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**ALTERNATIVE RULE OPTIONS**

**New Source Review, particulate matter and greenhouse gas permitting requirements and other permitting rule updates**

In this rulemaking DEQ is proposing to incorporate federal standards for PM2.5 and greenhouse gases into Oregon’s New Source Review and Prevention of Significant Deterioration Program rules. Since Oregon’s rules for the NSR/PSD program differ from the default federal program, Oregon is looking at different ways to implement the program while maintaining stringency equal to the federal program. The main difference between the programs is the process for determining when NSR/PSD is triggered.

DEQ is proposing to trigger NSR/PSD in the same manner in which it is triggered for other pollutants in Oregon. To do this, DEQ proposes to establish a source's netting basis for greenhouse gas and PM2.5 proportional to its current netting basis for other pollutants. The netting basis is the emission level in a defined baseline year, adjusted by any required decreases and approved increases of emissions. In Oregon’s program, the netting basis is the level from which all other emissions increases and decreases are tracked in determining whether a source triggers NSR/PSD and other regulatory requirements to protect air quality. By setting the netting basis for PM2.5 and greenhouse gas proportional to the netting basis for the other pollutants, the new pollutants would be integrated into the NSR/PSD program without changing the regulatory effect of the program on past increases or decreases of the other pollutants.

The approaches proposed to establish the netting basis for PM2.5 and greenhouse gas are:

Fine particulates: PM2.5

In the proposed rule, a source would need to establish a ratio between its PM2.5 and PM10 emissions. Once established, the ratio would be applied to a source’s current PM10 netting basis to calculate a source’s PM2.5 netting basis. However, sources would also have the option of defaulting to the use of their PM10 or particulate matter emissions to establish their netting basis if they did not want to differentiate PM2.5 emission and establish a ratio. This would allow a source to make an assumption that all of their particulate matter or PM10 emissions are PM2.5.  In this case, whenever there is an increase in particulate emissions, the source would be required to assume all of those emissions are also PM2.5 and subject to the lower PM2.5 trigger level for NSR/PSD. This approach to establishing a baseline and netting basis for PM2.5 is considered to be Option 1.

Greenhouse gases

For sources with greenhouse gas emissions resulting from fuel combustion, the production rate used to establish the netting basis would also be used to establish greenhouse gas emissions. For sources whose greenhouse gas emissions do not result from fuel combustion, a different approach would be used. If these non-combustion greenhouse gas emissions are related to the production parameters used to establish the source’s netting basis, the greenhouse gas baseline emission rate would be calculated using the relationship between greenhouse gas emissions and the same production parameters. If a source’s production parameters do not correspond to their greenhouse gas emissions or if a source did not have a netting basis, baseline emissions would then be set at actual emissions during their highest emission year between 2000 and 2010. This approach to establishing a baseline and netting basis for greenhouse gases is considered to be Option 1.

DEQ is also considering and would like comment on other options described below.  
  
Option 2

Set the baseline emission level according to emissions in the year 1977 or 1978, or a prior time period if it is more representative of normal operation, and calculate the netting basis by adjusting for any required decreases or approved increases since that time. DEQ is considering this period for both PM2.5 and greenhouse gases as it is the current procedure for other criteria pollutants.

Sources that were permitted during that time would use the production parameters in their permits to set baseline emissions for PM2.5 and greenhouse gases. For sources that did not exist at that time, the baseline levels for PM2.5 and greenhouse gases would be set at their potential emissions.   
  
Option 3

Set the baseline emission level according to emissions in the year 2006 or 2007, or a prior time period if it is more representative of normal operation, and calculate the netting basis by adjusting for any required decreases or approved increases since that time. DEQ is considering this period for both PM2.5 and greenhouse gases because it closer to the time when these pollutants became regulated and because better data may be available. This is the procedure approved in the temporary PM2.5 rules adopted in August 2010.

Option 4  
Set the process for determining if a source goes through PSD the same way it is done under EPA’s default program. EPA’s PSD program typically relies on a rolling 10-year look back period for establishing baseline emission levels used to determine if a source has emission increases above a significant emission rate that would trigger PSD. DEQ is contemplating this option for greenhouse gases only at this time; DEQ would need to reevaluate its entire PSD program to use this option for PM2.5, which could not be done in the timeframe of this rulemaking.

Sources would have to examine their actual emissions over the past ten years. They would typically choose the highest two-year period and average the actual emissions over a 12-month period. Generally speaking, once they have determined their highest actual emissions over that 10-year period, they would compare those actual emissions to their actual emissions for the proposed project. If the increase in emissions for the project is over a threshold, preconstruction review would be required. Under this option, emission control technology requirements would apply only to emission increases from the new physical changes, as opposed to the other three options under which retrofit emission control technology requirements would apply to all physical changes that contributed to emission increases since the baseline year.

**Example rule language for Option 4:**

**340-224-0005**

**Federal Regulations Adopted by Reference**

(1) **40 CFR Part** **52.21** (June 3, 2010) except paragraph (a)(1) is by this reference adopted and incorporated herein, for purposes of implementing the Prevention of Significant Deterioration program for greenhouse gases only. The term "permitting authority" means the Oregon Department of Environmental Quality and the term "Administrator" shall mean the Administrator of the United States Environmental Protection Agency.

