

Evaluation of Potential Economic Impacts of AQMD Air Quality- Related Energy Policy

Energy Policy Stakeholder Meeting

August 11, 2011

Background

- Air quality-related energy policy as a means to implementing “black box” commitment
 - Costs associated with “black box” reductions to meet clean air mandate
- Federal, state, and other local agencies have similar energy programs
 - Integrated strategy to maximize co-benefits to reduce clean air compliance costs

Limitations

- Data needed to quantify sector specific impacts not available at this time
 - Implementation schedule
 - Level of penetration
 - Program design
- More detailed analysis committed for 2012 AQMP and future AQMD actions

Approach

- Review existing reports & analyses on similar program elements by other agencies/entities
 - Energy conservation/Efficiency
 - Load shifting
 - Renewables
 - Distributed generation
 - Zero and near zero emission technologies
 - Electrification
 - Alternative fuels
- Review 2007 AQMP socioeconomic analysis
 - “Black box” reductions

Energy Conservation/Efficiency

- Reduce GHG emissions, energy cost, and avert the building of power plants
- Net savings of \$5 billion from building & appliance energy efficiency, vehicle efficiency, and efficiency improvements of process and equipment (AB 32 Scoping Plan)
- Need to find ways to stimulate demand for energy efficiency to overcome upfront investments

Load Shifting

- Shift timing of electricity demand away from peak demand hours to promote generation at more efficient sources
- Complement with electricity storage

Renewables

- Piggyback on State requirements
- Southern California has substantial renewable potential in wind and solar power
- Combined with energy efficiency, cost of renewables is substantially lowered
- The renewable energy sector is the most export-intensive sector in the aggregate clean economy
- Need to minimize environmental impacts on neighborhood of renewable installations

Distributed Generation

- Reduce consumers' use of grid-connected power during peak periods
- Provide shorter lead and construction times and create local jobs
- Reduce need to build new transmission & distribution infrastructure

Zero and Near-Zero Emission Technologies

- Control strategies in every AQMP
- Since 1999, total project funding of AQMD co-sponsorship for zero & near-zero technologies amounts to \$386.2 million
- Reduce dependence on foreign oil & increase energy security
- Detailed analysis forthcoming for CARB LEV III rulemaking (Nov 2011)

Projected Costs of 2007 AQMP (Year 2023)

Cost Category	Amount (in millions of 2000 dollars)
Total Cost	\$3,963
Short-Term Quantified Measures	\$2,138
NOx “Black Box” Measure	\$1,665
Others*	\$160

*Short-term unquantified measures and VOC “black box” measure

Projected Cost of Black Box by Ozone Standard (Year 2023)

Ozone Standard	Cost (in millions of 2000 dollars)
80 ppb	\$1,665
75 ppb	\$1,955
60-70 ppb	\$2,126

Clean Air Benefit in 2023

Benefit Category	Amount (in millions of dollars)
Total	\$23,277
Reduction in Morbidity & Mortality	\$16,011
Visibility	\$5,587
Congestion Relief	\$308
Reduced Materials Expenditures	\$1,349
Increased Crop Yields	\$23

Potential Sectors Most Affected

- Applicability of 2007 AQMP socioeconomic analysis
 - 90% of short term measures from mobile sources
 - SCAG TCM measures
- Most sectors to be benefited by transportation sector investment

Next Steps

- 2012 AQMP will formulate specific strategies with reduction commitment and implementation schedule with socioeconomic analysis
- Rule-specific socioeconomic analysis for AQMD actions