



# **Gauging Demand for Carl Moyer Program Funding**

**Carl Moyer Program Advisory Group**

California Air Resources Board

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Sacramento, CA



# Gauging Demand for Incentives

- Interaction of ARB incentive programs
- Impact of regulations on Moyer project eligibility
- Conclusions

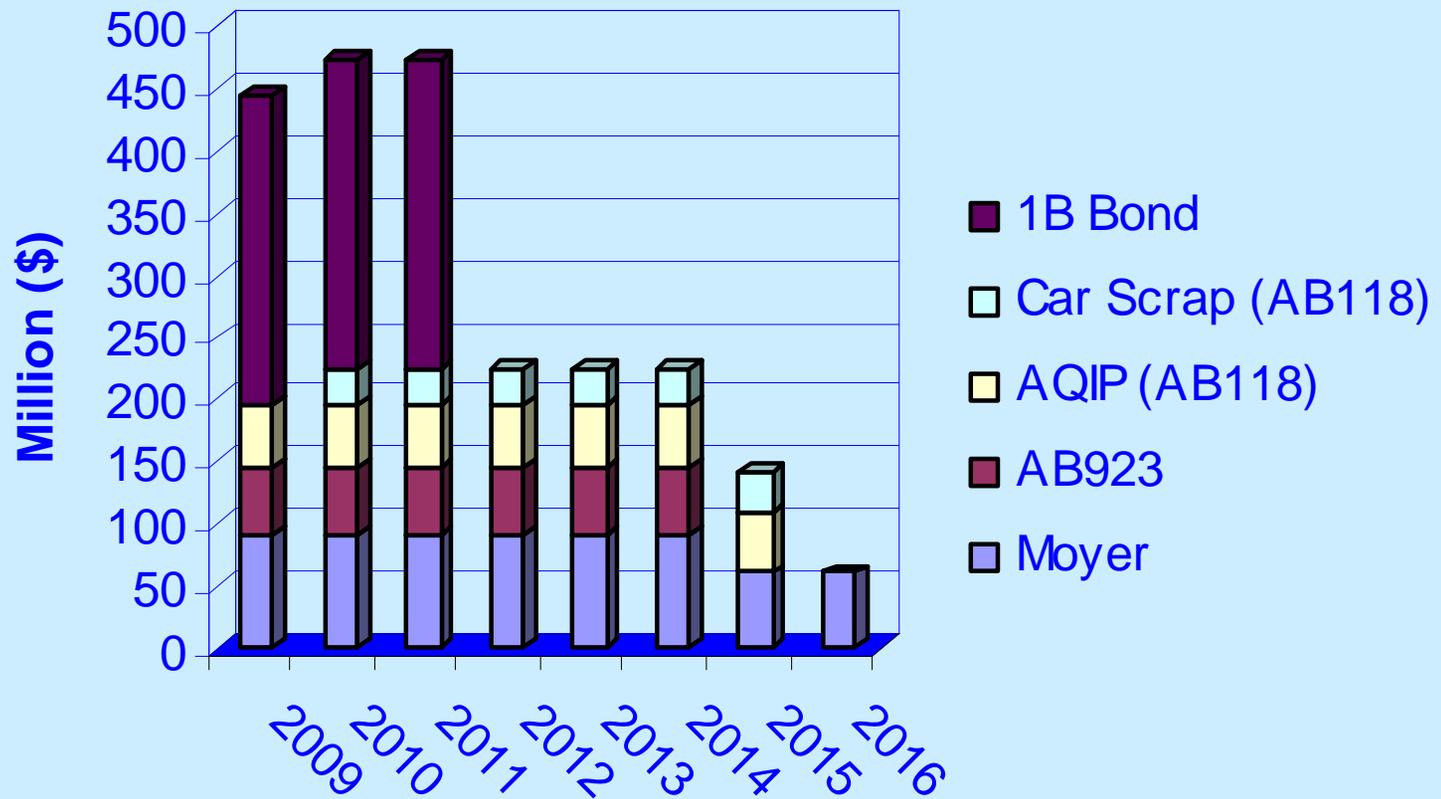


**“Prediction is very difficult,  
especially if it's about the  
future.”**

**Niels Bohr**



# Incentive funding 2009-14





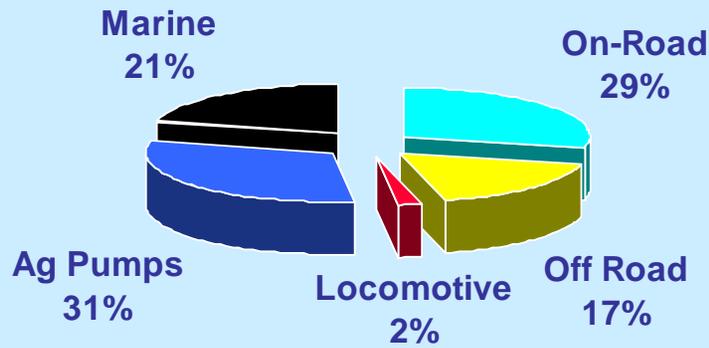
# Impact of Regulations

- Growth of in-use heavy duty diesel engine regulations
  - 1998: None
