

## **BST 445: POLITICAL ECONOMY OF ENERGY (Winter 2012)**

Tuesdays and Thursdays 11 am - 1 pm in UWBB-240

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Office Hours: Mondays and Wednesdays 11:30 am - 1 pm,  
Thursdays 10-11 am, 1:15 - 2:00 pm, and by appointment

### **Overview**

This course explores the back story of technology, economics, and politics shaping the energy policy debate in the U.S. What are the main factors governing availability and price of energy sources? What are the prospects for renewable energy? Should nuclear energy be an important part of the future energy mix? How has the energy policy framework evolved since the oil shocks of the 1970s, and why? What policy tools does the government use to promote new technologies, improve energy security, and encourage sustainable production and consumption of energy? How should these tools be assessed? What are the objectives of energy policy? And how should those objectives be achieved? Shedding light on these questions requires an interdisciplinary approach that cuts across sciences, engineering, business and economics, policy and politics.

The course begins with the concept of energy and its measurement, followed by the role of energy in human history and an overview of current patterns of energy production and consumption. It moves on to probe current prospects and problems in the oil, natural gas, coal, and nuclear energy sectors. Sections are devoted to the politics of oil and natural gas, with case studies of peak oil and the controversial new practice of “fracking” for natural gas, as well as the prospects for nuclear power in the aftermath of the tsunami and explosions that rocked the Fukushima nuclear plant in Japan. The potential for wind, solar, and other renewable energy sources is explored, followed by analysis of the politics behind the recent failures in the US to pass comprehensive energy and climate legislation. Looking back on the massive oil spill in the Gulf of Mexico in 2010 and last year’s nuclear plant accident in Japan, we close by asking why the policy framework in the US has evolved as it has, whether it is serving the country well, whether there’s a need to reform it.

The intended audience consists of undergraduate and graduate students interested in the science, politics, and economics of energy policy with a focus on the US. Students should expect to read books and articles drawn from several disciplines, including science and engineering, politics, law, and economics, and be prepared to conduct a substantial research project on a policy question or problem related to energy. The course will be run as a small seminar, with most class time dedicated to discussion of the readings. The instructor will also give presentations that elaborate on or augment the reading. In the final class meetings, students will give presentations of their own projects.

## Learning Objectives

1. Be able to evaluate energy technologies on the basis of their scientific, economic, and technological merits, as well as on their potential to contribute to broad societal goals such as mitigating global warming, alleviating poverty, improving energy security, and promoting sustainable development.
2. Understand opportunities and constraints associated with different energy resources and technologies, including fossil fuels, nuclear, wind, solar, and biofuels, and appreciate the different political dynamics surrounding each technology.
3. Understand the political forces that shape, and often frustrate, energy policy making in the U.S.
4. Develop capacity to identify, define, and analyze a policy problem; propose policy solutions; and communicate results orally and in writing.

## Textbooks and Other Resources

The following textbooks are available for purchase in the UWB Bookstore:

1. Michael J. Graetz, *The End of Energy: The Unmaking of America's Environment, Security, and Independence* (The MIT Press, 2011)
2. Hewitt D. Crane et al, *A Cubic Mile of Oil: Realities and Options for Averting the Looming Global Energy Crisis* (Oxford University Press, 2010)

Additional readings will be posted as needed on Blackboard (<http://bb.uwb.edu>)

Students will need to self-enroll in Blackboard during the first week of the quarter. Instructions for doing so, along with other tutorials, can be found here:

<http://www.uwb.edu/learningtech/help/how-to/bb-student>

Apart from the texts and readings noted in the schedule below, students should stay abreast of the latest news on energy science, technology, business, and policy. Good general sources include the New York Times, Wall Street Journal, The Economist, Business Week, and Technology Review. A frequently updated web source specific to energy is Renewable Energy World.com (<http://www.renewableenergyworld.com/rea/home>).

I may occasionally post news items from these or other sources to Blackboard for us to read and discuss.

## Requirements

**Class participation** (20 percent of course grade): The course will be conducted as a small seminar. This means that most of our class time will be spent discussing the readings and topics. In a seminar we learn through active listening and engagement with fellow students and the instructor. Prepare for classes by doing all the reading assigned for that day; bring it with you to class so that it's handy in case you need it for an in-class activity. Expect most class meetings to feature an individual or small group exercise. This could take various forms, including a free-write response to a question I pose, working individually or in small groups to answer questions I distribute or write on the board, staging an impromptu debate, and giving informed oral responses to questions from me or other students. Sharing news with the class is also encouraged.

