Department Response**

The Department has made changes to the proposed rule language to address these concerns. Of particular concern was the definition of cogeneration unit. The Department has changed this definition to correspond to the federal definition. The Legislative Council Rules Clearinghouse also made some technical comments. The Department has made changes to the proposed rule language to address these comments.

**Fiscal Estimate — 2003 Session**

- Original       Updated  
 Corrected       Supplemental

LRB Number AM-03-06
Bill Number

**Subject**

NR 432 for NOx Reductions from Major Electric Generating Units in Wisconsin

**Fiscal Effect**

State:  No State Fiscal Effect

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

- Increase Existing Appropriation       Increase Existing Revenues  
 Decrease Existing Appropriation       Decrease Existing Revenues  
 Create New Appropriation

**Local:  No Local Government Costs**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Increase Costs<br><input checked="" type="checkbox"/> Permissive<br><input type="checkbox"/> Mandatory<br>2. <input type="checkbox"/> Decrease Costs | 3. <input type="checkbox"/> Increase Revenues<br><input type="checkbox"/> Permissive<br><input type="checkbox"/> Mandatory<br>4. <input type="checkbox"/> Decrease Revenues |
|--|---|

**Fund Sources Affected**

- GPR    FED    PRO    PRS    SEG    SEG-S

**Assumptions Used in Arriving at Fiscal Estimate**

SUMMARY OF RULE -- The Clean Air Interstate Rule (CAIR) is a federal rule promulgated by the United States Environmental Protection Agency (USEPA) to reduce the interstate transport of ozone, fine particles and the precursors to those pollutants, NO<sub>x</sub> and SO<sub>2</sub>. To reduce interstate transport of the pollutants, the USEPA established emission budgets for NO<sub>x</sub> and SO<sub>2</sub> for 28 states in the eastern US. The CAIR allows the affected states flexibility to meet the budgets in various ways. However, to aid in compliance, USEPA created a "model trading rule" that establishes emissions budgets for power plants and three separate power plant emission trading programs: an annual NO<sub>x</sub> program, an ozone season NO<sub>x</sub> program, and an annual SO<sub>2</sub> program. The department proposes that the state participate in the CAIR trading programs, but the department also proposes to make some discretionary changes to the model trading rule regarding the allocation of the NO<sub>x</sub> allowances within the state.

Creation of Chapter NR 432 will specify the process for allocation of NO<sub>x</sub> allowances for the NO<sub>x</sub> Annual Trading Program and the NO<sub>x</sub> Ozone Season Trading Program. Chapter NR 432 also specifies that the remaining elements of the NO<sub>x</sub> trading programs will be implemented and administered by the USEPA. The entirety of the SO<sub>2</sub> trading program will be implemented and administered by the USEPA.

FISCAL IMPACT -- The Department of Natural Resources is expected to incur minimal additional cost to implement and administer the rules. There will be costs associated with the collection of operating data from the affected units as well as yearly updates to the allocations starting in 2011. The total estimated impact on Department resources is approximately one-twentieth of a FTE per year, which, assuming \$80,000 per FTE salary and fringe, will be \$4,000 annually. The reductions in NO<sub>x</sub> emissions from the rule is not expected to significantly impact the Air Program's emission fee revenues under the current fee structure.

(continued...)

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Long-Range Fiscal Implications

Prepared By:	Telephone No.
Joseph Polasek	266-2794
Authorized Signature	Telephone No.
	266-2794

**NATURAL RESOURCES BOARD AGENDA ITEM**

**SUBJECT:** Adoption of Order AM-03-06, proposed rules affecting ch. NR 432 pertaining to adoption of state regulations regarding NO<sub>x</sub> reductions from major electric generating units in Wisconsin to address interstate transport of pollutants.

**FOR: January 2007 BOARD MEETING**

**TO BE PRESENTED BY: Larry Bruss**

**SUMMARY:**

The Clean Air Interstate Rule (CAIR) is a federal rule promulgated by the United States Environmental Protection Agency (USEPA) to reduce the interstate transport of ozone, fine particles and the precursors to those pollutants, NO<sub>x</sub> and SO<sub>2</sub>. To reduce interstate transport of the pollutants, the USEPA established emission budgets for NO<sub>x</sub> and SO<sub>2</sub> for 28 states in the eastern US. The CAIR allows the affected states flexibility to meet the budgets in various ways and to capture a mechanism to meet budgets through a state implementation plan (SIP). To aid in compliance, USEPA created an interstate trading program that establishes emissions budgets for power plants and three separate power plant emission trading structures addressing annual NO<sub>x</sub> emissions, ozone season NO<sub>x</sub> emissions, and annual SO<sub>2</sub> emissions. The department proposes that the state participate in the federal CAIR trading programs, but the department also proposes some discretionary alterations to the federal CAIR model trading rule regarding the allocation of the NO<sub>x</sub> allowances within the state. The CAIR specifically allows for state discretion in this area.

Proposed ch. NR 432 will specify the process for allocation of NO<sub>x</sub> allowances for the NO<sub>x</sub> Annual Trading Program and the NO<sub>x</sub> Ozone Season Trading Program. Proposed ch. NR 432 also specifies that the remaining elements of the NO<sub>x</sub> trading programs will be implemented and administered by the USEPA. The entirety of the SO<sub>2</sub> trading program will be implemented and administered by the USEPA and no state rules are proposed for addressing SO<sub>2</sub> emissions under the CAIR program.

Interested stakeholders include electric utilities, major electricity users, the Public Service Commission, Department of Commerce and the general public. Public hearings were held in Stevens Point on October 10, 2006 and in Milwaukee on October 12, 2006. The comment period ended on October 23, 2006. The department received both adverse and supportive comments on the proposed rule.

**RECOMMENDATION:** Adopt AM-03-06 creating ch. NR 432.

**LIST OF ATTACHED MATERIALS:**

- |  |   |   |          |
|--|---|---|----------|
| No <input type="checkbox"/>            | Fiscal Estimate Required                              | Yes <input checked="" type="checkbox"/> | Attached |
| No <input checked="" type="checkbox"/> | Environmental Assessment or Impact Statement Required | Yes <input type="checkbox"/>            | Attached |
| No <input type="checkbox"/>            | Background Memo                                       | Yes <input checked="" type="checkbox"/> | Attached |

**APPROVED:**

\_\_\_\_\_  
Acting Bureau Director, Kevin Kessler

\_\_\_\_\_  
Date

\_\_\_\_\_  
Administrator, Al Shea

\_\_\_\_\_  
Date

\_\_\_\_\_  
Secretary, Scott Hassett

\_\_\_\_\_  
Date

- |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| cc: Amy Arthur - AD/5 | K. Kessler - AM/7     | Marney Hoefler - AM/7 |
| Carol Turner - LS/5   | R. Eckdale - AM/7 (6) | Tom Steidl - LS/5     |

STAFF REVIEW - DNR BOARD AGENDA ITEM

REMINDER

Have the following questions been answered under the summary section of this form?

- -Why is the rule needed?
- -What are the significant changes?
- -What are the key issues/controversies?
- -What was the last action of the Board?

LIST OF ATTACHED REFERENCE MATERIAL REQUIRED FOR RULE PROPOSALS:

Hearing authorization:

Final adoption:

Background memo (if needed)\*

Background Memo (if needed)\*

Fiscal Estimate

Response Summary

Environmental Assessment (if needed)

Fiscal Estimate

Rule

Environmental Assessment (if needed)

Rule

\* If all the questions listed in the REMINDER section above can be adequately summarized on the Green Sheet (and a second sheet if needed), the Background Memo may be omitted.

Unit	Reviewer	Date	Comments
Environmental Analysis and Review			
Management and Budget			
Legal Services -Program Attorney -Carol Turner			

Other (if applicable)			
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ORDER OF THE STATE OF WISCONSIN  
NATURAL RESOURCES BOARD  
CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **create** NR 432 relating to the establishment of provisions for major electric generating units in Wisconsin to comply with the Clean Air Interstate Rule (CAIR) promulgated by the U.S. Environmental Protection Agency.

AM-03-06

Summary Prepared by the Department of Natural Resources

1. **Statute interpreted:** s. 285.11(6), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.

2. **Statutory authority:** ss. 227.11(2)(a), 227.14(1m)(b) and 285.11(1), Stats.

3. **Explanation of agency authority:**

Section 227.11(2)(a), Stats., gives state agencies general rule-making authority. Section 227.14(1m) Stats., allows state agencies to use the format of federal regulations if the proposed state rule is to be administered in a manner identical or similar to the federal rule. Section 285.11(1) Stats., gives the Department the authority to promulgate rules consistent with ch. 285, Stats. Section 285.11(6), Stats., authorizes the Department to develop and revise a state implementation plan for the prevention, abatement and control of air pollution.

4. **Related statute or rule:**

Chapter NR 428, Wis. Adm. Code, regulates the emissions of NO<sub>x</sub> from major stationary sources in ozone nonattainment areas including electric generating units. Chapters NR 417 and NR 418, Wis. Adm. Code, regulate SO<sub>2</sub> emissions from stationary sources in SO<sub>2</sub> nonattainment areas and statewide, including electric generating units.

5. **Plain language analysis:**

EPA has promulgated federal rules to reduce the interstate transport of fine particles and ozone (Clean Air Interstate Rule – CAIR) for 28 states including Wisconsin. CAIR focuses on reductions of emissions of nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) from fossil-fuel-fired electric generating units (EGUs). The federal rule caps emissions from EGUs in two phases (2009 and 2015) and allows EGUs to meet their respective emissions caps through installation of controls or by trading emission allowances through a federally administered trading program. The federal rule allows states to implement the federal rule through various state-specific options including varying the structure of the allocation of NO<sub>x</sub> allowances to state utilities from the federal model rule. This proposed rule involves the NO<sub>x</sub> allocation structure for the CAIR NO<sub>x</sub> annual allowances and the CAIR NO<sub>x</sub> ozone season allowances. The structure is the same for the two programs. The SO<sub>2</sub> program is administered in its entirety by the U.S. EPA and is not addressed by this rule.

The main allocation pool consists of the allowances allocated to the state in its state budget minus allowances in the new unit set-aside. The NO<sub>x</sub> allowances are allocated from the main allocation pool to existing units based on the average of

the top three years of electric generation over a five year period. The allowances are distributed to the units in the main allocation pool based upon a unit's percentage share of the total generation for all units. Initially, existing units are those units commencing operation before January 1, 2001. Units that began operating on or after January 1, 2001 receive allowances from the new unit set-aside until they have established five years of operating data. After operating five years, the unit receives allowances from the main allocation pool as an existing unit.

For new units (those units commencing operation on or after January 1, 2001), a new unit set-aside of 7% of the state budget is proposed. New units are allocated allowances from this set-aside based on the unit's NO<sub>x</sub> emissions in the previous year until the unit has operated for five years and has established a baseline. Allowances from the new unit set-aside are applied for and allocated in the compliance year starting in 2009. If the new unit set-aside is oversubscribed, the set-aside allowances are distributed to the applicants on a percentage basis. If the new unit set-aside is undersubscribed, the remaining set-aside allowances are distributed to the units in the main allocation pool.