| **OPTION** | **EXPLANATION** | **CONSIDERATIONS** |
| --- | --- | --- |
| 1. Netting Basis Proportional to netting basis for other pollutants (for process GHG not related to production, use actual emissions in the highest year during 2000-2010) | For PM2.5:  Gives sources PM2.5 fraction of PM10 netting basis in effect on 03/01/11 or can default to PM10 or PM | * Doesn’t make projects that have gone through PSD for PM10 go through it again PM2.5 * Maintains status quo for sources * Consistent with PM10 Surrogate Policy * Simplifies permitting * Emission control technology requirements would apply to all emission increases from physical changes or changes in the method of operation since the 1977/78 baseline period or last NSR/PSD approval * Fraction of PM10 does not necessarily represent actual contribution to ambient air quality during any specified period * If the PM2.5 fraction of the PM10 netting basis is used, the baseline may be higher than actual emissions in recent years * If all PM is assumed to be PM2.5 it could inflate emissions estimates for air shed planning and make competing source analysis more challenging * Netting basis (required reductions) not tied to emission units |
| For GHG:  For combustion sources, based on the production rate used to establish the current netting basis in effect on 03/01/11  For non-combustion sources, if GHG emissions are related to the production parameters used to establish the netting basis, the GHG baseline emission rate must be calculated using the relationship between GHG emissions and the same production parameters |

| **OPTION** | **EXPLANATION** | **CONSIDERATIONS** |
| --- | --- | --- |
| 1. 1977/78 or a prior time period | Existing baseline year for other pollutants | * Easier to track netting basis for all pollutants based on the same year * Okay for sources that have not made changes to their since 77/78 but would be difficult to use this period if changes have been made, such as shutting down or adding equipment. * Less confusing rules * Use existing baseline production rates in permits * Emission control technology requirements would apply to all emission increases from physical changes or changes in the method of operation since the 1977/78 baseline period or last NSR/PSD approval * Difficult to find old records for process emissions (non-combustion GHGs) * Some emissions units have shut down/changed * Farther away from the year that the National Ambient Air Quality Standard was adopted and baseline concentration year (the year that DEQ starts counting emissions increases and decreases toward the maximum extent to which the ambient concentration of regulated pollutants from new or modified industrial facilities may be allowed to increase over the legally defined baseline concentration in an area with clean air). * Many sources didn’t exist then, so they would get zero baseline and would be subject to PSD for any increase over 1 ton above the major source level * Sources that went through NSR/PSD after 77/78 would get potential emissions as baseline |
| 1. 2006 or 2007 or a prior time period | Baseline year in PM2.5 temporary rule | * Matches PM2.5 baseline concentration year * More recent so it matches current plant configuration * Predates significant recession and potential non-representative emission levels for many sources but not all * Emission control technology requirements would apply to all emission increases from physical changes or changes in the method of operation since the 2006/2007 baseline period or last NSR/PSD approval * Different from other pollutants * Different from the surrogate policy * Sources with actual emissions between 10-14 tpy will have to get standard permits with baseline for PM2.5 and double the cost of the permit |
| 1. Federal Netting Method for GHG | 10 year look back for actual emissions | * Consistency with federal default program * Levels the playing field across the country, but not for all pollutants * In some cases, sources would be subject to PSD that wouldn’t be subject to PSD under Oregon rules. In other cases, sources would avoid PSD that would be subject to PSD under Oregon rules * Different program for different pollutants, could be confusing and result in implementation problems * Does not address all changes before the modification and would not require retrofit emission control technology for previous projects * Allows for small emissions increases not related to proposed project that could cumulate over time (creep) * Does not provide incentive for sources to do early voluntary reductions because reductions more than 5-10 years old cannot be used in netting * Significant training will be necessary for permitting staff |

Below are examples of changes made at a facility that show where the federal PSD rules are more stringent than DEQ rules and vice versa. All numbers are for greenhouse gas emissions in tons per year.

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| **EXAMPLE 1 (FEDERAL PSD MORE STRINGENT)** | | | | | | | | | |
| **YEAR** | **INCREASE DUE TO PHYSICAL CHANGE** | **NETTING BASIS** | **PSEL** | **FEDERAL ACTUAL EMISSIONS** | **TRIGGER OR PSD?** | **BACT** | **TRIGGER FEDERAL PSD?** | **BACT** | **EXPLANATION** |
| 2010 |  | 200,000 | 200,000 | 100,000 |  |  |  |  | grandfathered |
| 2015 | 90,000 | 200,000 | 200,000 | 190,000 | NO | NO | YES | YES for most recent change | PSEL < netting basis so not subject to PSD under DEQ rules  Actual increase > 75,000 so change is subject to PSD under federal rules |

| **EXAMPLE 2 (DEQ PSD MORE STRINGENT)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **YEAR** | **INCREASE DUE TO PHYSICAL CHANGE** | **NETTING BASIS** | **PSEL** | **FEDERAL ACTUAL EMISSIONS** | **TRIGGER OR PSD?** | **BACT** | **TRIGGER FEDERAL PSD?** | **BACT** | **EXPLANATION** |
| 2010 |  | 100,000 | 100,000 | 100,000 |  |  |  |  | grandfathered |
| 2011 | 60,000 | 100,000 | 160,000 | 160,000 | NO | NO | NO | NO | PSEL < to netting basis + SER so change is not subject to DEQ PSD  Actual increase is less than SER so change is not subject to federal PSD |
| 2022 | 60,000 | 220,000 | 220,000 | 220,000 | YES | YES for the 2011 and 2022 changes | NO | NO | PSEL greater than previous netting basis by more than SER so change is subject to DEQ PSD, reset netting basis, BACT applies to 2011 and 2022 changes.  Actual emission increase in last 10 years less than SER so not subject to federal PSD |
| 2033 | 80,000 | 300,000 | 300,000 | 300,000 | YES | YES for most recent change | YES | YES for most recent change | Change triggers PSD under both programs, BACT applies to all changes under DEQ PSD. BACT only applies to most recent change in 2033 under federal PSD. |