  - 2008: 15
- How will regulations affect the supply of eligible equipment?

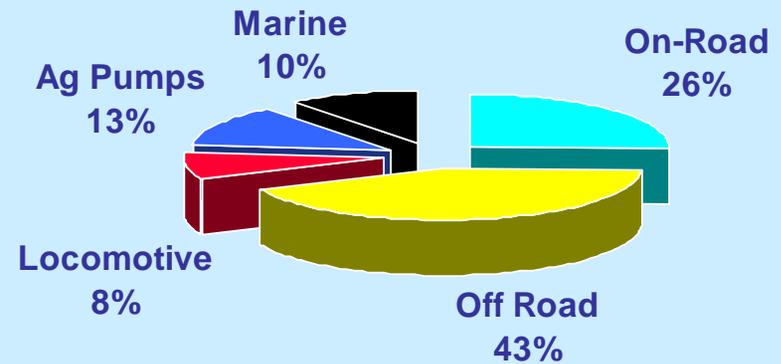


# Moyer Funding Trends

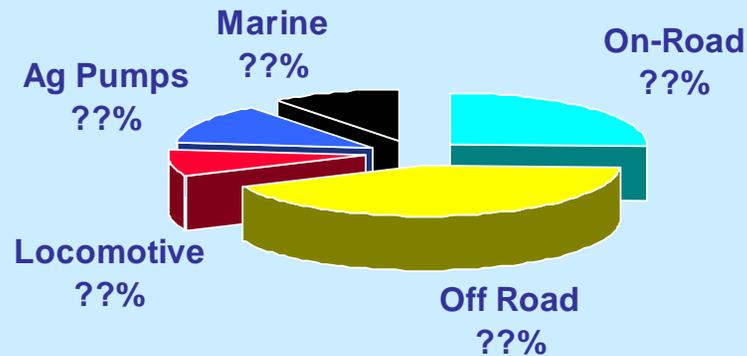
Percentage of Funding  
1998-99 to 2003-04



Percentage of Funding  
2006-07



Percentage of Funding  
2009-14





# Gauging Demand

- **Estimate total equipment** that could apply for funding from 2009-2014
  - Regulated and unregulated
  - Regulatory staff reports
  - Inventory models
  - Based on equipment with 3-4 years before compliance dates (except ag pumps)
- **Estimate total funding**
  - Regulatory compliance costs
  - Past Moyer projects



