



Enhancing our Portfolio of NOx Emission Reduction Strategies

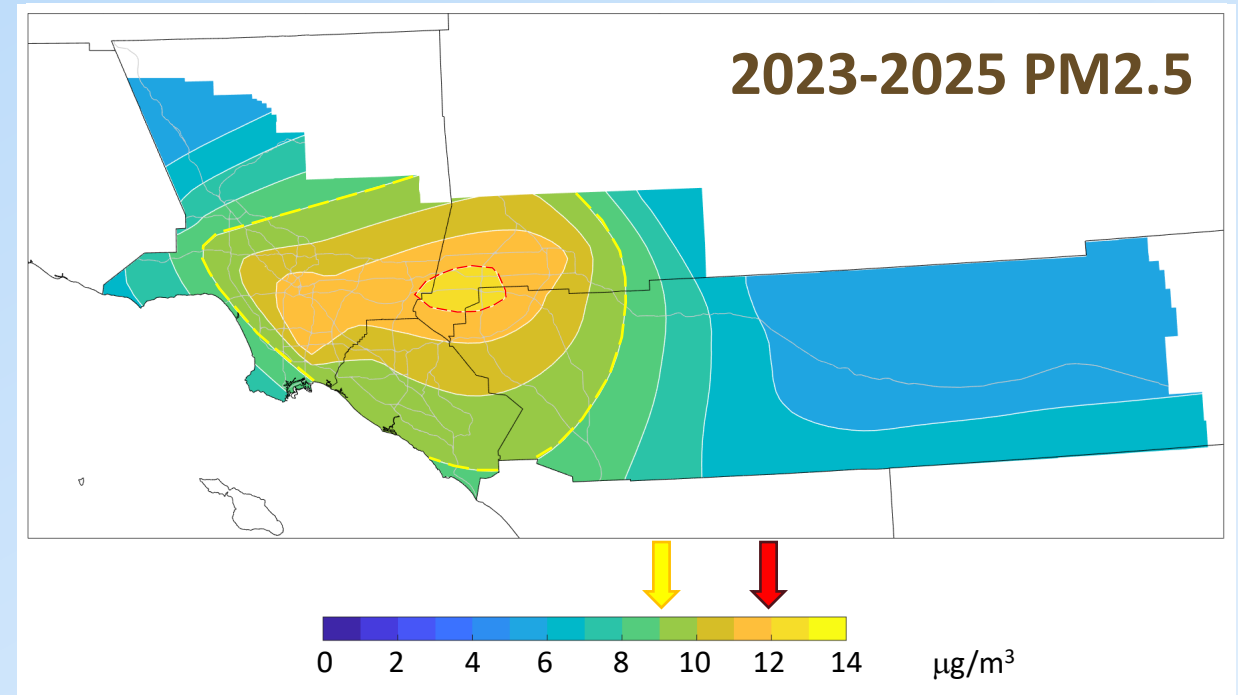
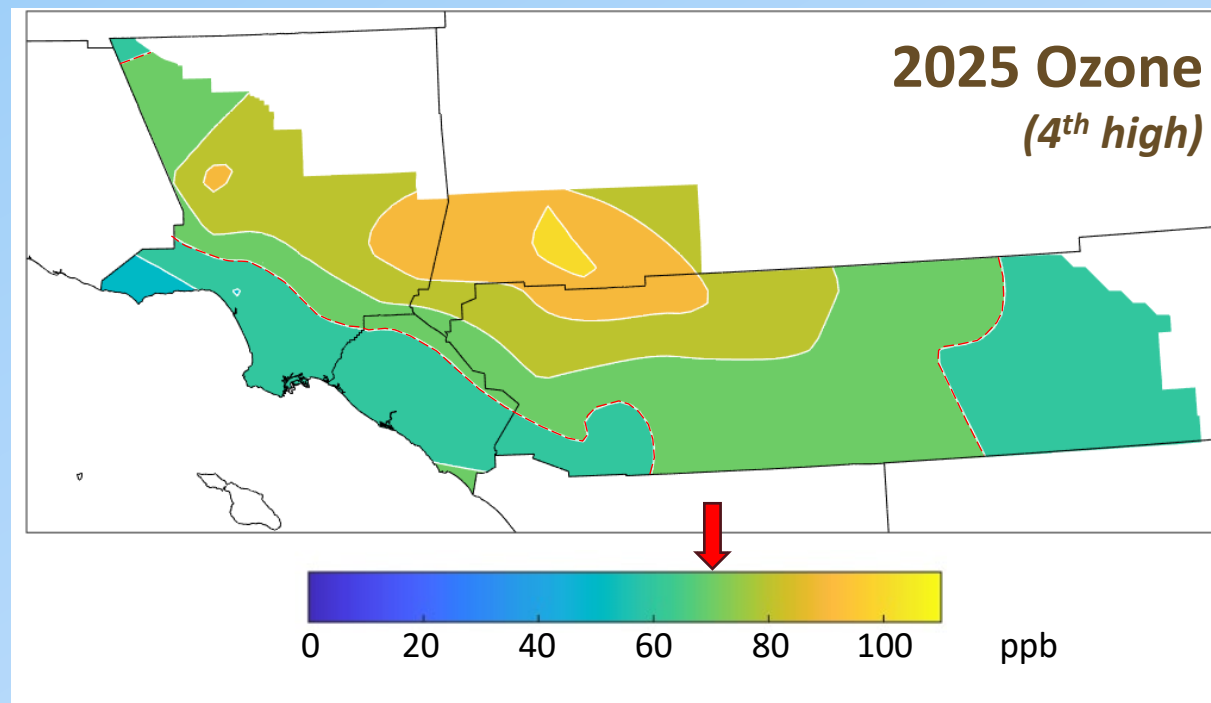
**Governing Board Retreat
September 10, 2026**

