

New or Redevelopment Facility-Based Mobile Source Measures



3rd Working Group Meeting
October 4, 2017

FBMSM

Agenda

- Background
- FBMSM Development Framework
- New Development and Redevelopment Emissions Inventory
- Emission Reduction Opportunities
- Next Steps

Background



- 2016 AQMP adopted March 2017
- Facility-Based Mobile Source Measure (EGM-01): Emission Reductions at from New Development and Redevelopment Projects



- Key topics discussed at previous working group meetings:
 - FBMSM Process
 - FBMSM Development Framework
 - SIP credit
 - Regulations, others

FBMSM Development Framework						
Background Information			Strategies (Discussion Topics for Working Groups)		Implementation (Discussion Topics for Working Groups)	
Emission Sources	Regulations & Other Commitments	Technologies	Emission Reduction Opportunities	Financial and Other Incentives*	Implementing Mechanisms	SIP Credit
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Background – FBMSM Development Framework

- Stakeholders have requested more information on:
 - Assumptions in 2016 AQMP emissions inventory
 - Cost-effectiveness of proposed emission reduction measures

<u>Background Information</u>			<u>Strategies</u> <i>(Discussion Topics for Working Groups)</i>		<u>Implementation</u> <i>(Discussion Topics for Working Groups)</i>	
<i>Emission Sources</i>	<i>Regulations & Other Commitments</i>	<i>Technologies</i>	<i>Emission Reduction Opportunities</i>	<i>Financial and Other Incentives*</i>	<i>Implementing Mechanisms</i>	<i>SIP Credit</i>
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<i>Emissions Inventory</i>
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<i>Cost-Effectiveness</i>
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Key Considerations with FBMSM-Related Emissions Inventories

- Assumptions used in emissions inventory important to understand when developing and evaluating emission reduction opportunities
- Many facility-based emission reduction opportunities are local, whereas AQMP inventory is regional
- Common adjustments to AQMP emissions inventory:
 - Changes in assumptions (e.g., growth forecast, etc.)
 - Assumptions may affect both the base year and future baseline years
 - Emission reduction measures (e.g., new regulations, voluntary measures that satisfy SIP integrity elements, etc.)

“Top-Down”

- Statewide emissions applied to subareas based on surrogates
 - Example: Natural gas emissions are based on county consumption rates

“Bottom-Up”

- Local data used to generate facility-specific emissions
 - Example: CEQA air quality analysis for a specific facility/project

Emissions Inventory Overview

– 2012 Base Year

On-Road Emissions

- CARB EMFAC 2014 emission factors applied to travel activity data provided by SCAG

Off-Road Emissions

- Provided by CARB for multiple source categories (e.g., construction equipment)

