

California Global Warming Solutions Act of 2006

Interaction Between AB 32 and the CA Electricity Market

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**climate
CHANGE**

California Environmental Protection Agency
AIR RESOURCES BOARD

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
 - Cal/EPA & Climate Action Team continue coordinating statewide climate policy
 - Other agency authorities preserved
 - Role of CPUC and CEC explicitly recognized
 - ARB must consult on all energy related matters

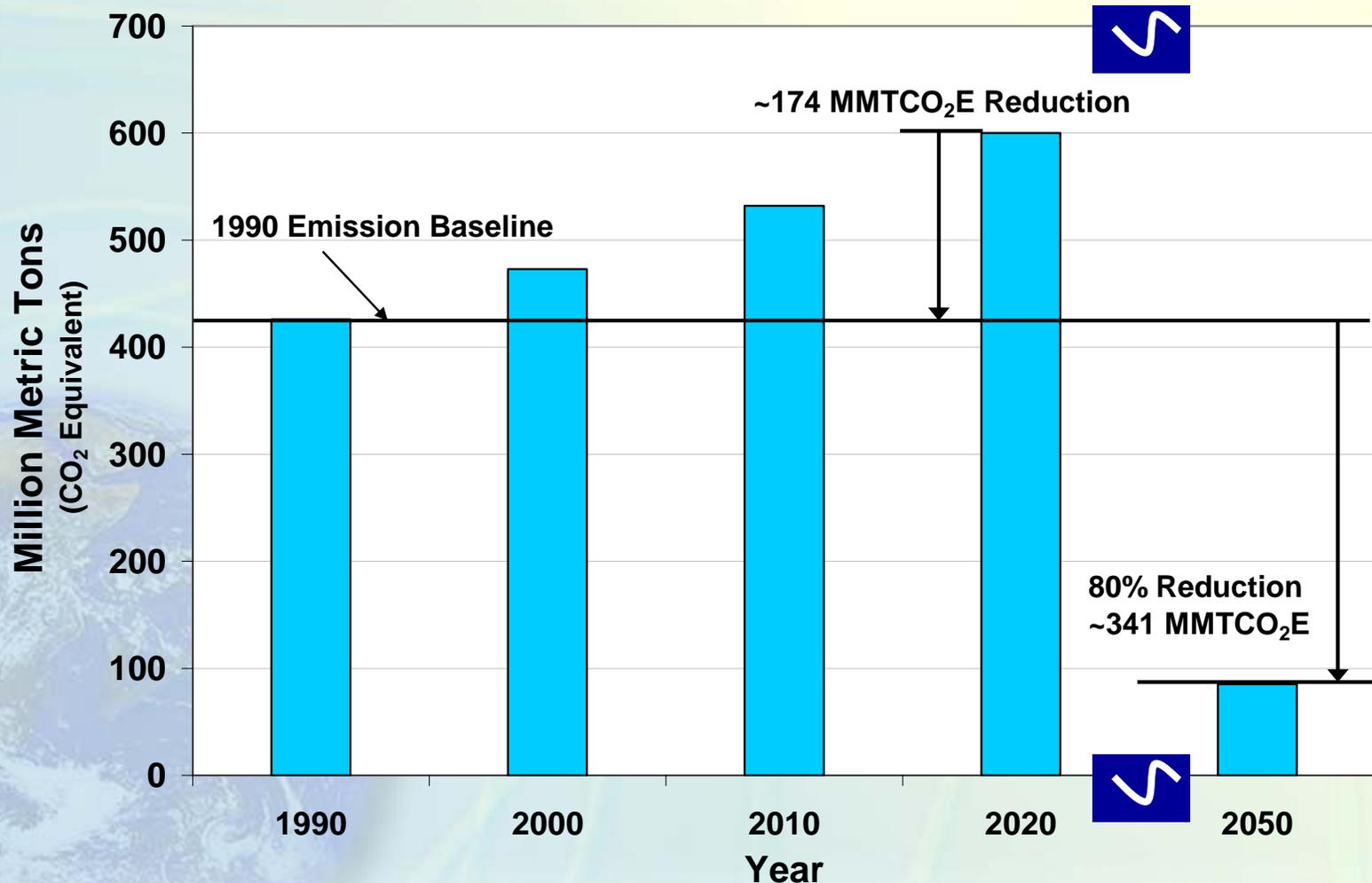
GHG Reductions Required

- **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%

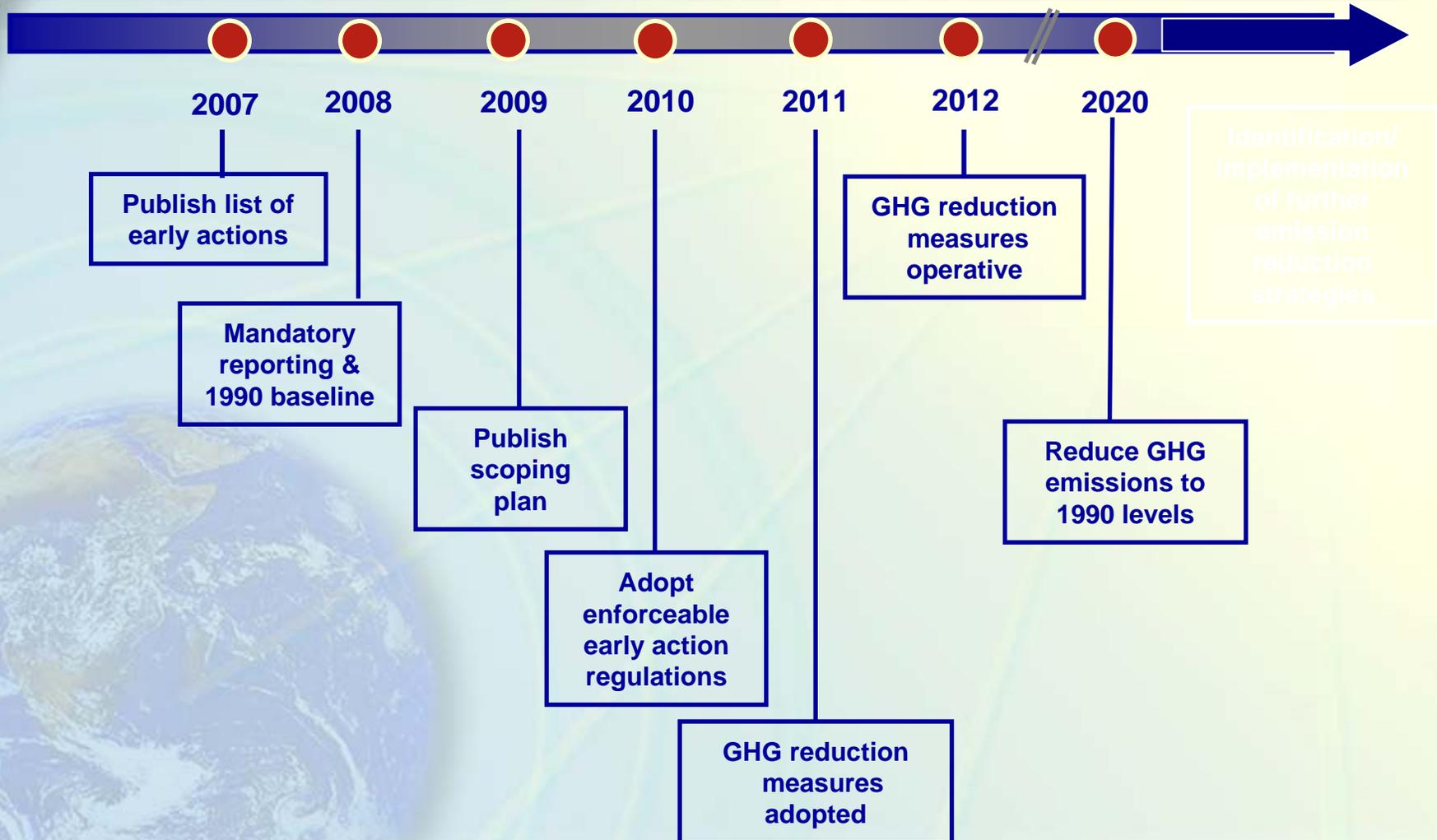
The 2020 & 2050 Challenges

California's GHG Emissions Targets

CAT Report Emissions



California Global Warming Solutions Act of 2006 (AB 32)



