Vermont Law School Autumn 2017
Energy Policy in a Carbon Constrained World

This is a "living" syllabus; some elements may change, particularly as new governmental policies are enacted, and if we see potential for site visits to power plants or for guest lecturers. If changes occur, we will discuss them in class or post them on The West Education Network (TWEN) web site for the course. **You are responsible for registering on TWEN, and periodically reviewing for** each class. Doing so is vital for updates, readings and general information.

Class Times
Monday and Wednesday
2:10 – 3:25
Oakes 110

Contact Information
Professor: Michael Dworkin 831-1319
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Assistant: Jenny Thomas 831-1151
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Offices: Eaton House, second floor

Office Hours: Monday and Wednesday,
12 p.m. to 2 p.m. and 3:30 p.m. to 4:45 p.m.
By appointment, through Jenny Thomas

Course Description & Overview
The energy industry is both:
i) a path to the quality of life that billions seek and
ii) our world's most significant source of pollution.

Put another way:
if you care about energy, environmental problems are the most important constraint now faced by energy industries; and
if you care about the environment, the energy sector is the most important influence you must face.

This course examines the key issues in American energy policy (with some reference to its global context), and searches for ways to resolve, or at least ease, the strains that such policy puts upon environmental sustainability.

Course Expectations:

Grading
Grading will be based on a 60 – 100 point score, converted to a letter grade. This score will be based on these elements:
1) a short written project (25%),
2) a take-home final examination, graded anonymously, (75%) and
3) a possible 0 – 6 point premium for in-class contributions.

Grading will be anonymous only on the final exam.

Grading of **Class Performance**
Up to six points of your 60-100 point score will be heavily influenced by the way in which your classroom performance demonstrates knowledge of assigned materials and pre-class thought about their significance. In addition, participation that indicates an ability **to learn from and encourage input from others** will be valued highly. Comments that use an understanding of earlier readings to address later ones are particularly likely to make a favorable impression. Grading class performance is inherently subjective, but my conceptual model is very simple: how happy would an employer be to have had you as part of a taskforce that needed to resolve a hard, uncertain, and important problem?

To help me grade you on class performance, you **must** bring and display an easily readable tent-card with your full name upon it for each class. If you do not do this, your class-performance credit and your overall grade will suffer.

Written Projects: Twenty-five percent (25%) of your base grade in this course will be based on a short written project (900-1,000 words). The due date will be **October 25, 2017**, at the start of class. Substantively, you should outline the significance of a specific topic related to energy and the environment (from a legal perspective) and describe your recommendations for improvements in regard to that topic.

A "Guide Sheet" for writing and grading follows at the end of this syllabus.

A hard-copy of your paper must be handed in at the start of the class on that day. A penalty will be assessed for late papers. If an emergency prevents you from meeting the deadline, you must notify me or the Registrar's office (tjohnson@vermontlaw.edu) before the due date and time.

Final Examination: The final examination will count for 75% of the base grade. The final exam will be a take-home, multi-day exam with essay topics and short questions. It is likely to require you to consider several of the topics addressed during the course, and may require you to focus on tensions and/or synergies between and among the topics. In other words, if you have not kept up with the readings *throughout* the course, you will have a very difficult time doing well on the final examination.

Class Attendance and Participation: I expect you to attend and be prepared to participate in each class. The course requires a great deal of reading upon demanding subjects; however, **our class time will not be spent merely on going over each day's assigned material.** Instead, I expect to spend most of our class time in discussions that compare and contrast different readings and that go beyond the texts themselves. That expectation is linked to the fact that this course is not just about learning an accepted body of knowledge; rather, it is about searching for better answers in areas where disagreements are persistent, among both experts and lay-folk.

Importantly, contributing to these discussions is not just a way for you to learn the underlying material; it is also a valuable skill that the course seeks to build – and grade.

