

Energy in US History

HON 2973 005

Fall 2015

Dr. Robert Lifset

“What is a government without energy? And what is a man without energy? Nothing--nothing at all. What is the grandest thing in "Paradise Lost"--the Arch-Fiend's terrible energy! What was the greatest feature in Napoleon's character? His unconquerable energy! Sum all the gifts that man is endowed with, and we give our greatest share of admiration to his energy. And today, if I were a heathen, I would rear a statue to Energy and fall down and worship it!”

Mark Twain to Orion Clemens, June 1860

“I SING the Body electric” Walt Whitman, *Leaves of Grass*, 1867

“Dear future generations, please accept our apologies. We were roaring drunk on petroleum.”
Kurt Vonnegut

This course uses the prism of energy to examine the history of the United States from the colonial period to the present. We will consider how energy has affected, and is affected by, American society, culture, science and technology, politics, diplomacy, and the environment.

Four broad, thematic questions will recur throughout the semester. First, how has increasing energy use transformed American social life, the economy, and politics? Second, how and why has the United States (and the world) come to rely on different forms of energy over time? What are the conditions that produce energy transitions? Third, what are the relationships between energy consumption and environmental change? And finally, how did the United States grow to be the largest consumer of energy in the history of the world? Addressing these questions will reveal the fundamental ways in which energy has shaped American history.

Requirements

1. Active class participation and attendance; 2. Website; 3. Five reaction papers; 4. Mid-term and Final

1. Class participation: This is a challenging course in which regular attendance is essential to successful completion. Assignments depend heavily upon material treated in class and class discussion. Moreover participation in class will prepare you for the assigned readings. Read the texts *actively* making note of what you like and dislike, where you agree and disagree. Think hard and critically about the readings and bring your thoughts and questions to class. Attendance is mandatory and impacts the participation grade. Your attendance grade is derived from the percentage of classes you attend.

2. Website:

You will work in groups of three to research and write a webpage devoted to a topic in energy history. A list of possible topics will be provided. But as you read through the semester you should stay alert to individuals, events, and primary sources that interest you that may serve as possible topics. Each group will present their website during our last class.

3. Reaction papers:

You will submit five reaction papers over the course of the semester. These essays should be between 2 and 3 double-spaced typed pages in length and they will focus on the essay prompt(s) posted on the “D2L” website for this course. Your papers should be grammatically and syntactically correct and without typographical errors. They should also feature an introduction and conclusion, and demonstrate familiarity with class materials.

PRIOR TO THE MIDTERM EXAM, you are expected to have submitted *at least TWO* of your Reaction Papers.

OVER THE COURSE OF THE SEMESTER, you must see the writing assistant *on at least two occasions*. (You will lose one percentage point from your final grade for each meeting short of the required minimum of three meetings.) You may see them more often than that. Please note that the writing assistant has no input on the *grading* of papers. The writing assistant provides assistance with structure, style, clarity, coherence, grammar and spelling as well as other relevant matters.

Reaction papers are due on the Thursday of the week we spend discussing that reading assignment. All papers should be uploaded to the drop-box of the course website. Your first reaction paper should be uploaded to the “Reaction Paper #1” folder. Your second reaction paper to the “Reaction Paper #2” folder and so on. If the paper is a draft designed for the writing tutor please indicate that in the saved title of the document. Professor Lifset does not open drafts. Do not upload a draft unless you intend to see the writing tutor. If you use the writing tutor the final draft of that reaction paper is due one week after submission of the draft. If you elect not to use the writing tutor the final draft is due on the Thursday of the week in which we discuss that reading.

4. Mid-term and Final papers: You will have seven days to complete each five-page paper. Each paper will require you to draw upon the material from one section of the course. You are encouraged to use the texts and your class notes. Papers will be graded for presentation (spelling, grammar etc.) as well as content. Your answer should be roughly five double-spaced typed pages in length. The mid-term is due on Friday, March 11. The final paper must be emailed by noon, Friday May 13.

Grading: Your written work will be graded according to the following criteria: 1. Coherence of argument. 2. Extent and nature of supporting evidence. 3. Structure. 4. Style. 5. Presentation (grammar, spelling, layout etc.). 6. Creativity/originality of thought.

Grade Breakdown:

Participation	15%
Website	15%
Five short reaction papers	20%
Mid-term	25%
Final	25%

Learning Outcomes:

By the end of this course, students will be able to:

- Think critically about the relationships between energy and American political, social, technological, diplomatic and environmental history from the colonial era to the present
- Describe various energy transitions, their historical impact and the conditions that made them possible
- Relate significant historical trends regarding American energy policy and politics both in the past and the present
- Gain a basic understanding of American energy history

Required Texts

De La Pena, Carolyn Thomas. *The Body Electric: How Strange Machines Build The Modern American*. New York: NYU Press, 2003. 978-0814719831

Freeberg, Ernest. *The Age of Edison: Electric Light And The Invention Of Modern America*. New York: Penguin Press, 2013.978-0143124443