Emission Reduction Measures— Statutory Directives

- **Achieve maximum technologically feasible and cost-effective reductions**
- **Consider information from programs in other states and nations**
- **Minimize costs and maximize benefits**

Performance Based Measures will Play a Very Important Role

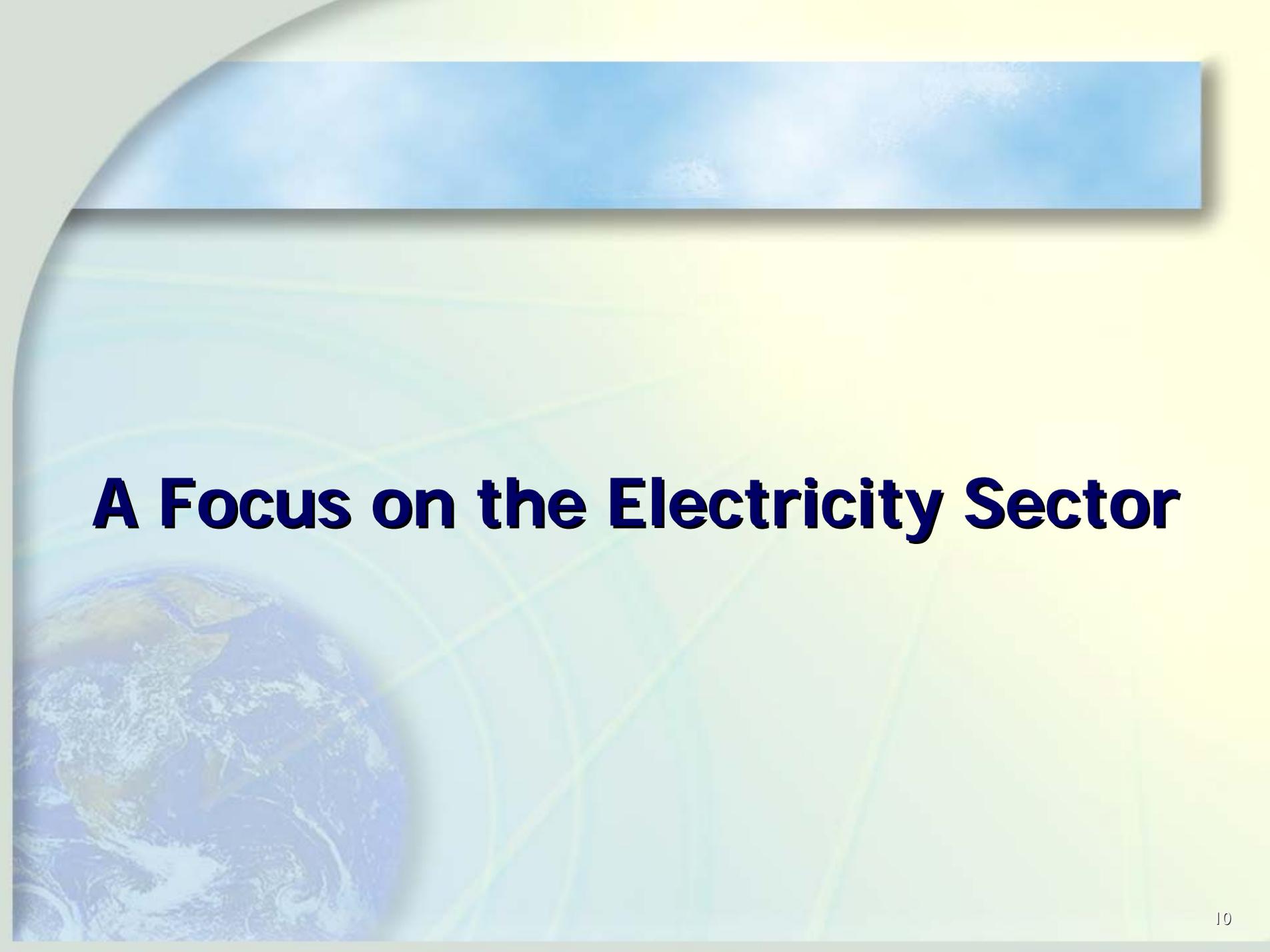
- Likely to provide most reductions needed to meet AB 32 goal for 2020
- Examples for ARB adoption include:
 - Vehicle GHG emission standards (AB 1493)
 - The low carbon fuel standard
 - Controls on methane, CFC gases
 - SMOG reduction rules with GHG co-benefits
- Energy related standards set by other agencies
 - CPUC rules for energy efficiency, RPS, SB 1368
 - CEC rules for appliance efficiency, SB 1368

