Topics in Environmental Values & Society — Introduction to Policy Analysis: Environmental Case Studies
Fall 2019

Instructor Information

- [Gernot Wagner](mailto:gwagner@nyu.edu)
- Email: gwagner@nyu.edu
- Office Address: Department of Environmental Studies, 285 Mercer Street, 10th floor
- Office Hours: Mondays & Tuesdays, 9:40-11:00 a.m. (Please sign up. Alternatively, join me on a ~40-minute morning run. If none of these times work, please email me.)

Course Information

- Class Meeting Times: Tuesdays & Thursdays, 8:00-9:15 a.m.
- Class Location: 12 Waverly Place, Room L114

Course Prerequisites

The main prerequisite: a significant interest in public policy issues, coupled with an open mind to new approaches and ways of thinking about thorny questions.

There are no formal course prerequisites. Informally, the main prerequisite is simply that we need to speak the same language. That language is largely that of economics, political economy, and (intro) statistics. Please talk to me after the first class if you have any questions or concerns.

Course Description

Economics, for better or worse, is organized common sense. No more, also no less. In this class we develop a toolkit to help us analyze real-world climate and energy policy problems.
How to best cut carbon pollution? Should we price fossil fuels and/or subsidize low-carbon energy? What to make of new technologies like solar geoengineering? More broadly, how to think about decisions in light of pervasive uncertainties? How useful are toy models in helping us make any of these decisions? What are their real and perceived limits?

We will look at a number of climate and energy-related public policy problems. Some of the questions we will be asking have clear answers. Many don’t.

The biggest question to us then often is in how far the tools economics gives us can provide objective policy advice, and at what point do normative judgments—politics—take over.

We will develop our toolkit around key policy questions, looking to the real world—including the news of the day—for ideas. In doing so, we apply economic insights, some basic mathematical tools, statistical thinking, econometrics, and borrow fundamental ideas from various other disciplines—all in the service of turning ourselves into better policy analysts and, ultimately, more astute decision makers.

Note that the topics of this course overlap significantly with ENVST-UA 450.006 Topics in Environmental Values & Society — Climate Politics: When Policy meets Reality. We here use an entirely different approach. There, the focus on the political implications of climate policies. Here it is on developing a fundamental analytical toolkit for these policies. In the language of economics, the two courses are complements, not substitutes.

This course fulfills the Environmental Studies major's Methods requirement.

Readings

There is no textbook. All readings are available online or via the course website except (ironically) my own books, *But Will the Planet Notice? How Smart Economics Can Save the World* and *Climate Shock*. I will give everyone enrolling in the class a free copy of the former (at the beginning of week 2). The latter is available at NYU Bookstore and on reserve at NYU libraries. The whole book isn’t required reading, though the ‘fat tails’ chapter is on the list for week 6, and chapters 5 and 6 are on the syllabus for the discussion on solar geoengineering.

This is not a drill. It’s not a class taught in a vacuum, to give you abstract tools. It’s about real-world questions, using real-world tools. That implies that there is no one-size-fits all approach. Reading amounts vary by topic, week, and type of material. Use your judgment.

If the report is 150 pages long, skim it.

If it’s a non-technical, 5-page article, study it.

If it’s a dense, technical economics paper, focus on the main results presented in abstract, introduction, and conclusion. Don’t internalize footnote 18 from the technical appendix.
In short, come prepared to discuss the gist of the reading materials and be able to submit brief reflections prior to class. A good portion of your grade depends on it. Equally important, where appropriate, incorporate the readings into your short essays, peer reviews, and the group presentation.

