

Energy Economics and Policy
Harris School of Public Policy
PPHA 36921 – Spring Quarter, 2020

Instructor: Dr. Donnan Steele (donnansteele@gmail.com)
TA: [TBD]
Time: Monday evenings 5-7:50
Location: [TBD]

Course Description

This course introduces the economic, technological, and political forces that shape the global energy industry, the methods governments use to regulate the industry, and the business models that emerge. The course begins by framing the industry in its microeconomic context and uses that framework to explore the role of technology and innovation, global markets and geopolitics, and the regulation of externalities including climate change. The readings and coursework will use specific examples from the power, renewables, oil & gas, and environmental sectors from the United States and other select geographies to illustrate these forces in context. Students can tailor their final policy memo towards their topics of interest.

Prerequisites

Intermediate microeconomics
Introductory finance (including discounted cash flow valuation)

Interactions with the Instructors

The Instructor will both hold office hours by arrangement. The Instructor can be available the hour after class at Harris or Downtown during business hours the rest of the week. Please email him directly to arrange a meeting.

The Teaching Assistant will lead office hours by arrangement and scheduled review sessions during the week before problem sets are due.

ADA Student Accommodations

Any student who believes they may need assistance should inform the Harris Dean of Students office by the end of the first week of class. The Dean of Students office will coordinate any student accommodations directly with the instructor.

Student Responsibilities

- *Attendance.* Please contact the instructor directly if you expect to miss, arrive late to, or leave early from any session.
- *Class preparation.* You are expected to complete the readings ahead of the course and to be prepared for discussions.
- *Meeting deadlines.* Completion of all assignments by the indicated dates; no exceptions.
- *Individual work.* You should complete graded assignments on your own unless the assignment is explicitly assigned as a group project; work developed for other classes will not be accepted.
- *Academic integrity.* Adherence to the University's Academic Dishonesty Statement, included below.

Academic Dishonesty Statement

All University of Chicago students are expected to uphold the highest standards of academic Integrity and honesty. Among other things, this means that students shall not represent another's work as their own, use un-allowed materials during exams, or otherwise gain unfair academic advantage. All students suspected of academic dishonesty will be reported to the Harris Dean of Students for investigation and adjudication. The disciplinary process can result in sanctions up to and including suspension or expulsion from the University. In addition to disciplinary sanctions, I will impose a grade penalty for students who have committed academic dishonesty. The Harris policy and procedures related to academic integrity can be found at <https://harris.uchicago.edu/gateways/current-students/policies>.

The University of Chicago Policy on Academic Honesty & Plagiarism can be found at <https://studentmanual.uchicago.edu/academic-policies/academic-honesty-plagiarism/>.

Readings

Required Textbooks

Kneese, A.V., and J.B. Sweeney, 1993. *Handbook of Natural Resource and Energy Economics, Volume 3*. Elsevier. (KS) – chapters can be purchased individually online.

Viscusi, W. K., J. M. Vernon, and J.E. Harrington, 2018. *Economics of Regulation and Antitrust, 5th Edition*. MIT Press. (VHV)

Case Studies (available as a course packet at hbsp.harvard.edu)

Abdelal, R., G. Goldstein, and P. Apostolicas, 2019. *The United States and Russia: Gas Rivals in Europe?* Harvard Business School Press.

Alfaro, L., R.H.K. Vietor, and H. White, 2014. *The U.S. Shale Revolution: Global Rebalancing?* Harvard Business School Press.

Fermeth, A., and M. Loudermilk, 2017. *Environmental Defense Fund and the Leveraged Buyout of TXU*. Ivey Publishing.

Fetter, T., E. Snowberg, and R.M. Henderson, 2019. *The Leveraged Buyout of TXU: (B) Energy Future Holdings*. Harvard Business School Press.

Roberts, M. J., J. B. Lassiter, and R. Nanda, 2010. *U.S. Department of Energy & Recovery Act Funding: Bridging the “Valley of Death”* Harvard Business School Press.

Beach Reading (optional)

Braziel, E. Russell, 2016. *The Domino Effect: How the Shale Revolution is Transforming Energy Markets, Industries and Economies*.

Chernow, Ron, 2004. *Titan: The Life of John D. Rockefeller, Sr.*

Simmons, Matthew, 2005. *Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy*.

Yergin, Daniel, 2003. *The Prize: The Epic Quest for Oil, Money, and Power*.

Yergin, Daniel, 2011. *The Quest: Energy, Security, and the Remaking of the Modern World*.