Vintage year 2009-2014 allowances are allocated from the main allocation pool in 2007 based on generation data from 2000-2004. Starting in 2011, allowances from the main allocation pool are allocated yearly, four years in advance of the compliance year. In 2011, the unit baseline is updated every five years to reflect current operating data and the state baseline is updated every year to incorporate new units that have established a baseline into the main allocation pool.

Combined heat and power units receive allowances based on electricity generation and useful thermal energy produced.

The compliance supplement pool (CSP) consists of additional CAIR NO<sub>x</sub> annual allowances which are distributed only in calendar year 2009 to CAIR NO<sub>x</sub> units which demonstrate that they achieved early emission reductions in 2007 and 2008 at the 2009 CAIR level of compliance or which demonstrates that compliance would create extreme hardship for the unit.

There are 4,989 CAIR NO<sub>x</sub> annual allowances available for distribution from the CSP. If there are excess allowances after the 2009 distribution, these allowances are retired.

#### **6. Summary of, and comparison with, existing or proposed federal regulation:**

The federal regulation that addresses interstate transport of air pollution, the Clean Air Interstate Rule (CAIR), is found at 40 CFR Part 97. Part 97 details the Federal Implementation Plan (FIP) which creates an emission trading market across the 28 eastern states for NO<sub>x</sub> and SO<sub>2</sub> emissions from major electric generating units implemented and administered by the EPA. The CAIR gives the states the discretion to adopt an allocation structure for the NO<sub>x</sub> allowances for the CAIR Annual NO<sub>x</sub> and the CAIR ozone season NO<sub>x</sub> trading programs while relying on the FIP for the implementation of the administrative, monitoring and record keeping aspects of the trading programs at the federal level. This proposed rule covers the NO<sub>x</sub> allocation structures for both the CAIR NO<sub>x</sub> annual and ozone season trading programs.

#### **7. Comparison with rules in adjacent states:**

Illinois, Indiana, Iowa, Michigan and Minnesota all are subject to the requirement to submit a CAIR State Implementation Plan or be subject to regulation under the CAIR federal implementation plan (FIP). From a review of the preliminary drafts of the states' rules and discussions with each state's rule drafter, it appears that all five states will participate in the federal trading program like proposed by the Department. Iowa has finalized and adopted its CAIR SIP which became effective July 12, 2006. None of the remaining adjacent states have finalized their rules. Iowa is the only adjacent state that has adopted the federal model rule. Minnesota has indicated that its CAIR sources will be regulated by the FIP in 2009 and is examining whether it will adopt a CAIR SIP in later years. The remaining states are adopting state specific rules that deviate from the allocation structure in the federal model rule.

#### **8. Summary of factual data and analytical methodologies:**

The proposed structure for the NO<sub>x</sub> allocations is based upon the review of several guidance documents, technical documents and modeling prepared by the United States Environmental Protection Agency, the State and Local Air Pollution Control Agencies associations (STAPPA/ ALAPCO), Lake Michigan Air Directors Consortium (LADCO) and the National Renewables Energy Lab. These documents are available through the DNR's website at [www.dnr.wi.gov/org/aw/air/hot/8hrozonestd/cairbart/](http://www.dnr.wi.gov/org/aw/air/hot/8hrozonestd/cairbart/) or available from Marney Hoefer at (608) 267-0577 or [Margaret.hoefer@wisconsin.gov](mailto:Margaret.hoefer@wisconsin.gov). In addition, the proposed structure is based in part on comments received through a series of public information meetings, presentations to the Clean Air Act Task Force and comments received through the public hearing process.

#### **9. Analysis and supporting documents used to determine effect on small business or in preparation of economic impact report:**

The proposed rule is not expected to have a significant effect on small businesses. The major EGUs subject to the emission reduction requirements of CAIR are not small businesses. Any costs which EGUs expend to comply with the CAIR requirements are likely to be passed on to their customers, which will include small businesses. In preparing the economic impact report, staff of the Department of Natural Resources relied on modeling results from Integrated Planning Model (IPM) to determine the expected controls installed by EGUs in Wisconsin. Using the IPM results, staff determined the expected cost of controls. Additionally, staff reviewed the control costs for major EGUs associated with operating within the number of allowances the units are initially allocated under the proposed draft rule.

#### **10. Effect on small business:**

The proposed rule is not expected to have a significant effect on small businesses. Because EGUs may pass along the costs of complying with CAIR to their customers, the proposed rule may minimally increase electricity rates, resulting in small businesses having to pay more for electricity.

#### **11. Agency contact person:**

Marney Hoefer, Bureau of Air Management, Department of Natural Resources  
Phone (608) 267-0577  
*F. Margaret.Hoefer@wisconsin.gov*

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SECTION 1. Chapter NR 432 is created to read:

CHAPTER NR 432

ALLOCATION OF CLEAN AIR INTERSTATE RULE NO<sub>x</sub> ALLOWANCES

**NR 432.01 Applicability; purpose.** (1) APPLICABILITY. (a) This chapter applies to the owner or operator of

any source that includes a CAIR NO<sub>x</sub> unit or a CAIR renewable unit. A CAIR NO<sub>x</sub> unit is any stationary, fossil fuel-fired boiler or stationary, fossil fuel-fired combustion turbine which has served at any time, since the later of November 15, 1990 or the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale, except for those units that are excluded under par. (b).

**Note:** In addition, a CAIR NO<sub>x</sub> unit is subject to the requirements of 40 CFR part 97, Subparts AA, BB, CC, FF, GG, HH, AAAA, BBBB, CCCC, FFFF, GGGG, and HHHH.

(b) The following units are not CAIR NO<sub>x</sub> units:

1. Any unit qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit and which does not serve at any time, since the later of November 15, 1990 or the start-up of the unit's combustion chamber, a generator with a nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit's potential electrical output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

2. Any solid waste incineration unit that commenced operation before January 1, 1985 and which had an average annual fuel consumption of non-fossil fuel for 1985 to 1987 exceeding 80% of the unit's total average annual fuel consumption for the period, on a Btu basis, and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80% of the unit's total average annual fuel consumption for the same 3-year period, on a Btu basis.

3. Any solid waste incineration unit that commenced operation on or after January 1, 1985 and which had an average annual consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80% of the unit's total fuel consumption, on a Btu basis, and an average annual consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80% of the unit's total fuel consumption, on a Btu basis.

Comment [RBE1]: Hard return inserted.

(c) If a stationary boiler or stationary combustion turbine, that under par. (a), is not a CAIR NO<sub>x</sub> unit, begins to combust fossil fuel or to serve a generator with a nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR NO<sub>x</sub> unit on the first date on which it both combusts fossil fuel and serves the generator as provided in par. (a).

(d) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and meets the requirements of par. (b)1. for at least one calendar year, but subsequently no longer meets the requirements, the unit shall become a CAIR NO<sub>x</sub> unit starting on the earlier of January 1 of the year immediately after the first calendar year during which the unit first no longer qualifies as a cogeneration unit or January 1 of the year immediately after the first calendar year during which the unit no longer meets the requirements of par. (b)1.

(e) If a unit qualifies as a solid waste incineration unit and meets the requirements of par. (b)2. or 3. for at least 3 consecutive calendar years, but subsequently no longer meets all the requirements, the unit shall become a CAIR NO<sub>x</sub> unit starting on the earlier of January 1 of the year immediately after the first calendar year during which the unit first no longer qualifies as a solid waste incinerator unit or January 1 of the year immediately after the first 3 consecutive calendar years after 1990 for which the unit has an average annual fuel consumption of fossil fuel of 20% or more of the unit's total fuel consumption.

(2) PURPOSE. This chapter is adopted under s. 285.11, Stats., to allocate the NO<sub>x</sub> allowances for the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program. The purpose of this chapter is to implement only those parts of the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program that is administered by the EPA under the federal implementation plan for the CAIR relating to the allocation of CAIR NO<sub>x</sub> allowances found in 40 CFR part 97, Subparts EE and EEEE.

(3) PETITION FOR APPLICABILITY An owner or operator of any unit may petition the administrator of the EPA at any time for a determination concerning the applicability, under sub. (1), of the CAIR NO<sub>x</sub> trading program and the CAIR NO<sub>x</sub> ozone season trading program to the unit pursuant to 40 CFR 97.104(c) and 40 CFR 97.304.

**Note:** This chapter modifies the schedule and methodology for allocating CAIR nitrogen oxides (NO<sub>x</sub>) allowances that are set forth in the federal implementation plan. This chapter does not have a provision allowing any fossil fuel-fired unit that is not a CAIR NO<sub>x</sub> unit to "opt-in" to a CAIR NO<sub>x</sub> trading program. This chapter is not intended to modify in any other way the implementation or administration in Wisconsin of the federal implementation plan for CAIR. The CAIR NO<sub>x</sub> federal implementation plan is published in 40 CFR part 97.

**NR 432.02 Definitions.** The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

(1) "Actual weighted average NO<sub>x</sub> emission rate" means, for an NO<sub>x</sub> averaging plan under s. NR 409.065(7), for a year the sum of the products of the actual annual average NO<sub>x</sub> emission rate and actual annual heat input, as determined in accordance with 40 CFR part 75 transfers, for all units in the NO<sub>x</sub> averaging plan for the year divided by the sum of the actual annual heat input, as determined in accordance with 40 CFR part 75, for all units in the NO<sub>x</sub> averaging plan for the year.

(2) "Allocate" or "allocation" means, with regard to CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances, the determination by the department of the amount of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances to be initially credited to a CAIR NO<sub>x</sub> unit, a CAIR renewable unit, or other entity.

(3) "Biomass" means a resource that derives energy from wood or plant material or residue, biological waste, crops grown for use as a resource or landfill gases. "Biomass" does not include garbage, as defined in s. 289.01(9), Stats., or nonvegetation – based industrial, commercial or household waste, except that "biomass" includes refuse-derived fuel used for a renewable facility that was in service before January 1, 1998.

(4) "Boiler" means an enclosed fossil fuel-fired or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

(5) "Bottom-cycle cogeneration unit" means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

(6) "CAIR" means the federal clean air interstate rule promulgated in 40 CFR part 97.

(7) "CAIR designated representative" means, for a CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit at the source, the natural person who is authorized by the owners and operators of the source and all units at the source, in accordance with 40 CFR part 97 Subparts BB and HH and Subparts BBBB and HHHH, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program.

This person shall be the same person as the designated representative for the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program. If the CAIR NO<sub>x</sub> source is also subject to the acid rain program, this natural person shall be the same person as the designated representative under the acid rain program.

