# CIBO Environmental Committee Meeting
# Boiler MACT & Related Rules Status

September 10, 2013

# Utility MATS Rule

# Reconsideration Proposed Rule

- Fed. Reg. notice June 25, 2013
- Comments were due August 26
- EPA general approach- request for comments on specific issues and approaches
  - End of startup definition issue
    - Combination of load/generation and time
    - Commenters had recommended 4 hours after 25% load is first reached or 12 hours after first electricity generation
- EPA document referenced: "Assessment of startup period at coal-fired electric generating units"

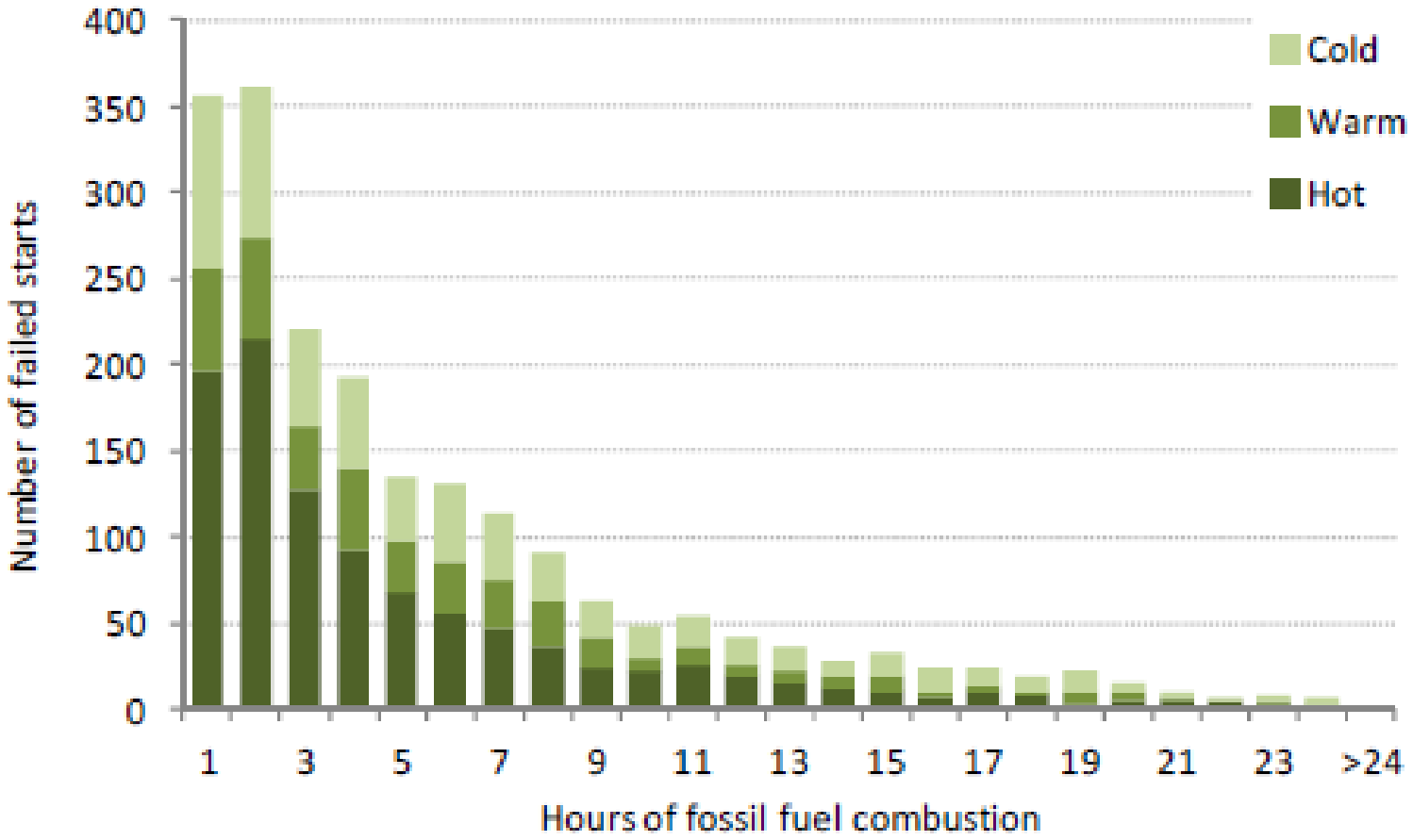
# EPA Assessment- Normal & Failed Starts (~20% failed starts)

