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## Econ 5260/6260 Spring 2013 Energy Policy

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## 1. Syllabus

### Location:

Orson Spencer Hall (OSH) room 111

### Time:

Every Tuesday 6–9 pm. First class Jan 8, Spring Break Mar 12, last class April 23, final exam April 30, 2013.

### Credit hours:

3

### Enrollment:

5260 and 6260 and the noncredit 526.

### Links:

#### This syllabus:

<http://greenhouse.economics.utah.edu/readings/syllabus.html>, also linked from Class Schedule.

#### Hans's paragraph-by-paragraph notes about the textbook:

<http://greenhouse.economics.utah.edu/readings/GeriMcNabb2011EPUS.html>. These detailed Notes about the textbook still have some gaps and will be updated during the Semester.

Instead of using powerpoints, Hans will discuss this carefully designed web site in class, we may also look at some of the videos linked, etc.

**Energy Mailing List:**

<http://greenhouse.economics.utah.edu/mailman/listinfo/energy>

**Testing Center:**

<http://www.sa.utah.edu/testing/hours/test-proctoring-service.html> If you miss the in-class quizzes, you can make them up in the Testing Center starting Wednesday morning until Friday afternoon (on Fridays the Center closes at 3 pm). You must notify Hans that you want to do this. Go to the Testing Center during their Proctoring hours and ask for the Econ 5260 test, make sure they give you the current one. They charge \$5.

**Climate Progress Web Site**

The most visited blog about climate change and policy issues

<http://thinkprogress.org/climate/issue> has several new entries every day. It is recommended for this class.

**Xhtml extensions**

Some of the pages on Hans's web site for climate issues linked from this syllabus use math formulas coded in mathml. For several years now, Firefox has been parsing these formulas correctly if you use xhtml extensions. But other browsers are also getting these capabilities as they are implementing more and more of HTML5. Each URL is also available with a html extension.

**Text Book:**

Laurance R Geri, David E McNabb. *Energy Policy in the US, Politics, Challenges, and the Prospects for Change*, 2011. Boca Raton, London, New York: CRC Press. <Amazon>.

**Instructor:**

Assoc. Prof. Dr. Dr. Hans G. Ehrbar.

**Office hours:**

You are welcome to come by whenever Hans is in his office in OSH 363, or otherwise by appointment.

**Hans's best email:**

[ehrbar@greenhouse.economics.utah.edu](mailto:ehrbar@greenhouse.economics.utah.edu). This is the most reliable way to reach Hans, Hans checks this email regularly whenever he is on the computer.

**Hans's office phone:**

(801) 581 7797. Sometimes Hans forgets to check his voice mail box when he comes to his office.

**Hans's home phone:**

(801) 908 6937.

## 1.1. Course Description

**From Course Catalog:**

The class takes a critical look at energy policies in order to find out why renewable energies have not yet taken off in the USA, despite urgent need for them. It considers both sides in the debate between renewable portfolio standards and feed-in tariffs, and between carbon trading and carbon taxes. All forms of renewable energy will be discussed one by one, with special consideration of their availability in Utah: cost, environmental impact, other considerations, and policies appropriate with respect to that type of energy.

**Addendum for 2013:**

The class will closely follow the text book **Energy Policy in the US** written by two practitioners in the field, Laurance R Geri and David E McNabb, CRC Press 2011. This book has a wealth of information about the many strands making up US energy policy which you will not find elsewhere compiled in one place. However in the past, the practice of US energy policy has fallen far short of what could have and should have done. Hans will teach you to read the book critically and distinguish between effective policies and bogus solutions.

**Emphasized Areas**

The class will focus on

- policies accelerating the technological learning curve for renewable energy,
- the necessary steps for a transition to an energy system centered on renewable energy,
- policies allowing businesses to make best use of the fossil fuels
- the thermodynamics and economics of energy efficiency—which includes combined heat and

- power and the utilization of waste heat in industrial processes
- and understanding climate change denial among policy makers, businesses, and the public.

