
Air Quality Impacts From Delaware Power Plants

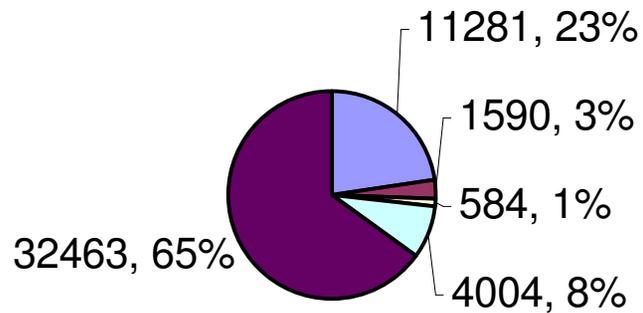
Reducing the Environmental Footprint of Energy Used by Delawareans
Workgroup

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Environmental Impacts from Energy - SO₂

SO₂ - tons per year

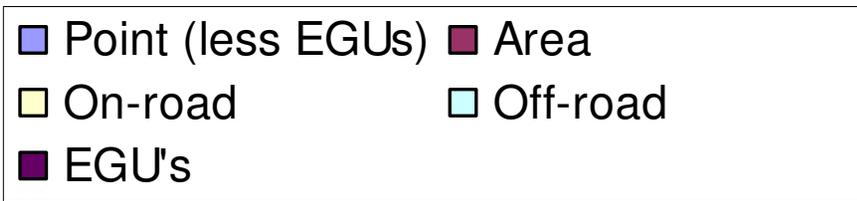
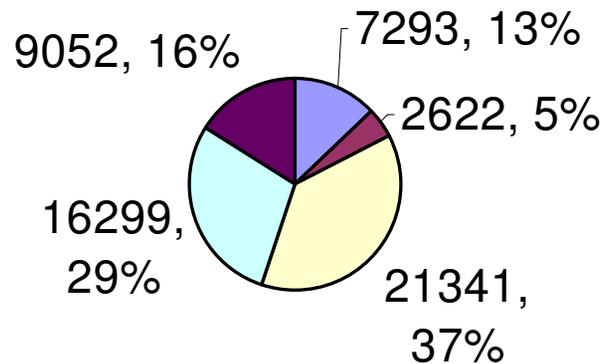


- Approximately **50,000 tons per year** emitted in Delaware
- Delaware's power plants (EGU's) account for 65% of the SO₂ emitted in the state (after the DCR project).
- 75% of the off-road SO₂ emissions are from commercial marine vessels.



Environmental Impacts from Energy - NO_x

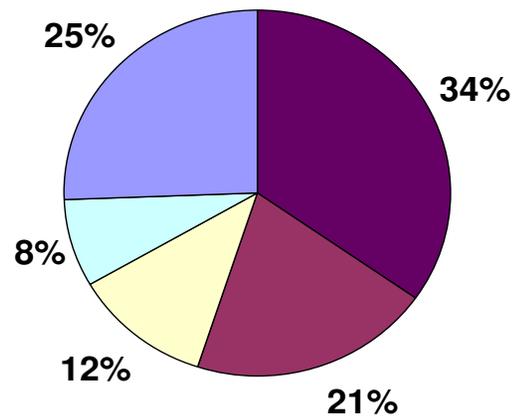
NO_x - tons per year



- Over **47,000 tons per year** emitted in Delaware
- **Mobile sources account for 66%** of states NO_x
- Delaware's power plants accounted for about 16% of Delaware's overall NO_x inventory for 2002.