Overview

- **Our attainment challenges are getting harder with recent federal policy changes**
- **South Coast AQMD still has mandates under the Clean Air Act**
- **There are several tools available to continue to make progress**
- **Presentation explores which tools show greatest promise in this moment**

Our Greatest Air Quality Challenge

Attaining
Federal
Air Quality
Standards



Clean Air Act Requirements

Prepare and
implement air
quality plans
Attain air quality
standards by set
deadlines

Upcoming Deadlines

Ozone

2027	Last Remaining Plan Element* due for 75 ppb standard
2031	Attainment Year 75 ppb standard
2037	Attainment Year 70 ppb standard

** 'Black Box' Plan that describes how previously undefined emission reduction measures will be achieved*

PM2.5

2030*	Attainment Year 12 $\mu\text{g}/\text{m}^3$ standard
2037**	Attainment Year 9 $\mu\text{g}/\text{m}^3$ standard

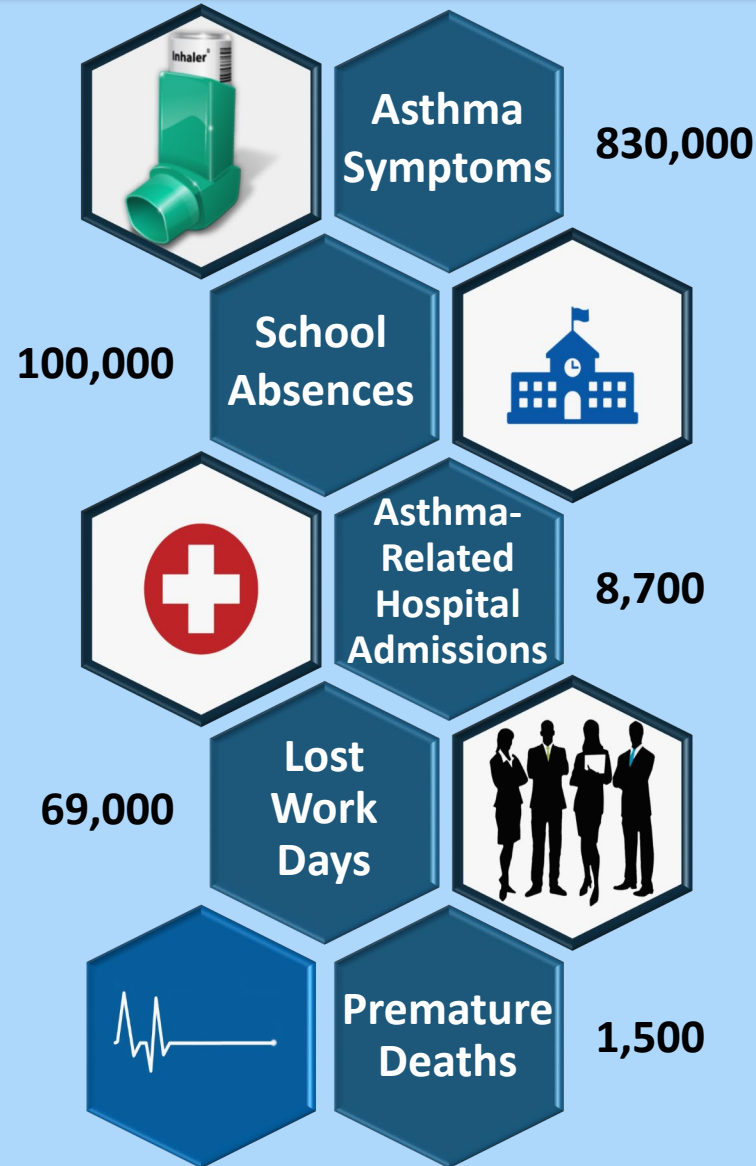
** If extension finalized by U.S. EPA*

*** If U.S. EPA follows most recent court decision*

Why Attaining Air Quality Standards Matters

Public Health

Annual Public Health Benefits (examples of avoided outcomes)



