

Agriculture Stakeholder Working Group on Scoping Plan Development

January 23, 2008

Overview

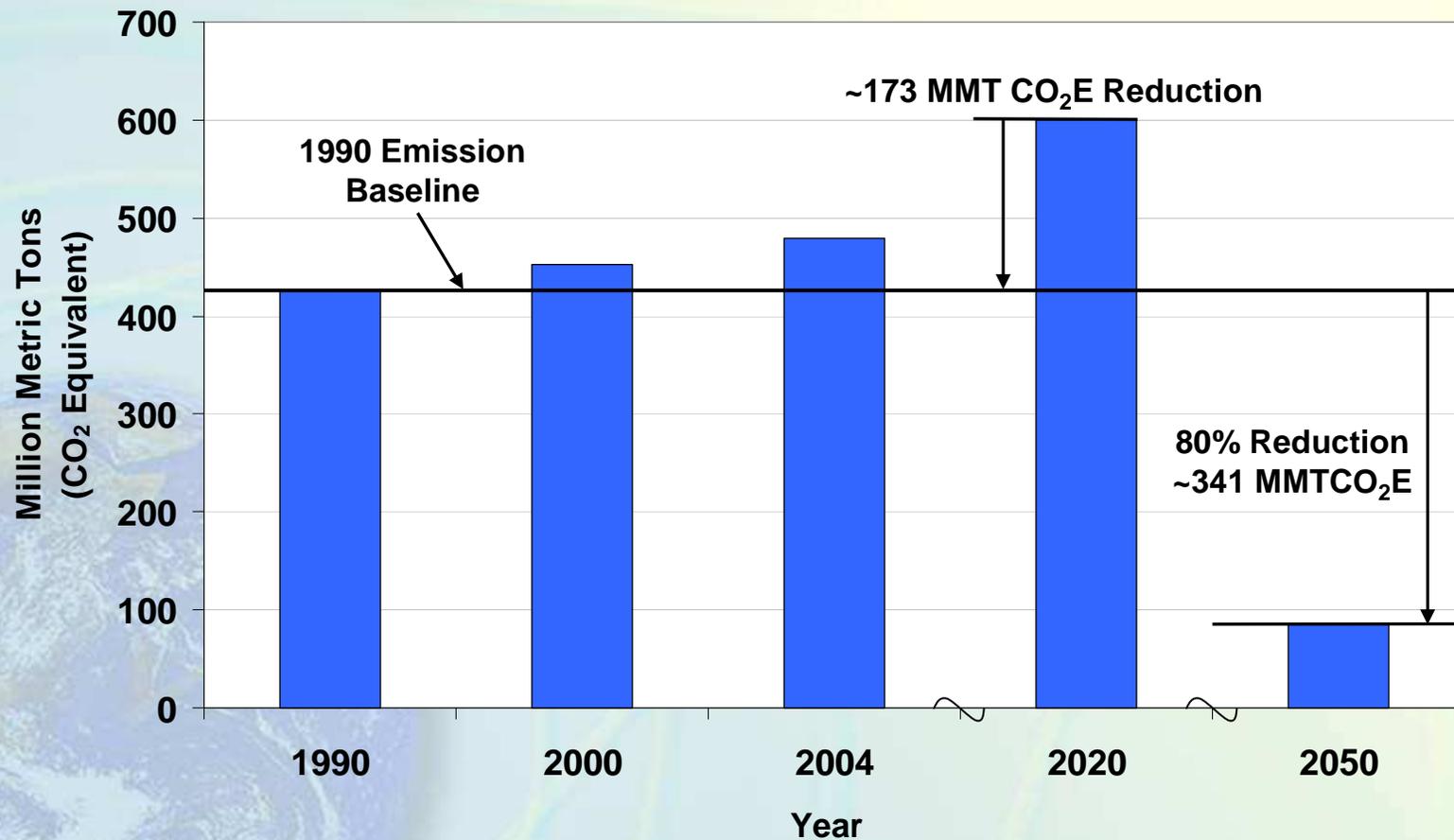
- **Introduction and Overview of AB 32 Scoping Plan Process**
- **Potential Agriculture Strategies for Greenhouse Gas Reductions**
- **Next Steps**

Overview of Global Warming Solutions Act (AB 32)

