

Renewable Energy Policy

ENVS 5820/RSEI 5001

Meets Mondays 3-5:30 in ECCS 1B14

Instructors: Paul Komor and Adam Reed

Course Syllabus

Until recently, most forms of renewable energy were seen as interesting but largely impractical technical curiosities – better suited for the cover of *Popular Science* than for actual widespread use. In recent years, however, renewables have made a remarkable transition. Wind power now supplies more than 15% of electricity in some U.S. states, new renewables businesses are booming, and many regions – including Colorado – have mandated that renewables play a significant role in future energy supplies.

What role could, and should, renewables play in our national electricity supply? What policy options are available to increase our use of renewables? How do these policy options work? What do we know of their unintended side effects? How do we measure the success of a renewable policy?

These and other related questions will be explored in this class. We will use a mix of lectures, guest speakers, discussions, mock debates, and student presentations to tease apart the complex process through which policy influences renewable energy. Our focus is on renewable energy for on-grid electricity generation in the U.S.

The *tentative* class schedule is below. Note that this may change due to guest speaker availability, new legislation, and other factors.

| Date | Topic I | Topic II |
|--|---|---|
| Part 1: The U.S. Electricity System | | |
| Aug. 27 | Introduction/overview. Renewables: past, present, future | Stakeholder role-play |
| Sept. 3 | Labor Day - no class | -- |
| Sept. 10 | Origins of public utility regulation / cost-of-service regulation | Case study: Colorado electricity system |
| Sept. 17 | Renewable Energy Technologies | Electricity restructuring, competitive markets, and implications for renewables |
| Sept. 24 | Federally-owned big hydropower | TBA |
| Part II: Renewable Policy Tools | | |
| Oct. 1 | \$: PTC, ITC, and other tax levers | TBA |

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| Oct. 8 | Renewable Portfolio Standards (RPS), RECs | The Colorado RPS story |
| Oct. 15 | Utility Planning/resource acquisition | TBA |
| Oct. 22 | Feed-in Tariffs (FITs) | TBA |
| Oct. 29 | Municipalization - History | Municipalization and renewables |
| Nov. 5 | Project updates | TBA |
| Part III: New Challenges and Opportunities for Renewables | | |
| Nov. 12 | Distributed renewables and microgrids | TBA |
| Nov. 19 | The natural gas boom – game over for renewables? | TBA |
| Nov. 26 | Thanksgiving week - no class | --- |
| Dec. 3 | Renewable futures | Project presentations |
| Dec. 10 | Project presentations | Project presentations |

Note: TBA means ‘To Be Announced’

Assignments: This course will have ten homework assignments. These assignments will include problem sets, short (1-2 page) papers, and presentations. Homework is due the week after it is assigned. Late homework is not accepted. The cut-off time for turning in homework is the beginning of class (i.e., 3 pm Mondays).

There will be a number of assigned readings – some from the course textbook, and some from readings assigned in class. Readings will be posted on Desire2Learn (D2L).

There is a required semester-long project. For ENVS 5820 students, this project involves finding a client with a specific interest or need in renewable energy policy, and providing that client with a ‘deliverable.’ For RSEI 5001 students, there are several options for the class project. More details on the project are provided in a separate handout.

There are no exams in this class.

| Assignment | % Of Grade - ENVS 5820 | % Of Grade - RSEI 5001 |
|---------------------|-----------------------------------|-----------------------------------|
| Homeworks | 55 | 65 |
| Project | 35 | 35 |
| Class Participation | 10 | 0 |
| TOTAL | 100 | 100 |

Textbook: The course will use P. Komor, *Renewable Energy Policy*, Diebold Foundation, 2004, as the main text. This book is available from amazon.com. Additional readings will be assigned in class, and posted on D2L.

Office Hours: Paul has office hours Mondays and Wednesdays 1-2 pm in Fleming 310. You can always send email to Paul at komor@colorado.edu to schedule an individual time as well. Adam has office hours from 10-11am Mondays and Wednesdays in Fleming 308, and you may email him at adam.reed@colorado.edu to schedule an individual time.

Desire2Learn (D2L): This class has a Desire2Learn web site. All readings, handouts, and assignments will be posted at that web site. If you don't get a copy of something handed out in class, you can download a copy from that web site. For more information on D2L, see <http://oit.colorado.edu/d2l>.

Class Sections: If you are a regularly enrolled CU-Boulder graduate student taking this course on campus, you should be signed up for ENVS 5820-001. If you are taking this course over the Internet, you should be signed up for RSEI 5001-740. If you are not a regularly enrolled CU-Boulder student and are taking this class on campus, you should be signed up for RSEI 5001-750. Please be sure you are signed up for the correct section!

Distance Learning/Internet access: This course is offered via distance learning technologies. For more information on this option, see <http://cuengineeringonline.colorado.edu/distance-delivery>.

Honor Code: All students in this course are subject to Honor Code requirements. Please see <http://honorcode.colorado.edu/> for your obligations under the Code.

Special Services: Students with disabilities, please let me know early in the semester (that is, by Sep. 1) so that your academic needs may be appropriately met. Students with religious obligations that conflict with the class should contact me early in the semester so that accommodations can be made. More information on these issues can be found in the Syllabus Supplement, available at the class D2L web site.

Syllabus Supplement: The syllabus supplement, available at the class CU D2L web site, has more information on disabilities services, harassment, and other issues.

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