

The background of the slide features a stylized globe on the left side, showing continents and oceans. A prominent blue horizontal bar with a slight gradient and a drop shadow is positioned at the top. The text is centered and rendered in a bold, dark blue font with a light blue drop shadow.

Climate Change Draft Scoping Plan:

Public Health Benefits

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Linda Murchison, Chief

Planning and Technical Support Division

Scoping Plan Health Benefits

- AB32 requires the ARB to assess environmental and public health benefits of the Scoping Plan
- Focused on air quality improvements and resulting public health benefits

Other Environmental Analyses

- CEQA document to be released with Proposed Scoping Plan
- Additional analysis during development of regulations, including market-based compliance mechanisms

Key Findings

- Scoping Plan measures will significantly reduce air pollution related premature deaths
- In 2020:
 - 320 fewer premature deaths statewide
 - 160 fewer in the South Coast Air Basin
 - 11 fewer in the Wilmington area

Other Health Benefits

- Fewer hospital admissions for heart and lung conditions
- Fewer cases of acute bronchitis, asthma, and respiratory symptoms
- Fewer work loss and restricted activity days
- Positive lifestyle changes with land use changes

Analysis Approach

- Statewide impacts
- Region with significant exposure to air pollutants – South Coast Air Basin
- Local community – Wilmington area

Analysis Steps

- AQ improvements from existing program
- Statewide GHG reductions
- Corresponding criteria pollutant reductions
- Apportion to regions by criteria pollutant levels
- Apply State and region-specific health impact correlations

GHG Reduction Estimates

- **Transportation:**
 - Avoided fuel combustion
 - Electrification
 - Avoided upstream emissions
- **Electricity and Natural Gas:**
 - Avoided electricity generation, natural gas combustion
 - Replacement with zero-emission sources
- **Industry:**
 - Avoided fuel combustion

Health Effects Methodology

- Developed and used by U.S. EPA
- Endorsed by health organizations
- Used to assess ambient air quality standards, diesel PM control measures and Goods Movement Plan
- Includes California-specific health studies
- Peer reviewed

Health Methodology Overview

Air Quality Data

Emissions Estimates

Total Exposure

Baseline Incidence Rates & Response Functions

Health Impacts

Health Endpoints

- Premature death
- Hospital admissions: respiratory
- Hospital admissions: cardiovascular
- Acute bronchitis
- Asthma/other respiratory symptoms
- Work loss days
- Minor restricted activity days

State Level Impacts

- Greatest reductions come from:
 - energy efficiency and conservation,
 - goods movement efficiency, and
 - the renewable portfolio standard
- 56 tpd NO_x, 12 tpd PM_{2.5} reduced in 2020

Statewide Health Benefits

Health Endpoint	Existing and 2007 SIP	Scoping Plan
Premature deaths	3,700	320
Hospital admissions respiratory	770	67
Hospital admissions cardiovascular	1,400	120
Asthma/respiratory symptoms	110,000	8,800
Acute bronchitis	8,700	730
Work loss days	620,000	53,000
Restricted activity days	3,600,000	310,000

Mean number of cases avoided in 2020; uncertainty intervals range within 20-70 percent of the mean benefit.

Regional Level Analysis

- South Coast Air Basin example
- Stationary source reductions reflect basin's share of existing statewide emissions at sector/process level
- On-road mobile reductions apportioned by VMT
- Scoping Plan provides additional health benefits over existing program and 2007 SIP

South Coast Health Benefits

Health Endpoint	Existing and 2007 SIP	Scoping Plan
Premature deaths	2,500	160
Hospital admissions respiratory	530	33
Hospital admissions cardiovascular	980	62
Asthma/respiratory symptoms	74,000	4,700
Acute bronchitis	6,100	390
Work loss days	440,000	28,000
Restricted activity days	2,500,000	160,000

Mean number of cases avoided in 2020; uncertainty intervals range within 20-70 percent of the mean benefit.

Community Level Analysis

- Wilmington community (12x12 Km area)
- Located in the South Coast Air Basin
- Close proximity to ports, rail, and other sources

Community Level Sources

Stationary Sources

- Electrical utilities
- Oil and gas production
- Oil refining
- Industrial boilers and internal combustion engines

Mobile Sources

- Cars and trucks
- Trains
- Ships
- Off-road equipment

Other

- Residential & commercial fuel combustion

Analysis at the Local Level

- Gridded modeling inventory used to reflect local sources and vehicle emissions
- Percent statewide emission reductions applied to local source emissions or throughput by source category

Community Level Impacts

- Scoping Plan reduces 2020 emissions
- Scoping Plan reductions \approx 11 avoided premature deaths in study area
- Most health benefits will occur outside of the study area

Conclusions

- Draft Scoping Plan will provide new air pollution and health benefits
- In addition to significant improvements in air quality from existing control program
- Additional analyses will be conducted during measure development