

PM_{2.5}/GHG Training Workshops

July 11, Monday 10-3
General Services Building, E. Mt. Mazama Rm, 1225 Ferry St SE,
Salem


July 14, Thursday, 11:30 – 3:30
County Commissioner's Office, Community Rm, **305 Main St,**
Klamath Falls

July 19, Tuesday 10-3
State Office Building, 700 SE Emigrant Ave, **Pendleton**

July 21, Thursday, 10:30-3:30
Central Library, US Bank Rm, 801 S.W. 10th Ave; **Portland**

July 26, Tuesday, 10-3
Community Justice Center, 2nd Floor Conference Rm , 1101 W.
Main, Suite 101, **Medford**

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Items to be posted on DEQ's website on August 1, 2011

- Updated guidance documents and application forms
- Training workshop materials

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Topics

- Background
- PM_{2.5} PSEL and Netting Basis
- GHG Baseline and PSEL

LUNCH/BREAK

- Biomass Deferral
- Wood Fuel/Solid Waste Definition
- Existing Area Source Boiler MACT Requirements

BREAK

- Reset/Embargo

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3



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Background

- Rule adoption – April 2011
- PM_{2.5} NAAQS
- GHG regulated pollutant
- Program improvements

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4



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Acronyms

- CO₂e – carbon dioxide equivalent
- GHG – greenhouse gas
- NAAQS – national ambient air quality standard
- NSR – New Source Review
- PM_{2.5} – particulate matter \leq 2.5 microns in diameter
- PM₁₀ – particulate matter \leq 10 microns in diameter
- PSD – Prevention of Significant Deterioration
- PSEL – Plant Site Emission Limit
- PTE – potential to emit
- NB – netting basis
- UE – unassigned emissions

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5



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Divisions that changed:

- 200 - Definitions
- 202 – Ambient Air Quality Standards and PSD Increments
- 216 – ACDP Table 1
- 224 – Major New Source Review
- 225 – Air Quality Analysis Requirements

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6



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Key Definitions (separate handout)

- Actual emissions
- Baseline emission rate
- Baseline period
- Federal major source
- Greenhouse gases
- Major modification
- Major source
- Netting basis

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7




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New Terminology

- PM_{2.5} fraction - PM_{2.5} fraction of PM₁₀
- 5 ton “true-up” – for some sources that increased PM₁₀ emissions since baseline
- Reset/Embargo – NSR/PSD or actual emissions = PTE

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PM_{2.5} PSEL and Netting Basis

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PM_{2.5}

- **Baseline year = 1977/78**
- **Baseline emission rate = none**
- **Significant Emission Rate = 10 tpy**
- **Generic PSEL = 9 tpy**
- **De minimis = 1 tpy**

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10



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PM_{2.5} permitting concepts

- PM_{2.5} has been indirectly regulated through PM₁₀ and total particulate matter for years.
- DEQ wanted to add PM_{2.5} to the existing permitting program as seamlessly as possible.
- PM_{2.5} PSEL and Netting Basis are tied to PM₁₀ PSEL and Netting Basis.

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- **PM_{2.5} PSEL =**

PM_{2.5} fraction of PM₁₀ PSEL

- **Netting basis =**

PM_{2.5} fraction of PM₁₀ NB, or
Up to 5 tons for small sources

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12



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Definition of PM_{2.5} fraction

“PM_{2.5} fraction” means the *fraction* of PM_{2.5} to PM₁₀ for each emissions unit that is included in the netting basis and PSEL. →

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PM_{2.5} fraction – what it means

- “...PM_{2.5} PSEL ...will be set equal to the PM_{2.5} fraction of the PM₁₀ PSEL”

$$(\text{amt. of PM}_{2.5}) = f * (\text{amt. of PM}_{10})$$

- This applies to each EU at a source
- f may be (probably is) different for each EU

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Sources of PM_{2.5} Fractions:

- Source test data (EPA Methods 201A and 202)
- AP-42 (specific chapters + Appendix B-1, 10.5)
- Trade association information

Concerns:

