

ECON 5805 A  
Topics in Environmental and Resource Economics  
Carleton University, 2025 Winter

Professor Maya Papineau

Winter 2025

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## Course Information

**Class Hours:** Fridays 11:35am-2:25pm  
**Class Delivery** In-person  
**Office Hours:** Thursdays 3-4pm  
**Office Location:** Loeb Building A808  
**Professor Contact:** Email: [maya.papineau@carleton.ca](mailto:maya.papineau@carleton.ca)

**Course Website:** [Brightspace](#) will be used for posting class slides, all the course announcements and email communication. Students are responsible for regularly checking the course Brightspace site to ensure that they are up to date with any announcements and have access to the documents posted.

## Course Objectives

This course is designed to familiarize PhD and Master's students with key contemporary research questions, analytic frameworks, and data sources in the fields of resource, energy and environmental economics. The focus will be on helping students identify promising research areas, honing the use of economics in a rigorous manner in written prose, and on developing insights to improve Canadian and global policy-making. While the class midterm will be a "traditional" economics exam that tests your understanding of the models and papers presented in class in the form of short questions and answers, the final exam will be an in-class essay format that will be described further below.

## Evaluation

Attendance: 10%  
Midterm Exam (in-class): 35%, February 28th  
Class presentation: 20%, March 14th  
Final Exam (in-class essay): 35%, April 4th

There is no make-up midterm. In the event that you cannot write the midterm, the weight of the midterm will be transferred to the final examination. I may request that you complete the self-declaration form, which is available on the [Registrar's Office website](#).

## Final Exam Essay

The objective of the final exam is to write an essay on a topic you have selected in advance, on an economic issue related to energy, natural resources and/or environmental externalities. The essay will be written by hand in-class on April 4th, the last day of class. Please inform me of your essay topic by e-mail **on or before Monday February 17th**.

**Class Presentation:** As part of the final exam preparation, you will choose a topic and research question of interest, then present a summary of current research in this area and an explanation of what further research question or questions remain open or unaddressed based on your assessment of the literature. You will present this in class on March 14th. The selected topic should be related to the essay you will write in the final exam on April 4th. The presentation should be in powerpoint or pdf format, and should take about 20 minutes. A short Q & A session will follow. Early in the semester I will post a separate list of topics to select from for the presentation and essay. You can also choose a different topic but please discuss with me beforehand if you choose to do so. I will also give more details on the presentation and final exam in class.

## Course Outline

Tentative list of papers to be covered in class. Those marked with an asterisk (\*) are required reading. The others are not required but will be covered in the lecture notes. Additional papers may be cited in the course slides.

### 1. Pricing, Efficiency and Market Power in Energy Markets

- S. Borenstein, "Time-Varying Retail Electricity Prices: Theory and Practice," Chapter 8 in *Electricity Restructuring: Choices and Challenges*, University of Chicago Press, 2005 \*
- S. Martin and N. Rivers, "Information Provision, Market Incentives, and Household Electricity Consumption: Evidence from a Large-Scale Field Deployment," *Journal of the Association of Environmental and Resource Economists*, vol.5 (1) 2018
- S. Borenstein, "Understanding Competitive Pricing and Market Power in Wholesale Electricity Markets," *The Electricity Journal*, 2000
- S. Borenstein, J. Bushnell and M. Lewis, "Market Power in California's Gasoline Market," CSEM WP-132, 2004

### 2. Energy Efficiency

- Hunt Allcott and Michael Greenstone, "Is There an Energy Efficiency Gap?," *Journal of Economic Perspectives*, American Economic Association, vol. 26(1), pages 3-28, Winter, 2012 \*
- K. Gillingham, R. Newell, and K. Palmer, "Energy Efficiency Economics and Policies," *Annual Review of Resource Economics*, 2009, Vol. 1, pp. 597-619.
- Jessoe, K., M. Papineau and D. Rapson, "Utilities Included: Split Incentives in Commercial Electricity Contracts," *The Energy Journal* 41(5): 271-297.
- Boomhower, J. and L.W. Davis, "A credible approach for measuring inframarginal participation in energy efficiency programs," *Journal of Public Economics*, 113:67-79, 2014.

### 3. Renewable Energy Markets and Externalities

- J. Bushnell and K. Novan, "Setting With The Sun: The Impacts Of Renewable Energy On Wholesale Power Markets" UCEI WP-292, 2018 \*
- S. Borenstein, "The Private and Public Economics of Renewable Electricity Generation" *Journal of Economic Perspectives*, Winter 2012.
- S. Borenstein, "The Market Value and Cost of Solar Photovoltaic Electricity Production," CSEM WP 176, 2008.

### 4. Randomized Controlled Trials in Environmental and Resource Economics (RCTs)

- H. Allcott, "Social Norms and Energy Conservation." *Journal of Public Economics*, Vol. 95, No 9-10 (October), p. 1082-1095. 2011 \*
- D. Byrne, A. La Nauze, and L. Martin "Tell Me Something I Don't Already Know," *Review of Economics and Statistics* 100 (3): 510-527, 2018.
- M. Greenstone and T. Gayer, "Quasi-experimental and experimental approaches to environmental economics," *Resources for the Future Discussion Paper* 07-22, 2007.

## 5. Program Evaluation of Climate Change and Pollution Policies

- Papineau, M., Rivers, N. and Yassin, K. "Household benefits from energy efficiency retrofits: Implications for net zero housing policy" *Carleton Economics Working Paper* CEWP 24-01 \*
- Christensen, P., Francisco, P., Myers, E., Shao, H. and Souza, M., "Decomposing the Wedge between Projected and Realized Returns in Energy Efficiency Programs," *The Review of Economics and Statistics* 105 (4): 798–817, 2023.
- Hahn, R., Hendren, N., R. D. Metcalfe and B. Sprung-Keyser, "A Welfare Analysis of Policies Impacting Climate Change," *NBER Working Paper* 32728.

## 6. Natural Resources' Contribution to GNP, The Natural Resource Curse

- Olewiler, N. "Canada's Dependence on Natural Capital Wealth: Was Innis Wrong?" *Canadian Journal of Economics*, 50:4,927-964, 2017. \*
- Keay, I. "The Engine or the Caboose? Resource Industries and Twentieth-Century Canadian Performance," *The Journal of Economic History*, 67(1):1-32, 2007.
- Van Der Ploeg, F. "Natural Resources : Curse or Blessing," *Journal of Economic Literature*, 49(2):366-420, 2011.

## 7. Measuring Natural Resource Scarcity

- J. Livernois, "On the Empirical Significance of the Hotelling Rule," *Review of Environmental Economics and Policy*, 3:22-41, 2009. \*
- Jacks, D.S., "From Boom to Bust: A Typology of Real Commodity Prices in the Long Run," *NBER WP* 18874, 2013.

## 8. Natural Resource Rents and Equalization

- Bernard, J.-T., "The Canadian Equalization Program: Main Elements, Achievements and Challenges," *The Federal Idea*, 2012. \*
- Bernard, J.-T. and M. Roland, "Rent Dissipation through Electricity Prices of Publicly Owned Utilities," *Canadian Journal of Economics*, 30(4b):1204-1219, 1997.

## Carleton Policies on Plagiarism, Resources and Academic Accommodations

You are responsible for reading and knowing the information about plagiarism, Carleton University resources, and academic accommodations found [HERE](#). It is your responsibility to read these policies.

## In-Class Policy on Artificial Intelligence

There is no restriction on the use of AI tools (eg. ChatGPT) in this course.

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