

Governmental Responses to Global Climate Change

SMA 521

Autumn 2011
M W, 12:30-1:50, MAR 168
Credit Hours: 3

Instructor: Nives Dolšak
Office hours: Wednesdays, 11:30-12:30 and by appointment
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Note: This course is approved as one of the elective courses for the Graduate Certificate in Climate Science in the UW Program on Climate Change.

Course Description

Why would governments invest resources to protect the global atmosphere? After all, this is an open access resource in that no government, firm, or individual can be prevented from benefitting from somebody else's action. Hence, it makes most sense to simply wait for others to do the work (incentives for free-riding are imminent). This argument holds even more power given the uncertainties our knowledge of global climate change, its causes, and impacts at regional and local levels entails. Furthermore mitigation efforts are likely to impose non-trivial costs on the domestic economy, with costs concentrated on specific sectors that have the incentives to organize and oppose its governmental actions to mitigate global climate change. At the same time, adaptation to global climate change is an easier sell for governments. A governmental entity only funds the adaptation needed for its communities, not for everybody else around the globe. Further, if mitigation and/or adaptation efforts result in development of a new technology that can be protected by intellectual property rights, acting fast can lead to a creation of a marketable product and future revenues. Governments therefore, balance the costs and benefits of mitigating and adapting to global climate change.

However, governments are not merely guided by cost considerations. They respond to ethical principles and opportunities for policy leadership created by pressures from voters demanding cleaner and more sustainable communities. Hence, to study and impact governmental responses to global climate change, we need to draw on multiple academic disciplines that enable us to understand the problem of global climate change, its impacts at the appropriate governmental level, the framing of this problem for policy makers, the solutions available, and the policy instruments likely to lead to implementation of these technologies and change of behavior.

Course Organization

The course is organized in four units drawing on multiple academic disciplines. In the first unit, we will define global climate change as a policy problem. We will learn about the basics of

carbon cycle, assessment tools available to model global climate change and its impacts at the global as well as regional levels. Lastly, we will examine alternative ways governments have used to frame global climate change. The second unit will examine several technologies available for global climate change mitigation and adaptation. In the third unit, we will study institutions (policy actors and policy instruments) that have been addressing global climate change. This unit will include policies developed at the international level, the U.S. A. national policies, as well as policies developed by city, county, and state governments. The fourth unit will conclude with recommendations for the future of global climate change policy.

Guest Speakers

The course incorporates lectures given by a number of guest speakers (listed alphabetically). Please note that some talk titles may change.

Janice Adair, Special Assistant to the Director: Regulatory improvement, Washington state Department of Ecology; “Coordinating State and Provincial Climate Actions or lessons in herding cats”

Christie Baumel, Policy Advisor, Office of Sustainability and the Environment, Seattle City;

Ann Bostrom, Evans School of Public Affairs, UW; “*Global Climate Change and Risk perceptions*”;

Daniel Kirschen, Close Professor of Electrical Engineering, UW; “*Integrating Renewable Resources into Current Power Systems*”;

Terrie Klinger, School of Marine and Environmental Affairs, UW; “*Ocean Acidification*”;

Matt Kuharic, King County’s Climate Program Manager;

Jeremy S. Littell, Research Scientist, CSES Climate Impacts Group, UW; “*Adaptation across Agencies: Similarities and Differences*”;

Ed Miles, Senior Fellow in JISAO and Co-Director, Center for Science in the Earth System; Professor Emeritus, SMEA, UW; “*United Nations Framework Convention on Climate Change and its protocols*”;

Edward S. Sarachik, Center for Science in the Earth System, UW; “*Climate Models*”;

Amy Snover, Co-Director, Climate Impacts Group, JISAO Center for Science in the Earth System, UW; “*Adaptation in the Pacific North West: Actors, Actions, and Barriers*” .

Learning objectives

- (1) Advance the understanding of the nature of global climate change problems and how they are framed in policy discourse;
- (2) Examine effectiveness, efficiency, and fairness of various policy instruments for global climate change mitigation and adaptation;
- (3) Critically evaluate global climate change policy processes and outcomes across levels of governance.

