



# California's Emission Reduction Strategies for Off-Road Equipment

## 加州的非道路机械减排战略

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# CARB and Our Partners

## 加州空气资源委员会及我们的合作方

### FEDERAL



#### US EPA

Sets & enforces national air quality standards.  
Regulates interstate transportation.



Trains



Planes



Ships

### STATE



Regulates mobile sources of air pollution,  
greenhouse gases & consumer products.



Cars



Trucks



Buses

### LOCAL



#### Local Air Districts

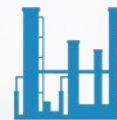
Regulates stationary & local  
sources of air pollution.



Fireplaces



Factories



Refineries



Power plants



**Californians now breathe the cleanest air since the first air pollution monitors**

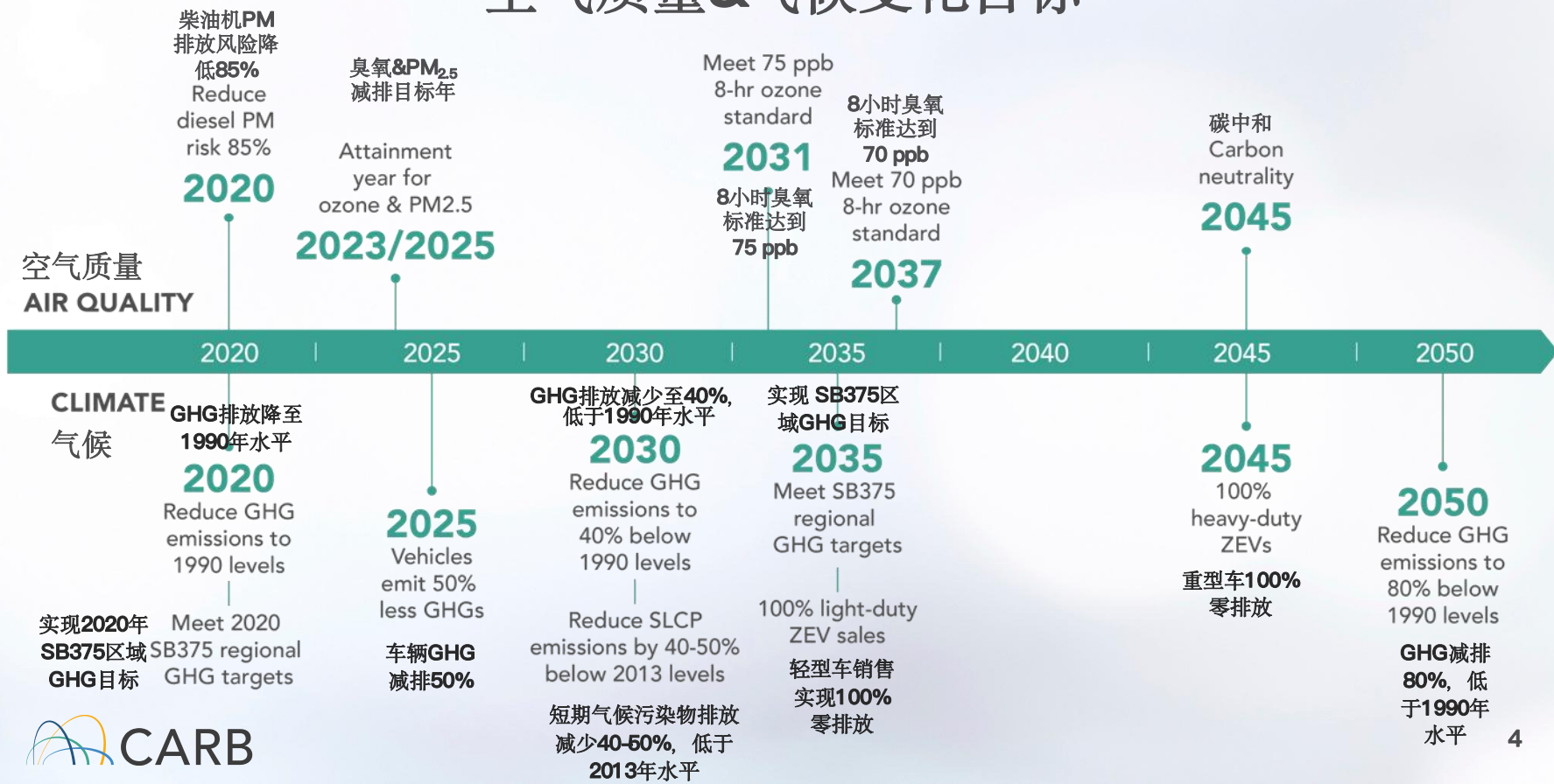
**were installed more than 50 years ago.**

