

Global Warming Solutions Act

California's AB 32 and Prospects for Market Approaches

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**GHG Emissions Trading Workshop
Paris, France**

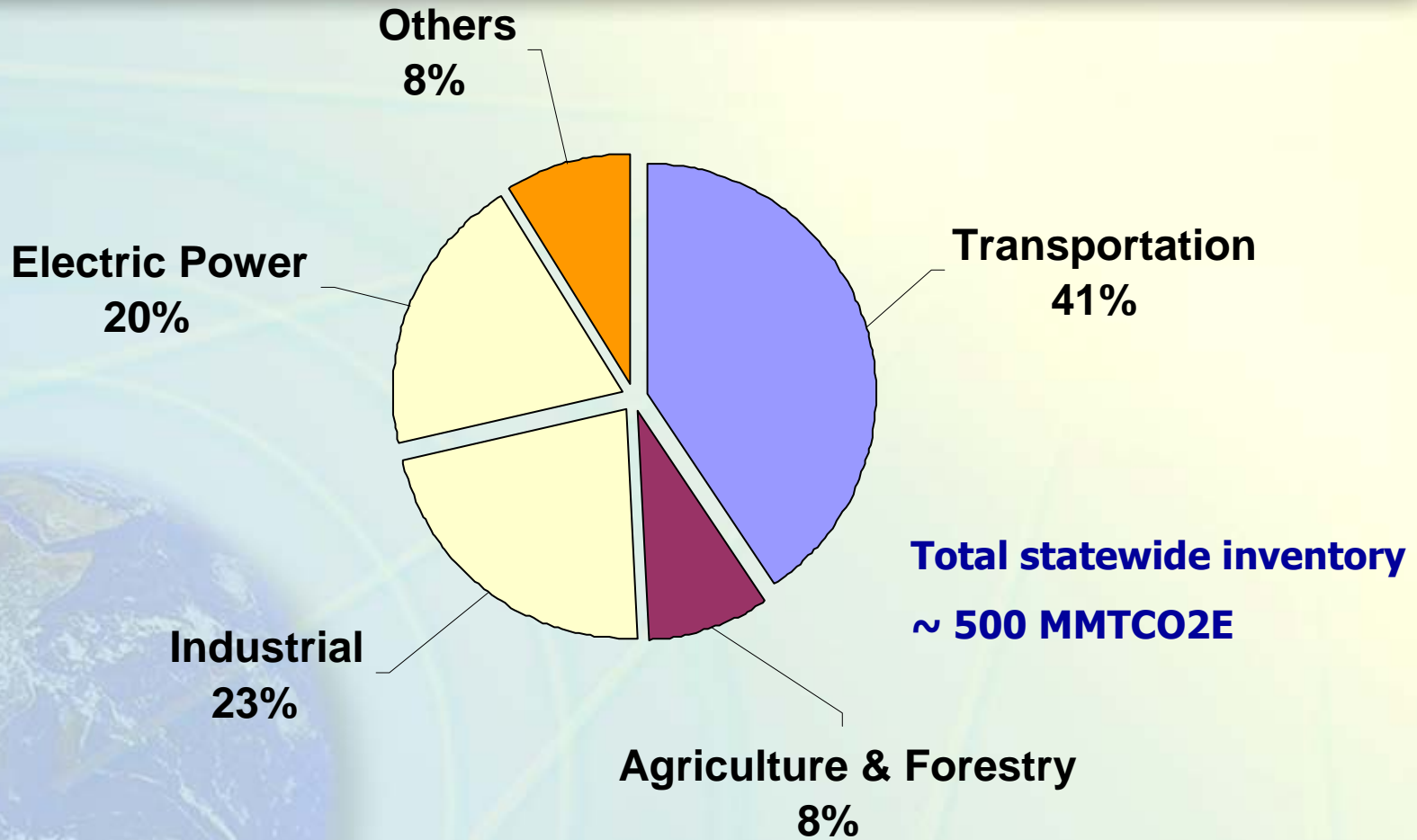
October 9 and 10, 2007



AB 32 Basics

- **Sets in statute Governor's 2020 target**
- **ARB to monitor/regulate GHG sources**
- **Market approaches allowed, but not required**
- **Air Resources Board lead, but other agency authorities preserved**
 - **Cal/EPA has lead coordination role with other state agencies**
 - **Role of California Public Utilities and Energy Commissions explicitly recognized**

California's Anthropogenic GHG Emissions 2002 (CO₂-equivalent)



