LAW OF CLEAN AND RENEWABLE ENERGY
Professor Joel B. Eisen
Spring 2013

Course Description:

This course explores the challenges and opportunities that come with new policies seeking to promote renewable energy and transition to a low-carbon electricity system. We will take an intensive look at legal developments and the effectiveness of various policy instruments in state, regional, national, and international forums where the evolving body of law to encourage clean energy sources is being made. Along the way, we will look at implications of new climate change and renewable energy mandates for the electric power sector.

The course will cover attributes of specific types of renewable energy (including wind, solar, and biofuels) and mandates and goals for renewable energy (including renewable portfolio standards and feed-in tariffs); federal, state, and local demand response laws, including their relationship to the Smart Grid; state and federal laws governing the siting and permitting of renewable energy facilities; tax and other incentives for demand response and renewables; ratemaking, wholesale markets and other aspects of the sale of electricity; and financing mechanisms for transactions involving efficiency and renewables.

Course assignments are designed to spotlight the broad range of challenges facing investors and developers in clean energy projects, and enhance students' lawyering skills in the clean energy field. There is no final exam.

A specific focus is on renewable energy project development. Project developers must deal with a set of fragmented, uncoordinated provisions that apply to different types of facilities. Numerous federal, state, and local laws govern clean energy projects. There is wide variety in these laws across levels of government, regions of the country, types of energy resources, regulatory techniques, and policy objectives.

To focus you on project development, the centerpiece of this course is drafting assignments and other hands-on exercises aimed at
accomplishing substantive objectives, such as structuring an agreement for the purchase of power generated from a renewable energy facility. You will complete a major transactional assignment (described in detail below): drafting a “power purchase agreement” (PPA) for a nonprofit institution that agrees with a third-party developer for it to install a solar energy system on its premises in return for a commitment to purchase the power that the system generates.

This assignment is designed to give you practical experience in working with state and federal laws governing renewable energy, and to introduce you to the wide variety of issues that project developers face. Just as importantly, it is designed to provide you with more experience in transactional drafting. The assignment has been developed in close consultation with Richmond-area energy lawyers who specialize in renewable energy transactions, who will provide their real-world perspective on energy law to our students through a guest lecture introducing the assignment.

**Course Format and Logistics:**

We meet on **Mondays from 10-11:40 am in Room 206**.

All readings and announcements will be posted on Blackboard.

Any written assignment may be turned in to me (I will let you know whether you may send it as an e-mail attachment) or, if I authorize it, to my administrative assistant, Melinda Fenick, in room 203. It is your responsibility to make sure that assignments reach me in a timely fashion.

You may send me e-mail at joelbeisen@gmail.com or jeisen@richmond.edu. I will make every effort to respond promptly to your messages. If you would like to chat via IM with me about the course, please feel free to invite me on Gchat at my Google email address. I am also on Twitter as “@joeleisen” and tweet on energy and environmental matters. If you would like to meet in person, you may drop in to see me if I am in my office or schedule an appointment by calling Melinda Fenick at x1593. I am usually available immediately after this class.
**Required Reading:**

In addition to the reading materials listed below, I will be assigning other materials which I will post on the course website.

There is a wealth of materials available on clean and renewable energy, and I can only scratch the surface with my suggestions. Some helpful sources include:

**DSIRE** (Database of State Incentives for Renewables & Efficiency), the most comprehensive source for federal and state policies

**ACORE** (American Council on Renewable Energy) has a state-by-state description of renewable energy in the 50 states

**National Renewable Energy Laboratory** & **Lawrence Berkeley National Laboratory** have a wealth of useful publications on specific issues relating to renewables and efficiency

The **Regulatory Assistance Project**, based in Montpelier, VT, has done cutting-edge research on renewables, efficiency, and the Smart Grid.

**Renewable Energy World** is an excellent trade publication, with timely articles on renewables issues.

Finally, **Greenwire** (login information can be obtained from the Law Library) is a daily newsletter that provides outstanding topical and timely energy law stories and information. I do strongly suggest that you consult it from time to time. I've found it to be especially helpful.

I have also put on reserve a book on Energy and Environmental Project Finance Law and Taxation: New Investment Techniques (2010), which contains a wealth of information about project finance. This should be helpful in the PPA drafting assignment.
Course Requirements:

In addition to reading weekly assignments, preparing for class, and participating actively in class discussions, there are two written requirements for the course:

1) Drafting a “Power Purchase Agreement” (PPA)

A PPA is a financial arrangement in which a third-party developer owns, operates, and maintains a photovoltaic solar (PV) system, and a host customer agrees to site the system on its property (typically on its roof). In this business model, the host does not own the solar system, so it incurs no upfront costs of purchasing or leasing the system. Nor is it responsible for coordinating the installation project: that work is done by a project coordinator (in this case, the developer), that arranges for the financing, design, permitting, and construction of the system.

In return, the host customer buys the power produced by the PV system for a predetermined period. This financial arrangement allows the host to receive stable, and sometimes lower cost electricity, while the developer acquires valuable financial benefits such as tax credits and income generated from the sale of electricity to the host customer.

You will be responsible for drafting a PPA for a nonprofit institution located in Maryland. This hypothetical institution has decided it is interested in meeting its energy needs from renewable sources onsite, but does not have the financial resources to purchase or lease a solar system.

