New Prospects for Climate Change Regulation

Conference at *Harvard Law School*

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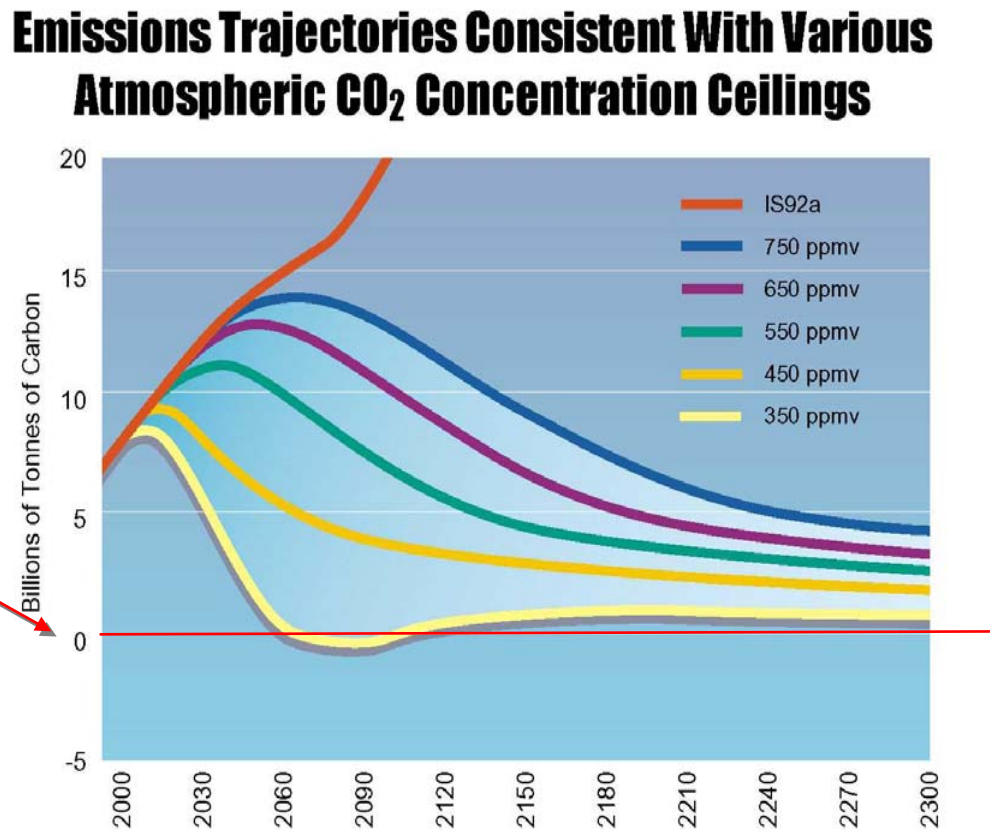
Climate Policy Goals and the Extent of Their Challenge

- **Policy goals**
  - Stabilize global temperature
  - Stabilize GHG *concentrations*
- **Implications for emissions**
  - Ultimately, net greenhouse gas emissions must fall to zero
- **Current technology and evolutionary improvements cannot achieve these goals**



Need for "breakthrough technologies"
Zero net emissions -- tolerable cost -- global applicability

