Energy Policy Analysis
TESC MPA Program Summer 2016 Draft Syllabus 5 27 16

June 25 & 26, July 2, 23 & 24, 9a-5p

Location: Sem II C2107

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TESC MPA Mission Statement: Our students, faculty and staff create learning communities to explore and implement socially just, democratic public service. We think critically and creatively; communicate effectively; work collaboratively; embrace diversity; we value fairness and equity; advocate powerfully on behalf of the public; and imagine new possibilities to accomplish positive change in our workplaces and in our communities.
"You must be the change you wish to see in the world." Mohandas K. Gandhi

I. Introduction. Through energy policies, governments influence the development of energy resources, the relative costs of various types of energy, and establish a vision for how countries and communities will provide for their future energy needs. Viewed from one perspective, U.S. energy policies have been remarkably successful, as they have fostered the creation of complex systems that generate vast quantities of energy at relatively low prices. Yet our energy systems are highly centralized, cause significant pollution, and have arguably bent the political process to favor the fossil fuel status quo. The very sustainability of fossil fueled civilization is now an issue, as we wrestle with how to transition to sources of energy that will provide the services we want while minimizing impacts on the climate.

This course will provide an introduction to the many dimensions of energy, including sources, technologies, systems, markets, and the economic, social, national security and environmental implications of energy use. We will examine how public policy is crafted in the energy sector in the U.S., other countries, and globally, focusing on policies supporting renewable energy. A major theme will be how to analyze energy-related phenomena, and proposed and ongoing energy policies. We will also critique the recently signed Paris Agreement that is the first truly global international agreement to take action on the causes and impacts of climate change.

By the completion of the course I expect students to gain:

1. An introduction to energetics, energy services and the operation of energy markets;
2. An introduction to the social and environmental effects of energy use;
3. Knowledge of how to perform basic quantitative and qualitative analysis of energy systems and policies;
4. A strong grasp of the variety of energy interventions, policy setting processes, including policy analysis, and how to influence energy policy;
5. An introduction to the global framework of energy policy;
6. Improved skills at research, writing and analysis.

Canvas. Lecture notes after each class session and some course readings will be available on the course Canvas site under the course name.

II. Texts

Alexis, Madrigal. (2013*). Powering The Dream: The History and Promise of Green Technology*. Cambridge, MA: Da Capo Press. ISBN: 9780306820991. (Paperback; hardcover/Kindle versions OK).

Geri, Laurance and David McNabb (2011). *Energy Policy in the U.S.: Politics, Challenges and Prospects for Change.* Boca Raton, FL: CRC Press. ISBN 978-1439841891. (Hardcover; Kindle or E-version version also OK).

Jamieson, Dale (2014). *Reason in a Dark Time: Why the Struggle Against Climate Change Failed -- and What It Means for Our Future.* New York: Oxford University Press. ISBN-10: 0199337667. ISBN-13: 978-0199337668 (Hardcover; Kindle or E-version version also OK).

III. Articles and Readings (will be posted to Canvas, except where indicated):

Bodle, et al (2016). "The Paris Agreement: Analysis, Assessment and Outlook." Ecologic Institute.
Congressional Budget Office (2012)*. Energy Security in the U.S.* Washington, DC: CBO. (read pgs. 1-4, skim the rest).
Global Energy Assessment, Ch. 1.
Geri, L. (2016). "Aviation, Tourism and the Paris Agreement." Draft article.
Gordon, Richard (2008). "The Case Against Government Intervention in Energy Markets" *Pol. Analysis*
Homans, "The Experiment: How Steven Chu Lost His Battle With Washington." *New Republic.*
Jacobson, et al (2016). "A 100% wind, water, sunlight (WWS) all-sector energy plan for Washington State." *Renewable Energy*.
Maugeri, Leonardo (2013). "The Shale Oil Boom: A US Phenomenon." Harvard: Belford Center.
Roberts, David (2016) "Political Hurdles Facing a Carbon Tax." *Vox.*
Smith, Zadie (2014). "Elegy for a Country's Seasons." *New York Review*.
World Bank (2014). "Key Issues for Consideration for the Proposed Rogun Hydropower Project."

Skim through these:
Survey of World Energy Resources 2013 Exec. Summary ;
EIA, *Annual Energy Outlook 2015;*
BP, *Statistical Review of World Energy 2015*
Jacobson, et al (2015). "100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for the 50 United States." *Energy and Environmental Science*.
Rhys Roth (2016). "Rewiring the Northwest's Energy Infrastructure."

Optional:

Sachs, J. and Warner, M. (2001). "The Curse of Natural Resources." *Euro Economic Review*.

