

NOx Regulatory Strategy: a different approach



February 14, 2008

Continue Status Quo



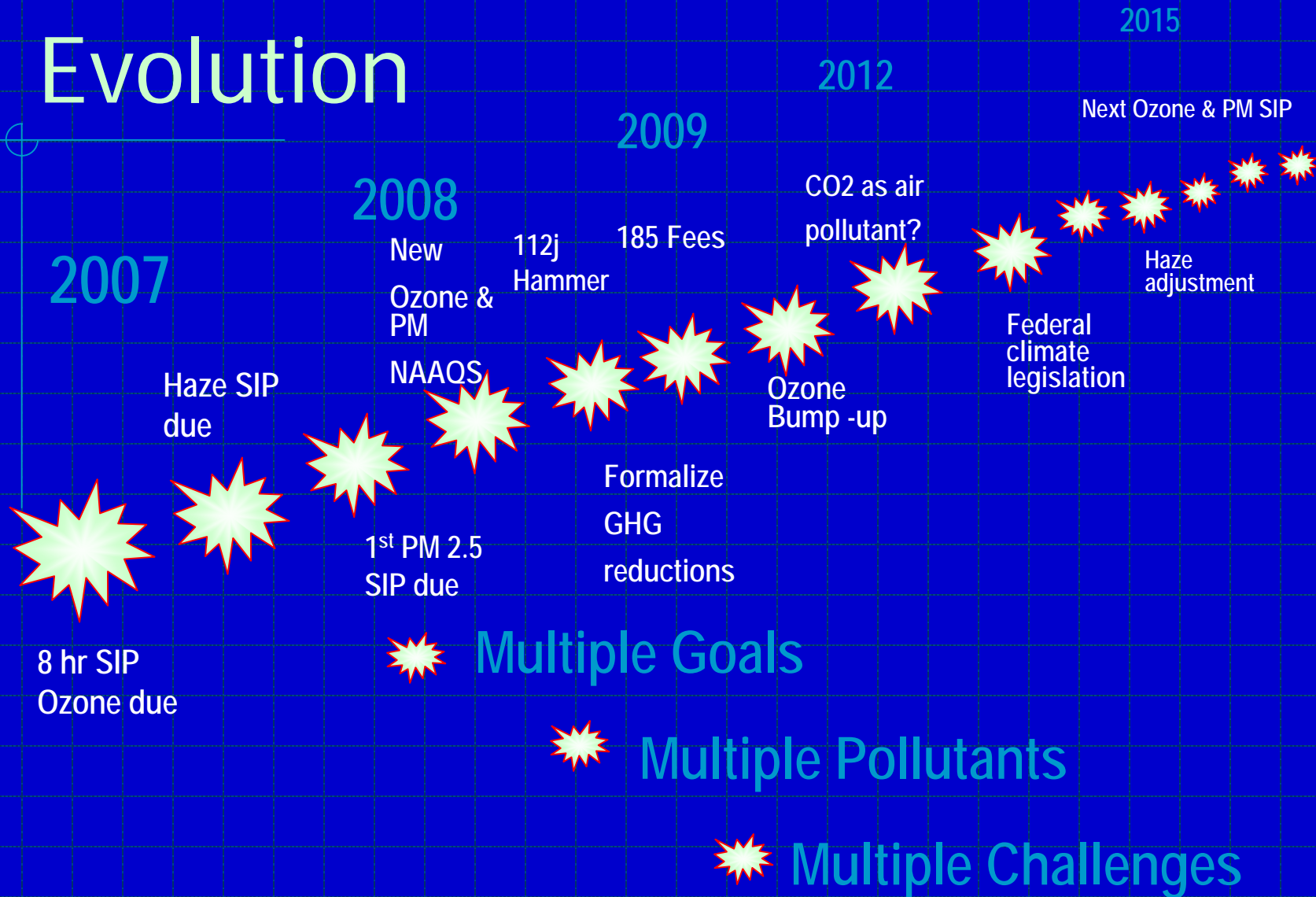
Section 22 Hearing Officer Recommendations

- ◇ 2001 Model Rule as a general template
- ◇ Applicability included boiler program
- ◇ Introduced the tune-up program
- ◇ Compliance Plans to include
 - Control strategy evaluations
 - Credit Creation & Acquisition Program
- ◇ However, lacked long term effectiveness
 - ozone planning
 - 2006 Model Rule

Not Addressed by Section 22

- ◆ 2006 OTC model rule
- ◆ HEDD and daily limits
- ◆ 112j MACT hammer for boilers
- ◆ Climate change opportunities
- ◆ Energy market evolution

Evolution



Up to this point air pollution control strategy has been linear...

