

# Vapor Recovery Transition Issues



**Lisa Rector**

Senior Policy Analyst

[lrector@nescaum.org](mailto:lrector@nescaum.org)

802-899-5306

Manchester, NH

May 1, 2007

# Policy Issues

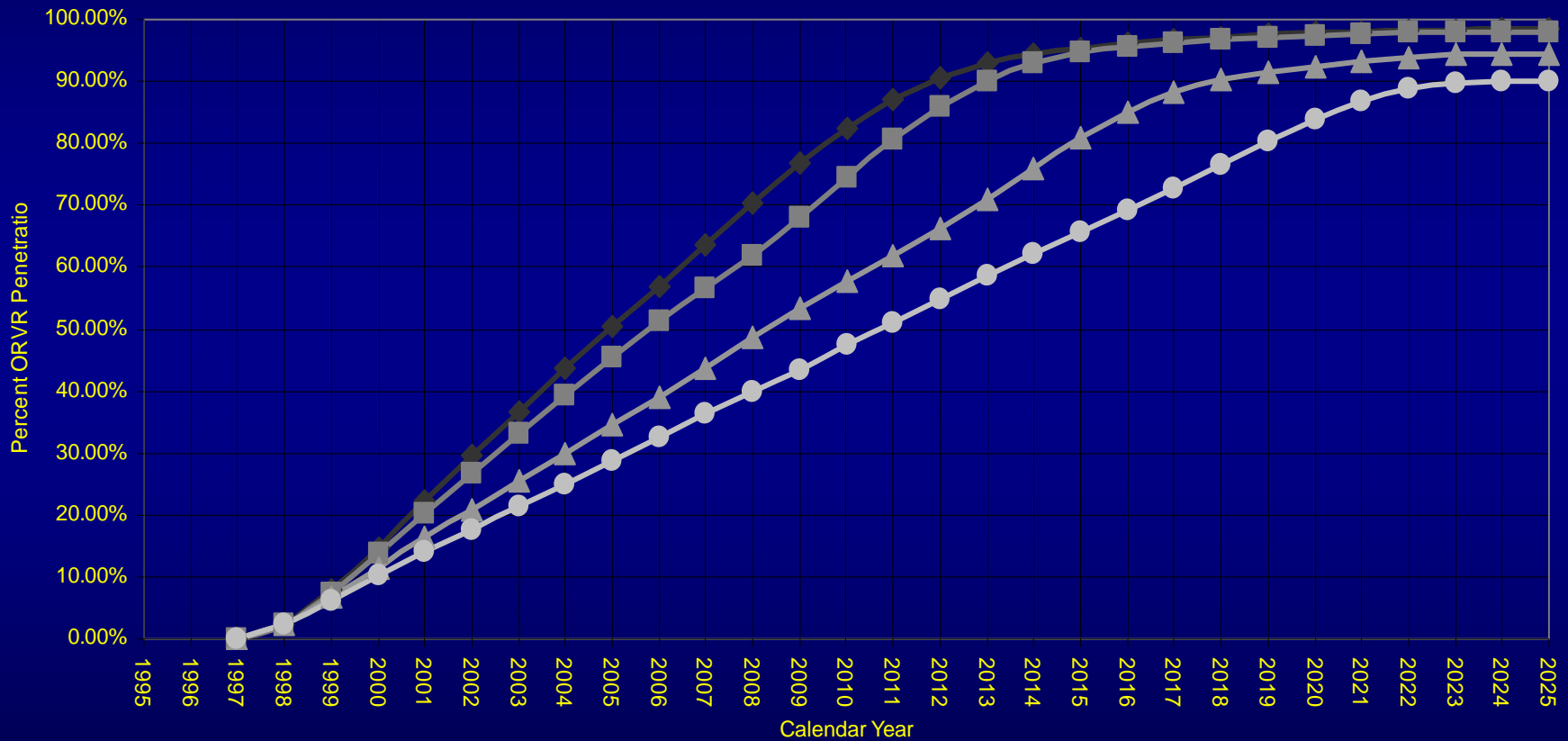
- In order to revise Stage II regulations, States will need to show that changes will not result in an increase in emissions
- In order to revise requirements states will need to revise state regulations and State Implementation Plans (SIPs)
- States in the Ozone Transport Region (OTR)\* have additional requirements to comply with Section 184(b)2 of the Clean Air Act

*\* OTR states include Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Pennsylvania, Rhode Island, Vermont and Northern Virginia*

# ORVR Issues

- As ORVR vehicles penetrate the market, the efficacy of these systems and the ability of the OBD systems to identify failures is critical since Stage II will not act as a backstop to ORVR failures
- Limited test data, to determine efficacy
- No analysis of ORVR effectiveness with alternative fuels such as E85
- Need assurances that OBD will detect ALL ORVR failures

# Comparison of ORVR Penetration into the Automobile Fleet for 13, 15, 20 and 25 Year Average Fleet Lives



# ORVR Issues

Questions/Comments?