Market-Based Mechanisms

- Allowed, but not required under AB 32
- What might be included:
 - System of market-based declining annual aggregate emission limits
 - GHG emissions exchanges, banking, credits, and other transactions that result in the same reduction as direct compliance
- Must meet stringent criteria before ARB can approve

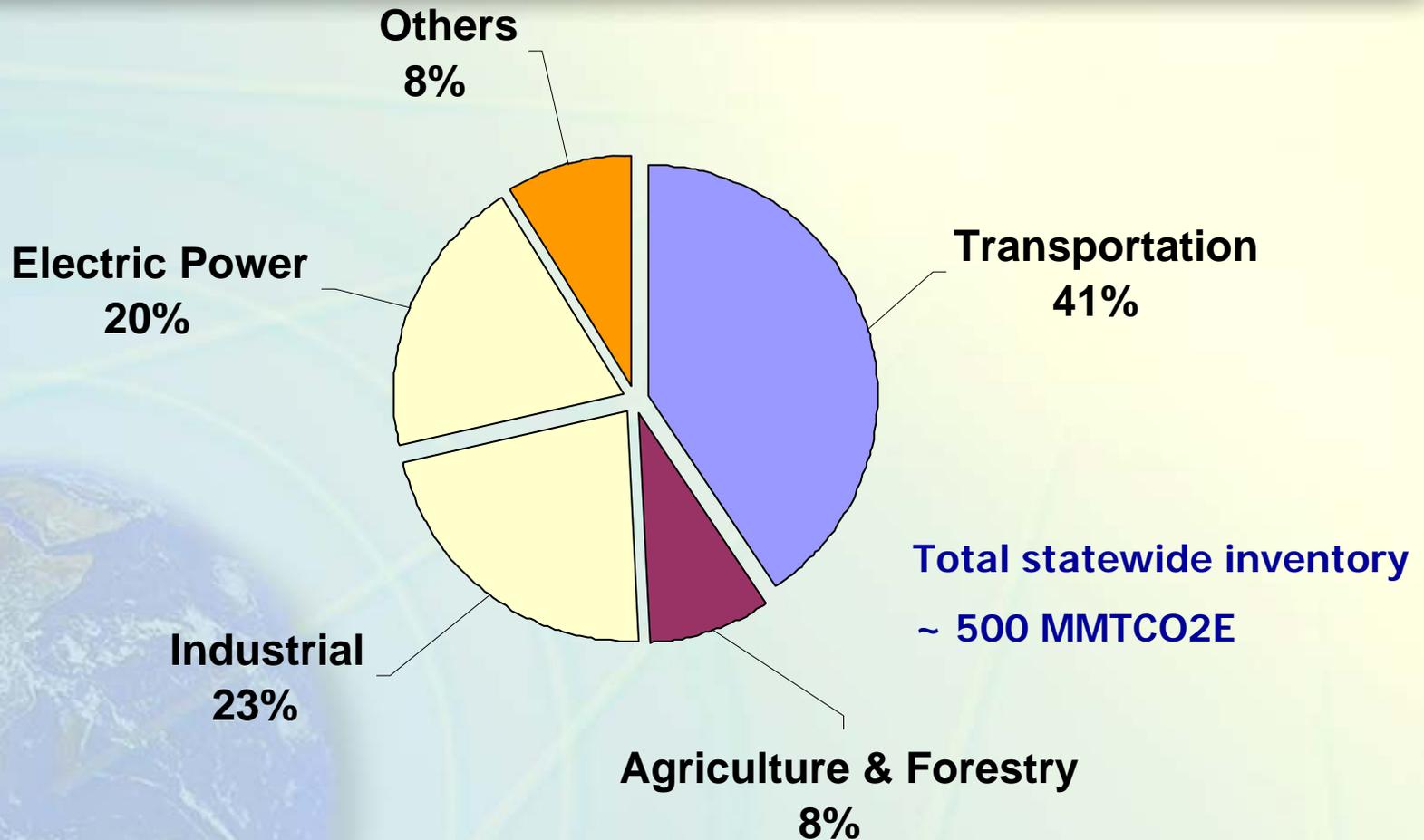
Ultimate ARB AB 32 Goals

- Reduce emissions back to 1990 levels
- Develop least cost approach
- Enhance other energy policies
- Create model that is copied by other states and nations
- Generate economic benefits -- new business opportunities, improved efficiency, climate protection