加州开展空气污染物监测已有**50**余年的历史，  
如今加州的空气质量达到了世界先进水平



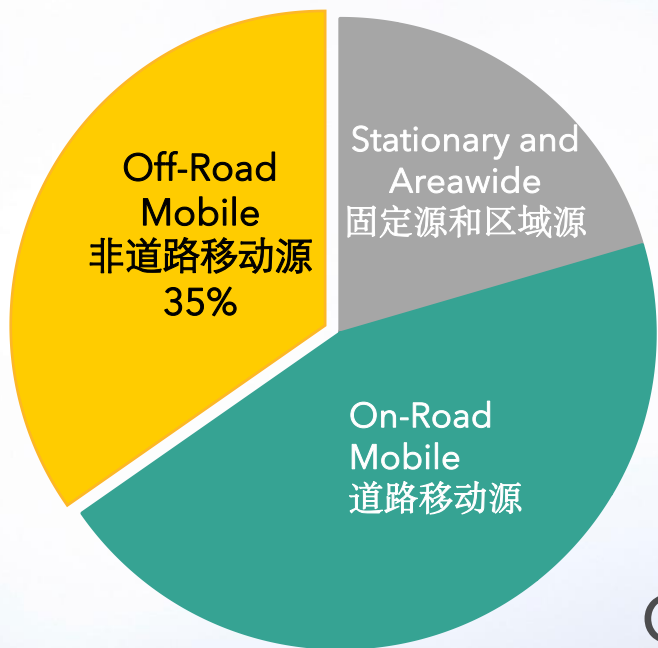
# Air Quality & Climate Change Goals

## 空气质量&气候变化目标

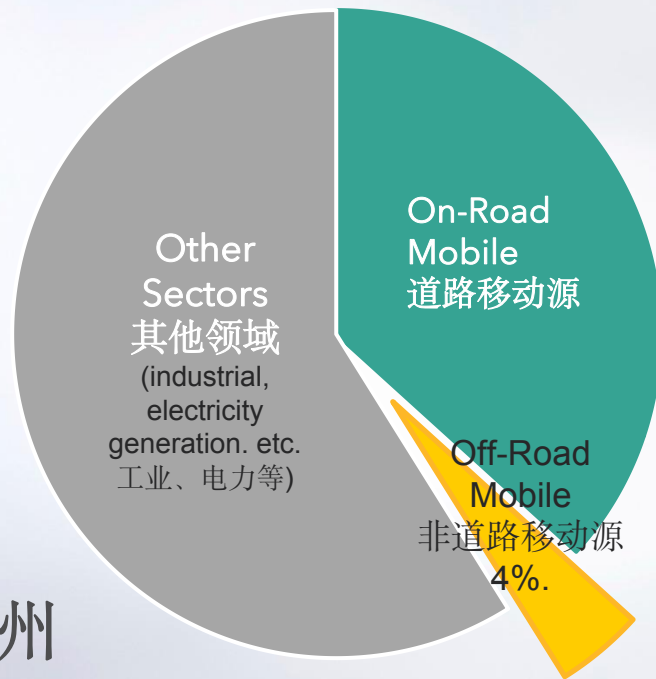


# Mobile Source Emissions 移动源排放

NOx



GHG



California 加州  
2017

# Three Strategy Approach

## 三大战略措施



Incentive  
Funding  
Programs  
资助激励方案



New Equipment  
Regulations  
新生产机械  
管理法规



In-Use  
Equipment  
Regulations  
在用机械管理法规

# CARB Incentive Programs

## 加州空气资源委员会的激励方案



### Community Air Protection Program (AB 617)

Criteria, toxics and GHG reductions for community goals

#### 社区空气保护方案 (AB 617)

标准污染物、有毒性污染物和GHG社区减排目标

### Air Quality Improvement Program (AQIP)

Criteria pollutant and toxics reductions

#### 空气质量改善方案 (AQIP)

标准污染物和有毒性污染物减排

### Carl Moyer Program

Cost-effective, State Implementation Plan  
credible criteria pollutant emission  
reductions

#### Carl Moyer方案

具有成本效益，在州级层面实施的标准污染物  
减排计划

### Volkswagen Mitigation Trust

Oxides of Nitrogen (NOx) mitigation and ZE

#### 大众公司弥补减排信托基金

致力于氮氧化物减排和推动零排放

### Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program

Criteria, toxics and GHG reductions for the ag sector

#### 农业机械更新置换减排资助方案 (FARMER)

减少农业机械的标准污染物、有毒性污染物和GHG排  
放

### Low Carbon Transportation

Advance technologies to provide GHG  
reductions and Priority Populations benefits

#### 低碳交通

推动GHG减排先进技术，优先考虑民众所能  
获得的收益

### Woodsmoke Reduction Program

Reduces particulate reductions from home  
heating devices

#### 木柴黑烟减排方案

减少家用取暖设备的颗粒物排放

### Fluorinated Gases (F-Gas) Reduction Incentive Program

Reduces high global warming potential F-Gas emissions

#### 气体氟化物 (F-Gas) 减排激励方案

减少全球变暖潜能值较高的F-Gas排放

# Off-Road New-Engine Regulations

## 新生产非道路发动机管理法规

### CURRENT

- Small Off-Road Engines

### 目前的管理法规

- 小型非道路发动机

### PROPOSED

- Tier 5 Off-Road Engine Standards
- Zero-Emission Off-Road Equipment Targeted Manufacturer Rule

### 管理法规修订提案

- Tier 5非道路发动机标准
- 以推动零排放非道路机械为目的的制造商管理法规



# Off-Road In-Use Equipment Regulations

## 在用非道路机械管理法规

### CURRENT

- In-Use Off-Road Diesel-Fueled Fleet Rule Amendments
- Commercial Harbor Craft Amendments
- Transportation Refrigeration Unit (TRU) Amendments
- In-Use Locomotive Regulation

### CONCEPTS

- Zero-Emission Forklift Regulation
- Cargo Handling Equipment Regulation Amendments
- Zero-Emission Non-Truck TRU Regulation

### 目前的管理法规

- 在用非道路柴油车/机管理法规修订案
- 港口商用机械管理法规修订案
- 道路冷藏设备（TRU）管理法规修订案
- 在用火车机车管理法规

### 概念法规

- 零排放叉车管理法规
- 货物装卸设备管理法规修订案
- 零排放非货车TRU管理法规修订

# Zero-Emission is Here!

## 这些都是零排放机械





**Thank You!**  
**谢谢大家!**