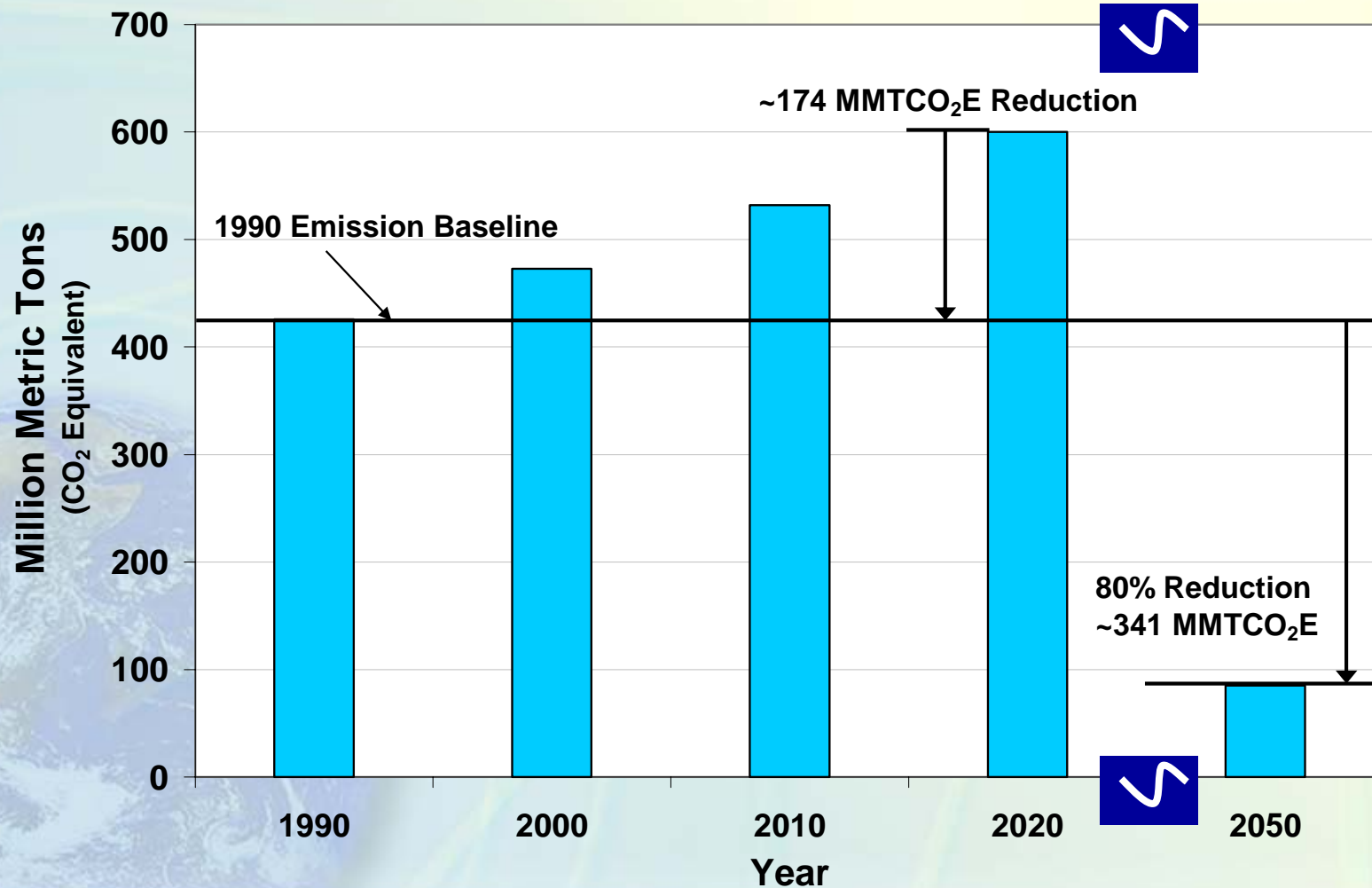
GHG Reductions Required

- **By 2020 California must:**
 - **Reduce GHG emissions to 1990 levels**
 - **Collectively this means reducing:**
 - **today's levels by 15%**
 - **projected levels by 28%**
 - **emission intensity by 33%**