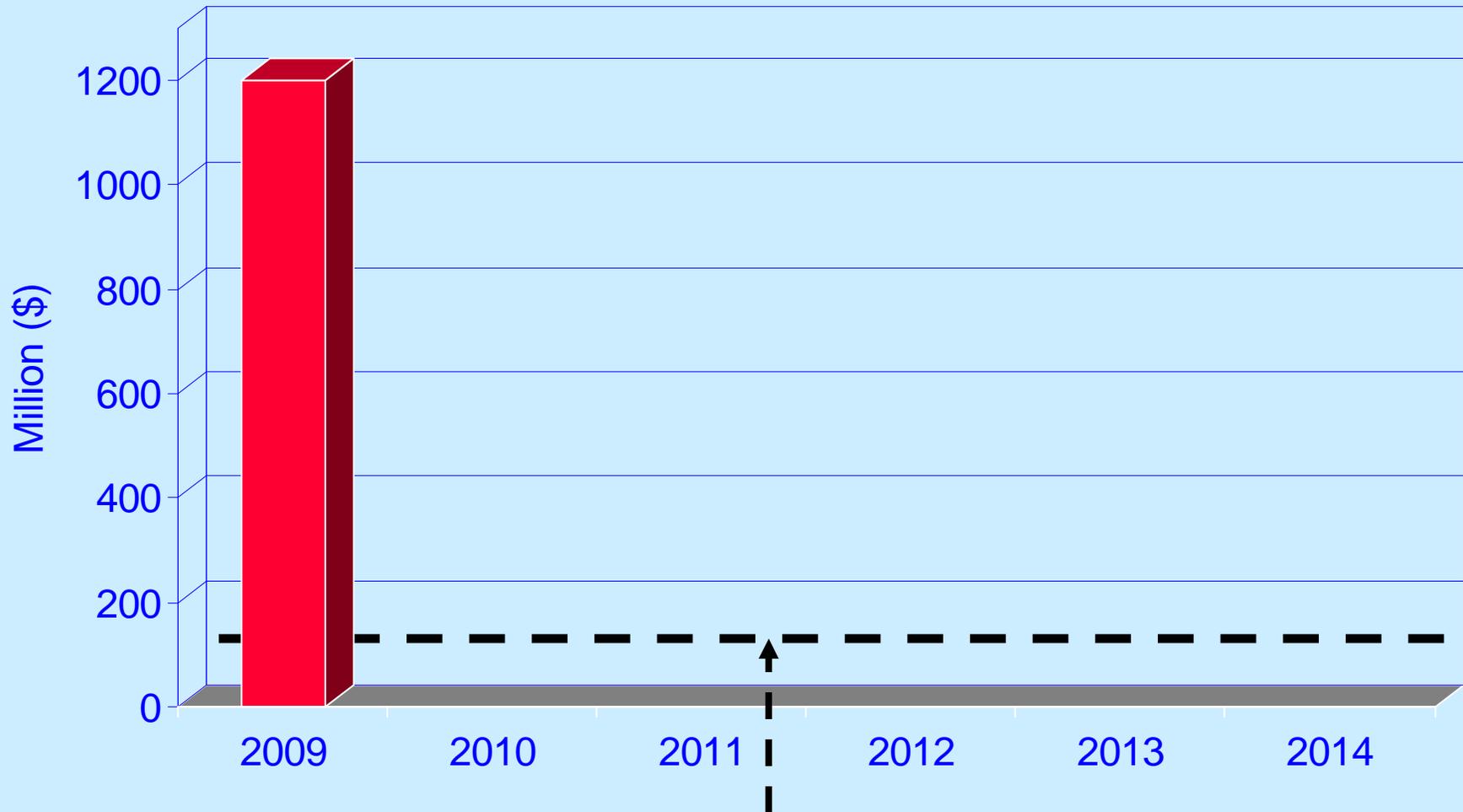
# On-Road

- Could apply for funding
  - Small fleets (1-3 trucks) – Fleet Mod: 24,000 trucks
  - Miscellaneous projects
  - School buses – new purchase (AB923—Lower Emission School Bus Program Guidelines)
- Cost
  - Fleet Mod: \$50K per truck: \$1.2 billion