## 1.2. Purpose

Climate change, ocean stresses, and the overuse of the earth's resources present enormous challenges to everyone living today. Good economics is needed in order to switch the energy system away from fossil fuels and generally respect the resource limits of our finite planet, while guaranteeing a high quality of life. Unfortunately, the policy discussions have been polarized and limited. This class tries to understand the situation and provide the tools needed to overcome the limitations of the mainstream policy discussion.

## 1.3. Requirements

- Attendance in class. Hans will take class rolls.
- Subscribe to the energy mailing list. You are required to stay subscribed until the end of the Semester but you may stay on even after that if you like. This is a low volume list with quality postings, which has some of the most active members of the Utah environmental community as subscribers.
- 15-minute quizzes at the beginning of each class before Spring break, starting in the second class on Jan 15. There will be 8 quizzes altogether. You are required to participate in 6 of them. If you participate in 7 or 8 quizzes, your lowest grades will be dropped. If you miss class or are late for class but cannot afford missing the quiz, you can make up the quiz in the testing center until Friday. But you have to pay their \$5 fee and there will be a 10% grade penalty.
- Comprehensive Final exam
- Each student has to prepare a portion of a chapter in the text book (one half or one third) and present it to the class in a 15 minute talk.
- Each student enrolled in 6260 also has to write a brief term paper (5–10 pages) about an energy-policy related topic. Example topics are at the end of this syllabus. Undergraduates who want to improve their grades can also write a term paper for extra credit.
- Attend one of the environmental policy stakeholder events during the Semester, write a report about it, and give the report to Hans. How do you find out about the stakeholder events? Announcements will be posted to the Energy list.
- A requirement of a more technical nature is: set up your web browser so that it can read the math formulas coded in mathml in some of the class webpages. One possibility that works is to install Firefox and visit the pages with an xhtml suffix.
- Hans is flexible regarding the requirements and he is willing to take input from the class participants regarding what works best for their situation and their prior knowledge in the field.

# 2. The Course Week by Week

## 2.1. Jan 8 2013: Introduction.

Discussion of the format of the class. Hans will give an overview over the most advanced national energy policy in the world, that of Denmark, and he will present the Introduction of the text book to the class so that participants know how he wants you to do your class presentations in the subsequent classes.

## 2.2. Jan 15 2013: Chapter 1: The Political Realities of Energy Policy

Be there on time because the quiz begins at 6 pm sharp. Here is a tentative detailed schedule for this session.

- 6–6:20 pm quiz with three essay questions. You should prepare all study questions on the page with the Denmark links, and questions 3, 6, 9, and 12 in Hans's notes about the text book. The quiz will ask you to answer a selection of these questions.
- 6:20–6:40 pm: presentation by Brandon S about first half of chapter 1.
- 6:40–6:50 pm: discussion about first half of chapter 1
- 6:50–7:10 pm: presentation by Zach S about second half of chapter 1.
- 7:10–7:20 pm: discussion about second half of chapter 1
- 7:20–7:30 pm: break.
- 7:30–8:40 pm: Hans will make a presentation about Rankine cycle: Look at the two sections about Newcomen's steam pump and the Rankine cycle in [Entropy.xhtml](#), you have to use Firefox to visit this link because of the [mathml](#).

### 2.3. Jan 22 2013: Chapter 2: Energy Policy in Transition

As always, be there on time for the quiz. Here is a tentative detailed schedule:

