Political Science 340
Energy Policy
Fall 2013

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Office Hours: M, W and F 10:30 to 11:30 and by appointment

Introduction and Goals of the Course

Societies use energy to do work, produce goods and meet the basic needs and demands of their members. Social choices in this regard have profound implications for patterns of human settlement, the structure of social life, the distribution of income, and allocations of political power. Energy choices also have implications for the viability of the environment and conditions of human health. Choices of energy technologies can also affect levels of personal freedom and the possibilities of democratic government. All of these matters entail public policy is some form. A combination of environmental concerns including global warming, wars in the Middle East, the spread of terrorism, escalating military activity around access to oil and volatile energy prices keep these issues as a major part of the public policy agenda.

As these issues deserve serious attention, the course objects are as follows:

- Students will understand the concepts that structure debates about energy use and policy choice regarding the sources and end-uses of energy in the U.S. and globally
- Students will develop a sense of the interrelationships between the choices of energy technologies and the social, economic and political characteristics of a society.
- Students will understand the key physical, economic and political dimensions of the choices that societies have available to them.
- Students will understand the current position of energy issues on the public policy agenda and the significant domestic and international conflicts connected to the use of energy.
- Students will consider the best path for future energy development and use, including normative and ethical questions in that regard.

Attendance

Students are expected to attend all classes. Absences due to extracurricular activities, a doctor's excuse or notification by the Dean of Students Office will allow a student to be excused. All other excuses are subject to the instructor's judgment.

Academic Honesty

All students should be aware of their obligations under the Academic Honesty Policy published in the ***Moravian College Student Handbook 2011-2012***. A copy of that document can be found at http://www.moravian.edu/studentLife/handbook/academic/academic2.html.

Learning Disability accommodations

Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support at 1307 Main Street, or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center.

Texts

Thomas Easton, **Taking Sides: Clashing Views in Energy and Society**, Second Edition, (New York: McGraw-Hill, 2012)

Laurence R. Geri and David E. McNabb, **Energy Policy in the U.S.**, (Boca Raton, FL: CRC Press, 2011)

Michael Klare, **Rising Powers, Shrinking Planet: The New Geopolitics of Energy**, (New York: MacMilllan, 2009)

Evaluation of Student Work

The final grade will be based on a 300 point system. The points will be determined through set of out of class writing assignments, an energy journal and the instructor's evaluation. Descriptions of the assignments, point values and due dates are listed below:

Essays

Evaluation of these essays will be based on the following criteria:

- Clarity and concreteness in answering the question
- Evidence of understanding of key concepts
- Incorporation of reading and in class materials

Essay 1 - A major premise of the course is that energy is of great importance because of its connection to work both as physical and economic activity. Discuss what you have learned from class and the readings scheduled between **9/3** and **9/12** to demonstrate that you understand how energy represents work, the types of work for which energy is used and the availability of energy to perform the desired work. Make sure to include a discussion of the significant physical and mathematical principles discussed in the course that govern the availability of energy used to perform work. **{4 to 6 typewritten pages} (30 points) DUE DATE: 9/19**

Essay 2 – Using the class readings and materials covered from **9/18** to **10/8**, identify and describe the most important factors that structure the actions of government in making energy policy. Be sure to include a discussion of the conceptual foundation on which policy is justified and the alternative policy tools available for government to use. **{5 to 8 typewritten pages} (50 points) DUE DATE: 10/17**

Klare Report

In **Rising Powers, Shrinking Planet: The New Geopolitics of Energy,** Michael Klare discusses the changing geopolitical context of energy in the late 20th and early 21st Centuries. In this assignment, the student needs to answer the following questions that are addressed by Kalre's work:

- What is Klare's basic thesis?
- What are the most important general or systemic changes in the global system of energy production and distribution?
- What are the most important specific regional changes that he identifies?
- How have these changes been shaped by U.S. foreign policy?
- What are the implications for the U.S. going forward?

{5 to 8 typewritten pages} (50 points.) DUE DATE: 10/31

Press conferences

Each student will participate in an in-class presentation organized as a simulated press conference. There will be four such press conferences and a minimum of six students will be involved in each with no student being involved in more than one.

Student participation will be organized in the performance of one of two roles. One role will be as members of a professional or citizens advocacy group. The other will be as members of the press corps. Generally, three students will assume each role.

The press conferences will be 30 minutes in length with 15 minutes for a presentation on the issue at hand and 15 minutes of questions from the press corps.