Assignments

Assignment	Weighting	Due
Problem Set #1	20%	April 13, 5pm
HBS Cases	15%	April 20, May 4, and May 18, 5pm
Problem Set #2	20%	April 27, 5pm
Final Policy Memo proposal	–	May 11, 5pm
Policy Memo	15%	June 1, 5pm
Final Project	20%	June 8, 8:00pm
Class participation	10%	–

The *Problem Sets* will be distributed in class and will reinforce key elements of energy economics discussed in the first half of the course. If you work on these in groups, please indicate the names of the students you collaborated with at the top of the assignment; however, you should write your own solutions and perform calculations independently. Handwritten solutions can be handed in at the beginning of the class in which the assignment is due. Electronic versions (including scanned handwritten versions) may be uploaded or emailed to the TA.

The *Policy Memo* should be no more than 2 pages and should recommend to Saudi Arabia's oil minister a desired outcome for the May 25, 2017 meeting with supporting rationale. There will do doubt be rumors in the press about the likely outcome of the meeting by the time you write your memo; make sure to take your own position on what they should have done and to articulate why (and not simply reporting the Saudi's apparent position, which no doubt will be part fact and part positioning). In it, you should make a case for tangible policies that could be implemented weighing of the key economic, investment, and political issues. You should work on this alone. For reference, see "[Tips on Writing a Policy Memo](#)" by Peter J. Wilcoxon.

The *Case Studies* will be the partial focus of three classes. Each of you should read the case carefully and be prepared for active in class discussion including being able to summarize various aspects of the case and to work through any calculations out loud. You should also submit a 1 page write up of the case before class begins that addresses questions circulated the week prior.

The *Final Policy Memo* on a topic of your choosing is due at the end of the course and should be no longer than 5 pages. A 1 page or less overview of the topic and a high level outline of the key issues you plan to address will be due by May 11. The project should demonstrate mastery of the themes and material developed through the course. The Instructors will provide approval of the topic and any feedback on the structure of the project by the next class. The Final Project will be due at the end of the class timeslot during finals week.

There will be no final exam.

Course Agenda, Assignments, and Readings

I. March 30. Course Introduction & The Economics of Natural Monopolies

[No readings]

II. April 6. The Power Sector as a Natural Monopoly: Regulation and Deregulation

Assignments: Problem Set #1 distributed

* VHV, Chapter 10, 12, and 17 (pp. 669-683)

* Lazard's Levelized Cost of Energy Analysis – Version 13, November 2019

Griffin J. and S. Puller, “A Primer on Electricity and the Economics of Deregulation,” in *Electricity Deregulation: Choices and Challenges*, Griffin and Puller eds., Chicago: University of Chicago Press, 2005.

III. April 13. Technological Change: The Shale Revolution in Oil & Gas

Assignments: Problem Set #1 due (5:00 pm)

* Fermeth and Loudermilk (1st TXU Case Study)

* RBN Energy, 2016. “Born in the U.S.A. – The Potential for Duplicating America’s Shale Success Overseas”

IV. April 20. The Age of Cheap Natural Gas

Assignments: 1-page write-up on the Case Study (5:00pm); Problem Set #2 distributed

* Fetter et al. (2nd TXU Case Study)

V. April 27. The Economics of Depleting Resources & The Oil Sector Example

Assignments: Problem Set #2 due (5:00 pm)

* KS, Chapter 17 (pp. 759-771 and 779-789)

* VHV, Chapter 17 (pp. 683-698)

VI. May 4. Monopolies in Energy: Managing Undersupply and Abundance

Assignments: 1-page write-up on the Case Study (5:00pm)

* Abdelal et al. (Gas Rivals Case Study)

* VHV, Chapter 5

* KS, Chapter 17 (pp. 834-847)

VII. May 11. The Economics of Externalities & The Renewable Energy Marketplace

Assignments: Final Project proposal due (5:00pm)

* VHV, Chapter 21

Pinner, D. and M. Rogers, "Solar Power Comes of Age: How Harnessing the Sun Got Cheap and Practical. *Foreign Affairs*, March/April 2015 Issue.

VIII. May 18. The Government's Role in Innovation: the U.S. Stimulus Program

Assignments: 1-page write-up on the Case Study (5:00pm)

* Roberts et al. (Recovery Act case study)

[May 25 is Memorial Day – No Class]

IX. June 1. Regulating Environmental Externalities: Acid Rain, Carbon, and Climate

Assignments: Policy Memo due (5:00 pm)

* Rickover, H., 1957. "Energy Resources and Our Future," Speech to the Minnesota State Medical Association.

* McKinsey & Company, 2007. *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?*

[Finals Week (6/8/17) – No Class]

Assignments: Final Project Due (8:00pm)