

# SESSION 6

## Environmentally Concerned Public Sector Panel Discussion

“The Light-Duty Diesel In  
America?”



***John Heywood***  
**Sun JAE Professor of Mechanical Engineering**  
**Director, Sloan Automotive Laboratory**  
**MIT**

***Rich Kassel***  
**Director, National Vehicle & Fuels Project**  
**Natural Resources Defense Council (NRDC)**

***Drew Kodjak***  
**Deputy Director**  
**National Commission on Energy Policy (NCEP)**

***Thomas Lanni***  
**Senior Research Scientist**  
**NYS Dept. of Environmental Conservation (NY DEC)**

***David Park***  
**Environmental Engineer, Program Manager**  
**Northeast States For Coordinated Air Use Management (NESCAUM)**

***Michael Block – Moderator***  
**Senior Staff Engineer**  
**Northeast States For Coordinated Air Use Management (NESCAUM)**

# Key Issues

---

- **Emissions**
- **Energy Security**
- **GHG/Global Warming**
- **Durability & Maintenance**
- **Compliance**

***Customer Acceptance***

# Emissions

---

- **Quantity v Quality**
- **LD Signature different from HD Signature?**
- **Toxics & PM Composition (nanoparticles)**
- **Measurements of Low Concentrations**

# Energy Security

---

**Fuel consumption –  
diesel fuel and CI combustion process**

- **CAFÉ**
- **Fuel Taxation – all & differential**
- **Purchase Tax Credits (ex. hybrid)**
- **Other?**

# **GHG/Global Warming**

---

- **CO<sub>2</sub> as Criteria Pollutant?**

# Durability & Maintenance

---

- **CI “backslide?” – aftertreatment compromises durability & maintenance intervals**
- **SI advancement? – durability & maintenance intervals approaching “diesel-like”**

# Compliance

---

- **Consumer v Commercial**
- **Need I/M for LD Diesels?**
- **What is the template?**
  - **I/M 240?**
  - **Next generation smoke opacity?**