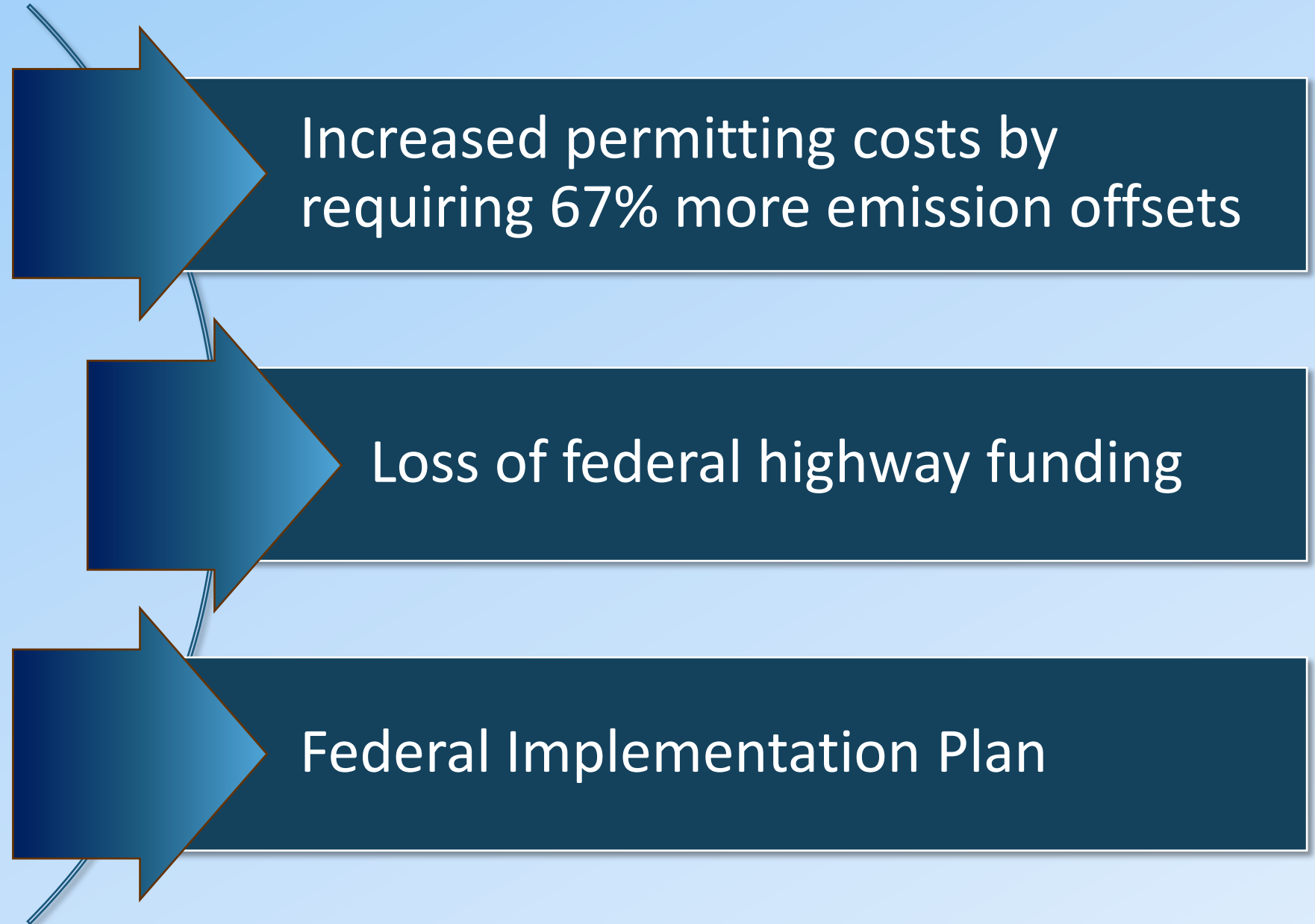
Annual Monetized Public Health Benefit (2025-2037)

