The Future of Climate Change Policy

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Oil and the Macroeconomy in a Changing World

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The Global Climate Policy Challenge

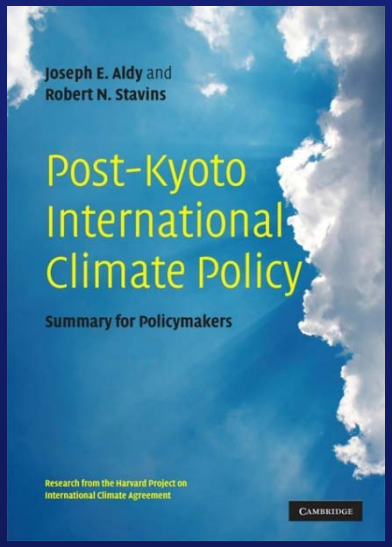
- Kyoto Protocol came into force in February 2005, with first commitment period, 2008-2012
- Even if the United States had participated, the Protocol's direct effects on climate change would be very small to non-existent
- Science and economics point to need for a credible *international* approach
- Climate change is a classic global commons problem — so it calls for international (although not necessarily global) cooperation

Can the Kyoto Protocol Provide the Way Forward?

- The Kyoto Protocol has been criticized because:
  - The costs are much greater than need be, due to exclusion of most countries, including key emerging economies – China, India, Brazil, Korea, South Africa, Mexico (conservative estimate: costs are four times cost-effective level)
  - The Protocol will generate *trivial* climate benefits, and *fails* to provide any long-term solution
  - Short-term targets are excessively ambitious for some countries
  - So, the Kyoto Protocol is "*too little, too fast*"
- Whether the Kyoto Protocol was a good first step or a bad first step, a next step is needed …..

Searching for the Path Forward for Post-2012

- The Harvard Project on International Climate Agreements
- Mission: To help identify key design elements of a scientifically sound, economically rational, and politically pragmatic post-2012 international policy architecture for global climate change
- Drawing upon research & ideas from leading thinkers around the world from:
  - Academia (economics, political science, law, international relations)
  - Private industry
  - NGOs
  - Governments
- 35 research initiatives in Australia, China, Europe, India, Japan, and the United States



Potential Global Climate Policy Architectures

- Targets & Timetables (as in Kyoto Protocol)
  - *Formulas for Evolving Emission Targets for All Countries*
- Harmonized National Policies
  - *Harmonized Domestic Carbon Taxes, Cap-and-Trade, or Other Regulations*
- Independent National Policies
  - *Linkage of National & Regional Tradable Permit Systems*

Placing Copenhagen (December 2009) in Perspective

- Cliché about baseball season applies to international climate change policy: it's a marathon, not a sprint
  - Scientifically: stock, not flow environmental problem
  - Economically: cost-effective path is gradual ramp-up in target severity (to avoid unnecessary capital-stock obsolescence)
  - Economically: technological change is key, hence long-term price signals
  - Administratively: creation of durable international institutions is essential
- International climate negotiations will be an ongoing process – much like trade talks – not a single task with a clear end-point.
- Bottom-Line: sensible goal for Copenhagen was progress on sound foundation for meaningful long-term action, not some notion of immediate "success"

Alternative definitions of “success” at COP-15

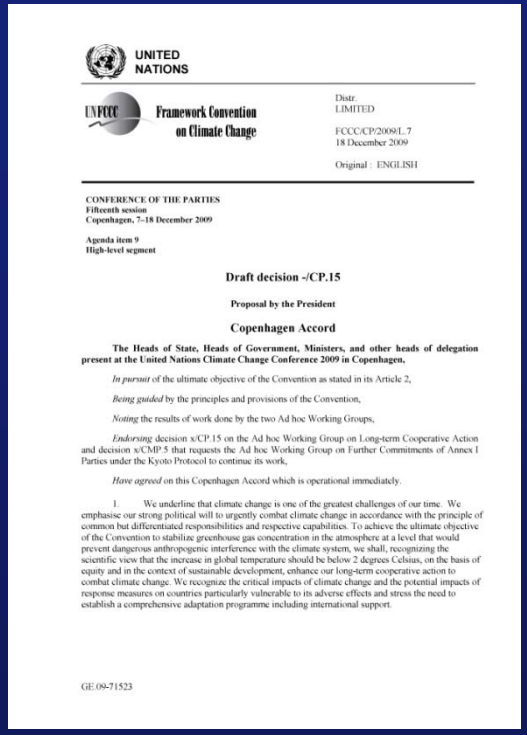
- It would have been possible – but actually unfortunate – to achieve what some people would have defined as “success” in Copenhagen:
  - A signed international agreement, glowing press releases, & photo opportunities
  - That would have been unfortunate, because ……..
- Such an agreement could only have been the “Kyoto Protocol on Steroids”
  - More stringent Annex I targets, & no meaningful action by key developing countries
  - Signature but no ratification by U.S. (just like Kyoto)
  - No real progress on climate change
  - Remarkably, some groups – including many advocacy organizations, as well as the international press corps – would have applauded such a step