- Literature may have factors that apply only to filterable PM_{2.5}
- Condensables should be the same for PM₁₀ and PM_{2.5}

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15



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Examples of PM_{2.5} fraction “f”

Emission Unit	Fuel	Controls	PM _{2.5} fraction “f”	Source of “f”
Boiler	Natural gas LPG	None	1	AP-42
Boiler - Industrial	#2 oil	None	0.67	AP-42
Boiler - Commercial	#6 oil	None	0.44	AP-42
Boiler - Commercial	#2 oil	None	0.89	AP-42
Boiler	Wood	None	0.84	AP-42
Boiler	Wood	Multiclones	0.61	AP-42
Boiler	Wood	Wet scrubber	1	AP-42
Boiler	Wood	ESP	0.91	AP-42
Boiler	Wood	Fabric filter	0.90	AP-42

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16



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Example 1 - calculating PM_{2.5} PSEL from PM₁₀ PSEL

- Given the following information:

EU	PM10		
EU1	50		
EU2	80		
EU3	30		
Totals	160		

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17



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Example 1 (continued)

- Find PM_{2.5} fraction for each EU

EU	PM ₁₀	Fraction, f	
EU1	50	0.9	
EU2	80	0.7	
EU3	30	0.2	
Totals	160	--	

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18



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Example 1, end

- Calculate $PM_{2.5} = f * PM_{10}$

EU	PM ₁₀	f	PM _{2.5}
EU1	50	0.9	45
EU2	80	0.7	56
EU3	30	0.2	6
Totals	160	--	107

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19



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Example 2 – calculating PM_{2.5} Netting Basis

- Information needed:
 - PM₁₀ PSEL as of 05/01/11
 - PM₁₀ Netting Basis and unassigned emissions as of 05/01/11
 - PM_{2.5} fractions for all emissions units in the PM₁₀ PSEL as of 05/01/11

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20



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Example 2 (continued)

- Start with PSEL
- $PM_{2.5} \text{ PSEL} = f * PM_{10} \text{ PSEL}$

EU	PM ₁₀ PSEL	f	PM _{2.5} PSEL
EU1	33	0.7	23.1
EU2	56	0.5	28
EU3	22	0.9	19.8
EU4	8	0.8	6.4
totals	119		77

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21



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Example 2 (continued)

- Calculate ratio of PM_{2.5} PSEL to PM₁₀ PSEL = R
 $R = 77/119 = 0.647$

EU	PM ₁₀ PSEL	f	PM _{2.5} PSEL
EU1	33	0.7	23.1
EU2	56	0.5	28
EU3	22	0.9	19.8
EU4	8	0.8	6.4
totals	119		77

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22



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Example 2 (continued)

- PM₁₀ Netting Basis = 134 tpy
- PM₁₀ Unassigned emissions = 15 tpy
- PM_{2.5} Unassigned emissions =
 (PM₁₀ Unassigned emissions) * R =
 15 * 0.647 = 9.7 = 10 tpy

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23



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Example 2 (continued)

$$\begin{aligned} \text{PM}_{2.5} \text{ Netting Basis} &= \text{PM}_{10} \text{ Netting basis} * R \\ &= 134 * 0.647 = 87 \text{ tpy} \end{aligned}$$

	PM ₁₀	PM _{2.5}
PSEL	119	77
Netting Basis	134	87
Unassigned Emissions	15	10

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24



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Example 3 – true-up

- Small source with generic PM₁₀ PSEL and no netting basis
- Assume maximum PM₁₀ emissions = 13 tpy

Emissions Unit	PM ₁₀ emissions	f	PM _{2.5} emissions
EU1	13	0.9	12

- Maximum PM_{2.5} emissions > generic PM_{2.5} PSEL
- Source may need PM_{2.5} netting basis

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25



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Example 3 – true-up (continued)

- Option 1 – hold PM_{2.5} emissions to ≤ 9 tpy
- Option 2 – Set PSEL = 12 and establish PM_{2.5} netting basis
 - PM_{2.5} netting basis = PM_{2.5} emissions – 9 tpy
12 – 9 = 3 tpy
 - Source must have standard ACDP (not simple ACDP)