(8) "CAIR NO<sub>x</sub> allowance" means a limited authorization issued by the department under this chapter, to emit one ton of nitrogen oxides during a calendar year for which the authorization is allocated or during any calendar year thereafter under the CAIR NO<sub>x</sub> annual trading program. An authorization to emit nitrogen oxides that is not issued under this chapter, 40 CFR part 97, Subpart EE, 40 CFR 97.188, or provisions of a state implementation plan that are approved under 40 CFR 51.123(o)(1) or (2) is not a CAIR NO<sub>x</sub> allowance.

(9) "CAIR NO<sub>x</sub> annual trading program" means a multi-state nitrogen oxides air pollution control and emission reduction program established by the administrator in accordance with 40 CFR part 97 Subparts AA to HH and 40 CFR 51.123(p) and 52.35 or approved and administered by the administrator under provisions of a state implementation plan that are approved under 40 CFR 51.123(o)(1) or (2), as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

(10) "CAIR NO<sub>x</sub> ozone season allowance" means a limited authorization issued by the department under this chapter, to emit one ton of nitrogen oxides during an ozone season for which the authorization is allocated or during an ozone season of any calendar year thereafter under the CAIR NO<sub>x</sub> ozone season trading program or a limited authorization issued by a permitting authority for a control period during 2003 through 2008 under the NO<sub>x</sub> budget trading program in accordance with 40 CFR 51.121(p) to emit one ton of nitrogen oxides during a control period, provided that the provision in 40 CFR 51.121(b)(2)(ii)(E) may not be used in applying this definition and the limited authorization may not have been used to meet the allowance-holding requirement under the NO<sub>x</sub> budget trading program. An authorization to emit nitrogen oxides that is not issued under this chapter, 40 CFR part 97 Subpart EEEE, 40 CFR 97.388, or provisions of a state implementation plan that are approved under 40 CFR 51.123(aa)(1) and (bb)(1), (aa)(2) and (bb)(1), (bb)(2) or (dd) or that meets the requirements of 40 CFR 51.121(p) is not a CAIR NO<sub>x</sub> ozone season allowance.

(11) "CAIR NO<sub>x</sub> ozone season trading program" means a multi-state nitrogen oxides air pollution control and emission reduction program established by the administrator in accordance 40 CFR part 97 Subparts AAAA to HHHH and 40 CFR 51.123(ee) and 52.35 or administered by the administrator under provisions of a state implementation plan that are approved under 40 CFR 51.123(aa)(1) and (bb)(1), (aa)(2) and (bb)(1), (bb)(2) or (dd), as a means of mitigating interstate transport of ozone and nitrogen oxides.

(12) "CAIR NO<sub>x</sub> source" means a source that includes one or more CAIR NO<sub>x</sub> units.

(13) "CAIR NO<sub>x</sub> unit" means a unit that is subject to the CAIR NO<sub>x</sub> annual trading program under 40 CFR 97.104 or the CAIR NO<sub>x</sub> ozone trading program under 40 CFR 97.304.

(14) "CAIR renewable representative" means, for a CAIR renewable unit, the natural person who is authorized by the owners and operators of the unit in accordance with s. NR 432.07, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program.

(15) "CAIR renewable unit" means an installed and operational electric generating facility, located in this state, commencing operation on or after January 1, 2001 that does either of the following:

(a) Generates renewable energy serving a generator with nameplate capacity greater than 25 MWe.

(b) Consists of units combined pursuant to s. 299.83, Stats., serving generators with combined nameplate capacity of greater than 25 MWe.

(16) "Coal-fired" means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

(17) "Cogeneration unit" means a stationary, fossil fuel-fired boiler or stationary, fossil fuel-fired combustion turbine which has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating or cooling purposes through the sequential use of energy and which during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity, does one of the following, as appropriate:

(a) For a topping-cycle cogeneration unit, produces useful thermal energy not less than 5% of total energy output and useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5% of total energy input if useful thermal energy produced is 15% or more of total energy output, or not less than 45% of total energy input if useful thermal energy produced is less than 15% of total energy output.

(b) For a bottoming-cycle cogeneration unit, produces useful power not less than 45% of total energy input.

(18) "Combustion turbine" means an enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine. If the enclosed device is combined cycle, the combustion turbine includes any associated duct burner, heat recovery steam generator, and steam turbine.

(19) "Commence commercial operation" means, with regard to a unit:

(a) To have begun to produce steam, gas or other heated medium used to generate electricity for sale or use, including test generation, except for retired units and repowered opt-in units as provided in 40 CFR 97.105, 97.184(h), 97.304 or 97.384(h).

1. For a unit that is a CAIR NO<sub>x</sub> unit under 40 CFR 97.104 or 97.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in par. (a) (intro.) and that subsequently undergoes a physical change other than replacement of the unit by a unit at the same source, the date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

2. For a unit that is a CAIR NO<sub>x</sub> unit under 40 CFR 97.104 or 97.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in par. (a) (intro.) and that is subsequently replaced by a unit at the same source, e.g., repowered, the date shall remain the replaced unit's date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in par. (a) (intro.) or (b) (intro.) as appropriate.

(b) Notwithstanding par. (a) (intro.) and except for retired units as provided in 40 CFR 97.105 or 97.305, for a unit that is not a CAIR NO<sub>x</sub> unit under 40 CFR 97.104 or 97.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in par. (a) (intro.), the unit's date for commencement of commercial operation shall be the date on which the unit becomes a CAIR NO<sub>x</sub> unit under 40 CFR 97.104 or 97.304.

1. For a unit with a date for commencement of commercial operation as defined in par. (b) (intro.) and that subsequently undergoes a physical change, other than replacement of the unit by a unit at the same source, the date shall

remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

2. For a unit with a date for commencement of commercial operation as defined in par. (b) (intro.) and that is subsequently replaced by a unit at the same source, e.g., repowered, the date shall remain the replaced unit's date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in par. (a) (intro.) or (b) (intro.) as appropriate.

(20) "Conventional resource" means a resource that derives energy from coal, oil, nuclear power or natural gas. A fuel cell that derives energy from natural gas is not a conventional resource.

(21) "Generator" means a device that produces electricity.

(22) "Gross electrical output" means electricity made available for use, including any electricity used in the power production process. A power production process includes any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls.

(23) "Heat input" means, with regard to a specified period of time, the product, in mmBtu/time, of the gross calorific value of the fuel, in Btu/lb, divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device, in lb of fuel/time, as measured, recorded, and reported to the administrator by the CAIR designated representative and determined by the administrator in accordance with 40 CFR part 97 Subpart HH and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

(24) "Heat input rate" means the amount of heat input, in mmBtu, divided by unit operating time, in hours, or, with regard to a specific fuel, the amount of heat input attributed to the fuel, in mmBtu, divided by the unit operating time, in hours, during which the unit combusts the fuel.

(25) "MWh" means megawatt hours.

(26) "Nameplate capacity" means, starting from the initial installation of a generator, the maximum electrical generating output, in MWe, that the generator is capable of producing on a steady state basis and during continuous operation, when not restricted by seasonal or other deratings, as of the installation as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output, in MWe, that the generator is capable of producing on a steady state basis and

during continuous operation, when not restricted by seasonal or other deratings, the increased maximum amount as of the completion as specified by the person conducting the physical change.

(27) "Operator" means any person who operates, controls or supervises a CAIR NO<sub>x</sub> unit, a CAIR NO<sub>x</sub> source or a CAIR renewable unit and includes any holding company, utility system or plant manager of a unit or source.

(28) "Owner" means any of the following persons:

(a) Any holder of any portion of the legal or equitable title in a CAIR NO<sub>x</sub> unit at the source, a CAIR NO<sub>x</sub> unit or a CAIR renewable unit.

(b) Any holder of a leasehold interest in a CAIR NO<sub>x</sub> unit at the source, a CAIR NO<sub>x</sub> unit or a CAIR renewable unit.

(c) Any purchaser of power from a CAIR NO<sub>x</sub> unit at the source, a CAIR NO<sub>x</sub> unit or a CAIR renewable unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner may not include a passive lessor, or a person who has an equitable interest through the lessor, whose rental payments are not based, either directly or indirectly, on the revenues or income from the CAIR NO<sub>x</sub> unit.

(29) "Permitting authority" means a state air pollution control agency, local agency, other state agency or other agency authorized by the administrator of the EPA to issue or revise permits to meet the requirements of the CAIR NO<sub>x</sub> trading program or the CAIR NO<sub>x</sub> ozone season trading program in accordance with 40 CFR part 97 Subpart CC and CCCC or, if no agency has been authorized, the administrator of the EPA.

(30) "Potential electrical output capacity" means 33% of a unit's maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh and multiplied by 8,760 hr/yr.

(31) "Renewable energy" means electricity derived from a renewable resource.

(32) "Renewable resource" means any of the following:

(a) A resource that derives electricity from any of the following:

1. A fuel cell that uses a renewable fuel, as determined by the public service commission.
2. Wave action.
3. Solar thermal electric or photovoltaic energy.
4. Wind power.
5. Geothermal technology.
6. Biomass.

- (b) A resource that derives electricity from hydroelectric power.
- (c) Any resource not described in par. (a) or (b), except a conventional resource, that the public service

commission has designated as a renewable resource in rules promulgated under s. 196.378(4), Stats.

**Note:** The definition of a renewable resource is based on the definition in s. 196.378(1)(h), Stats.

(33) "Repowered" means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

- (a) Atmospheric or pressurized fluidized bed combustion.
- (b) Integrated gasification combined cycle.
- (c) Magnetohydrodynamics.
- (d) Direct and indirect coal-fired turbines.
- (e) Integrated gasification fuel cells.

(f) As determined by the administrator in consultation with the secretary of energy, a derivative of one or more of the technologies under pars. (a) to (e) and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

(34) "Solid waste incineration unit" means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine that is a "solid waste incineration unit" as defined in section 129(g)(1) of the Clean Air Act (42 USC 7429(g)(1)).

(35) "Topping-cycle cogeneration unit" means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

(36) "Total energy input" means, with regard to a cogeneration unit, total energy of all forms supplied to a cogeneration unit, excluding energy produced by the cogeneration unit itself.

(37) "Total energy output" means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

(38) "Unit" means either of the following:

(a) A stationary, fossil fuel-fired boiler or combustion turbine or other stationary, fossil fuel-fired combustion device.

(b) A CAIR renewable unit.

(39) "Useful thermal energy" means, with regard to a cogeneration unit, thermal energy that is any of the following:

(a) Made available to an industrial or commercial process, not a power production process, excluding any heat contained in condensate return or makeup water.

(b) Used in a heating application, such as space heating or hot water heating.

(c) Used in space cooling application, such as thermal energy used by an absorption chiller.

(40) "Utility power distribution system" means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

**Note:** The definitions in this section are limited to use in this chapter and are substantively similar to the federal CAIR definitions found in 40 CFR part 97 except for "gross electrical output" and "useful thermal energy". The difference in the definitions for these 2 terms is necessary to implement the state allocation structure that differs from the allocation structure in the federal implementation plan.

