

CNY's Response to Global Energy & Climate Change Challenges: Is it sustainable?
As part of Accelerate 2008

- County and Statewide Actions: 1:45 to 3PM
 - Richard Smardon - "California's actions to address climate change"
 - Ravi Raman "Onondaga County Programs"
 - Gay Nicholson "Tompkins County GHG Action Plan"

 - This part of the program is sponsored, in part, by Regional Economic Transformation & Environmental Systems Grant from NYS Department of Labor

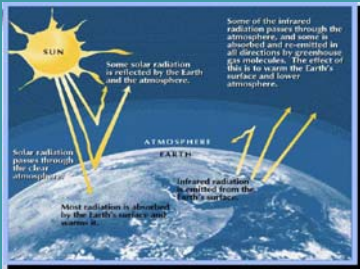
CNY's Response to Global Energy & Climate Change Challenges: Is it Sustainable?

- CNY Municipal Programs - 3:45- 5PM
 - Paul Thompson- "Syracuse Efforts to date" &
 - Scott Smith of NYSERDA
 - Norman Jones - "The Rochester Green Team & Efforts to date"
 - Mike Long - "Auburns Energy Projects to date"
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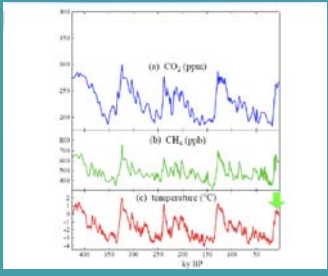
California's Actions to Address Climate Change

Compiled by Richard Smardon Ph.D.
From NAEP/AEP Symposium on
Global Warming in San Diego,
California, March 24, 2008 for
Accelerate 2008 Environmental
Stewardship Track

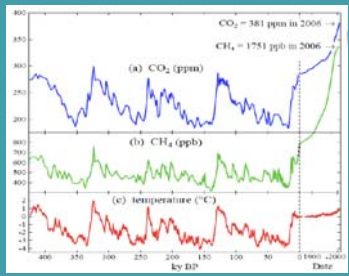
Greenhouse Gas Effect



Tipping point for GHG



Tipping point projection



Dangerous interference

What does "dangerous interference" mean?

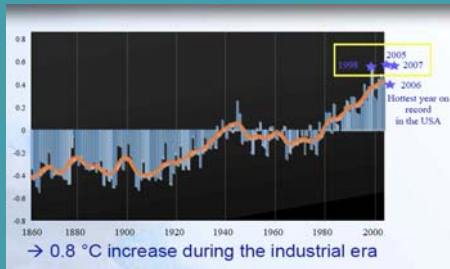
→ A question of values

IPCC, AR4, "reasons for concern":

- Risks to unique and threatened systems.
- Risks of extreme weather events.
- Distribution of impacts and vulnerabilities.
- Aggregate impacts.
- Risks of large-scale singularities.

→ Many of the worst, irreversible impacts can *probably* be avoided if global average temperature rise is limited to $\leq 2^{\circ}\text{C}$ (relative to pre-industrial)

Projected temperature increase



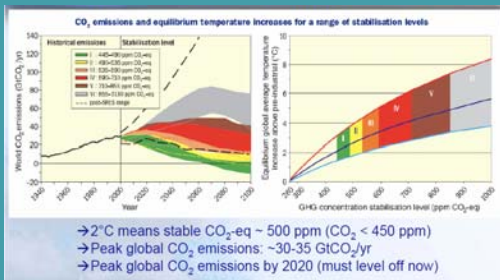
Temperature lock in point



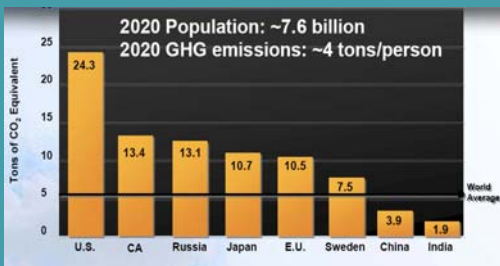
Temperature lock in point



Projected CO₂ emissions



GHG emissions per person



Action needed!

→ Major climate change is unavoidable at this point

But, it is still possible to:

- Prevent global T rise > 2°C
- Limit atmospheric GHG concentrations to ~550 ppm CO₂-eq or lower
- Limit global emissions to < 30 GtCO₂/yr
- Global emissions must begin to decrease by 2020

→ Requires quick, decisive action

California's Global Warming Solutions Act of 2006

What is AB 32?