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26



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Example 4 –true-up not needed

- Small source with generic PM₁₀ PSEL and no netting basis
- Assume maximum PM₁₀ emissions = 13 tpy

Emissions Unit	PM ₁₀ emissions	f	PM _{2.5} emissions
EU1	13	0.6	8

- Maximum PM_{2.5} emissions < generic PM_{2.5} PSEL
- Source does not need PM_{2.5} netting basis

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27



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Summary

$$PM_{2.5} \text{ PSEL} = f * PM_{10} \text{ PSEL}$$


$$PM_{2.5} \text{ NB} = PM_{10} \text{ NB} * R, \text{ or if no } PM_{10} \text{ NB:}$$

use PM_{2.5} true-up = PM_{2.5} PSEL – 9 tpy
(if necessary, applies in limited cases)

$$PM_{2.5} \text{ UE} = PM_{10} \text{ UE} * R$$

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28




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Greenhouse Gas Baseline and PSEL

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Six Gases Are *Regulated* Greenhouse Gases

- The GHGs are:
 - carbon dioxide -CO₂
 - methane - CH₄
 - nitrous oxide - N₂O
 - hydrofluorocarbons - HFC
 - perfluorocarbons - PFC
 - sulfur hexafluoride - SF₆

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30



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Carbon Dioxide Equivalent

- Each GHG is **equivalent to** some amount of CO₂ – called the **Carbon dioxide equivalent**, or **CO₂e**
- CO₂e is calculated using a weighting factor called the Global Warming Potential (**GWP**)
- To get the total “effective” amount of GHG, we take the individual GWPs into account when we add them up

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31



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Global Warming Potential

GWPs are in **Subpart A** of EPA’s GHG reporting rules, **40 CFR Part 98** :

For CO₂, GWP = 1

For CH₄, GWP = 21

For N₂O, GWP = 310

For SF₆, GWP = 23,900

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32



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Tons And Tonnes

- GHG reporting is in metric tons (aka tonnes, metric tonnes, mt)
- Permitting is in tons (the good old 2,000 pounds)
- 1 metric ton = 1,000 kg = 1.1023 ton
- GHG reporting threshold is 2,500 metric tons
- GHG deminimis level is 2,756 tons

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33



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Calculating CO₂e

- CO₂e = *actual mass* of GHG x GWP
- Example: CO₂e of 80 tons of HFC-134a
- GWP = 1,300
- 80 tons HFC-134a x 1,300 =
104,000 tons CO₂e
- GHGs have **three** measurements:
for permitting: actual mass (80 tons)
for permitting: CO₂e (104,000 tons)
for reporting: metric CO₂e (94,350 tonnes)

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34



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GHG Major Source for Title V

- 100 tons/year mass **AND**
- 100,000 tons/year CO₂e (2 part test)

GHG Federal Major Source for PSD

- 100 or 250 tons/year mass **AND**
- 100,000 tons/year CO₂e (2 part test)

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GHG Significant Emission Rate

- 0 tons/year mass **AND**
- 75,000 tons/year CO₂e

GHG De Minimis Emission Level

2,756 tons/year CO₂e

GHG Generic PSEL

74,000 tons/year CO₂e

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36



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Rounding-off GHG PSELS

- Round off to the nearest 1 ton if close to 2,756 tons
- Round off to the nearest 10 tons if over 2,756 but less than 10,000 tons
- Round off to the nearest 100 if total is 10,000 tons or more
 - 9,989 rounds off to 9,990
 - 10,491 rounds off to 10,500
 - 74,867 rounds off to 74,900
 - 74,951 rounds off to 75,000

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Emission Factors

- The **majority** of sources will emit only CO₂, CH₄ and N₂O (combustion)
- Combustion emission factors are in EPA's GHG *reporting rules*,
[40 CFR Part 98 Subpart C](#)
- Emission factor units are kg/mmBtu
- Fuel heat content factors are with the emission factors in
[40 CFR Part 98 Subpart C](#)

