

AB 1007 -- 2050 Vision

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climate
CHANGE

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AIR RESOURCES BOARD

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AB 1007: Need to Look Beyond 2022

- **AB 1007 requires forecasts to 2022,**
- **But - many reasons to look farther ahead**
 - Help identify ultimate goals for new fuels
 - Allow time to reflect fleet turnover and technology innovation
 - Help guide longer term investments
 - Determine how transportation sector might meet 80% GHG reduction goal in 2050
 - Determine if the alternative fuel paths to 2022 support the longer term transportation goals

2050 Vision

Policy Goals Included in Effort

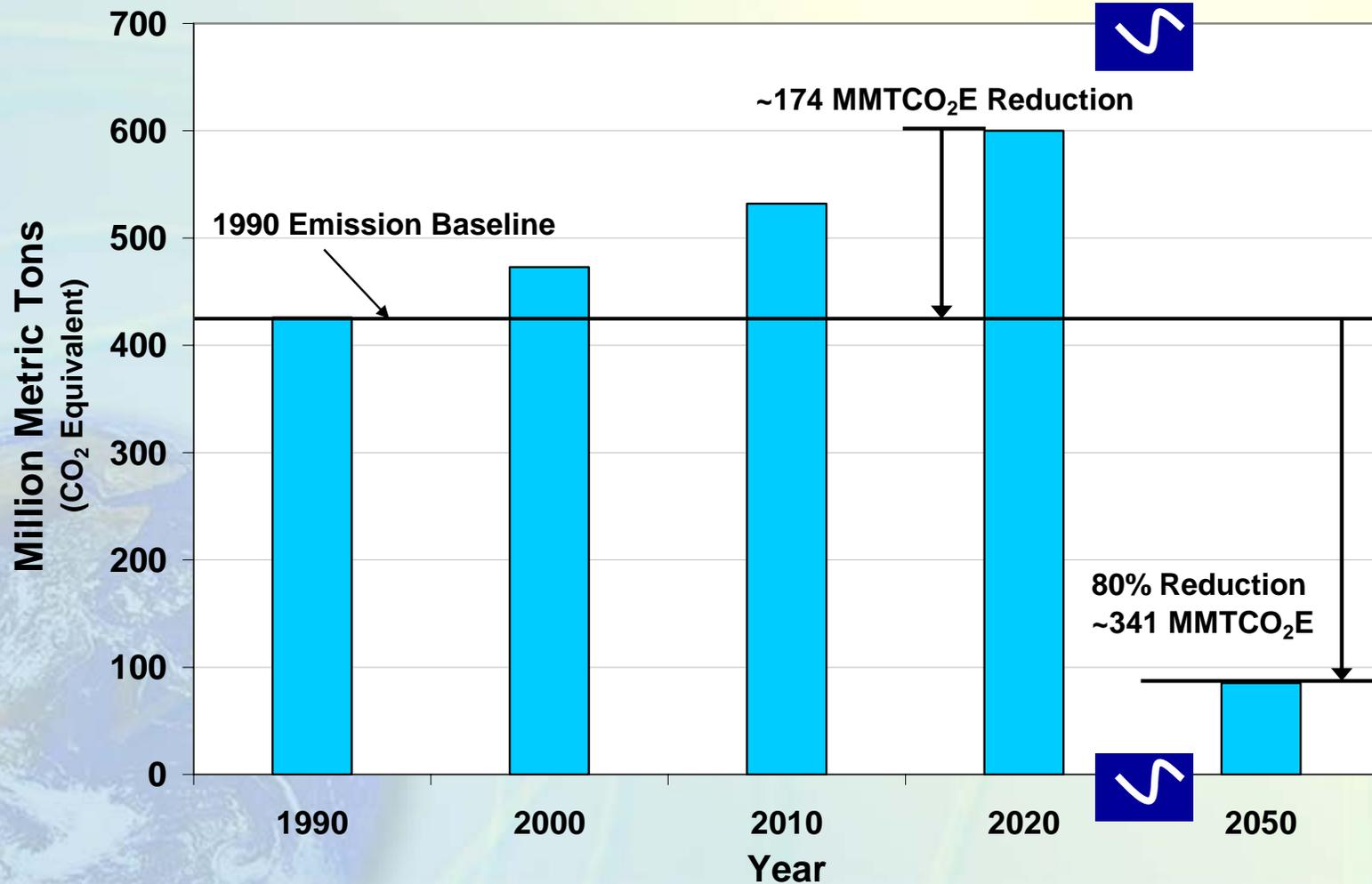
- **Reduce GHG emissions by 80+ percent**
- **Create sustainable long term transportation fuels**
- **Protect economy from dependence on single fuel**
- **Minimize costs through efficiency and diversity**
- **Maximize potential for in-state production**

California's GHG Reduction Efforts Need to Be Considered in AB 1007

- **AB 32 – Return to 1990 levels by 2020**
 - Requires a 15% GHG reductions from today's levels
- **Governor's EO S-3-05**
 - Reduce 2050 GHG emissions to 20% of 1990 levels
 - Requires a ~85% GHG reductions from today's levels
- **The Low Carbon Fuel Standard**
 - Reduce fuel GHG intensity by 10% by 2020
 - Further improve fuels beyond 2020
- **Ensure Needed Long Term GHG Reductions are obtained From the Transportation Sector**

The Long Term GHG Goal Is Very Challenging

CAT Report Emissions



Creation of a 2050 Vision for the AB 1007 Report

- ARB and CEC staff have added two forecast years
 - A mid term year of 2030
 - A long term year of 2050
- Not detailed forecasts -- use aggressive, yet plausible, assumptions on technology and fuels
- The mid and long term forecasts reflect three broad strategy approaches for transportation
 - Maximize energy efficiency of both vehicles and fuels
 - Reduce travel demand through technology and land use
 - Deploy lower and lower GHG transportation fuels
- The target for 2050 – 80% GHG reduction

2050 Vision

Measures Included to Reach Goals

- **Tripling of average vehicle fuel efficiency**
 - Conventional vehicles on gasoline > 40mpg
 - Hybrid vehicles achieve almost 60 mph
 - Electric drives exceed 100 mpg
 - Fuel cell vehicles exceed 80 mph

- **Highly diverse supply of transportation fuels**
 - 70 % very low GHG biofuels, electricity and hydrogen
 - 30% from Gasoline, diesel, natural gas and LPG

- **Population increases to 55 million, but per capita driving is decreased by 5% (1990 level)**

2050 Vision – Changes from Business as Usual Forecast

- Miles traveled – reduced from 570 to 450 billion/yr
- Per capita VMT - reduced from 10,000 to 8,000 miles/yr
- Average fuel efficiency – increased from 26 to about 70 miles per gasoline gallon equivalent
- Transportation energy demand – decreased from 23 to 6.4 billion gallons/yr
- GHG emissions from personal travel – decreased by almost 85% (~160MMTs/yr)
- Mix of transportation fuels used for personal travel
 - 30 % from gasoline, diesel, natural gas or LPG
 - 30 % from biofuels or other renewable liquid fuels
 - 40 % from electricity or hydrogen