**NR 432.03 CAIR NO<sub>x</sub> allowance allocation.** The department shall use the procedures in this section for calculating and allocating CAIR NO<sub>x</sub> allowances for CAIR NO<sub>x</sub> units and CAIR renewable units.

(1) UNIT BASELINES. (a) *Calculating baseline energy output.* The department shall calculate the baseline energy output of each CAIR NO<sub>x</sub> unit and each CAIR renewable unit, in MWh according to the following equations as appropriate:

1. For a CAIR NO<sub>x</sub> unit that is a cogeneration unit and that has operated for 5 or more consecutive calendar years, by using one of the following equations:

a. Use equation 1a if the unit is the only unit serving a generator or, if more than one unit serves the same generator and unit-level data for equation 1a is available for all units:

$$B = GE_{avg} + \left( \frac{TE_{avg}}{3.4} \right) \quad \text{Equation 1a}$$

where:

B is the unit baseline energy output made available by the cogeneration unit in MWh

GE<sub>avg</sub> is the average of the 3 highest annual amounts of the unit's annual gross electric output in MWh over the 5-year period identified in par. (b)

TE<sub>avg</sub> is the average of the 3 highest annual amounts of the unit's annual useful thermal energy in mmBtu over the 5-year period identified in par. (b)

3.4 is a conversion factor in mmBtu/MWh

b. Use equation 1b if more than one unit serves the same generator and unit-level data for equation 1a is not available for all units:

$$B_i = \left( GE_{Gen} + \frac{TE_T}{3.4} \right) \times \left( \frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 1b}$$

where:

$B_i$  is the baseline energy output made available by cogeneration unit  $i$  in MWh

$GE_{Gen}$  is the average of the 3 highest annual amounts of the annual gross electric output in MWh for the generator served over the 5-year period identified in par. (b)

$TE_T$  is the average of the 3 highest annual amounts of annual useful thermal energy in mmBtu for the generator served over the 5-year period defined in par. (b)

3.4 is a conversion factor in mmBtu/MWh

$NC_i$  is the nameplate capacity of unit  $i$

$n$  is the number of units serving the same generator

2. For a CAIR  $NO_x$  unit that is not a cogeneration unit and that has operated for 5 or more consecutive calendar years and for a CAIR renewable unit that has operated for 5 or more consecutive calendar years, by using one of the following equations as appropriate:

a. Use equation 2a if the unit is the only unit serving a generator or, if more than one unit serves the same generator and unit-level data for equation 2a is available for all units:

$$B = GE_{avg} \quad \text{Equation 2a}$$

where:

$B$  is the unit baseline energy output made available by the CAIR  $NO_x$  unit or the CAIR renewable unit in MWh

$GE_{avg}$  is the average of the 3 highest annual amounts of the unit's annual gross electric output in MWh over the 5-year period identified in par. (b)

b. Use equation 2b if more than one unit serves the same generator and unit-level data for equation 2a is not available for all units:

$$B_i = GE_{Gen} \times \left( \frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 2b}$$

where:

$B_i$  is the baseline energy output made available by CAIR  $NO_x$  unit  $i$  or CAIR renewable unit  $i$  in MWh

$GE_{Gen}$  is the average of the 3 highest annual amounts of the annual gross electric output in MWh for the generator served over the 5-year period identified in par. (b)

$NC_i$  is the nameplate capacity of unit  $i$

$n$  is the number of units serving the same generator

(b) *Periodic updates of baseline energy output for units with more than 5 years operating data.* The department shall use the procedures in this paragraph for calculating the unit baseline energy output for each CAIR NO<sub>x</sub> unit or CAIR renewable unit which has more than 5 years of operating data.

1. In 2007, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit for 2009 to 2014 allowances using data for the years 2000 to 2004.

2. On or before May 1, 2011, and on or before May 1 of every fifth year thereafter, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit for the next 5 year allocation period using data from the 5 calendar year period beginning 9 years before the first year of the allocation period and ending 5 years before the first year of the allocation period.

**Note:** For example in 2021, unit baseline energy output for the calculation of allocation for 2025 to 2029 allowances will be calculated using data from the years 2016 to 2020. In 2026, unit baseline energy output for the calculation of the allocation for 2030 to 2034 will be calculated using data from 2021 to 2025.

(c) *Baseline energy output for new units and units achieving 5 years of operating data for the first time.* The department shall use the procedures in this paragraph for calculating the unit baseline energy output for each CAIR NO<sub>x</sub> unit or CAIR renewable unit which have only 5 years of operating data.

1. On or before May 1, 2011, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit that commences operation on or after January 1, 2001 and that has operating data for the years 2006 to 2010 for 2015 to 2019 allowances using data for years 2006 to 2010.

2. On or before May 1, 2012, and on or before May 1 of every year thereafter, the department shall calculate the unit baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit that has been operating for its first 5 consecutive years, using the first 5 years of operating data. Once the unit's baseline energy output has been established, the CAIR NO<sub>x</sub> unit or CAIR renewable unit's baseline energy output shall be updated according to par. (b).

**Note:** Starting in 2011, and every year thereafter, new units that commence operation on or after January 1, 2001 will have their unit baseline energy output calculated once the unit has 5 consecutive years of operating data. The 5 years of data do not have to be full years of data. Once the unit has 5 or more years of operating data, this unit is then incorporated into the state baselines calculated in s. NR 432.03(1m) and receives allocations from the main allocation pool under s. NR 432.03(2). These new units are incorporated into the main allocation pool on a yearly basis.

(d) *Baseline energy output for retired units.* If a unit is retired in any year, the department shall calculate the baseline energy output according to par. (b). If a unit only operates a portion of the year, the data for that portion shall constitute the unit's data for that year.

**Note:** The following is an example of how a retired unit's baseline energy output is calculated. A unit is retired in 2011. In 2011, unit baselines are updated using 2006 to 2010 annual data that will be used to calculate allocations for 2015 to 2019. For 2015 to 2019 allocations, the retired unit would receive all allowances based upon its unit baseline for 2006 to 2010 operating data even though it is no longer operating. In 2016, the next unit baseline updating year, the baseline for the unit would be determined using the most recent 5 years of data, 2011 to 2015. The 2016 updated baseline would be used to determine allocations for 2020 to 2025. If the unit had some operating data in 2011, it would receive minimal allowances in 2020 to 2025 based on the amount of electrical generation in 2011. The next unit update would occur in 2021 and would use 2015 to 2019 operating data. Since the unit would have no operating data for this time period it would no longer receive allocations. Under this procedure a unit that is retired in 2011 could receive allowances until 2025.

(e) *Data used for energy generation baselines.* In performing the unit energy output baseline calculations under pars. (a) to (d), the department shall use data reported by the CAIR designated representative to EPA under 40 CFR part 97, Subpart HH and available from the EPA and data reported by the CAIR

renewable representative to the department under s. NR 432.07. If the required data is unavailable from the EPA, the department shall request the required data directly from the unit's CAIR designated representative. If the representative does not provide data within 30 days of the department's request, the department shall estimate the unit's baseline energy output using best available data.

(1m) STATE BASELINE. (a) Prior to 2011, the department shall establish the state baseline by summing the unit baselines calculated according to sub. (1) for all CAIR NO<sub>x</sub> units listed in Table 1.

(b) In 2011 and annually thereafter, the department shall calculate an annual state baseline by summing the unit baselines calculated according to sub. (1) for all CAIR NO<sub>x</sub> units and all CAIR renewable units.

**Note:** The state baseline is updated starting in 2011 annually to incorporate new units that have 5 years of operating data and have established a baseline under s. NR 432.03(a) and (b). Once a new unit has established a baseline, it is eligible for allowances from the main allocation pool.

(2) ALLOWANCE ALLOCATION FOR UNITS WITH 5 OR MORE YEARS OF OPERATION DATA. (a) In 2007, and in 2011 and annually thereafter, the department shall allocate to all CAIR NO<sub>x</sub> units and CAIR renewable units for which a unit baseline has been calculated under sub. (1), a total amount of CAIR NO<sub>x</sub> allowances equal to 93% of the tons of NO<sub>x</sub> emissions in the trading budget for Wisconsin in 40 CFR 97.140.

(b) The department shall allocate CAIR NO<sub>x</sub> allowances to each unit in an amount determined by equation 3:

$$A_i = MAP \times \left( \frac{B_i}{B_s} \right) \quad \text{Equation 3}$$

where:

A<sub>i</sub> is the annual allocation of CAIR NO<sub>x</sub> allowances for unit i rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed 93% of the trading budget in 40 CFR 97.140

MAP is the main allocation pool of CAIR NO<sub>x</sub> allowances in tons which is the trading budget for Wisconsin in 40 CFR 97.140, minus the new unit set-aside established in sub. (3)

B<sub>i</sub> is the unit baseline established under sub. (1) for unit i

B<sub>s</sub> is the state baseline as determined under sub. (1m).

(3) ALLOCATIONS FOR UNITS WITH LESS THAN 5 YEARS OF OPERATING DATA. In 2009 and annually thereafter, the department shall allocate CAIR NO<sub>x</sub> allowances to CAIR NO<sub>x</sub> units for which a request is received under par. (b) and that commenced operation on or after January 1, 2001 and for which a baseline energy output cannot be determined under sub. (1), in accordance with the following procedures:

(a) For 2009 and each year thereafter, the department shall establish a new unit set-aside consisting of all CAIR NO<sub>x</sub> allowances available for new units in that year. The new unit set-aside in each year shall be equal to 7% of the amount of tons of NO<sub>x</sub> emissions in the trading budget under 40 CFR 97.140 for Wisconsin.

(b) The CAIR designated representative of a CAIR NO<sub>x</sub> unit that commenced operation on or after January 1, 2001, may submit to the department a request to be allocated CAIR NO<sub>x</sub> allowances under this subsection, starting with 2009 or the first calendar year after the calendar year in which the CAIR NO<sub>x</sub> unit commences commercial operation, whichever is later, and until the first calendar year for which the unit is eligible for and is allocated CAIR NO<sub>x</sub> allowances under sub. (2). The CAIR NO<sub>x</sub> allocation request shall be submitted on or before May 1 of the calendar year for which the CAIR NO<sub>x</sub> allowances are requested and after the date on which the CAIR NO<sub>x</sub> unit commences commercial operation.

(c) In a CAIR NO<sub>x</sub> annual allocation request under par. (b), the CAIR designated representative may not request CAIR NO<sub>x</sub> allowances exceeding the CAIR NO<sub>x</sub> unit's total tons of NO<sub>x</sub> emissions during the calendar year immediately before the calendar year of the request.

(d) The department shall review each CAIR NO<sub>x</sub> annual allocation request submitted under par. (b) and allocate CAIR NO<sub>x</sub> allowances for each calendar year as follows:

1. The department shall establish the maximum amount of new unit set-aside CAIR NO<sub>x</sub> allowances a unit is eligible for based upon a request submitted under par. (b).