**Presentation on readings** (10 percent of course grade): You will have two opportunities (more or less, depending on the number of students in the class) to lead class discussion on the day's assigned topic. This will involve a roughly 5-minute opening statement that outlines the key points in the reading and your thoughts about it, followed by a 15-20 minute Q&A session in which you lead the rest of us in a discussion of the topic. Your task will be to pose relevant questions, respond to points raised by fellow students or the instructor, and sustain the discussion. Prepare these questions in advance, along with notes to help you with the opening statement, and submit them to me afterward.

**Homework** (30 percent of course grade): Check the "Assignments" section of Blackboard every Friday after 5 PM to find a set of study questions and/or notes for the following week's reading. Each assignment will be oriented toward the topics and readings coming up the following week. You may be asked to give short answers to a set of questions, summarize or respond to one of the readings, look up and analyze data, prepare a short oral presentation for class, or a combination of exercises. These will normally be collected (hardcopy only!) at the beginning of class **the following Thursday**. All work must be typed and submitted in hard copy; no emailed work will be accepted.

**Research Paper** on a topic related to energy and public policy (40 percent of course grade): The final deliverable is a 12-15 page report (15-20 pages for graduate students), double-spaced with Times New Roman 12-point font, and with citations/bibliography in APA format. The final draft will be submitted electronically **by 5 pm March 12**. You will give a formal 15-minute presentation of your work at one of the last two class meetings. Further guidelines for the paper and presentation will be provided.

A statement of the topic, with explanation of why you chose it and a list of sources you used in defining it (should be at three or four articles!), will be submitted electronically no later than **5 pm Friday January 27**. A draft of a substantial section of the paper, not less than 3 or more than 5 pages--complete with citations--will be submitted electronically for me to review no later than **5 pm Friday February 24**.

In choosing a topic, consider the subjects and readings included on the syllabus. Your paper should be inspired by, and it should be an elaboration upon, something you came across in connection with the subject matter from the course. For example, perhaps you are curious about President Jimmie Carter's approach to ending the energy crisis that ultimately sank his presidency. What energy policy did he pursue? How did he work with Congress to pass it? Was he successful? Why or why not? What were the sources of ideas behind his policies? How did he communicate his ideas to the American people?

If you're more interested in the present, your topic might be the Obama Administration's energy policy. What are his Administration's goals with respect to energy? Why did Congress fail to pass a comprehensive energy/climate bill in 2009-2010, even though the House had passed its own version (the so-called Waxman-Markey Bill)? What part did President Obama play in the process? What theories could explain the failure to pass such legislation, even though the Democrats controlled both Executive and Legislative Branches? What are the prospects for an energy bill in the near future? Start your

research by going to the White House web site and looking under “energy.” You’ll find a wide range of policy initiatives, any one of which could serve as the focus of a paper.

Still another possibility is to choose a specific energy technology--say, wind power--and analyze it in terms of the state of the technology, the global competitive environment for wind turbine manufacturers, its strengths and limitations as an energy source, and prospects that it will become a significant part of the energy mix in the US. What has to happen in order for this resource/technology to take off? What policies are federal and state governments pursuing with respect to this technology? What should they be doing? There are lots of possible topics here, including “fracking” of natural gas, deepwater drilling for oil, the status and prospects of batteries and/or other forms of energy storage, the Three-Mile Island nuclear accident and its effects on nuclear power development in the US, what really happened in Fukushima and the effects it’s having on nuclear power around the world, the causes of the Deepwater Horizon explosion and oil spill in the Gulf of Mexico, the “smart grid” and the future of the public utility corporation in generating and transmitting electric power, the future of coal (does it have one?) etc.

### **Policies**

**GRADING:** Grades are recorded on a 4-point scale, in accordance with UW policy. Tests and problem sets may be graded on a 100-point scale and converted to the 4-point scale using the following conversion: 99-100=4.0, 97-98=3.9, 95-96=3.8, 93-94=3.7, 91-92=3.6, 90=3.5, 89=3.4, 88=3.3, 85=3.0, 82=2.7, 80=2.5. More information on the UW grading system can be found here: [http://www.washington.edu/students/genocat/front/Grading\\_Sys.html](http://www.washington.edu/students/genocat/front/Grading_Sys.html).