**Assessment Assignments and Evaluation**

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<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>%</th>
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<tbody>
<tr>
<td>Participation and engagement</td>
<td>Actively engage with the readings and participate in class discussions. The 30% are made up of three parts:</td>
<td>30%</td>
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<td></td>
<td>1. Brief (100-200 word) reflections and/or questions on the readings, posted by 10:00 p.m. the evening before each class on the course website, beginning with the second class. (Total grade: 5-15%)</td>
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<td></td>
<td>2. Active class engagement, debating the merits and demerits of any one particular policy or its politics. (Total grade: 5-15%)</td>
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<td>3. Three brief, anonymous peer reviews (100-200 words) of short essays, submitted on the course website (3.33% each, 10% total)</td>
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<td>The ratio between the first two parts is not fixed: to those more comfortable with written comments, emphasis (up to 15%) will be placed on the pre-class postings. To those more comfortable with engaging during class, emphasis (up to 15%) will be placed on class participation.</td>
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<td>Bonus points for anyone able to point to recent news stories relevant to the topic at hand. (Please post them, by 10:00 p.m. the night before each class, on the course website, in addition to your reflections on the readings.)</td>
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<td></td>
<td>The remaining 10% are for three short (100-200 word) constructive critiques of your colleagues’ essay submissions. You will be randomly assigned to review essays from your peers.</td>
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<td>Essays</td>
<td>You might call them “policy memos.” You might call them “essays.” Either way, these four essays help us apply our toolkit to real-world policy questions. They present the analysis in clear terms and come in at around 1,000-1,200 words (sans bibliography and any appendix with calculations). Make sure to use proper citations of materials, including those from the syllabus.</td>
<td>40%</td>
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<td>Essays will be graded on a 10-point scale, and each counts for 10% of your final grade. Please add a word count and</td>
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make sure it comes within 50 words of 1,000-1,200 word range to avoid point deductions.

You are free to write your essays in any four of weeks 2 through 14 of the semester. Your essays will be based on the topic and tools developed that week and are due by 4:00 p.m. Friday via the course website.¹

If you submit more than four essays, your overall essay grade will be based on the best four of the first five submitted.

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<th>Final exam</th>
<th>Exam with (brief) numerical problems and essay questions, mimicking the structure of the course.</th>
<th>30%</th>
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<td><strong>Total</strong></td>
<td></td>
<td>100%</td>
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All written assessments are individual. Discuss the topic with each other; join up in reading groups; come to office hours alone or in groups to discuss details; but submit your own, individual essays.

If you need more time, you will need to optimize in light of the following time-grade tradeoff: You will lose 10% of the total grade for each assignment immediately, and another 10% for each additional 24 hours.

## Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Tools/Concepts</th>
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<tbody>
<tr>
<td>Classes 2&amp;3²</td>
<td>Rebound Effect</td>
<td>Political vs engineering vs economic thinking</td>
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<tr>
<td>Classes 4&amp;5</td>
<td>Energy Paradox</td>
<td>Limits to the rational model</td>
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<tr>
<td>3</td>
<td>Green Paradox</td>
<td>Time (in)consistency</td>
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<tr>
<td>5</td>
<td>How far how fast? Aka what’s the optimal carbon price?</td>
<td>Benefit-cost analysis</td>
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<tr>
<td>6</td>
<td>How far how fast? It’s not over ‘til the fat tail zings.</td>
<td>Limits to benefit-cost analysis; decision-making under (deep) uncertainty</td>
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<td>7</td>
<td>Tax pollution or subsidize renewables?</td>
<td>Domestic instrument choice</td>
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¹ That implies you have two extra days to write your essays if you choose to write them for the first two topics, rebound and energy paradox, as the essays will be due on Friday after we had finished discussing the topic that Tuesday.
² See footnote 4.
8 Spatial leakage Domestic instrument choice
9 Global problem, global solution International instrument choice
10 Linkage International instrument choice
11 Solar geoengineering Policy tradeoffs
12 Moral hazard Ethical dimension
13 Precautionary principle Decision-making under uncertainty
14&15 Bringing it all together Your Policy Analysis Toolkit

Class schedule

CLASS 1: Intro—Why Economics?

Class meeting: Tuesday, September 3rd

Readings
2. This syllabus(!)

CLASSES 2 & 3: Rebound Effect: Can CAFE standards lead to more driving?

Class meetings: Thursday, September 5th & Tuesday, September 10th

Readings

Recommended Reading

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3 All readings found on NYU Classes; the links here go to the published articles.
CLASSES 4 & 5: Energy Paradox: Why don’t we all use CFLs and drive hybrids?

Class meetings: Thursday, September 12th & Tuesday, September 17th

Readings


Recommended Reading


CLASS 6: Case study: Nitrogen pollution policy toolkit

Class meeting: Thursday, September 19th; guest lecturer: Prof. David Kanter

Readings


WEEK 4⁴: Green Paradox aka Temporal Leakage: Can environmental policy lead to more pollution?

Readings


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⁴ Apologies for the awkwardness of switching from “classes” to “weeks”. From here on out, our topics are in sync with weeks, each spanning Tuesday & Thursday classes in any one week.