Environmental Impacts from Energy - CO₂

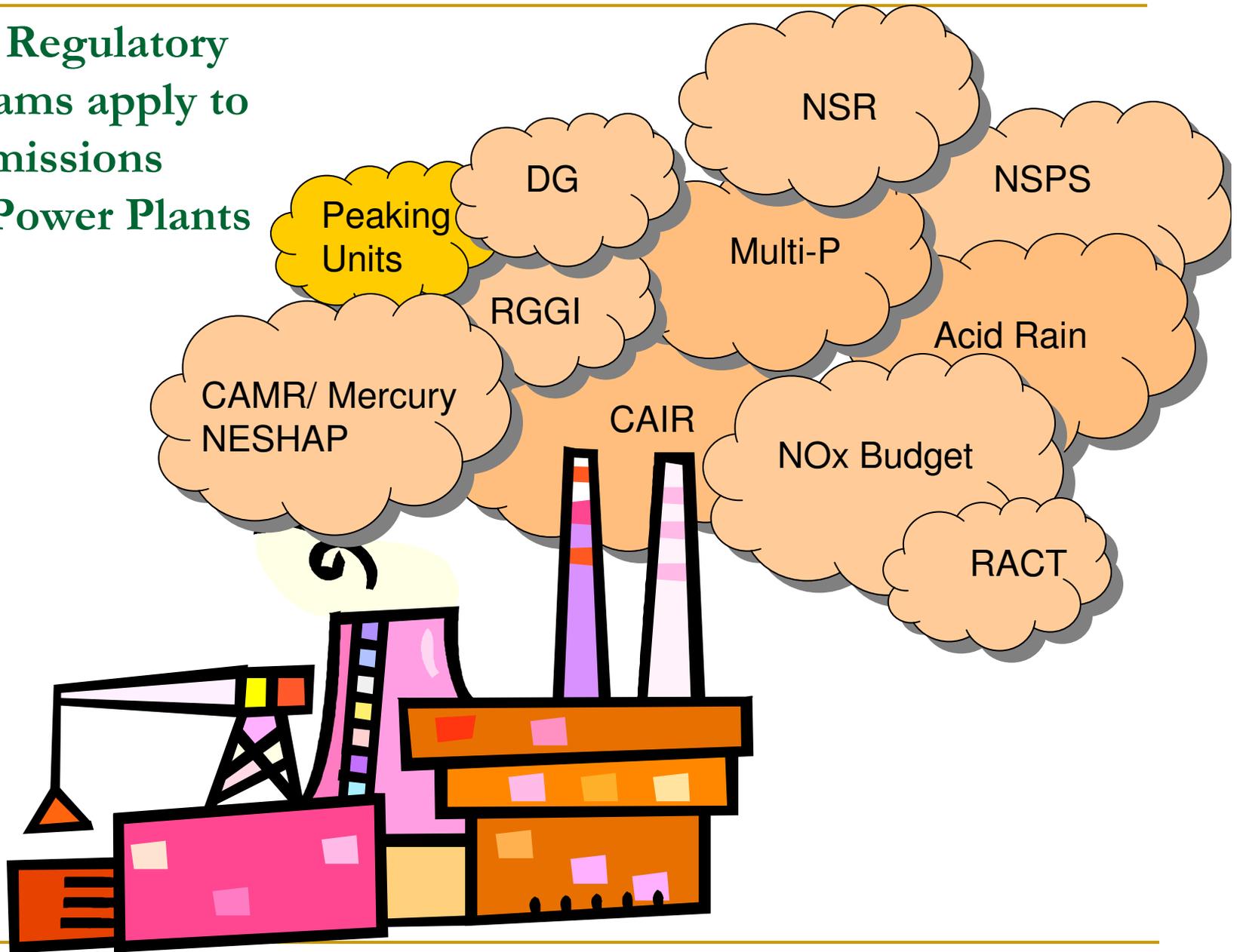
Relative CO2 Emissions



- Delaware's CO2 Emissions in 1990 were 15.6

MMT (DE Climate Change Action Plan, 2000)