*Table 1: Number of normal and failed starts by boiler and APCD types, years 2011 and 2012.*

| Boiler-control | Normal starts | Failed starts | Total starts |
|---|---|---|---|
| PC EGU | 7,364 | 2,103 | 9,467 |
| *Supercritical w/ FGD* | *1,612* | *369* | *1,981* |
| *Supercritical w/ SCR* | *1,413* | *324* | *1,737* |
| *Subcritical w/ FGD* | *4,827* | *1,335* | *6,162* |
| *Subcritical w/ SCR* | *2,578* | *823* | *3,401* |
| CFB EGU | 208 | 44 | 252 |

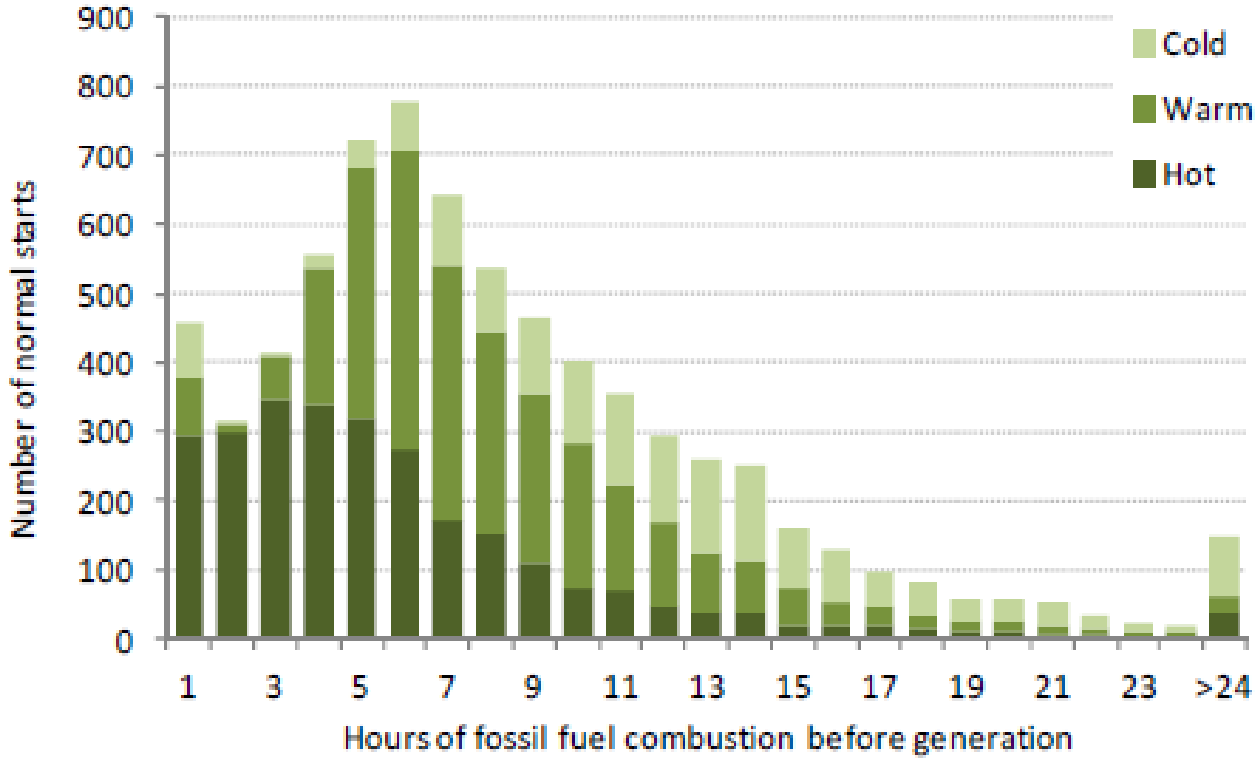
# Failed Startup Fuel Combustion Time

*Figure 1: Duration of fossil fuel combustion during failed startup events*



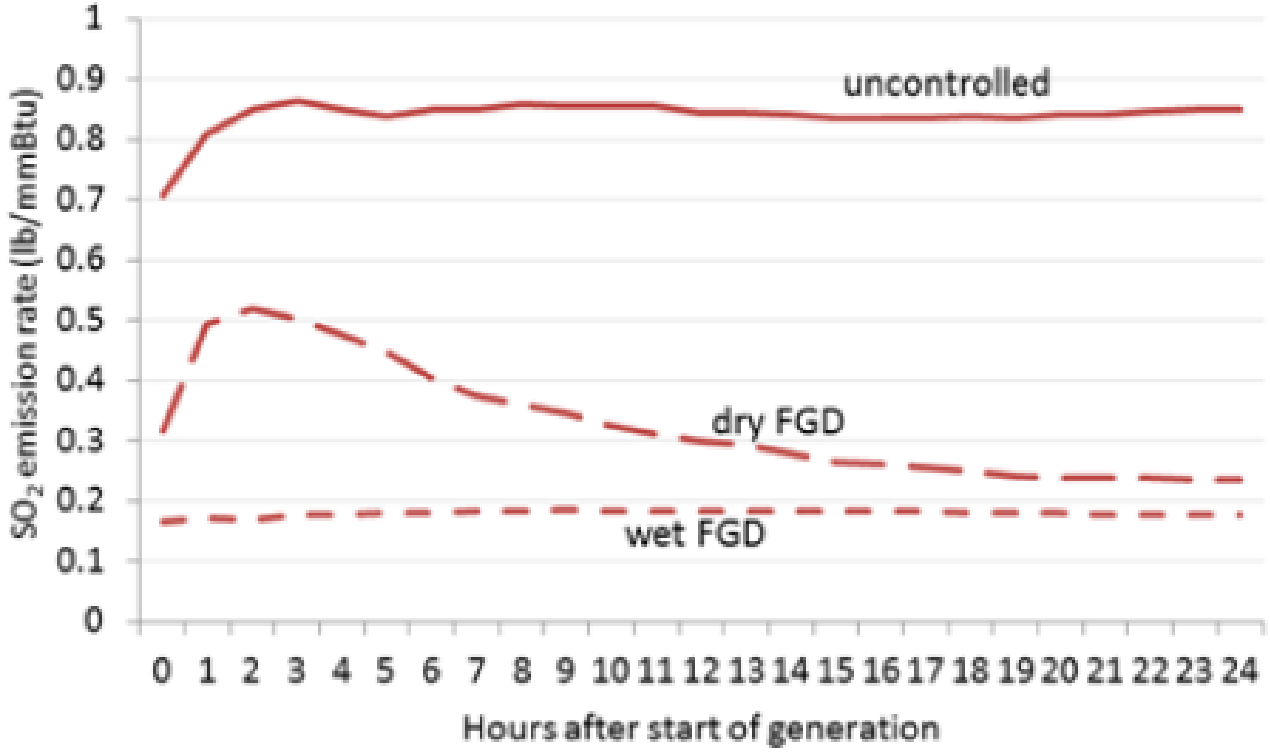
# Normal PC Startup Fuel Use Prior to Electricity Generation

*Figure 2: Duration of fossil fuel combustion prior to electricity generation during normal startup events at PC EGUs*