2. Before June 1 of each calendar year, the department shall determine the sum of all CAIR NO<sub>x</sub> allowances established under subd. 1. for all new units in the calendar year.

3. If the amount of CAIR NO<sub>x</sub> allowances in the new unit set-aside for the calendar year under par. (a) is greater than or equal to the sum determined under subd. 2., the department shall allocate the amount of CAIR NO<sub>x</sub> allowances determined under subd. 1. to each CAIR NO<sub>x</sub> unit for which an allocation request was submitted.

4. If the amount of the CAIR NO<sub>x</sub> allowances in the new unit set-aside for the calendar year under par. (a) is less than the sum determined under subd. 2., the department shall allocate to each CAIR NO<sub>x</sub> unit for which the department established a maximum amount under subd. 1. greater than zero, an amount determined using equation 4:

$$N_i = R_i \times \left( \frac{NUSA}{\sum_{j=1}^k R_j} \right) \quad \text{Equation 4}$$

where:

N<sub>i</sub> is the annual allocation of CAIR NO<sub>x</sub> set-aside allowances for new unit i for the calendar year rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed 7% of the trading budget in 40 CFR 97.140

R<sub>i</sub> is the amount of CAIR NO<sub>x</sub> allowances the department determined unit i is eligible for under subd. 1.

NUSA is the new unit set-aside established under par. (a)

k is the number of units for which the department established an amount greater than 0 under subd. 1.

(e) The department shall notify each CAIR designated representative that submitted an allocation request under par. (b) of the amount of CAIR NO<sub>x</sub> allowances allocated for the calendar year to the CAIR NO<sub>x</sub> unit covered by the request.

(4) ALLOCATION OF REMAINING NEW UNIT SET-ASIDE ALLOWANCES. After completion of the procedures under sub. (3), any CAIR NO<sub>x</sub> allowances remaining in the new unit set-aside for the calendar year shall be allocated to the CAIR NO<sub>x</sub> units and CAIR renewable units that were allocated CAIR NO<sub>x</sub> allowances under sub. (2) for the calendar year in an amount determined using equation 5:

$$X_i = U \times \left( \frac{A_i}{MAP} \right) \quad \text{Equation 5}$$

where:

X<sub>i</sub> is the allocation of remaining CAIR NO<sub>x</sub> new unit set-aside annual allowances for unit i rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed the amount of U

U is the amount of unallocated CAIR NO<sub>x</sub> new unit set-aside allowances in tons  
A<sub>i</sub> is the annual allocation of CAIR NO<sub>x</sub> allowances for unit i calculated using equation 3  
MAP is the main allocation pool of CAIR NO<sub>x</sub> allowances in tons which is the trading budget for Wisconsin in 40 CFR 97.140 minus the new unit set-aside established in sub. (3)

(5) CAIR NO<sub>x</sub> ALLOCATIONS FOR 2009 TO 2014. The CAIR NO<sub>x</sub> allocations for 2009 to 2014 for individual CAIR NO<sub>x</sub> units are listed in Table 1.

**Table 1**  
**CAIR NO<sub>x</sub> Allocations for 2009 to 2014 by CAIR NO<sub>x</sub> Unit**  
(in tons of CAIR NO<sub>x</sub> allowances)

Unit Location	Unit Number	2009	2010	2011	2012	2013	2014
Alma	4	223	223	223	223	223	223
Alma	5	316	316	316	316	316	316
Bayfront	1	78	78	78	78	78	78
Bayfront	2	70	70	70	70	70	70
Bayfront	5	109	109	109	109	109	109
Blackhawk	3	9	9	9	9	9	9
Blackhawk	4	8	8	8	8	8	8
Blount Generating Station	3	5	5	5	5	5	5
Blount Generating Station	5	7	7	7	7	7	7
Blount Generating Station	6	9	9	9	9	9	9
Blount Generating Station	7	71	71	71	71	71	71
Blount Generating Station	8	167	167	167	167	167	167
Blount Generating Station	9	193	193	193	193	193	193
Blount Generating Station	11	2	2	2	2	2	2
Columbia	1	3050	3050	3050	3050	3050	3050
Columbia	2	2933	2933	2933	2933	2933	2933
Concord	1	12	12	12	12	12	12
Concord	2	14	14	14	14	14	14
Concord	3	11	11	11	11	11	11
Concord	4	11	11	11	11	11	11
Custer Energy Center	1	0	0	0	0	0	0
De Pere	ALL	124	124	124	124	124	124
Edgewater	3	337	337	337	337	337	337
Edgewater	4	1570	1570	1570	1570	1570	1570
Edgewater	5	2128	2128	2128	2128	2128	2128
Fitchburg	1	4	4	4	4	4	4
Fitchburg	2	4	4	4	4	4	4
French Island	3	4	4	4	4	4	4
French Island	4	4	4	4	4	4	4
Genoa	1	1787	1787	1787	1787	1787	1787
Germantown	38	25	25	25	25	25	25
Germantown	30, 31	4	4	4	4	4	4
Germantown	32, 33	3	3	3	3	3	3

Germantown	34, 35	5	5	5	5	5	5
Germantown	36, 37	4	4	4	4	4	4
Madgett	1	1893	1893	1893	1893	1893	1893
Manitowoc	6	84	84	84	84	84	84
Manitowoc	7	84	84	84	84	84	84
Manitowoc	8	84	84	84	84	84	84
Mirant/ Neenah	1	100	100	100	100	100	100
Mirant/ Neenah	2	100	100	100	100	100	100
Nelson Dewey	1	515	515	515	515	515	515
Nelson Dewey	2	508	508	508	508	508	508
Paris	1	17	17	17	17	17	17
Paris	2	21	21	21	21	21	21
Paris	3	22	22	22	22	22	22
Paris	4	15	15	15	15	15	15
Pleasant Prairie	20	3514	3514	3514	3514	3514	3514
Pleasant Prairie	21	3564	3564	3564	3564	3564	3564
Port Washington	1	219	219	219	219	219	219
Port Washington	2	191	191	191	191	191	191
Port Washington	3	222	222	222	222	222	222
Port Washington	4	220	220	220	220	220	220
Pulliam	3	100	100	100	100	100	100
Pulliam	4	123	123	123	123	123	123
Pulliam	5	267	267	267	267	267	267
Pulliam	6	378	378	378	378	378	378
Pulliam	7	468	468	468	468	468	468
Pulliam	8	762	762	762	762	762	762
Rock River	1	116	116	116	116	116	116
Rock River	2	95	95	95	95	95	95
Rock River	3	0	0	0	0	0	0
Rock River	5	14	14	14	14	14	14
Rock River	6	21	21	21	21	21	21
Sheepskin	1	1	1	1	1	1	1
Sheepskin	2	0	0	0	0	0	0
South Fond du Lac	1	29	29	29	29	29	29
South Fond du Lac	2	24	24	24	24	24	24
South Fond du Lac	3	18	18	18	18	18	18
South Fond du Lac	4	14	14	14	14	14	14
South Oak Creek	25	1168	1168	1168	1168	1168	1168
South Oak Creek	26	1195	1195	1195	1195	1195	1195
South Oak Creek	27	1612	1612	1612	1612	1612	1612
South Oak Creek	28	1624	1624	1624	1624	1624	1624
Stoneman	B2	19	19	19	19	19	19
Stoneman	B1	17	17	17	17	17	17
Valley Boiler 1	21	377	377	377	377	377	377
Valley Boiler 2	22	377	377	377	377	377	377
Valley Boiler 3	23	377	377	377	377	377	377

Valley Boiler 4	24	377	377	377	377	377	377
West Marinette	34	47	47	47	47	47	47
West Marinette	31	12	12	12	12	12	12
West Marinette	32	9	9	9	9	9	9
West Marinette	33	77	77	77	77	77	77
Weston	1	322	322	322	322	322	322
Weston	2	533	533	533	533	533	533
Weston	3	2010	2010	2010	2010	2010	2010
Weston	32	39	39	39	39	39	39
Wheaton	1	13	13	13	13	13	13
Wheaton	2	12	12	12	12	12	12
Wheaton	3	14	14	14	14	14	14
Wheaton	4	9	9	9	9	9	9
Wheaton	5	4	4	4	4	4	4
Wheaton	6	3	3	3	3	3	3
Whitewater Cogen Facility	CTG1	377	377	377	377	377	377
Whitewater Cogen Facility	STG1	177	177	177	177	177	177

**NR 432.04 Compliance supplement pool.** In addition to the CAIR NO<sub>x</sub> allowances allocated under s. NR 432.03, the department may allocate for calendar year 2009 only, additional allowances from the compliance supplement pool up to the amount designated by the EPA in 40 CFR 97.143 for Wisconsin for the purposes identified in this section.

(1) EARLY REDUCTION CREDITS. (a) The department may allocate CAIR NO<sub>x</sub> allowances from the compliance supplement pool to a CAIR NO<sub>x</sub> unit if the unit's CAIR designated representative demonstrates that it achieved early reductions of NO<sub>x</sub> emissions. To be eligible for early reduction credits, the unit's CAIR designated representative shall demonstrate all of the following:

1. The CAIR NO<sub>x</sub> unit's average annual NO<sub>x</sub> emission rate for 2007 or 2008 is less than 0.25 lb/mmBtu based on heat input.

2. If the unit is included in a NO<sub>x</sub> averaging plan under s. NR 409.065(7) for 2007 or 2008, the NO<sub>x</sub> averaging plan has an actual weighted average NO<sub>x</sub> emission rate for 2007 or 2008 equal to or less than the actual weighted average NO<sub>x</sub> emission rate for preceding year.

3. Compared to the preceding year, the CAIR NO<sub>x</sub> unit achieves NO<sub>x</sub> emission reductions in both 2007 and 2008.

(b) The CAIR designated representative of the unit may request early reduction credits, and allocation of CAIR NO<sub>x</sub> allowances from the compliance supplement pool for early reduction credits, in accordance with the following:

1. The CAIR designated representative shall monitor and report the NO<sub>x</sub> emissions rate and the heat input of the unit based on monitoring data required in accordance with 40 CFR part 97, Subpart HH in each calendar year for which early reduction credits are requested.