Because of this, **class attendance is required**. Absences will affect your class performance rating and thus, your grade. In addition, unexcused absence from ten percent (10%) of the regularly scheduled classes, i.e., from three (3) classes will result in a written warning. Unexcused absences from two (2) additional classes will result in a grade of FWd. (See Academic Regulations). Make-up classes are not a suitable substitute for purposes of attendance. Just telling me that you will miss a class will not convert an unexcused absence into an "excused one". This statement constitutes the notice required by the Academic Regulations.

If you must be absent due to serious illness or a family emergency, please notify the Registrar's Office (tjohnson@vermontlaw.edu) which will notify all of your professors. Absences resulting from religious observance, serious illness, and personal emergency will be excused if notice is given in advance or as early as possible, to the Professor or the Registrar. Absences for work, interviewing, exercise, or vacationing will not be excused even if prior notice is given.

In essence, I expect you to treat your obligations to attend and prepare for this class with the same respect you would give a client's needs if you were their attorney. Please re-read the previous sentence, repeatedly, until you have it firmly in your mind.

Course Materials Include:

A. Energy Law in a Nutshell, 3rd edition. Joseph Tomain and Richard Cudahy, West Publishing Co., 2016. This edition is greatly revised since the 2011 edition and all assignments are based on the 2016 edition.

B. Regulating Public Utility Performance: The Law of Market Structure, Pricing and Jurisdiction. Scott Hempling, American Bar Association, 2013.

C. Reinventing Fire: Bold Business Solutions for the New Energy Era, Amory Lovins, principal author, Chelsea Green Publishing, 2011.

D. Energy Regulation in the US: A Guide, The Regulatory Assistance Program, 2nd Edition, March 2016. Posted on TWEN in Course Materials.

E. Registration on TWEN Site is essential for accessing readings

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CLASS TOPICS AND READINGS

Class 1 (August 28) Our Energy Trilemma approximately 80 slides

1. Michael Dworkin: PowerPoint presentation, "The Energy Trilemma" in course pack. The PowerPoint is also posted on the course TWEN site.

2. Checklist and Grading Aid for Essays and Memos: Last page of syllabus.

Class 2 (August 30) Our Energy Trilemma (continued) Review +30 pp

1. Review PowerPoint from Class 1.

2. National Climate Assessment 2014, "Overview":
   Available at http://nca2014.globalchange.gov/highlights/overview/overview
   Link is important as it provides access to interactive features.

3. Link to a short video (6 minutes), "Question Power":
   https://www.youtube.com/watch?v=dr-3AzFevlE

4. "Scientists Fear Trump will Dismiss Blunt Report:
   https://www.nytimes.com/2017/08/07/climate/climate-change-drastic-warming-trump.html?rref=climate&module=Ribbon&version=context®ion=Header&action=click&contentCollection=Climate&pgtype=Multimedia

NO CLASS September 4th, LABOR DAY HOLIDAY

Class 3 (September 6) Environmental Effects of Energy Demand 31 pp

1. US EPA, Carbon Emissions
   Link to reading: https://www.epa.gov/ghgemissions

2. US EPA, What are the biggest sources of mercury air emissions in the U.S.?

   https://publicaccess.zendesk.com/hc/en-us/articles/211395308-What-are-the-biggest-sources-of-mercury-air-emissions-in-the-U-S-

3. Mercury Emissions from Power Plants: Michigan v. Environmental Protection Agency. 576 U.S. – (2015), Opinion of Scalia, Thomas, and Kagan, J.J. (8 pages). Posted in TWEN.

4. U.S. Energy Information Administration, "Annual Energy Outlook 2017",

   https://www.eia.gov/outlooks/aeo/pdf/0383(2017).pdf

   Read "Energy Related Carbon Dioxide Emissions", pp 26-29.