**\$19.4
Billion**

**74% of benefit from
avoided premature deaths
due to reduced PM2.5**

Why Attaining Air Quality Standards Matters

Clean Air Act Sanctions



The Importance of NOx

NOx is widely emitted

NOx + Other Pollutants + Weather ➡ Ozone, PM2.5

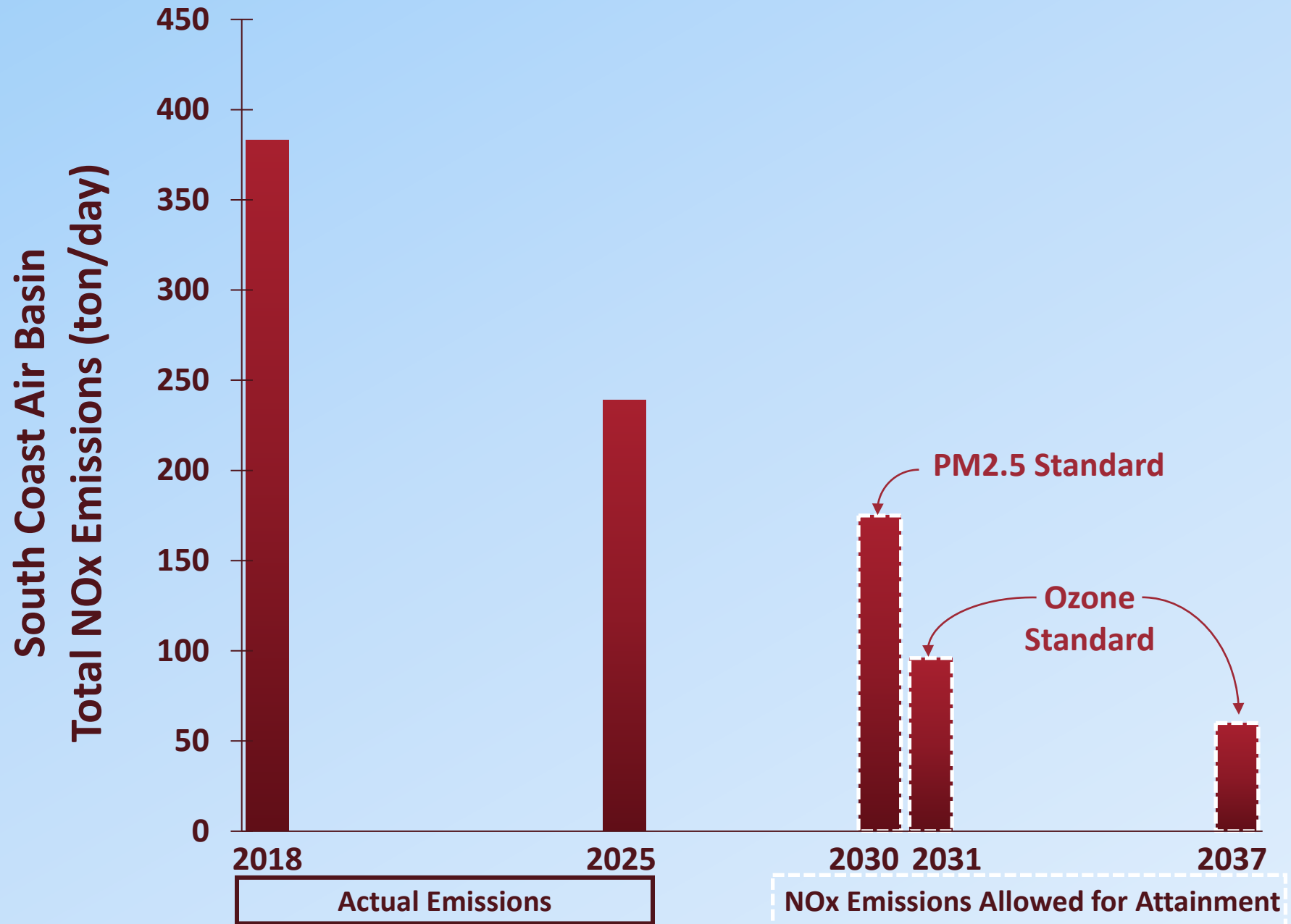


NOx Levels for Attainment

Ambient Air
Quality
Standards:

2008 & 2015
Ozone

2012
PM2.5



**How Has
Recent
Federal
Policy
Affected
Attainment of
Air Quality
Standards?**

***Federal government is attempting
to roll back nearly ten years of
CARB's rulemaking***

Regulations Affected by New Federal Policies

**Most Actions Here
are Either Proposed
or Still in Litigation**

CARB Withdrawal of Waiver Requests

- Advanced Clean Fleets
- In-Use Locomotive
- Partial: Commercial Harbor Craft
- Partial: Transport Refrigeration Unit

U.S. EPA SIP Decision

- Heavy-Duty Inspection and Maintenance (Clean Truck Check)