What actually happened in Copenhagen?

- Organizational failure (47,000 advance credentials – capacity of 15,000)
- Political grandstanding & lack of consensus
- But last-minute, direct negotiations among key national leaders
  - Leaders of United States, China, India, Brazil, and South Africa
  - Virtually unprecedented in international negotiations
  - Saved COP-15 from complete collapse
  - Produced a significant political framework, the Copenhagen Accord
- Accord addresses two of the key deficiencies of Kyoto Protocol:
  - (1) expands coalition of meaningful commitments to include all major emitters
  - (2) extends time-frame of action

The Copenhagen Accord

- The "good news"
  - Provides for real cuts in greenhouse gas emissions by all major emitters
  - Establishes a transparent framework for evaluating countries' performance against their commitments
  - Initiates a flow of resources to help poor, vulnerable nations carry out both mitigation and adaptation
  - Submissions received from 130+ parties, which account for >80% of 2006 global emissions
- The "bad news"
  - Not on track for 450 ppm (2° C)
  - Annex I/non-Annex I distinction remains, in words (but blurred in action)
  - Future of UNFCCC threatened (bad news?)
- U.S. (& Chinese) domestic policy action is critical



UNITED NATIONS

UNFCCC Framework Convention on Climate Change

Distr.
LIMITED

FCCC/CP/2009/L.7
18 December 2009

Original : ENGLISH

CONFERENCE OF THE PARTIES
Fifteenth session
Copenhagen, 7–18 December 2009

Agenda item 9
High-level segment

Draft decision -/CP.15

Proposal by the President

Copenhagen Accord

The Heads of State, Heads of Government, Ministers, and other heads of delegation present at the United Nations Climate Change Conference 2009 in Copenhagen,

In pursuit of the ultimate objective of the Convention as stated in its Article 2,

Being guided by the principles and provisions of the Convention,

Noting the results of work done by the two Ad hoc Working Groups,

Endorsing decision x/CP.15 on the Ad hoc Working Group on Long-term Cooperative Action and decision x/CMP.5 that requests the Ad hoc Working Group on Further Commitments of Annex I Parties under the Kyoto Protocol to continue its work,

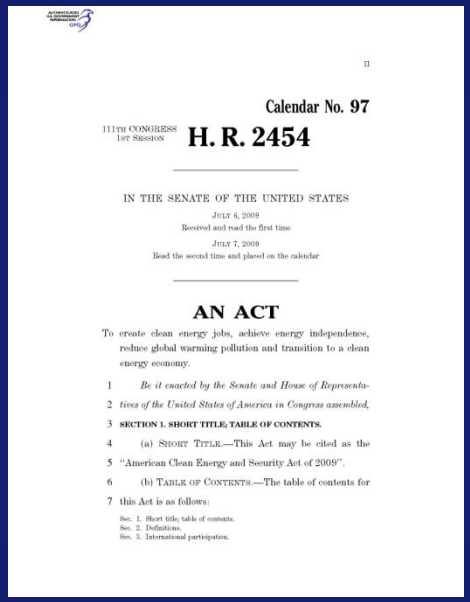
Have agreed on this Copenhagen Accord which is operational immediately.

1. We underline that climate change is one of the greatest challenges of our time. We emphasise our strong political will to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities. To achieve the ultimate objective of the Convention to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, we shall, recognizing the scientific view that the increase in global temperature should be below 2 degrees Celsius, on the basis of equity and in the context of sustainable development, enhance our long-term cooperative action to combat climate change. We recognize the critical impacts of climate change and the potential impacts of response measures on countries particularly vulnerable to its adverse effects and stress the need to establish a comprehensive adaptation programme including international support.