- Maximize co-benefits -- reductions in smog and toxic emissions



A Focus on the Electricity Sector

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



Source: March 2006 CAT Report, adapted from CEC, 2005

Electricity Imports are a Major Portion of Sector's GHG Emissions

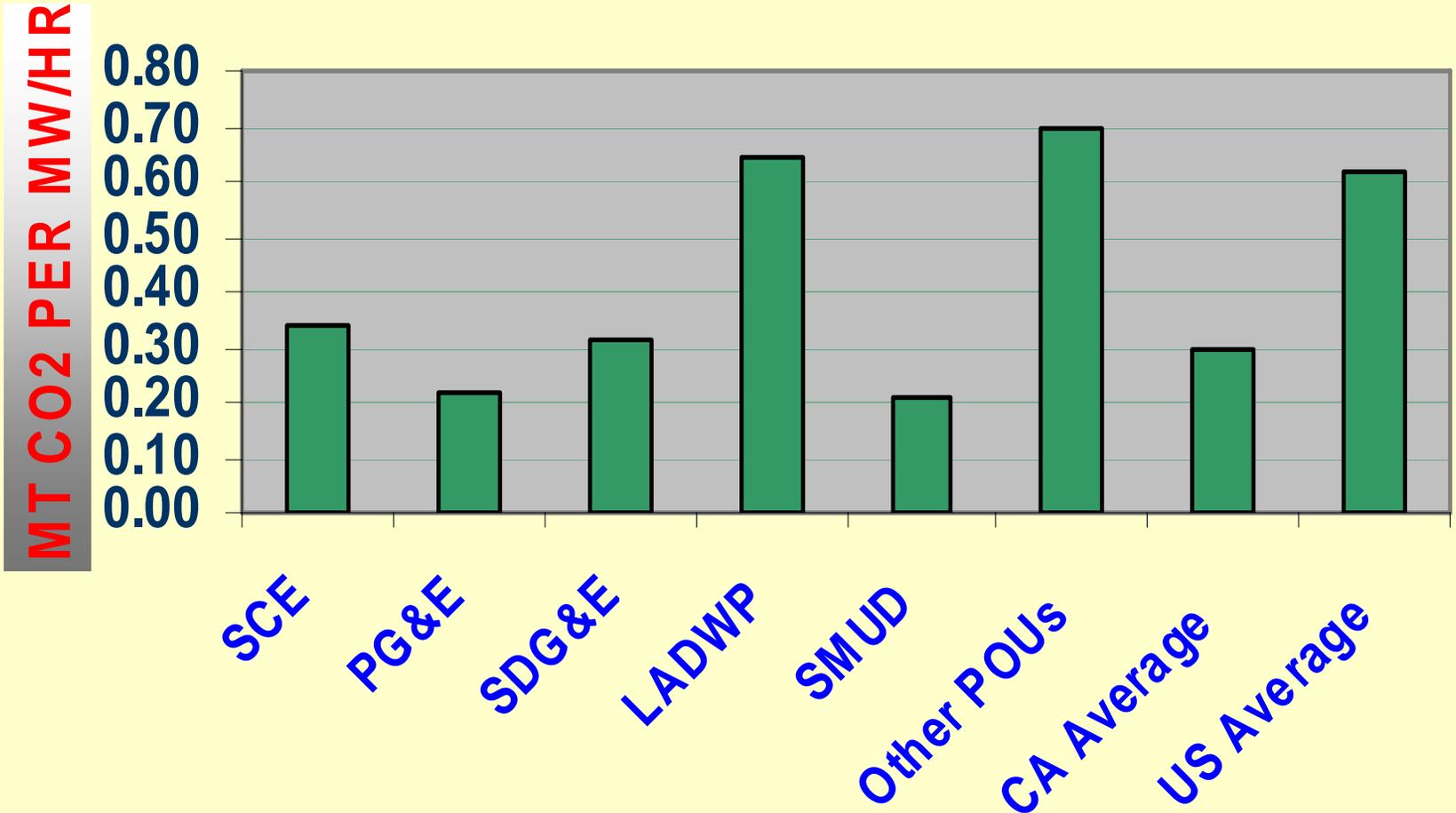
- In-State Production ~ 47 MMT's (44%)
 - Independent power producers – 24 MMT's
 - Utility owned generation – 5 MMT's
 - CHP and QF facilities – 18 MMT's
- Out-of-State Production ~ 60 MMT's (56%)
 - Independent power producers – 35 MMT's
 - Utility owned generation – 25 MMT's