Area Source Emissions

- Emission factors based on SCAQMD rule limits and regional fuel consumption

Key Emissions Inventory Assumptions – Future Baseline

Growth Forecast

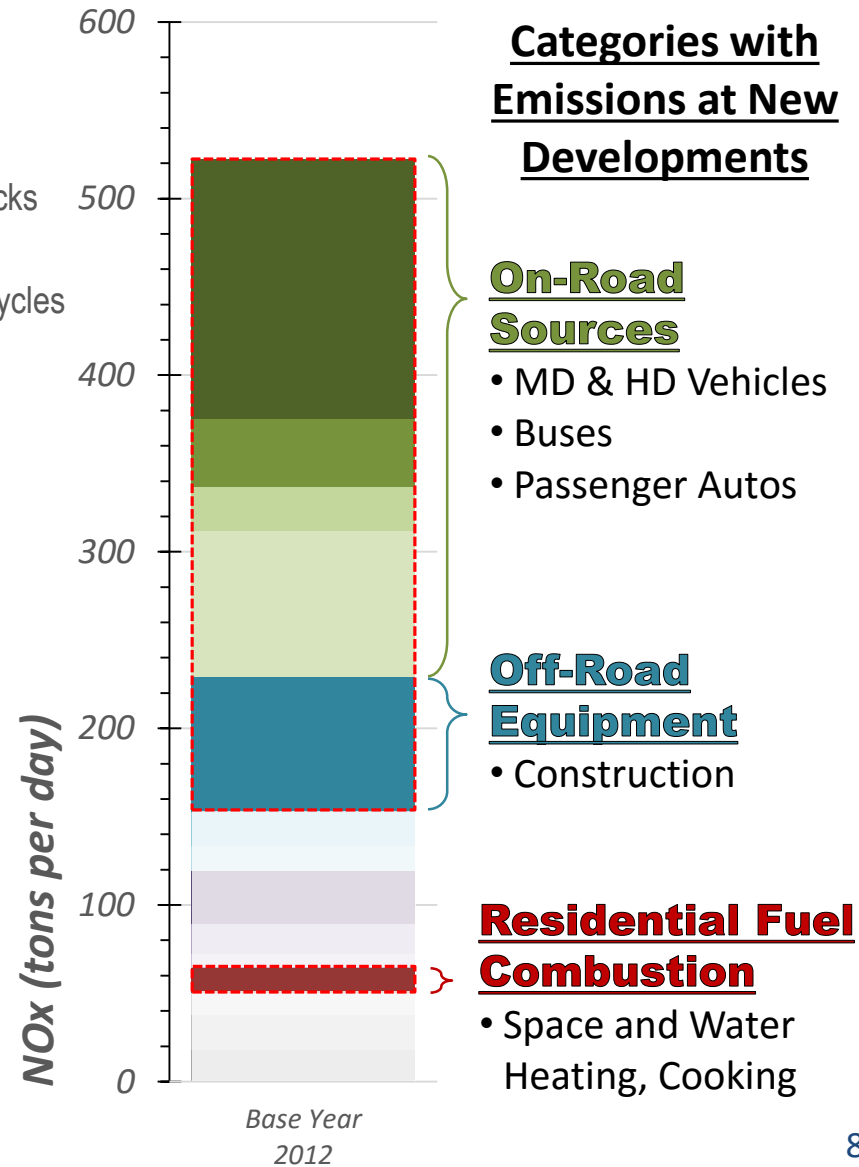
- Primarily based on demographic and economic growth projections provided by Southern California Association of Governments (SCAG)

Regulations

- Emissions inventory accounts for emissions reductions resulting from:
 - SCAQMD regulation adopted or amended by December 2015, and
 - CARB regulations adopted by November 2015

2016 AQMP – Base Year NOx Emissions

- Heavy-Duty Diesel Trucks
- Medium-Duty & Heavy-Duty Gas Trucks
- Buses
- Cars/Light-Duty Trucks/SUVs/Motorcycles
- Off-Road Equipment and Vehicles
- Locomotives
- Aircraft
- Ocean Going Vessels
- Commercial Harbor Craft
- Recreational Boats
- Residential Fuel Combustion
- Industrial Fuel Combustion
- RECLAIM
- Other Stationary