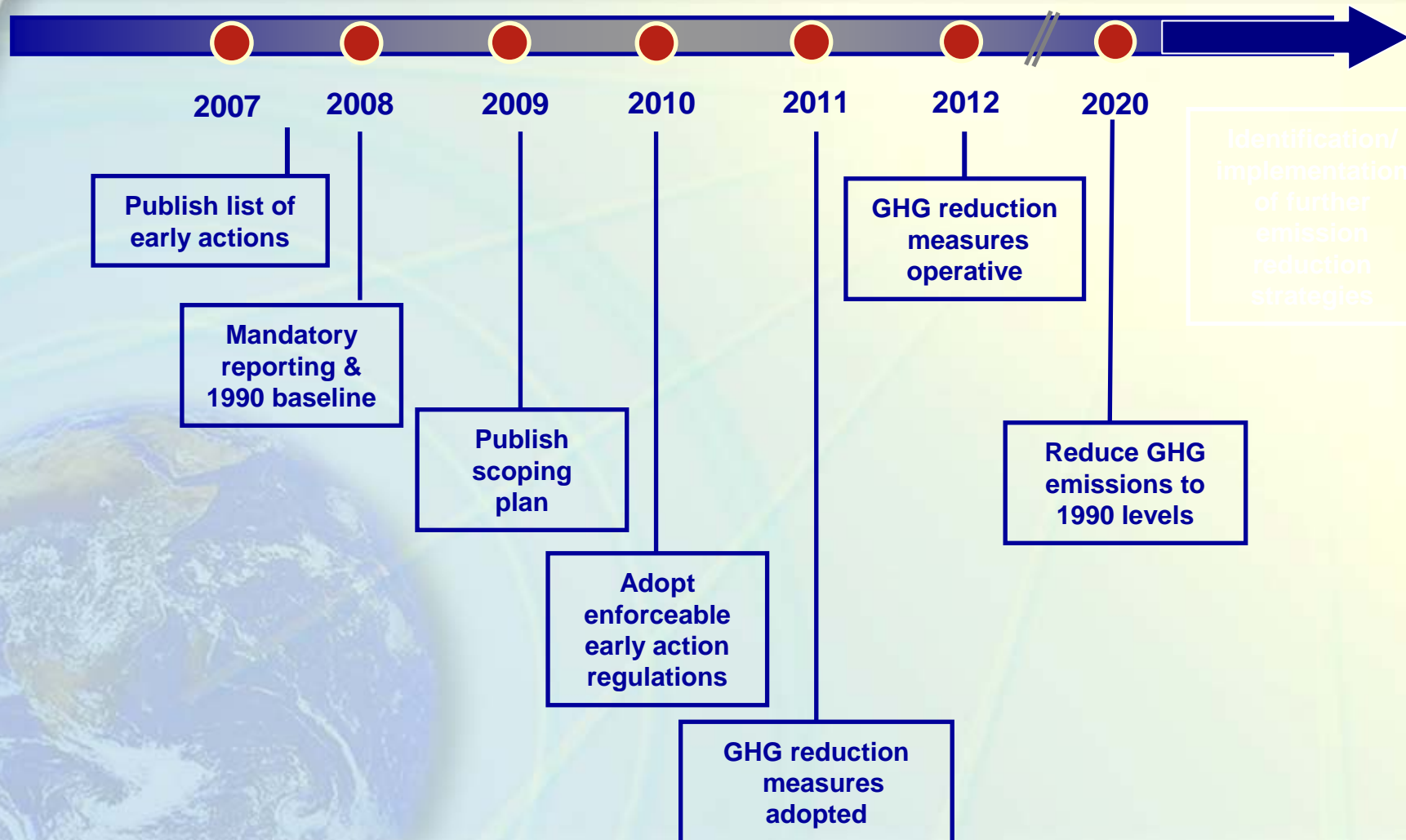
The 2020 & 2050 Challenges

California's GHG Emissions Targets

CAT Report Emissions



California Global Warming Solutions Act of 2006 (AB 32)



Ultimate ARB AB 32 Goals

- **Reduce emissions back to 1990 levels**
- **Develop least cost approach**
- **Enhance new technologies and sustainable energy policies**
- **Create programs that can be copied by other states and nations**
- **Enable California to link our efforts to programs in other states and countries**

Emission Reduction Measures— Statutory Criteria

- **Achieve maximum technologically feasible and cost-effective reductions**
- **Consider information from programs in other states and nations**
- **Minimize costs and maximize benefits**
- **Use available regulatory approaches to reduce emissions of warming gases**
- **Consider market-based approaches**

Regulatory Measures will Play an Important Role

- **Likely to provide most of the reductions needed to meet AB 32 goal for 2020**
- **ARB adoption of:**
 - **Vehicle GHG emission standards (AB 1493)**
 - **A low carbon fuel standard**
 - **Controls on methane, CFC gases**
 - **SMOG reduction rules with GHG co-benefits**
- **Energy performance programs by other agencies**
 - **CPUC - energy efficiency, low GHG renewables**
 - **CEC - appliance efficiency, alternative fuels**
 - **GHG emission limits for base load electricity**