Many Regulatory Programs apply to Air Emissions from Power Plants



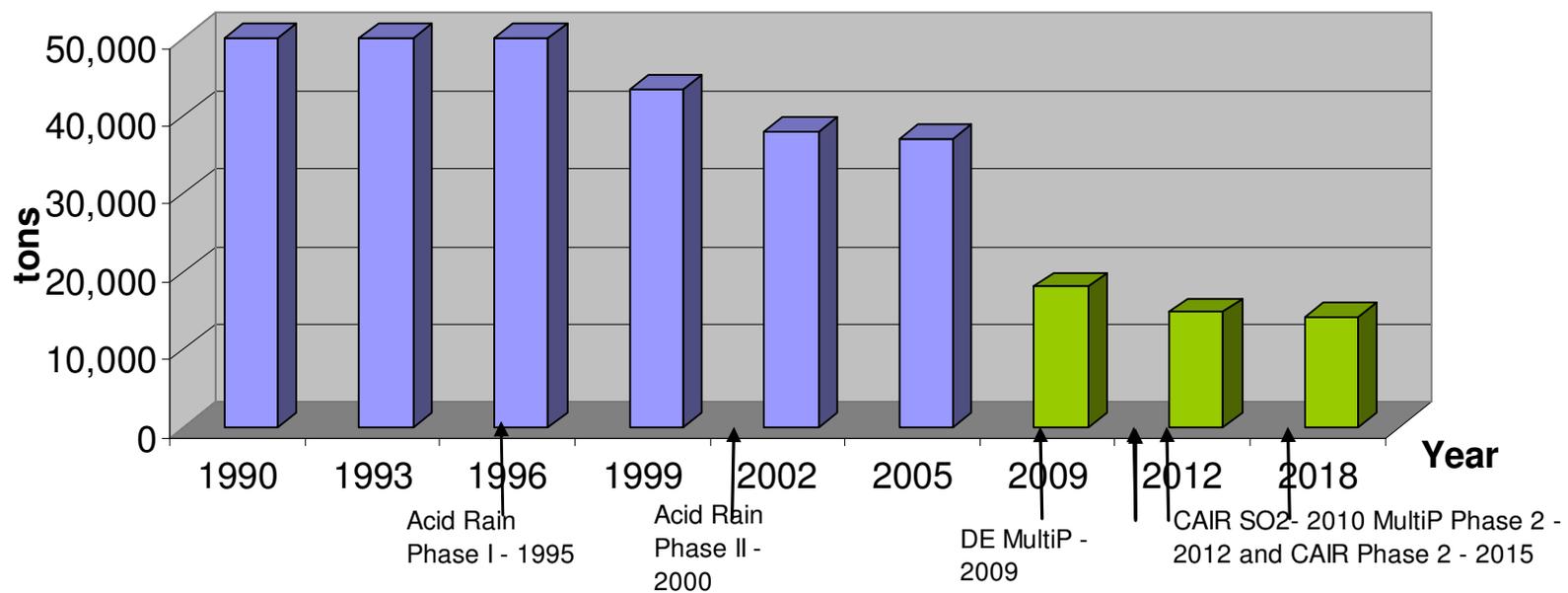
Federal Air Regulations that Apply to Power Plant Emissions