- **Sets in statute emission target to reduce GHG emissions to 1990 levels by 2020**
- **ARB given authority to monitor and regulate GHG sources**
- **Cal/EPA and Climate Action Team coordinate statewide climate policy**
- **Coordinate with other states and countries to reduce emissions**

Magnitude of the Challenge

ARB Emissions Inventory



Potential Impacts on Agriculture



Decreased milk production



Decrease in chill hours required for fruit and nuts



Increased risk of water shortages



Increasing temperatures could decrease yields

Increased pest pressure and expanded range for many agricultural pests



Production losses in some of California's most important crops

Scoping Plan

- **Describes how California will reduce GHG emission levels to 1990 levels by 2020**
- **Plan not a regulation**
- **Identifies measures for future adoption or implementation**
- **Addresses all sectors**

Scoping Plan Sectors

- **Agriculture**
- **Water**
- **Manufacturing**
- **Land Use & Local Government**
- **High Global Warming Potential Gases**
- **Forests**
- **Transportation**
- **Electricity**
- **Oil & Gas/Refining**
- **Waste Management & Landfills**

Overview of Scoping Plan Process

- **Scoping plan will identify mix of measures and approaches to achieve 2020 target**
- **Regulations, voluntary approaches and incentives being explored**
- **Agriculture measures viewed primarily as source of voluntary GHG reductions**
- **Measures identified by ETAAC and AgCAT groups provide foundation for scoping plan development**
- **Stakeholder input to build on existing work**

Agriculture Sector for the Scoping Plan

- **On-farm energy use and fuel combustion**
- **Field tillage and harvesting operations**
- **Fertilizer use**
- **Management of on-farm residual biomass such as prunings, straw, or manure**
- **Agricultural irrigation pump efficiency and water management**
- **Other emissions associated with production of meat, eggs, and milk**

Scoping Plan Program Design

- **Agriculture sector team not directly addressing offsets and other market mechanisms**
- **Role of market mechanisms being addressed in context of economy-wide program**
- **Scoping Plan will include recommendations on role of offsets in implementing AB 32**

Workgroup Process

- **Reports from ARB staff**
- **Input from stakeholders**
- **Focused technical discussions as needed**



Potential Agriculture Strategies for Greenhouse Gas Reductions

Agriculture Sector Workgroup Meeting

January 23, 2007

Dale Shimp

California Air Resources Board

Categories of Strategies

- **Livestock and Confined Animal Facilities**
- **Energy**
- **Efficiency improvements**
- **Conservation/Sequestration**
- **Research**

Livestock and Confined Animal Facilities

- **Manure to Energy (anaerobic digesters)**
- **Methods to reduce or capture enteric emissions**
- **Improved manure management methods**
- **Management or breeding practices that increase the productivity and/or efficiency**

- **Agriculture Waste Stream (biomass) Utilization**
 - Use of agricultural biomass as fuel for power generation
- **Bio-energy Crops**
 - Crop Production for Fuels
 - Sugar and Starch Crops for Ethanol
 - Oil Seed Crops

Efficiency Improvements

- **Fertilizer Use Efficiency**
- **Agricultural Pump Efficiency and Water Management**
- **Agricultural Pump Electrification**
- **Crop Management/Precision Farming**

Conservation/Sequestration

- **Farmscape Sequestration**
 - Riparian Areas
 - Hedge Rows
 - Wind Breaks
- **Soil Sequestration**
 - Conservation Tillage
 - Permanent Crops
 - Rangeland Management

Research

- **Fertilizer use, application, and emissions**
- **Enteric fermentation**
- **Best management practices for GHG reductions**
- **Life cycle analysis**

Technical Working Group Activities

- **Provide feedback on currently identified measures or actions**
- **Propose additional measures or strategy areas**
- **Discuss feasibility, potential for emission reductions, costs, data gaps**

Examples of Issues to Explore

- **Nature of utility contracts for manure to energy projects**
- **Capacity of biomass facilities**
- **Permitting requirements**

Timeframes

- **Focused meetings – February, March and April**
- **June 2008 – Draft Scoping Plan**
- **Public comment throughout**
- **November 2008 – Board consideration of Scoping Plan**

