



ENERGYLAW

LEB 380.31, PA 388K

TTh 12:30-2:00pm, GSB 3.104
Professor: [David Spence](#)

Course Description

This course is intended to introduce graduate students to the ways in which legal/regulatory systems affect the energy industry, and to the important economic and political concerns that underlie the regulation of production and sale of energy. The course will be comparative: that is, while much of our focus will be on the American regulatory system, we will consider regulatory regimes from other countries as well. We will study, among other things: (1) the structure of the energy industry itself; (2) the evolution of Anglo-American regulatory systems from traditional public utility rate regulation to the partially deregulated system of today; (3) the role of state ownership and privatization of energy services in the rest of the world; (4) regulation of production and other aspects of the industry upstream of wholesale and retail sales; and (5) the issue of “political/regulatory risk” as it affects investment in the energy industry.

Readings : The readings for this course will include Brennan et al., *Alternating Currents: Electricity Markets and Public Policy* (RFF 2002), readings linked from the syllabus, and handouts.

Electronic communication: The official syllabus for this course will be on the web. When changes are made in the syllabus, I will notify you in class or via email or both; however, it is your responsibility to consult the syllabus periodically and keep up to date with changes. In addition, the syllabus contains important cross-links to other web locations that you may find helpful. Unless I indicate otherwise, these links are not required readings. Nevertheless, I encourage you to visit them. I will communicate to you via email using the email list on blackboard for this course. If you are not enrolled as a user at the blackboard site, you will not receive group email communications.

Assignments:

- **Class participation** (including in-class exercises) comprises 20% of your course grade. Perfect attendance in class does not guarantee you an “A” in class participation; rather, you can maximize your class participation grade by coming to class having done the readings and prepared to discuss them, and by demonstrating creativity and effort in your participation in in-class exercises. Except when required during in-class exercises or by arrangement with the instructor, laptop use in class is prohibited. [More about participation grades.](#)
 - Each student will be responsible for preparing a briefing consisting of a **memo** and **in-class presentation** to classmates on energy issues. (See the syllabus for briefing topics). For each briefing, students must prepare an **individual memo**, and participate in an in-class **team presentation** (with one or two other students). The memo should be no more than 5 pages in length (single-spaced, exclusive of charts and graphs, 12-point regular-width font), with citations to authority (footnotes or parenthetical citations). [More on memo writing.](#) The presentation should be 20-25 minutes in length (not including Q&A), and will address the same topic as your memo. [More on presentations.](#) You will receive an individual grade on your memo, and a team grade on your presentation. The memo and presentation will each comprise 25% of your course grade. For more information about any of the individual briefing topics, please see me.
 - A final **take-home problem** will comprise the remaining 30% of your grade. The problem requires no additional research; rather it asks you to apply concepts from class and the readings to a hypothetical problem and produce a written response. It is essentially a take-home, single problem final exam.
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ASSIGNMENT SCHEDULE

DATE	TOPIC	ASSIGNMENTS	Additional Readings (not required)
	I. Foundation Material		
1/19	Historical Introduction and Introduction to Energy	<ul style="list-style-type: none"> • Please pick up (and read) two handouts for this class. They can be found outside Prof. Spence’s 	<ul style="list-style-type: none"> • EIA’s historical timeline of major developments energy industry • Glossary of energy terms

		office, CBA 5.254).	<p>from US DOE.</p> <ul style="list-style-type: none"> • How Power Distribution Grids Work • Conversion of energy and the laws of thermodynamics • History of electricity use in North America
1/21	Legal and Theoretical Basis for Regulation of Energy Goods and Services	<ul style="list-style-type: none"> • Brennan, Chps. 2 and 3 • Charles River Bridge case • Munn v. Illinois 	<ul style="list-style-type: none"> • A chronology of John D. Rockefeller's "South Improvement Co." scheme • PBS summary of the history of the "public vs. private" power debate in the U.S.
II. Primary Energy Sources and Externalities			
1/26	A. Water and the Rise of Hydropower	<ul style="list-style-type: none"> ○ National Hydropower Ass'n fact sheets ○ History of the Edwards Dam ○ Scenic Hudson Preservation Conference v. F.P.C 	<ul style="list-style-type: none"> ○ Basics of hydropower from TVA ○ How Hydropower Works ○ Explanation of hydropower from the Environmental Literacy Council ○ FERC hydropower licensing web portal