- ❑ Acid Rain Program. A national program designed to reduce SO₂ and NO_x, which cause acid rain.
 - ❑ NO_x SIP Call. A 22-state program designed to reduce NO_x to aid in attainment of ozone standard.
 - ❑ CAIR. A 22-state program designed to reduce NO_x and SO₂ to mitigate transport (*i.e., the impact of upwind states on downwind states*).
 - ❑ CAMR (to be replaced by a Mercury National Emission Standard for Hazardous Air Pollutants). A national program to reduce emissions of the neurotoxin mercury.
 - ❑ New Source Performance Standard. Applies based on the date of construction/ modification.
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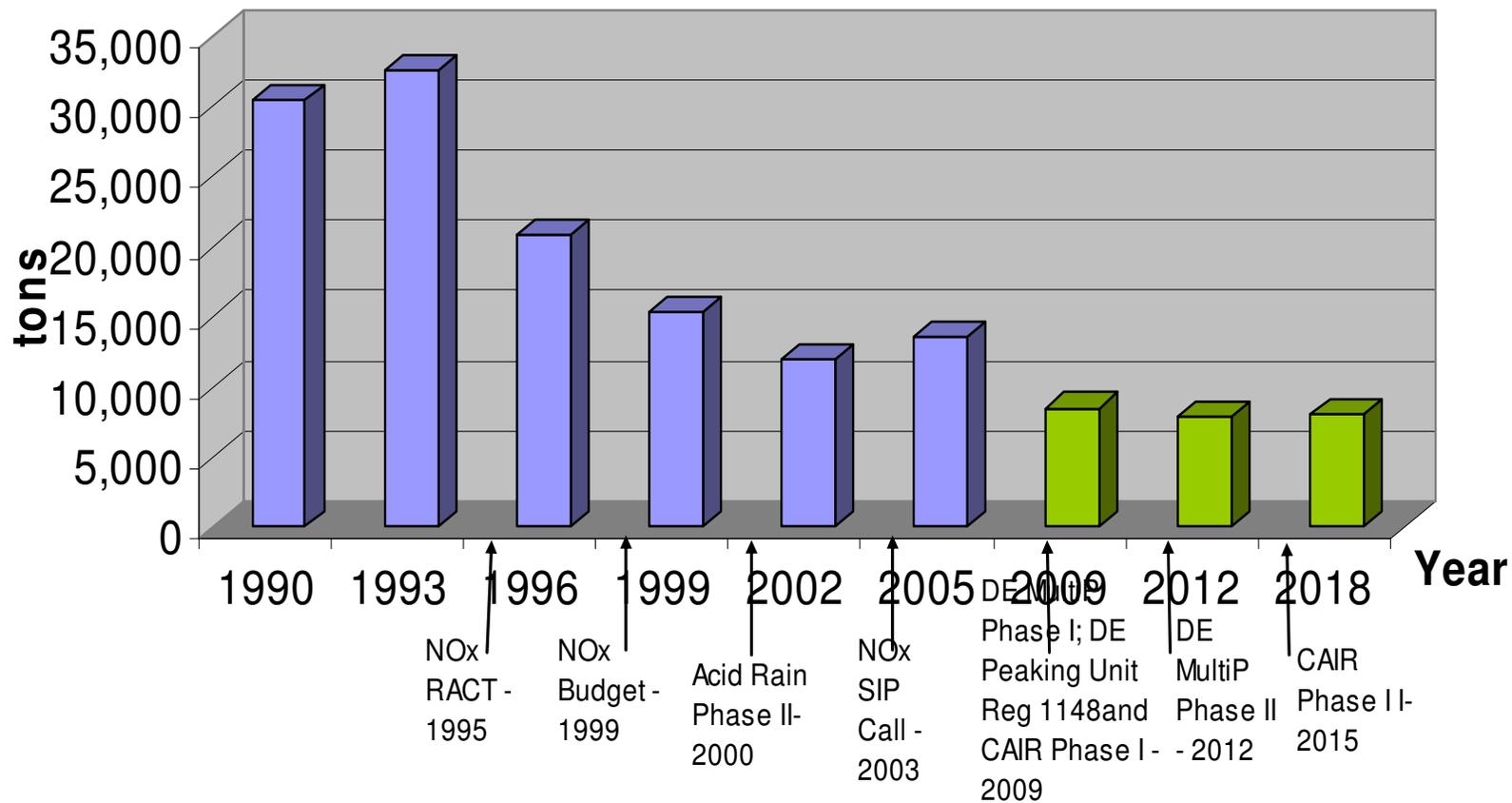
Delaware Regulations that Apply to Power Plant Emissions