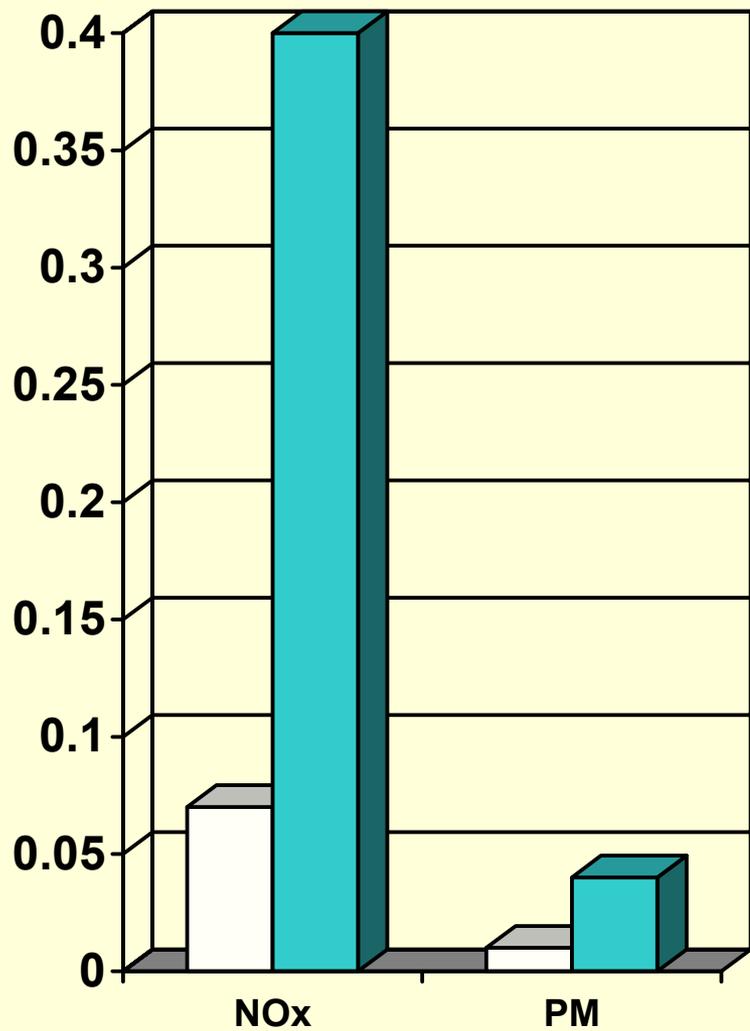
# US Customer Acceptance

---

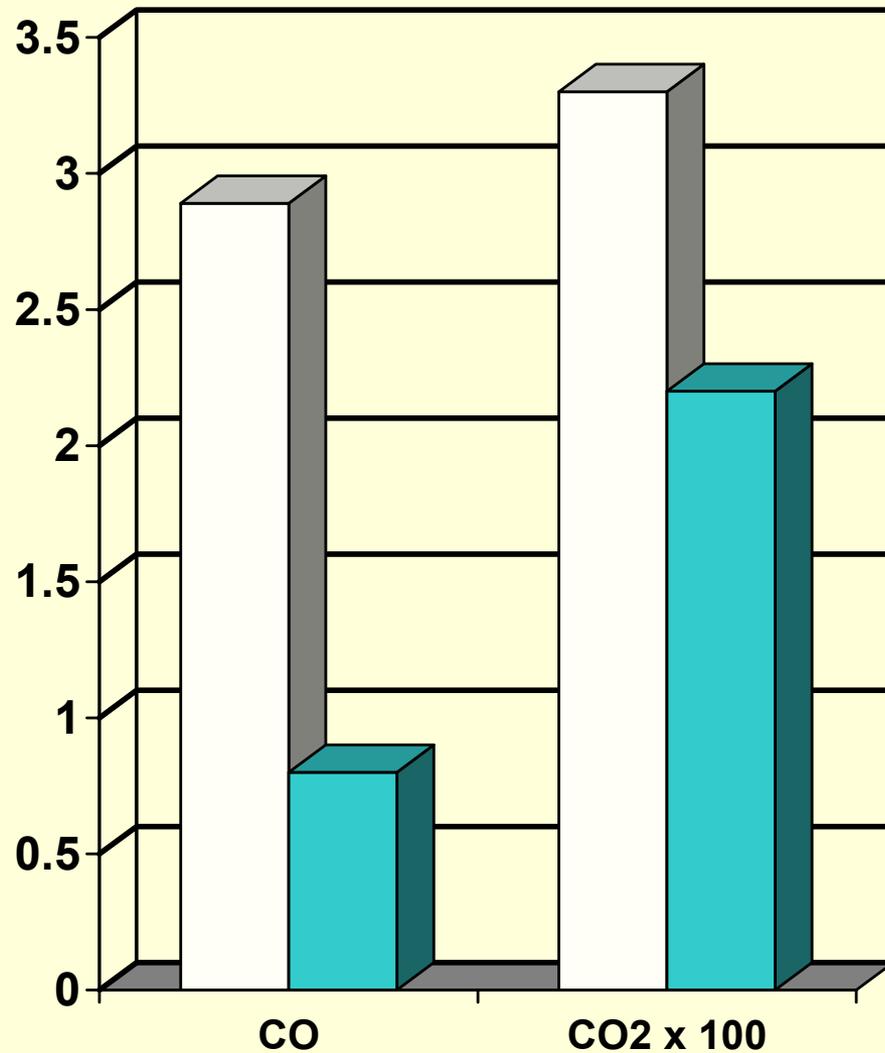
- **Wrapped around all these other issues?**
- **W or w/o “forcing” regulation?**
- **Other alternatives?**
  - **Hybrid**
  - **Hydrogen IC**
  - **SI enhanced – traditional, GDI, other**

***US EPA Tier 2 – Full useful Life, (g/mi)***

<b>Bin#</b>	<b>NOx</b>	<b>NMOG</b>	<b>CO</b>	<b>HCHO (formaldehyde)</b>	<b>PM</b>
11	0.9	0.28	7.3	0.032	0.12
10	0.6	0.156/0.230	4.2/6.4	0.018/0.027	0.08
9	0.3	0.09/0.18	4.2	0.018	0.06
<i>Bins 9 – 11 expire in 2006 (for LDVs and LLDTs) and 2008 (for HLDTs and MDPVs)</i>					
8	0.2	0.125/0.156	4.2	0.018	0.02
7	0.15	0.09	4.2	0.018	0.02
6	0.1	0.09	4.2	0.018	0.01
5	0.07	0.09	4.2	0.018	0.01
4	0.04	0.07	2.1	0.011	0.01
3	0.03	0.055	2.1	0.011	0.01
2	0.02	0.01	2.1	0.004	0.01
1	0.00	0.0	0.0	0.000	0.00



□ US Tier 2    ■ EURO IV



Source: Diesel Technology Forum