2) Preparing a Client Memo For a Demand Response Firm

“Demand response” (DR) is the name for strategies by which end-use customers directly reduce consumption of electricity. A customer using a DR technique has used less energy, not purchased more of it. DR is different from energy efficiency improvements that make consumers more efficient per unit of electricity consumed. Typically, consumers reduce their use of electricity in response to emergency needs on the electric grid or price signals. An example would be a system using sensors on devices that consume large amounts of electricity, such as air
conditioning units, that link the devices to a utility or third party that can cut back the device's use automatically if the price of electricity increases.

Firms known as “aggregators” or “curtailment service providers” contract with customers that have “smart” electric meters to put together (aggregate) these reductions in electricity demand and bid them as a block into wholesale electricity markets. This is an essential building block of the Smart Grid, which anticipates a revolutionary transformation of consumers’ relationship with the electric grid. It can give consumers increased control over their electricity consumption and compensation for reducing it.

In the client memo, you will represent an aggregator doing business in a state that has utilities that have installed “smart meters” at their customers’ premises. The purpose of this memo will be to assess how proposals pending in the state to establish requirements for licensing aggregators would impact the aggregator.

**Grading and Evaluation:**

Course grades will be determined by the following formula:

(1) **70%** on the two writing assignments (50% for the PPA; 20% for the client memo).
(2) **30%** on performance in class.

**Course Assignments and Readings:**

A list of reading assignments is set forth below.

These reading assignments are not necessarily daily readings, but rather a list of the order in which we will cover the materials. I will let you know in advance about your assignment for each class, using the course website for posting of these and other assignments.
Reading Assignments:

Class 1: Background on Renewable Energy Resources, Technologies, Economics, and Current Status of Deployment


Class 2: Promoting Renewables Today: Renewable Portfolio Standards and REC Markets

Lincoln Davies, State Renewable Portfolio Standards: Is There a “Race” and Is It “To the Top”?, 3 San Diego Journal of Climate and Energy Law 3 (2012)


Class 3: Principles of Contract Drafting (taught by Andrew Winston of the Law Library)

Readings TBA

Class 4: Promoting Renewables Today: Net Metering and Feed-In Tariffs
California PUC, Net Energy Metering page

California PUC, Decision Regarding Calculation of the Net Energy Metering Cap (2012)


Decision Revising Feed-In Tariff Program, California PUC Decision 12-05-035 (May 24, 2012)

FERC Orders (California PUC), 132 FERC ¶61,047 & 133 FERC ¶61,059 (2010)

Class 5: Promoting Renewables Today: Barriers to State Programs; Federal Clean Energy Standard Proposals


Energy Information Administration, Analysis of the Clean Energy Standard Act of 2012

Bingaman launches uphill battle with ‘clean’ power proposal, The Hill, March 1, 2012

Class 6: Renewable Energy Project Development: Project Financing Issues (PPA Drafting Assignment to be introduced)


Chris Groobey, John Pierce, Michael Faber, and Greg Broome, Project Finance Primer for Renewable Energy and Clean Tech Projects
Wayne P. Olson, At a Crossroads: Modernizing Utility Infrastructure In a Tough Credit Environment, 22 The Electricity Journal 6 (2009)

**Class 7: Renewable Energy Project Development: A Practitioner’s Perspective**

Guest Lecture by Eric Hurlocker, Esq., GreeneHurlocker, Richmond, VA

William H. Holmes, Power Purchase Agreements: Keys to Drafting, Negotiating & Allocating Risks (2011)

**Class 8: Renewable Energy Project Development: Focus on Tax and Other Financial Issues**

Chris Groobey, John Pierce, Michael Faber, and Greg Broome, *Project Finance Primer for Renewable Energy and Clean Tech Projects*

Lawrence Berkeley National Laboratory, Using the Federal Production Tax Credit To Build a Durable Market For Wind In the United States (2007)


**Class 9: Promoting Renewables Today: Transmission Challenges**


AWEA/SEIA, Green Power Superhighways: Building a Path to America’s Clean Energy Future (2009)

**Class 10: Promoting Renewables: Distribution Challenges; Community Solar and Other Local Initiatives**

Selections from Garrick B. Pursley and Hannah Jacobs Wiseman, Local Energy, 60 Emory Law Journal 877 (2011)


Class 11: Virginia Clean Energy Policies

DSIRE, Virginia Incentives/Policies For Renewables/Efficiency

Virginia Code § 15.2-958.3 (Financing clean energy programs; PACE authority)

Virginia Code § 56-585.2 (voluntary RPS goal)

Virginia Conservation Network, Clean Energy: Powering Virginia’s Future and Solar Energy

Virginia Electric and Power Company, Terms and Conditions for the Provision of Electric Service (tariff), sec. XXV (Net Metering)

Virginia House Bill 129 (2012)

Class 12: Clean Energy Policies: Energy Conservation, IRP & DSM (DR client memo assignment distributed)

World Bank, Primer on Demand Side Management (2005)


ACEEE, Non-Transmission Alternatives: The Emerging Importance of Regional Planning to the Clean Energy Industry Under FERC 1000 (2012)

**Class 13: Clean Energy Policies: “Smart Grid” and Demand Response Providers (Part 1)**

Rebecca Henderson, Noel Maurer and Catharine Ross, The Smart Grid (2010)

Selections from Joel B. Eisen, Smart Regulation and Federalism For the Smart Grid, 37 Harvard Environmental Law Review __ (2012)


ACEEE, AMI and Smart Meter Data: 100 Year Flood or Gold Mine? (2012)

**Class 14: Clean Energy Policies: “Smart Grid” and Demand Response Providers (Part 2)**

FERC Order 745, 134 FERC ¶ 61,187 (2011)


PJM Interconnection LLC, Staff Whitepaper, Price Responsive Demand (2011)