Evaluation

Students' work will be evaluated based on the following assignments:

- (1) Memos summarizing the assigned readings and blogs/news (5 memos, each max 10 points; please see the Weekly list of topics for class sessions when a memo can be submitted);
- (2) Oral presentation and a 1-2 page summary of selected mitigation technologies (max 10 points; due October 24; please sign up for technologies on Blackboard);
- (3) Analysis of global climate change bills introduced in the 111th or 112th Congress (max 10 points; due November 14; please sign up for the selected bills on Blackboard);
- (4) Oral presentation and a 1-2 page summary of selected global climate change mitigation/adaptation policies implemented across levels of governance (max 30 points; written product due on December 7th ; oral presentations on December 5th and 7th; please sign up on Blackboard for presentation date)

Additional information on these assignments will be posted on Blackboard.

Memos

Students are expected to write a total of 5 memos. In the memos, you will summarize and reflect on the readings assigned for the class for which you are submitting the memo. In addition, you will also incorporate news/opinions from one or more of the below sources. You can select which additional source you will incorporate.

The weekly schedule of topics below indicates for which class sessions/topics you will be able to post a memo. You will submit the memos by 8:00 AM of the day for which the readings were assigned. Please use the Blackboard "Digital Dropbox" tool. Make sure you **use the SEND** and NOT the "ADD" option. The latter merely stores your memo in your Digitaldropbox instead of sending it to mine.

NOTE: Please use only letter and number characters in file names for your memos. If any other characters are used, Digital dropbox does not upload files correctly.

Additional sources for memos (please cite the source you use):

BBC's portal, http://news.bbc.co.uk/2/hi/science/nature/portal/climate_change/default.stm

Climate Connect. <http://www.climate-connect.co.uk/Home/>

Climate Progress, Joe Romm's blog, <http://climateprogress.org/>

Earthwire climate, <http://www.earthwire.org/climate/>

Grist, <http://grist.org/topic/climate>

Politico, www.politico.com

World Business Council for Sustainable Development (WBCSD)'s [Energy & Climate](#)

Disability accommodations

University of Washington is committed to assisting disabled students. If you believe that you have a disability and would like academic accommodations, please contact Disability Services Office (DSO). DSO is located in Suite 836, Condon Hall, 1100 NE Campus Parkway, Seattle, Washington 98105. They can also be accessed through Campus Mail: Box 364560; via e-mail at dso@u.washington.edu; by phone at 206-543-6450; 206-543-6452 (TTY); or fax at 206-685-7264. You can find more information about the DSO services at <http://www.washington.edu/admin/dso/contacts.html>.

On-line document access and assignment submission

I will use Blackboard to post course documents and grades for the class. Students will use Blackboard to sign-up for assignments and post them electronically. You will be able to access the course Blackboard site at <http://www.bb.bothell.washington.edu/> You will first have to create an account on Blackboard and then enroll in the course. When you create the account, please enter the address for the e-mail account you most frequently check.

The title of this course on Blackboard is *Governmental Responses to Climate Change*. You can also find it under the instructor's name. For information on how to create an account on Blackboard and how to enroll in the appropriate course, please see Blackboard resources page at (<http://www.uwb.edu/learningtech/blackboard/bb-student>).

Late Submission Policy

I will not accept late assignments. Students will have multiple opportunities to submit memos; students are encouraged to plan ahead and build in a buffer. If a student is not able to give an oral presentation of a project, (s)he will lose the oral presentation points, but will still have the written assignment graded, if submitted by the deadline.

Weekly Schedule and Readings

I expect students to read the assigned readings PRIOR to the class session and come prepared to discuss them in class.