Loosening of Federal Rules

- Heavy-Duty Engines for 2027 and later
- Tier 4 Light-Duty Phase-In

Enacted CRA Resolutions

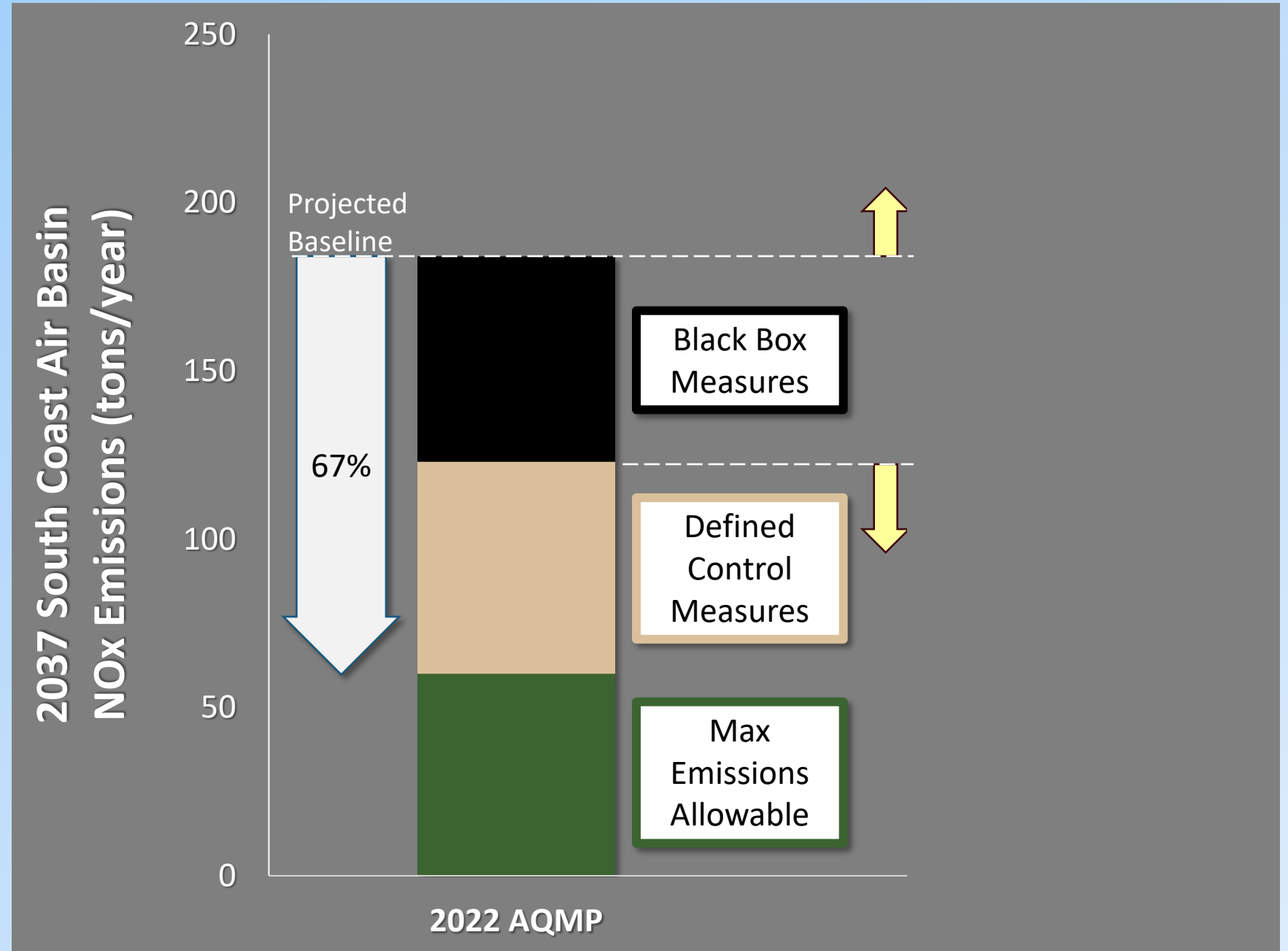
- Advanced Clean Cars II
- Advanced Clean Trucks
- Heavy-Duty Omnibus
- Zero Emissions Airport Shuttle Bus
- Zero Emission Powertrain Certification
- Heavy-Duty Warranty

Pending CRA Resolutions

- Ocean-Going Vessels At-Berth (2022 amendments)
- Small Off-Road Engines (2022 amendments)
- Commercial Harbor Craft (2022 amendments)
- 2012 Advanced Clean Cars I emission standards
- LEV II GHG* standards for 2009 and later

How Big Is the Impact of Recent Federal Policy Change?

2037 Example



Estimates shown are subject to change with rapidly evolving policy landscape

**South Coast AQMD, CARB, and U.S. EPA are still working on these estimates*

Solutions Need to Scale

Equipment Type	Total Equipment Count In South Coast AQMD
Passenger Vehicles	8 million+
Medium/Heavy-Duty On-Road Vehicles	2 million+
Light Commercial Off-Road	5 million+
Heavy-Duty Off-Road	0.4 million+
Locomotives	8,000+
Aircraft	1.1 million+ landings & take-offs/year
Ships	9,000+ vessel calls/year
Lawn and Garden	10 million+
Residential Furnaces & Water Heaters	10 million+
Heaters & Boilers	1 million+