- Sets in statute 2020 GHG emissions limit at 1990 level
 - Acknowledges that 2020 is not the endpoint
- ARB to monitor/regulate GHG sources
- Air Resources Board lead, but extensive collaboration with other agencies
- Mandates that a Scoping Plan be adopted by January 1, 2009

California's Global Warming Solutions Act of 2006

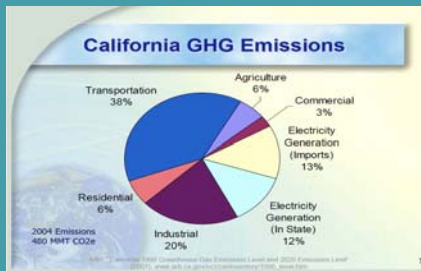


California Global Warming Solutions Act of 2006

Scoping Plan

- Describe how California will reduce GHG emission levels to 1990 levels by 2020
- Provide a vision for a low carbon future - 2020 and 2050
- Establish California's leadership on addressing climate change
- Maximize benefits to California
 - Criteria and toxic air pollutant co-benefits
 - Economic opportunities
 - Community participation

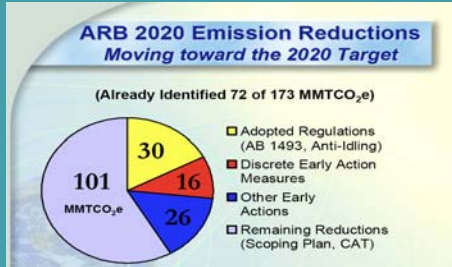
California's GHG production



California's GHG challenge



California's emission reduction targets



AB 32 Scoping Measures

Scoping Plan Measures

- AB 32 requires ARB to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions
- Options include:
 - Direct regulations
 - Alternative compliance mechanisms
 - Market-based compliance mechanisms
 - Monetary and non-monetary incentives

AB 32 Scoping Measures

Scoping Plan Measures

- Being developed by ARB and other state agencies
- All sectors to be evaluated
 - Electricity/Natural gas
 - Transportation (vehicles and fuels)
 - Business and industry
 - HFCs/PFCs
 - Land use
 - Agriculture
 - Forests

Possible cap & trade measures

Possible Approaches for a Cap & Trade System

- California-only cap & trade system
 - Electricity only
 - Electricity and other large sources (e.g. some or all sources covered under mandatory reporting)
 - Electricity, other large sources, and transportation fuels
 - Upstream
- Regional (Western Climate Initiative) cap & trade system

Transportation sector measures

Transportation Sector

GHG Reductions \approx Vehicles + Fuel + Use (VMT)

- ↑
• AB 1493
• Cool Paints
• Tire Efficiency
• Smartways
- ↑
• Low carbon fuel standard
- ↑
• Land use and transp strategies

Energy sector measures

Energy Sector

GHG Reductions \approx Energy Efficiency + Renewable Energy + Emission Limits for Generators

- ↑
• Update appliance & efficiency stds
• Water efficiency
- ↑
• Renewable Portfolio Std
- ↑
• Emission performance stds
• DG/Cogen

AB 32 implementation

Plan Implementation

- Scoping Plan will include a suite of emission reduction measures and methods
- ARB has two years to adopt regulations implementing the GHG reduction measures
- Accountability
 - State agency annual "Report Card" due to Legislature beginning March 2008
- Enforcement of GHG regulations will be key to achieving targets

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California Global Warming Solutions Act plus the California Env. Quality Act (CEQA)

Where It All Began

- June 2005: Governor declared that the debate was over
 - Climate change is real and time for action is now
 - Signed EO S-03-05
 - Created Climate Action Team
- Passage of AB 32 (2006)
 - Climate change a threat to the environment
- Passage of SB 97 (2007)
 - Puts GHG into the CEQA realm
 - Governor's signing message

California AB 32 plus CEQA

CEQA and SB 97

CEQA concepts

- Climate change is an environmental issue
- CEQA is only one of many tools to reduce emissions
- CEQA should recognize the benefits of sustainable land use

California AB32 plus CEQA

General Observations

- The analysis is typically included in:
 - The air quality analysis
 - The cumulative impacts analysis (EIRs)
 - A separate climate change section
- The analysis typically includes:
 - Description of the regulatory setting (EO, AB32)
 - Estimate of GHG emissions (using calculators for criteria pollutants)
 - Discussion about the cumulative nature of impact

California AB32 plus CEQA

General Observations

Project types represented by the CEQA Docs

- Large housing developments
- Energy/infrastructure projects
- Transportation projects, including RTPs
- Oil Refinery expansions
- Habitat restoration
- City/County General Plan updates

California Legal Action

Pushing for federal action

Massachusetts v. EPA, __ U.S. __, 127 S.Ct. 1438 (2007)

- GHGs are pollutants under Clean Air Act.
- EPA must regulate GHG emissions from motor vehicles or explain its reasons for failing to do so.
- More than seven years after original petition was filed – still waiting

California Legal Action

Pushing for federal action

Application of *Massachusetts v. EPA*

California has petitioned to EPA to regulate other sources of GHGs

- Ocean-going vessels
- Aircraft
- Off-road vehicles and engines

California Legal Action

Pushing for federal action

***Center for Biological Diversity v. NHTSA*, 508 F.3d 508 (9th Cir. 2007)**

- Challenge to fuel efficiency standards.
- Court held: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct."

California Legal Action

Protecting CA's decision to act

AB 32 and Ex. Order #S-3-05

- State must reduce total emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050.
- Very aggressive reduction targets in light of expected economic, population growth.