Part 1: PROBLEM DEFINITION

Wednesday, September 28: Introduction and the Syllabus

Monday, October 3: Climate Models

IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>

Wednesday, October 5: Regional models

Christensen, J.H., B. Hewitson, A. Busuioc, A. Chen, X. Gao, I. Held, R. Jones, R.K. Kolli, W.-T. Kwon, R. Laprise, V. Magaña Rueda, L. Mearns, C.G. Menéndez, J. Räisänen, A. Rinke, A. Sarr and P. Whetton, 2007: Regional Climate Projections. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter11.pdf>

Monday, October 10: Climate Impacts

IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 7-22.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf>

Wednesday, October 12: Climate Impacts

Schneider, S.H., S. Semenov, A. Patwardhan, I. Burton, C.H.D. Magadza, M. Oppenheimer, A.B. Pittock, A. Rahman, J.B. Smith, A. Suarez and F. Yamin, 2007: Assessing key vulnerabilities and the risk from climate change. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental*

Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 779-810.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter19.pdf>

Monday, October 17: Framing Global Climate Change Policies (**MEMO**)

Halsnæs, K., P. Shukla, D. Ahuja, G. Akumu, R. Beale, J. Edmonds, C. Gollier, A. Grübler, M. Ha Duong, A. Markandya, M. McFarland, E. Nikitina, T. Sugiyama, A. Villavicencio, J. Zou, 2007: Framing issues. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O. R. Davidson, P. R. Bosch, R. Dave, L. A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter2.pdf>

McCright, Aaron M., and Riley E. Dunlap. 2011. "Cool Dudes: The Denial of Climate Change among Conservative White Males in the United States." *Global Environmental Change* 21:1163-1172 (on Blackboard).

Nisbet, Matthew C. 2009. "Communicating Climate Change: why Frames Matter for Public Engagement." *Environment: Science and Policy for Sustainable Development*, Vo. 51 (2): 12-23. (on Blackboard).

PART 2: TECHNOLOGY OF SOLUTIONS

Wednesday, October 19: Global Climate Change Mitigation (**MEMO**)

IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf>

Pacala, S. and R. Socolow. 2004. Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies. *Science*, **305** (5686): 968-972 (on Blackboard)

Also, read the reply to the above approach by Romm, available at

<http://www.grist.org/article/is-450-ppm-or-less-politically-possible-part-1>

Monday, October 24: Global Climate Change Mitigation (Student Presentations of Mitigation Approaches; Assignment 2)

Gupta, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo, A. Sari, 2007: Policies, Instruments

and Co-operative Arrangements. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf>

Wednesday, October 26: Adaptation in the Pacific Northwest (**MEMO**)

Adger, W.N., S. Agrawala, M.M.Q. Mirza, C. Conde, K. O'Brien, J. Pulhin, R. Pulwarty, B. Smit and K. Takahashi, 2007: Assessment of adaptation practices, options, constraints and capacity. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 717-743.

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter17.pdf>

Mote, P.W. et al. 2003. Preparing for climatic change: The water, salmon, and forests of the Pacific Northwest. *Climatic Change* 61:45-88. (on Blackboard)

Climate Impacts Group. (n.d.) Climate in Brief. Skim to update the findings of the above article.

<http://cses.washington.edu/cig/pnwc/ci.shtml>

PART 3: INSTITUTIONS FOR THE SOLUTIONS

Monday, October 31: The International Regime (**MEMO**)

United Nations. 1992. United Nations Framework Convention on Climate Change.

http://unfccc.int/essential_background/convention/background/items/2853.php

Kyoto Protocol to the United Nations Framework Convention on Climate Change.

<http://unfccc.int/resource/docs/convkp/kpeng.pdf>

David Victor. 2009. "Plan B for Copenhagen," *Nature*, Vol. 461 (17 September), pp. 342-344. (on Blackboard).

Wednesday, November 2: Policy Design Principles: Effectiveness, Equity, Efficiency, and Security (**MEMO**)

Bowen, Alex and Samuel Frankhauser. 2011. The green growth narrative: Paradigm shift of just spin? *Global Environmental Change*, Volume 21, Issue 4, *Pages 1157-1159. (On Blackboard)*

Meckling, Jonas. 2011. The Political Economy of Carbon Trading. In Carbon Coalitions: Business, Climate Politics, and the Rise of Emission Trading. Massachusetts Institute of Technology Press. P. 47-74. (on Blackboard).

