# SESSION 6

## Environmentally Concerned Public Sector Panel Discussion

## “The Light-Duty Diesel In America?”

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# 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

- $CO_2$ as Criteria Pollutant?

# Durability & Maintenance

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

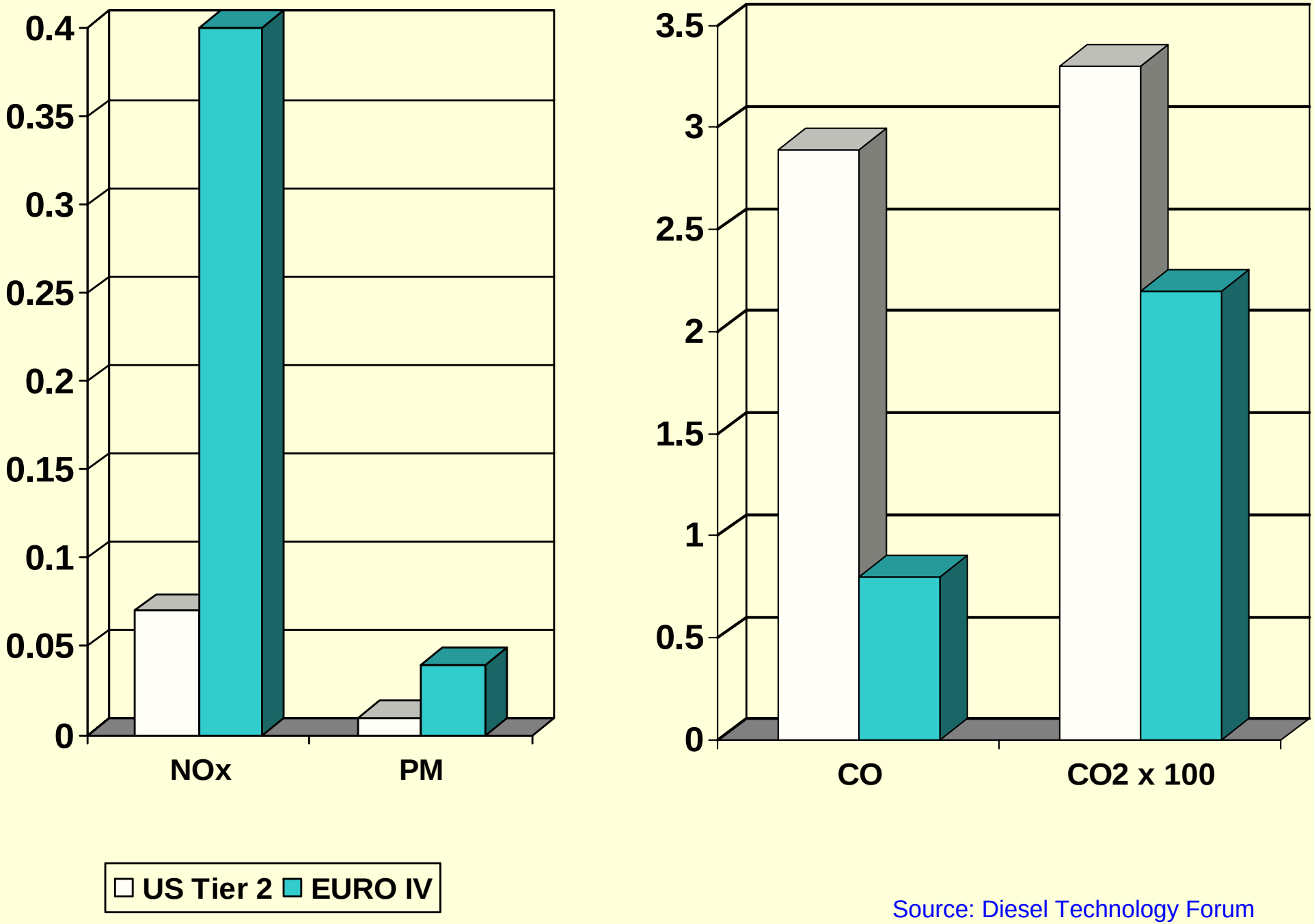
# Compliance

- 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)* | | | | | |
|---|---|---|---|---|---|
| **Bin#** | **NOx** | **NMOG** | **CO** | **HCHO (formaldehyde)** | **PM** |
| 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 |
| *Bins 9 – 11 expire in 2006 (for LDVs and LLDTs) and 2008 (for HLDTs and MDPVs)* | | | | | |
| 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 |




Source: Diesel Technology Forum