			<ul style="list-style-type: none"> ○ <u>California vs. FERC</u>
	B. Coal		
1/28	1. Coal Mining	<ul style="list-style-type: none"> • <u>Explanation of underground mining methods</u> • <u>Kentuckians for the Commonwealth h v. Rivenburgh</u> (4th Cir. 2002)(read majority opinion parts I and III). 	<ul style="list-style-type: none"> • History <ul style="list-style-type: none"> • <u>History of British coal mining</u> ○ <u>Coal exploitation in North America</u> ○ <u>Explanation of surface mining methods</u>
2/2	2. Coal Combustion & air pollution - I	<p>Excerpt, Bosselman et al., Energy, Economics and the Environment (on regulation of air emissions from coal fired power plants) -- <u>available on blackboard</u> site, under course documents</p>	<ul style="list-style-type: none"> ○ North American Commission on Environmental Cooperation, Report: "Environmental Challenges and Opportunities of the Evolving North American Electricity Market" (browse)(download report <u>here</u>). ○ <u>Kyoto Protocol page</u> from the Suzuki Foundation
2/4	2. Coal Combustion & air pollution - II	<ul style="list-style-type: none"> ○ Pew Center on Climate Change, <u>Global Warming Facts and Figures</u> ○ <i>Massachusetts v. EPA</i> (available on blackboard: read majority opinion, sections I-III, VI 	<ul style="list-style-type: none"> • <u>The Intergovernmental Panel on Climate Change</u>

		<p>and VII)</p> <ul style="list-style-type: none"> Washington Post, "EPA is Preparing to Regulate Emissions in Congress' Stead" 	
2/9	<p>PRESENTATION: Report on state efforts to regulate CO2 emissions, including CA's regulation of GHGs from automobiles, and regional cap and trade systems (RGGI and Western Climate Initiative). How do those regulations work? How will they affect business?</p> <p>PRESENTATION: How would Congress regulate GHG emissions under the Waxman-Markey and Kerry-Boxer bills pending in Congress. How would those regulations work? How will they affect business?</p>		
2/11	<p>PRESENTATION: The political, economic and legal issues associated with the exploitation of coal for energy in China (including issues associated with coal mining safety, China's energy needs, and the political/social/legal pressures China faces in making energy decisions). What is the likely future of coal in China? What should it's future be?</p> <p>PRESENTATION: The political, economic and legal issues associated with the exploitation of coal for energy in Germany (including the legal and policy constraints under which Germany makes energy policy choices). What is the likely future of coal-fired power in Germany? What should it's future be?</p>		
	C. Oil and Gas		
2/16	<p>1. Basics of oil, and geopolitical risk</p> <p>PRESENTATION: The political and legal risks of investment in oil exploration and development in Russia.</p> <p>PRESENTATION: What is the "oil curse"? What can oil-rich developing nations do to try to avoid the curse?</p>	<ul style="list-style-type: none"> Brief history of oil industry How Oil Drilling Works How Oil Refining Works Political Risk Insurance Center, 	<p>Background:</p> <ul style="list-style-type: none"> Oil exploitation in North America <p>Political Risk:</p> <ul style="list-style-type: none"> Oil.com

		PRI basics	
2/18	<p style="text-align: center;">2. Oil and the Environment</p> <p>IN-CLASS DEBATE QUESTIONS:</p> <ol style="list-style-type: none"> 1. Should the recently-expired offshore drilling moratoria (covering OCS lands off of the Florida and California coasts) be reinstated? 2. Should Congress lift the moratorium on oil exploration in ANWR? 	<p>Offshore drilling</p> <ul style="list-style-type: none"> ○ Browse the "Offshore Energy Law Blog" (for answers to discussion questions) ○ <p>ANWR</p> <ul style="list-style-type: none"> ○ Defenders of Wildlife ANWR page ○ ANWR.org (Arctic Power) 	<p>Sustainable Energy Institute's Committee Against Offshore Drilling</p> <p>National Geographic magazine summary of ANWR issue</p> <p>U.S. Dept. of the Interior's outer continental shelf exploration regulations – summary.</p>
2/23	<p style="text-align: center;">3. Transportation fuels</p> <p><u>HOMEWORK:</u> See the links to the four energy bills enacted into law in the last 5 years, at right. How many different provisions can you find in those laws that promote the development of alternative-fueled vehicles?</p> <p><u>IN-CLASS DEBATE:</u> What else, if anything, should Congress do to promote alternatives to gasoline-driven automobiles?</p>	<p>Transportation fuels</p> <ul style="list-style-type: none"> • NREL's biofuels page • EERE's alternative fuels pages (see links near top of page) <p>Energy Policy Act of 2005 (EPAAct 2005)</p> <ul style="list-style-type: none"> • Library of Congress summary of provisions • Full text • Wiki summary <p>Energy Independence and Security Act of 2007 (EISA 2007)</p> <ul style="list-style-type: none"> • Library of Congress summary of provisions • Full text • Wiki summary 	

		<p>Energy Improvement and Extension Act</p> <ul style="list-style-type: none"> • Senate committee staff summary • House summary and full text <p>Stimulus package 2009</p> <ul style="list-style-type: none"> • BNET's notes on energy provisions in stimulus package 	
<p>2/25</p>	<p>4. Natural Gas</p> <p><u>PRESENTATION</u>: Security of gas supplies in Europe, and overreliance on Russian gas. What can Europe do to diversify its sources of supply? What is it doing? What else should it do? Why?</p>	<ul style="list-style-type: none"> • Basics of natural gas, from exploration to market • History of natural gas regulation in the U.S. • Map of world gas reserves • Summary of the environmental impacts of the natural gas industry from Naturalgas.org. 	<p>Natural gas in North America</p> <p>Structure of industry in U.S.</p>
<p>3/2</p>	<p><i>Natural Gas cont'd</i></p> <p><u>PRESENTATION</u>: How can Bolivia and Mexico make better use of their considerable natural gas reserves? What are the political, legal and economic barriers to development in each country? How can those barriers be overcome, if at all?</p> <p><u>PRESENTATION</u>: What are the environmental and other regulatory issues associated with exploiting American reserves of gas trapped in</p>		