Thomas D.S.G. and C. Twyman. 2005. Equity and justice in climate change adaptation among natural-resource-dependent societies. *Global Environmental Change* 15 (2005) 115–124. (on Blackboard)

Paavola, J. and W.N. Adger. 2006. Fair Adaptation to Climate Change. *Ecological Economics*, Vol. 56 (4): 594-609. (on Blackboard)

Monday, November 7: Implementation of the UNFCCC and its protocols **(MEMO)**

Nives Dolšak. 2009. "Climate Change Policy Implementation: A Cross-Sectional Analysis." *Review of Policy Research*, 26(5): 551-570. (on Blackboard)

Meckling, Jonas. 2011. The United States: Reimporting Carbon Trading. In Carbon Coalitions: Business, Climate Politics, and the Rise of Emission Trading. Massachusetts Institute of Technology Press. Pp. 133-166. (on Blackboard).

Grubb, Michael and Karsten Neuhoff. 2006. Allocation and competitiveness in the EU emissions trading scheme: policy overview. *Climate Policy*. Vol 6: 7-30. (on Blackboard)

Wednesday, November 9: Global Climate Change Policies in the United States: the Executive Branch **(MEMO)**

U.S. Climate Policy and Actions. <http://epa.gov/climatechange/policy/index.html>

The White House. President Barak Obama. Energy, Climate Change, and our Environment. <http://www.whitehouse.gov/energy/climate-change>

Editorials. A Paler Shade of Green. *Nature*, Vol. 477 (15 September),pp 249-249. (on Blackboard)

EPA Regulatory Initiatives. <http://epa.gov/climatechange/initiatives/index.html>

Monday, November 14: The U.S. Congress: Students' analyses of bills

Wednesday, November 16: Metro Region and County Policies **(MEMO)**

King County Climate Change Policy.

<http://www.kingcounty.gov/environment/climate/king-county/climate-change-policy.aspx>

King County. 2010. Toward A Sustainable, Prosperous King County: 2010 Annual Report of King County's Climate Change, Energy, Green Building and Environmental Purchasing Programs

<http://kingcounty.gov/environment/climate/king-county/2010-sustainability-report.aspx> (also on Blackboard)

Monday, November 21: Puget Sound Travel Demand

Western Governors' Association. 2008. Transportation Fuels for the future.

http://www.westgov.org/index.php?option=com_content&view=article&id=128&Itemid=62 (and on Blackboard)

WA Climate Action Team Transportation Policy Option Descriptions December, 2007.

http://www.ecy.wa.gov/climatechange/InterimReport/122107_TWG_trans.pdf (and on Blackboard)

Wednesday, November 23: Seattle City Policies (**MEMO**)

Seattle, a Climate of Change: Meeting the Kyoto Challenge. Climate Action Plan 2006.

http://www.seattle.gov/archive/climate/docs/SeaCAP_plan.pdf

Seattle Climate Protection Initiative Progress Report 2009.

<http://www.seattle.gov/archive/climate/docs/CPI-09-Progress-Report.pdf>

Going Carbon Neutral. April 12, 2010.

<http://www.seattlechannel.org/videos/video.asp?ID=2161010>

Monday, November 28: State Global Climate Change Policies (**MEMO**)

Department of Ecology. State of Washington. 2008. Growing Washington's Economy in a Carbon-Constrained World: *A Comprehensive Plan to Address the Challenges and Opportunities of Climate Change*. December 2008

<http://www.ecy.wa.gov/pubs/0801025.pdf> (and on Blackboard)

Department of Ecology. State of Washington. 2010. Measuring Performance.

http://www.ecy.wa.gov/quality/forums/2010/climate_change.pdf (and on Blackboard)

Department of Ecology. State of Washington. Washington State Climate Policy Laws and Executive Orders Policy Framework (2005-2010)

<http://www.ecy.wa.gov/climatechange/laws.htm>

Wednesday, November 30: Regional Global Climate Change Policies

Western Climate Initiative. <http://www.westernclimateinitiative.org/about-the-wci>

Monday, December 5: Policies across levels of government: Student Presentations

Wednesday, December 7: Policies across levels of government: Student Presentations