The Wild West- Chapter 2008



Advisory Committees

- Environmental Justice
- Economic & Technology Advancement
- Market Advisory

ETAAC GOALS

- *Advise ARB on activities that will facilitate investment in and implementation of technological research and development opportunities that will assist in the reduction of greenhouse gas emissions.*
- *Including, but not limited to, identifying new technologies, research, demonstration projects, funding opportunities, developing state, national, and international partnerships and technology transfer opportunities, and identifying and assessing research and advanced technology investment and incentive opportunities*
- *Advise the ARB on state, regional, national, and international economic and technological developments related to greenhouse gas emission reductions.*

Economic and Technology Advancement Advisory Committee Members

Alan Lloyd (Chair)

President of the International Council on Clean Transportation. Environmental Engineering

Bob Epstein (Vice-Chair)

Co-Founder of Environmental Entrepreneurs

Lisa Bicker

President of the California Clean Energy Fund

Jack Broadbent

Exe. Officer/Air Pollution Control Officer, Bay Area Air Quality Mgmt. District

Cynthia Cory

Director of Environmental Affairs, California Farm Bureau Federation

Amisha Patel

California Chamber of Commerce, Policy Advocate for Energy and Climate Change

Alex Farrell

Assistant Professor in the Energy and Resources Group, UCB

Bill Gerwing

BP America General Manager of Regulatory Affairs

Scott Hauge

President and owner of CAL Insurance & Associates, Inc.

Jim Hawley

Vice President and General Counsel of Technology Network (TechNet)

Patti Krebs

Executive Director of the Industrial Environmental Association

Jason Mark

U.S. Transportation Program Officer at the Energy Foundation

Joan Ogden

Associate Professor of Environmental Science and Policy, UCD

Dorothy Rothrock

V.P.of Government Relations for the California Manufacturers and Technology Association

Jan Smutny-Jones

Executive Director of the Independent Energy Producers Association (IEP)

Andrea Tuttle

Teaches forest and fire policy at UCB, Former Director, CA Dept. of Forestry and Fire Protection

Fong Wan

Vice President of Energy Procurement for Pacific Gas and Electric Company (PG&E)

Jonathan Weisgall

V.P.,Legislative and Regulatory Affairs, MidAmerican Energy Holdings Co.

John Weyant

Professor of Management Science and Engineering, Stanford University

Rick Zalesky

V.P. of the Biofuels and Hydrogen business, Chevron Technology Ventures Company, LLC

ETAAC SUBJECT AREAS

- **MANURE MANAGEMENT/DIGESTER TECHNOLOGY:** expand on the recently developed protocol and projects that can reduce methane from manure management and produce renewable energy.
- **ORCHARD AND VINEYARD MANAGEMENT FOR CARBON STORAGE:** explore management practices that could enhance above and below ground carbon sequestration
- **REFORESTATION AND RIPARIAN RESTORATION ON FARMS AND RANCHES:** restoration projects that have the potential to increase carbon storage and provide other environmental and wildlife benefits
- **BIOMASS UTILIZATION AND BIOFUELS:** Use of abundant agricultural byproducts including prunings, straws, processing wastes, etc. for production of biofuels using biochemical and thermo chemical technologies
- **EFFICIENT FERTILIZER AND WATER USAGE/ENTERIC FERMENTATION:** Evaluate methods to reduce emissions from fertilizer use and livestock feeding activities