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Calculating Emissions

- The emission calculation in general is:
- (annual fuel usage, **mmBtu/yr**) x
 (emission factor, kg/mmBtu) x
 (conversion factor, kg to tonnes) x
 (conversion factor, tonnes to tons)
 = (emission rate, tons/yr)
- **Note that fuel usage must be in mmBtu/yr**
- **Actual mass**, not CO₂e



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39



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Example 1 – *simple sources/Part 98 tier 1*

- Source has maximum fuel usage of 973 mmscf of natural gas per year
- Heat content = **1.028x10⁻³ mmBtu/scf (default)**
- CO₂ EF = 53.02 kg CO₂/mmBtu
- CH₄ EF = 1.0x10⁻³ kg CH₄/mmBtu
- N₂O EF = 1.0x10⁻⁴ kg N₂O/mmBtu
- Calculate source's PTE for GHG

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Example 1 (continued)

- First convert mmscf/yr to mmBtu/yr
- 973 mmscf/yr = 973x10⁶ scf/yr
- 973x10⁶ scf/yr x 1.028x10⁻³ mmBtu/scf = 1.0x10⁶ mmBtu/yr

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41



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For CO₂:

1.0x10 ⁶ mmBtu	53.02 kg CO ₂	1 tonne	1.1023 ton
yr	mmBtu	1000 kg	tonne
		58,444 ton CO ₂	
		= yr	

- convert to CO₂e using **GWP**
- 58,444 ton CO₂/yr x **1** = 58,444 tpy CO₂e

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42



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For CH₄:


1.0x10⁶ mmBtu	1.0x10⁻³ kg CH₄	1 tonne	1.1023 ton
yr	mmBtu	1000 kg	tonne

1.1 ton CH₄

yr

- convert to CO₂e using **GWP**
- 1.1 ton CH₄/yr x **21** = 23.1 tpy CO₂e

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43



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For N₂O:

1.0x10⁶ mmBtu	1.0x10⁻⁴ kg N₂O	1 tonne	1.1023 ton
yr	mmBtu	1000 kg	tonne

0.11 ton N₂O

yr

- convert to CO₂e using **GWP**
- 0.11 ton N₂O/yr x **310** = 34.1 tpy CO₂e

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Example 1 (continued)

- Total GHG emissions =

CO ₂ :	58,444	tpy CO ₂ e
CH ₄ :	23.1	tpy CO ₂ e
N ₂ O:	34.1	tpy CO ₂ e
	<u>58,501</u>	tpy CO ₂ e
- Rounds to 58,500 tpy CO₂e
- This source gets the generic GHG PSEL of 74,000 tpy CO₂e

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45



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Example 2

- Source has max fuel usage of 1,946 mmscf of natural gas per year (2x example 1)
- Total GHG emissions =

CO ₂ :	116,888	tpy CO ₂ e
CH ₄ :	46.2	tpy CO ₂ e
N ₂ O:	68.2	tpy CO ₂ e
	<u>117,002</u>	tpy CO ₂ e
- Rounds to 117,000 tpy CO₂e
- This source gets a source-specific GHG PSEL of 117,000 tpy CO₂e

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46



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Wood Fuel And Steam Production

- Many sources that burn wood have no way to measure the amount of wood they burn
- Instead, they track steam production
- EPA's GHG rules include calculations that use steam production instead of fuel amount
- **40 CFR Part 98, Subpart C, equations C-2c and C-9b →**

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Quick side note:

Why talk about wood fuel when EPA has deferred biomass?

