



# Connecticut Department of Energy and Environmental Protection



# Fuel Sulfur Content Limitations for Stationary Sources

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SIPRAC



Connecticut Department of Energy and Environmental Protection

# MANE-VU “Ask”

- Connecticut, as a Mid-Atlantic Northeast Visibility Union (MANE-VU) member state, participated in the development of the MANE-VU “Ask”, which was approved by the MANE-VU Board on June 20, 2007.
- Among other items, the MANE-VU “Ask” promises that each member state will pursue the adoption and implementation of a low sulfur fuel strategy.



# MANE-VU “Ask” (cont)

- In its final Regional Haze State Implementation Plan submitted in November 2009, Connecticut committed to pursue adoption of low sulfur fuel requirements consistent with the MANE-VU “Ask”.



# Low Sulfur Fuel Strategy in Outer Zone States

- Reduce sulfur content as follows:
- Distillate oil to 0.05% sulfur by weight (500 ppm) by no later than 2014
- #4 residual oil to 0.25-0.5% sulfur by weight by no later than 2018
- #6 residual oil to no greater than 0.5% sulfur by weight by no later than 2018
- Distillate oil to 15 ppm by 2018, depending on supply availability



# Connecticut General Statute 16a-21a

- Amended in 2013 to remove 3-state “trigger” and revise applicable dates/fuel sulfur content limits
- No. 2 heating oil limited to 500 ppm fuel sulfur content starting July 1, 2014 and 15 ppm fuel sulfur content starting July 1, 2018



# Hey – What about other state fuel sulfur limits?

- DE, MA, MD, ME, NJ, NY, VT have all adopted fuel sulfur limits similar to the MANE-VU “Ask”
- PA has adopted a 500 ppm fuel sulfur limit for distillate oil and 5000 ppm fuel sulfur limit for residual oil in 2016
- RI is currently pursuing adoption of fuel sulfur limits consistent with the MANE-VU “Ask”



# CT DEEP Proposal for fuel sulfur limits

- Regulations of Connecticut State Agencies (RCSA) section 22a-174-19 amended to only address sulfuric acid plants, sulfur recovery plants, nonferrous smelters, sulfite pulp mills and other process sources.
- RCSA section 22a-174-19a amended to remove obsolete date/emission limit requirements and clarify record keeping requirements.
- New RCSA section 22a-174-19b added to address fuel sulfur content limitations for stationary sources not covered by RCSA section 22a-174-19.



