

## Climate Policy

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Climate policies can include technology requirements, emissions intensity standards, carbon taxes, cap-and-trade systems, subsidies for low-carbon technologies, and tariffs on imports of carbon-intensive goods. Learn about the economic rationales for and against these and other choices. The course starts with some basic environmental economics. We study the market failure known as externalities—when consumers or producers don't account for the costs their actions impose on others. Pollution is a prototype, and carbon pollution a specific case. Next we will describe ways to measure the monetary damage from pollution, and hence the benefit of abatement. That's difficult for current, local air pollution like smog and particulates, and even trickier when the pollutant is global and will affect people for centuries. We will discuss possible objectives for climate policy, including economic efficiency, employment, and environmental justice. The bulk of the course will then be spent analyzing existing and proposed environmental policies on the grounds of efficiency, cost-effectiveness, and equity. Applications will include the Inflation Reduction Act, the European Emissions Trading System, and recent efforts by the U.S. EPA to regulate carbon emissions from passenger vehicles and electric power plants.

**Objectives:** By the end of the course, students should be able to articulate the economic problems associated with climate change, describe various policies designed to address climate change, and distinguish between the goals of efficiency, cost effectiveness, and equity, and to evaluate climate policies in those terms.

**Prerequisite:** None.

**Text:** No great textbook covers climate policy directly. Many environmental economics texts have climate chapters, which is different in ways this class will make clear.

One inexpensive short book is *Environmental Economics: A Very Short Introduction*. (You can buy it on [Amazon](https://www.amazon.com) or from the GU bookstore [here](#).)

A longer version is *Markets and the Environment* by Nat Keohane and Sheila Olmstead. This is a nice readable guide, written by two key players in environmental policy. You can access the electronic version of this for free via the Georgetown Library, and key chapters will be distributed in Canvas.

**Office Hours:**

- TBA.

## Requirements:

1. **Occasional problem sets.** These will be group projects, where group membership is assigned by the instructor.
2. **Occasional unannounced short quizzes.** (Designed to be easy for students who have done some reading and attended class.)
3. **Occasional discussion questions in canvas.**
4. **Questions for guest speakers.** Each student will be required to submit a question for the occasional guest speaker.
5. **One in-class carbon trading game.**
6. **Two Case studies.** On the day that each is to be discussed in class, students prepare and *post online*. A 2-page “talking point” memo summarizing key features of the cases under analysis, and answering the decision question.  
These will be group projects. Group membership is assigned by the instructor.
7. **Two midterm exams.** In class.
8. **Final exam.**

**Grading:** There will be two grading schemes. I will use whichever yields the highest overall class score for each student.

- (a) Midterms 15% each; final 40%; all other work 30%.
- (b) Best midterm 25%; final 35%; all other work 30%. (Lowest midterm dropped.)

## Important Dates:

xx/xx	Midterm 1	In class
xx/xx	Midterm 2	In class
xx/xx	Final exam	12:30-2 pm

## Other class policies:

1. Successful completion of the course requires adherence to the standards of conduct outlined by the Georgetown Honor Code (<https://honorcouncil.georgetown.edu> ).
2. No late assignments will be accepted, and there will be no makeup midterms. If the midterm exam is missed, grading scheme (b) will be invoked automatically. The final exam is xx/xx, in person on campus.
3. Artificial Intelligence (AI). You are permitted (for this class) to use AI tools to help you find sources, find ideas, search for synonyms or alternative phrasing, and improve your writing. But you must acknowledge doing so. I strongly believe that *writing* is the best way to think and learn. Clear writing is a sign of clear thinking and takes work. If you depend on AI to generate submissions for this class, you will not learn the material well.

## Class Schedule, with Readings and Links

1. Economics 1
  - Hanna Ritchie *Not the End of the World* Chapter 1 (or just watch her [TED talk](#)).
  - Smith *Environmental Economics* Ch.1.
2. Environmental Economics
  - Smith *Environmental Economics* Chapter 2 and 4.
  - Keohane and Olmstead *Markets and the Environment* Ch.3.
3. Climate Economics
  - Smith. *Environmental Economics* Chapter 5.
  - Hsiang and Kopp “Economist’s Guide to Climate Change Science” 2018.
4. Integrated Assessment Models
  - Kotchen, Rising and Wagner. 2023. “The costs of “costless” climate mitigation” *Science*.
  - Rebuttal by Sills and Reply by Kotchen et al.
5. Social Cost of Carbon (SCC) or Greenhouse Gases (SCGHGs)
  - Rennert et al. 2022. “Comprehensive evidence implies a higher social cost of CO2” *Nature*.
  - Prest et al. 2024 “Equity Weighting Increases the Social Cost of Carbon” *Science*.
6. Policy 1: Carbon Pricing
  - Professor Hausman’s [video](#).
  - Smith. *Environmental Economics* Chapter 3.
  - Metcalf. 2020. “How to Set a Price on Carbon Pollution” *Scientific American*.
  - Check out the World Bank's [Carbon Pricing Dashboard](#).
7. In-class carbon trading game
8. Prices vs Quantities
  - Stavins. 2022. “The Relative Merits of Carbon Pricing Instruments: Taxes versus Trading” *Review of Environmental Economics and Policy*.
  - Keohane and Olmstead *Markets and the Environment* Ch.8.
9. Policy 2: Subsidies
  - Opinion: [Carrots before Sticks](#).
  - Try one of these two arguments for subsidies in the form of industrial policy:
    - David M. Konisky and Sanya Carley. 2021. “What we can learn from the Green New Deal” *JPAM*.
    - Rodrik “Green Industrial Policy” 2014. *Oxford Review*.

