The Role of Agriculture and Forestry in a Reduced Carbon Economy

Session 2: Policy Alternatives and Consequences

Webinar 3
March 5, 2009

Welcome!

Introductions and Objectives

Ernie Shea
25x'25 Project Coordinator

Session Leaders

- **Tim Warman**, executive director, Global Warming Solutions Program, National Wildlife Federation; and member of the 25x'25 Carbon Work Group
- **Antonio Bento**, associate professor, Department of Applied Economics and Management, Cornell University; and member of the 25x’25 Carbon Work Group
- **Fred Yoder**, corn, soybeans and wheat producer; past president of the National Corn Growers Association; and member of the 25x'25 Carbon Work Group
- **Jeffrey Frost**, 25x'25 carbon advisor; Executive Director AgRefresh and President, Renagen LLC
- **Ernie Shea**, 25x’25 project coordinator and president of Natural Resource Solutions

Webinar objectives:

- Examine the primary carbon management policy options under consideration at the federal level including a carbon tax, cap and trade legislation, regulation of greenhouse gases under the Clean Air Act and policies to accelerate the development and use of alternative transportation fuels.
- Address the opportunity for agriculture and forestry offsets and the associated economic challenges and opportunities that will arise from federal and state policy decisions.
- Discuss the preliminary action principles and policy imperatives that the 25x'25 Carbon Work Group has developed for the consideration of partners.

Webinar Procedures

- Lines will be muted during presentations (*96) to minimize background noise
- For presenters and Q&A, unmute by pressing *6
- Will take questions following each presentation and also at the end of the session
- To ask a question, either press *6 to unmute or use the comment feature to submit a written question

Policy Options

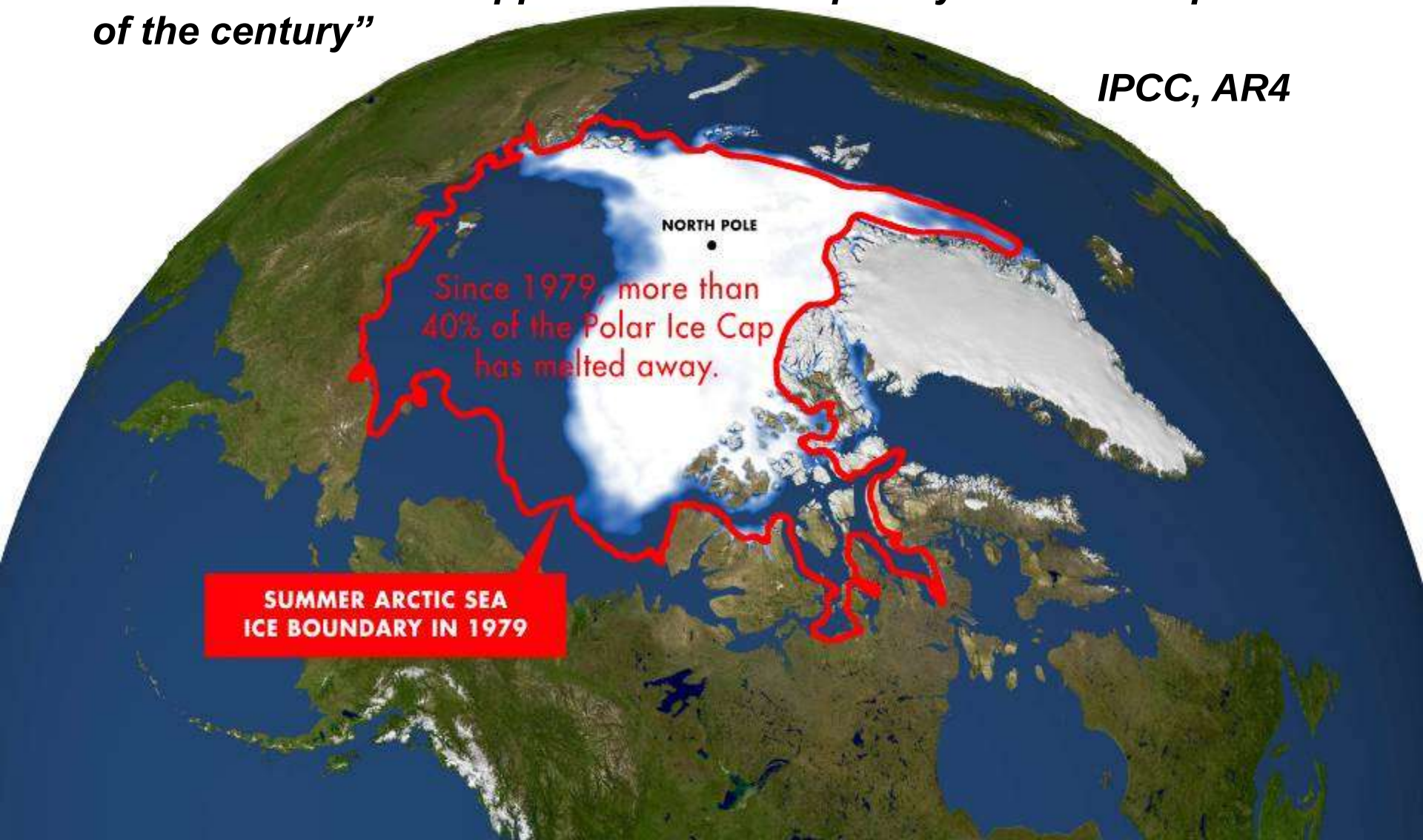
Tim Warman
Executive Director, Global Warming Solutions Program, National Wildlife Federation; and 25x'25 Carbon Work Group member