MMT = million metric tons CO2/year

CA Utilities-Relative GHG Emissions in 2004

Utility	Load Served GW-HR	Emissions MMTs GHGs
SCE	90,000	31
PG&E	87,000	19
SDG&E	20,000	6
LADWP	26,000	17
SMUD	10,000	2
Other POU's	30,000	21

CA UTILITIES - LARGE DIFFERENCES IN GHG EMISSIONS INTENSITY



Joint Development of Electricity Sector Recommendations

- CPUC and CEC developing GHG reduction approach for electricity sector (IOUs & POUs)
- CPUC GHG Proceeding 06-04-009, jointly conducted with CEC, used as forum
- ARB full partner and participant

CPUC/CEC Electricity Sector Recommendations

- **CPUC/CEC to recommend approach to ARB**
 - **ARB would use AB 32 authority to adopt rules, assuming it agrees with recommendations**
 - **Timing consistent with ARB AB 32 process**
 - **Approach ensures full coordination between GHG reduction and other electricity sector policies**

CPUC/CEC Workshops: Designing a Load-Based GHG Emissions Cap

- **Establish reporting requirements**
- **Design GHG reductions targets, load-based caps and flexible compliance mechanisms**
- **Consistent approach for IOUs and POUs**
- **Include energy efficiency and RPS effects**
- **Minimize leakage due to electricity imports**
- **Full coordination with broader electricity sector activities and policies**

Market Advisory Committee

- Advise ARB on design of market-based strategies for use under AB 32
- Released draft report on June 1
- Complete work by June 30
- Electricity sector major focus
- Discussed two approaches
 - Load based focus on LSEs
 - First seller concept (preferred by MAC)

Senate Bill 1368: GHG Performance Standard

- **PUC and Energy Commission to establish GHG emission performance standards for new long term, base load power contracts:**
- **Standard must be no higher than the rate of GHG emissions from efficient natural gas generation**
- **PUC and CEC have taken required actions**

AB 32 Challenges Facing the CAISO

- Coordinating market reform efforts with AB 32 program design, rules, and policies
- Incorporating GHG reduction policies into CAISO's power purchases and system reliability functions
- Participating fully in the AB 32 electric sector program design by:
 - Sharing data and technical expertise
 - Providing advice on how to reflect CAISO activities and policies into AB 32 program
 - Advising ARB, CPUC and CEC on market issues

Summary

- **AB 32 is a major initiative with far reaching consequences for California**
- **Two major goals being pursued**
 - **Achieve required GHG reductions**
 - **Develop approaches others will copy**
- **GHG reductions from the electricity sector will be critical to AB 32 success**
- **Both performance and market-based mechanisms are likely to be employed**

Thank You and Contacts for More Information

- ARB Climate Change Web Site
<http://www.arb.ca.gov/cc/cc.htm>
- California Climate Change Portal
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