

PLCY 686 / ENST 686 / ENVR 686 Environmental Policy Instruments (3)

Spring 2007

MW 3:30-4:45

PH 0212

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Public policy interventions are widely used to promote particular environmental management outcomes such as reduction of pollutant emissions and the sustainable management of natural species and ecosystems; they also are the subject of a large critical literature concerning their relative effectiveness and other impacts and consequences.

This course introduces the most ubiquitous types of these policy instruments, criteria for comparing and evaluating them, and applied examples of each. We hope to challenge students to undertake the task of designing such instruments for use on contemporary problems both within the United States and internationally. The course is intended primarily for graduate and professional students in Public Policy, Environmental Sciences and Engineering, City and Regional Planning, and related fields. Advanced undergraduates and graduate students in other fields may be admitted with the permission of the instructor. A prerequisite for all students is intermediate microeconomics (ECON 101 or PLAN 210 or equivalent).

Readings

The course has three assigned books:

Sternier, Thomas. 2003. *Policy Instruments for Environmental and Natural Resource Management*. Washington, DC: Resources for the Future Press.

Pearce, David, Anil Markandya, and Ed Barbier. 1989. *Blueprint for a Green Economy*. London: Earthscan Publications.

Tietenberg, Tom H. 2006. *Emissions Trading: Principles and Practice*. Second Edition, RFF Press.

All three books are available from Student Stores.

In addition students may find the following U.S. EPA report useful background reading, for descriptive information on the variety of environmental policy tools and applications in use by U.S. EPA:

U.S. EPA. 2001. *The United States Experience With Economic Incentives for Protecting the Environment*, Report No. EPA-240-R-01-001, January 2001. Available on line from EPA or on Blackboard site.

[http://yosemite.epa.gov/ee/epa/ermfile.nsf/11f680ff78df42f585256b45007e6235/da1eb5228bd1257b852569e0007130c6/\\$FILE/EE-0216B-13.pdf](http://yosemite.epa.gov/ee/epa/ermfile.nsf/11f680ff78df42f585256b45007e6235/da1eb5228bd1257b852569e0007130c6/$FILE/EE-0216B-13.pdf)

Much of the course material, however, will be drawn from articles, reports and other additional readings which will be posted on electronic library reserves or on UNC's Blackboard course support site (<http://blackboard.unc.edu>). Please start by going to this site and downloading an electronic copy of the full course syllabus as soon as possible. This will allow you to access some readings directly from hotlinks in the syllabus.

Format

The course will meet for two sessions per week. The format will be a mixture of lecture and discussion, with emphasis on critical analysis of readings and discussion of issues and cases. *It is expected that all students will come to each class having read the assigned readings, thought about the questions they raise, and prepared to participate actively in discussions.* Readings listed as "Background" are not required but are listed as additional references that you may find useful for further knowledge on the topic.

Written Assignments and Grading

Student evaluation will be based on the following:

1. Term paper (40%)
2. Final Exam (30%)
3. A few class assignments and presentations, including written and oral review of draft analysis of an environmental policy tools application (20%)
4. Class participation (10%)

Paper: analysis of an environmental policy tools application. Each student is expected to develop and submit a paper examining in detail the potential for applying one or more policy instruments to correcting an environmental problem of your choice. An initial version of the paper will be distributed to the class for discussion, and then revised and refined before final submission for grading. The paper should show your detailed understanding of the principles involved both with the tools and with the problem to which you propose to apply them, the essential characteristics and design characteristics that would need to be considered in designing such an application, and the likely challenges that would need to be considered and planned for in making it effective and avoiding potential unintended side effects. The paper may be either a critical analysis of an existing application with your proposals for improving it; or it may propose a design for a new application of policy tools to a problem not yet well addressed by such instruments. In either case this is intended as an exercise both in critical analysis and in creative policy design, with close attention to the essential details of designing such an application.

A brief statement of your proposed topic and an initial working bibliography of anticipated reference sources will be due on **Monday, February 26**. A full draft of the paper is to be distributed to all members of the class for discussion, and for written and oral comment by one of the other students (comment assignments to be drawn at random). These sessions will be held **March 28-April 11; draft papers due 1 week in advance**. The final graded version of the paper (anticipated length ~15-20 pages, but length flexible depending on what you have to say), with revisions and refinements based on class discussion, will be due at the final class of the semester, **Wednesday, April 25**.