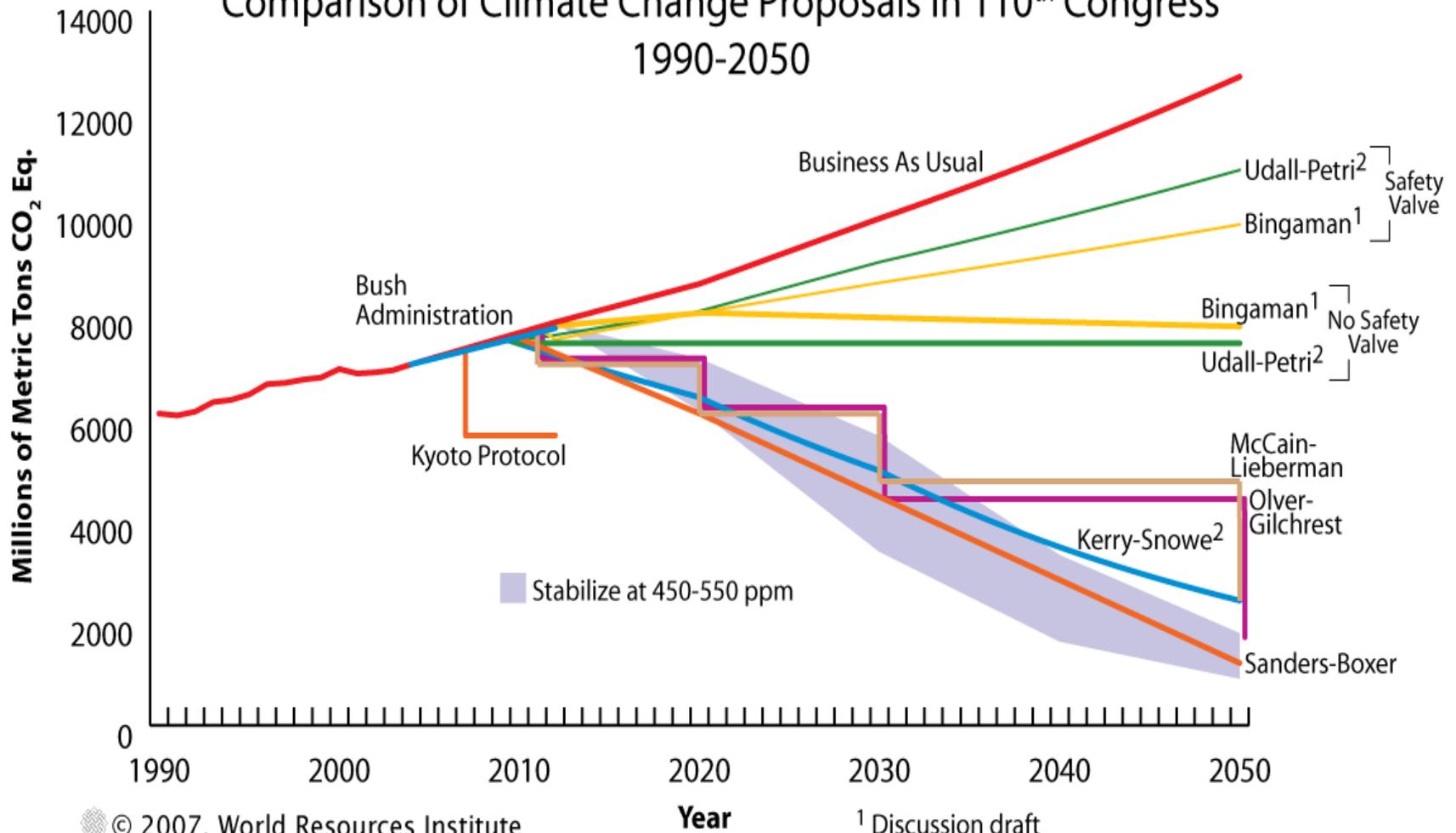
Further ETAAC Information

- **www.arb.ca.gov/cc/etaac**
- All meetings webcast
- Next meeting January 25, 2008 to review public input
- Final meeting Feb 11, 2008
- ETACC report to be presented to CARB on Feb 28-29, 2008

What AAQTF asked USDA to do

- USDA should convene a working group of university/ government scientists and stakeholders to establish minimum protocol standards for measuring, monitoring and verifying GHG reductions for carbon credits that could be included in FY07 Farm Bill programs.
- USDA, in conjunction with the NRCS NRI, should establish a national network of on-farm soil measurements to complement existing models and experimental data to develop a national inventory and aid in baselines for soil C markets.
- The Secretary of Agriculture should actively support a minimum of \$15 million in funding for competitive agricultural GHG research, such as CASMGS, in the 2007 Farm Bill.
- GRACENET should be expanded beyond its 29 sites to better represent the geographic diversity across the U.S.

Comparison of Climate Change Proposals in 110th Congress 1990-2050



Farmers and Ranchers To Do List

- With help from their ag associations and USDA, take an active role in learning about existing and emerging carbon markets so you are ready to provide GHG/carbon credit opportunities and emission reductions
- Pay attention to 2007 Farm Bill and insure the GHG research and programs are maintained in the Research and Conservation Titles
- Get S. 2191 (Lieberman-Warner changed so it allows ag to get full market credit and the ability to fully participate without limits in offset programs for future cap-and trade programs

A New Conservation Market