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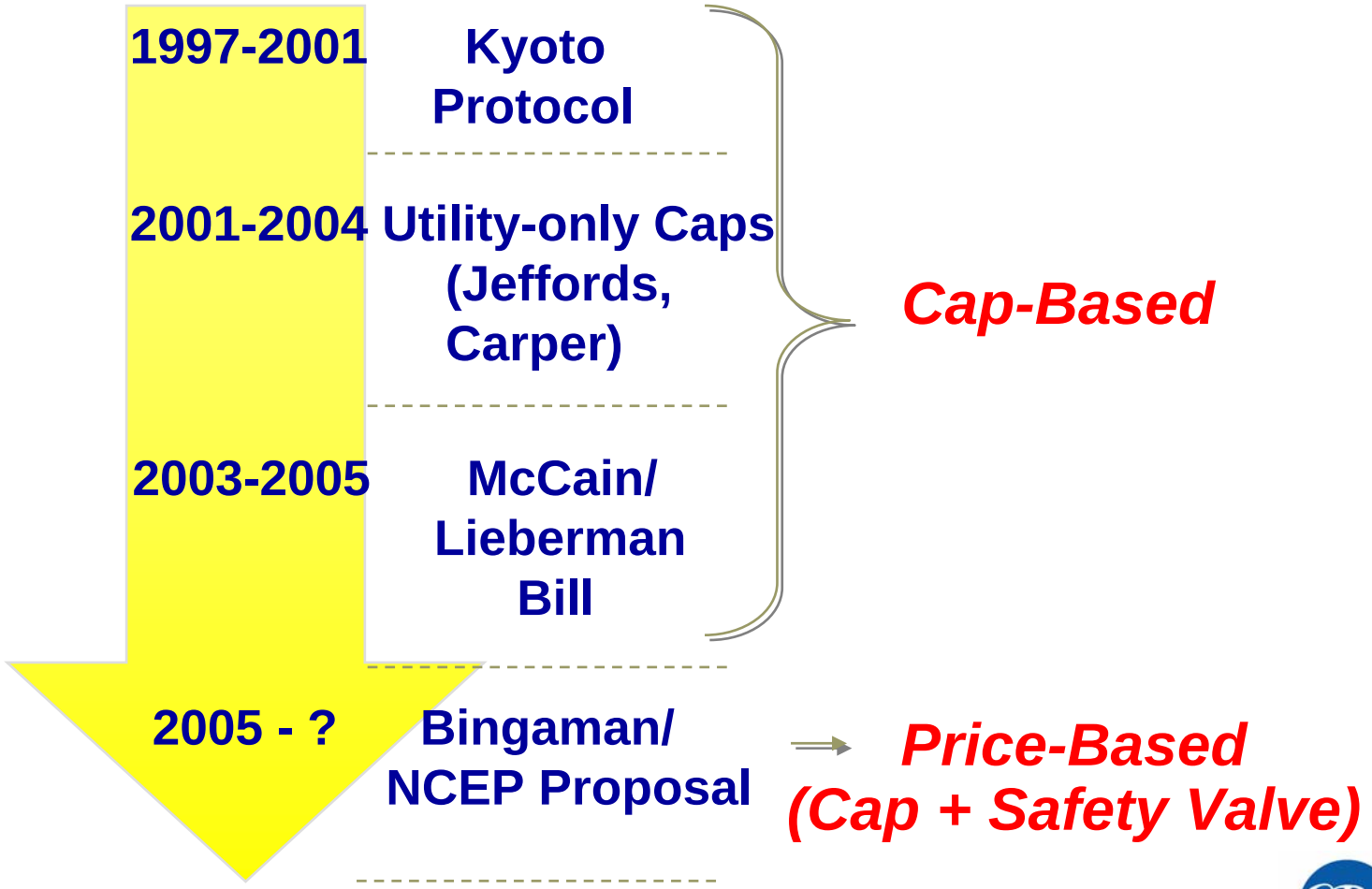
Climate Policy Proposals Reflect Growing Awareness of Long-Term Nature of Climate Change Mitigation



