

Energy Technology and Policy

CVEN 5830-002
Mondays and Wednesdays 4—5:15
Instructor: P. Komor

How do new energy technologies move from the research laboratory to widespread use? What role does energy play in global environmental problems, and what can energy technologies do to address those problems? Why do some energy technologies get generous public support, while others get none? This course will examine how society makes decisions about energy issues and energy technologies, and how the energy policy process really works. This is not a course on how policy *should* be made, nor is it a course on how to be a successful lobbyist. Rather, it is intended to help you understand how energy technologies – from wind turbines to new coal-burning power plants to energy efficient lighting – wind their way from the laboratory to the marketplace to common use.

Policy-making has been called the equivalent of sausage-making: an ugly and mysterious process, with an end-result that some love and some find nauseating. This course may not make you any more or less fond of the end-result, but it will remove the mystery of how it came about.

Content: The course will use case studies to illustrate how society makes energy technology decisions. Case studies may include:

- If energy efficiency is such a good idea, why don't we do more of it?
- Renewable energy: RPSs and RECs
- Nuclear energy: Is it time for a revival?
- Transportation energy use: What does corn-based ethanol get us?
- Utility planning and regulation: Market forces and Least cost planning
- Evolving carbon markets and evolving electricity markets
- Colorado's Electricity Future: New wind, new coal

Each case study will begin with an introductory lecture to provide an overview of the issue; followed by lectures, discussions, and guest speakers to explore specific areas in more detail. At the beginning of each case study, a complete schedule will be handed out describing the specific assignments and assigned readings.

Assignments: Most case studies will involve one problem set and one short (1-2 page) paper. Students will also give occasional brief presentations based on their papers. There will be a number of assigned readings. Students will also do a semester project.

Assignment	% Of Grade
Problem Sets	20
Papers	20
Class Participation	10
Presentations	10
Project	20
Final Exam	20
TOTAL	100

Readings: Readings will be posted on CU Learn. Optional for this course is P. Komor, *Renewable Energy Policy* (Diebold Foundation, 2004), available at www.amazon.com.

Office Hours: To be announced. You can always email me at komor@colorado.edu to schedule an individual time as well.

Prerequisites: A basic energy course, such as PHYS 3070 or equivalent. Basic knowledge of energy units and concepts, such as electric power (kW) and electric generation (kWh).

Tentative Schedule:

Monday August 27 – Lecture/discussion:

- What's the problem? What are some possible solutions?
- Energy supply and demand I

Wednesday August 29 – Lecture:

- Energy supply and demand II
- Energy Units

Reading for this class: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2006*, selected pages

Sep. 3 - 12	Energy efficiency
Sep. 17 - 26	Renewable energy
Oct. 1 - 10	Nuclear energy
Oct. 15 - 24	Transportation
Oct. 29 - Nov. 7	Utility planning
Nov. 12 - 21	Carbon markets
Nov. 26 - Dec. 5	Colorado electricity futures
Dec. 10 - 12	Graduate student presentations
To be announced	Final Exam