

# Technologies for mitigating diesel black carbon

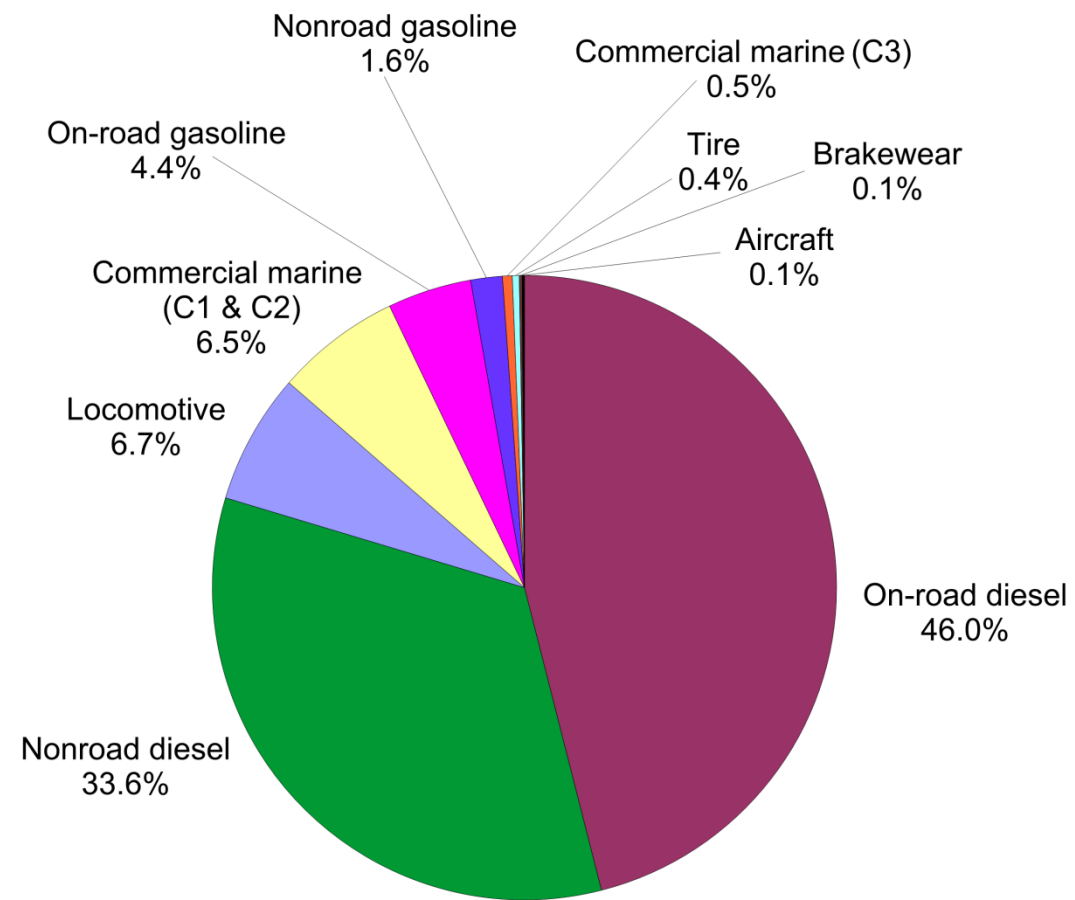
Dan Birkett  
EPA Region 2



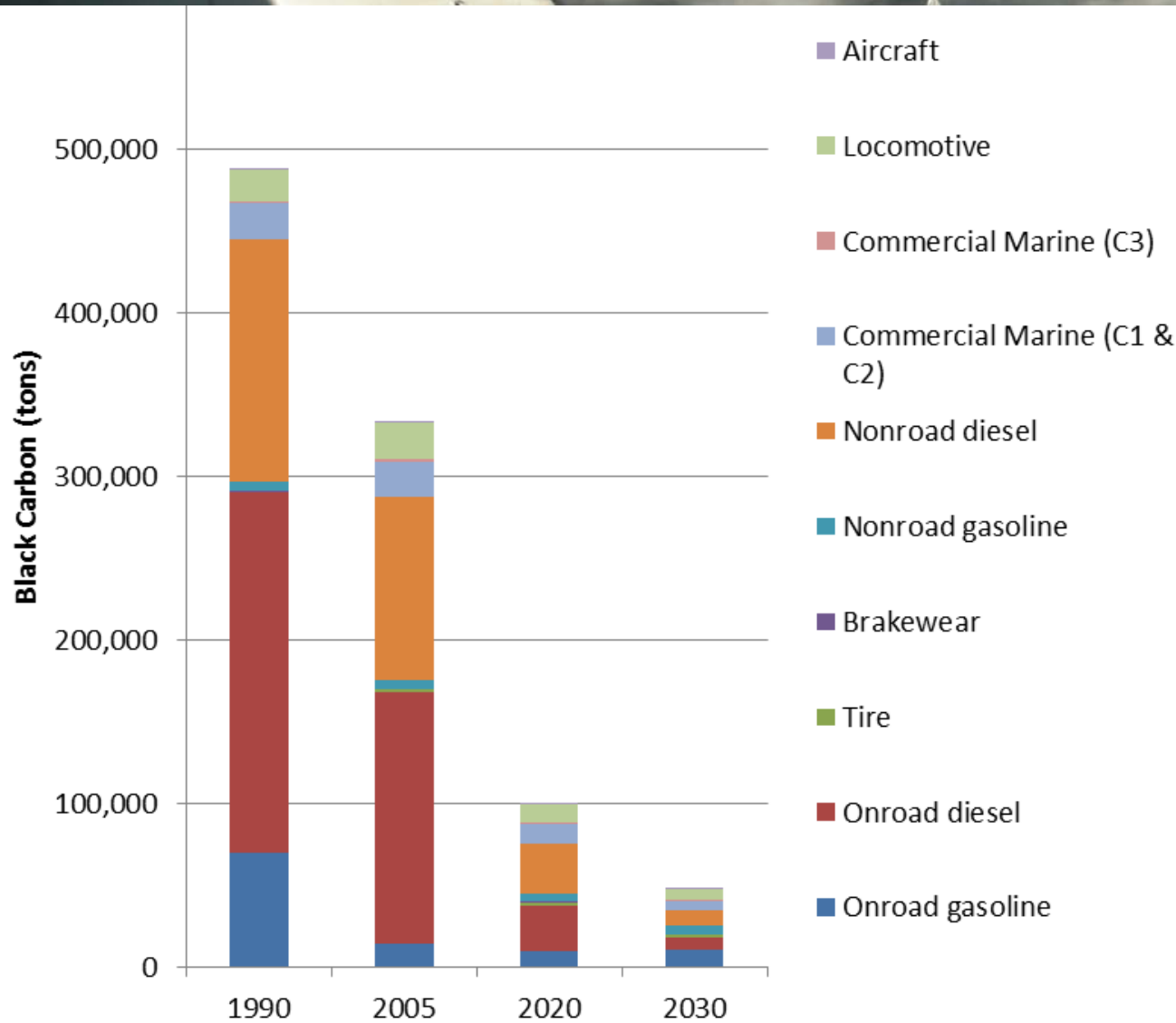


# BC Emissions from Mobile Sources

- Year 2005
- U.S. mobile source BC comes mainly from diesels
- Gasoline exhaust is a smaller source of BC



# Projected Decline in BC Emissions from Mobile Sources

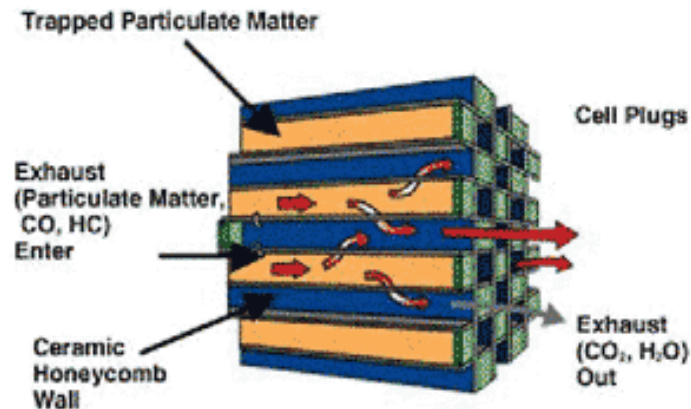


Total U.S. mobile source BC emissions are projected to decline by 86% by 2030 due to regulations already promulgated.