- 6–6:20 pm quiz with four essay questions.
  - One essay question will be one of the 15 review questions about Chapter 1 listed on p. 215/216 of the textbook.
  - The second question will be about the technology of steam engines. You should prepare questions 7136, 7140, and 7148 in [Entropy.xhtml](#), you have to use Firefox to visit these links because of the [mathml](#).
  - The third and fourth questions will be two of the following: Either question 50 in Hans's notes [Tomain2011EDEP.html](#) about Tomain (2011), 7212 in Hans's notes [CastenAyres2007EME.html](#) about Casten and Ayres (2007) or question 9 or 36 in [GeriMcNabb2011EPUS.html](#).
- 6:20–6:40 pm: presentation by Jaclyn S about first third of chapter 2.
- 6:40–6:50 pm: discussion about first third of chapter 2
- 6:50–7:10 pm: presentation by Cody G about second third of chapter 2.
- 7:10–7:20 pm: discussion about second third of chapter 2
- 7:20–7:30 pm: break.
- 7:30–7:50 pm: presentation by Jonathan P about third third of chapter 2.
- 7:50–8:00 pm: discussion about third third of chapter 2

### 2.4. Jan 29 2013: Chapter 3: The Art and Science of Crafting Public Policy

Again a quiz at the beginning. Here are the questions for you to prepare:

- Questions 1054, 1006, 36 (the answer uses [mathml](#), therefore you need Firefox for this one), 37, 38 and 51 in Hans's notes for the textbook.
- Regarding climate denial Hans can recommend Marshall (2007), it is out of print but still available as a Kindle ebook. For the quiz you have to prepare questions 2003, 2006, 2009, 2080, 2088, and 2092 in Hans's notes to Marshall's book [Marshall2007CD.html](#). These questions do not need the book itself, they can be answered either from Hans's notes or they refer to videos and blog posts about climate change denial.

We will not discuss the first half of the chapter, (unless Hans can find a guest speaker from the Political Sciences Department). The text book uses political science Hans is not familiar with. Then a presentation by Harvest M. about the second half of chapter 3.

In the second half, Hans will talk about exergy. Notes are at [Entropy.xhtml](#), you have to use Firefox to visit this link because of the [mathml](#). There is some [mmath](#) which is not more difficult than the math in other advanced undergraduate Econ courses.

## **2.5. Feb 5, 2013: Chapter 4: The Long Search for a Sustainable Energy Policy**

We won't begin with the quiz but first Hans will answer your remaining questions about entropy.

For the quiz you should prepare the following:

- From Hans's notes about the textbook questions 37, 38.
- From the Entropy notes questions 7108, 7156, 7164, 7172, and 7180.

Then a presentation by John P. about Chapter 4.

## **2.6. Feb 14, 2012: Chapter 5: Difficulties in Achieving a Balanced Energy Policy**

For Quiz 5 you should prepare the following:

- From the GeriMcNabb2011EPUS notes questions 40, 43, 48, 50.
- From the Tomain2011EDEP notes questions 28, 42, 56, 70, 84.
- From the HFR2007SP notes questions 3556.

Then presentation by Dylan M about chapter 5.

## **2.7. Feb 19, 2013: Chapter 6: What's on the Current Energy Policy Agenda?**

Again quiz at the beginning.

Then presentation by Brent H about chapter 6. This completes part I of the textbook.

## **2.8. Feb 26, 2013: Climate Change Denial.**

Again quiz at the beginning.

After this, Hans will discuss the reasons why the public seems so unconcerned about climate change, mainly using Norgaard (2011) and Marshall (2007) or Marshall (2009-March 7). For theoretical background Rosenberg is interesting. Hans is making available his notes about Norgaard, Marshall, and Rosenberg.

## **2.9. Mar 5 2013: Special class about energy policy in Utah.**

Again quiz at the beginning.

Then presentation by Heather B about the energy policy pursued by the state of Utah.

## **2.10. No class Mar 12 2013: Spring Break**

## **2.11. Mar 19 2013: Chapter 7: Crafting Policy with Subsidies and Regulations.**

No more in-class quizzes are scheduled for the second half of the Semester. (Volunteer needed) will present about tax expenditures, Nefi A about other subsidies, and David B about regulation (pp. 138–146

(volunteer needed) will present about taxes and (volunteer needed) will present about Renewable Portfolio Standards and Feed-in Tariffs.