- ❑ New Source Review. A delegated federal program that applies based on the date of construction/ modification.
 - ❑ Regulation No. 1112, NOx RACT. A state program that defines a minimum level of NOx control. Developed to aid in the attainment of the ozone standard.
 - ❑ NOx Budget Program. A collaboration among 13-states to reduce NOx emissions to aid in the attainment of the ozone standard. This program was succeeded by the federal NOx SIP Call.
 - ❑ Regulation No. 1144, Stationary Generators. Designed to aid in ozone standard attainment by reducing NOx emissions from generators that have high peak day emissions, yet were uncontrolled because of low annual emissions.
 - ❑ Regulation 1146 Multi-pollutant. Designed to reduce emissions of SO₂, NOx, and Hg to aid in the attainment of ozone and fine particulate matter standards, and to reduce impacts of mercury emissions. Promulgated due to the ineffectiveness of federal programs on Delaware units.
 - ❑ Regulation 1147, Regional Greenhouse Gas Initiative. Reduces CO₂ emissions as a first step to address climate change.
 - ❑ Regulation 1148, Peaking Units. Designed to aid in ozone standard attainment by reducing NOx emissions from combustion turbines that have high peak day emissions, yet were uncontrolled because of low annual emissions.
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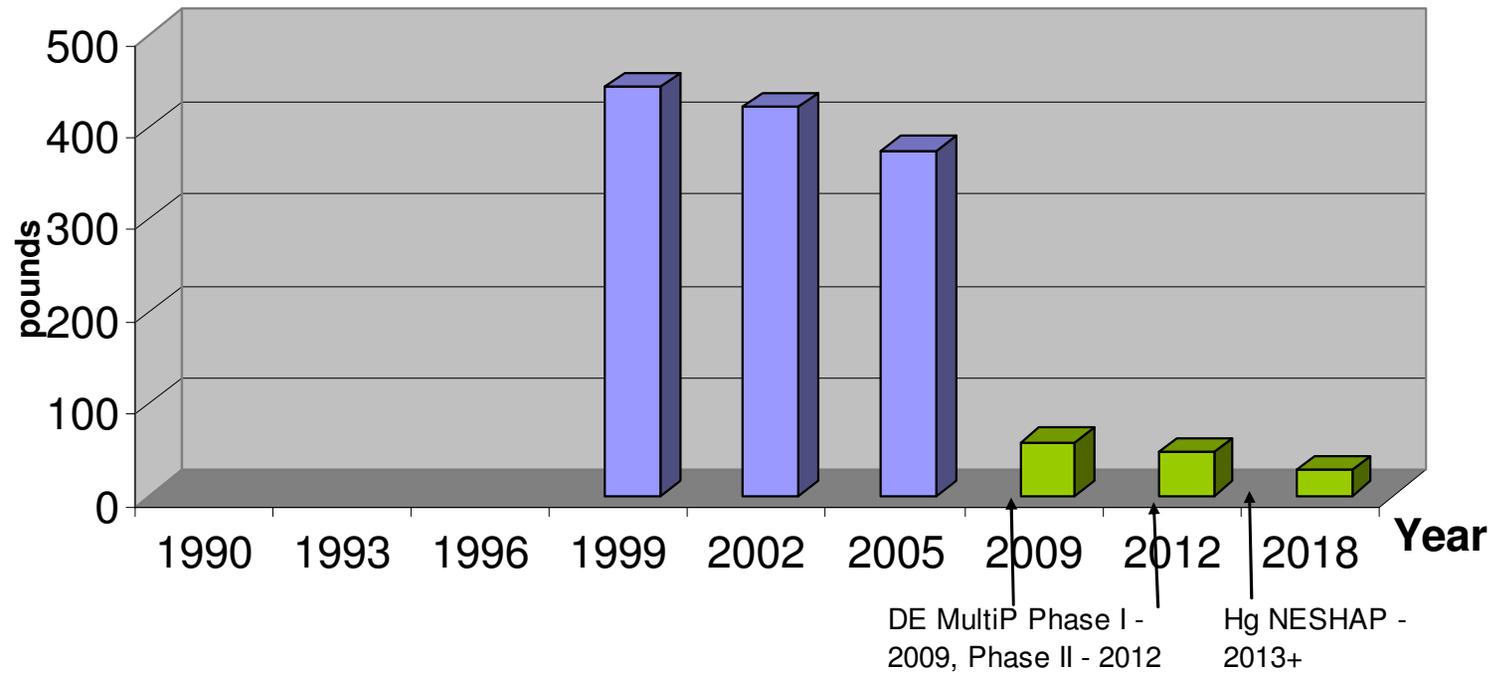
Sulfur Dioxide (SO₂) Emissions from Delaware Power Sector



NOx Emissions from Delaware Power Sector



Mercury (Hg) Emissions from Delaware Power Sector



Carbon Dioxide (CO₂) Emissions from Delaware Power Sector

