

Scenario Development

Agenda No. 3

Passenger Transportation and
Goods Movement White Paper
Working Group
Joint Meeting
September 4, 2014



Developing Scenarios

- Framework
 - Develop a “core set” of scenarios for each sector
 1. Across-the-Board
 2. 100% Deployment of Most-Stringent Existing Standards
 3. Advanced Technology Penetration
(would include Efficiency Actions that Reduce VMT, etc.)
 4. From (3), Develop Scenarios for Remaining Emissions:
 1. 100% Penetration Zero-Emissions
 2. 100% Penetration of Cleaner Technologies with 90% or Greater Emission Reductions

Developing Scenarios

- Framework
 - Develop Scenarios Where:
 1. Advanced Technologies May Have Greater Penetration
 2. Advanced Technologies May Have Less Penetration
 - Develop Scenarios to Look at Trade-Offs Between Sectors
 1. Least-Cost for Engine Technology and Infrastructure
 2. Minimal Deployment of New/Advanced Technologies and Infrastructure
 3. Maximum NOx Reductions for each emission source
 4. Maximum NOx and GHG Reductions for each emission source
 5. Others?
 - Develop Scenarios Looking Backwards from 2032 to 2023

Scenario Output Information

- Emissions
- Total Energy
- Population of Vehicles/Equipment Affected
- Other Information (Where Available)
 - Technology Costs
 - Operational Impacts
 - Others??

Example Scenario Output

MAIN FACTORS

Vehicle Efficiency

Fuels & Energy

Including Infrastructure
Development

Advanced Tech.

Operational Efficiency

INPUTS

Vehicle population

Vehicle miles
traveled

Vehicle sales

Emission rates

Infrastructure
Development

RESULTS

Total Emissions

Total Energy

Total Vehicles

Example Proposed Output Format for Goods Movement Sources

Source	2032 Baseline NOx	75% Reduction	100% Existing Standard	Advanced Technology Penetration	Zero-Emission	90% Cleaner Technologies
On-Road Trucks						
Ocean-going Vessels						
Locomotives						
Cargo Handling Equipment						
Harbor Craft						
Aircraft						
Total						

Example Proposed Output Format for Passenger Transportation Sources

Source	2032 Baseline NOx	75% Reduction	100% Existing Standard	Advanced Technology Penetration	Zero-Emission	90% Cleaner Technologies
Passenger Cars, SUVs, etc.						
Transit Buses						
School Buses						
Commuter Rail						
Ferries						
Cruise Ships						
Aircraft						
Total						

Examples – Goods Movement

- “What If” Scenarios
 - Lower Number of Ocean-Going Vessel Calls are with Tier 3 Vessels
 - Locomotives Entering the South Coast Air Basin achieve greater reductions
 - Greater Penetration of Cleaner Combustion Engine Trucks
 - Implementation of Efficiency Measures (Offset Need for Additional Advanced Technology Penetration?)
 - Others??

Examples – Passenger Transportation

- “What If” Scenarios
 - Significant Number of Older Passenger Cars Remain in Use
 - Greater Mode Choice Actions
 - Implementation of Efficiency Measures (Reduce Congestion; ITS, etc.)
 - Others??