Efficiency, Renewables and the Clean Air Act

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Agenda

- Context for EE and Renewables and the CAA
- Regulatory Drivers
- Barriers and Opportunities

Context

- Efficiency and/or renewables could apply:
  - At the regulated unit - increase efficiency of regulated unit.
  - At the regulated facility - increase efficiency of regulated plant/facility (reduced demand for regulated unit).
  - Outside the regulated facility - increase efficiency at downstream customer site ("Demand Side Management").
  - Use of renewables to displace regulated unit (on-site or off-site).
- All are environmentally beneficial.
- How can these benefits be recognized by environmental regulations?
- How environmental regulations encourage these actions?

Relevant Regulatory Structures

- Conventional statutory limits (NSPS, MACT) – typically defined for a specific emission unit type, often with unit-specific emission limits.
- NSR/BACT – Case-by-case evaluation of requirements. Requires on-site emission reduction but broader than individual units.
- Cap and trade programs – most flexible option, can recognize on-site and off-site effects.
- Addressing EE and renewables within these structures has been discussed in the past but the GHG issue presents new opportunities.

Role of Output-Based Standards

- Output-based standards relate the emissions to the useful output (lb/MWh) rather than the fuel input (lb/MMBtu) or pollutant concentration (ppm).
- Directly account for unit or site efficiency in the compliance measurement.
- For CHP, need to include both thermal and electric output.
- Usually necessary but not sufficient to include efficiency in regulation.

Conventional Emission Limits (NSPS/MACT)

- Standardized limits are set for specific emission unit types.
- Output-based NSPS have existed for many years (engines – g/bhp-hr, cement kilns – lbs/ton of clinker) and some are more recent (electric utility boilers - lb/MWh).
  - Again, CHP must include both electric and thermal.
- Easily and directly account for efficiency at the unit.
- More difficult to incorporate broader efficiency at the facility since the limits are generic and fixed, except as a separate practice requirement.
- Very limited role for renewables.
- Must be addressed during rulemaking.

NSR/PSD/BACT

- Case-by-case nature provides more flexibility, especially for plant-wide efficiency.
  - Output reference can be complicated for complex facilities.
- Still must create on-site reductions.
  - Likely problem for CHP and possibly other technologies.
- Can on-site renewables count?
  - As part of regulated unit?
  - Separate from regulated unit?
- Defining enforceable emission limit can be complicated, especially for off-design conditions.

Emission Trading Programs

- Compliance requirement is to hold allowances equal to actual emissions.
  - Efficiency and renewables either off-site or on-site can create creditable reductions in actual emissions.
  - There may be issues over who gets credit for off-site reductions.
- There may be opportunities to promote renewables and efficiency through allowance allocation systems.

Conclusions

- Efficiency and renewables are nearly always environmentally beneficial.
- The opportunity to recognize and/or encourage them through environmental regulation varies by program and application.
- The barriers can be statutory and regulatory or just procedural and mechanical.
- Output-based measurement is a necessary but not sufficient tool.
- Maximizing the support for efficiency and renewables within the CAA will require additional training and support for regulators.

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  http://www.icfi.com/markets/energy/webinar/
  - Focus on energy and environment.
  - Presentations are archived.
- Next webinar on January 11:
  U.S. Regulatory Outlook for 2011

Contact Information

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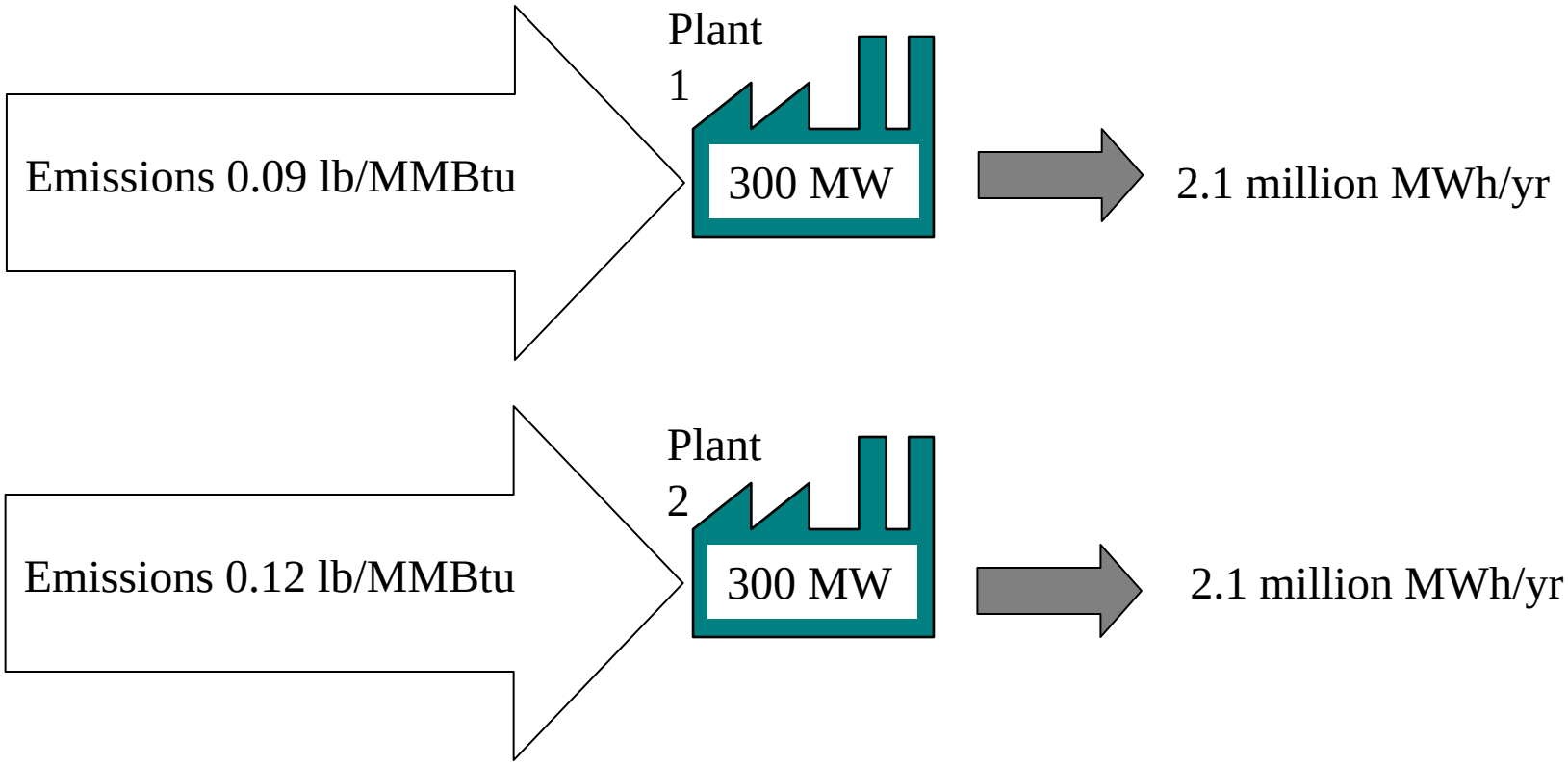
Example of Output-Based Regulation