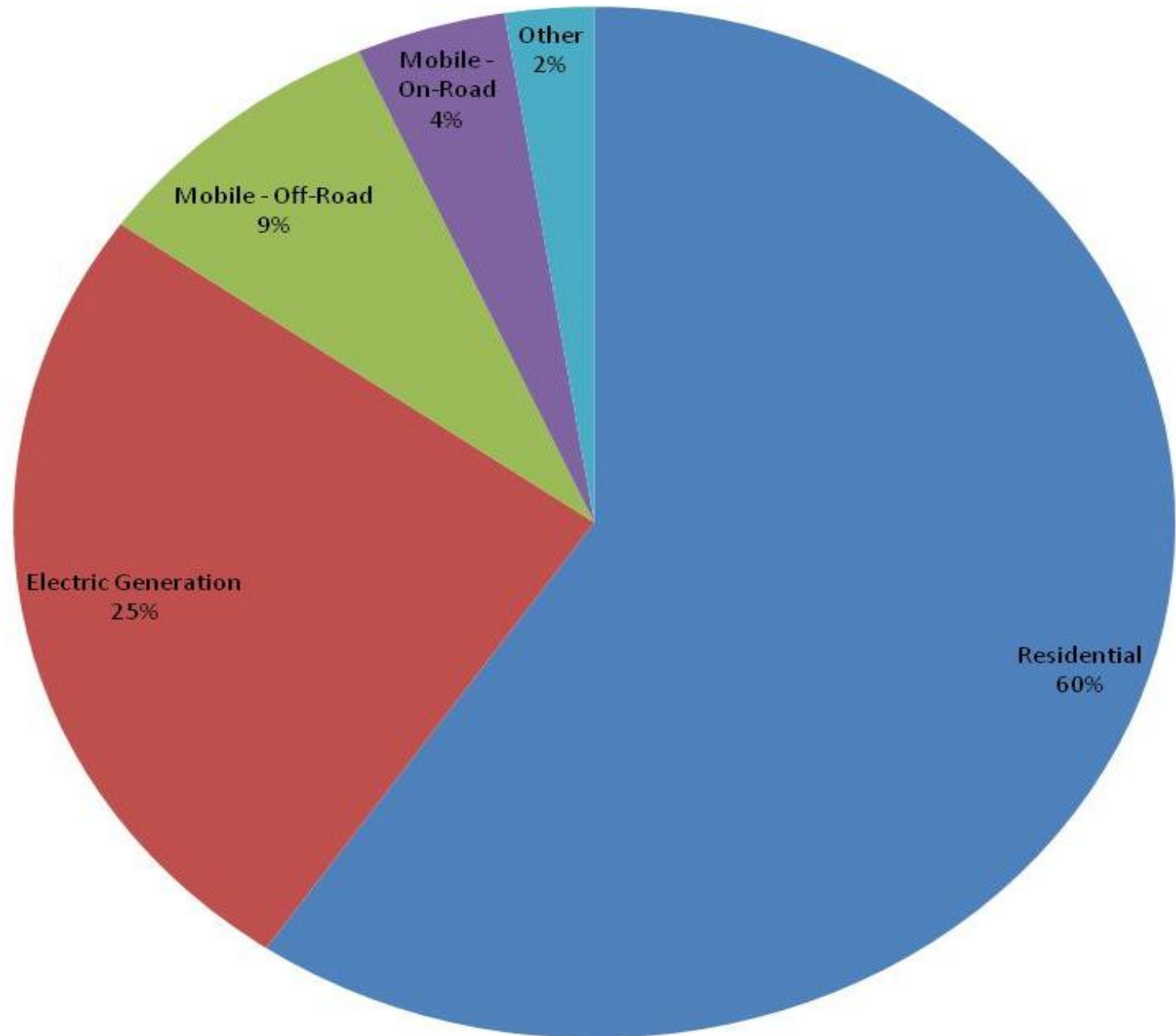


# CT DEEP Proposal for fuel sulfur limits (cont.)

<b><u>Table 19b-1</u></b>		
	<b>Maximum Fuel Sulfur Content</b>	
<b>Fuel Type</b>	<b>Effective July 1, 2014 through June 30, 2018</b>	<b>Effective on and after July 1, 2018</b>
Distillate fuel oil or distillate fuel oil blended with biodiesel fuel	500 ppm (0.05%) by weight	15 ppm (0.0015%) by weight
Residual oil or residual oil blended with biodiesel fuel	10,000 ppm (1.0 %) by weight	3000 ppm (0.3%) by weight
Aviation fuel combusted in a stationary source	3000 ppm (0.3%) by weight	15 ppm (0.0015%) by weight
Kerosene	400 ppm (0.04%) by weight	15 ppm (0.0015%) by weight



# Connecticut 2008 Sulfur Dioxide Emissions Inventory



# Air Quality Benefits

- Minimize Emissions of SO<sub>2</sub>
  - Potential SO<sub>2</sub> emissions reductions in 2018:
    - Distillate fuel oil ≈ 2,200 tons
    - Residual fuel >150 tons
    - Residential fuel oil ≈ 10,000 tons
- Decrease the formation of PM<sub>2.5</sub>
- Decrease sulfuric acid formation
- Attain and maintain NAAQS for PM<sub>2.5</sub> and SO<sub>2</sub>
- Reduce regional haze and improve visibility as required under the Clean Air Act
- Secondary Benefit: Decrease Emissions of NO<sub>x</sub> – process that removes sulfur also removes nitrogen from fuel



# Public and User Benefits

Cost effective – no add-on controls

Reduce rate of boiler fouling:

- lower furnace maintenance costs
- higher fuel efficiency

Less corrosive combustion byproducts:

- extend boiler/furnace life
- could reduce the cost of new oil-burning equipment

Decreases emergency room visits and hospital admissions for respiratory & cardiovascular disease

Avoided adverse health costs  $\approx$  \$18,000/ton of sulfur removed across MANE-VU states



# Public hearing on proposal

- The public hearing on the proposal was held on October 9, 2013
- The comment period closes October 10, 2013 (today).



# Questions?

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