5. "It's Not Your Imagination: Summers are getting hotter": view at

   https://www.nytimes.com/interactive/2017/07/28/climate/more-frequent-extreme-summerheat.html?action=click&contentCollection=U.S.&module=RelatedCoverage®ion=EndOfArticle&pgtype=article

Class 4 (September 11) Energy Fundamentals 39 pp

Lovins, Reinventing Fire, Pages xi-xvii, 3-13, 226-245 (39 pgs.)

Class 5 (September 13) Electricity Policy in Context 44 pp

1. Regulatory Assistance Project, Electricity Regulation in the United States**:** A Guide, Pages 1-35 (35 pgs.)
   Check page #s

2. Hempling, Regulating Public Utility Performance, Chapter 1, Pages 1 – 9 (9 pgs.)

Class 6 (September 18) Industry Structure and Industry Outlook 57 pp

Tomain & Cudahy, Energy Law, "Energy Policy", 51-108. (57 pgs.)
Updated according to 2016 edition.

Class 7 (September 20) Case Law with Deep Roots 43 pp

1. *The Proprietors of the Charles River Bridge v. The Proprietors of the Warren Bridge* (1837) (7 pages). Posted on TWEN.

2. *Munn v. Illinois* (1877), (13 pages) Posted ON TWEN.

3. Franklin Delano Roosevelt (1932), The Portland Speech (11 pages). Posted on TWEN.

4. *Duquesne Light Co. v. Barasch* (1989) (12 pages). Posted on TWEN.

Class 8 (September 25) Structure of a State Utility Law 34 pp

1. Dworkin, Michael, "The PSB Process: The Scope, The Players, and the Rules of Practice Before the Public Service Board" (12 pgs.) Posted on TWEN.

2. Regulatory Assistance Project, Energy Regulation in the US: A Guide, "The Fundamentals of Rate Regulation", pages 36 – 58 (22 pgs.).

Class 9 (September 27) Structure of a State Utility Law (cont'd) 42 pp

1. Table showing *purposes* of 30 VSA sections, followed by the statutes; read each statute with "purpose" in mind. (42 pgs.) Posted on TWEN.

Class 10 (October 2) Ratemaking as Practiced 53 pp

1. Hempling, Regulating Public Utility Performance, Part Two, Pricing and Chapter 7: "Just and Reasonable" Prices in Non-competitive Markets, Pages 213 – 266 (53 pages)

Class 11 (October 4) Litigating Rates and Duties 44 pp

1. Reread VSA Title 30, Section 225 from class 9 (2 pages) Posted on TWEN.
2. VT PSB Docket No. 5270-CV-1, Order of 3/19/91 (37 pages) Posted on TWEN.
3. VT PSB Docket No. 5983 GMP/HQ Disallowance (5 pages) Posted on TWEN.

OCTOBER 8-11: FALL RECESS

Class 12 (October 16) Jurisdictional Lines: States and Feds 46 pp

1. Tomain & Cudahy, Energy Law, "Federal Energy Regulation/Energy Regulation by the States", Pages 142-157. According to 2016 edition. (15 pgs.)

2. *Connecticut PUC v FERC*, D.C. Circuit (2009) Read entire case. (13 pages). Posted on TWEN.

3. *FERC Order 1000, July 21, 2011: Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities* (summary) Pages 1 – 2, 7 – 22. (18 pages) Posted on TWEN.

Class 13 (October 18) Natural Gas 62 pp

1. Tomain and Cudahy, Energy Law, Chapter 6, "Natural Gas", Pages 273-224. According to 2016 edition. (44 pgs.)

2. International Energy Agency, World Energy Outlook 2016, Executive Summary, (8 pgs.). Posted on TWEN or read at: http://www.iea.org/publications/freepublications/publication/WorldEnergyOutlook2016ExecutiveSummaryEnglish.pdf

Class 14 (October 23) 40 pp

1. Eisen, Joel B. et. al. Energy, Economics and the Environment (4th edition), Chapter 4, "Oil and Gas Production", pp 131-169. Posted on TWEN.