***How can technology be
deployed at scale affordably?***

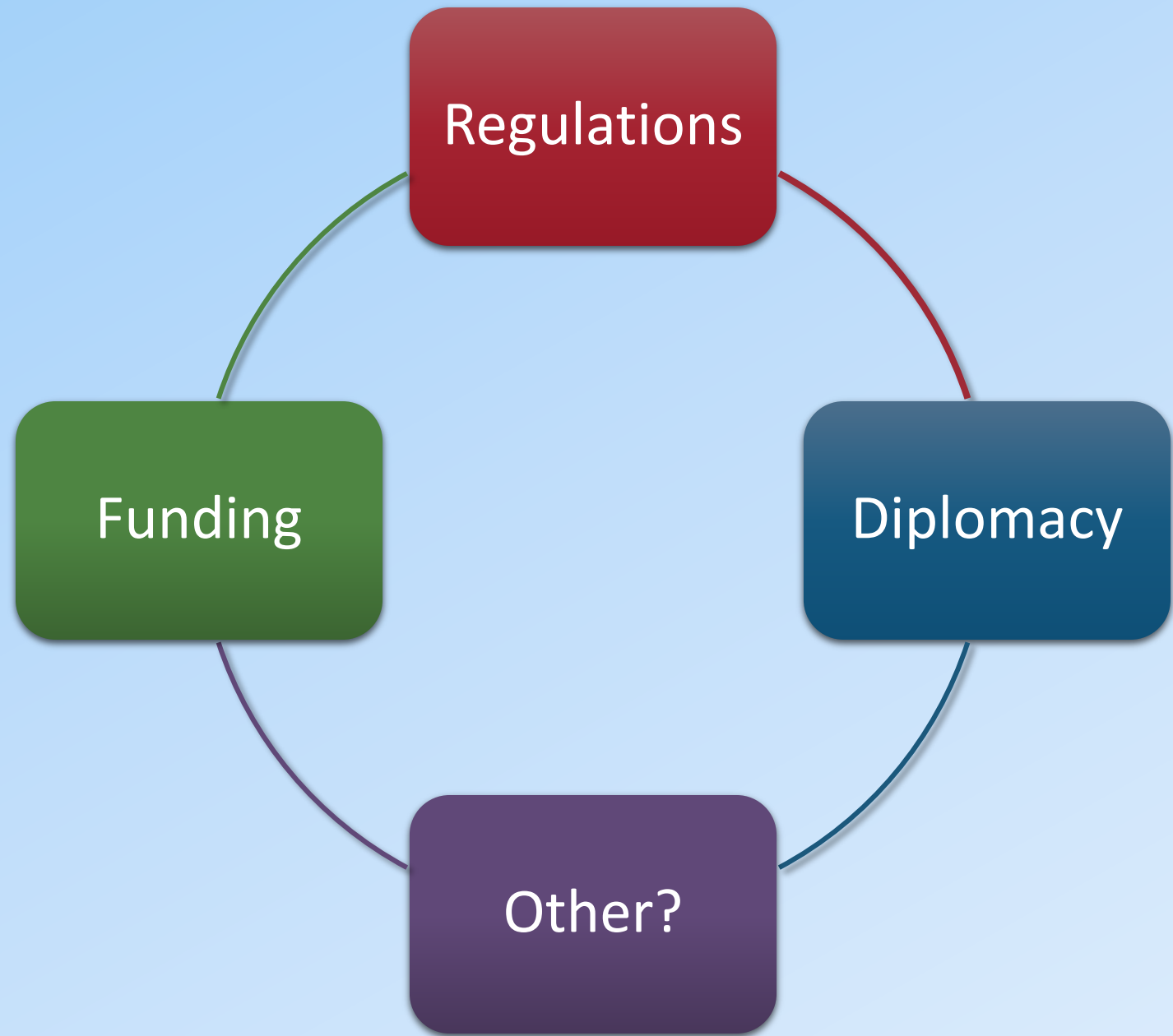
Key Considerations for Next Steps

- Mobile sources are >80% NO_x, but authority is limited
- Technological changes must be cost-effective and affordable
- Time is needed to deploy millions of pieces of new equipment
- Fuel switching requires significant infrastructure upgrades
- Technology development still needed for many sources

...but Clean Air Act requirements and public health impacts require action

What are promising approaches to address these challenges – given current federal and state policy, and the current state of technology?

What Tools Are Available to South Coast AQMD?