Potential Methods to Estimate Emissions Due to Growth

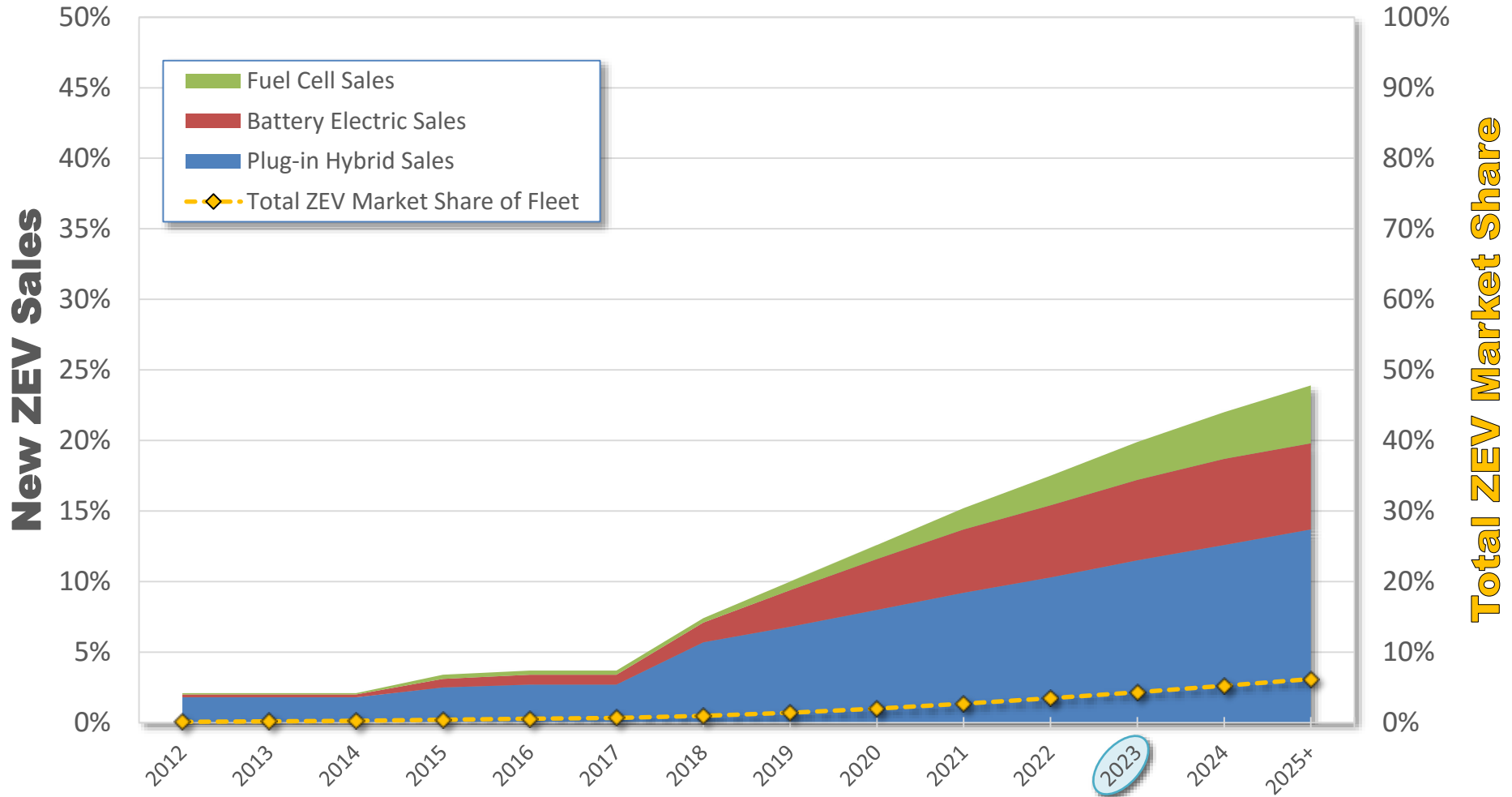
- On-road
 - VMT offset calculation in AQMP (App. VI-E)
 - Provides estimate of VOC emissions in 2022 based on expected growth in VMT
 - Subtracts out effect of future regulatory phase-in (e.g., ARB Truck and Bus rule)
 - Estimates based on analysis in RTP EIR
- Off-road
 - Growth projections in ARB OFFROAD model for construction equipment
- Area sources
 - Growth surrogates and emissions from AQMP

Emissions Inventory Assumptions & Potential Opportunities – On-road

Emissions Source	Emissions Inventory Assumptions	Potential Emission Reduction Opportunities
<ul style="list-style-type: none"> ➤ On-Road Sources* 	<ul style="list-style-type: none"> ➤ Growth and activity data from SCAG Regional Transportation Plan (RTP) ➤ Emission Factors from EMFAC 2014 	<ul style="list-style-type: none"> ➤ Ride share programs ➤ Installation of EV charging stations ➤ Mitigation funds to achieve NOx reductions ➤ Local government GHG Climate Action Plans (CAPs)