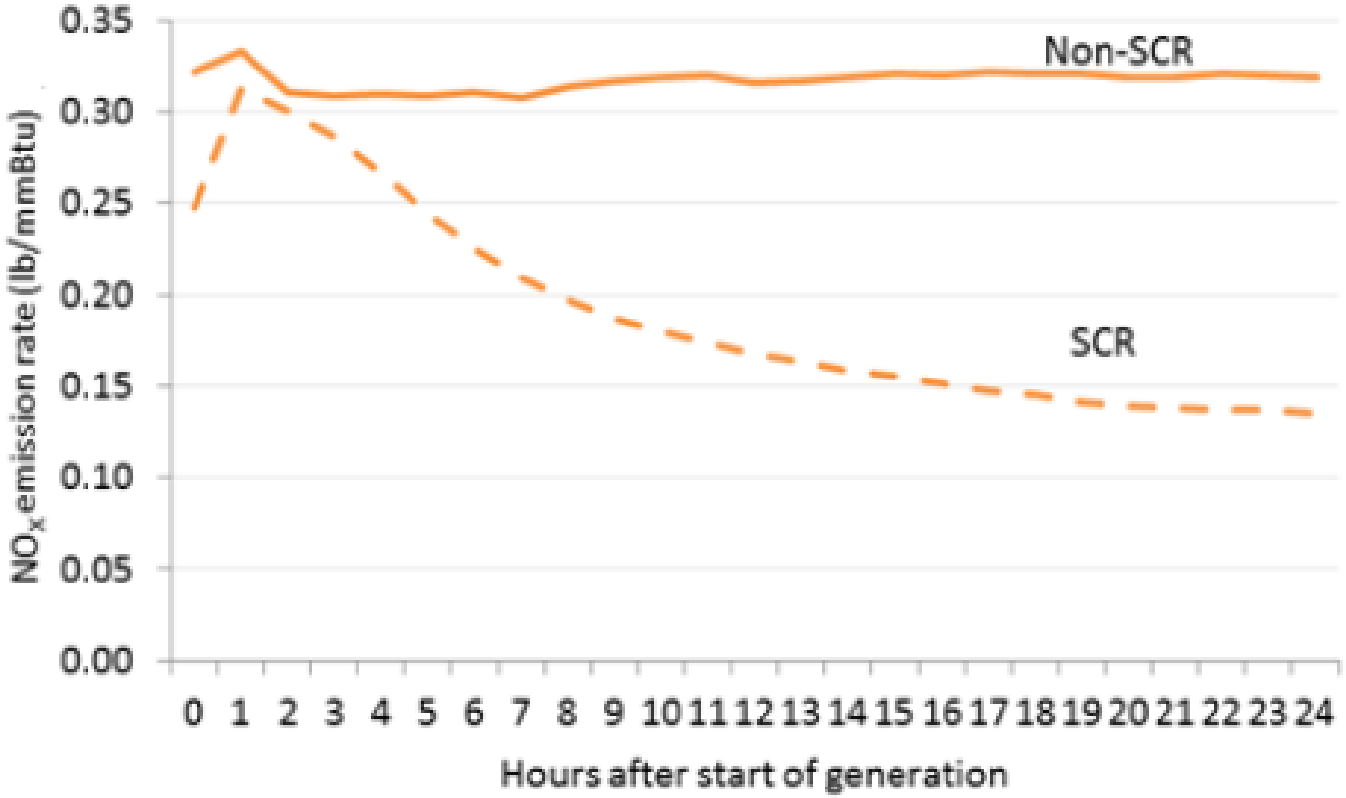
# Subcritical PC EGU Average SO2 Emission Rate After First Generation

*Figure 16: Average $SO_2$ emission rates following start