Climate Change Policy Solutions

The world is changing…

"Arctic ice could disappear almost completely in the latter part of the century"

IPCC, AR4



The Source Of The Problem:

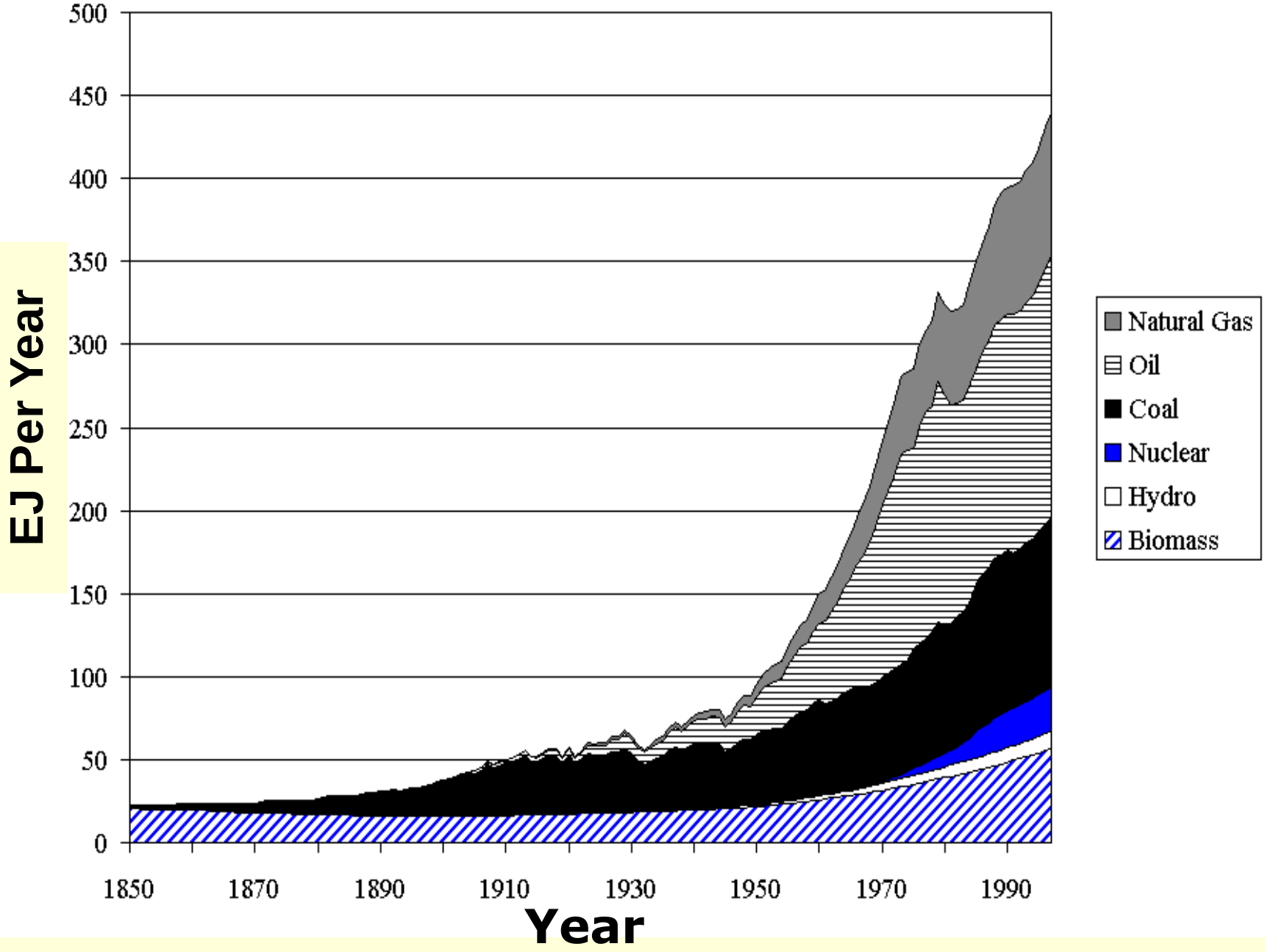
Coal

Oil

Natural Gas

80%

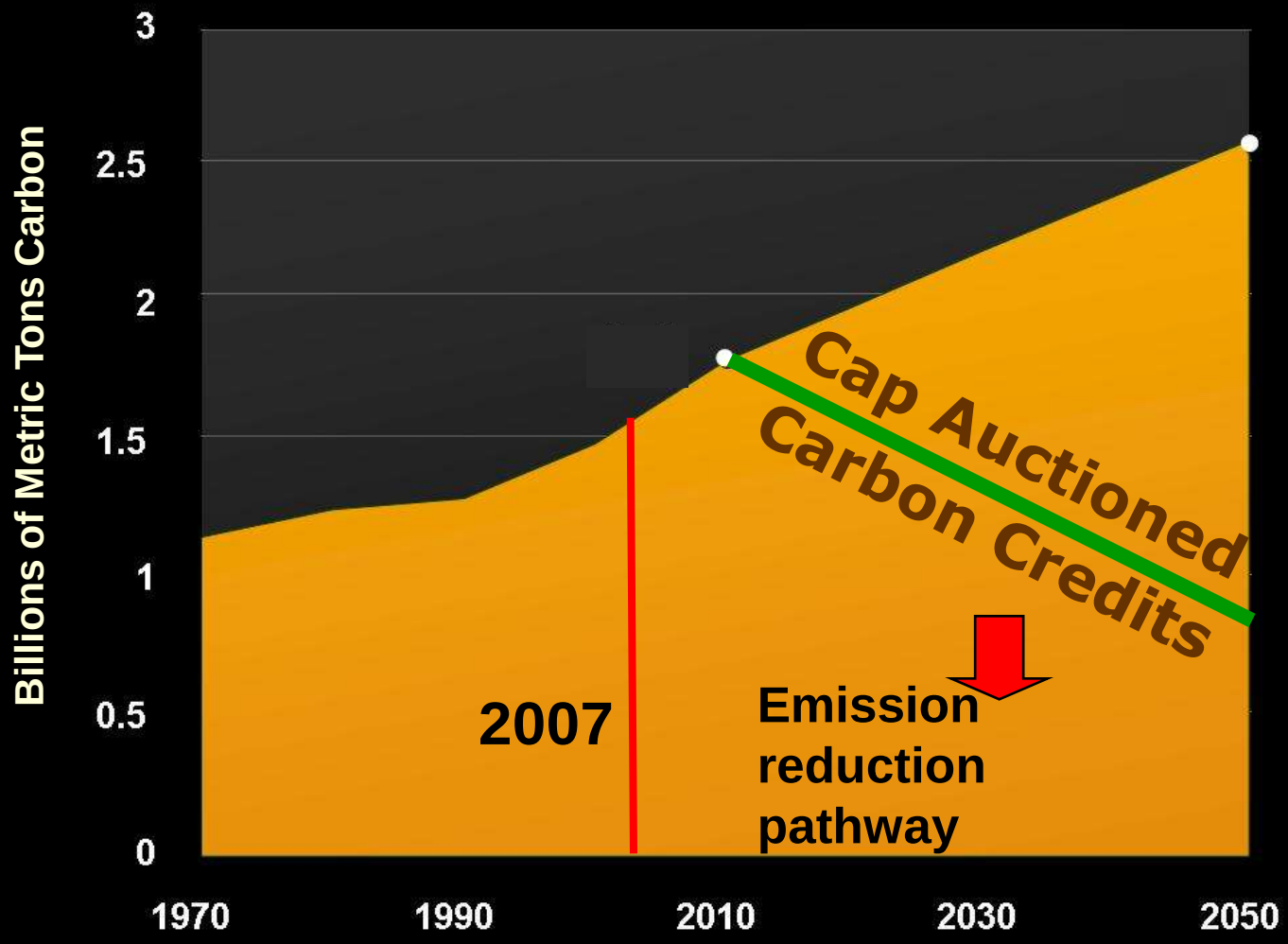
World Primary Energy Source by Supply



Source of the Problem: Land Use 20%

U.S. Emissions

Business as Usual



After Pacala and Socolow, 2004; ARI CarBen3 Spreadsheet

Policy Framework

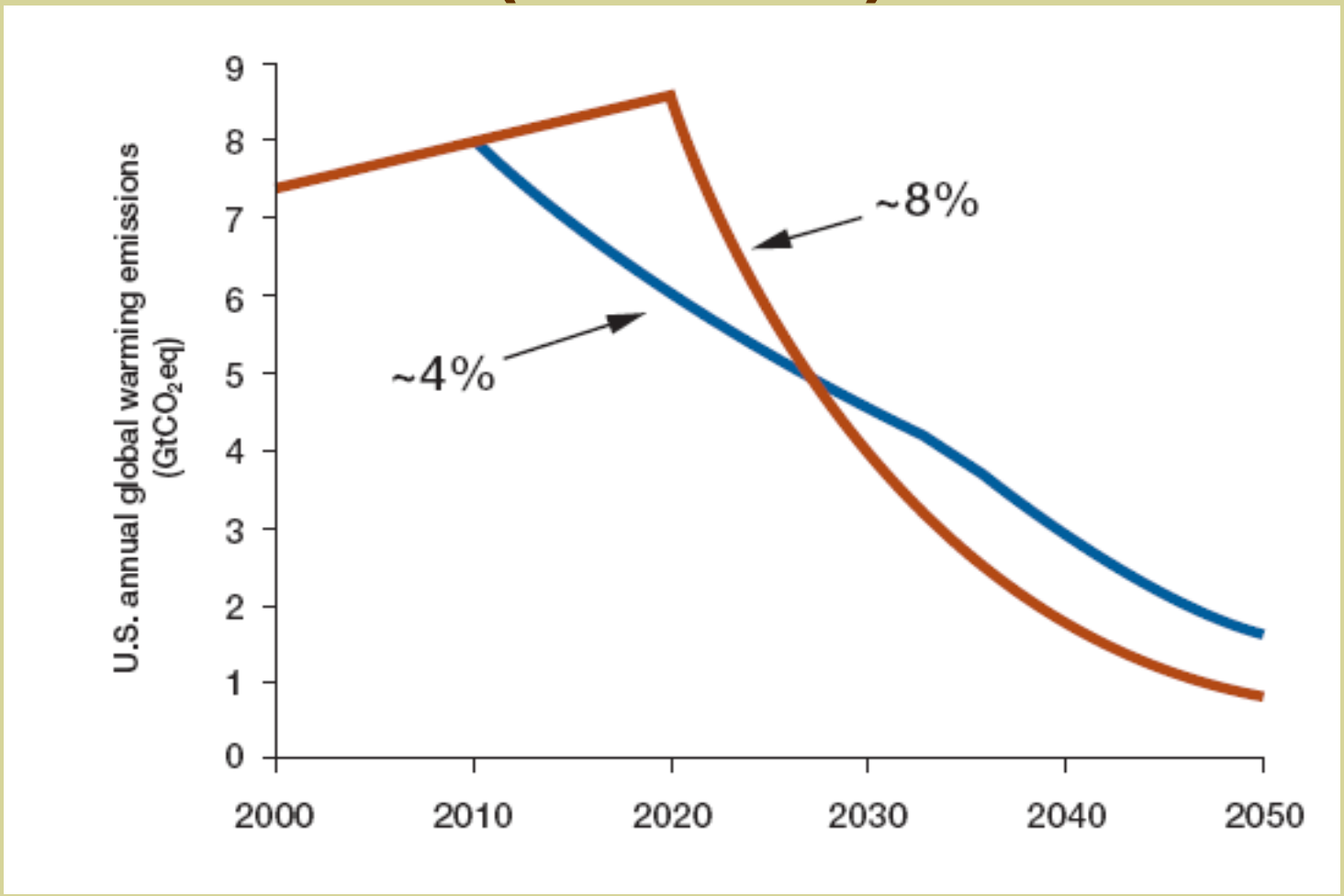
Key Issues:

