# An Economic Perspective on Climate Change Policy

**Robert N. Stavins**
*Albert Pratt Professor of Business and Government*
*John F. Kennedy School of Government, Harvard University*
*Director, Harvard Environmental Economics Program*
*Director, Harvard Project on Climate Agreements*

ALPS International Symposium
*Research Institute of Innovative Technology for the Earth*
*Tokyo, Japan*
*February 4, 2014*

# Basic Economics and Geopolitics of Climate Change

- **Climate change is a global commons problem**
  - Any jurisdiction taking action – a country, province, or city – incurs the costs of its actions
  - But the benefits (averted climate change) are distributed globally
  - Hence, for virtually any jurisdiction, the benefits it reaps from its actions will be *less* than the costs it incurs ….
    - despite the fact that the global benefits may be *greater* – possibly much greater – than the global costs
- **This presents a classic free-rider problem, ….**
  - which is why *international*, if not global, cooperation is essential,
  - and this is why the *highest levels* of effective government should be involved, i.e., nations …...

# The U.S. National Context

- **Most U.S. economists & other policy analysts favor *carbon-pricing*** (carbon tax or cap-and trade)**. Why?**
  - No other feasible approach can provide truly meaningful emissions reductions (such as U.S. target of 80% cut in national $CO_2$ emissions by 2050)
  - It's the least costly approach in short term (heterogeneous abatement costs)
  - It's the least costly approach in the long term (incentive for carbon-friendly technological change)
  - So, it's a necessary (but not sufficient) component of sensible climate policy

# **The National Context** (continued)

- **But carbon-pricing is a hot-button political issue in the U.S.**
  - It makes the costs transparent (unlike conventional policy instruments, which *hide the costs*)
  - And so cap-and-trade is easily associated with the T-word; indeed, in Washington, cap-and-trade was *demonized* as "cap-and-tax"
  - *Antipathy by conservatives* to cap-and-trade was *ironic*, given experience
    - *President Reagan*: leaded gasoline phase-out with cap-and-trade
    - *President George H.W. Bush*: acid rain cut by half with cap-and-trade
    - *President George W. Bush*: Clean Air Interstate Rule (cap-and-trade)
  - Cap-and-trade was *collateral damage* in battle against climate action, which itself was a consequence of political polarization.
  - So, a meaningful carbon-pricing policy is *unlikely* in the foreseeable future.
- **Does that mean there will be no U.S. climate policy? *No.***

# Other Important Climate Policy Developments

- **Stimulus Package –** $80 billion committed for renewables and energy-efficiency (but delays and Federal budget have intervened)
- **Energy Policies** (variety of standards & subsidies, not targeted at $CO_2$)
  - National renewable electricity standard
  - Clean Energy Standard
- **Carbon Tax –** will fiscal realities lead to look at Federal "consumption taxes?"
- **Technology Policies**
  - Carbon-pricing necessary, but not sufficient – information is a public good
  - Technology innovation subsidies – *politically palatable*

# Federal Regulations Already in Place or On the Way

- **Automobile and Appliance Energy Efficiency Standards**
- **U.S. Supreme Court decision, EPA endangerment finding, & CAA**
  - Mobile source standards
  - Stationary sources (first for new sources, next for existing sources)
- **Air pollution policies for correlated pollutants under CAA**
  - Rules in regulatory pipeline – $SO_x$, $NO_x$, Hg, PM, coal ash, & cooling water
  - Could have very important $CO_2$ impacts (w/o any $CO_2$ requirements)
    - Impacts on *investment* in new coal-fired power plants
    - Impacts on *retirement* of existing coal-fired power plants
    - Impacts on *utilization* (*dispatch)* of coal-fired power plants