The topics for each press conference and the dates on which the press conferences will be held are as follows:

Propositions:

1. Fracking is necessary to meet future energy needs of the U.S. **(11/7)**
2. Utilities should be given significant tax incentives and other subsidies to expand the amount of nuclear power in use in the U.S. **(11/14)**
3. It is imperative to begin to place a price on carbon as a means of reducing the emission of GHG. **(11/19)**
4. The U.S. should produce 30% of its electricity by solar, wind or biomass by the year 2025. **(11/21)**

Format and role performance

Professional or citizens advocacy group:

- Students in this role will work as a team.
- Students assuming this role will be responsible for organizing a 15 minute presentation in class supporting the proposition to which they are assigned.
- The presentation should include an explanation of the problem being addressed and the "outline" of a policy proposal to address the problem.
- It should be organized as an advocacy presentation. Presentations should be specific, concrete and focused on the key points the advocates wish to make.
- The presentation will be preceded by a "press release" of 500 to 750 words previewing the presentation and identifying the most important points that will be made. The "press release" will be available to all members of the class one full week before the in-class activity.
- Students should consider the use of graphics in the presentation. Use of power point will be considered graphics for the purpose of this assignment but additional graphics can be used. Graphics should not obfuscate the delivery of substantive information, however.
- After the presentation is complete, the presenters will answer questions from the "press corps" for 15 minutes. Answers should be as direct and to the point as possible. Extended answers that are rambling or introduce irrelevant material will be penalized.
- Teams can organize the presentation as they wish and can assign roles to team members if the team chooses to do so. E.G. One team member could write the press release. A second could make the presentation. The third could answer questions.
- Upon completion of the event, each student should submit a three page type written summary of the content of the presentation.

Press Corps:

- Students will work individually but are free to consult with each other.
- Using the "press release," course materials and relevant materials from other courses or from individual research, students will prepare a set of questions to be asked of the advocacy team members during the second half of the press conference.
- 15 minutes will be allocated for questions.
- The order for the initial round of questions will be determined by lot. After the first round of questions, a second round will be undertaken with the questions being posed in reverse order from the first round. Time permitting a third round of question can be asked using the same order as the first round. Rounds of questions will continue in this format until the 15 minutes allotted for questions has been completed.
- Questions should not be speeches. Questions can be introduced by reference to contextual material or by specific reference to relevant data or events, but the questions should generally be tied to the issues raised by the advocates. Press corps members should avoid tangential, rhetorical or "gotcha" questions.
- Press corps participants should anticipate that all students playing this role are likely to develop questions focused on the same issues. To avoid repeating questions or having a question asked by someone else, press corps members should develop a set of questions such that multiple questions are available to the individual press corps members. Keep in

mind that the presentations will focus both on problem definition and policy solutions. The press releases should help identify potential areas for questioning in this regard.

- Upon completion of the event, each member of the press corps will submit a typewritten list of four questions that he or she had prepared to ask. For each question listed, the press corps member should provide one to three paragraphs of explanation as to why the question was developed or why it is important. The questions and explanations submitted in writing need not have been asked in the press conference itself but should developed under the same concerns listed in the 5th press corps bullet.

Student evaluation:

This assignment is worth **50 points**. Twenty-five points will be based on the quality of the in class performance and 25 points will be based on the written materials submitted after the press conferences have been completed.

Instructor Evaluation (10 points)

Thirty points towards the final grade will be determined by instructor evaluation. This evaluation will be based on participation in class **including answering or asking questions on the readings**. Attendance, completing assignments on time and other indications of effort and commitment to the course will also be part of the evaluation.

Energy Journals (10 points)

Students will submit a typewritten report on how they used energy during the course of a week during this semester. The week in question will be the week of September 23 through September 29. These journals will have eight entries. Seven of these entries will be a record of the ways that the student consumed energy during a given day and **an identification of the energy resource that was consumed in that activity**. The eighth entry will be a student commentary reflecting on the record established in the journal. This commentary could focus on any of the topics in the course. The commentary could include normative judgments on lifestyle, implications for public policy or government action, lessons learned by the individual about energy use, or a discussion of a particular event or activity that yielded to the student a noteworthy insight about the issues raised by the course. **Due date 10/4**

Final Assignment

Imagine yourself to be a time traveler who goes back in time to 1950. Upon arriving, you decide to write a letter to the White House Chief of Staff describing the energy problems that face 21st century America. The intent of the letter is to alert the United States to the problems that are coming, how they came to be and possible actions that could be implemented to avoid or rectify the problems at hand today. **{7 to 10 typewritten pages} (100 points) DUE DATE: Final Exam Date**

Course Topics and Reading Assignments:

1. Introduction (8/27)

2. Culture, values and choice: technological determinism, technological momentum and the social construction of technology (8/29)

Read: Nye, "Introduction," pp. 1-12 **(distributed in class)**; Geri and McNabb, "Introduction"

3. Energy and the economy: work, demand, end use, and consumption (9/3)

Read: Geri and McNabb, Ch. 1; Material distributed in class from **Annual Energy Review 2011** (Washington, D.C.: Department of Energy, 2011 and 2009) entire report available at http://www.eia.doe.gov/emeu/aer/pdf/aer.pdf; James Glanz, "The Cloud Factories: Power, Pollution and the Internet," **New York Times**, September 22, 2012 at http://www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html?pagewanted=all&_r=0; Barath Raghavan and Justin Ma, "The Energy and Emergy of the Internet," November 14, 2011, UC Berkeley at http://www.cs.berkeley.edu/~jtma/papers/emergy-hotnets2011.pdf

Thermodynamics, entropy and end use (9/5)