## Midterm #1 (9/30)

### 10. Policy 3: Intensity Standards

- Lawrence Berkeley National Laboratory “[U.S. State Renewables Portfolio & Clean Electricity Standards: 2024 Status Update.](#)”

### 11. Policy 4: Energy Efficiency

- Gillingham and Myers. 2024. "The Economics of Energy Efficiency" *Handbook*.

### 12. Energy efficiency continued

- Levinson (yes, that one) 2014. "California Energy Efficiency: Lessons for the Rest of the World, or Not?"

### 13. Inflation Reduction Act: Cars

- Bistline, Mehrotra, and Wolfram. 2023. “Economic implications of the climate provisions of the Inflation Reduction Act.” *Brookings Papers on Economic Activity*.
- Chad Bown. 2023. “Industrial Policy for Electric Vehicle Supply Chains” Peterson Institute for International Economics.”
- And for fun listen to the related [podcast](#).
- Max Maydanchik GU '19 and coauthors. "Will the IRA's 'Buy American' Tilt help US Electric Vehicles."

### 14. The IRA: Electricity

- Borenstein and Bushnell. 2022. “Do Two Electricity Pricing Wrongs make a Right? Cost Recovery, Externalities, and Efficiency Download Do Two Electricity Pricing Wrongs make a Right? Cost Recovery, Externalities, and Efficiency” *American Economic Journal: Economic Policy*.
- Holland, Kotchen, Mansur, and Yates. 2022. “Why marginal CO2 emissions are not decreasing for US electricity” Download Why marginal CO2 emissions are not decreasing for US electricity” *Proceedings of the National Academy of Science*.

### 15. The EPA's Power Rule

- The EPA’s [Fact Sheet](#) (short).
- [Regulatory Impact Analysis](#) (long).

### 16. The EPA’s cars rule: GHG standards for vehicles in the US

- EPA’s [Fact Sheet](#) (short).
- [Regulatory Impact Analysis](#) (long).

### 17. Case Study #1: The IRA

## Midterm #2

## 18. Carbon Offsets

- Aldy and Halem. 2024. "The Evolving Role of Greenhouse Gas Emissions Offsets in Combating Climate Change" *REEP*.
- Class visitor: Calel. 2024. "Do Carbon Offsets Offset Carbon" *AEJ: Applied Economics*.

## 19. Voluntary Carbon Markets

- TBA

## 20. Green Jobs

- Gray, Shadbegian, Wolverton. 2023. "Environmental Regulation and Labor Demand: What Does the Evidence Tell Us?" *Annual Review of Resource Economics*.

## 21. Inequality and Climate Change

- World Inequality Lab Climate Inequality 2023 (Read Section 2)
- Colmer, Hardman, Voorheis "Disparities in PM2.5 air pollution in the United States" *Science* 2020.

## 22. Inequality and Climate Policy

- Borenstein and Davis. 2024. "The Distributional Effects of U.S. Tax Credits for Heat Pumps, Solar Panels, and Electric Vehicles."

## 23. International consequences

- Clausing and Wolfram. 2023. "Carbon Border Adjustments, Climate Clubs, and Subsidy Races When Climate Policies Vary." *Journal of Economic Perspectives*.
- Levinson. 2023. "Are Developed Countries Outsourcing Pollution?" *Journal of Economic Perspectives*.

## 24. Hydrogen

- Dunkel Werner and Levinson. 2024. "Greenhouse Gas Emissions from Grid-Connected Electricity Demand."

## 25. Adaptation

- Martinich and Crimmins "Climate damages and adaptation potential across diverse sectors of the United States " *Nature Climate Change* May 2019.
- (challenging, I'll explain) Carleton et al. "Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation Costs and Benefits" *Quarterly Journal of Economics* 2022.

## 26. Final Project (Group)

## Final Exam