There are many interesting current examples of environmental policy tool applications for your consideration: just a few examples include proposals for carbon taxes vs. tradable emission allowances for greenhouse gas reduction in the U.S., similar or different proposals being implemented in the European Union (and more broadly internationally), gasoline taxes to reduce carbon and other emissions, EU proposals to charge aircraft emission fees, federal and state tax

credits to promote renewable energy technologies, energy efficiency and renewable energy (EE/RE) portfolio standards and “public benefit funds” (taxes on energy use to subsidize EE/RE technologies), payments for ecosystem services for forest conservation and watershed protection, extended producer responsibility mandates for product wastes over their full life cycles (e.g. for packaging, and for computers and other electronic products), “debt for nature swaps” with developing countries, and many others. Please see either or both of us about these or other ideas for topics.

Documenting source materials and avoiding plagiarism

It is very important that you develop good habits of documenting the sources of both factual statements and the ideas and arguments of other people that you use in any paper you write. One basic reason for this is to be able to support the statements you make and the facts you use, both for your own future use and if anyone else should question or disagree with them. A second is to distinguish clearly between someone else’s ideas and arguments and your own, and not confuse the two. And a third is to protect your own integrity against either deliberate or accidental representation of someone else’s ideas or work as your own, which if intentional is known as plagiarism and is a serious violation of the UNC Honor Code and of the standards of ethical writing.

Please read the handout on the Blackboard site for more detailed suggestions on this subject. For additional detail on proper citation, plagiarism, and proper use of other authors’ materials, see <http://www.unc.edu/depts/wcweb/handouts/plagiarism.html>. For an excellent discussion of criteria for evaluation of the quality of source materials on Internet web sites, see <http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Evaluate.html>. For handouts on other good writing practices, <http://www.unc.edu/depts/wcweb/handouts/>.

CLASS SESSIONS AND READINGS

Date	Session Topic	Readings
1/10	Introduction; course overview; policy instruments & decision matrices (DW)	
1/15	No class (MLK holiday)	
1/17	Overview of environmental policy instruments (RA)	<p>MacRae, Duncan, and Dale Whittington. 1997. <i>Expert Advice for Policy Choice</i>. Introduction. pp. 1-26</p> <p>Stern 67-70</p> <p>Gunningham, Neil, and Peter Grabosky. 1998. Instruments for Environmental Protection. Chapter 2 in their <i>Smart Regulation: Designing Environmental Policy</i>. New York: Oxford/Clarendon Press, pp. 37-91</p>
1/22	Discussion of group exercise (DW); Valuing Environmental Assets (DW)	Pearce, David, et al. <i>Blueprint for a Green Economy</i> .
1/24	Criteria: what makes a good environmental policy instrument? (DW)	MacRae and Whittington (1997). <i>Expert Advice for Policy Choice</i> . Chapter 2: Selecting Criteria. pp. 66-111.
1/29	Regulatory instruments (ambient standards; technology-based, technology-forcing, and performance-based permits; risk-based restrictions; other varieties. “Command-and-control” versus other types) (RA)	<p>Cole & Grossman 2005, Institutional and Technological Constraints on Environmental Instrument Choice: A Case Study of the U.S. Clean Air Act. Chapter 10 in <i>Environmental Policymaking: Assessing the Use of Alternative Policy Instruments</i>, edited by Michael T. Hatch (Albany, NY: SUNY Press), pp.225-44.</p> <p><u>Background:</u></p> <p>Stern, Chapter 6, p. 71-81.</p> <p>Latin, Howard. 1985. Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and “Fine-Tuning” Regulatory Reforms. <i>Stanford Law Review</i> 37:1267-1332.</p>
1/31	Cases: regulation (RA)	Harrington/Morgenstern/Stern (HMS) chap. 1 (SO ₂ emissions in Germany), chap. 3 (industrial water pollution in the US)
2/5	Environmental taxes and charges (DW)	<p>Stern, Chapter 8, p. 94-101.</p> <p>Miranda, Marie Lynn and Brack Hale. 2002. “A Taxing Environment: Evaluating the Multiple Objectives of Environmental Taxes.” <i>Environmental Science and Technology</i>. Vol. 36, No. 2, pp. 5289-5295.</p>

