SLMA Meeting

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Boiler MACT and Related Rules

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Boiler MACT and Related Rules

- 4 Related Proposed Rules Published 6/4/2010
  - Major Source Boiler and Industrial Furnace MACT Rule
  - Area Source Boiler MACT Rule
  - Commercial, Industrial Solid Waste Incinerator (CISWI) Rule
  - Definition of Non-Hazardous Solid Waste Rule
- Rules Were a Result of Court Rulings from Enviro's Lawsuits
- Final Rules Scheduled 12/16/2010

Solid Waste Rule

- Will Define What Is Waste and What Is Fuel When Burned for Energy Recovery
- Wastes Would Have to be Combusted in Units Permitted as Incinerators
  - More Burdensome Permitting and Operational Requirements
  - Enviros Want All Secondary Materials Considered Waste
- EPA Proposed 2 Alternatives for Comment
  - Most Legitimate Fuels as Fuels
  - Most Secondary Materials as Waste

Solid Waste Rule

- Defined Certain "Traditional" Fuels
  - Coal, Oil, Natural Gas, Clean Biomass
- Suggested Examples of Things that May Be Waste When Burned
  - Treated Wood
  - Resinated Wood if Not Burned On-site
- Expected Outcome – Wood Residues at Sawmills Will Be Fuel

Boiler MACT Rules

- Two Separate Rulemakings
- Major Sources of HAPs, Not Major for Criteria Pollutants (PM, CO, VOC, etc.)
  - Emit More Than 10 TPY of 1 HAP of 25 TPY of All HAPs
  - Methanol from Kilns (95 MMBf/yr)
- Area Sources of HAPs – Everyone Else
- Compliance Required within 3 Years of Final Rule

What Is MACT?

- Maximum Achievable Control Technology
- The MACT "Floor" Is Defined As the Average Performance of the Top 12% of Sources Employing the Same Existing Control Technology
- EPA Only Has to Consider "Available" Data
- EPA Can Go Beyond the Floor with Justification

Major Source MACT

- Applies to Boilers and Process Heaters
- Direct-Fired Kilns Not Covered
- Units Less Than 10 MMBtu/hr Have Limited Requirements (Tune-ups)
- Natural Gas Units Have Minimum Requirements
- Units Firing Coal, Oil, or Biomass Have Potentially Impossible Requirements

Major Source MACT

(Continued)

- No Health-Based Option
- Oil, Coal and Biomass Units Have Numerical Limits
  - Particulate Matter
  - Hydrogen Chloride
  - Mercury
  - Carbon Monoxide
  - Dioxin/Furan

Major Source MACT

(Continued)

- Beyond the Floor Requirement for Energy Audit
- Biomass Unit Limits Depend on Combustion Chamber Design
  - Stoker
  - Fluidized Bed
  - Suspension Burner/ Dutch Oven
  - Fuel Cell

Biomass Stoker Limits

Existing

- Particulate Matter – 0.02 lb/MMBtu
- Hydrogen Chloride – 0.006 lb/MMBtu
- Mercury – 9.0 E-7 lb/MMBtu
- CO – 560 ppm @ 3% O2
- Dioxin/Furan – 0.004 ng/dscm, TEQ @ 7% O2

New or Reconstructed

- Particulate Matter – 0.008 lb/MMBtu
- Hydrogen Chloride – 0.004 lb/MMBtu
- Mercury – 2.0 E-7 lb/MMBtu
- CO – 560 ppm @ 3% O2
- Dioxin/Furan – 0.00005 ng/dscm, TEQ @ 7% O2

Biomass Fluidized Bed Limits

Existing

- Particulate Matter – 0.02 lb/MMBtu
- Hydrogen Chloride – 0.006 lb/MMBtu
- Mercury – 9.0 E-7 lb/MMBtu
- CO – 250 ppm @ 3% O2
- Dioxin/Furan – 0.02 ng/dscm, TEQ @ 7% O2

New or Reconstructed

- Particulate Matter – 0.008 lb/MMBtu
- Hydrogen Chloride – 0.004 lb/MMBtu
- Mercury – 2.0 E-7 lb/MMBtu
- CO – 40 ppm @ 3% O2
- Dioxin/Furan – 0.007 ng/dscm, TEQ @ 7% O2