III. Assignments. Please use an 11 or 12-point font; double-spaced. **Post to Canvas.**

1."Fracking"— hydraulic fracturing of oil and gas bearing shale formations—has transformed U.S. energy production. It has led to U.S. production of a vast amount of natural gas and light crude oil, decisively moved electricity generation to natural gas and away from coal, and lowered global oil prices. But at what cost? For this assignment, review the resources on Canvas on fracking (and others you find) and render a judgment: has the benefit of this practice exceeded its costs, or is it too damaging to continue? What should we do about fracking? Briefly lay out what laws/regulations you would craft to bring about your preferred option. **2-3 pages, DUE Sunday, June 26th.**

2. Several of the course readings examine the case for a carbon tax as a primary policy response to climate change, and the barriers to enacting such a policy at the state or national level. What actions by policy entrepreneurs concerned about climate change would help surmount those barriers, in your view? A carbon tax proposal, I-732, is also on the Washington ballot in November 2016. What is your assessment on the likelihood of its passage? **2-3 pages. DUE Saturday, July 2nd.**

3. **Final paper:** Research and write a paper of ***10-15 pages (double-spaced***) in which you analyze an energy policy issue. *Come to the first class session with two or three potential topics for this paper*. The paper should be written as a policy brief in which you explore an important energy issue in depth and provide recommendations to policy makers. More details on the format will be provided in class. **Due Sunday, July 24th**. Prepare a 10-minute presentation summarizing your findings; be prepared to deliver it in class on **Sunday, July 24th**.

IV. Workshops. There will be three workshops for which some pre-class research will be required. Spend some time doing quick data gathering, thinking, and/or internet research on each topic, prior to the class day shown. No paper required; bring your notes to class and be ready to discuss.

1. **For Sunday, June 25th.** How much energy do you use, and does your household use, and what carbon emissions result from that use? Do some data gathering. How many miles do you drive, and what type of driving is it? (Local? Do you regularly drive one way more than 50 miles?) Flying? Electricity use? Once you have those data, use one of the carbon calculators on the Canvas site (or others if you wish) to estimate your yearly carbon emissions.

2. For **Saturday, July 23rd.** Mark Jacobson, with a series of co-authors, has completed a series of research projects and articles that show how the U.S. could transition to an economy and society that runs entirely on renewable energy sources. Skim through his article on the U.S., then examine much more closely the article on Washington state and how it could run entirely on renewables. Carefully critique their model and their arguments. Is this a viable vision? What are the technical, political and social obstacles to its implementation?

3. For Sunday, July 24th. Think about how travel fits into your life, and how much you plan to travel in the years ahead. How might climate change impact your thinking and travel behaviors?

V. Tentative Class Schedule. Subject to Change.

Saturday, June 25th **Introductions, Concepts, definitions. Oil, Gas, Coal. The World of Energy** *Readings:* Geri and McNabb, Intro., Ch. 1-6; Maugeri,"The Shale Boom: A US phenomenon." Skim: *Survey of World Energy Resources 2013 Exec. Summary* , Skim: BP, *Statistical Review of World Energy 2015* *Skim:* Roth: "Rewiring the NW Energy Infrastructure"	**Sunday, June 26th Electricity; Introduction to Energy Policy** *Readings:* Madrigal, Sections I, II, III (Chapters 1-15). *Articles:* Gordon,"The Case Against Government Intervention in Energy Markets; Homans, "The Experiment: Stephen Chu" CBO, *Energy Security in the US (summary, pgs 1-4, skim the rest).* **Workshop 1.** **Due: Assignment 1.**
Saturday, July 2nd: International Dimensions of Energy Policy; *Readings:* Geri and McNabb, Chapters 7-11 Jamieson: *Reason in a Dark Time*, Ch.1-5 World Bank: Key Issues on the Rogun Dam Bodle, et al, on the Paris Agreement Roberts, "Political Hurdles Facing a Carbon Tax" Optional: Sachs/Warner,"The Curse of Natural Resources" **DUE: Assignment 2.**	**No class on July 3rd.**
Saturday, July 23rd **Renewable Energy and Energy Transition** *Readings.* Jamieson: *Reason in a Dark Time*, Ch. 6,7 Madrigal, Parts IV and V Jacobson, et al: "A 100% wind, water, sunlight plan for Washington" Skim: **DUE: Prep for Workshop 2.**	**Sunday, July 24th Student Presentations** *Readings:* Geri: "Aviation, Tourism and the Paris Agreement" **Film.** **Workshop 3** **DUE: Final Paper.**

V. Credit and Evaluation. Students will receive four graduate or undergraduate credits based upon satisfactory and on-time completion of all course requirements and assignments. Plagiarism, failing to complete one or more assignments, or any non-excused absences, may lead to automatic denial of credit. Students will receive 4 credits at the completion of the course if all course requirements have been successfully completed. Plagiarism (i.e., using other peoples' work as your own), failing to complete one or more assignments, completing one or more assignments late (without having made arrangements before the due date), or multiple absences may be grounds for denial of credit. Partial credit or incompletes will be awarded only under unusual circumstances. If you believe you will have difficulty submitting the final paper by its due date, contact me immediately.

