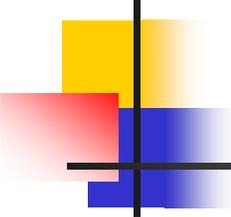




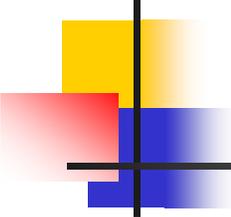
OAQPS' Strategy to Address Outdoor Wood-Fired Hydronic Heaters

Environmental Technology Verification Program
Stakeholder Advisory Committee Mtg.
Research Triangle Park, NC
September 11, 2007



OVERVIEW

- The Opportunity and Its Potential Impacts
 - Environment and health
 - Partnering with states (NESCAUM, MI, WA, others)
 - 25 Vendors with 2-3 products each
- ETV Implementation
 - Timing
 - Verification process
 - Resources
- Next Steps



Background

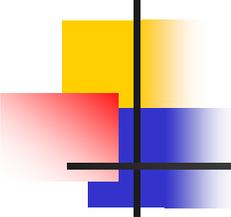
- OWHH emissions are truly a significant concern in many local areas in >12 States
 - Many air quality complaints from neighbors
 - Preliminary modeling and monitoring indicate air quality levels near OWHH as high as $1000 \mu\text{g}/\text{m}^3$
 - Much local press
 - Many towns (>40) are banning new OWHH and/or restricting use of existing OWHH
 - Sales elsewhere are growing fast and are expected to double in next 5-10 years because of belief that wood heating costs are much lower than for fuel oil or gas

Front View of Typical Unit



Common Firebox Design

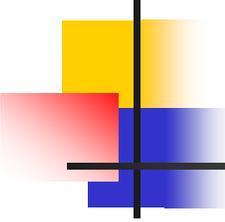




Why Are People All Fired-Up?

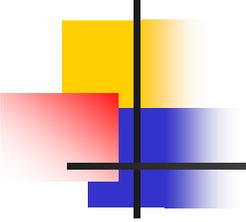






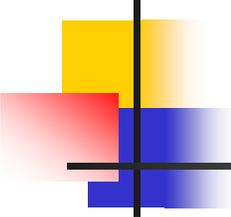
8/05 Petition & OAQPS' Response

- 7 States & NESCAUM petitioned EPA to set NSPS
- OAQPS agrees that OWHH emissions of current models are of much concern, especially when they are located near neighbors and when they are designed and/or operated improperly
- OAQPS is leading effort to reduce emissions in a timely manner – both encouraging industry efforts to voluntarily improve unit designs and supporting State efforts to regulate as they deem appropriate



OAQPS' Two-part Stakeholder Strategy

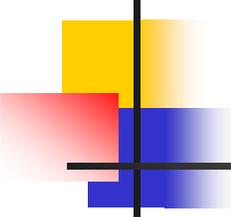
- Part 1 – EPA OWHH Voluntary Program (VP)
- Part 2 – Model Rule for States to use as appropriate
 - Parts 1 and 2 are in parallel and complementary
 - Public Roll-out: 01/29/07



Part 1: Voluntary OWHH Program

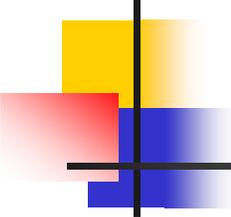
Developed via Stakeholder Process based on mutual needs of EPA, manufacturers & states

- Goal: Reduced emissions from new OWHH sooner than Model Rule (or Federal Rule)
 - Phase 1: New, cleaner models by Spring 2007
(i.e., sales for the next heating season)
 - Phase 2: More stringent, date TBD



Components of Voluntary OWHH Program – MOU & Incentives

- MOU between EPA/OAQPS and manufacturers to bring cleaner units to market by Spring 2007
- Table top display
- Owner's Manual text on proper operation and maintenance
- EPA Web site with list of cleaner OWHH

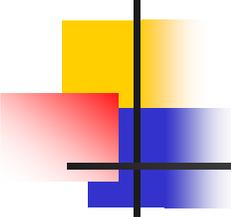


Part 2: NESCAUM Model Rule

States, Tribes, and local authorities may elect to use portions as they develop their own rules