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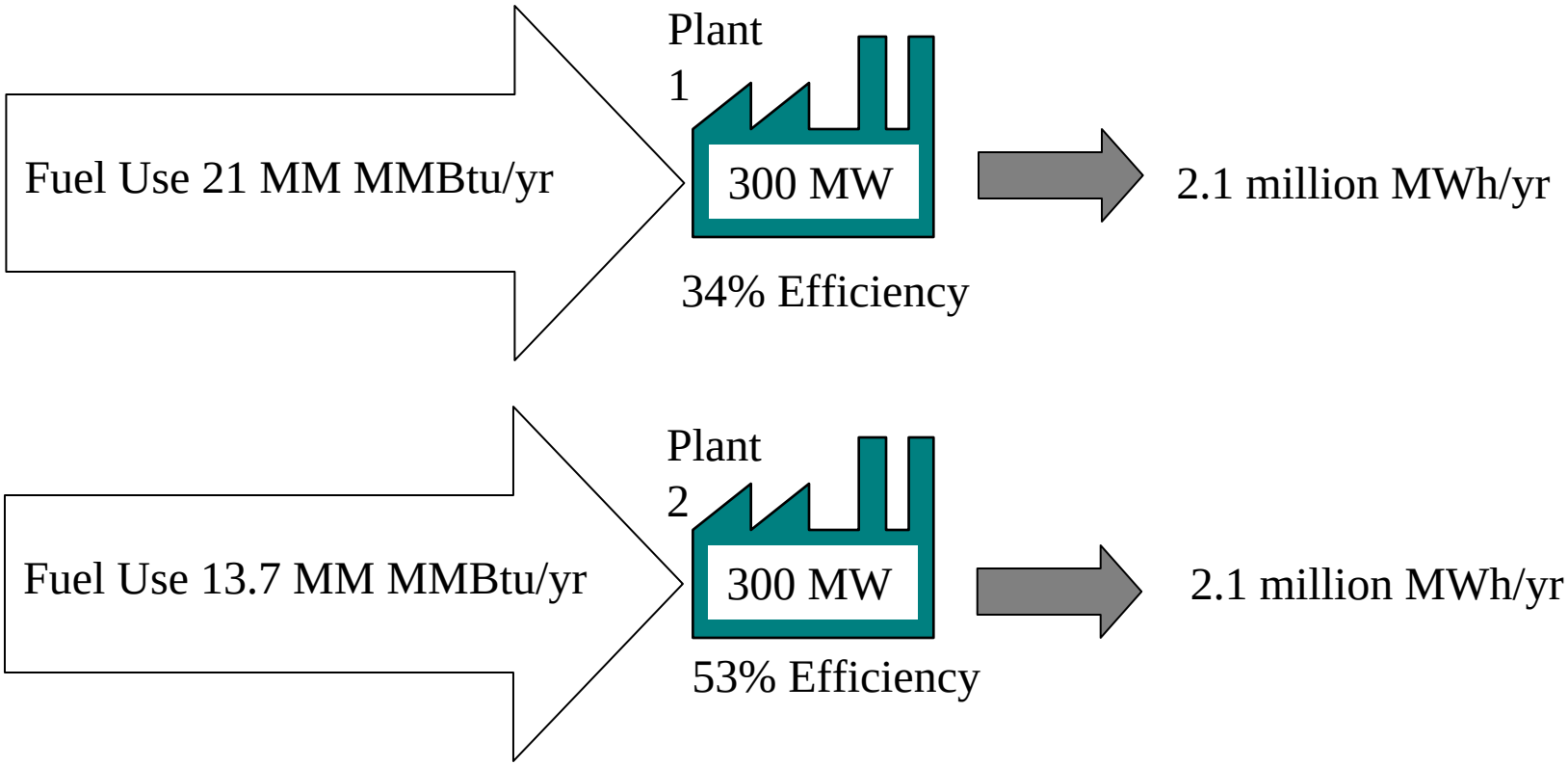

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