**WEEK 5: How far how fast? aka What’s the ‘optimal’ carbon price?**

**Readings**


**Recommended Reading**

1. Lizza, Ryan, “As the World Burns,” *New Yorker* (3 October 2010).

**WEEK 6: How far how fast? aka It’s not over ‘til the fat tail zings.**

**Readings**


**WEEK 7: Tax pollution or subsidize renewables?**

**Read**


**Skim (abstract, introduction, and conclusion):**


**WEEK 8: Spatial leakage: What if companies just move abroad?**

**Readings**


**WEEK 9: Global problem, global solution: Kyoto, Copenhagen, Paris, etc?**

**Read**


**Skim**


**WEEK 10: Linkage of cross-country climate policies**

**Read**


**WEEK 11: Solar geoengineering is ‘nuts’, but ‘nuts’ compared to what?**

Readings


Recommended Reading

2. Fabre, Adrien and Gernot Wagner, “Risky geoengineering option can make climate mitigation agreement more likely,” *mimeo* (13 November 2019).

**WEEK 12: Moral hazard and climate policy (class 1) & geoengineering governance (class 2)**

Class 1: Tuesday, November 19th

Readings


Class 2: Thursday, November 21st (Guest lecture: Jesse Reynolds)

Readings

WEEK 13: Precautionary principle: a poor guide for policy!?  

Class meeting: Tuesday, November 26th

Readings

WEEKS 14 & 15: Bringing it all together: our environmental policy toolkit

Class 1: Tuesday, December 3rd

Readings
2. [Review readings from weeks 5 & 6.]

Class 2: Thursday, December 5th

Readings
3. [Review readings from weeks 7 & 8.]

Class 3: Tuesday, December 10th

Readings
2. [Review readings from weeks 9 & 10.]

Class 3: Thursday, December 12th

No additional readings

[Review readings from classes 1 through 5 and week 4.]
NYU Classes

This is the first time I’m offering this specific class. While many of the elements of the toolkit we are developing here are fixed, the topics are very much fluid. In fact, changes throughout the semester are likely—probably in conjunction with adjustments to readings and topics in ENVST-UA 450.006 Topics in Environmental Values & Society — Climate Politics: When Policy meets Reality.

All announcements, resources, and assignments will be delivered through the NYU Classes site.

Academic Integrity

Plagiarism results in failure in the class and referral to your academic dean. It includes: copying sentences or fragments from any source without quotes and references; not citing a source used in your papers; citing internet information without proper citation; presenting someone else’s work as your own; or inadvertently copying verbatim from any source. More detail can be found at http://cas.nyu.edu/page/academicintegrity. NYU offers academic support and tutoring at the University Learning Center: http://www.nyu.edu/cas/ulc; (212) 998-8085.

Moses Center for Students with Disabilities at NYU

Academic accommodations are available for students with disabilities. Please visit the Moses Center for Students with Disabilities (CSD) website and click on the Reasonable Accommodations and How to Register tab, or call or email CSD at (212) 998-4980 or mosescsd@nyu.edu for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

NYU’s Calendar Policy on Religious Holidays

NYU’s Calendar Policy on Religious Holidays states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify me in advance of religious holidays that might coincide with exams to schedule mutually acceptable alternatives.

Acknowledgments

This syllabus has evolved from climate and energy policy classes I have taught at various institutions, including Columbia, NYU Stern, and Harvard. Its first incarnation was largely based on Snorre Kverndokk and Knut Einar Rosendahl’s Energy Economics class taught at Johns Hopkins in Spring 2009. This current syllabus has benefited greatly from Richard Zeckhauser’s Analytic Frameworks for Policy class at Harvard, as well as from his mentorship and guidance over the years. Prior iterations have also taken some cues from Bill Hogan’s Energy Policy
Analysis class at Harvard, Paul Joskow’s former Energy Economics class at MIT, Rob Stavins’s Fundamentals of Environmental Economics and Policy class at Harvard, Erin Mansur’s former Energy Economics & the Environment class at Yale, Jim Stock’s U.S. Energy Revolution and its Implications seminar at Harvard, and valuable feedback from, among others, Joe Aldy, Rajeev Dehejia, Ken Gillingham, Matt Kahn, Katherine Rittenhouse, Steve Salant, Rob Stavins, Thomas Sterner, Martin Weitzman, Matthew Zaragoza-Watkins, participants in an OurEnergyPolicy.org discussion forum, and students at Columbia, NYU Stern, and Harvard who have taken versions of this course in the past. Thank you to all.

Anything seems off? Please let me know.