## **2.12. Mar 26 2013: Chapter 8: Policies Shaped by Taxes and Market Mechanisms**

Brendan B about cap and trade. Hans will say more about FIT and about Carbon Rationing.

## **2.13. Apr 2 2013: Chapter 9: International Cooperation on Energy Policy**

Tyler B will cover the first part of the chapter, pages 165--175, about international energy organizations. The second half of the chapter, pp. 175--185, is shared by (volunteer needed) who focuses on the UNFCCC framework (Kyoto, Copenhagen etc), and (volunteer needed), who focuses on offsets, REDD and Carbon Sinks. (REDD and related matters are perhaps the most discussed international issues right now.)

## **2.14. Apr 9 2013: Chapter 10: Policies for a New Energy Future**

Lance will present about renewables, (volunteer needed) about nuclear power, and (volunteer needed) about fossil fuels.

## **2.15. Apr 16 2013: Chapter 11: Aftermath of the Gulf Oil Spill: Prospects for Policy Changes**

(volunteer needed) will present about problems and opportunities of centralized action. (volunteer needed) will present about problems and opportunities of decentralized action.

## **2.16. Apr 23 2013: Last Class of the Semester: Review Session in Preparation of Final Exam.**

Has everybody made an in-class presentation? If you haven't, email Hans and propose a topic for a presentation today.

## **2.17. Apr 30 2013: Final Exam**

Same time same classroom as the ordinary classes. It will be an open-book exam but not an open-notes exam. You will be required also to know alternative viewpoints not covered in the book but in class, and the issues discussed on the energy list and in the class discussion boards. Hans's notes about the text book and the material linked in these notes will be important preparation for the exam.

# **3. Term Paper Subjects**

Here are some recommended term paper topics, but you are allowed to come up with your own topic, send an email to Hans:

- Review and Critique of the Utah's Energy Plan Herbert (2011-March 2), see for instance Gleich (2011) and Hans's Notes.
- Combined Heat and Power in Utah, look at Hans's notes about Casten and Ayres (2007). Why is there not more? Obstacles.
- Future of the Grid, see Heidel et al. (2012-jan)
- Which regulatory reforms are necessary to accommodate distributed energy? See Tomain (2008-aug)
- The role of natural gas in recent energy policy.
- The nexus between energy and water, see Fisher and Ackerman (2011).

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2. Gary R Herbert. *Energy Initiatives and Imperatives, Utah's 10-Year Strategic Energy Plan*, 2011-March 2. Governor's Office, State of Utah. <<http://www.energy.utah.gov/governorsenergyplan/index.htm>>. <Utah>.
3. George Marshall. *Carbon Detox, Cut Your Carbon, Improve Your Lifestyle, Save the Planet*, 2007. Gaia Books Ltd. <Amazon>.
4. George Marshall. *The Ingenious Ways To Avoid Believing Climate Change*, 2009-March 7. <[http://deoxy.org/media/Ingenious\\_Ways\\_To\\_Avoid\\_Believing\\_Climate\\_Change](http://deoxy.org/media/Ingenious_Ways_To_Avoid_Believing_Climate_Change)>.
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6. Joseph P Tomain. Building the iUtility. Market Forces are Transforming the IOU Business Model. *Public Utilities Fortnightly* 2008-aug. <[http://www.fortnightly.com/display\\_pdf?id=08012008\\_BuildingiUtility.pdf](http://www.fortnightly.com/display_pdf?id=08012008_BuildingiUtility.pdf)>.
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10. Timothy D Heidel, John G Kassakian, Richard Schmalensee. Gridlock in 2030?. *Policy Priorities for Managing T and D Evolution*. *Public Utilities Fortnightly* 2012-jan. <[http://www.fortnightly.com/article.cfm?p\\_id=728](http://www.fortnightly.com/article.cfm?p_id=728)>.

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Hans G. Ehrbar. Date: Spring Semester 2013

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