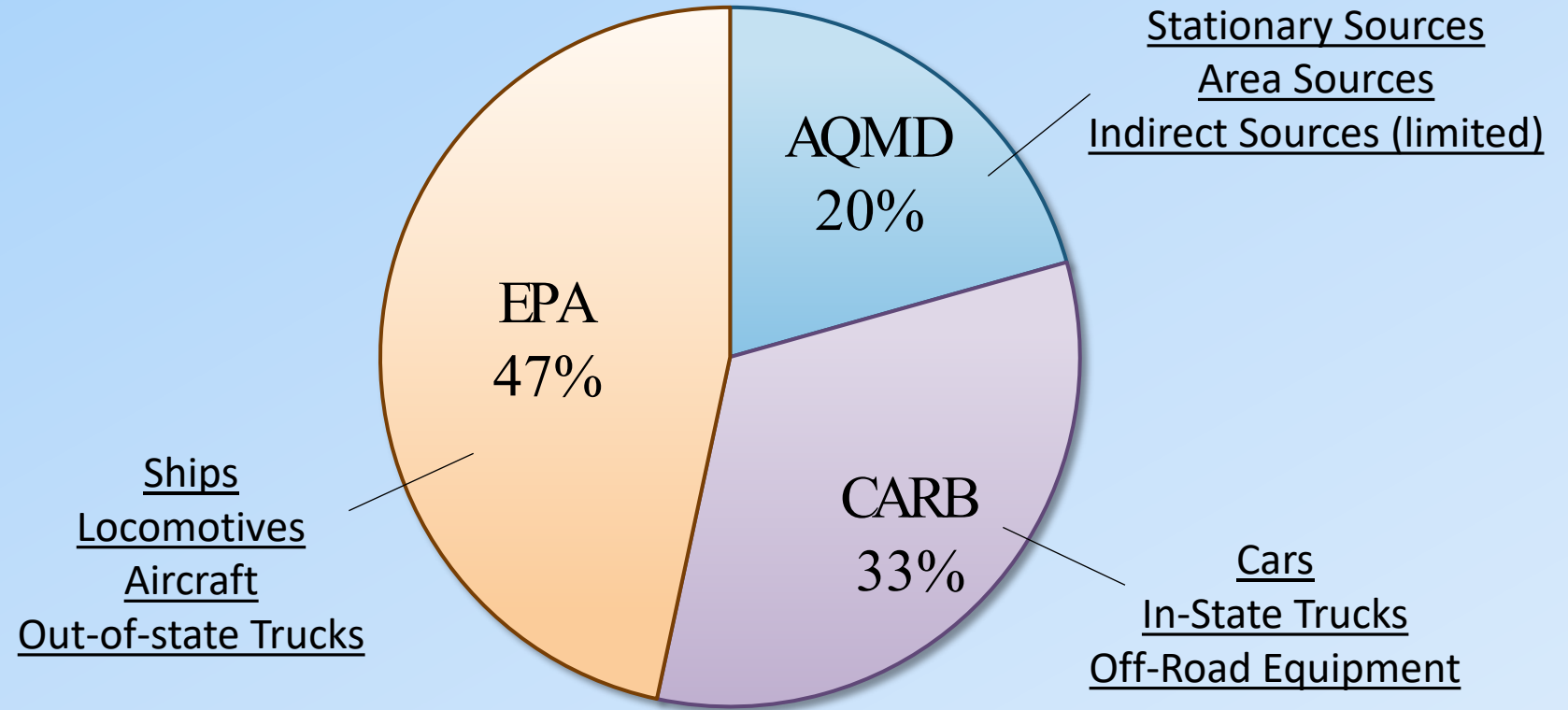


No single action can get us to attainment

Percent of Total NOx Emissions in 2037 by Agency with Primary Regulatory Authority