Emissions from U.S. Mobile Sources

# Aftertreatment technologies

- Diesel particulate filters can reduce BC by 99 percent
- Partial flow filters, oxidation catalysts, closed crankcase ventilation, selective catalytic reduction don't provide significant BC reductions directly



## Active Diesel Particulate Filter (DPF) (catalyzed)

- Reduction of the particulate matter by more than 90%
- Enhanced regeneration performance
- Significant reduction of soot ignition temperature

- Ultra low sulfur diesel
  - 15ppm sulfur enables use of DPFs
  - Current standard highway, nonroad and marine
- Renewable and alternative fuels
  - LNG/CNG
  - Biodiesel
  - Electricity





## In-Use Diesel Programs

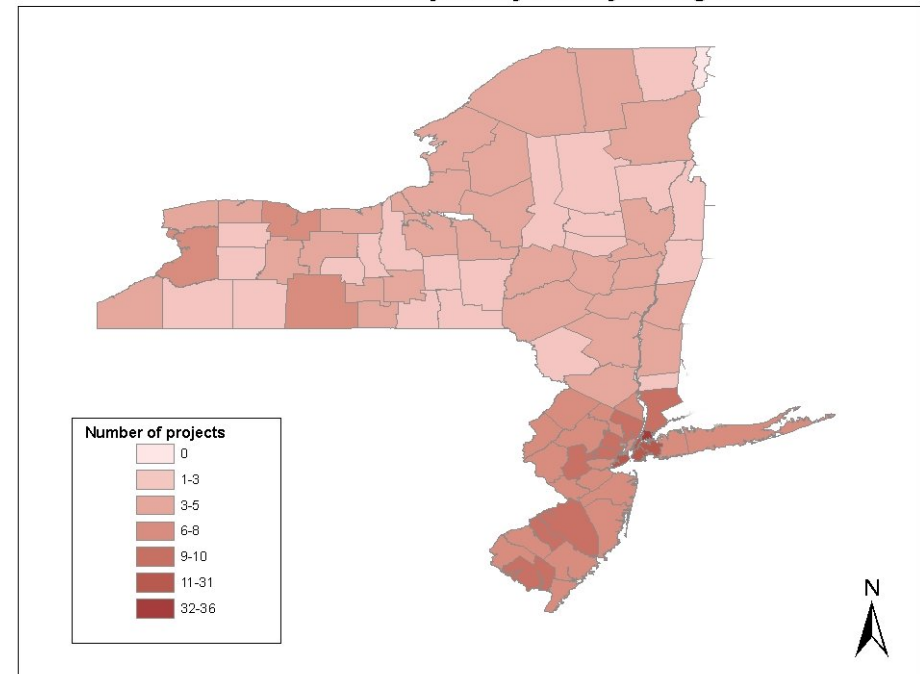
- The tightest standards on new diesel engines can not clean up the existing fleet
- Goal: reduce emissions from the legacy fleet of 11 million diesel engines
- National Clean Diesel Campaign components:
  - Diesel Emissions Reduction Program (DERA): retrofit, repower, replace, refuel...
  - SmartWay Transport Program: Promote fuel saving technologies; less fuel = emissions reductions



## Accomplishments to date

- National
  - EPA has awarded over 500 grants across the U.S. totaling over \$500 Million
- State
  - DERA funds have provided States with \$165 Million for clean diesel projects in all 50 States, plus D.C. and the 5 territories

Number of Diesel Projects by County in Region 2



**Dan Birkett**

EPA Region 2

[birkett.daniel@epa.gov](mailto:birkett.daniel@epa.gov)

212-637-3701