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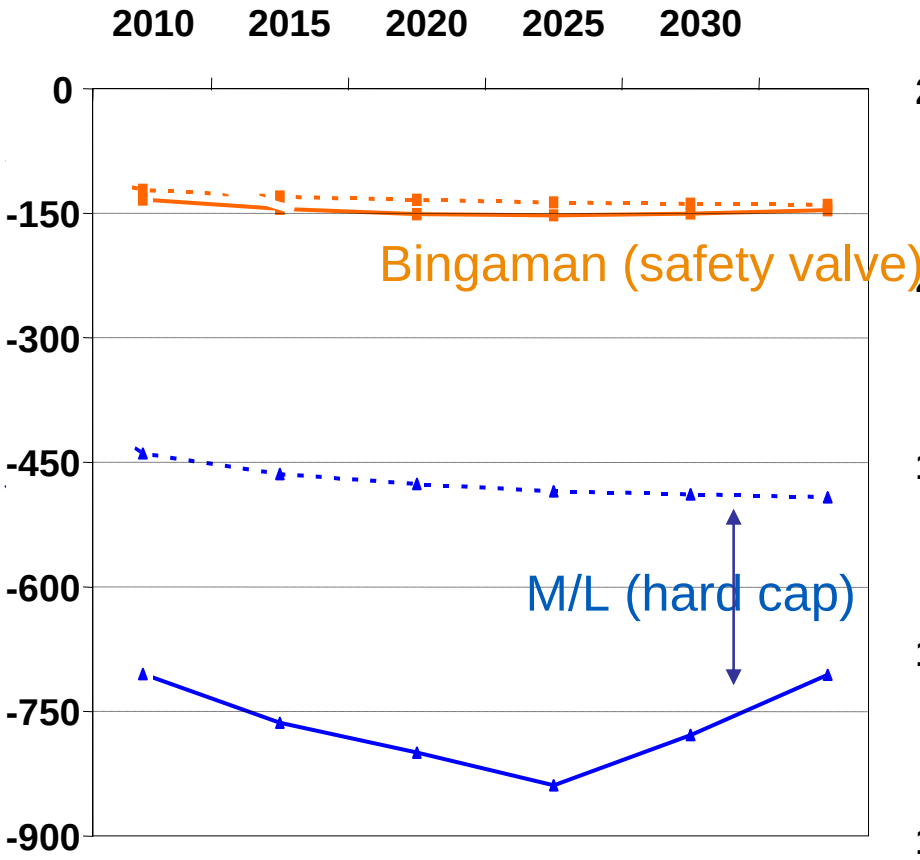
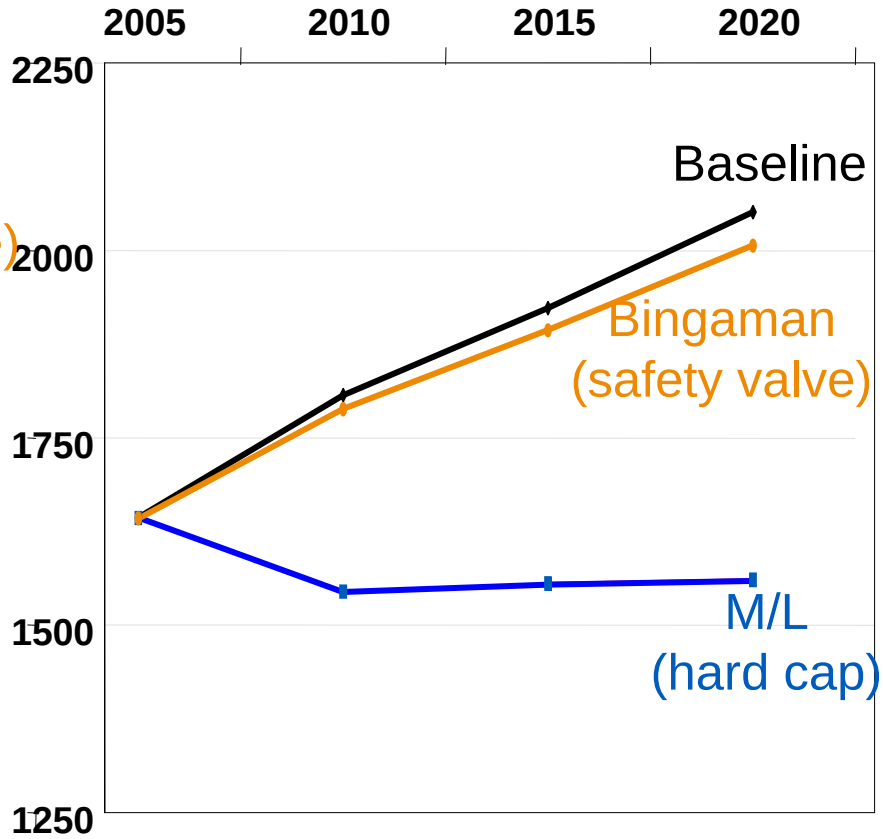
Example of Cost-Progress Trade-off for Near-Term Action:
-- Bingaman vs. McCain/Lieberman Bills



US$ per Household (2005$)



US Carbon Emissions (mmtC)

Note: Results are from analysis using July 2005 version of MRN

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What Is the Purpose of a Carbon Pricing Policy Like that of NCEP If It Produces So Little Emissions Reduction?

- **The hope is that it will *induce* the technological change**
- **Externality pricing has been thought to induce investment in R&D for two different reasons:**
  - Learning-by-doing
  - R&D motivated by an "announcement effect"

The problem with learning-by-doing:
It cannot create technology breakthroughs -- learning with one technology does not carry over to a different, successor technology

The problem with the announcement effect:
Difficulties of "dynamic inconsistency" undermine the hoped-for incentives to invest in R&D
(Montgomery & Smith, forthcoming 2006)