Students are expected to attend each class meeting and to be on time. If an absence from class is unavoidable, contact me prior to class. Because of the intensive nature of this course, missing one day of class will necessitate a make-up assignment. Missing a second day of class will result in a reduced award of credit, or a no credit. Makeup work must be completed by the end of summer quarter. Consistent with MPA program requirements, a self-evaluation will be required for credit.

VI. Expectations of Students and faculty. We will promote a cooperative, supportive atmosphere within this learning community; give everyone opportunity for self-reflection and expression; Use high standards in reading the text and preparing our papers, lectures, and comments in seminar; Handle all disputes in a spirit of goodwill. Discuss any problems involving others in the learning community directly with the individuals involved (so long as the concerned party feels safe doing so), with the right to support from other program members during those discussions. We will abide by the student conduct code (Chapter 174-120 WAC Student Conduct Code & Grievance/Appeals;http://apps.leg.wa.gov/wac/default.aspx?cite=174) and social contract http://www.evergreen.edu/about/social.htm;WAC 174-121-010. Conflict Resolution: http://www.evergreen.edu/policies/policy/conflictresolution. Student rights and responsibilities: http://www.evergreen.edu/studentaffairs/rightsandresponsibilities.htm#matrix

VII. A Sample of Online Resources on Energy

The Energy Information Administration's (EIA) "Energy Explained" website provides an excellent overview of "energy" and energetics: http://www.eia.gov/energyexplained/index.cfm. For those of you who want deeper knowledge in this area, Vaclav Smil's books are helpful texts. *Energy: Beginner's Guide* is a fine introduction; *Energies: An Illustrated Guide* has more detail. *Energy in Nature and Society* is a detailed and technical overview. *Energy at the Crossroads* has more analysis of energy issues.

MacKay, David JC (2009). *Sustainable Energy - Without the Hot Air*. Cambridge, UK: UIT. (paperback). ISBN-13: 9780954452933. Available free online at: http://www.withouthotair.com/. (Though slightly outdated, MacKay's book is useful if you want to focus on renewable energy issues).

US Gov page on energy policy: http://www.whitehouse.gov/energy/

Text of the Paris Agreement: https://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf
DOE's Energy Efficiency and Renewable Energy Program: http://www.eere.energy.gov/
Foreign Policy on energy: http://www.foreignpolicy.com/category/topic/energy/.
Journal of Energy Security: http://www.ensec.org/.
Energy Policy (a journal): Available online at TESC Library site
International Energy Agency: http://www.iea.org/.
The IEA's *World Energy Outlook* on renewables:
http://www.worldenergyoutlook.org/media/weowebsite/2013/WEO2013_Ch06_Renewables.pdf
International Energy Agency (IEA): http://www.iea.org/
Council of Foreign Relations on Energy Security: http://www.cfr.org/issue/energy-security/
National Geographic's Energy Challenge:
http://environment.nationalgeographic.com/environment/energy/great-energy-challenge/

US DOE, Energy Information Admin: http://www.eia.gov/
EIA, Electric Power Monthly:
http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_6_a
EIA's "Energy Explained" website: http://www.eia.gov/energyexplained/index.cfm;
EIA: Annual Energy Outlook 2014 website: http://www.eia.gov/forecasts/aeo/

US Global Change Research Program: http://www.globalchange.gov/what-we-do/assessment
World Energy Council, 2013 World Energy Resources Survey:
http://www.worldenergy.org/publications/2013/world-energy-resources-2013-survey/

Global energy Assessment: Chapter by Chapter downloads: http://www.globalenergyassessment.org/

Shale Public Finance: https://energy.duke.edu/shalepublicfinance

https://www.transportation.gov/transportation-health-tool/indicators

NY Times: http://www.nytimes.com/roomfordebate/2016/05/03/whats-holding-back-renewable-energy?
http://www.nytimes.com/roomfordebate/2015/11/03/the-environmental-costs-of-solar-energy
http://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html?

Useful books:

Everett, Bob, Ed. (2012). *Energy Systems and Sustainability: Power for a Sustainable Future*. New York: Oxford.

Boyle, G. (2012). *Renewable Energy: Power for a Sustainable Future 3rd Edition.* New York: Oxford.

Sernovitz, Gary (2016). *The Green and the Black: The Complete Story of the Shale Revolution, the Fight over Fracking, and the Future of Energy.*

Nordhaus, William (2013*). The Climate Casino: Risk, Uncertainty, and Economics for a Warming World*. New Haven, CT: Yale University Press.