2. The CAIR designated representative of a CAIR NO<sub>x</sub> unit shall submit to the department by July 31, 2009 a request for allocation of an amount of CAIR NO<sub>x</sub> allowances from the compliance supplement pool. The request may not exceed the value determined using equation 6:

$$ER = \frac{(HI_{2007} \times \Delta EM_{2007}) + (HI_{2008} \times \Delta EM_{2008})}{2000} \quad \text{Equation 6}$$

where:

ER is the amount of CAIR NO<sub>x</sub> allowances a CAIR designated representative may request based on early emission reductions in 2007 and 2008 rounded to the nearest ton

HI<sub>2007</sub> is the total heat input to the unit for the calendar year 2007 in mmBtu

HI<sub>2008</sub> is the total heat input to the unit for the calendar year 2008 in mmBtu

2000 is a conversion factor in lb/ton

ΔEM<sub>2007</sub> and ΔEM<sub>2008</sub> are the differences between the actual emission rates for 2007 and 2008 respectively and the target emission rate for early reductions in lbs NO<sub>x</sub>/mmBtu. If the unit's actual average emission rate for the calendar year is greater than 0.25, ΔEM<sub>year</sub> is equal to 0. If the unit's actual average emission rate for the calendar year is equal to or less than 0.25, then ΔEM<sub>year</sub> is calculated using equation 7:

$$\Delta EM_{year} = 0.25 - Actual_{year} \quad \text{Equation 7}$$

where:

Actual<sub>year</sub> is the unit's actual average emission rate for calendar year for 2007 or 2008 in lbs NO<sub>x</sub>/mmBtu determined in accordance with 40 CFR part 97 Subpart HH

0.25 is the target emission rate for early reductions in lbs NO<sub>x</sub>/mmBtu

**Comment [RBE2]:** Tom S. questioned the appropriateness of this reference. I believe he was uncertain if it includes procedures for determining or calculating (versus monitoring and reporting) an emission rate.

(2) ELECTRIC RELIABILITY. The department may allocate CAIR NO<sub>x</sub> allowances from the compliance supplement pool to any CAIR NO<sub>x</sub> unit for which the unit's CAIR designated representative demonstrates that compliance with the CAIR NO<sub>x</sub> allocation under s. NR 432.03, Table 1 for calendar year 2009 would create an undue risk to the reliability of electricity supply during 2009. The CAIR designated representative of the unit may request the allocation of CAIR NO<sub>x</sub> allowances from the compliance supplement pool in order to avoid an undue risk to the reliability of electricity supply during 2009 in accordance with the following requirements:

(a) The CAIR designated representative of the CAIR NO<sub>x</sub> unit shall submit to the department by July 31, 2009 a request for allocation of an amount of CAIR NO<sub>x</sub> allowances from the compliance supplement pool not exceeding the minimum amount of CAIR NO<sub>x</sub> allowances necessary to remove the undue risk to the reliability of electricity supply.

(b) In the request under par. (a), the CAIR designated representative of the CAIR NO<sub>x</sub> unit shall demonstrate that, in the absence of an allocation to the unit in the amount of CAIR NO<sub>x</sub> allowances requested, the unit's compliance with CAIR NO<sub>x</sub> allocation under s. NR 432.03, Table 1 for calendar year 2009 would create an undue risk to the reliability of electricity supply during that year. This demonstration shall include a showing by the unit's CAIR designated representative that it would not be feasible to do both of the following:

1. Obtain a sufficient amount of electricity from other electricity generation facilities for compliance with the CAIR NO<sub>x</sub> allocations under s. NR 432.03, Table 1 to prevent the undue risk.

2. Obtain under subs. (1) and (3), or otherwise obtain, a sufficient amount of CAIR NO<sub>x</sub> allowances to prevent the undue risk.

(3) ALLOCATION PROCEDURE. The department shall review each request submitted under subs. (1) and (2) and shall allocate CAIR NO<sub>x</sub> allowances for calendar year 2009 to CAIR NO<sub>x</sub> units covered by the requests as follows:

(a) Upon receipt of each request, the department shall determine whether the amount of the CAIR NO<sub>x</sub> allowances requested from the compliance supplement pool meets the requirements of sub. (1) or (2).

(b) If the amount of CAIR NO<sub>x</sub> allowances in the compliance supplement pool is greater than or equal to the total amount of CAIR NO<sub>x</sub> allowances in all requests submitted under subs. (1) and (2), the department shall allocate to each

CAIR NO<sub>x</sub> unit covered by the requests the amount of CAIR NO<sub>x</sub> allowances requested, and determined eligible for under par. (a).

(c) If the state's compliance supplement pool has a smaller amount of CAIR NO<sub>x</sub> allowances than the total amount of CAIR NO<sub>x</sub> allowances in all requests submitted under subs. (1) and (2), as adjusted under par. (a), the department shall allocate CAIR NO<sub>x</sub> allowances to each CAIR NO<sub>x</sub> unit covered by the requests according to equation 8:

$$Z_i = Y_i \times \left( \frac{CSP}{\sum_{j=1}^k Y_j} \right) \quad \text{Equation 8}$$

where:

Z<sub>i</sub> is the amount of CAIR NO<sub>x</sub> allowances allocated to unit i from the state's compliance supplement pool rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed the CSP

Y<sub>i</sub> is the amount of CAIR NO<sub>x</sub> allowances requested for unit i under subs. (1) and (2), as determined eligible under par. (a)

CSP is the amount of CAIR NO<sub>x</sub> allowances in the state's compliance supplement pool as provided in 40 CFR 97.143

k is the number of units which the department deemed eligible for requests made under subs. (1) and (2)

(d) By November 15, 2009, the department shall determine the allocations under par. (b) or (c), as applicable. The department shall make available to the public each determination of CAIR NO<sub>x</sub> allowances under par. (c) and shall provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with sub. (1) or (2) and par. (b) or (c) and data correction. Based on any objections, the department may adjust each determination to the extent necessary to ensure that it is in accordance with sub. (1) or (2) and par. (b) or (c) and the data is correct.

(e) By December 15, 2009, the department shall notify the administrator of the allocations made under par. (d).

**NR 432.05 CAIR NO<sub>x</sub> ozone season allowance allocation.** The department shall use the procedures in this section for calculating and allocating CAIR NO<sub>x</sub> ozone season allowances for CAIR NO<sub>x</sub> units and CAIR renewable units.

(1) UNIT BASELINES. (a) *Calculating baseline energy output.* The department shall calculate the baseline energy output of each CAIR NO<sub>x</sub> unit and each CAIR renewable unit, in MWh according to the following equations as appropriate:

1. For a CAIR NO<sub>x</sub> unit that is a cogeneration unit and that has operated for 5 or more consecutive calendar years, by using one of the following equations:

a. Use equation 1a if the unit is the only unit serving a generator or, if more than one unit serves the same generator and unit-level data for equation 9a is available for all units:

$$B = GE_{avg} + \left( \frac{TE_{avg}}{3.4} \right) \quad \text{Equation 9a}$$

where:

B is the unit baseline energy output made available by the cogeneration unit in MWh

GE<sub>avg</sub> is the average of the 3 highest annual amounts of the unit's ozone season gross electric output in MWh over the 5-year period identified in par. (b)

TE<sub>avg</sub> is the average of the 3 highest annual amounts of the unit's ozone season useful thermal energy in mmBtu over the 5-year period identified in par. (b)

3.4 is a conversion factor in mmBtu/MWh

b. Use equation 9b if more than one unit serves the same generator and unit-level data for equation 9a is not available for all units:

$$B_i = \left( GE_{Gen} + \frac{TE_T}{3.4} \right) \times \left( \frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 9b}$$

where:

B<sub>i</sub> is the baseline energy output made available by cogeneration unit i in MWh

GE<sub>Gen</sub> is the average of the 3 highest annual amounts of the ozone season gross electric output in MWh for the generator served over the 5-year period identified in par. (b)

TE<sub>T</sub> is the average of the 3 highest annual amounts of ozone season useful thermal energy in mmBtu for the generator served over the 5-year period defined in par. (b)

3.4 is a conversion factor in mmBtu/MWh

NC<sub>i</sub> is the nameplate capacity of unit i

n is the number of units serving the same generator

2. For a CAIR NO<sub>x</sub> unit that is not a cogeneration unit and that has operated for 5 or more consecutive calendar years and for a CAIR renewable unit that has operated for 5 or more consecutive calendar years, by using one of the following equations as appropriate:

a. Use equation 10a if the unit is the only unit serving a generator or, if more than one unit serves the same generator and unit-level data for equation 10a is available for all units:

$$B = GE_{avg} \quad \text{Equation 10a}$$

where:

B is the unit baseline energy output made available by the CAIR NO<sub>x</sub> unit or the CAIR renewable unit in MWh

GE<sub>avg</sub> is the average of the 3 highest annual amounts of the unit's ozone season gross electric output in MWh over the 5-year period identified in par. (b)

b. Use equation 10b if more than one unit serves the same generator and unit-level data for equation 10a is not available for all units:

$$B_i = GE_{Gen} \times \left( \frac{NC_i}{\sum_{j=1}^n NC_j} \right) \quad \text{Equation 10b}$$

where:

B<sub>i</sub> is the baseline energy output made available by CAIR NO<sub>x</sub> unit i or CAIR renewable unit i in MWh

GE<sub>Gen</sub> is the average of the 3 highest annual amounts of the ozone season gross electric output in MWh for the generator served over the 5-year period identified in par. (b)

NC<sub>i</sub> is the nameplate capacity of unit i

n is the number of units serving the same generator

(b) *Periodic updates of baseline energy output for units with more than 5 years operating data.* The department shall use the procedures in this paragraph for calculating the unit baseline energy output for each CAIR NO<sub>x</sub> unit or CAIR renewable unit which has more than 5 years of operating data.

1. In 2007, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit for 2009 to 2014 allowances using data for the ozone seasons 2000 to 2004.

2. On or before May 1, 2011, and on or before May 1 of every fifth year thereafter, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit for the next 5-year allocation period using data from the 5 ozone season period beginning 9 years before the first year of the allocation period and ending 5 years before the first year of the allocation period.

**Note:** For example in 2021, unit baseline energy output for the calculation of allocation for 2025 to 2029 allowances will be calculated using ozone season data from the years 2016 to 2020. In 2026, unit baseline energy output for the calculation of the allocation for 2030 to 2034 will be calculated using ozone season data from 2021 to 2025.

(c) *Baseline energy output for new units and units achieving 5 years of operating data for the first time.* The department shall use the procedures in this paragraph for calculating the unit baseline energy output for each CAIR NO<sub>x</sub> unit or CAIR renewable unit which have only 5 years of operating data.

1. On or before May 1, 2011, the department shall calculate the baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit that commences operation on or after January 1, 2001 and that has operating data for the years 2006 to 2010 for 2015 to 2019 allowances using data for ozone seasons 2006 to 2010.

2. On or before May 1, 2012, and on or before May 1 of every year thereafter, the department shall calculate the unit baseline energy output for each CAIR NO<sub>x</sub> unit and each CAIR renewable unit that has been

operating for its first 5 consecutive years, using the first 5 ozone seasons of operating data. Once the unit's baseline energy output has been established, the CAIR NO<sub>x</sub> unit or CAIR renewable unit's baseline energy output shall be updated according to par. (b).

**Note:** Starting in 2011, and every year thereafter, new units that commence operation on or after January 1, 2001 will have their unit baseline energy output calculated once the unit has 5 consecutive years of operating data. The 5 years of data do not have to be full years of data. Once the unit has 5 or more years of operating data, this unit is then incorporated into the state baselines calculated in s. NR 432.03(1m) and receives allocations from the main allocation pool under s. NR 432.03(2). These new units are incorporated into the main allocation pool on a yearly basis.