Huber, Matthew T., *Lifeblood: Oil, Freedom, And The Forces of Capital*. Minneapolis: University of Minnesota Press, 2013. 978-0816677856

Nye, David. *Consuming Power, A Social History of American Energies*. Cambridge: The MIT Press, 1998.978-0262640381

Schedule

Part I: Introduction

Introduction

Tuesday, January 19

Energy in Early America: Muscle, Water & Wood

Thursday, January 21

David Nye, *Consuming Power*, pp. 1-12

Martin Melosi, *Coping With Abundance*, pp. 3-13

Tuesday, January 26

David Nye, *Consuming Power*, pp. 15-68

Vaclav Smil, *Energy in Nature And Society*, 147-202

Thursday, January 28

Ann Greene, *Horses at Work*, pp. 1-42, 164-199, 244-279

From the Organic to the Mineral: The World of Fossil Fuels - Coal

Tuesday, February 2

Jones, *Routes of Power*, pp. 1-89

Thursday, February 4

Nye, *Consuming Power*, pp. 71-154

Tuesday, February 9

Shulman, *Coal & Empire*, pp. 125-228

The Ascent of Oil

Thursday, February 11

Jones, *Routes of Power*, pp. 89-160

Daniel Yergin, *The Prize*, pp. 11-55

Tuesday, February 16

Daniel Yergin, *The Prize*, pp. 78-113, 207-228, 244-259

Thursday, February 18

Daniel Yergin, *The Prize*, pp. 305-388, 391-408, 472-475, 535-537, 541-554, 558-560, 567-574

Something New Under the Sun: Electricity

Tuesday, February 23

Ernest Freeberg, *The Age of Edison*, pp. 1-107

Thursday, February 25

Ernest Freeberg, *The Age of Edison*, pp. 108-214

Tuesday, March 1

Ernest Freeberg, *The Age of Edison*, pp. 215-311

Thursday, March 3

Jones, *Routes of Power*, 161-239

Electricity & the Body

Tuesday, March 8

De La Pena, *The Body Electric*, pp. 1-137

Thursday, March 10

De La Pena, *The Body Electric*, pp. 137-221

Friday, March 11: MID-TERM DUE

Tuesday, March 15 SPRING BREAK

Thursday, March 17 SPRING BREAK

The Growth of Demand

Tuesday, March, 22

David Nye, *Consuming Power*, pp. 157-215

Owen Gutfreund, *20th Century Sprawl*, Introduction and chapter 1, pp. 1-59

Nuclear Weapons & Nuclear Power

Thursday, March 24

Joseph Cirincione, *Bomb Scare*, chapters 1-3, pp. 1-46

J. Samuel Walker, "The Nuclear Power Debate of the 1970s" in Lifset ed. *American Energy Policy in the 1970s*, pp. 221-254

Fossil Fuel America

Tuesday, March 29

Mathew Huber, *Lifeblood*, pp. 1-95

Thursday March 31

Mathew Huber, *Lifeblood*, pp. 96-169

The Energy Crisis of the 1970s

Tuesday, April 5

Jay Hakes, *A Declaration of Energy Independence*, chapters 1-2, pp. 11-70

Robert Lifset, "A New Understanding of the American Energy Crisis of the 1970s" *Historical Social Research* 39 (2014) 4, 22-42

Global Warming

Thursday, April 7

Spencer Weart, *The Discovery of Global Warming*, selections.

Fracking

Tuesday, April 12

Guest Speaker: Dr. Kyle Murray, Oklahoma Geological Survey

Rivka Galchen, "Weather Underground: The Arrival of Man-Made Earthquakes" *The New Yorker*, April 13, 2015.

Thursday, April 14- NO CLASS

Alternative Energy

Tuesday, April 19

Alex Madrigal, *Powering the Dream*, Introduction and chapters 1-9, pp. 1-68

Thursday, April 21

Alex Madrigal, *Powering the Dream*, chapters 10-20, pp. 69-198

Tuesday, April 26

Alex Madrigal, *Powering the Dream*, chapters 21-27, pp. 199-278

Oil, War and Website Presentations

Thursday, April 28

Toby Craig Jones, "America, Oil, and War in the Middle East" *Journal of American History* (2012), 99 (1): 208-218.