Biomass Deferral only defers CO₂ from biomass, not CH₄ or N₂O

Discussion of deferral later

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48



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Wood Fuel And Steam Production

- The steam calculations require annual steam production in pounds and “B”
- B = ratio of boiler’s maximum rated heat input capacity to its design rated steam output capacity (mmBtu/lb steam)
- Sources that have been reporting GHG emissions using these calculations should know what B is

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49



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GHG Baseline Period

- GHGs have a unique ***baseline period***: any 12-consecutive month period during the years 2000 through 2010
- Sources that want/need GHG baseline must specify the 12 month period
- ***NOTE*** that the GHG ***baseline period*** is the ***12 month period***, not 2000-2010

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50



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GHG Netting Basis and PSEL

- Baseline emission rate establishes the netting basis but it does not establish the PSEL
- PSEL may be based on capacity provided there have not been any physical changes since the baseline period

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51



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GHG Baseline Emission Rate

- GHG **baseline emission rate** = *actual GHG emissions* during the baseline period
- Source would normally just pick their highest year of GHG emissions between 2000 and 2010
- *However*, baseline year should include all currently permitted emissions units
- Baseline year may not be the highest actual CO₂e emissions year

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52



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Example: Company Fuel Use Data

• 2000	610 mm ft ³ NG
• 2001	559
• 2002	642
• 2003	553
• 2004	526
• 2005	510
• 2006	454
• 2007	462
• 2008	457
• 2009	463
• 2010	522

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53



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Question: What if source installed new GHG emitting equipment since highest GHG emission year and the equipment hasn't been operating at capacity due to the economy?

Answer: Select a baseline year that includes the new equipment

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Example – with two possible outcomes

- 2000 GHG emissions = 47,500 tons
- New fuel burning equipment installed 2006-2008
- 2009 GHG emissions = 16,126 tons

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Outcome 1 - baseline year 2000

Current PTE (PSEL)	200,000 tons
Year 2000 baseline	<u>47,500 tons</u>
Increase over NB	152,500 tons

Increase over NB > SER (75,000) due to physical change (units installed in 2006-2008) so retroactive PSD is triggered

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56



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Outcome 2 – baseline year 2009

Current PTE (PSEL)	200,000 tons
Year 2009 baseline	<u>16,000 tons</u>
Increase over NB	184,000 tons

- **Increase over NB > SER (75,000) but not due to physical change because baseline period is after the equipment was installed**
- **Increase is due to utilizing existing capacity so PSD is not triggered**

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57



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Title V applicability

- CAA defines major source for Title V (in part) as one that has PTE \geq 100 tpy
- EPA couldn't ignore this, but if GHGs were subject to this alone, every boiler in the country would be a Title V source
- EPA added a second criterion, creating the so-called ***two-part test***

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58



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The two-part test for Title V

- Source emits or has PTE \geq 100 tpy of GHG on **mass basis**; and
- Source emits or has PTE \geq 100,000 tpy of GHG on a **CO₂e basis**
- Tons, not tonnes
- Example follows →

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59




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Title V applicability example

- Criteria pollutants all < 100 tpy
- HAPs < 10/25 tpy
- 120,000 tpy CO₂ from natural gas boiler
- (CH₄ and N₂O ignored, they don't affect answer)
- Subject to Title V? YES
- Source must submit Title V application by July 1, 2012 or become synthetic minor for GHG

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60




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Resources

- DEQ GHG calculator
(<http://www.deq.state.or.us/aq/permit/tv/tv.htm>)
- 40 CFR Part 98 MANDATORY GREENHOUSE GAS REPORTING
- Colin McConnaha
DEQ GHG Audit Specialist
(503) 229-5094
McConnaha.Colin@deq.state.or.us

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Biomass Deferral

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Definition of Greenhouse Gases

- (b) The definition of greenhouse gases in subsection (a) of this section does not include, for purposes of division 216, 218, and 224, **carbon dioxide** emissions from the combustion or decomposition of biomass *except to the extent required by federal law.*
- DEQ's deferral tied to EPA's
- EPA signed final rule on 07/01/11

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63



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What is deferred?

- CO₂ emissions from bioenergy and other biogenic sources ... that are generated during the combustion or decomposition of biologically-based material.
- Note that CH₄ and N₂O from biomass combustion are not deferred

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64



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Deferral includes but is not limited to:

- Landfill gas and wastewater treatment gas
- Combustion of landfill gas or wastewater treatment gas
- Ethanol production
- Combustion of biological fraction of municipal solid waste
- Combustion of biological fraction of tire derived fuel
- Combustion of biomass, including *all types of wood and wood waste*, forest residue, and agricultural material.

