

Freshman Seminar 42H
U.S. Energy Policy and Climate Change

How we produce and use energy has major implications for the economy, energy security, and climate change. The U.S. “energy revolution” – nonconventional oil and gas production (fracking), increasing use of renewable energy, and reduced demand – has contributed to a sharp decline in U.S. oil imports, a 14% reduction in U.S. carbon dioxide emissions, a shift away from coal, and economic growth. With these technological and economic changes have come wild swings in national climate policy, as Obama-era regulatory and subsidy policies designed to shift from fossil fuels to renewables are replaced by Trump administration policies to promote and subsidize fossil fuel use and production. The course starts with a review of the U.S. energy sector, climate science, and climate economics including carbon pricing. The course then dives into four current policy issues: (1) debates about fossil fuels and renewables in the power sector, including the regulation of CO₂ emissions under the Clean Air Act; (2) biofuels policy; (3) fossil fuel extraction policy and the “keep it in the ground” movement; and (4) state and local climate policies. In each case we will evaluate the policy landscape with a focus on the economic and climate consequences. The conceptual framework for this course is economics (but no prior economics is assumed), a powerful tool for understanding market failures and for designing government policies that are efficient, effective, and appropriate.

Readings: The only required text is Nordhaus, W., *The Climate Casino: Risk, Uncertainty, and Economics for a Changing World*, Yale University Press, 2013. All other readings will be posted on the course Web site are available for public access on the Web.

Course requirements: Class participation, including in-class data exercises (Excel), one individual oral presentation (30 minutes) including presentation deck. The course is self-contained and assumes no prior knowledge, and no math above pre-calc.

Time and location: Monday 3-5, Littauer M-42 (Economics Dept. building, not HKS)

Course Schedule

Note: readings for the second half of the semester will be provided in a later draft.

1. Sept. 10: The changing energy landscape
 - Readings:
 - [U.S. Energy Information Administration, Annual Energy Outlook 2018](#) - “Overview/key takeaways” section.
 - Browse: US Energy Information Administration, “[Energy Explained](#)”

- EIA, "[Energy Sources have changed throughout the history of the United States](#)," *Today in Energy*, July 3, 2013
 - Richard Rhodes – Energy: A Human History, [podcast](#), Columbia Center for Global Energy Policy, May 28, 2018
2. Sept. 17: Climate change fundamentals
- Readings:
 - Nordhaus, W., *The Climate Casino: Risk, Uncertainty, and Economics for a Changing World*, Yale University Press, 2013; preface and Ch. 1-3
 - Wagner, Gernot and Martin L. Weitzman (2015), *Climate Shock: The Economic Consequences of a Hotter Planet*, Princeton University Press, Preface, Ch. 1, Ch. 2.
 - U.S. Energy Information Administration (EIA), "[US Energy-Related Carbon Dioxide Emissions in 2016](#)" (October 2017)
3. Sept 24: Carbon pricing 1: An economist's view of climate change: The Social Cost of Carbon
- Reading:
 - Nordhaus (2013), ch. 6-8, 12
 - Wagner and Weitzman (2015), Ch. 3.
 - Executive Order 13783, "Promoting Energy Independence and Economic Growth," [82 FR 16093](#)
 - Newell, Richard G. (Oct 2017), "[Unpacking the Administration's Revised Social Cost of Carbon](#)," Resources for the Future blog
 - Optional:
 - National Academy of Sciences (2017), "Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon," Summary, pp 5-20. *Note: register for free download [here](#).*
 - Julian Morris (March 2018), "[Climate Change, Catastrophe, Regulation, and the SCC](#)," Reason Foundation blog
 - Browse Climate Impact Lab [Web site on cost of climate change](#)
 - Browse Resources for the Future [Web site on its SCC project](#)
4. Oct. 1: Carbon pricing 2: Correcting market failures: Corrective taxes and cap-and-trade
- Readings:
 - Mankiw, N.G., "[Smart Taxes: An Open Invitation to Join the Pigou Club](#)," *Eastern Economic Journal* (2009), 35, p. 14-23.
 - Climate Leadership Council (2017), "The Conservative Case for Carbon Dividends," at <https://www.clcouncil.org/publications/>
 - Climate Leadership Council (2017), "A Winning Trade," at <https://www.clcouncil.org/publications/>
 - Gillingham, Kenneth and J.H. Stock (2018), "[The Cost of Reducing Greenhouse Gas Emissions](#)," forthcoming, *Journal of Economic Perspectives*.

- Optional:
 - Jensen, S., K. Mohlin, K. Pittel, and T. Sterner (2015), “An Introduction to the Green Paradox: The Unintended Consequences of Climate Policies,” *Review of Environmental Economics and Management* 9, 246-265.

Oct. 8: No class – Columbus Day

5. Oct. 15: Power sector 1: Overview; the Clean Power Plan and the Affordable Clean Energy plan
 - Readings:
 - Charles Kolstad, “[What is Killing the US Coal Industry?](#)” Stanford Institute for Economic Policy Research blog.
6. Oct. 22: Power sector 2: Legal aspects of the CPP and ACE; grid security and current DOE pricing reform proposals
 - Guest: **Joseph Goffman** (lead counsel at EPA for the Clean Power Plan)
7. Oct. 29: Transportation 1: Biofuels and the Renewable Fuel Standard
8. Nov. 5: Transportation 2: RFS reform; electric vehicles
 - Guest: **Brooke Coleman**, Executive Director, Advanced Biofuels Business Council
9. Nov. 12: Keep-it-in-the-ground? Supply side policies
10. Nov. 19: Administrative policy-making in a democratic society
 - Guest: **The Honorable Gina McCarthy**, Administrator of the EPA, 2013-2017.
11. Nov. 26: State and local climate policies
 - Guest: **Senator Mike Barrett**, Commonwealth of Massachusetts Senate; Chair, Massachusetts Senate Committee on Telecommunications, Utilities, and Energy.
12. Dec. 3: Energy-environmental policy looking forward