(d) *Baseline energy output for retired units.* If a unit is retired in any year, the department shall calculate the baseline energy output according to par. (b). If a unit only operates a portion of the year, the data for that portion shall constitute the unit's data for that year.

**Note:** The following is an example of how a retired unit's baseline energy output is calculated. A unit is retired in 2011. In 2011, unit baselines are updated using 2006 to 2010 ozone season data that will be used to calculate allocations for 2015 to 2019. For 2015 to 2019 allocations, the retired unit would receive all allowances based upon its unit baseline for 2006 to 2010 ozone season operating data even though it is no longer operating. In 2016, the next unit baseline updating year, the baseline for the unit would be determined using the most recent 5 years of ozone season data, 2011 to 2015. The 2016 updated baseline would be used to determine allocations for 2020 to 2025. If the unit had some operating data in 2011, it would receive minimal allowances in 2020 to 2025 based on the amount of electrical generation in the ozone season in 2011. The next unit update would occur in 2021 and would use 2015 to 2019 ozone season operating data. Since the unit would have no operating data for this time period it would no longer receive allocations. Under this procedure a unit that is retired in 2011 could receive allowances until 2025.

(e) *Data used for energy generation baselines.* In performing the unit energy output baseline calculations under pars. (a) to (d), the department shall use data reported by the CAIR designated representative to EPA under 40 CFR part 97, Subpart HH and available from the EPA and data reported by the CAIR renewable representative to the department under s. NR 432.07. If the required data is unavailable from the EPA, the department shall request the required data directly from the unit's CAIR designated representative. If the representative does not provide data within 30 days of the department's request, the department shall estimate the unit's baseline energy output using best available data.

(1m) STATE BASELINE. (a) Prior to 2011, the department shall establish the state baseline by summing the unit baselines calculated according to sub. (1) for all CAIR NO<sub>x</sub> units listed in Table 1.

(b) In 2011 and annually thereafter, the department shall calculate an ozone season state baseline by summing the unit baselines calculated according to sub. (1) for all CAIR NO<sub>x</sub> units and all CAIR renewable units.

**Note:** The state baseline is updated starting in 2011 annually to incorporate new units that have 5 years of operating data and have established a baseline under s. NR 432.03(a) and (b). Once a new unit has established a baseline, it is eligible for allowances from the main allocation pool.

(2) ALLOWANCE ALLOCATION FOR UNITS WITH 5 OR MORE YEARS OF OPERATION DATA. (a) In 2007, and in 2011 and annually thereafter, the department shall allocate to all CAIR NO<sub>x</sub> units and CAIR renewable units for which a unit baseline has been calculated under sub. (1), a total amount of CAIR NO<sub>x</sub> ozone season allowances equal to 93% of the tons of NO<sub>x</sub> emissions in the trading budget for Wisconsin in 40 CFR 97.340.

(b) The department shall allocate CAIR NO<sub>x</sub> ozone season allowances to each unit in an amount determined by equation 11:

$$A_i = MAP \times \left( \frac{B_i}{B_s} \right)$$

Equation 11

where:

$A_i$  is the annual allocation of CAIR NO<sub>x</sub> ozone season allowances for unit  $i$  rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed 93% of the trading budget in 40 CFR 97.340

MAP is the main allocation pool of CAIR NO<sub>x</sub> ozone season allowances in tons which is the trading budget for Wisconsin in 40 CFR 97.340, minus the new unit set-aside established in sub. (3)

$B_i$  is the unit baseline established under sub. (1) for unit  $i$

$B_s$  is the state baseline as determined under sub. (1m)

(3) ALLOCATIONS FOR UNITS WITH LESS THAN 5 YEARS OF OPERATING DATA. In 2009 and annually thereafter, the department shall allocate CAIR NO<sub>x</sub> ozone season allowances to CAIR NO<sub>x</sub> units for which a request is received under par. (b) and that commenced operation on or after January 1, 2001 and for which a baseline energy output cannot be determined under sub. (1), in accordance with the following procedures:

(a) For 2009 and each year thereafter, the department shall establish a new unit set-aside consisting of all CAIR NO<sub>x</sub> ozone season allowances available for new units in that year. The new unit set-aside in each year shall be equal to 7% of the amount of tons of NO<sub>x</sub> emissions in the trading budget under 40 CFR 97.340 for Wisconsin.

(b) The CAIR designated representative of a CAIR NO<sub>x</sub> unit that commenced operation on or after January 1, 2001, may submit to the department a request to be allocated CAIR NO<sub>x</sub> ozone season allowances under this subsection, starting with 2009 or the first calendar year after the calendar year in which the CAIR NO<sub>x</sub> unit commences commercial operation, whichever is later, and until the first calendar year for which the unit is eligible for and is allocated CAIR NO<sub>x</sub> ozone season allowances under sub. (2). The CAIR NO<sub>x</sub> ozone season allocation request shall be submitted on or before May 1 of the calendar year for which the CAIR NO<sub>x</sub> ozone season allowances are requested and after the date on which the CAIR NO<sub>x</sub> unit commences commercial operation.

(c) In a CAIR NO<sub>x</sub> ozone season allocation request under par. (b), the CAIR designated representative may not request CAIR NO<sub>x</sub> ozone season allowances exceeding the CAIR NO<sub>x</sub> unit's total tons of NO<sub>x</sub> emissions during the calendar year immediately before the calendar year of the request.

(d) The department shall review each CAIR NO<sub>x</sub> ozone season allocation request submitted under par. (b) and allocate CAIR NO<sub>x</sub> ozone season allowances for each calendar year as follows:

1. The department shall establish the maximum amount of new unit set-aside CAIR NO<sub>x</sub> ozone season allowances a unit is eligible for based upon a request submitted under par. (b).
2. Before June 1 of each calendar year, the department shall determine the sum of all CAIR NO<sub>x</sub> ozone season allowances established under subd. 1. for all new units in the calendar year.
3. If the amount of CAIR NO<sub>x</sub> ozone season allowances in the new unit set-aside for the calendar year under par. (a) is greater than or equal to the sum determined under subd. 2., the department shall allocate the amount of CAIR NO<sub>x</sub> ozone season allowances determined under subd. 1. to each CAIR NO<sub>x</sub> unit for which an allocation request was submitted.

4. If the amount of the CAIR NO<sub>x</sub> ozone season allowances in the new unit set-aside for the calendar year under par. (a) is less than the sum determined under subd. 2., the department shall allocate to each CAIR

NO<sub>x</sub> unit for which the department established a maximum amount under subd. 1. greater than zero, an amount determined using equation 12:

$$N_i = R_i \times \left( \frac{NUSA}{\sum_{j=1}^k R_j} \right) \quad \text{Equation 12}$$

where:

N<sub>i</sub> is the annual allocation of CAIR NO<sub>x</sub> ozone season set-aside allowances for new unit i for the calendar year rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed 7% of the trading budget in 40 CFR 97.340

R<sub>i</sub> is the amount of CAIR NO<sub>x</sub> ozone season allowances the department determined unit i is eligible for under subd. 1.

NUSA is the new unit set-aside established under par. (a)

k is the number of units for which the department established an amount greater than 0 under subd. 1.

(e) The department shall notify each CAIR designated representative that submitted an allocation request under par. (b) of the amount of CAIR NO<sub>x</sub> ozone season allowances allocated for the calendar year to the CAIR NO<sub>x</sub> unit covered by the request.

(4) ALLOCATION OF REMAINING NEW UNIT SET-ASIDE ALLOWANCES. After completion of the procedures under sub. (3), any CAIR NO<sub>x</sub> ozone season allowances remaining in the new unit set-aside for the calendar year shall be allocated to the CAIR NO<sub>x</sub> units and CAIR renewable units that were allocated CAIR NO<sub>x</sub> ozone season allowances under sub. (2) for the calendar year in an amount determined using equation 13:

$$X_i = U \times \left( \frac{A_i}{MAP} \right) \quad \text{Equation 13}$$

where:

X<sub>i</sub> is the allocation of remaining CAIR NO<sub>x</sub> ozone season new unit set-aside ozone season allowances for unit i rounded to the nearest whole ton, adjusted by the department as needed to ensure that the sum of the allowances to all units does not exceed the amount of U

U is the amount of unallocated CAIR NO<sub>x</sub> ozone season new unit set-aside allowances in tons

A<sub>i</sub> is the annual allocation of CAIR NO<sub>x</sub> ozone season allowances for unit i calculated using equation 11

MAP is the main allocation pool of CAIR NO<sub>x</sub> ozone season allowances in tons which is the trading budget for Wisconsin in 40 CFR 97.340 minus the new unit set-aside established in sub. (3)

(5) CAIR NO<sub>x</sub> OZONE SEASON ALLOCATIONS FOR 2009 TO 2014. The CAIR NO<sub>x</sub> ozone season allocations for 2009 to 2014 for individual CAIR NO<sub>x</sub> units are listed in Table 2.

**Table 2**  
**CAIR NO<sub>x</sub> Ozone Season Allocations for 2009 to 2014 by CAIR NO<sub>x</sub> Unit**  
(in tons of CAIR NO<sub>x</sub> ozone season allowances)

Unit Location	Unit Number	2009	2010	2011	2012	2013	2014
Alma	4	94	94	94	94	94	94
Alma	5	129	129	129	129	129	129

Bayfront	1	33	33	33	33	33	33
Bayfront	2	31	31	31	31	31	31
Bayfront	5	47	47	47	47	47	47
Blackhawk	3	7	7	7	7	7	7
Blackhawk	4	7	7	7	7	7	7
Blount Generating Station	3	3	3	3	3	3	3
Blount Generating Station	5	4	4	4	4	4	4
Blount Generating Station	6	6	6	6	6	6	6
Blount Generating Station	7	31	31	31	31	31	31
Blount Generating Station	8	76	76	76	76	76	76
Blount Generating Station	9	91	91	91	91	91	91
Blount Generating Station	11	1	1	1	1	1	1
Columbia	1	1413	1413	1413	1413	1413	1413
Columbia	2	1391	1391	1391	1391	1391	1391
Concord	1	8	8	8	8	8	8
Concord	2	10	10	10	10	10	10
Concord	3	7	7	7	7	7	7
Concord	4	8	8	8	8	8	8
Custer Energy Center	1	0	0	0	0	0	0
De Pere	ALL	62	62	62	62	62	62
Edgewater	3	149	149	149	149	149	149
Edgewater	4	743	743	743	743	743	743
Edgewater	5	967	967	967	967	967	967
Fitchburg	1	2	2	2	2	2	2
Fitchburg	2	2	2	2	2	2	2
French Island	3	2	2	2	2	2	2
French Island	4	2	2	2	2	2	2
Genoa	1	760	760	760	760	760	760
Germantown	38	16	16	16	16	16	16
Germantown	30, 31	1	1	1	1	1	1
Germantown	32, 33	1	1	1	1	1	1
Germantown	34, 35	1	1	1	1	1	1
Germantown	36, 37	0	0	0	0	0	0
Madgett	1	828	828	828	828	828	828
Manitowoc	6	38	38	38	38	38	38
Manitowoc	7	38	38	38	38	38	38
Manitowoc	8	38	38	38	38	38	38
Mirant/ Neenah	1	62	62	62	62	62	62
Mirant/ Neenah	2	60	60	60	60	60	60
Nelson Dewey	1	235	235	235	235	235	235
Nelson Dewey	2	229	229	229	229	229	229
Paris	1	12	12	12	12	12	12
Paris	2	14	14	14	14	14	14
Paris	3	15	15	15	15	15	15
Paris	4	10	10	10	10	10	10
Pleasant Prairie	20	1549	1549	1549	1549	1549	1549