# Other Legal Mechanisms in Place

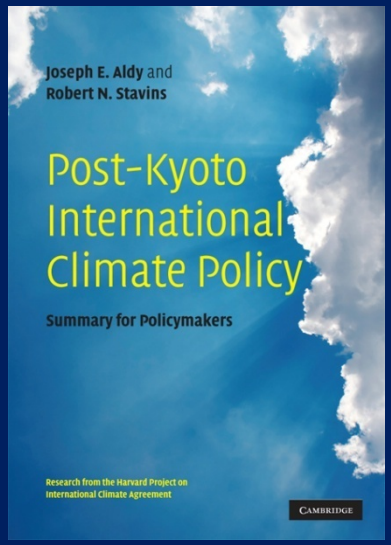
- **Public Nuisance Litigation**
  - Lawsuits pursuing injunctive relief and/or damages
  - In flux – recent court decisions, and Supreme Court
- **Other Interventions**
  - Intended to block permits for new fossil energy investments
    - Power plants
    - Transmission lines
  - Largely NIMBY, but some may be strategic
- **Sub-National Policies: RGGI and AB-32**
- **Finally, not public policy, but Key Reality: Low Natural Gas Prices**
- **Bottom Line on U.S. Action: The Reality Surpasses the Rhetoric!**

# A View of the International Domain: Placing Climate Negotiations 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 global 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
  - So, sensible goal for climate negotiations is progress on sound foundation for meaningful long-term action, not necessarily an immediate "solution"

# Searching for the Path Forward

- The Harvard Project on Climate Agreements
- Mission: To help identify key design elements of a scientifically sound, economically rational, and politically pragmatic 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
- 50 research initiatives in Argentina, Australia, China, Europe, India, Japan, and the United States



# Potential International Climate Policy Architectures

- **Centralized architectures**
  - Kyoto Protocol
  - Formulas for Assigning Targets
  - Portfolio of International Agreements

- **Harmonized national policies**
  - Harmonized National Carbon Taxes
  - Trading Regimes
  - Standards

- **Decentralized architectures and coordinated national policies**
  - Linkage of Regional, National, & Sub-National Cap-and-Trade Systems
  - Linkage of Heterogeneous National Policies
  - Portfolio of Commitments:  Pledge & Review

# Four lessons have emerged

1. **Market-based approaches are essential**

2. **Getting (carbon) prices right is necessary, but *not* sufficient**
   - Because of *public-good nature of R&D*, private sector will under-invest
   - Possible need for *government-funding of private-sector R&D*, such as for CCS

3. **"Developing country" participation is essential**
   - *Impossible* to address climate change *without* meaningful participation by China & other key emerging economies (*even if* OECD emissions were *zero*)
   - *Central task* in international negotiations is developing means of bringing key emerging economies on board

4. **Defacto *interim* (or post-2020) policy architecture *may* already be emerging**
   - Direct and indirect linkage of regional, national, and sub-national cap-and-trade *and other policy instruments*

# An Additional Lesson – that has emerged from International Negotiations

- Negotiations in Copenhagen (2009) illustrated limitations of process under UN
  - Size: 197 countries, when 20 account for about 90% of global emissions
  - UN culture polarizes factions: industrialized vs developing world
  - UNFCCC (default) voting rule: consensus, interpreted as unanimity
    - Lack of consensus behind Copenhagen Accord due to objections of 5 countries *(not* major emitters), with their accusations of "undemocratic" procedures:
      - Bolivia, Cuba, Nicaragua, Sudan, & Venezuela

# Possible Institutional Venues Going Forward

- Major Economies Forum (MEF)– accounts for 90% of global emissions; initiated and led by U.S. (formerly "Major Emitters Meeting" – MEM)
  - Australia, Brazil, Canada, China, *European Union*, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, United Kingdom, and United States
- G20 – finance ministers; since 1999; have met on climate change
  - *Argentina*, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, *Saudi Arabia*, South Africa, *Turkey*, United Kingdom, and United States
- Other multilateral (C30); bilateral, including China-U.S.
- UNFCCC – too soon for obituaries
  - Kyoto Protocol continues *at least* through 2020
  - Substantial constituency
  - International "legitimacy"