Biomass Suspension Burner & Dutch Oven Limits

Existing

- Particulate Matter – 0.02 lb/MMBtu
- Hydrogen Chloride – 0.006 lb/MMBtu
- Mercury – 9.0 E-7 lb/MMBtu
- CO – 1010 ppm @ 3% O2
- Dioxin/Furan – 0.03 ng/dscm, TEQ @ 7% O2

New or Reconstructed

- Particulate Matter – 0.008 lb/MMBtu
- Hydrogen Chloride – 0.004 lb/MMBtu
- Mercury – 2.0 E-7 lb/MMBtu
- CO – 1010 ppm @ 3% O2
- Dioxin/Furan – 0.03 ng/dscm, TEQ @ 7% O2

Biomass Fuel Cell Limits

Existing

- Particulate Matter – 0.02 lb/MMBtu
- Hydrogen Chloride – 0.006 lb/MMBtu
- Mercury – 9.0 E-7 lb/MMBtu
- CO – 270 ppm @ 3% O2
- Dioxin/Furan – 0.02 ng/dscm, TEQ @ 7% O2

New or Reconstructed

- Particulate Matter – 0.008 lb/MMBtu
- Hydrogen Chloride – 0.004 lb/MMBtu
- Mercury – 2.0 E-7 lb/MMBtu
- CO – 270 ppm @ 3% O2
- Dioxin/Furan – 0.0005 ng/dscm, TEQ @ 7% O2

Oil-Fired Limits

Existing

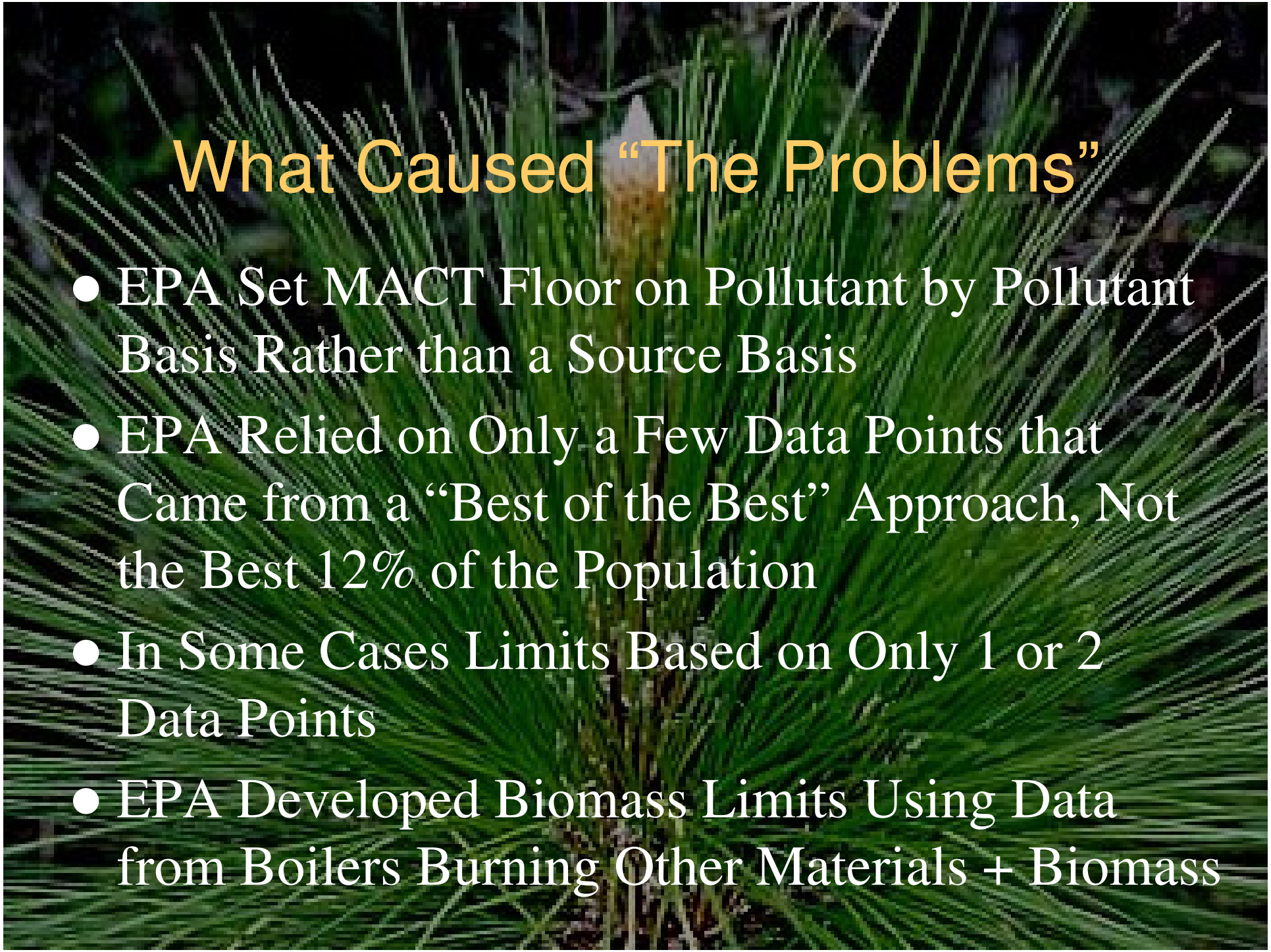
- Particulate Matter – 0.004 lb/MMBtu
- Hydrogen Chloride – 0.0009 lb/MMBtu
- Mercury – 4.0 E-6 lb/MMBtu
- CO – 1 ppm @ 3% O2
- Dioxin/Furan – 0.002 ng/dscm, TEQ @ 7% O2