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Let's be careful...

- Biomass deferral exempts “all types of wood waste”... ***BUT!***
- Don't forget Boiler MACT and CISWI NSPS
- Burning “non-hazardous solid waste” makes a boiler a CISWI
- Certain forms of wood “waste” are considered “non-hazardous solid waste”
 - Treated wood, creosoted wood, others

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66



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The point is...

- The biomass deferral makes it sound like *any form of wood* can be burned, but...
- For any source that doesn't want to be a CISWI, the real controlling factor is the definition of "non-hazardous solid waste"
- Discussed in more detail later

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67



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What does the biomass deferral mean?

- As long as biomass CO₂ is deferred, it is not counted for:
 - Div. 216 - ACDP applicability
 - Div. 218 - TV permit applicability
 - Div. 224 - PSD applicability
- DEQ's deferral is tied to EPA's deferral – 3 years; beyond that ?????
- Biomass CO₂ must still be reported under Division 215

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68



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Example: Title V applicability considering biomass deferral

- Criteria pollutants all < 100 tpy
- HAPs < 10/25 tpy
- 80,000 tpy CO₂ from natural gas boiler
- *40,000 tpy CO₂ from hog fuel boiler*
- (CH₄ and N₂O ignored, they don't affect answer)
- Subject to Title V? **NO**
- Non-biomass GHG < 100,000 tpy CO₂e

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69



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Wood Fuel/ Solid Waste Definitions

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70



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Solid Waste---to be or not to be?

2+ pages in Federal Register
(FR 15456 March 21, 2011,
40 CFR Part 241)

- Non-hazardous solid waste (NHSW) combustion is subject to CISWI NSPS
 - No minimum size unit
- Fuel that is not a NHSW is subject to Boiler MACT

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71



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EPA designated some things as NHSW outright

- Creosote treated wood
- Copper naphthanate treated wood
- Pentachlorophenol treated wood
- Off-spec used oil
- Sewage sludge

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72



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EPA also designated some fuels outright

- Fossil fuels & derivatives (pet coke)
- TDF & whole tires (managed via tire collection)
- On-spec used oil
- Processed fat
- Clean cellulosic biomass
 - Forest derived
 - Crop residue

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73




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“Possible” fuels must pass legitimacy criteria

- C & D wood (sufficiently processed)
- Resinated wood residuals
- OCC rejects
- Pulp & paper sludges
- Borate treated wood (@ generator & no other contaminants)
- Manure (@ generator or processed into biofuel)

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74




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Legitimacy Criteria

- Valuable commodity
 - reasonable storage time
 - managed like traditional fuel
 - contained to prevent releases
- Meaningful heating value
- Contaminants at comparable levels to traditional fuel

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If material meets legitimacy criteria
and remains within control of
generator:
= FUEL

Generator can make determination

**In cases that are unclear, EPA will make
determination**

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Fuel produced by processing of discarded material that meets the legitimacy criteria

= FUEL

Legitimacy criteria apply after material has been processed

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EPA petition process for determining what's what:

- Material cannot be discarded
- To be done by Region X with 30 day public notice
- Determinations must be done by MACT compliance date

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EPA factors in determinations

- Must meet legitimacy criteria
- Market treats material as product rather than SW
- Physically and chemically comparable to commercial fuel
- Must be used in reasonable time frame
- Air, water, and land releases comparable to traditional fuel
- Other relevant factors?