# Stage II for New Stations

- SIPs issues may arise if Stage II requirement eliminated for new stations
- EPA Issues has indicated that a cost/benefit analysis might be appropriate
- State RACT levels vary significantly with costs ranging from \$6,600 per ton removed in attainment areas up to \$29,623 per ton removed in non-attainment areas\*

\*in 2006 dollars

# Factors to Consider

- Estimated costs to install Stage II systems
- Potential emission increases if no Stage II system
- Installation of alternative measures in lieu of Stage II to reduce emissions

# Stage II for New Stations

Questions/Comments?



# Stage II for Existing Stations

- Rental car facilities, auto manufacturing facilities and E85 stations
  - EPA memo released on 12/12/2006
  - Facilities OTR states will need to address comparable measures questions
  - May require SIP revision
- Gasoline Stations
  - Requirement to maintain systems remains in place until regulations revised AND revised SIPs are approved by EPA

# Stage II Maintenance Cost Analysis for Existing Stations (95% Stage II control efficiency)

%ORVR in fleet	Emission delta associated with removing Stage II (tons per year)	\$/ton cost to maintain Stage II (no fuel credit)	\$/ton cost to maintain Stage II (with fuel credit)
20	4.20	\$714 - 976	-\$136 – 126
30	3.67	\$817 - 1,116	-\$33 – 266
40	3.15	\$953 - 1,302	\$103 – 452
50	2.62	\$1,143 - 1,562	\$292 – 712
60	2.10	\$1,429 - 1,953	\$579 – 1,103
70	1.57	\$1,905 - 2,604	\$1,055 – 1,754
80	1.05	\$2,858 - 3,906	\$2,008 – 3,056
90	0.52	\$5,716 - 7,811	\$4,866 – 6,961

- typical station throughput of 1,300,000 gallons fuel per year
- uncontrolled emission rate of 8.5 lb/1,000 gallons dispensed =uncontrolled emissions per station of 5.52 tpy
- 95% ORVR control efficiency and 90% Stage II control efficiency
- cost to maintain Stage II systems \$3,000-4,100 per station
- value of recovered gasoline is \$2.55 per gallon or \$850 per ton

# Stage II Maintenance Cost Analysis for Existing Stations (80% Stage II control efficiency)

%ORVR in fleet	Emission delta associated with removing Stage II (tons per year)	\$/ton cost to maintain Stage II (no fuel credit)	\$/ton cost to maintain Stage II (with fuel credit)
20	3.54	\$848-1,160	-\$2-310
30	3.09	\$970-1,325	\$120 – 475
40	2.65	\$1,131-1,546	\$281 – 696
50	2.21	\$1,357-1,855	\$507 – 1,005
60	1.77	\$1,697-2,319	\$847 – 1,469
70	1.33	\$2,262-3,092	\$1,412 – 2,242
80	.88	\$3,394-4,638	\$2,544 – 3,788
90	.44	\$6,787-9,276	\$5,937 – 8,436

- typical station throughput of 1,300,000 gallons fuel per year
- uncontrolled emission rate of 8.5 lb/1,000 gallons dispensed =uncontrolled emissions per station of 5.52 tpy
- 95% ORVR control efficiency and 80% Stage II control efficiency
- cost to maintain Stage II systems \$3,000-4,100 per station
- value of recovered gasoline is \$2.55 per gallon or \$850 per ton

# Vapor Recovery for Existing Stations

- Costs associated with maintaining Stage II at existing stages are within the range of reasonable costs per ton removed
- Costs to maintain balance systems are likely to be lower
- Stage II systems will need to be maintained until states determine appropriate removal dates
- Compliance/enforcement requirements will stay in place

# Stage II for Existing Stations

Questions/Comments?

# Removal of Stage II Systems

- If and when the Stage II requirement is removed, states/EPA will be developing guidance regarding the appropriate procedures for removing Stage II equipment and equipment requirements in a post-Stage II world
- States/EPA concerned about leaks from improper capping and nozzle leaks
- Stage II equipment may still be required beyond the widespread use in shortfall areas
- States have expressed concern regarding the availability of appropriate equipment

# Stage II Phase-out

Questions/Comments?