Market-Based Mechanisms

- **Allowed, but not required under AB 32**
 - **Governor directed ARB to concurrently develop market approaches and regulatory measures**
 - **Possible approaches to be developed over next 15 months**
- **What might be included:**
 - **System of declining aggregate emission limits and allocations made to regulated sources**
 - **Emissions trading, banking, credits, and offsets that produce the same reduction as direct compliance**
- **Must meet stringent criteria specified in AB 32 for ARB to approve any market mechanisms**

Market Advisory Committee

- **Fifteen national and international experts on use of market-based approaches to achieve environmental results**
- **Advised ARB on design of market-based strategies for use under AB 32**
- **Completed work in June 2007**
- **Focused on Cap and Trade Program**
 - **Prepared a comprehensive report**
 - **Addressed unique California conditions**
 - **Strongly supported broad market linked to other programs worldwide**

Market Advisory Committee Recommendations

- **Supported a very broad market program**
- **Make allocations by using combination of:**
 - Auction process with dedicated revenues
 - Performance based method
- **Supported widespread use of trading, banking and offsets, linking with other systems**
- **Did not support borrowing or a "safety value"**
- **Electricity sector major focus**
 - Agreed "source – based" not workable at current time for a California only effort
 - Concerned about "load-based" effort by CA PUC/CEC/ARB
 - Preferred a first seller concept
 - Both concepts are now under consideration

Candidates for Inclusion in Potential AB 32 Market System*

- **Most likely early candidates – Industrial Sector:**
 - Electricity Producers (in-state and importers)
 - Oil Refineries
 - Cement manufacture and perhaps cement imports
 - Oil and gas production
 - Cogeneration and other large industrial fuel users
- **Eventually system could be expanded**
 - Overall transportation sector
 - Smaller industrial and commercial fuel users
- **Other programs with market elements:**
 - Low carbon fuel standard - trading within fuels sector
 - Vehicle GHG emission limits – limited trading

* *Performance-based limits likely to apply concurrently*

Market-Based Options Under Consideration – Cap & Trade

Explore Comprehensive Cap & Trade Effort

- **Multi sector program with tradable allocations**
- **Overall emission cap through at least 2020**
- **Determination of which sectors:**
 - **Are included in program at start-up**
 - **Would be eventually phased into program**
- **Allowances - evaluate use of performance, auction and historical emission methods of allocation**
- **Define role of banking, offsets, trading with other programs; evaluate safe valve mechanisms**
- **Deal with California's reliance on imports for electricity**
- **Minimize leakage and "contract shuffling"**

Market-Based Options Expected in Low Carbon Fuel Standard

- **Adopt by the end of 2008, implement in 2010**
- **Reduce the carbon intensity of transportation fuels by at least 10% by 2020 through performance standards**
- **Fuel producers have flexibility to determine the type and mix of fuels needed to meet performance standards**
- **Use consistent methods to define how various fuels affect GHG emissions**
- **Employ several market-based elements to lower cost and increase flexibility:**
 - **Provide method to generate credit for over compliance**
 - **Allow credit trading among fuel providers**
 - **Allow for averaging and banking**
 - **Evaluate use of excess credits in wider Cap & Trade program**
 - **Form of credits consistent with Cap & Trade allowances**

CA Market-Based Approaches – Special Concerns in Electricity Sector

- **Electricity use results in 20% of CA GHG emissions, half from out-of-state plants**
- **Electricity highly regulated, GHG policies must mesh with programs of State Energy and Public Utilities Commissions**
- **ARB working with both Commissions to**
 - **Reflect energy efficiency and renewable energy policies in GHG reduction program**
 - **Minimize leakage/shuffling due to electricity imports**
 - **Coordinate with broader electricity sector policies related to reliability, diversity and cost reduction**
 - **Determine how to include energy suppliers -- “load-based” and “first seller” approaches being investigated**

CA Market-Based Elements – Schedule for Development

- **Emission reporting – adopt rules in December 2007, Report emissions for 2008**
- **Determine role of Cap & Trade in “Scoping Plan”**
 - **Evaluate program design options by spring 2008**
 - **Propose approach by late summer 2008**
 - **CARB decision on approach by the end of 2008**
- **Develop and adopt needed rules for Cap & Trade by end of 2010**
- **Begin trading for Low Carbon Fuel Standard by 2010, for Cap & Trade by 2012 (if adopted)**

Summary

- **AB 32 is a major initiative with far reaching consequences for California**
- **Major goals being pursued**
 - **Achieve required GHG reductions, inspire new technologies**
 - **Develop approaches others can copy**
 - **Ensure California can link its efforts with other GHG reduction programs**
- **Both performance and market-based mechanisms are likely to be employed**

Thank You and Contacts for More Information

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