**LATE ASSIGNMENTS:** Late assignments will be docked half a grade point for each day after the due date unless a student has a compelling reason and has consulted with me in advance, or has met with an unforeseeable emergency. Barring the sudden onset of illness or a family emergency, failure to appear for a scheduled exam will result in a grade of zero on that exam unless prior arrangements have been made to take the exam at a different time. Missed classwork may be submitted late at my discretion and only if a student has a compelling reason for having missed a class meeting. Let me know in advance if you plan to miss a class; if your reason is valid, I’ll let you know how you can make up for the missed work.

**INCOMPLETES:** University rules state that “an incomplete is given only when the student has been in attendance and has done satisfactory work until within two weeks at the end of the quarter and has furnished proof satisfactory to the instructor that the work cannot be completed because of illness or other circumstances beyond the student’s control.”

**CLASSROOM CONDUCT:** I expect all students to arrive on time, listen and work quietly (unless an activity requires collaboration with other students), ask questions relevant to the subject at hand, and treat others with thoughtfulness and respect. Be critical of and judge arguments and ideas, not people. Students that behave in a manner disruptive to the learning environment will be dismissed from the classroom.

1. **Laptops:** Laptops and other portable electronic devices are not to be used in class unless I give students explicit permission to use them.
2. **Participation:** Student participation is an important part of the learning experience. However, to maintain a respectful and inviting environment in the classroom, students should speak only after raising their hands and being acknowledged by the instructor or discussion leader. The instructor may also randomly call upon students to answer a question or render an opinion. Informed opinions, backed by reasoned argument, data, or both, are welcome. Students should expect to have their statements, arguments, and opinions challenged both by fellow students and the instructor.

**DISABILITY ACCOMMODATIONS:** Accommodation for disabled students is a campus priority. If you believe that you have a disability and would like academic accommodations, please contact Disability Support Services at 425.352.5307, 425.352.5303 TDD, 425.352.5455 FAX, or at [dss@uwb.edu](mailto:dss@uwb.edu). Further information may be found here: <http://www.uwb.edu/student-services/dss>.

**ACADEMIC INTEGRITY:** See <http://www.uwb.edu/student-services/academic-conduct> for crucial information regarding academic integrity. The library also has a useful website with resources at <http://libguides.uwb.edu/ai>. You are responsible for knowing what constitutes a violation of the University of Washington Student Code, and you will be held responsible for any such violations whether they were intentional or not. Be aware that plagiarism is a serious form of academic misconduct. Some rules of thumb: Never cut-and-paste material from a text or website without enclosing it in quotes and inserting a citation (and realize, too, that it's almost always better to paraphrase than to quote!); always ensure that a paraphrase is unmistakably made in your own words; and when in doubt, cite it! Also note that it is your responsibility to know what plagiarism is, and how to avoid it through the proper use of source material. The following reference will help you avoid common forms of plagiarism and hone your ability to recognize it when you see it: <http://libguides.uwb.edu/content.php?pid=87430&sid=691952>

**CLASS CANCELLATION AND INCLEMENT WEATHER POLICY:**

Should illness, inclement weather, or other unexpected event require me to cancel a particular class meeting, I will post an announcement to Blackboard at the earliest opportunity. Students can learn of campus operations status from the website or by calling the Campus Information Hotline 425.352.3333. You may also sign up with an alert system that will contact you via email or text message if classes are canceled. For more information on the alert process, please see <http://www.uwb.edu/alert>. Class activities will be rescheduled as needed.

**STUDENT SUPPORT SERVICES:**

**Library:** [www.uwb.edu/library](http://www.uwb.edu/library), 425-352-5340;

Policy Studies librarian Alyssa Deutschler (<http://library.uwb.edu/staff/deutschler/alyssa.html>) and Science and Technology librarian Rob Estes (<http://library.uwb.edu/staff/restes/>) will be happy to help you identify and obtain sources for your writing assignments.