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79



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DEQ still evaluating the finer points of this non-hazardous solid waste rule

DEQ encourages sources to contact EPA with questions

EPA has formal applicability determination process

Source must submit applicability determination results to DEQ

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80




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Existing Area Source Boiler MACT Requirements

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81



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Boiler MACT/CISWI NSPS

- Major source boiler MACT Subpart DDDDD on hold – no compliance date
- CISWI NSPS Subpart CCCC on hold – no compliance date
- Area source boiler MACT Subpart JJJJJJ in effect but under reconsideration

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82



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- Subpart JJJJJJ applies to coal, oil and biomass
- Exemptions –
 - natural gas fired with or without oil backup
 - Any boiler subject to another MACT standard or solid waste combustor NSPS
- Natural gas-fired DEQ requirement - keep fuel records (if using back-up oil)

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83



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Existing sources:

- Submit **Initial Notification** by **09/17/2011**
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>
- Conduct first **tune-up** by **03/21/2012**, and every 2 years thereafter.
- If > 10 mmBtu/hr, conduct **energy assessment** by **03/21/2014**.

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84



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Existing Sources

- Only coal-fired boilers > 10 mmBtu/hr have emission limits
- All other boilers only subject to work practices
 - Biennial tune up
 - Energy assessment (> 10 mmBtu/hr)

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85




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New Sources

- Boilers > 10 mmBtu/hr subject to emission limits and standards
- Subject to work practices
 - Biennial tune up
 - Startup/shutdown plans

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86




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QUESTIONS?

The next section applies to future NSR/PSD actions so if you are not interested, please feel free to leave now

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Reset/Embargo

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Applicability

- Future NSR/PSD actions for any regulated pollutant where sources are permitted at PTE
- **THREE** GHG sources whose “actual emissions” during the baseline year are set at PTE (will not be discussed today)

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89



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Netting basis – subsection (g) *...new concept*

- (g) For permits issued after May 1, 2011 under New Source Review regulations in OAR 340 division 224, **and where the netting basis initially equaled the potential to emit for a new or modified source**, the netting basis will be reduced in accordance with the definition of actual emissions. **Notwithstanding OAR 340-222-0041(2), this adjustment does not require a reduction in the PSEL.** →

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90



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More on (g)

- Emission increases granted under NSR/PSD permits often based on estimated PTE
- Sources frequently emit less than that
- Sources could use the difference between PTE and actual emissions for a future netting action to avoid NSR/PSD

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91



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Even more on (g)

- To prevent sources from using the difference between PTE and actual for netting, a couple things have been done:
- Approved emissions must be **“reset”** from PTE to highest actual emissions 10 years after the approval (or 15 years if extended, earlier at source's request)
- Emission increase approved in the NSR/PSD action is **“embargoed”**, i.e., cannot be used for netting until emissions are “reset”

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92



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Yet more on (g)

- Finally, although we will reduce the NB (by PTE minus actuals), the source may still have potential to emit more than their highest actuals
- To provide operational flexibility, we do not reduce the PSEL
- However, PSEL may be recalculated in accordance with Div. 222 as appropriate

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93



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Still more on (g)

- Requirement to reset is in definition of Netting Basis
- Procedure to reset is in definition of Actual Emissions
- Reset provision is not retro-active !!!
- ***Applies to NSR/PSD permits issued after May 1, 2011***

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94



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Practical effect of the embargo:

- Any emissions subject to reset provisions are embargoed until they are reset
- For netting purposes, it's as if the embargoed portions of NB and PSEL ***simply don't exist until they are reset***
- Embargo provision is in the definition of Major Modification, subsection (d)

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95



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"Actual emissions" reset

- Reset occurs ten years from the date the NSR/PSD permit is issued
- May be reset earlier if requested by source
- Source can ask for 5 year extension on reset if it is demonstrated that equipment has not achieved normal operation

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96



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“Actual emissions” reset – (continued)

Actual emissions that were equal to PTE will be reset to the highest actual emission rate during any consecutive 12-month period during the ten year period

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97



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"Actual emissions" reset (continued)

Any emission reductions achieved due to **enforceable permit conditions** based on OAR 340-226-0110 and 0120 (highest and best practicable treatment and control) are not included in the reset calculation.