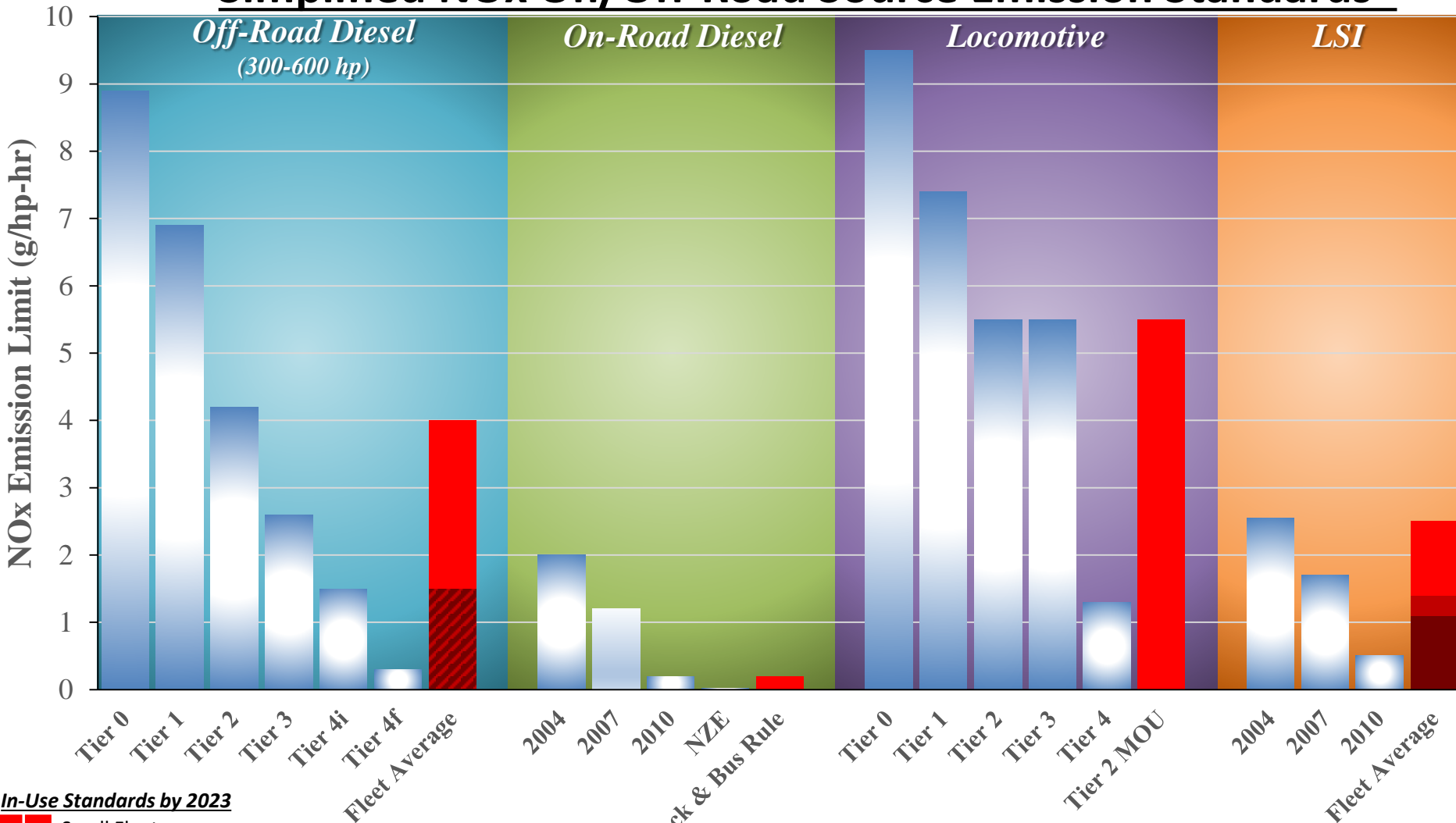
****Does not include measures that affect local land use authority***

Baseline SIP Inventory Zero Emission Vehicle Market Penetration (EMFAC)



*~10 million light duty vehicles
in total fleet in 2023*

Simplified NOx On/Off-Road Source Emission Standards*



In-Use Standards by 2023

- Small Fleet
- Medium Fleet
- Large Fleet

*Many unique provisions affect individual fleets.
Original regulations should be consulted for compliance purposes.