	shale formations, such as the Barnett Shale in Texas and the Marcellus Shale in the northeastern U.S.? Should the U.S. exploit these gas resources?		
3/4	D. Nuclear Energy 1. Generally	How Nuclear Power Works Maps of nuclear plants in North America , South America , Europe , and Asia University of Rochester's history of nuclear waste disposal in the U.S.	How Nuclear Radiation Works Nuclear Energy Institute Nuclear Regulatory Commission International Atomic Energy Agency
3/9	VIDEO: PBS Frontline, The Three Mile Island Accident	Chronology of events at Three Mile Island	
3/11	VIDEO: National Geographic Channel, The Chernobyl Disaster	Chronology of events at Chernobyl Nuclear Energy Institute, Web page on new reactor designs	
Mar 14 -20	SPRING BREAK		
3/23	2. The Future of Nuclear Power <u>PRESENTATION</u> : What is the future of nuclear energy in France and Germany? Why are the two policy approaches so different? <u>PRESENTATION</u> : What is the future of new nuclear power plant development in the U.S.? What recent policy changes have sought to spur new construction? Are they having the desired effects? What will determine whether new plants are actually licensed and built?		
3/25	E. Alternative Sources of Electricity (Renewables)	Wind <ul style="list-style-type: none"> o NREL, Wind Energy Basics 	

	1. Basics	<p>(browse site)</p> <p>Solar</p> <ul style="list-style-type: none"> o NREL, Solar Energy Basics (browse site) <p>Biomass</p> <ul style="list-style-type: none"> o NREL, Biomass Energy Basics (browse site) <p>Geothermal</p> <ul style="list-style-type: none"> o NREL, Geothermal Energy Basics (browse site) <p>Tidal/Wave</p> <ul style="list-style-type: none"> o How Tidal Power Plants Work (browse site) 	
3/30	GUEST SPEAKER - TBD		
4/1	<p>2. RPS Exercise</p> <p>IN-CLASS EXERCISE: Download RPS worksheet here. Groups must determine the ideal electrical energy fuel mix for their jurisdiction.</p>	Browse EERE web site on state RPS	
	III. Regulation of Price and Competition - the Case of Electricity		
4/6	A. Fundamentals	Brennan, Review Chps. 1-3	
4/8	B. Restructuring in Theory and Practice - The California Energy Crisis	Brennan, Chps. 4 and 5	<ul style="list-style-type: none"> • EIA's "California Energy Situation" page • "Supplemental Analysis of Trading and Scheduling Strategies Described in

			Enron Memos," CA ISO (2003).
4/13	C. Maintaining Price and Reliability <u>PRESENTATION</u> : How does the move from vertically integrated utilities to wholesale competition threaten the reliability of the grid? What are system managers (RTOs and ISOs) trying to do to avoid congestion, ensure that supply and demand are in balance, and to ensure sufficient generation and transmission capacity, over the long run?	Brennan, Chps. 9-11.	
4/15	D. Restructuring in Europe <u>PRESENTATION</u> : How has restructuring worked in Europe? What governmental entities pushed for competition? What have been the primary obstacles to well-functioning European markets? What is the European Union doing to overcome those obstacles? Are they likely to succeed? Why or why not?	Browse European Commission's web site on the single market for electricity and gas	
4/20	E. Energy Derivatives and Price Risk <u>PRESENTATION</u> : How can players in competitive energy markets use derivatives (futures, forwards, options, swaps) to hedge price risk? Do they help reduce price volatility in energy markets, or do they exacerbate it? How are the use of these instruments regulated, and by whom? How might it be regulated in the future?		
4/22	F. Efficiency and Conservation 1. Standards -- CAFE, building codes, appliance standards	Brennan, Chp. 16 Dernbach article - TBA	
4/27	2. Smart grid and demand response <u>PRESENTATION</u> : What is the smart grid? Smart meters? What policy objectives would these infrastructure investments	Reading TBA	

	achieve? What is driving investment in this infrastructure? In electric ratemaking parlance, what is "demand response"? How does it work? Who pays for what, exactly?		
4/29	DEBATE: Are restructured markets a good idea? Should the U.S. and Europe continue to move toward competitive wholesale and retail markets in electricity and gas? Why or why not? Should we instead return to traditional regulation? Why or why not?	Download Spence, " Can Law Manage Competitive Energy Markets? "	
	IV. The Big Picture: Energy Policy Reform		
5/4	Small groups work on developing their preferred legislative package for reforming American energy policy. Be prepared to present and defend your recommendations to the class on May 6.	Pew Center's summary of the American Clean Energy and Security Act (Waxman-Markey bill)	
5/6	Discuss and debate group recommendations		
5/13	Final take-home problem due		