Website Presentations

Tuesday, May 3 NO CLASS- READING WEEK

Thursday, May 5 NO CLASS- READING WEEK

FINAL DUE NOON, FRIDAY, MAY 13

Bibliography

- Cirincione, Joseph. *Bomb Scare, The History and Future of Nuclear Weapons*. New York: Columbia University Press, 2008.
- De La Pena, Carolyn Thomas. *The Body Electric: How Strange Machines Build The Modern American*. New York: NYU Press, 2003.
- Freeberg, Ernest. *The Age of Edison: Electric Light And The Invention Of Modern America*. New York: Penguin Press, 2013.
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- Gutfreund, Owen. *20th Century Sprawl, Highways and the Reshaping of the American Landscape*. Oxford: Oxford University Press, 2004.
- Hakes, Jay. *A Declaration of Energy Independence, How Freedom from Foreign Oil Can Improve National Security, Our Economy, and the Environment*. Hoboken: John Wiley & Sons Inc., 2008.
- Jones, Christopher. *Routes of Power: Energy and Modern America* Cambridge: Harvard University Press, 2014.
- Huber, Matthew T., *Lifblood: Oil, Freedom, And The Forces of Capital*. Minneapolis: University of Minnesota Press, 2013.
- Jones, Toby Craig. "America, Oil, and War in the Middle East" *Journal of American History* (2012), 99 (1): 208-218.
- Lifset, Robert. "A New Understanding of the American Energy Crisis of the 1970s" *Historical Social Research* 39 (2014) 4, 22-42
- Madrigal, Alex. *Powering the Dream, The History and Promise of Green Technology*. New York: Da Capo Press, 2011.
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- Nye, David. *Consuming Power, A Social History of American Energies*. Cambridge: The MIT Press, 1998.
- Shulman, Peter. *Coal & Empire: The Birth of Energy Security in Industrial America*. Baltimore: Johns Hopkins University Press, 2015.
- Smil, Vaclav, *Energy in Nature And Society: General Energetics of Complex Systems*. Cambridge: The MIT Press, 2008.
- Walker, J. Samuel. "The Nuclear Power Debate of the 1970s" in Lifset, Robert ed. *American Energy Policy in the 1970s*. Norman: University of Oklahoma Press, 2014.

Weart, Spencer. *The Discovery of Global Warming*

Yergin, Daniel. *The Prize, the Epic Quest for Oil, Money & Power*. New York: Free Press, 1991.

A Word on Plagiarism from "A Student's Guide to Academic Integrity at the University of Oklahoma" (<http://www.ou.edu/provost/integrity/#p>)

What is PLAGIARISM?

Here is OU's basic assumption about writing: all written assignments show the student's own understanding in the student's own words.

That means all writing assignments, in class or out, are assumed to be composed entirely of words generated (not simply found) by the student, except where words written by someone else are specifically marked as such. Including other people's words in your paper is helpful when you do it honestly and correctly. When you don't, it's a form of academic misconduct called plagiarism. Within the academic community and specifically at the University of Oklahoma, the following rules apply:

1. **IT IS PLAGIARISM TO COPY WORDS AND PRESENT THEM AS YOUR OWN WRITING.** It is the worst form of plagiarism to copy part or all of a paper from the Internet, from a book, or from another source without indicating in any way that the words are someone else's. To avoid this form of plagiarism, the paper must **BOTH** place the quoted material in quotation marks **AND** use an acceptable form of documentation to indicate where the words come from.
2. **IT IS PLAGIARISM TO COPY WORDS, EVEN IF YOU GIVE THE SOURCE, UNLESS YOU ALSO INDICATE THAT THE COPIED WORDS ARE A DIRECT QUOTATION.** Simply documenting the source in a footnote or bibliography isn't good enough. You must also indicate that the words themselves are quoted from someone else. To avoid this form of plagiarism, put all quoted words in quotation marks or use equivalent punctuation.
3. **IT IS PLAGIARISM TO COPY WORDS AND THEN CHANGE THEM A LITTLE, EVEN IF YOU GIVE THE SOURCE.** Repeating someone else's writing in different words so it's not a direct quotation is called "paraphrasing." Paraphrasing is fine when you indicate the source and the new expression is actually your own. When it's not -- when the expression remains substantially similar to the source as a whole or in one of its parts -- it's plagiarism.

Even if not specifically prohibited by the instructor, "writing" a paper by copying words and then altering them violates OU's basic assumption about writing and may easily result in a charge of academic misconduct. To count as "your own words," your paper must be so significantly different from your sources that a reasonable reader would consider it a new piece of writing. If it's not -- if "your writing" is substantially similar to somebody else's where individual variations would be expected, it's plagiarism.

4. **EVEN IF YOU EXPRESS THEM IN YOUR OWN WORDS, IT IS PLAGIARISM TO PRESENT SOMEONE ELSE'S IDEAS AS YOUR OWN.** It is plagiarism to present someone else's original arguments, lines of reasoning, or factual discoveries as your own, even if you put the material in your own words. To avoid this form of plagiarism, cite the source.

Then we follow the path to the early scientists who discovered radioactivity. Finally, we reach modern-day use of atoms as a valuable source of energy. This pamphlet also includes a detailed chronology of the history of nuclear energy and a glossary. We hope the glossary will explain terms that may be new to some readers and that studying the chronology will encourage readers to explore the resources listed in the bibliography. It is human nature to test, to observe, and to dream. The history of nuclear energy is the story of a centuries-old dream becoming a reality. Ancient Greek philosophers first developed the idea that all matter is composed of invisible particles called atoms. The word atom comes from the Greek word, atomos, meaning indivisible. Energy in the United States comes mostly from fossil fuels: in 2010, data showed that 25% of the nation's energy originates from petroleum, 22% from coal, and 22% from natural gas. Nuclear energy supplied 8.4% and renewable energy supplied 8%, mainly from hydroelectric dams and biomass; however, this also includes other renewable sources like wind, geothermal, and solar.