of generation at subcritical PC EGUs by $SO_2$ control type*



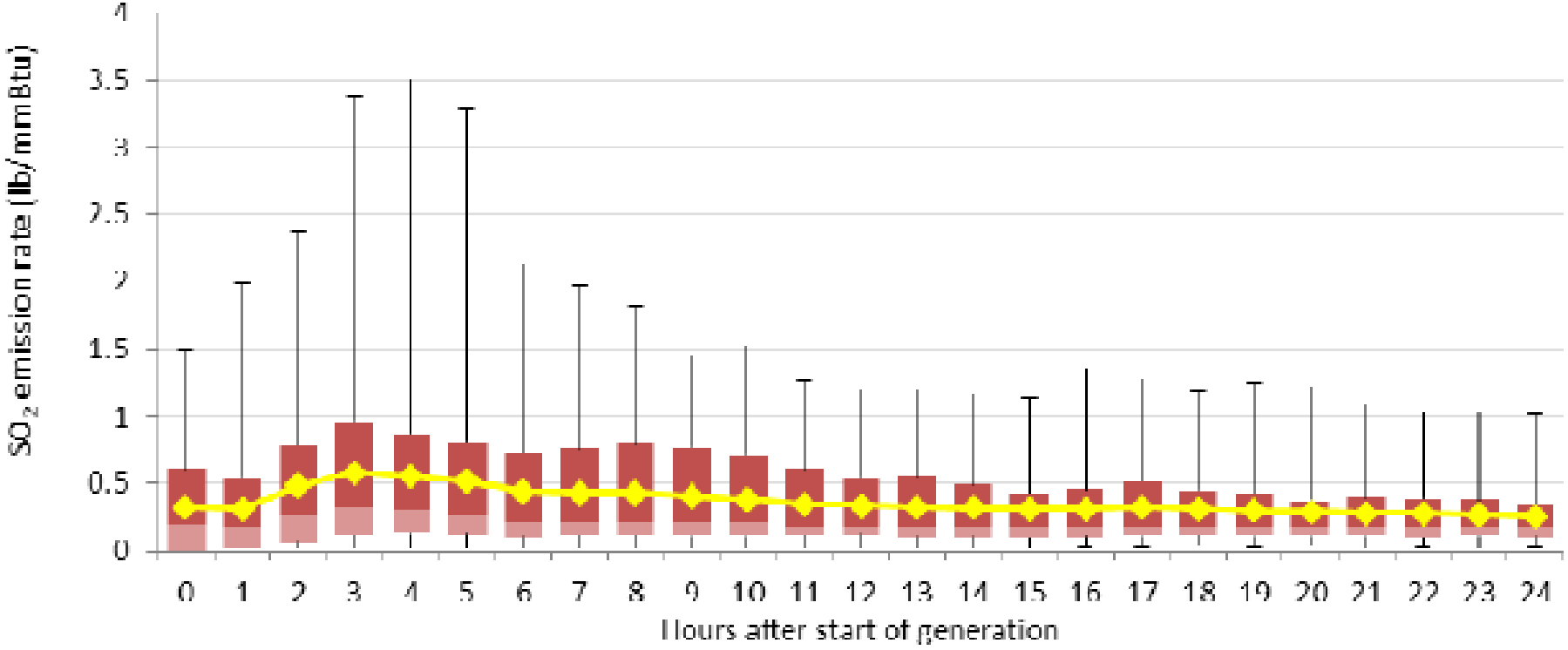
# Subcritical PC EGU NOx Emission Rate After First Generation