Emissions Inventory Assumptions & Potential Opportunities – Off-Road/Area Sources

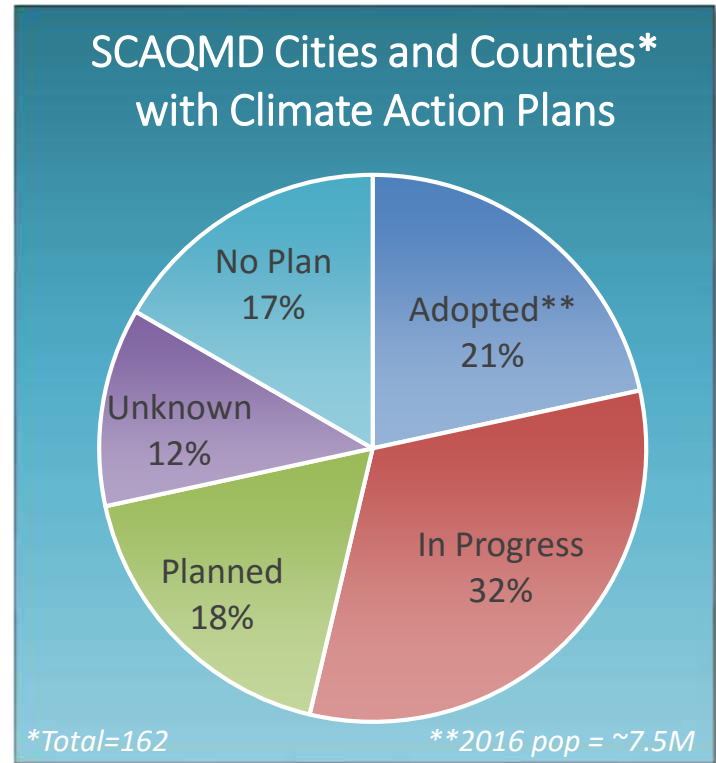
Emissions Source	Emissions Inventory Assumptions	Potential Emission Reduction Opportunities
<ul style="list-style-type: none"> ➤ Construction Equipment 	<ul style="list-style-type: none"> ➤ Growth and emission rates based on: <ul style="list-style-type: none"> ➤ ARB OFFROAD models (2011 - diesel, 2007 – large spark ignition) ➤ Activity based on: <ul style="list-style-type: none"> ➤ DOORS data + OFFROAD model 	<ul style="list-style-type: none"> ➤ Clean construction policies ➤ Worksite emission reduction strategies, such as: <ul style="list-style-type: none"> ➤ Grading assistance technologies (e.g., GPS, on-board sensors) ➤ Fleet optimization software
<ul style="list-style-type: none"> ➤ Area Sources (space heating, water heating and cooking) 	<ul style="list-style-type: none"> ➤ Fuel usage based on utility-wide average ➤ Emission rates based on SCAQMD rule limits 	<ul style="list-style-type: none"> ➤ Equipment exceeding Title 24 standards ➤ AQMP control measure CMB-02 <ul style="list-style-type: none"> ➤ ZE/NZE appliances in commercial/residential applications ➤ ‘Net-zero’ developments

Clean Construction Policies

- Agencies currently implementing a clean construction policy
 - LA Metro, Ports of Los Angeles and Long Beach, and LAX
- Policy based on step-down approach
 - Cleanest equipment first, if unavailable or infeasible under specified criteria, then choose next cleanest
 - Off-road, Tier 4f -> Tier 4i -> Tier 3, etc.
 - On-road, 2010 truck -> 2007 truck -> 2004 truck + DPF, etc.
 - Potential improvements to policy could include ZE -> NZE as first choices

Emissions Inventory – Additional Information Needed

- Local programs that exceed air quality regulatory requirements
- For example, policies in climate action plans prepared by local jurisdictions



Next Steps

- Before March 2018 report to Board, staff needs the assistance of stakeholders to identify specific voluntary emission reduction commitments
- Continue to evaluate emissions inventory
- Evaluate climate action plans
- Develop voluntary and regulatory concepts
- Progress Report to Mobile Source Committee

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