New or Reconstructed

- Particulate Matter – 0.002 lb/MMBtu
- Hydrogen Chloride – 0.0004 lb/MMBtu
- Mercury – 3.0 E-7 lb/MMBtu
- CO – 1 ppm @ 3% O2
- Dioxin/Furan – 0.002 ng/dscm, TEQ @ 7% O2

"The Problems"

- Limits May Not Be Achievable
- 6% of Existing Units Should Be Able to Meet but Few, if Any, Can
- Would Require Series of Control Devices (ESP, Catalytic Oxidizer, Wet or Dry Scrubber, Carbon Injection, and Bag House)
- No Guarantees that Can Meet Even if Install All Controls
- Controls Will Cost Millions Per Boiler



What Caused "The Problems"

- EPA Set MACT Floor on Pollutant by Pollutant Basis Rather than a Source Basis
- EPA Relied on Only a Few Data Points that Came from a "Best of the Best" Approach, Not the Best 12% of the Population
- In Some Cases Limits Based on Only 1 or 2 Data Points
- EPA Developed Biomass Limits Using Data from Boilers Burning Other Materials + Biomass

What Caused "The Problems"

(Continued)

- Many of the Data Points Were Non-detect Values, and Many Were Fuel-Based Rather than Control-Based
  - Mercury and Dioxin/Furan Limits Based on ND Values and the EPA Test Methods Don't Have Published Detection Limits
  - MACT Data Shows Detection Limits Vary by 2 Orders of Magnitude from Run to Run
  - Therefore You Could Test and Get ND and Still Not Be in Compliance

What Caused "The Problems"

(Continued)

- EPA Failed to Consider Long-Term Variability
  - Variability in Fuel Chemistry Over Time
  - Variability in Boiler and Control Operation Over Time
- Did Not Consider Startups and Shutdowns in Emissions Limits
  - Court Has Ruled Previous EPA Startup and Shutdown Relief in General Conditions of the Rules Was Illegal

Area Source Proposed Rule

- EPA Took MACT Approach When It Could Have Followed GACT
  - GACT Is Generally Available Control Technology and Can Include Work Practices
  - Many Area Source Rules Have Relied Exclusively on Work Practices
  - GACT Can Consider Cost Implications