*Figure 21: Average $NO_x$ emission rates following start of generation at subcritical PC EGUs by $NO_x$ control type*



# CFB Boiler SO2 Emission Rate After First Generation

*Figure 25: Average $SO_2$ emission rates following start of generation at CFB boiler EGUs*



# EPA Assessment Stated Conclusions

- ***5. Conclusion***
  - In this analysis of supercritical and subcritical PC EGUs with FGD and/or SCR and CFB boiler EGUs, EPA examined several indicators that can aid in assessing the time required to achieve operating benchmarks. These indicators show that, on average, all types of EGUs in this study:
    - can reach 25% of nameplate capacity in 3 hours or less after the start of generation;
    - can begin controlling SO2 and NOx emissions 3 hours or less after reaching 25% of nameplate capacity or 6 hours or less following the start of electricity generation
  - We found no significant difference in performance related to startup events between the different boiler types and APCD technologies assessed in this analysis.

# CIBO Comments

- CIBO commenting on MATS due to applicability to member facilities and impact on Boiler MACT rule reconsideration
- Support prior commenters' positions; flexibility is critical
- Highest flexibility would be for each source to use unit-specific procedures to determine the end of startup
- Use of a common definition needs to be applicable to a large percent of units to be of value- that means longer time periods
- Combination of load and time is a valid approach to pursue, but detail is critical
- Time needs to be reset if a unit fails during startup to reach the end of startup

# CIBO Comments on Assessment

- Unknown representation of all EGUs or the range of EGUs
- Without known representation, it is also unknown to what extent conclusions and proposed numbers are applicable
- Waste coal fired CFBs are particularly under-represented
  - Most were coal fired CFBs
  - Need much longer time to build up bed material and stabilize operation and emissions controls
  - Unit specific approach is needed for those units
- Recognize that EPA had much data from EPA Clean Air Markets on EGUs in order to do even this analysis
  - Similar ICI Boiler/Process Heater MACT unit data is not available

# CIBO Comments

- Undoubtedly all units cannot meet the EPA proposed load/time combinations
- Must also include an alternative approach to defining startup
  - Allow unit-specific procedures to define minimum stable operating load conditions and stable emissions control system operation
  - Procedures can be reviewable and approvable
  - Can also monitor and document startups against those procedures
  - Frame to prevent continual in/out of startup

# CIBO Comments- Other

- Expand clean fuels to include those in Subpart DDDDD
  - Natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas
- Expand clean fuels to include biodiesel and other renewable fuels
- Recognize the inherent need to cofire startup fuel with primary fuel as a transition during the startup process
- Include recognition of need to have appropriate boiler conditions and all APCDs on line during startup
  - Specifically- ESP energization
- Consider use of parametric monitoring or other parameters to indicate normal operation of boiler(s) not in SU/SD mode while 1 or more other boilers are in SU/SD with CEM data not used for compliance during those periods

# Boiler MACT/GACT Issue Discussion

# Potential Discussion Topics

- Further SU/SD issues for D5/J6/CISWI
- Part 75 CEM issues relative to existing CEMS and conversion to natural gas firing
- Solid fuel emission controls
  - Current performance and DSI/ACI testing
  - Ability to schedule; results; project timing; sorbent availability
- Natural gas conversion- existing boilers
  - Burner availability
  - Impact on boiler performance
  - Emissions projections
- Replacement boilers- availability
- Compliance path forward decision and timing
- Permitting issues for any cases
- Others?