**Writing Center:** [www.uwb.edu/writingcenter/](http://www.uwb.edu/writingcenter/), UW2-124, 425-352-5253;

**Quantitative Skills Center:** <http://www.uwb.edu/qsc>; UW2-131, 425-352-3170;

**Student Success and Career Services:** <http://www.uwb.edu/student-services/success-services>, 425-352-3776;

**Student Counseling Services:** <http://www.uwb.edu/student-services/counseling>, 425-352-3183.

## Schedule of Assignments and Reading

- Jan 3**      Course Introduction
- Jan 5**      Defining and Measuring Energy, and Establishing its Salience as a Policy Issue  
*Cubic Mile of Oil* Chapter 1  
David MacKay, *Sustainable Energy Without the Hot Air*, pp. 5-16 (Blackboard)  
Roger Pielke, Jr., *The Climate Fix*, Chapter 3 (“Decarbonization of the Global Economy”) (Blackboard)
- Jan 10**     Historical and Current Patterns of Energy Use  
*Cubic Mile of Oil*, Chapter 2 (all) and 3 (pp. 31-41, 54-70)  
National Academy of Sciences, *Electricity from Renewable Resources*, Chapter 1 (Blackboard)  
U.S. Energy Information Administration, *Monthly Energy Review*, December 2011, Excerpts (Blackboard)
- Jan 12**     Oil  
*Cubic Mile of Oil*, Chapter 5 (pp. 85-101)  
Daniel Yergin, *The Quest*, Chapter 11 (“Is the World Running Out of Oil?”) (Blackboard)
- Jan 17**     Oil in American Politics  
*End of Energy*, Chapters 1 and 2  
Daniel Yergin, *The Quest*, Chapter 8 (“The Demand Shock”) (Blackboard)
- Jan 19**     Natural Gas  
*Cubic Mile of Oil*, Chapter 5 (pp. 85-113)  
Daniel Yergin, *The Quest*, Chapter 16 (“The Natural Gas Revolution”) (Blackboard)
- Jan 24**     Natural Gas in American Politics  
*End of Energy*, Chapter 6  
“Learning Too Late of the Perils in Gas Well Leases,” *New York Times*, December 1, 2011 (Blackboard)  
“Shale Gas Revolution,” *New York Times*, November 3, 2011 (Blackboard)  
“Natural Gas is not a Fracking Mess,” at <http://barryonenergy.wordpress.com/2011/12/15/shale-gas-is-not-a-fracking-mess/>
- Jan 26**     Coal and Coal’s Politics  
*Cubic Mile of Oil*, Chapter 5 (pp. 113-125)  
End of Energy, Chapter 5

- Jan 31**      Nuclear Power  
*Cubic Mile of Oil*, Chapter 6 (all)
- Feb 2**      Three-Mile Island, Fukushima, and the Politics of Nuclear Energy  
*End of Energy*, Chapter 4  
“24 Hours at Fukushima,” *IEEE Spectrum*, November 2011 (Blackboard)  
Amory B. Lovins, “Soft Energy Paths for the 21st Century,” 30 July 2011 (Blackboard)  
Charles D. Ferguson, “Think Again: Nuclear Power,” *Foreign Policy*, November 2011 (Blackboard)
- Feb 7**      From Earth Day to the Crisis of Confidence: Energy Politics in the 1970s  
*End of Energy*, Chapters 3, 7, and 8
- Feb 9**      Climate Science and the Joining of Energy and Climate Policies  
*End of Energy*, Chapters 9 and 10
- Feb 14**     Renewable Energy: Resources and Technologies  
*Cubic Mile of Oil*, Chapter 7 (all)
- Feb 16**     Government’s Role in Developing New Energy Technologies  
David Victor, *Global Warming Gridlock*, Chapter 5 (Blackboard)
- Feb 21**     The Politics of Tax and Subsidy Policies as Tools for Reducing Fossil Fuel Use  
*End of Energy*, Chapter 11
- Feb 23**     The Difficult Politics of Regulation and Cap-and-Trade Policies  
*End of Energy*, Chapter 12
- Feb 28**     Congressional Politics and the Fate of Clean Energy Legislation under the Obama Administration  
*End of Energy*, Chapter 13
- Mar 1**      The Deepwater Horizon Oil Spill and the Future of Energy Policy  
*End of Energy*, Chapter 14  
Other reading on this topic TBA
- Mar 6**      Student Presentations and Discussion
- Mar 8**      Student Presentations, Discussion, and Wrap-Up
- Mar 13**     Research Papers Due