		<p><u>Background:</u></p> <p>Wang, Hua, and Ming Chen. 1999. How the Chinese system of charges and subsidies affects pollution control efforts by China's top polluters. World Bank Research Paper 2198.</p> <p>Wang, Hua, and David Wheeler. 2005. Financial incentives and endogenous enforcement in China's pollution levy system. <i>J. Environ. Econ. and Mgt.</i> 49: 174-96.</p> <p>Blackman, Allen, and Winston Harrington. 1998. The Use of Economic Incentives in Developing Countries: Lessons from International Experience with Industrial Air Pollution. RFF Discussion Paper 99-39.</p> <p>Stavins, Robert N., and Bradley W. Whitehead. 1992. Pollution Charges for Environmental Protection. <i>Ann. Rev. Energy Environ.</i> 17:187-210.</p> <p>Stavins, Robert N. 2001. Experience with market-based environmental policy instruments. In <i>The Handbook of Environmental Economics</i>, edited by Karl-Göran Mäler and Jeffrey Vincent. Amsterdam: North Holland/Elsevier.</p>
2/7	Debate: environmental taxes and charges (DW)	(Debate roles to be distributed 1/24 to selected individuals)
2/12	Emissions trading (DW)	Tietenberg, T. <i>Emissions Trading: Principles and Practice</i> . Chapters 1-5 (pp. 1-126)
2/14	Emissions trading (cont.) (DW)	<p>Tietenberg, T. <i>Emissions Trading: Principles and Practice</i>. Chapters 6-9 (pp. 127-206)</p> <p><u>Background:</u></p> <p>Webster, Mort; Paltsev, Sergey; and John Reilly. (submitted). The Value of Emissions Trading. Submitted to <i>J. Envr. Econ. and Mgt.</i></p> <p>Kerr, Robert L.; Steven J. Anderson, and John Jaksch. 2000. Cross-cutting analysis of trading programs: case studies in air, water, and wetland mitigation trading systems. Learning from Innovations in Environmental Protection, Research Paper No. 6. Washington, DC: National Academy of Public Administration.</p>
2/19	Emissions trading	<p>Guest lecturer – Brian Morton</p> <p>Atkinson, Scott E. and Brian J. Morton. “Determining the cost-effective size of an emissions trading region for achieving an ambient standard.” <i>Resource and Energy Economics</i>. Vol. 26. 2000. pp. 295-315.</p>

		(Note change of time: 5:00-6:15 pm)
2/21	Prices vs. Quantity Controls (DW)	<p>Weitzman, Martin. 1974. "Prices vs. Quantities." <i>Review of Economic Studies</i>. Vol. 41, No. 4, Oct. 477-491.</p> <p>Pizer, William. 1999. <i>Choosing Price or Quantity Controls for Greenhouse Gases</i>. Climate Issues Brief No. 17. Washington, DC: Resources for the Future.</p> <p>Kaplow, Louis, and Steven Shavell. On the Superiority of Corrective Taxes to Quantity Regulation." <i>American Law and Economics Review</i>. Vol. 4, No. 1, 2002. pp. 1-17.</p>
2/26	Subsidies and investments (RA)	<p>Stern, Chapter 9, p. 102-108.</p> <p>Myers, Norman. 1998. <i>Perverse Subsidies</i>. Winnipeg, Manitoba: International Institute for Sustainable Development (IISD), pp. 1-12, 17-30.</p> <p><u>Background:</u></p> <p>U.S. EPA. 2001. Subsidies for Pollution Control. Pp. 111-42 in its <i>The United States Experience With Economic Incentives for Protecting the Environment</i>, Report No. EPA-240-R-01-001, January 2001.</p>
2/28	Markets for Ecosystem services (RA)	<p>Pagiola, Stefano; Arcenas, Agustin; and Gunars Platais. 2005. Can Payments for Environmental Services Help Reduce Poverty? An Exploration of the Issues and the Evidence to Date from Latin America. <i>World Development</i> 33:237-53.</p> <p>Salzman, James. Creating Markets for Ecosystem Services: Notes from the Field. <i>NYU Law Journal</i> 80: 870-961</p> <p><u>Background:</u></p> <p>Scherr, Sarah J.; Bennett, Michael T.; Loughney, Molly; and Kerstin Canby. 2006. <i>Developing Future Ecosystem Services Payments in China: Lessons Learned from International Experience</i>. http://www.forest-trends.org/index.php</p>
3/5	Markets for Ecosystem services": Catskill Case Study (RA)	<p>Guest lecturer – Jim Salzman (Note change of time: 5:00-6:15 p.m.)</p> <p>Frisch, Carla M. 2006. <i>Payment for Ecosystem Services: A Consideration of New York's Catskill/Delaware Watershed</i>. UNC Chapel Hill Senior Honors Thesis 2006, Chapters 4 and 5.</p> <p><u>Background:</u></p>