- Phase 1: Compliance as early as 4/2008 for first state, others later
 - Technology-based
 - 0.44 # of PM per MMBTU heat input
 - ~80% reduction

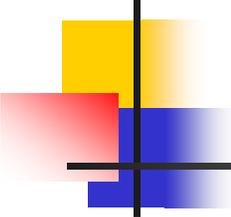
- Phase 2: Compliance as early as 4/2010 for first state, others later
 - Health-based
 - ~0.3 # of PM per MMBTU heat output
 - >90% reduction



NESCAUM Model Rule Components

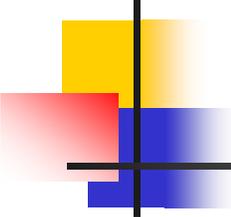
For New OWHH

- **emission limit**
- set-back from property lines, people
- stack height
- proper operation and maintenance
- label
- notice to buyers



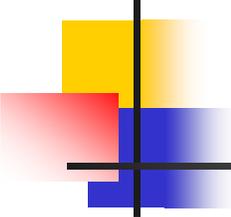
Key Expected Results

- Voluntary Program Phase 1 Units by Spring 2007
 - 0.6 #/MMBTU heat input
 - ~70% reduction
- Model Rule Phase 1 as soon as 4/2008
 - 0.44 #/MMBTU heat input
 - ~80% reduction
- Model Rule Phase 2 as soon as 4/2010
 - ~0.3 #/MMBTU heat output (tentative)
 - >90% reduction



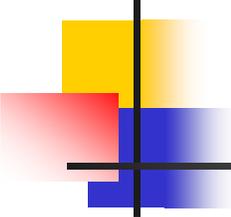
Testing/Verification

- Use of EPA method for evaluation
- 3rd party testing with QA/QC audits
- Potential verification of third-party testing via ETV Air Pollution Control Technology Center



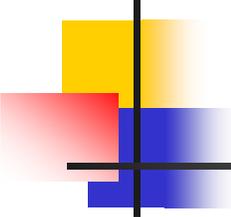
IMPLEMENTATION – TIMING

- ETV process in place by September 30, 2007



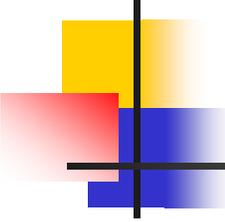
IMPLEMENTATION – PROCESS

- Protocol Development
 - ASTM work group and methods
 - EPA OAQPS stakeholder group for OWHH
 - Existing test methods to be used
 - ETV requirements and formatting
 - EPA ETV approval



IMPLEMENTATION – PROCESS

- Test Laboratory Qualification
 - 3 EPA-accredited laboratories that participate in wood stove certification
 - EPA APCT Center QA manager reviews existing documentation
 - EPA QA manager leads pre-test audits, if needed
 - EPA and RTI audit 1st verification at each lab



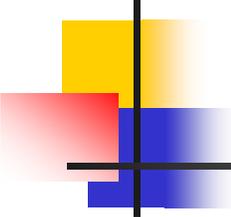
IMPLEMENTATION – RESOURCES

- APCT Center

- Protocol preparation (\$5-10K)
- Coordination with stakeholders (states)
- Test lab qualification audits
- T/QAP development (if labs don't pay)
- EPA FY07 budget timing issues

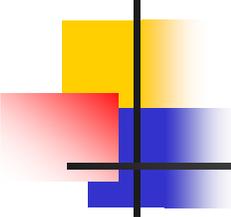
- EPA

- QA manager contracts audit support (~\$3K each) and may need travel funds
- Project Officer time commitment and travel
- OAQPS SCOUT Report



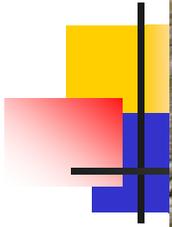
NEXT STEPS

- Develop Protocol
- Qualify and Negotiate with Test Labs
- Establish T/QAP for Each Lab
- Solicit Vendors



Benefits

- Service to OWHH manufacturers
- Provide independent test verification
- Strengthen working relationship with OAQPS
- Potential for future work
- Self-supporting



Baseline Equivalent Technology?

Baseline Equivalent Technology?