California vs. EPA & Clean Air Act (CCA)

Protecting CA's decision to act

AB 1493 (Pavley) – CAA continued

- Under CAA, right of states to establish vehicle emission standards is preempted; but
- Preemption provision is subject to an important exception that allows California – and only California – to set its own emission standards.

California vs. EPA & CCA

Protecting CA's decision to act

AB 1493 (Pavley) – CAA continued

- EPA must grant CA's petition for a waiver of preemption if standards will be at least as protective as the applicable federal standards; but
- EPA can deny California's petition for a waiver if it finds that California does not need its standards to meet "compelling and extraordinary conditions."

California vs. EPA & CCA

Protecting CA's decision to act

AB 1493 (Pavley) – CAA continued

- Waiver provision added in recognition of CA's role as pioneer and "laboratory for innovation."
- Other states can "piggyback" on CA's standards 42 U.S.C. § 7507.
- Sixteen-odd states stand ready to adopt CA's standards = more than 30% of U.S. auto market.

California vs. EPA & CCA

Protecting CA's decision to act

California's suits to implement Pavley:

- Before EPA took action, CA filed unreasonable delay suits.
- EPA issued decision denying waiver based on absence of "compelling and extraordinary conditions."
- CA has filed suit challenging denial.

California Local Legal Action

Encouraging local action

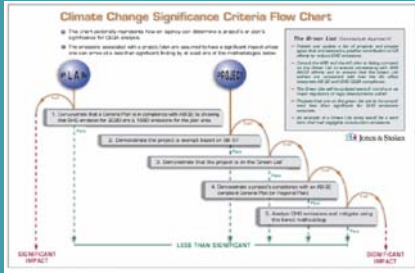
SB 97 removed any doubt that analysis and mitigation of greenhouse gases are required under CEQA. As a matter of law, GHG emissions can have a significant effect on the environment.

California technical support

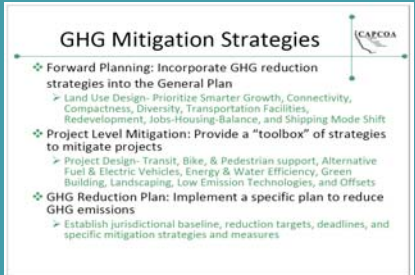
CAPCOA's Resource Paper

- ❖ Air Districts were approached by local governments for help on CEQA & GHG
 - ❖ California Air Pollution Control Officers Association coordinated district's efforts
 - ❖ Resource guide released in January '08
 - Intended to provide support for lead agencies incorporating GHG analysis into CEQA programs
 - ~~Not~~ Intended to dictate policy decisions
 - Plan to provide addendum in 9 - 12 months with thresholds set, new mitigations, etc.
- available at: www.capcoa.org

California Technical Support



California Technical Support

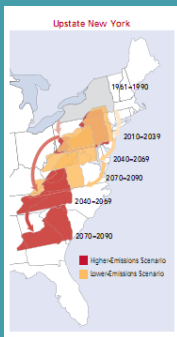


California technical support



California climate action review

- California Global Warming Solutions Act (2006)
- Tie in with CEQA with SB 97 which connects to environmental review+ land use planning
- California AG office battles EPA over CCA plus supports state and local compliance
- CPCOA and other agency offices working on technical support & analysis methods



NECIA

(New England Climate Impact Assessment)

...is a recent, scholarly look at our Northeast Climate.

NECIA reads like an IPCC study in miniature ...for our region.

Climate change planning !

...often in 2 parts →

1) Adaptation

+ what's coming down the pike?

2) Mitigation

+ can we prevent worse ?

NECIA 2007

www.climatechoices.org/ne/

The Changing Face of Winter



NECIA 2007

Less snow pack = new & different energy needs.

Increasing winter precipitation

Does nature absorb water
more easily some seasons?

Extreme Precipitation

- Heavy rainfall events are becoming more frequent across the Northeast
- Under both emissions scenarios
 - rainfall is expected to become more intense
 - periods of heavy rainfall are expected to become more frequent

2007

Campus planning?*climate adaptation* ?
... *mitigation*? How about trees?

Chicago Carbon Exchange

Affiliated Exchanges

- Chicago Climate Futures Exchange (CCFE™)**: The world's first environmental derivatives exchange
- European Climate Exchange (ECE™)**: FSA-regulated futures market for European CO₂ allowances; accounts for 85-90% of total exchange traded volume in the EU ETS
- Montreal Climate Exchange™ (MCLX™)**: Joint venture with the Montreal Board to host Canadian GHG trading and other environmental markets

In Development

- California Climate Exchange™ (CALX™)**: Developing financial instruments relevant to the California Global Warming Solutions Act (AB32)
- New York Climate Exchange™ (NYCE™) and Northeast Climate Exchange™ (NECE™)**: Developing financial instruments for the Northeast Regional Greenhouse Gas Initiative (RGGI)
- India Climate Exchange™ (ICE™)**: Developing the first pilot cap and trade program in India

Regional Greenhouse Gas Initiative (RGGI)



Implications for CNY/NYS

- Climate change is coming!
- We need mitigation and adaptation strategies
- We need regional support mechanisms to help use reduce GHG plus plan transition
- California action strategies should give us encouragement for what is possible!