		<p>Sagoff, Mark. "The Catskills Parable." <u>PERC Reports</u>. http://www.perc.org/perc.php?subsection=5&id=547 (Original and longer version: "On the Value of Natural Ecosystems: The Catskills Parable." <u>Philosophy and Public Policy Quarterly</u> 22. ½ (2002): 10-16.)</p> <p>Salzman, James. "What Paying for Ecosystem Services Means." <u>PERC Reports</u>. http://www.perc.org/perc.php?id=683</p>
3/7	Assignment of Liability (DW)	<p>Sterner, Chapter 10, p. 115-119.</p> <p><u>Background:</u></p> <p>Shavell, Steven. 1984. Liability for Harm versus Regulation for Safety. <i>Journal of Legal Studies</i> 13:357-74</p> <p>U.S. EPA. 2001. Liability Approaches. Pp. 143-51 in its <i>The United States Experience With Economic Incentives for Protecting the Environment</i>, Report No. EPA-240-R-01-001, January 2001.</p>
3/12, 3/14	Spring break	
3/19	Information tools: disclosure/reporting (RA)	<p>Tietenberg, Tom, and David Wheeler. 1998. Empowering the Community: Information Strategies for Pollution Control. <i>Frontiers of Environmental Economics</i>, edited by H. Folmer, H. L. Gabel, S. Gerking and A. Rose. (Cheltenham,UK: Edward Elgar, 2001), pp. 85-120.</p> <p>Afsah, Shakeb, and Jeffrey R. Vincent. 1997. Putting Pressure on Polluters: Indonesia's PROPER Program. Case Study for the HIID 1997 Asia Environmental Economics Policy Seminar, Harvard Institute for International Development.</p> <p><u>Background:</u></p> <p>Beierle, Thomas C. 2003. Environmental Information Disclosure: Three Cases of Policy and Politics. Resources for the Future Discussion Paper RFF-DP-03-16.</p> <p>Case, David. 2001. The law and economics of environmental information as regulation. <i>Environmental Law Reporter</i> 31:10773-89.</p> <p>LaPlante, Benoit, Jerome Foulon and Paul Lanoie. 2002. Incentives for pollution control: Regulation or information? <i>Journal of Environmental Economics and Management</i>, 44, 2002, 169-187.</p> <p>U.S. EPA. 2001. Information Disclosure. Pp. 153-72 in its <i>The</i></p>

		<i>United States Experience With Economic Incentives for Protecting the Environment</i> , Report No. EPA-240-R-01-001, January 2001.
3/21	Information tools: labeling/“ecolabels” (RA)	<p>Sterner, pp. 122-26</p> <p>Thøgersen, John. 2002. Promoting “green” consumer behavior with eco-labels. Chapter 5 in <i>New Tools for Environmental Protection</i>, edited by Thomas Dietz and Paul C. Stern. Washington, DC: National Academy Press, pp. 83-104.</p> <p>Müller, Edda. 2005. Environmental Labeling, Innovation, and the Toolbox of Environmental Policy: Lessons Learned from the German Blue Angel Program. Chapter 2 in <i>Environmental Policymaking: Assessing the Use of Alternative Policy Instruments</i>, edited by Michael T. Hatch (Albany, NY: SUNY Press), pp.17-44.</p>
3/26	“Voluntary” approaches (RA)	<p>Sterner, pp. 119-22</p> <p>Andrews, R. N. L. 1998. Environmental Regulation and Business “Self-Regulation.” <i>Policy Sciences</i> 31:177-97.</p> <p>May, Peter J. 2005. Regulation and Compliance Motivations: Examining Different Approaches. <i>Public Administration Review</i> 65(1):31-44</p> <p>Boyd, James. 2001. The Barriers to Corporate Pollution Prevention: An Analysis of Three Cases. Chapter 5 in <i>Improving Regulation: Cases in Environment, Health, and Safety</i>, edited by Paul S. Fischbeck and R. Scott Farrow. Washington, DC: Resources for the Future Press, pp. 95-114.</p> <p><u>Background:</u></p> <p>Hatch, Michael T. 2005. Voluntary Agreements: Cornerstone or Fig Leaf in German Climate Change Policy? Chapter 5 in his <i>Environmental Policymaking: Assessing the Use of Alternative Policy Instruments</i> (Albany, NY: SUNY Press), pp. 97-124</p> <p>Mazurek, Janice. 1998. The use of voluntary agreements in the United States: an initial survey. Document No. ENV/EPOC/GEEI(98)27/FINAL. Paris: OECD.</p> <p><u>Background Readings</u></p> <p>U.S. EPA. 2001. Voluntary Programs. Pp. 173-96 in its <i>The United States Experience With Economic Incentives for Protecting the Environment</i>, Report No. EPA-240-R-01-001, January 2001.</p>
3/28	Student presentations	
4/2	Student presentations	
4/4	Guest lecturer	(to be announced)