- Targets and Timetables
- Allocation of pollution permits & auction revenue
- Cost Containment (offsets)
- Trade and US Competitiveness

Clean Energy Now...

?

Slow start …
…crash (or burn) finish



Source: Union of Concerned Scientists

Offsets

Energy Bill

- Electric Grid Upgrades
- Renewable Electricity Standard
- Efficiency
- Innovation
- Building & Appliance Standards

Regulation

- California Waiver – Automobiles
- Clean Air Act – Electricity

Carbon Tax

- Fixed Cost
- Uncertain Outcome

Cap and Dividend

- Cap on emissions
- Revenue returned to consumers

Cap and Invest

- Cap on emissions
- Invest in innovation
- Protect people and nature from climate hardship

International Treaty

- Copenhagen December 2009
- Ratification
- Implementation 2012

Legislation in 111th Congress

House Energy & Commerce

- Chairman Waxman
- Subcommittee Chairman Markey
  - Chairman of Select Committee on Global Warming & Energy Independence
- Memorial Day deadline for Committee Action
  - Comprehensive Energy & Climate Bill

Senate Environment & Public Works

- Chairwoman Boxer
- Principles:
  - Reduce emissions guided by science
  - Market-based system
  - Invest revenues: technology, people, natural resources, workers and communities affected
  - Level global playing field

Other Congressional Committees will want to weigh in

- H. Ways & Means
- H. Transportation & Infrastructure
- S. Energy & Natural Resources
- S. Finance

Obama Administration

- Appointment of Carol Browner as “climate czar”
- Continues to make climate change a priority
  - State of the Union
  - Budget

Start the Clean Energy Economy

?