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Class 15 (October 25) Oil Laws, Oil Needs, Oil Choices 32 pp

!!!!! SHORT PAPER DUE at the *beginning* of class!!!

1. Eisen, Joel B. et. al. Energy, Economics and the Environment (4th edition), Chapter 4, "Oil and Gas Production", pp 169-201.Posted on TWEN.

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Class 16 (October 30) Coal and Renewables: Appraising them through the Trilemma Lens
50 pp

1. MIT: The Future of Coal, Chapters 2, 3 and 8. (39 pp)

   This study is available on line at:
   http://web.mit.edu/coal/The_Future_of_Coal.pdf

2. *American Elec. Power Co., Inc. v. Connecticut* (2011). (10 pgs.) Posted on TWEN

3. "The Other Reason to Shift Away from Coal: Air pollution that kills thousands every year", Jay Apt: article posted on TWEN.

4. "Renewable Energy is not a Threat to Grid, US Study Finds". Read at : https://www.bloomberg.com/news/articles/2017-07-14/renewable-energy-not-a-threat-to-grid-draft-of-u-s-study-finds

SPECIAL CLASS (Class 17): Thursday, October 26th
VELCO IS HOLDING THE DATE

SITE VISIT: VELCO State Generation and Transmission Control Center and Sub-Station, Rutland, VT. The site visit will be a substitute class for Wednesday, November 23rd. Class on November 22rd is cancelled as it is currently scheduled for late afternoon the day before Thanksgiving break. If you do not attend the VELCO site visit, you will be required to make-up the class by completing a short writing assignment.

Class 18 (November 1) Old Dreams, New Dreams **44 pp**

(Monday scheduled followed)

1. Tomain and Cudahy, Energy Law: Chapter 10, "Hydro Power", Pages 495-528. According to 2016 edition (33 pgs.)

2. Re-read from Class 7 Franklin Roosevelt's 1932 Portland Speech. (11 pgs.) Posted on TWEN.

3. "Down the Columbia River Where A Power Struggle Looms":

   https://www.nytimes.com/interactive/2017/07/28/us/columbia-river-privatization.html

4. Link to Amory Lovins' blog posting "Does 'Fuel On Hand' Make Coal and Nuclear Power Plants More Valuable?": https://rmi.org/news/fuel-hand-make-coal-nuclear-power-plants-valuable/

Class 19 (November 6) Emerging Sources

1. Tomain and Cudahy, Energy Law, Chapter 11, "Clean Energy Sources', Pages 529-587(59 pp) According to 2016 edition.

2. Krapels, Edward. "Modifying the Old Grid to Accept Clean Power: The Next Step in the Greening of New England", December 2013 draft. Pages 1 – 25. (25 pages).Posted on TWEN.

Class 20 (November 8) Emerging Sources, Part 2 **38 pp**

1. Synapse Energy Economics, "Beyond Business as Usual: Investigating a Future without Coal and Nuclear Power in the U.S." Pages 5-30, Skip pages 31 – 48, pages 49, 50. (27 pgs.)Posted on TWEN.

2. Synapse Energy Economics, "The Road to Better System Planning: ISO-New England's Revised Energy Efficiency" (10 pgs.)Posted on TWEN.

Class 21 (November 13) End-Use Energy Efficiency **71 pp + 9 pp optional**

1. Lovins, Reinventing Fire, Pages 164-217 (only top 4 lines of pg. 217. 53 pgs.)

2. Dworkin, Efficiency Vermont Rate Case dissent in 2001. (10 pgs.) Posted on TWEN

OPTIONAL:

3. *VT PSB Order of 8/2/2006 re Energy Efficiency Utility Budget. (7 pages)* pgs. 23– 30. Posted on TWEN.