Regulation

Challenges and Opportunities



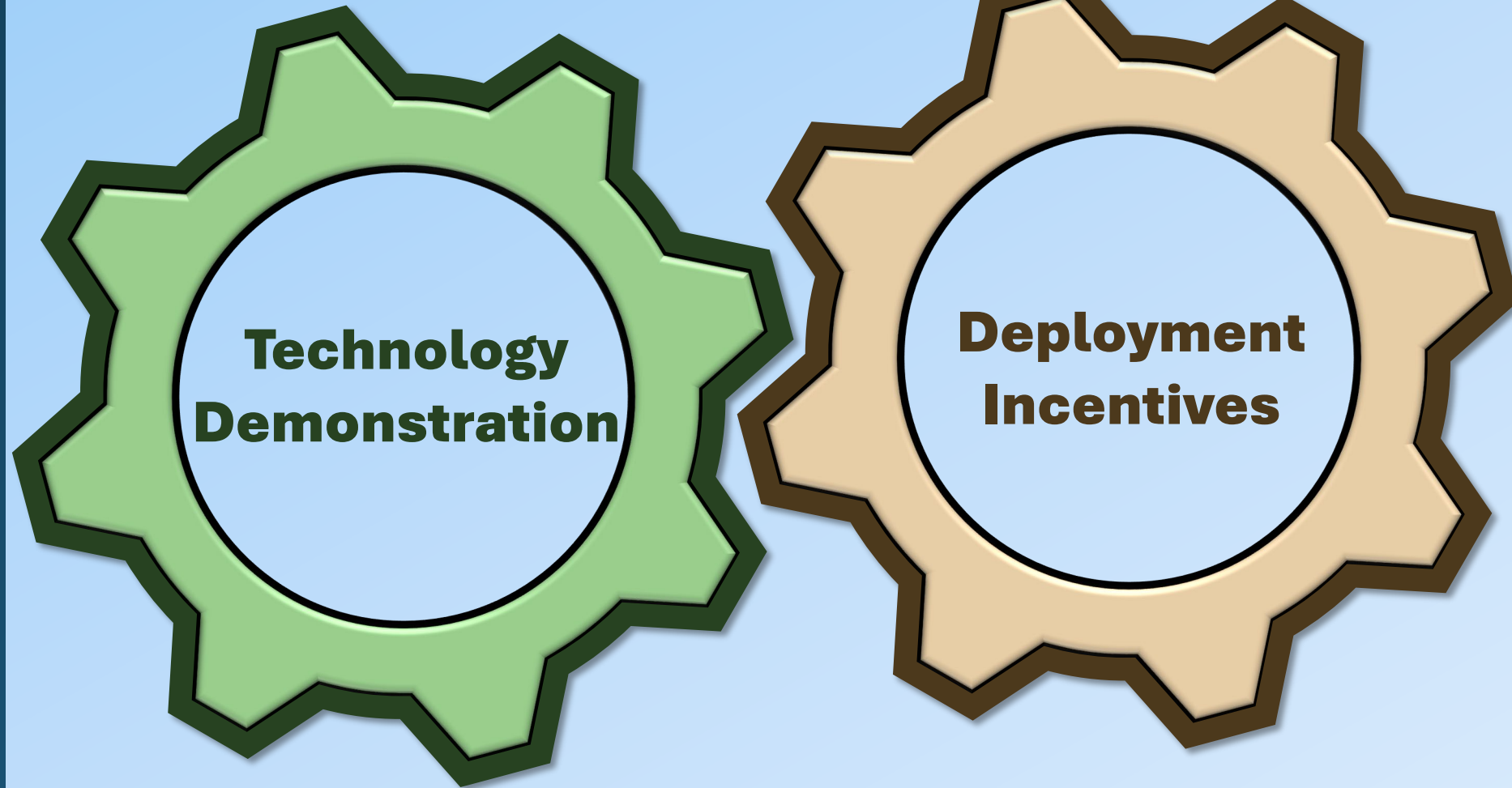
Zeroing out all AQMD and CARB sources would not get to attainment

Regulation - Challenges and Opportunities (continued)

- Near-term opportunities:
 - Stationary/area source rulemaking
 - We must implement 'all feasible measures'
 - Cost-effectiveness and affordability remain key issues
 - Several toxics rules also in development
 - Will not address attainment issues
 - CARB is beginning next set of mobile source strategies
 - Feedback needed during development



Funding



- Supports pre-commercial technology development into commercially-ready products
- Advances clean technologies that otherwise may not be developed

- Encourages early market adoption
- Allows manufacturers to scale and develop more affordable options
- Provides opportunity to support local manufacturers and workforce

Funding

Challenges and Opportunities

- Recent historically high funding from federal and state government unlikely to continue
- South Coast AQMD administers about \$150 million per year in incentives
 - About 8 tons/day NOx reduction expected by 2030
- South Coast AQMD is uniquely able to develop innovative new funding programs

Deployment Incentive Programs

Challenges and Opportunities

Recently Developed Programs



WAIRE Mitigation
Program



- Staff continuing to pursue new incentive opportunities
 - Technology demonstrations
 - Ocean-going vessels
 - Industrial heat pumps
 - Onsite power solutions
 - Technology deployment
 - Purchase and use of zero emission vehicles
 - Stationary sources

Diplomacy

Challenges and Opportunities



Contractual Agreements

- Ports
- Airports



International Engagement

- European and Asian port jurisdictions



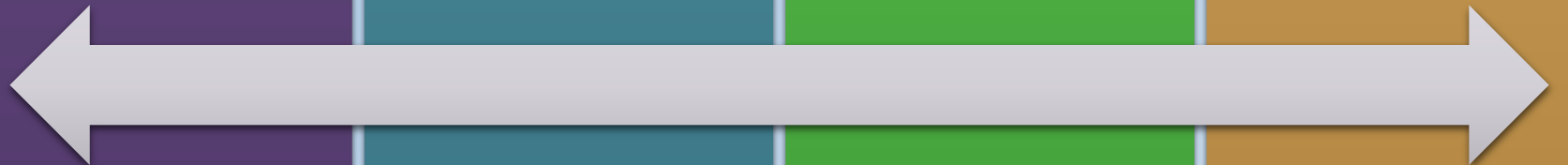
Alternative Fuels Advocacy

- Utilities
- Agencies
- Fuel providers



Legislative Outreach

- State
- Federal



*These efforts are critical facilitating measures,
but may not directly result in emission reductions*

Summary

- Our attainment challenges are getting harder
 - ...But we need to make progress for public health and under Clean Air Act requirements
- Many non-regulatory, near-term opportunities to address attainment issues:
 - Funding:
 - Creation of new, innovative funding programs
 - Technology Development
 - Incentives for Deployment
 - Diplomacy:
 - Engagement and partnership building is needed to set the stage for future emission reductions