Read: David Goodstein, "Heat Engines and Entropy," Ch. 4, David Goodstein, **Out of Gas**, pp. 77-98 (New York: W.W. Norton, 2004), **(distributed in class)**

4. Supply and the problem of exponential growth (9/10)

Read: Geri and McNabb, pp. 25-35; Klare, Ch. 2; A. Bartlett, "Forgotten Fundamentals of the Energy Crisis," **American Journal of Physics**, September 1978, at http://www.npg.org/specialreports/bartlett_index.htm

5. Oil and gas supplies (9/12)

Read: Easton, pp. 1-20; Charles C. Mann, "What If We Never Run Out of Oil?" **The Atlantic**, April 24, 2013, at http://www.theatlantic.com/magazine/archive/2013/05/what-if-we-never-run-out-of-oil/309294/ **and** Amory Lovins, "It Doesn't Matter If We Never Run Out of Oil: We Won't Want to Burn It Anymore," **The Atlantic**, May 13, 2013 at http://www.theatlantic.com/technology/archive/2013/05/it-doesnt-matter-if-we-never-run-out-of-oil-we-wont-want-to-burn-it-anymore/275773/,

6. The Policy Process: Economic and Political Trends (9/17)

Read: Geri and McNabb, pp. 45-49, 54-61, and Ch. 6

7. Structural variables: Separation of powers and federalism (9/19)

Read: Geri and McNabb, pp. 49-50 and Ch. 5

8. The interest group process (9/24)

Read: Geri and McNabb, pp. 50-54

9. Models of policy making and decision making (9/26)

10. Market failures and the logic of intervention (10/1)

Read: Neva Goodwin, "The Limitations of Markets," Global Development and Environment Institute, Dec. 2005, at http://www.ase.tufts.edu/gdae/Pubs/te/GoodwinMarketFailureFinal2005.pdf and Adam B. Jaffe and Robert N. Stavins, "The Energy-Efficiency Gap: What Does It Mean?" Energy Policy, 1994, Volume 22, No. 10, at http://www.hks.harvard.edu/fs/rstavins/Papers/The%20Energy%20Efficiency%20Gap.pdf

11. Policy options: subsidy and regulation (10/3)

Read: Geri and McNabb, Ch. 7

12. Policy options: taxes and market mechanisms (10/8)
Read: Geri and McNabb, Ch. 8

13. History of U.S. Energy Policy I (10/10)

Read: Start Klare

14. U.S. Energy Policy II (10/17)

Read: Geri and McNabb, Ch. 4; Easton, pp. 21-36

15. The changing geopolitical environment: China, India and Russia (10/22)

Read: Klare, Ch. 1, 3 and 4

16. The changing geopolitical environment: the Middle East, Africa and the Caspian region (10/24)

Read: Klare, Ch. 5 through 9

17. Electricity I (10/29)

Read: Brennan, et.al., "Understanding the Electric Industry," and "From Regulation to Competition," Ch. 2 and 3 in **Alternating Currents: Electricity Markets and Public Policy**, (Washington, D.C.: Resources for the Future, 2002) **(distributed in class)**

18. Electricity II (10/31)

Read: Jennifer Weeks, "Modernizing the Grid: Is the Electric Powers System at risk?" **CQ Researcher, February 19, 2010,** Volume 20, Issue 7 at http://0-library.cqpress.com.webpac.lvlspa.org/cqresearcher/document.php?id=cqresrre2010021900

19. Coal (11/5)

Read: Easton, pp. 80-102; Read: James Fallows, "Dirty Coal, Clean Future," **The Atlantic,** December 2010 at http://www.theatlantic.com/magazine/archive/2010/12/dirty-coal-clean-future/8307/ and James Meigs, "The Myth of Clean Coal," Popular Mechanics, Feb2010, Vol. 187 Issue 2, at http://www.popularmechanics.com/science/energy/coal-oil-gas/4339171

20. Natural gas (11/7)

Read: Daniel McGlynn, "Fracking Controversy: Are New Natural Gas Drilling Methods Safe," **CQ Researcher,** December 16, 2011, Volume 21, Issue 44 at http://0-library.cqpress.com.webpac.lvlspa.org/cqresearcher/document.php?id=cqresrre2011121600; Easton, pp. 51-64

21. Nuclear I (11/12)

Read: World Nuclear Association, "Nuclear Power Reactors," available at http://www.world-nuclear.org/info/inf32.html **OR** Marshall Brain and Robert Lamb, "How Nuclear Power Works," at http://www.howstuffworks.com/nuclear-power.htm/printable; Easton pp. 201-262

22. Nuclear II (11/14)

23. Climate change (11/19)

Read: Geri and McNabb, pp. 35-43; Easton pp. 103-181; Marcia Clement, "Energy and Climate: Should Carbon-Based Fuels Be Phased Out?" **CQ Researcher**, 24 July, 2009, Vol. 19, # 26 at http://0-library.cqpress.com.webpac.lvlspa.org/cqresearcher/document.php?id=cqresrre2009072400

24. Renewables and Alternatives I (11/21)

Read: Geri and McNabb, Ch. 10; Easton, pp. 265-327

25. Renewables and Alternatives II (12/3)