# On-Road

## Moyer/AB923 Eligible Equipment



**Current Funding Level -- \$36 million**



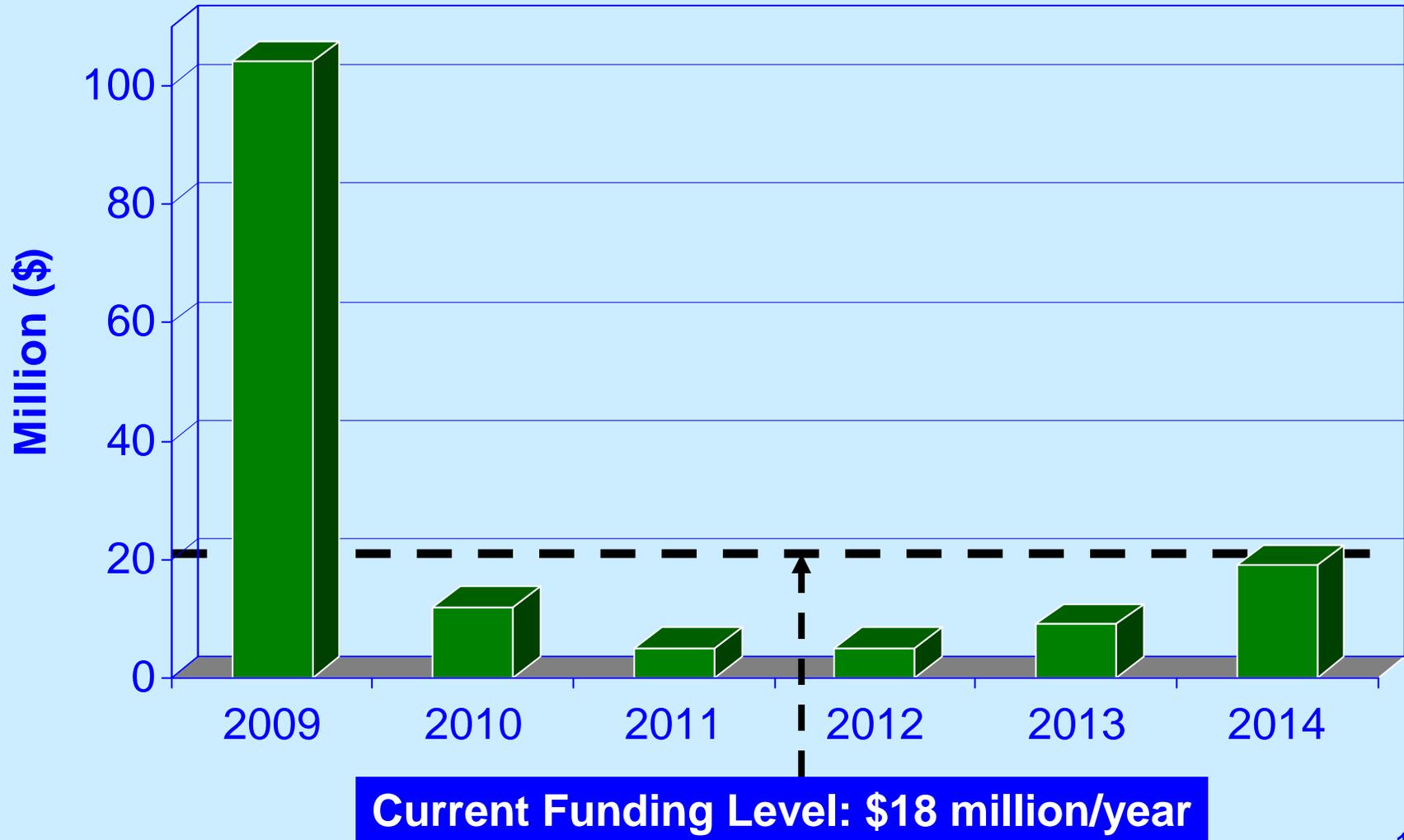
# Ag Pumps

- Could apply for funding
  - Based on engines 1-2 years from regulatory compliance deadlines
  - ARB inventory estimate minus engines repowered through Moyer grants (8,000 engines)
  - Second wave of controlled engine repowers starting in 2013 (4,000 engines)
- Cost
  - Based on ARB ATCM staff report