4. Fowlie, Meredith, Michael Greenstone and Catherine Wolfram. Policy brief: "Costs of Residential Energy Efficiency Investments are Twice their Benefits: Implications for Policy", the E2E Project. Brief posted on TWEN; full report can be found at: http://e2e.haas.berkeley.edu/featured-eeinvestments.html

5. ACEEE response to E2E report. Posted on TWEN. Also available at:

   http://aceee.org/blog/2015/07/e2e-weatherization-study-generating

Class 22 (November 15) Resource Choices, Resources Plans, Resource Portfolios 50 pp

1. Capital Investments & Cash Flows in the Energy Sector, (7 pgs.) Posted on TWEN.

2. Vermont Code Title 30. 218 c (**second reading from Class 9**), (1 pg.)

3. Electric Power System, Market, and Reliability Study, US Department of Energy, DRAFT July 2017. Full report is on TWEN. Read pages 1 to 3 and 9 to 13 (pagination may be updated if draft report is revised.)

Class 23 (November 20) The Rise and Fall of Markets for Electricity 46 pp

1. Hempling, Regulating Public Utility Performance, Part 1, Chapter 3: "Authorizing Competition", pages 69 -115. (46 pages)

NO CLASS Wednesday, November 22nd

Class 24 (November 27) Wholesale Power Markets: Tests & Lessons ISO +29 pp

1. Go to: www.iso-ne.com Click on "Morning Report" in upper right corner. Check "daily market report". Come to class prepared to discuss what it *means*.

2. Go to: www.iso-ne.com Under DIGITAL MEDIA see " Real-Time Charts and Data".

3. Dworkin and Goldwasser, "Consideration of the Public Interests in the Governance and Accountability of Regional Transmission Organizations",

Energy Law Journal, 2007, pp 543 – 561, 592-601. (29 pgs.) Posted on TWEN.

Class 25 (November 29) Market and Technology Cures 24 pp

1. Jones, Kevin B. and David Zoppo, A Smarter, Greener Grid
   Chapter 1: Introduction: The Digital Energy Revolution, pages 1-14 (14 pgs.)
   Chapter 8: Conclusion: Leading the Digital Energy Revolution Forward, pages 151-156 (6 pgs.). Posted on TWEN

2. Regulatory Assistance Project, Electricity Regulation in the United States: A Guide, Pages 91 – 94 (4 pgs.)

Class 26 (December 4) A Carbon Constrained World 52 pp

1. Lovins, Reinventing Fire, Pages 226-251 (36 pgs.)

2. Moniz, Ernie. "We are definitely heading toward a cleaner future", from POLITICO, July 15 at: http://www.politico.com/agenda/story/2015/05/energy-visionary-vaclav-smil-quick-transformations-wrong-000017 (scroll down to the last article)

Class 27 (December 6) 80 slides+ 11 pages

For review:
Dworkin: Energy Trilemma PowerPoint (from Classes 1 and 2).

Checklist (and Grading Aid) for Essays and Memos
Michael Dworkin, Vermont Law School, August 2017

As author, ask yourself how well the draft addresses each of the following:

--Strength of TITLE (does it convey topic *and* position?)
--clarity of OPENING PARAGRAPH (as summary and as hook)
--clarity of CLOSING PARAGRAPH (as summary and as recommendation)
--Research DEPTH (scope, relevance, weight, contending views)
--Research USE (how the facts are used to support conclusions)
--LOGIC CHAIN (how points are organized to support conclusions)
--Using TRILEMMA ($ cost, environmental cost, operational reliability)
--clarity of RECOMMENDATIONS
--PROSE STYLE: are clear subjects near active verbs, in short clauses?
--GESTALT (overall 'feel' and impact/persuasiveness for reader)

As grader, in each of the categories give:

Two checkmarks for exemplary
One checkmark for average
No checkmark if barely adequate
One x if poor or missing

Then give one overall Score between 60 and 100, then Grade:

	93-100	A	90-93	A-	
87-89 B+	83-86	B	80-83		B-
77-79 C+	73-76	C	70-72	C-	
67-69 D+	61-66	D	00-66	Fail	