4/9	Student presentations	
4/11	Student presentations	
4/16	Combinations and comparative evaluations (DW)	<p>Sterner chap. 18, Design of policy instruments, pp. 212-218.</p> <p>Walls, Margaret. 2003. <i>The Role of Economics in Extended Producer Responsibility: Making Policy Choices and Setting Policy Goals</i>. Discussion Paper 03-11. Washington, DC: Resources for the Future.</p> <p>Sterner Chap. 32, Policy issues and potential solutions, pp. 432-447.</p>
4/18	Case study: Use of economic instruments to regulate traffic in Singapore (DW)	To be assigned.
4/23	Institutional challenges (RA)	Keohane, Nathaniel O.; Richard L. Revesz; and Robert N. Stavins. 1998. The choice of regulatory instruments in environmental policy. <i>Harvard Envr. Law Rev.</i> 22:313-67.
4/26	Concluding observations and discussion (DW/RA)	

A few other useful readings

(starting points: not comprehensive, feel free to recommend additions):

- Ekins, Paul. 1999. European environmental taxes and charges: recent experience, issues and trends. *Ecological Economics* 31:39-62.
- Keeler, Andrew G. 2004. Contract-based trading programs in environmental regulation. *Contemporary Economic Policy* 22:526-33.
- Gertz, Renate. 2004. Environmental Information and the German Blue Angel. *European Environmental Law Review* 13:268-75.
- Kohlhaas, Michael, and Bettina Meyer. 2005. Ecological Tax Reform in Germany. Chapter 6 in *Environmental Policymaking: Assessing the Use of Alternative Policy Instruments*, edited by Michael T. Hatch (Albany, NY: SUNY Press), pp. 125-49.
- Nordhaus, William D. 2001. After Kyoto: Alternative mechanisms to control global warming. AEA/AERE paper. http://www.valt.helsinki.fi/staff/mhalko/PostKyoto_v4.pdf
- OECD. 2004. Tradable Permits: Policy Evaluation, Design, and Reform. Paris: OECD.
- Salomon, Lester. 2002. *The Tools of Government: A Guide to the New Governance*. New York: Oxford University Press.
- U.S. Environmental Protection Agency. 2004. [International Experiences With Economic Incentives for Protecting the Environment](#). Report No. EPA-236-R-04-001

A few other useful web sites (multiple documents on each):

Resources for the Future: <http://www.rff.org/rff/Publications> (See separate sections for discussion papers, RFF reports, issues briefs, etc., or search by keyword or author)

Prof. Tom Tietenberg's home page: <http://www.colby.edu/personal/t/thtieten/> (Includes additional papers on applications of emissions trading and other economic incentive tools to environmental issues, particular several very interesting papers on applications to greenhouse-gas emission trading schemes).

U.S. EPA National Center for Environmental Economics web site:

<http://yosemite.epa.gov/ee/epa/eed.nsf/Webpages/EnvironmentalEconomicsReports.html>

World Bank's New Ideas in Pollution Regulation web page: <http://www.worldbank.org/nipr/>