Ag and Forestry Offsets

Jeffrey Frost
25x'25 Carbon Advisor

Continuation points from February 19 Carbon Work Group webinar

- Ag & Forestry have a sizeable emissions reduction opportunity.
- The scope of practice changes which can reduce ghg emissions is broad.
- There are substantial upside financial implications for the sectors.

New Topics for Today

- Realization of the Ag & Forestry opportunity is policy dependent.
- 25x25 is developing Policy Principles & Imperatives:
  - Overarching
  - General
  - Ag & Forestry Specific

Some Specific Policy Needs

- Real (measure and quantify)
- Additional (beyond business as usual)
- Verified (third-party check)
- Registered (transparent and public)
- Fungible (allowances & offsets equal)
- Permanent (sequestration challenge)

Specific Policy Needs (p2) Sequestration Challenges

- Permanence (Contract Duration)
  - Permanence refers to the length of time that carbon will remain stored after being sequestered in vegetation.
  - Contractual solutions
  - Program-level shared risks
- Fungibility (allowances & offsets equal)
  - Program-level solutions
  - Solve "behind the registry"

Specific Policy Needs (p3) Other Practical Issues

- Protocols
  - Science based
  - Low-overhead implementations
- Crediting Periods
  - The crediting period is the number of successive years a project will be allowed to quantify and sell offset credits.
  - Cover investment capital returns and useful lives
- Credit for Early Actors
  - Similar to Credit for Early Action
  - Reward on-going gains

Specific Policy Needs (p4)
Other Practical Issues

- Program evolution
  - Partial rewards for promising practice changes
  - Procedure to qualify new practices
  - Choose outcomes, not technologies
  - Involve ourselves in the discussions

Other Key Terms to Recognize

- Additionality
  - Additionality tests assess whether an offset project would have happened under a "business as usual" scenario.
- Baselines
  - A baseline represents forecasted emission levels in the absence of the offset project.
- Leakage
  - Leakage is defined as an increase in emissions outside of the project's emissions boundary that occurs as a result of the project's implementation.

Questions and Discussion?

www.25x25.org

A Draft Discussion Guide

www.25x25.org/carbonprimer

To read and review the draft guide, use the link above.

Economic Challenges and Opportunities

Antonio Bento
Associate Professor, Department of Applied Economics and Management, Cornell University; and 25x'25 Carbon Work Group member

Economic Impacts of a Carbon Constraint Economy

Antonio M. Bento
Applied Economics and Management
Cornell University

Behavioral Changes resulting from Carbon Regulations

- regulation for GHG emissions means that firms and individuals will have to change their behavior from business as usual
- Polluting facilities respond to regulations by:
  - - reducing output;
  - -altering input mix
  - -investing in abatement technologies

- Prices of polluting goods tend to increase creating incentives for consumers to substitute towards cleaner goods

2 Key Questions

- What are the overall efficiency costs of cap-and-trade programs?
- What are the distributional costs of cap-and-trade programs?
  - - interested primarily on the distribution of costs along:
    - - different income groups
    - - different industries

Overall Costs of Cap-and-Trade

- the U.S. is less than one-half of one percent of GDP for the period 2010-2030 and below three quarters of one percent of GDP through the middle of the century.
- under a business as usual scenario the total output of the U.S. economy is expected to reach $26 trillion in January 2030. Under a cap and trade policy it will take four months longer, getting there in April 2030

Distributional Costs

- The Congressional Budget Office stated that a 15 percent cut in CO2 emissions would cost the average household in the lowest one-fifth of all households, ordered by income, slightly more than 3 percent of its income. Under the same scenario, it would cost the average household in the highest one-fifth just under 2 percent of its income
- Concern that these policies are regressive

Cap-and-Trade Policies generate revenues….