One Pollutant

One Strategy

One Goal

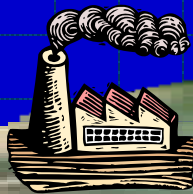
SO₂



Reduce Sulfur
in fuel oil



Attain NAAQS

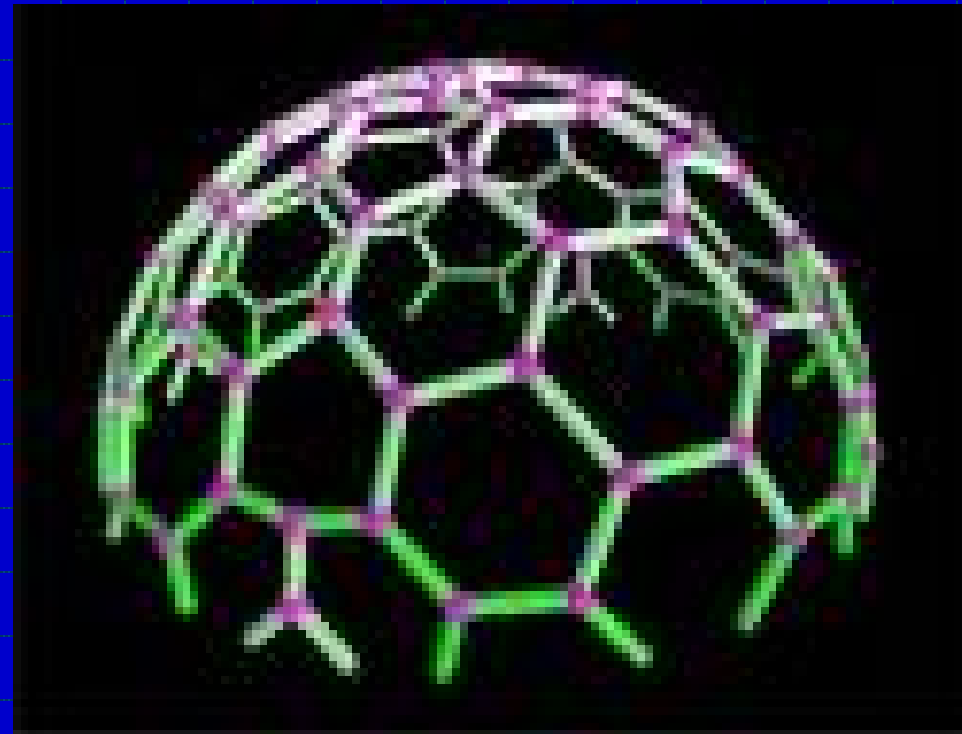


Determine Desired Outcome



Multi-pollutant challenge

- ◆ Integrated air quality planning
 - CLIMATE
 - OZONE
 - HAZE
 - PM



Strategic Approach



- ◆ Think holistically
 - Ozone & particulate matter attainment
 - Regional haze –natural visibility conditions
 - Climate change stabilization
 - Toxic exposure reduction
- ◆ Coordinate outcome with state energy planning

Energy Objectives



- ◆ Support clean & renewable energy
- ◆ Cut energy use and costs
- ◆ Choose cleaner transportation
- ◆ Reduce, reuse and recycle

Legal Obligations

- ◆ NO_x & VOC
 - ◆ Reduce annually by greater than 3% (CAA)
- ◆ Climate (CO₂)
 - ◆ Reductions by 2010 of 12.9 MMTCO₂E
 - ◆ Reductions by 2020 of 17.3 MMTCO₂E
- ◆ 8-hr ozone NAAQS (NO_x & VOC)
 - ◆ Reduce by 2015 to 70-80 PPB for NAAQS
- ◆ Haze (PM, SO_x, NO_x and VOC)
 - ◆ By 2018 - reasonable reduction needed

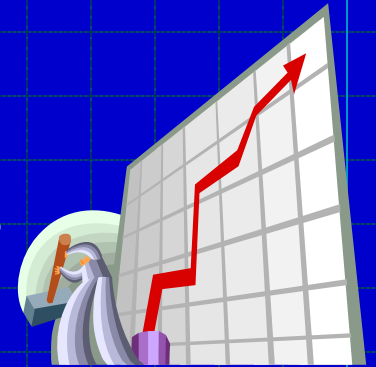
✓ New standards keep coming

We are not alone

Coal Plants with SCR installed as of 2007



New England Growth Factors



- ❖ Continual growth in consumption of energy sources being measured since 1949.
 - See Energy Information Administration
- ❖ Between 2006 and 2015, consumer electricity use in NE will grow about 1.3% annually.
- ❖ Summer demand grows 1.9% annually.
- ❖ For reliability NE would need to add one new 500 MW power plant each year. ISO NE

Policies to Address Growth

- ◆ Improving energy efficiency
- ◆ Reducing
 - Fuel consumption
 - Transmission losses
- ◆ Partnering through
 - Economic incentives
 - Educational outreach

Target Sectors for Reduction

- ◆ Evaluation needs to include:
 - Electricity generation
 - Heating
 - ◆ Industrial, commercial and residential boilers
 - Process sources

A Different Approach

- ◆ Strategy based on multi-pollutant, multi-dimensional evaluations
- ◆ To include:
 - ◆ All pollutants affected/collateral benefits and disbenefits
 - ◆ Re-evaluation of Section 22
- ◆ Opportunity to apply LEAN concepts

Work Plan

- ◆ Internal Lean kick-off – March
- ◆ Concept outline for discussion
- ◆ Public outreach
- ◆ Further scoping
- ◆ Initiate regulatory process