Area Source Proposed Rule

- Rule Contains Numerical Limits for Existing Boilers
- More Stringent Limits for New Boilers
- Rule Requires Energy Audit
- Boilers Less Than 10 MMBtu/hr Only Require Tune-up
- Compliance Required 3 Years After Publication

Area Source Limits

- Existing Biomass
  - CO – 160 ppm at 7% O2 (125 ppm at 10% O2)
- Existing Oil
  - CO – 2 ppm at 3% O2
- New Biomass
  - PM – 0.03 lb/MMBtu
  - CO – 100 ppm at 7% O2
- New Oil
  - PM – 0.03 lb/MMBtu
  - CO – 1 ppm at 3% O2

Area Source Problems

- Can't Meet the CO Limits Without Oxidizer
- Can't Use Oxidizer Without Particulate Control (ESP or Bag House)
- Averaging Time for CO Is Daily Average
- CO Limit for Area Sources Is More Stringent than for Major Sources
- Averaging Time for Area Sources Only 1 Day While Major Sources Get 30 Days
- No Allowance for Startups or Shutdowns

Area Source Problems

(Continued)

- EPA Made Error in Calculations of CO Limit for Existing Biomass Boilers
- If Corrected, Still Can't Meet
- Cost to Install Oxidizer and Particulate Control Could Exceed a Million Dollars for an Average Boiler
- Ongoing Operating Costs from the Gas to Fire the Oxidizer

Industry Response to Boiler Rules

- Presentations Made at Public Meetings
- Extensive Comments Addressing the Technical and Legal Issues Made by 8/23/10
- Political Outreach
  - Letter to EPA Signed by 106 Representatives
  - Letter to EPA Signed by 6+ Senators
  - At Least 13 Governors Have Publicly Asked for a Balanced Approach that Protects the Environment and Jobs

SLMA Comments

- Data Set Is Fatally Flawed
  - Errors in Data
  - Data from Best of the Best
  - Not Enough Data to Represent the Top 12% of Actual Population
  - Data for Biomass from Units Burning Other Fuels
  - Non-Detect Data Is Improperly Used
  - Data Used from Sources Not Subject to the Rules
  - Data Is Based on Fuel Content Not Control Efficiency

SLMA Comments
(Continued)

- EPA's Pollutant By Pollutant Approach Provides Results in Conflict with the Statutory Intent
  - The Law Intended that at Least the Average of the Top 12% of Facilities Could Meet the Standards Without Additional Controls
- EPA Should Use the GACT Approach for Area Sources and Should Employ Work Practices Such as Tune-ups Instead of Numerical Limits for CO for Biomass Boilers

SLMA Comments
(Continued)