GE.09-71523

Core of Likely Future U.S. Action: Cap-and-Trade +/-

- Meaningful legislation (HR 2454/Waxman-Markey) with cap-and-trade passed by House in June, 2009, by *small margin*
- Attention now focuses on Senate
  - ➢Kerry-Lieberman proposal (May 2010)
  - ➢ Politics difficult: 60 votes required
  - ➢ Bi-partisan opposition (coal & rural states)
- Major substantive issues remain
  - ➢ Ambition, allocation, offsets, cost-containment mechanisms, international competition protection, regulatory oversight, nuclear power provisions, offshore oil & gas provisions
  - ➢ Gulf oil spill will be used by supporters *and* opponents of climate bill



II

Calendar No. 97

111TH CONGRESS 1ST SESSION **H. R. 2454**

IN THE SENATE OF THE UNITED STATES

JULY 6, 2009
Received and read the first time

JULY 7, 2009
Read the second time and placed on the calendar

AN ACT

To create clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

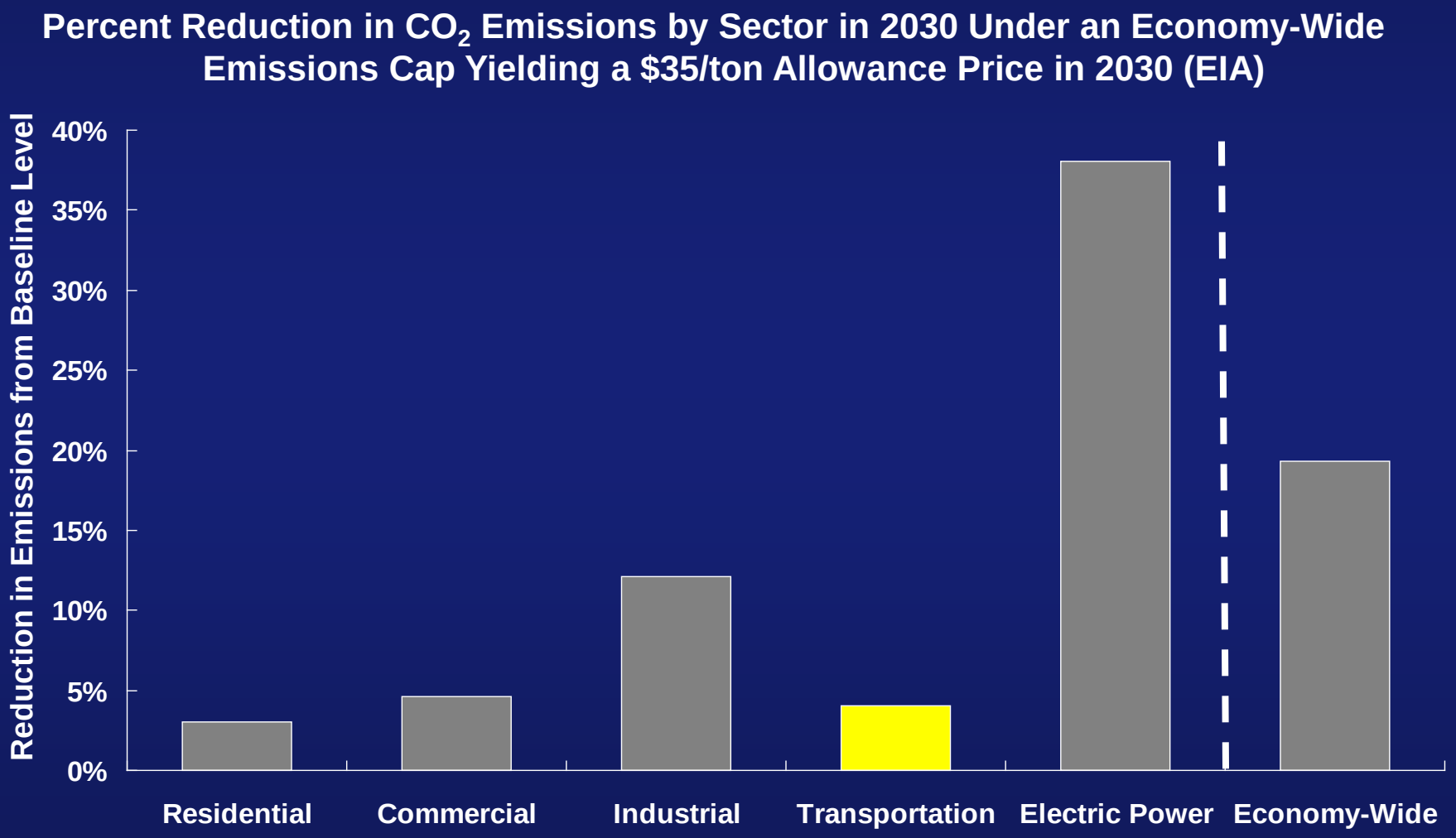
SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "American Clean Energy and Security Act of 2009".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Definitions.
Sec. 3. International participation.