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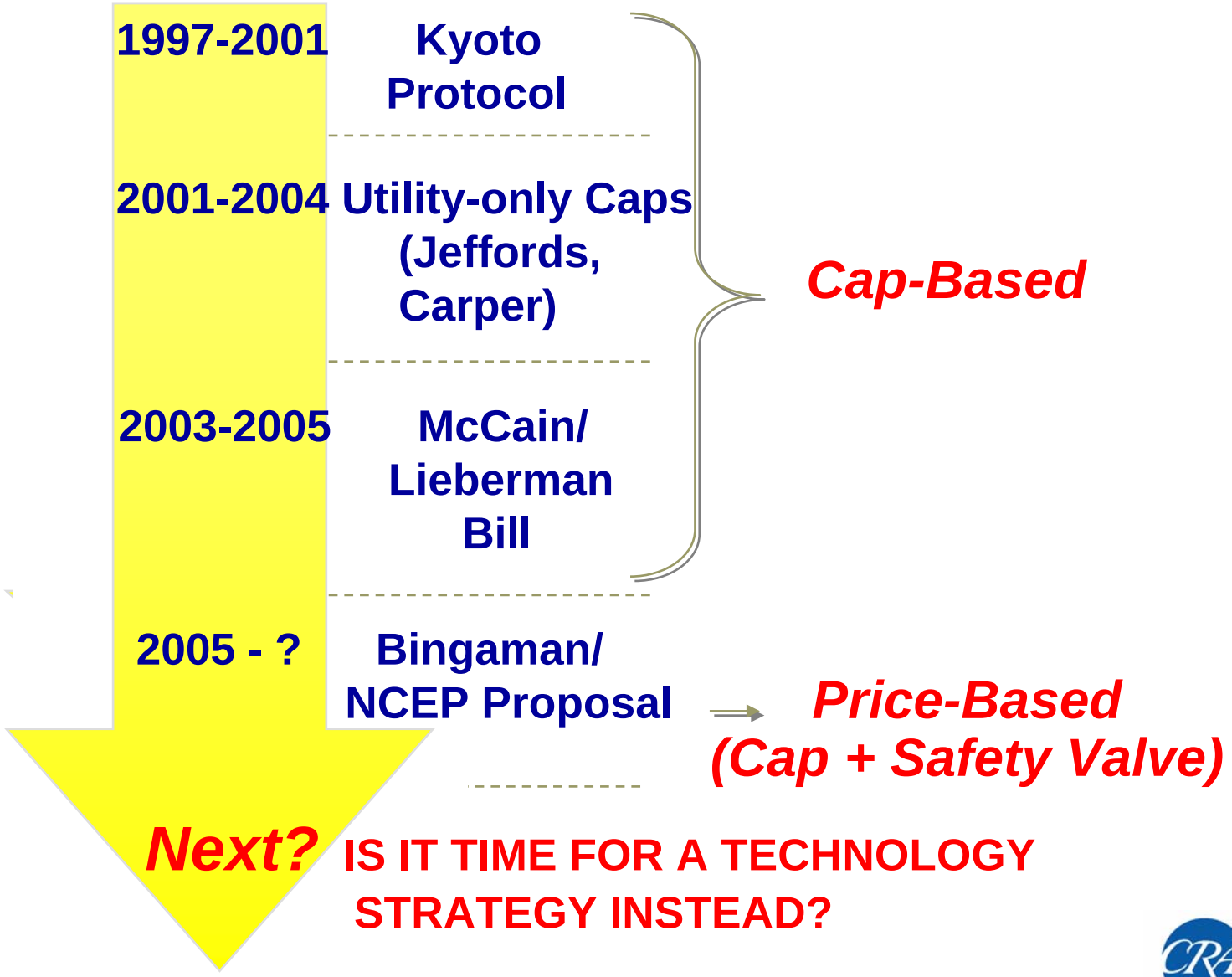
Yet Another Shift in Policy Approach Appears Warranted



What is Needed to Develop a Technology Strategy?

1. Economic research on creating effective incentives for breakthrough GHG R&D

- Credible, reliable, sufficient, current incentives
- Light-handed direction into lines likely to produce climate benefits
- Identification of appropriate private and public sector roles
- How to avoid repeating past mistakes in government-sponsored energy R&D?

2. Definition of GHG R&D goals

- What is our target for an affordable technology ($/ton removed)?
- What is the realistic timing target for commercial availability?
- Identify the scientific and technological barriers to meet these goals.
- Develop a lifecycle spending path to overcome barriers and achieve goals.

There Is Still a Role for Market-Based Emissions Policies as a Component of a Technology Strategy

Market-based tools will not put new technologies onto the shelf,

but they can serve to get available technologies off the shelf.

With this specific role in mind, one can identify the carbon price level that makes sense in the near-term:

Spend only on reductions that are cheaper in present value than if they were to be made later using the breakthrough technologies that are the goal of the R&D strategy.

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What Do We Gain if We Convert a "Cap+Safety Valve" into the Carbon Tax that It Is?

- **Greater reductions in GHGs if controls are much *cheaper* than expected**
- **Point of compliance dilemma goes away**
  (Choose what works, in any combination, without losing coverage)
- **Universal GHG coverage becomes administratively feasible**
  (Offsets provisions become less critical)
- **No more Kabuki Dance over allocations rules**
  (but reasonable compensation is still just as feasible)
- **No uncertainty in value of "allocations" to recipients**
- **No risk of "bait-and-switch" reaction among those who might have believed the cap was a real cap**
- **Policy maker focus on getting the carbon price right**
  (No distraction regarding the level of the cap that is unimportant)
- **Less complicated administration and accounting**

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Against All This, What Do We Lose?

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