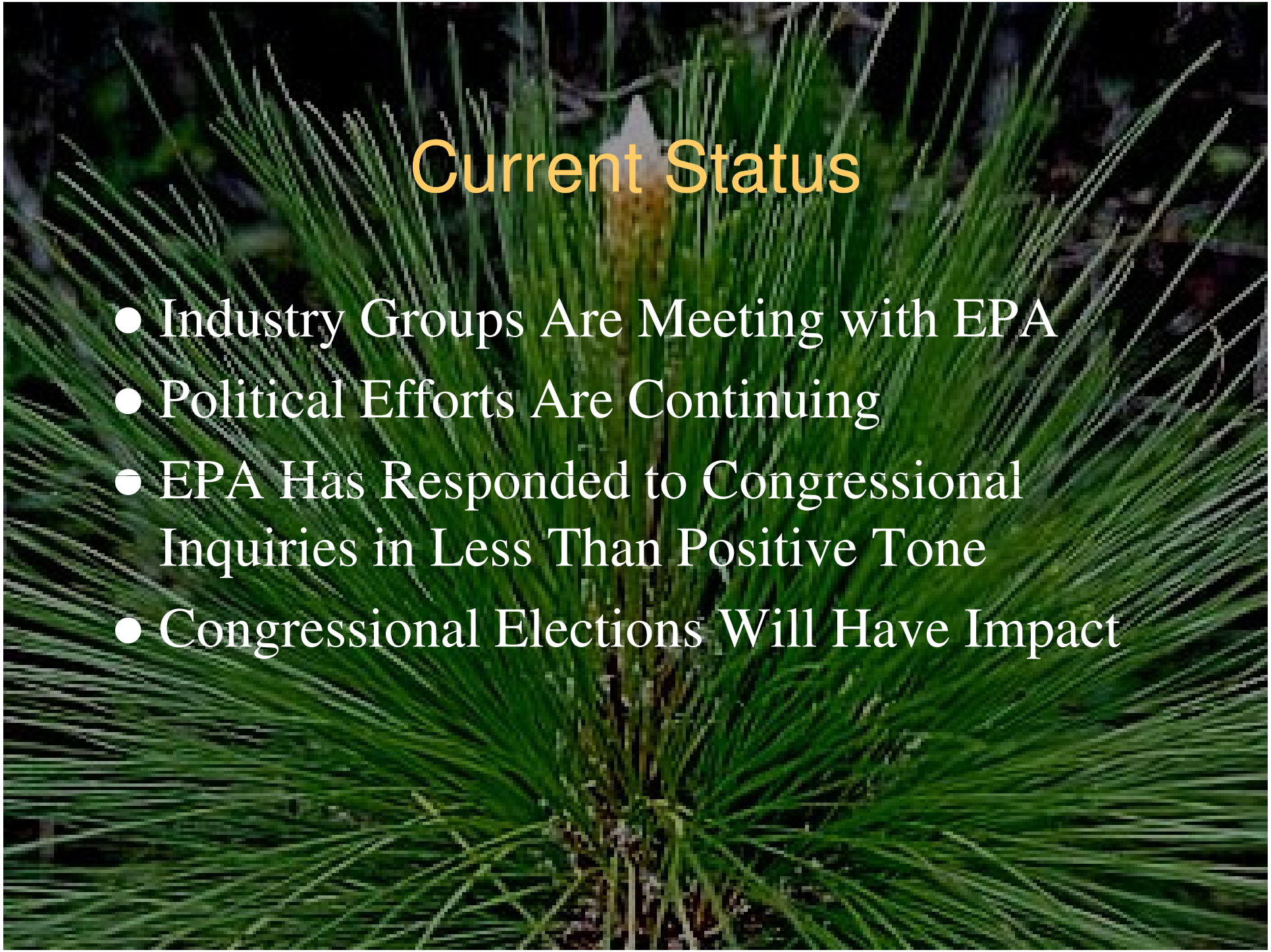
- The Rules Create a Disincentive to Biomass Combustion
  - Economic Analysis Assumes No New Biomass Boilers
  - New Gas Boiler Much Cheaper than Control Cost for Existing Biomass Boiler
  - Result Is Contrary to Government Push for Renewable Energy Use
- Limits for Area Source Boilers Should Not Be More Stringent Than for Major Source Boilers

SLMA Comments
(Continued)

- EPA Failed to Consider the Cost for Meeting the CO Limits for Area Source Boilers
  - Didn't Consider Any Cost for Oxidizers
  - Didn't Consider Any Cost for ESPs or Bag Houses for PM Control Necessary for Use of Oxidizers
  - Could Be 2.7 **Billion** Dollars if Only 25% of Area Source Biomass Boilers Require These Controls
- EPA Should Retain a Health-Based Compliance Alternative

SLMA Comments
(Continued)

- EPA Should Not Require Energy Audits as Part of the Rule
  - Is Beyond-the-Floor Requirement Without Justification
- Additional Time Should Be Allowed for Compliance



Current Status

- Industry Groups Are Meeting with EPA
- Political Efforts Are Continuing
- EPA Has Responded to Congressional Inquiries in Less Than Positive Tone
- Congressional Elections Will Have Impact

What Does the Grapevine Say?

- Some Changes Will Be Made
- May Require Additional Time
- Court Would Have to Approve
- May Have to Re-propose Rules
- OGC Is Driving the EPA Ship, Not the Technical Folks
- Don't Want to Allow Positions to Develop Contrary to Their Positions in Existing Litigation
- Wood Industry Continues to Have Bi-weekly Calls


Questions?