Cost-Effective Economy-Wide Climate Policy Achieves Very Different Reductions from Different Sectors



Anticipated Economic Impacts of U.S. Climate Policy

- **Combining results** from: International Energy Agency (*World Energy Outlook 2009*); U.S. Energy Information Administration (*HR 2454 Analysis*, 2009); Peterson Institute (*American Power Act Analysis*, 2010); and Stavins (*Hamilton Project Analysis*, 2007)
- **Cumulative cost**, 2012-2030 – 0.3% to 0.9% of GDP
- **Oil market** impacts relatively small
  - ➢ Essentially a **tax on coal**: coal price increases **280%** relative to BAU (2030)
    - Coal → natural gas, then nuclear & renewables for electricity generation
    - **Impact on gasoline price:** increase of **9%** (35¢/gal) relative to BAU (2030)
    - **Gasoline demand**: 5% fall below BAU by 2030
  - ➢ **Electricity sector** accounts for **80%-90%** of emissions reductions
    - Impacts on transportation sector & oil/heating relatively small (cost-effective)
  - ➢ **Oil imports: 9% decrease** below BAU by 2030
    - *(New York Times* editorial – June 5th – incorrectly cited **33%** decrease below current levels, *not* compared with BAU, i.e., *not* impact of policy)
- What about the Gulf oil spill?

Gulf Oil Spill & Likely Policy Responses

- Damages will not be known for years, but policy response unlikely to wait
  - Cuyahoga River fire (1969) –> Clean Water Act (1972)
  - Love Canal (1978) –> CERCL/Superfund (1980)
  - Exxon Valdez (1989) –> Oil Pollution Act (1990)

- Congressional action
  - Will *not* galvanize support for climate bill
  - But *will increase support* for energy bill (thought to reduce U.S. oil demand)
  - Will lead to big push in Congress to reduce or eliminate fossil fuel subsidies
  - Congress will raise or eliminate $75 million liability cap

Gulf Oil Spill & Likely Policy Responses (continued)

- Administration action
  - Moratorium on new deep-water (> 500 ft) exploratory wells
    - Production continues
    - 6-month moratorium likely to become 12-24-month moratorium
      - Commission reports in 6 months
      - Regulatory process
      - Platforms relocated
  - Lease sales suspended (Virginia indefinitely, Alaska Arctic one year)
  - Minerals Management Service split into 3: permits, royalties, and enforcement
  - Other new regulations (after commission reports)
  - Will government work with industry on R&D needed to develop technologies for dealing with deep-water blow-out?

Other Important U.S. Climate Policy Developments

- **Carbon Tax –** some real interest and some phony interest
- **Stimulus Package –** $80 billion for renewables and energy-efficiency
- Automobile and Appliance Energy **Efficiency Standards**
- Court-Ordered **Regulation** under the Clean Air Act
  - U.S. Supreme Court decision & Obama "endangerment finding"
  - Regulation would be ineffective and costly – but force Congress's hand?
  - Will Senator Murkowski's Disapproval Resolution stop it? (51 votes?)
- **Sub-National Policies –** California's AB 32, RGGI, etc.
  - May turn out to be the core of U.S. action (good news – can be linked; bad news – inferior to a national approach)

U.S. Political Timing:
A Challenge for the International Process

- Recession (and unemployment)
- Other domestic policy priorities: economic stimulus, health care, financial regulation, and – now – the Gulf oil spill
- Public perceptions
- Congressional deliberation, difficult politics, and challenging numbers
- U.S. mid-term elections (November, 2010) work *against* bipartisanship, and make it more difficult to vote to raise energy prices
- So, COP-16 in Cancún in December will probably be *more enjoyable* than COP-15 in Copenhagen, but *not* necessarily *more productive*