# How did we get here? Where are we going? International climate negotiations

- **The Rio Earth Summit (1992)**
  - United Nations Convention on Climate Change (UNFCCC) – principle of "*common but differentiated responsibilities*" (CBDR)
- **First Conference of the Parties (COP-1, Berlin, 1995)**
  - Berlin Mandate – interpretation of CBDR: *Annex I (OECD+/-) countries will commit* to targets for *emission reductions*, but *no commitments* for other countries
- **Kyoto Protocol (1997)**
  - KP *fulfilled* Berlin Mandate with quantitative targets for *Annex I countries only*
- **The Problem**
  - Annex I countries alone cannot reduce global emissions
  - Fifty non-Annex I countries have greater per capita income than poorest of Annex I
  - Dichotomous distinction makes progress impossible

# International Climate Negotiations

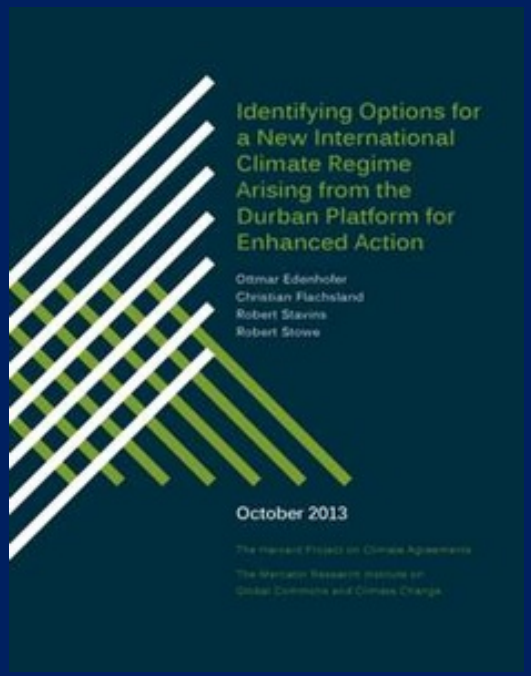
- **Copenhagen Accord (COP-15, 2009) & Cancun Agreements (COP-16, 2010)**
  - Began to *blur* – while still maintaining – the Annex I/non-Annex I distinction (in a non-binding pledge & review system)
- **Durban Negotiations (COP-17, 2011)**
  - COP-17 extended Kyoto Protocol for a second commitment period (2013-20)
  - *Durban Platform for Enhanced Action* – mandate to adopt by 2015 a new legal framework to include *all (key) countries* for implementation in 2020
  - This *broke* with the Berlin Mandate, and set the negotiations on a *new path*
  - This *won't* satisfy 350.org crowd, and may *annoy* opponents of climate policy action,
  - but in the *real world* of international climate negotiations, this is what *success* looks like.

# International Climate Negotiations

- **Doha Negotiations (COP-18, 2012) – the "Doha Gateway"**
  - ➢ Kyoto Protocol second commitment period, 2013-2020
    - Only EU and Australia participating, covers 14% of global emissions
  - ➢ Durban Platform for Enhanced Action
    - No progress, but did no harm
  - ➢ Loss and Damage – agreed to discuss mechanism for compensating vulnerable communities for loss and damage due to climate change
    - *Resisted by developed countries (particularly the U.S.) – fears of unlimited liability*
    - *Could be source of heated debate*
- The climate negotiations are a long relay race, with each negotiation being one leg of the race. In Doha, the baton was passed …
- … to Warsaw (November 2013),
- … Lima (2014), and Paris (2015).

# Path Ahead: Options for a New International Climate Regime Arising from the Durban Platform for Enhanced Action

- A Hybrid International Climate Policy Architecture
  - Bottom-up: National targets and actions that arise from – or are at least consistent with – national policies and goals.
  - Top-down: Centralized oversight, guidance, and coordination.
- Key Questions
  - Can such an agreement be *anchored* in domestic political realities,
  - While *adequately* recognizing the imperatives to address emissions and climate impacts?
  - Are there ways to enable and facilitate *increased ambition* over time?



# For More Information

Harvard Project on Climate Agreements
www.belfercenter.org/climate

Harvard Environmental Economics Program
www.hks.harvard.edu/m-rcbg/heep/

www.stavins.com