

US EPA ARCHIVE DOCUMENT

# Massachusetts' EE/RE Set-Aside Program

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# NOx Allowance Trading Program basics

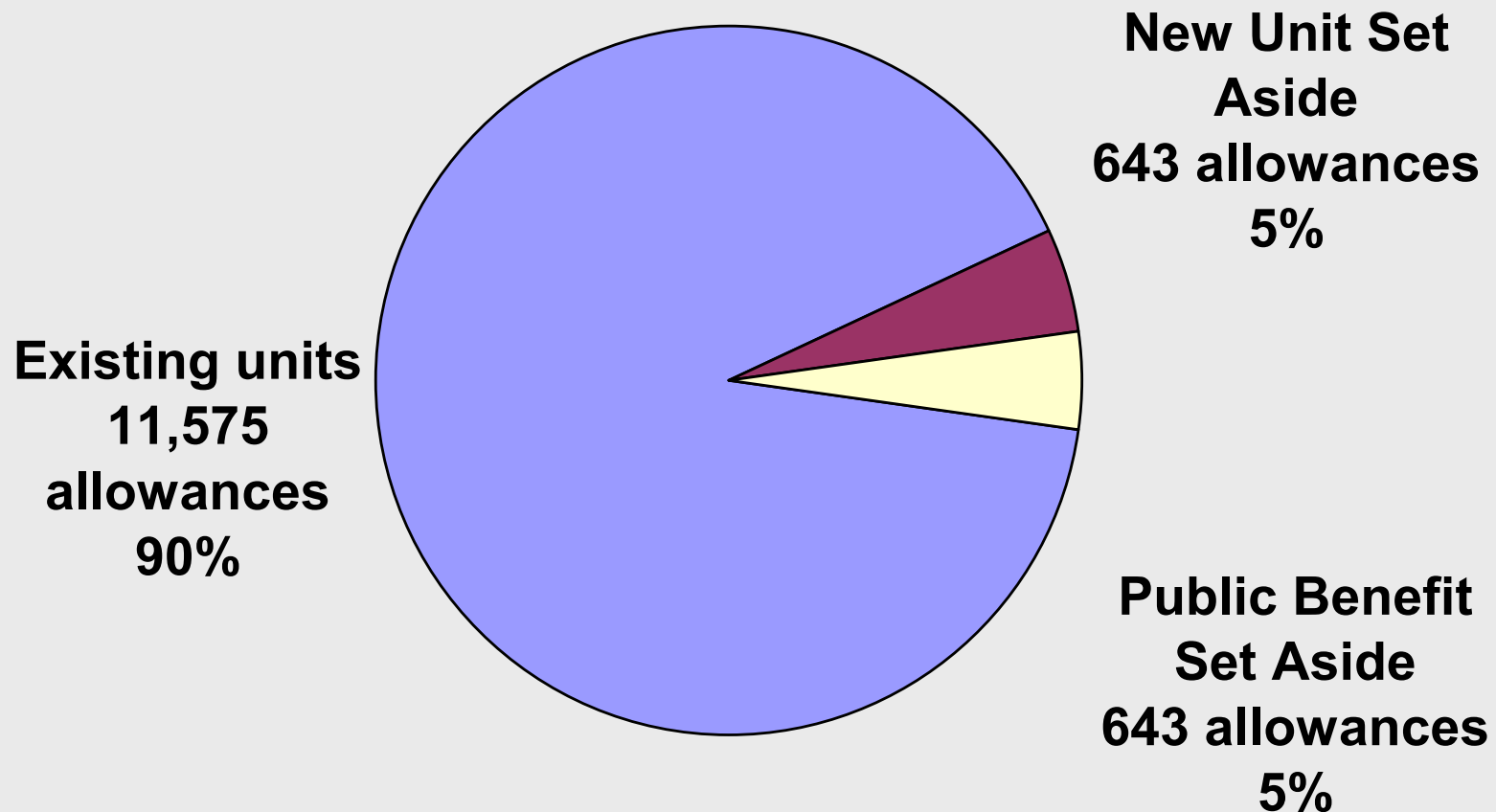
- Goal: Reduce NOx emissions to prevent formation of ground-level ozone
- Implementation:
  - Establish region-wide NOx emissions cap
  - States allocate NOx allowances to facilities, where 1 allowance permits 1 ton of NOx emissions
  - Facilities determine whether it is cheaper to:
    - install NOx controls and sell extra allowances to pay for the controls, or
    - buy allowances from other facilities to cover emissions
- Result: Reductions at lower cost

# NOx SIP Call Framework

- Each state establishes regulations to be included in State Implementation Plan (SIP)
- States have flexibility to include set-asides
  - MA established 2 set-asides in NOx trading rule promulgated in 1999
    - New unit set aside
    - Public benefit set aside (PBSA)
      - Energy Efficiency Projects (EEPs)
      - Renewable Energy Projects (REPs)

# MA Set Asides: New Unit and Public Benefit

**Total MA NO<sub>x</sub> Budget = 12,861 allowances**



# PBSA Implementation Regs Issued July 2004

- Only projects after December 31, 1999 are eligible
- Multiple small projects may aggregate to earn an allowance
- The calculations for determining the number of allowances awarded are specified; however
  - applications for fewer than 5 allowances may propose “other reliable and replicable methods of quantification acceptable to the Department”
  - Tradeoff between verification and not being too burdensome for small projects

# Energy Efficiency Projects (EEPs)

- Buildings more efficient than state building code requires
- Windows, doors, caulking, weather-stripping, insulation, automatic energy control systems, refrigeration, hot water systems, lighting fixtures, motors
- Replacement of furnaces or boilers
- Combined heat and power systems that achieve an energy efficiency of 60%

EEPs can earn allowances for 7 years

# Renewable Energy Projects (REPs)

- "solar photovoltaic or solar thermal energy; wind energy; fuel cells that do not employ a fuel processor that emits NO<sub>x</sub>; ocean thermal, wave or tidal energy; hydro and geothermal energy"

REPs can earn allowances each year as long as generate energy



# First Year MA PBSA Implementation

- Applications for 2003 & 2004 PBSA allowances were due 9/1/2004
- 2 Renewable Energy Projects (hydro) and many Energy Efficiency Projects (light bulbs, boiler controls, motors, LED exit signs, computer "sleep" mode software, Energy Star homes, thermostats, refrigerators, insulation, chiller & HVAC controls, occupancy sensors)
- DEP approved 96 2003 PBSA allowances & 208 2004 PBSA allowances

# Lessons Learned

- Application forms required energy generated or saved (MWh or mmBtu); each application calculated energy differently
- Must check energy calculations for:
  - Appropriate assumptions
  - Completeness
  - Double-counting
  - Math
  - Normalization for weather (via degree days)
  - Use of energy output, not input, as per reg.