For More Information

Harvard Project on International Climate Agreements

www.belfercenter.org/climate

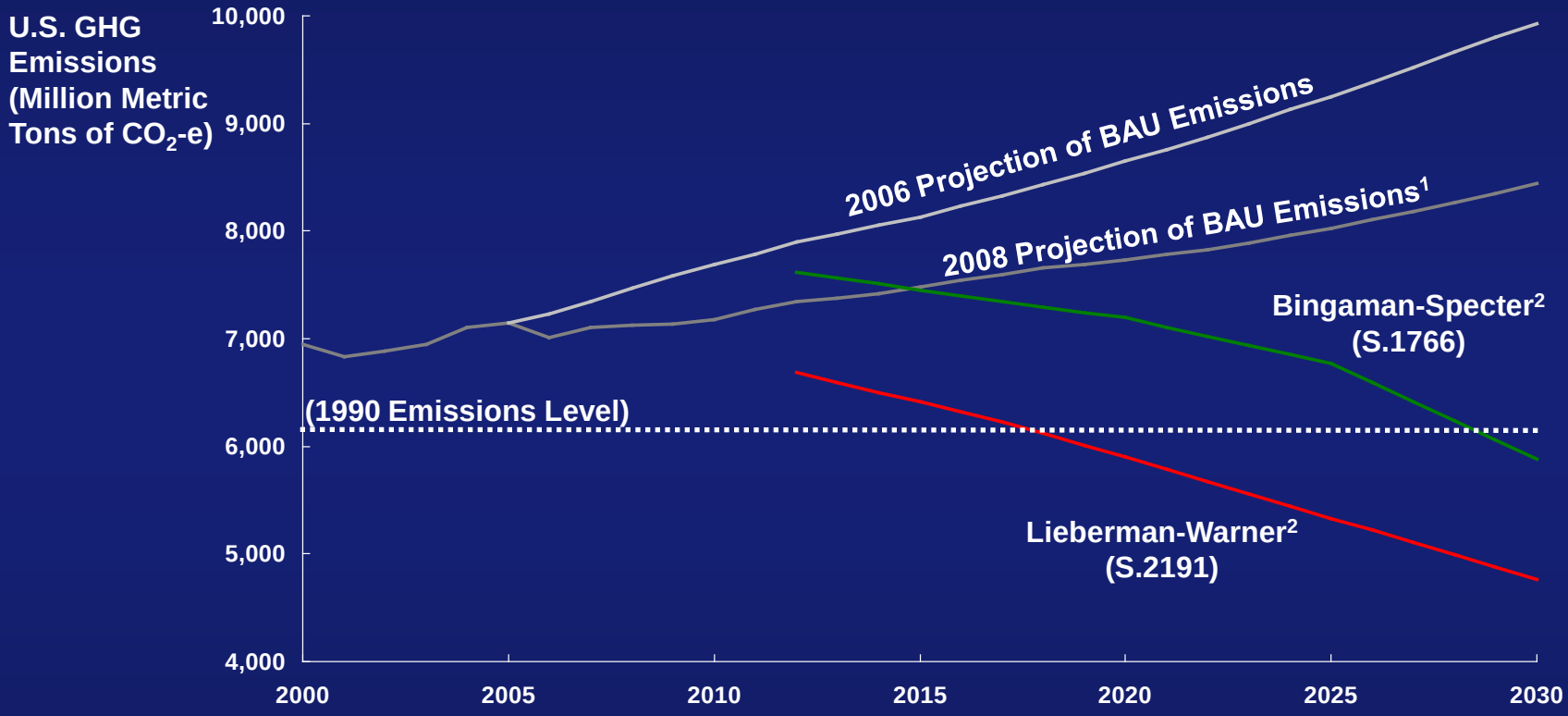
Harvard Environmental Economics Program

www.hks.harvard.edu/m-rcbg/heep/

www.stavins.com

Appendix

Two "Early" U.S. Cap-and-Trade Proposals *and* Dramatic BAU Changes

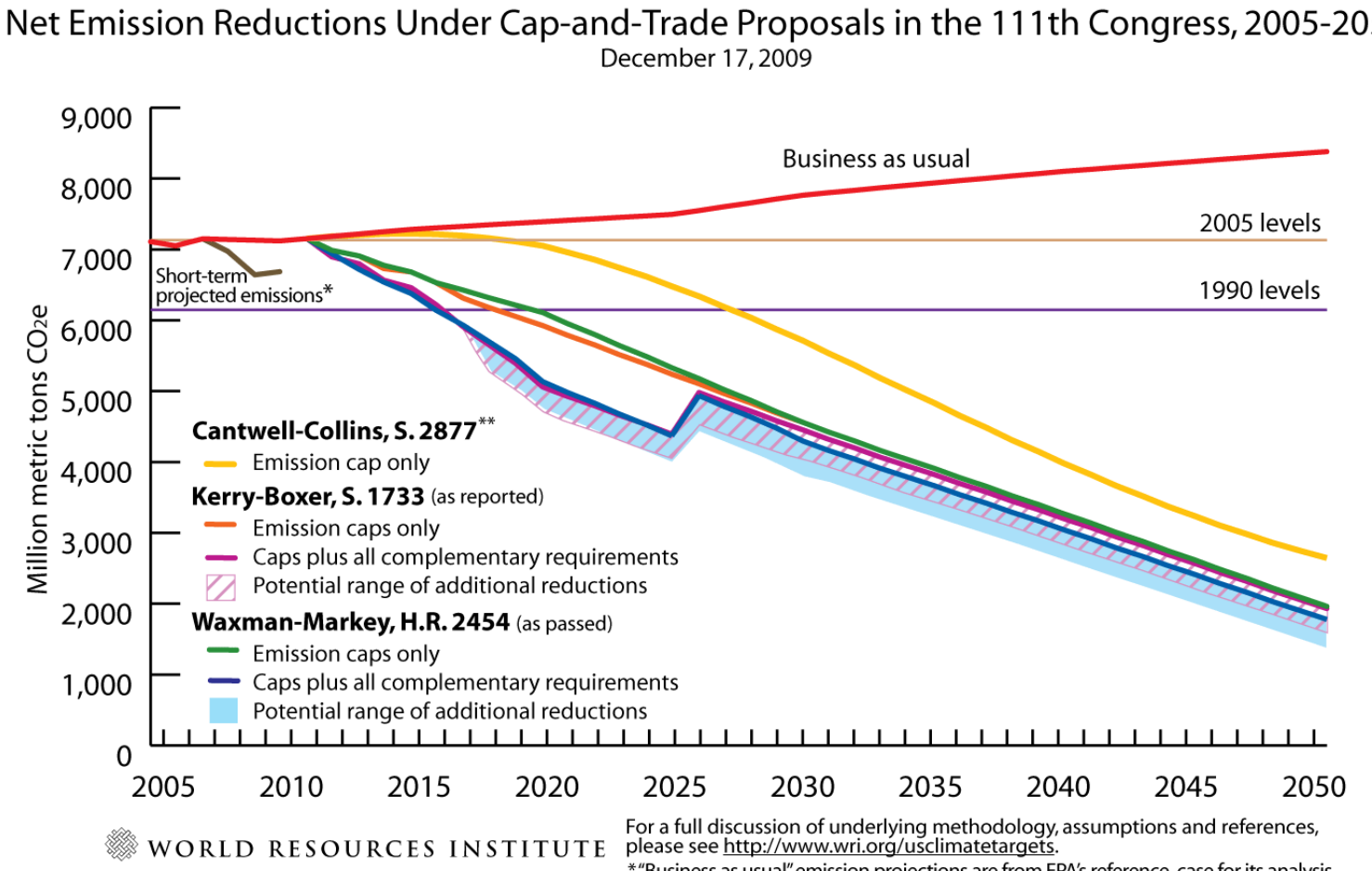


Notes:

1. Reduction in projected emissions relative to 2006 projection reflects impacts of higher fuel prices and impacts of the Energy Independence and Security Act of 2007 (including, for example, new fuel economy standards).
2. Lines reflect the level of emissions caps proposed by the legislation, together with business-as-usual growth in those emissions that would not fall under the cap proposed by the legislation.

Source: U.S. Department of Energy, Energy Information Administration

Three Current Cap-and-Trade Proposals in Congress



For a full discussion of underlying methodology, assumptions and references, please see http://www.wri.org/usclimatetargets.

*"Business as usual" emission projections are from EPA's reference case for its analysis of the Waxman-Markey bill. "Short-term projected emissions" represent EIA's most recent estimates of emissions for 2008-2010.

** Cantwell-Collins sets economy-wide reduction targets beginning with a 20 percent reduction from 2005 levels by 2020. However, additional action by Congress would be required before these targets could be met. Reduction estimates do not include emissions above the cap that could occur due to the safety-valve.

Allowance Value Distribution under H.R. 2454