# Ag Pumps

## Moyer Eligible Equipment





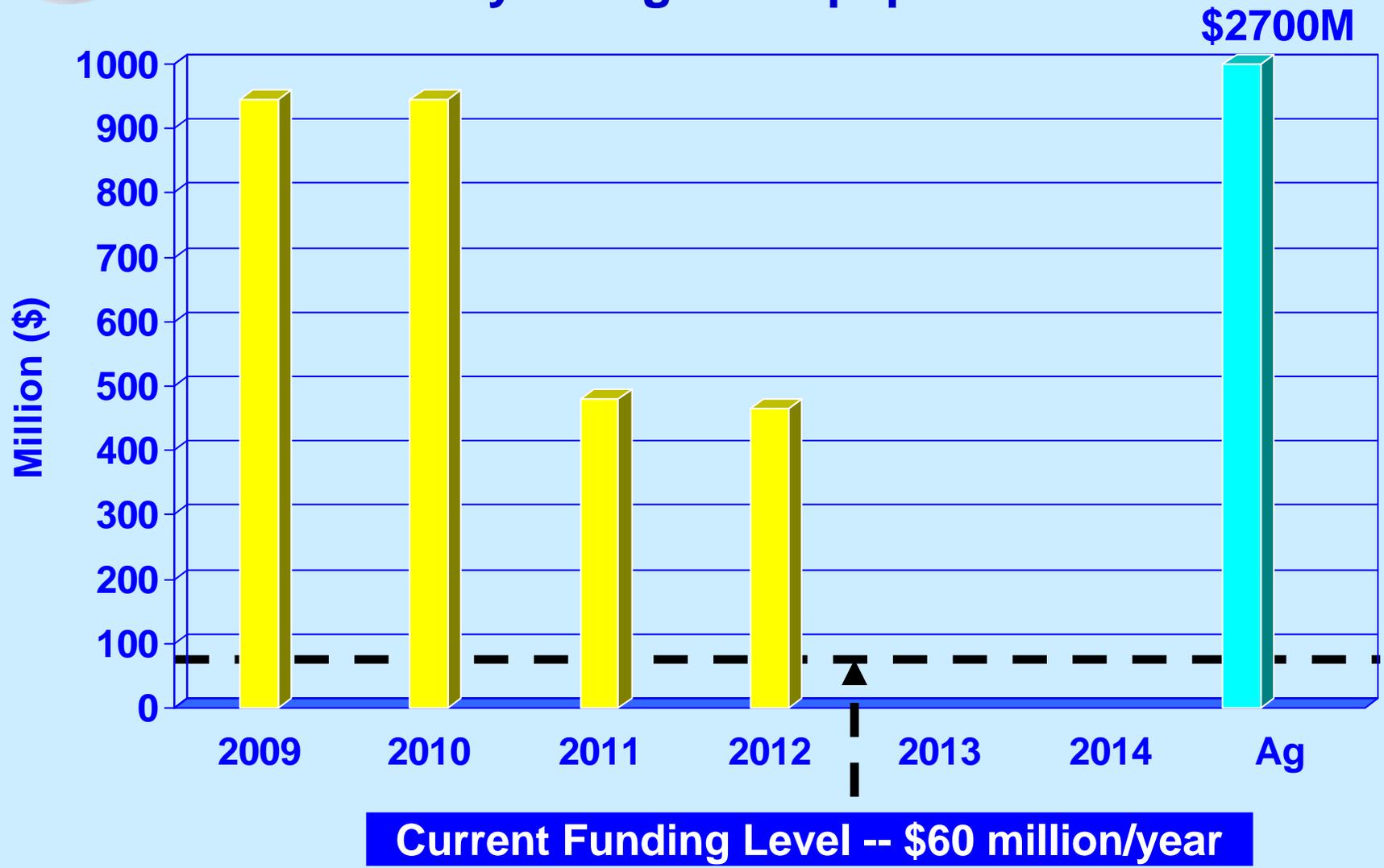
# Off-Road

- Could apply for funding
  - Regulated
    - Construction medium fleets and small fleets (24,000 + 18,000 pieces of equipment)
    - Large fleets: SOON programs currently in SCAQMD and SJVAPCD
  - Unregulated
    - Agricultural – mainly uncontrolled tractors
- Cost
  - Repower: \$270 per horsepower
  - Replacement and retrofit: varies by equipment and engine size