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98



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Long example for reset and embargo

- Existing source: CO NB = 600 tpy, PSEL = 600 tpy
- In 2012, source gets PSD permit for CO, approved emission increase = PTE = 500 tpy
- New CO NB = 600+500 = 1,100 tpy
New CO PSEL = 600+500 = 1,100 tpy

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99



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The NB “reset” for the 2012 project

- Over 2012-2022, highest 12 month CO emissions are 300 tpy
- In 2022 NB is “reset”
- 500 (PTE) – 300 (actual) = **200** tpy
... must reduce NB by 200
- CO NB = 1,100 – **200** = 900 tpy
- PSEL is not reduced, still = 1,100 tpy
- Simple, but what if... →

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Another project comes along in 2020 (before reset)

- New equipment with PTE 200 tpy CO
- Source requests no PSEL increase
- Highest emissions from 2012 project are 300 tpy
- Source says 2020 project does not trigger PSD because proposed PSEL = NB = 1,100 tpy
- True in the past, **but not any more...**

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101



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Embargo applies

- The 500 tpy increase approved in 2012 is **embargoed** until **reset** – must be excluded from “major mod” calculations
- “Effective PSEL” =
 $(1,100 - 500) + 200 = 800$ tpy
- “Effective NB” = $1,100 - 500 = 600$ tpy
- Eff. PSEL > Eff. NB by more than SER
- Emissions from new equipment >SER → **PSD**

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102



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Netting basis – subsection (h) *...new*

- Emission reductions required by rule that would reduce the netting basis do not include emissions reductions achieved under OAR 340-226-0110 and 0120
- 226-0110 and 0120 are pollution prevention actions; operation and maintenance provisions; and emission action levels

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103



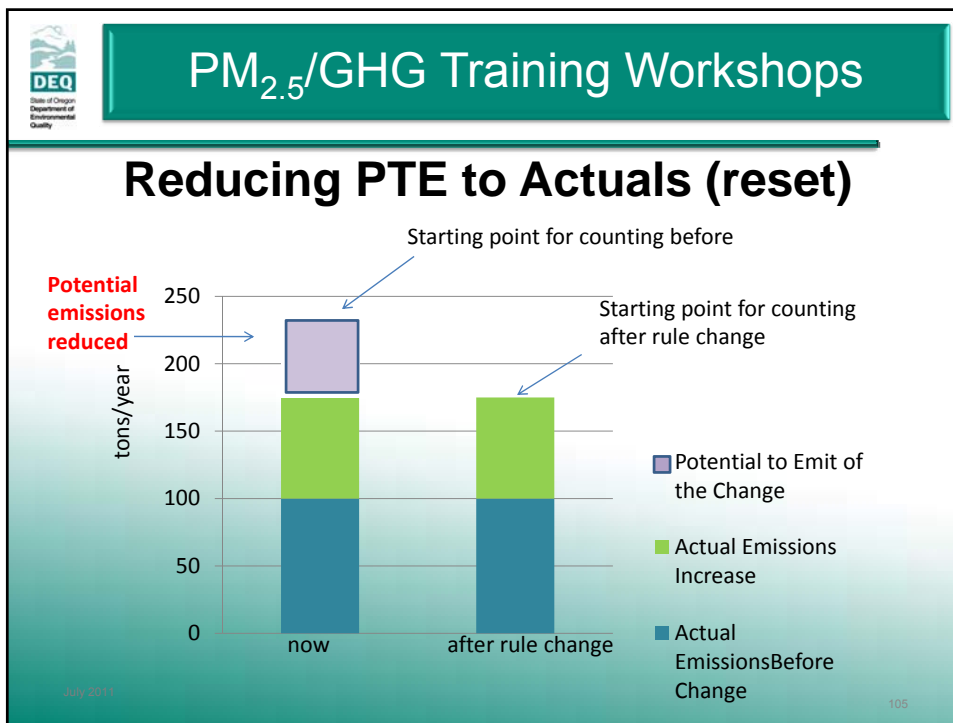
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More on (h)

- Generally, the Highest and Best rule helps reduce emissions above and beyond whatever standard applies, but they don't set limits
- Such reductions are not considered “reductions required by rule” and should not be subtracted from NB – *provided that permit has enforceable conditions to implement P2, O&M and/or EALs*

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104



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THE END

July 2011 106