Johns Hopkins University
Energy Policy and Climate Program
Summer 2013

RENEWABLE ENERGY PROJECT
DEVELOPMENT AND FINANCE

425.628.51
Means

Thursdays 6:00-8:45 PM from June 6 through August 22
No class July 4th; on-line lectures will be posted during that week.

The Course

The subject of the course is the development and financing of renewable energy projects, with primary emphasis on solar photovoltaic (PV) and wind. The framework is the rules that currently govern such projects or can realistically be expected to govern in the near future.

The goal is projects that are not only technically successful – panels absorb photons; turbines spin – but also financially viable. Financial viability means they are expected to earn a profit sufficient to attract funds from investors who may be indifferent to the environment and are concerned principally – or solely – with earning a return at least equal to ones available in other areas.

The course therefore will examine the operation of financial markets and analytical tools such as internal rate of return (IRR) that are used to assess financial viability. No background in financial analysis is assumed, but work in the course will include a number of exercises in which student teams assess the financial viability of a hypothetical project or determine one of the inputs relevant to that viability.

The following sections describe first the organization of the course and then its mechanics: instructors, assignments and course materials, and grading.
An Outline of the Course

Introduction

1. An overview of generating electricity with renewables

Solar Photovoltaic Projects

1. An overview of solar projects
2. Revenue, subsidies and net metering
3. Organizing and evaluating the project
4. Rate design (on-line class)

Wind Projects

1. The physical wind project: wind, turbines and transmission
2. Commercial revenue: the wholesale electricity market
3. Subsidies
4. Organizing the project, raising money and allocating risk

Energy Storage

1. Renewables and storage

Readings, Grades and Exercises

All required readings for the course will be posted on Blackboard, distributed electronically or available on the Internet.

For the course grade, equal weight will be given to an in-class final examination and to quizzes and take-home exercises during the term.

Instructor

Robert Means is a consultant in domestic and international energy issues. He teaches climate-related courses in the Johns Hopkins Advanced Academic Programs and in the Environmental Legal Studies Program of the University of Maryland School of Law and has developed and taught courses in energy law and policy at the University of Texas. He also serves as a consultant in energy regulation and presents expert testimony before the Federal Energy Regulatory Commission and in other forums.