# Off-Road

## Moyer Eligible Equipment





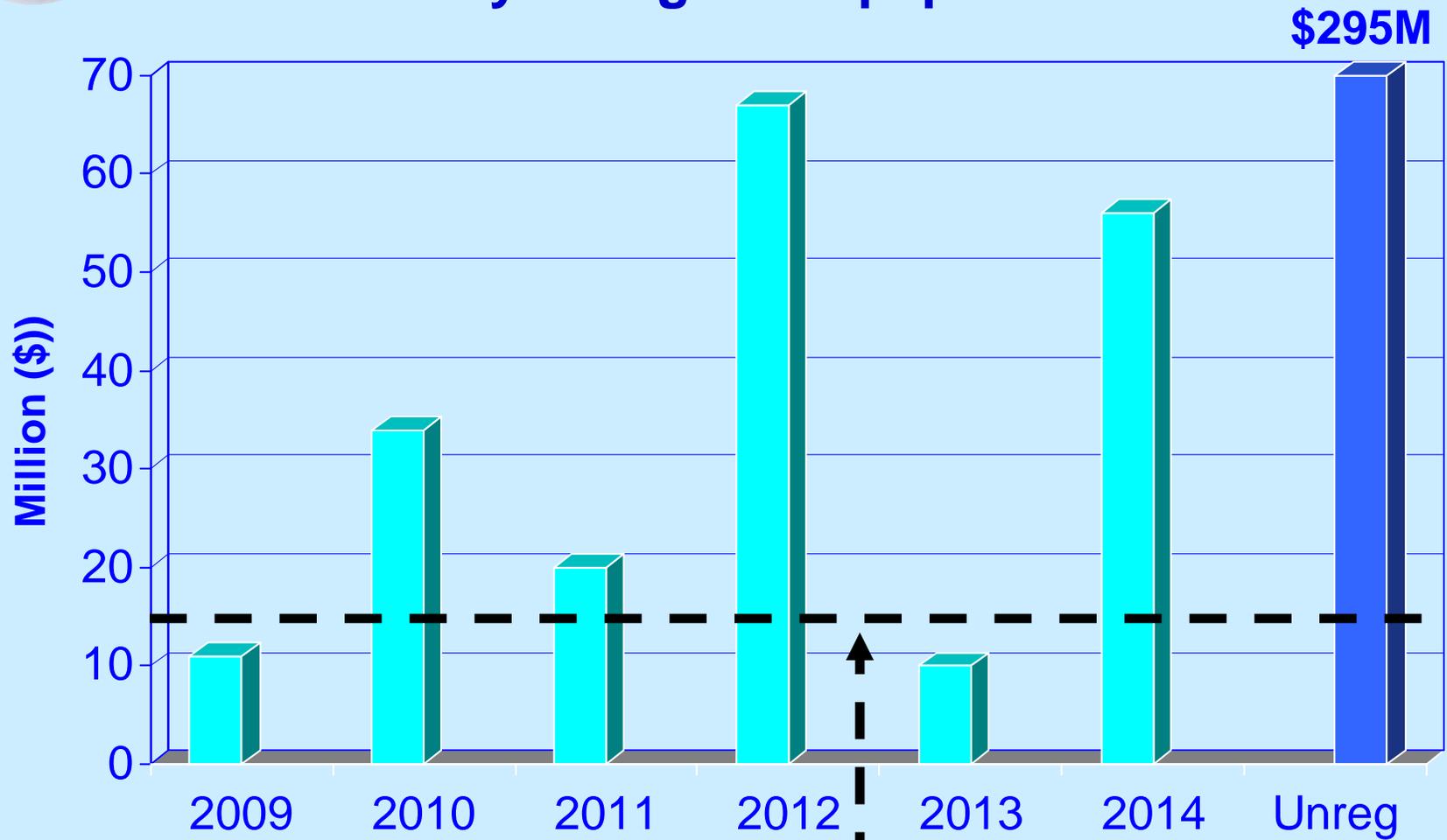
# Marine Vessels

- Could apply for funding
  - Regulated -- Commercial harbor craft (1400 engines)
  - Unregulated vessels (e.g., commercial fishing)
- Cost (Repower)
  - Auxiliary: \$233/horsepower
  - Main: \$270/horsepower