- When auctioned, allowances will generate revenues
- President Obama discussed recently the use of revenues of a Cap-and-Trade Program:
  - -Part of the revenues used to reduce income taxes, and correct the regressivety of the program
  - -Part of the revenues earmarked to investments in cleaner technologies and renewable energy (solar, wind, advanced biofuels)

Distributional Impacts Across Industries

- Climate change policy will have a greater economic impact on some sectors than others. Higher prices as a result of a cap would adversely affect firms in the energy and energy-intensive goods and services industry, which would create losses for some investors and workers in this sector
- Manufacturing, the most energy intensive industry, is likely to feel the greatest impact

To correct for undesirable industry impacts

- Policy Makers have the chance to decide:
  - - share of allowances that are given for free
  - - share of allowances that are auctioned
  - -which industries are given free allowances

Whenever allowances are given for free, you loose the revenues…that is, loose the potential to invest in renewables or reduce income taxes

Impacts on Ag and Forestry

- Ag and forestry will not be regulated directly
  - -they will be indirectly affected, as the prices of energy intense goods will increase
- agriculture and forestry sectors are expected to experience a positive output as a result of mitigation
- Offsets can provide an additional source of income

Offsets can provide additional sources of income, but…

- Again, the distributional impacts to the Ag and forestry sector will not be uniform and are depend on the costs of producing offsets
- There may be a variety of barriers to the production of offsets:
  - Need for outreach and extension programs to educate farmers about the different processes to generate offsets

Barriers to the production of offsets

- Consider the diversity of landowners. In States like NY, a large portion of land is idle or forest.
- Need to study the kinds of incentives that can be put in place to generate offsets from private forest lands; A priori there can be multiple capital constraints that prevent landowners from being able to produce offsets.

Cannot disregard other ecosystem services

- While there may be challenges relative to additionality, payments for other ecosystem services such as water quality improvements should not be precluded by participation in the carbon offsets markets, rather participation in multiple ecosystems services marketplaces should be allowed; the benefits should be “stackable”.

25x’25 Action Principles and Imperatives

Fred Yoder
Corn, soybeans and wheat producer; Past President, National Corn Growers Association; and 25x'25 Carbon Work Group member

Mission

- Analyze agriculture and forestry's role in a reduced carbon economy
- Develop recommendations for how each sector can capitalize on efforts to reduce and capture carbon and greenhouse gas emissions

25x'25 Energy Future

- Displaces fossil fuels
- Reduces greenhouse gas emissions
- Sequesters carbon dioxide in the atmosphere
- Delivers renewable energy and climate change solutions

Foundational Assumptions

- Carbon accounting and offsets are complementary to the goals of 25x'25.
- The cost of inaction warrants action.
- Sufficient science and political momentum exist to warrant action now.
- Both adaptation and mitigation must be included.
- Sustainability must be a consideration.
- The requirements of the entire global community must be addressed.

Key Cap and Trade Issues

- Baselines
- Additionality
- Fungible Qualified Offsets
- Leakage
- Permanence
- Verification and Registration
- Early Actors

Preliminary Guiding Principles

- Agriculture and forestry support the “reemergence” of a carbohydrate economy.
- We will strive to produce emissions reductions that are complementary to our role as stewards of the land while protecting and enhancing the economic value of our land assets.
- Significant investment in R&D and education are needed to actualize GHG market opportunities.

Guiding Principles (cont.)

- Within a cap and trade system agriculture and forestry must be identified as uncapped sectors and be allowed to participate via an offset program to the fullest available extent given our potential to produce hundreds of millions of tonnes of offsets per year.

- Climate change benefits should be acknowledged and counted in the full suite of ecosystem services that agriculture and forestry provide.

Next Steps

- Currently soliciting input on draft primer.
- One-on-one and small group briefing sessions with ag and forestry leaders.
- Preliminary recommendations will be spotlighted at the 25x'25 National Summit scheduled for March 31-April 2, 2009 in Washington, DC.
- Final report- May/June 2009
- State Alliance forums- spring/summer
- Partner/stakeholder engagement- ongoing

Mark your calendar!

2009 National Summit

March 31-April 2, 2009
Washington, DC

Key Areas of Focus:

Reduced carbon economy
Woody biomass
Community wind development
Sustainability

www.25x25.org