Pleasant Prairie	21	1600	1600	1600	1600	1600	1600
Port Washington	1	108	108	108	108	108	108
Port Washington	2	104	104	104	104	104	104
Port Washington	3	111	111	111	111	111	111
Port Washington	4	95	95	95	95	95	95
Pulliam	3	45	45	45	45	45	45
Pulliam	4	54	54	54	54	54	54
Pulliam	5	114	114	114	114	114	114
Pulliam	6	154	154	154	154	154	154
Pulliam	7	222	222	222	222	222	222
Pulliam	8	315	315	315	315	315	315
Rock River	1	52	52	52	52	52	52
Rock River	2	54	54	54	54	54	54
Rock River	3	0	0	0	0	0	0
Rock River	5	6	6	6	6	6	6
Rock River	6	8	8	8	8	8	8
Sheepskin	1	1	1	1	1	1	1
Sheepskin	2	0	0	0	0	0	0
South Fond du Lac	1	16	16	16	16	16	16
South Fond du Lac	2	14	14	14	14	14	14
South Fond du Lac	3	10	10	10	10	10	10
South Fond du Lac	4	7	7	7	7	7	7
South Oak Creek	25	550	550	550	550	550	550
South Oak Creek	26	515	515	515	515	515	515
South Oak Creek	27	689	689	689	689	689	689
South Oak Creek	28	739	739	739	739	739	739
Stoneman	B2	9	9	9	9	9	9
Stoneman	B1	8	8	8	8	8	8
Valley Boiler 1	21	84	84	84	84	84	84
Valley Boiler 2	22	84	84	84	84	84	84
Valley Boiler 3	23	84	84	84	84	84	84
Valley Boiler 4	24	84	84	84	84	84	84
West Marinette	34	20	20	20	20	20	20
West Marinette	31	5	5	5	5	5	5
West Marinette	32	3	3	3	3	3	3
West Marinette	33	33	33	33	33	33	33
Weston	1	137	137	137	137	137	137
Weston	2	234	234	234	234	234	234
Weston	3	852	852	852	852	852	852
Weston	32	21	21	21	21	21	21
Wheaton	1	5	5	5	5	5	5
Wheaton	2	5	5	5	5	5	5
Wheaton	3	6	6	6	6	6	6
Wheaton	4	4	4	4	4	4	4
Wheaton	5	2	2	2	2	2	2

Wheaton	6	2	2	2	2	2	2
Whitewater Cogen Facility	CTG1	155	155	155	155	155	155
Whitewater Cogen Facility	STG1	74	74	74	74	74	74

**NR 432.06 Timing requirements for allocations of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances.** (1) ALLOCATIONS FOR 2009 to 2014. By April 30, 2007 or within 30 days after the effective date of this chapter ...[revisor insert date], the department shall notify the administrator of the allocations of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances for 2009 to 2014 for the units listed in Tables 1 and 2.

(2) ALLOCATIONS FOR 2015 AND LATER YEARS FOR UNITS WITH 5 OR MORE YEARS OF OPERATING DATA. (a) By June 1, 2011 and June 1 of each year thereafter, the department shall determine the allocations of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances, in accordance with ss. NR 432.03(1) and (2) and 432.05(1) and (2), which shall apply to CAIR NO<sub>x</sub> units and CAIR renewable units in the 4th year after the determination.

**Note:** For example, in 2011, the department shall determine the allocations applicable in 2015 and in 2012, allocations for 2016.

(b) By July 31, 2011 and July 31 of each year thereafter, the department shall notify the administrator of each unit's allocation of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances under par. (a) for the fourth year after the year of the notification.

(3) ALLOCATIONS FOR UNITS WITH LESS THAN 5 YEARS OF OPERATING DATA. (a) By June 1, 2009 and June 1 of each year thereafter, the department shall determine the allocations of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances, in accordance with ss. NR 432.03(1), (3) and (4) and 432.05(1), (3) and (4), for the year of the applicable determination under this section.

(b) By July 31, 2009 and July 31 of each year thereafter, the department shall notify the administrator of each unit's allocation of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances under par. (a) for the year of the notification.

(4) PUBLIC COMMENTS. On or before June 15, 2009 and on or before June 15 of each year thereafter, the department shall make available to the public each determination of CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances under sub. (1), (2) or (3) and shall provide an opportunity for submission of objections to the determination within 20 days. Objections shall be limited to addressing whether the determination is in accordance with ss. NR 432.03 and 432.05. Based on any objections, the department may adjust the determination to the extent necessary to ensure that it is in accordance with ss. NR 432.03 and 432.05.

**NR 432.07 CAIR renewable units.** (1) CAIR RENEWABLE REPRESENTATIVE. (a) The owner and operator of each CAIR renewable unit shall select one and only one CAIR renewable representative who shall represent the CAIR renewable unit with regards to all matters concerning the unit under the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program.

(b) The CAIR renewable representative of the CAIR renewable unit shall be selected by an agreement binding on the owners and operators of the unit and shall act in accordance with the certifying statements found in par. (c).

(c) The CAIR renewable representative for the CAIR renewable unit shall submit to the department a certificate of representation. The certificate of representation shall include all of the following:

1. Identification of CAIR renewable unit for which the certificate of representation is being submitted, including identification and nameplate capacity of each generator served by the unit.

2. The name, address, e-mail address, telephone number and facsimile transmission number of the CAIR renewable representative.

3. A list of the owners and operators of the CAIR renewable unit.

4. The following certificate statements by the CAIR renewable representative:

a. "I certify that I was selected as the CAIR renewable representative, by an agreement binding on the owners and operators of the CAIR renewable unit."

b. "I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO<sub>x</sub> annual trading program and the CAIR NO<sub>x</sub> ozone season trading program on behalf of the owners and operators of the CAIR renewable unit and that each owner and operator shall be fully bound by my representations, actions, inactions or submissions."

c. "I certify that the owners and operators of the CAIR renewable unit shall be bound by any order issued to me by the administrator, the department or a court regarding the CAIR renewable unit."

d. Where there are multiple holders of legal or equitable title to, or a leasehold interest in, a CAIR renewable unit, or where a utility or industrial customer purchases power from a CAIR renewable unit under a life-of-the-unit, firm power contractual arrangement, "I certify that: I have given a written notice of my selection as the CAIR renewable representative, and of the agreement by which I was selected to each owner and operator of the CAIR renewable unit; and any CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances and the proceeds of transactions involving CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances by

contract, the CAIR NO<sub>x</sub> allowances, CAIR NO<sub>x</sub> ozone season allowances and the proceeds of transactions involving CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances will be deemed to be held or distributed in accordance with the contract."

5. The signature of the CAIR renewable representative and the date signed.

(d) Upon receipt by the department of a complete certificate of representation under par. (c), the CAIR renewable representative of the CAIR renewable unit shall represent and by his or her representations, actions, inactions or submissions, legally bind each owner and operator of the CAIR renewable unit in all matters pertaining to the CAIR NO<sub>x</sub> trading program and the CAIR NO<sub>x</sub> ozone season trading program, notwithstanding any agreement between the CAIR renewable representative and owners and operators of the CAIR renewable unit.

(2) ESTABLISHMENT OF GENERAL ACCOUNT. The CAIR renewable representative shall establish a general account, for CAIR NO<sub>x</sub> allowances pursuant to 40 CFR 97.151(b) and for CAIR NO<sub>x</sub> ozone season allowances pursuant to 40 CFR 97.351(b) prior to submitting a request under s. NR 432.03 or 432.05 for CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances.

(3) AGGREGATION OF RENEWABLE UNITS. If renewable units are aggregated pursuant to s. 299.83, Stats., the aggregated renewable units shall have only one CAIR renewable representative.

(4) REQUESTS FOR CAIR NO<sub>x</sub> ALLOWANCES AND CAIR NO<sub>x</sub> OZONE SEASON ALLOWANCES. On or before May 1, 2011, or on or before May 1 of each year for which CAIR NO<sub>x</sub> allowances and CAIR NO<sub>x</sub> ozone season allowances are being requested, the CAIR renewable representative shall submit a request to the department for the allowances. The request shall contain specific unit information, including the monthly gross electrical output data to be used to calculate the unit's baseline energy output in s. NR 432.03 and 432.05.

(5) MULTIPLE SUBMISSIONS. The department may not act as a mediator in situations where more than one entity submits a request for CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances based upon its ownership or operation interest in a CAIR renewable unit. If more than one entity submits an application for allowances for the same

CAIR renewable unit for the same control period and the competing applications are not withdrawn, the department shall reject all the applications.

**NR 432.08 Superior environmental performance.** (1) The owner or operator of a CAIR NO<sub>x</sub> unit or a CAIR renewable unit may voluntarily perform activities that constitute superior environmental performance as defined in s. 299.83(1)(g), Stats., for participation in Tier II of the environmental results program under ss. 299.80 and 299.83, Stats. These voluntary activities may include any of the following:

(a) Agreeing never to use a specified amount of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances.

(b) Agreeing not to use a specified amount of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances prior to a specified future year.

(c) Agreeing to reduce emissions of other pollutants such as sulfur dioxides, mercury, carbon dioxide or heavy metals beyond levels required by federal and state laws.

(2) The level of environmental benefit provided by an entity that agrees to never use or to defer the use of a specified amount of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances shall be based on the number of CAIR NO<sub>x</sub> allowances or CAIR NO<sub>x</sub> ozone season allowances involved and the number of years in which the allowances may not be used.

(3) The environmental benefit provided by the reduction of emissions of pollutants other than NO<sub>x</sub> shall be based on the types of pollutants reduced and the amount of reduction beyond federal and state requirements.

(4) In the context of a participation contract negotiated under the authority of s. 299.83(6), Stats., or cooperative agreements negotiated under the authority of s. 299.80, Stats., reductions in recordkeeping, reporting or other administrative requirements related to state environmental regulations may be appropriate incentives for the activities described in sub. (1). The amount of flexibility provided shall be proportional to the environmental benefits provided by the participant.

SECTION 2. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 3. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on \_\_\_\_\_.

Dated at Madison, Wisconsin \_\_\_\_\_.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By \_\_\_\_\_  
Scott Hassett, Secretary

(SEAL)