# Marine Vessels

## Moyer Eligible Equipment



**Current Funding Level: \$15 million**

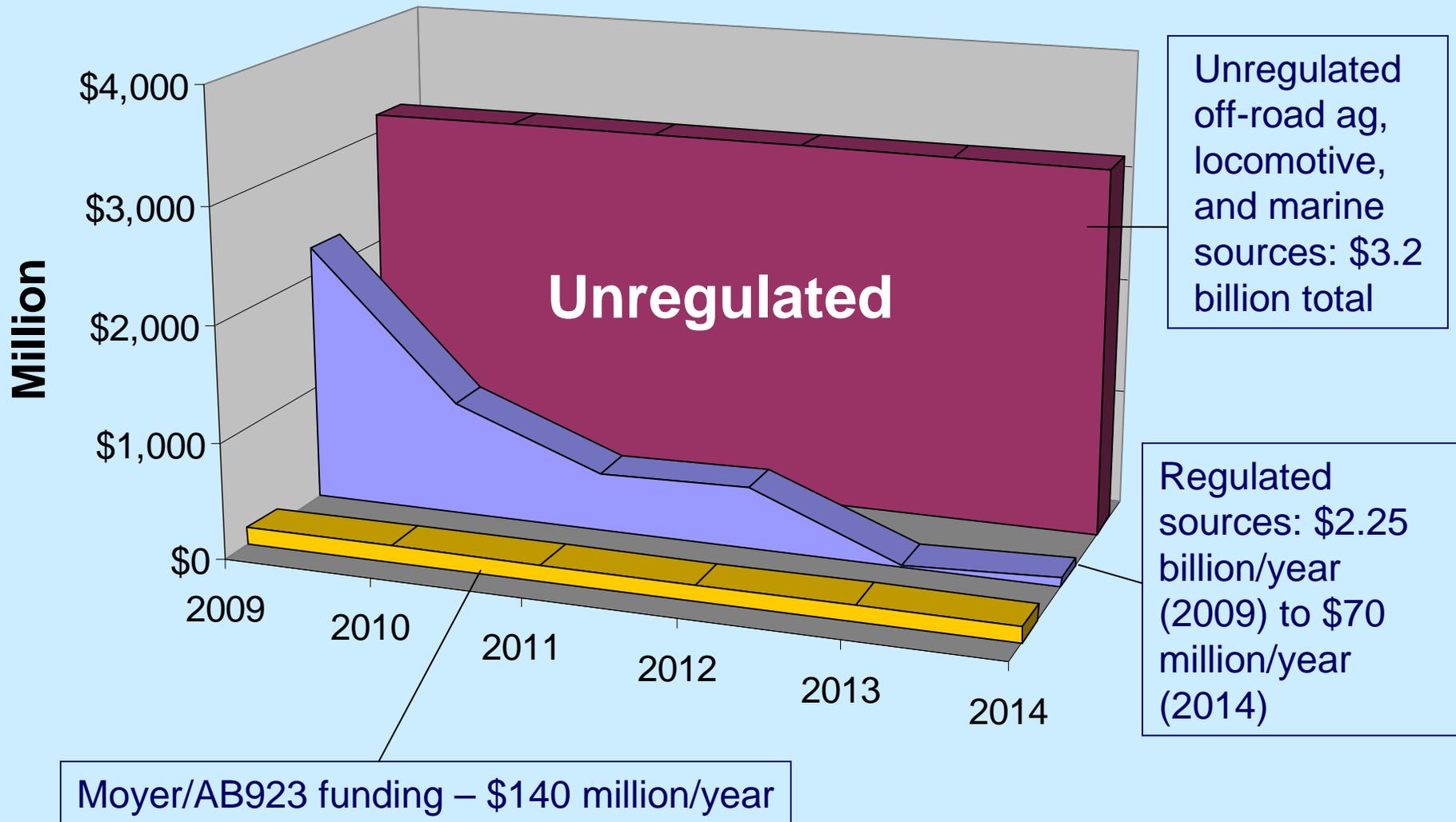


# Locomotives

- Could apply for funding — unregulated
  - Class III – Shortline: 120
  - Passenger – 113
  - Industrial/Military – 117
- Cost per project type
  - Alt. technology switchers: (\$1.1 million)
  - Idle limiting devices (\$10,000)
  - Engine remanufacture (\$400,000)
- Total potential funding: \$178 million
  - Alternative technology switchers (115): \$132 million
  - Idle limiting devices (115): \$115,000
  - Engine remanufacture (115): \$46,000,000
- Funding in 2006-07: \$11 million



# Potential Project Costs





# Conclusions

- Regulated sources
  - Sufficient potential projects from usual categories through 2010
  - 2011-12 – Potential projects in off-road, marine vessels, and ag pumps
  - 2013-14 – Increased reliance on unregulated sources
- AB923 sunsets in 2015



# Questions

- Unregulated sources: large potential, but ....
  - Will equipment owners apply?
  - Will these sources qualify for grants?
  - What's needed to bring unregulated equipment projects in for funding?



# Comments and Discussion



# Contacts

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