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PIA 2522 GLOBAL ENERGY POLICY
Fall 2013

This course applies concepts and tools from economics, political science and risk analysis to address global energy issues, while cognizant of the state of the science and uncertainties. First, we examine various energy sources in the US/EU/developing countries including oil, gas, nuclear, hydro, biofuels, solar and wind. Specifically, we explore methods to estimate the benefits and costs/risks (economic, environmental, health, political) from various energy sources. We discuss how market forces, market failures, lobbying, and government policies influence the gaps between private and social costs of energy. Second, we examine incentive policies for the adoption of renewable energy (e.g., carbon pricing, cap & trade, renewable portfolio standards, pull-push innovation policies), barriers to their adoption (infrastructure, storage, and intermittency), and overall benefits from restructuring towards a greener economy. Third, we address incentive policies to increase energy efficiency (e.g., fuel economy standards, rebates, LEED certification). Fourth, we examine the role of international trade, investment, technology transfer and climate policy in increasing energy efficiency and renewable energy worldwide. Fifth, we examine the geopolitics of energy sources (e.g. US, EU/Russia, China/Africa, Central Asia & Middle East). We discuss the growing recognition that investment in energy efficiency and renewable energy can mitigate national security concerns stemming from fossil fuel dependency.

At the end of this course, students should be able to:
- Write policy memos with solid arguments and analysis, backed by empirical evidence
- Articulate the benefits and costs/risks of different energy sources
- Describe how policy tools can internalize external costs of energy (e.g. environmental, health or security costs).
- Describe how policy tools can incentivize shifts towards greater energy efficiency and energy sources with lower environmental footprint.


I have developed and taught two companion courses to my Global Energy course:
PIA 2522 Global Environment Policy (Spring 2014) addresses environmental issues in depth.
PIA 2553 Global Health Policy (Spring 2014) addresses health issues in depth.
Week 1. Energy – Economy – Environment – Climate - Politics

Section 1: Overview

Section 2: Energy Statistics
EIA. Annual Energy Outlook. Executive Summary
EIA, Energy Statistics

Section 3: Energy–Environment Nexus
Keith Schneider. Circle of Blue. In Era of Climate Change and Water Scarcity, Meeting National Energy Demand Confronts Major Impediments

Week 2: Policy Memos and Review of Basic Economic Concepts

See powerpoints and sample memos on courseweb
Concepts: Public Goods, Externality, Principal-Agent, Coordination, Regulatory Capture, Monopoly, Monopsony, Time Inconsistencies

Week 3: Nuclear Energy Part I

Section 1: Nuclear Overview

Section 2: Nuclear Waste

Section 3: Prospects for Nuclear Energy post-Fukushima
Joskow, Paul L.; Parsons, John E. The Future of Nuclear Power After Fukushima MIT CEEPR, 2012-02
Week 4: Nuclear Energy Part 2

Section 4: France – Dependence on Nuclear  
Movie “Déchets - Le Cauchemar du Nucléaire” 2009  
“French nuclear firm accused of dumping of nuclear waste in Russia, prompting Parliamentary inquiry in France. The message that AREVA's "recycling" ratio had to be corrected from 95% to less than 10% of the original mass send a shockwave through the French political landscape.”

Section 5: Germany – Moving Away from Nuclear Energy  
Paul Hackenos, (2012) Why Germans are so skeptical about nuclear energy, World Policy.org  

Section 6: Nuclear Accidents: Fukushima, Chernobyl, Three Mile Island  
James M. Acton and Mark Hibbs, Why Fukushima was Preventable, March 2012, Carnegie Papers, Carnegie Endowment for International Peace  

Week 5: Fossil Fuel Part 1

Section 1: Estimating the military costs of fossil fuels use  
Mark A. Delucchi and James J. Murphy, US military expenditures to protect the use of Persian Gulf oil for motor vehicles Volume 36, Issue 6, June 2008, Pages 2253–2264  
Toby Craig Jones, America, Oil, and War in the Middle East, Journal of American History Special Issue volume 99 (2012)

Section 2: Estimating the costs of oil spills  
Catherine L. Kling, Daniel J. Phaneuf, and Jinhua Zhao, “From Exxon to BP: Has Some Number Become Better than No Number?” The Journal of Economics Perspectives Volume 26 • Number 4 • Fall 2012  
Jerry Hausman, “Contingent Valuation: From Dubious to Hopeless”, The Journal of Economics Perspectives Volume 26 • Number 4 • Fall 2012  

Section 3: Economic and Regulatory responses to reduce the probability of another major oil spill  
The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. Final Report. Executive Summary

Suggested Books

**Week 6: Fossil Fuels Part 2**

**Section 4: Holding Companies Accountable in Developed Countries for Actions in Developing Countries**
Paul Collier. The Plundered Planet: Why We Must, and How We Can, Manage Nature for Global Prosperity (2010) Oxford University Press, Chapters on keeping firms and governments accountable for oil revenues and environmental impacts.
Center for Constitutional Rights. Wiwa et al v. Royal Dutch Petroleum et al (on Alien Tort Claims Act)

**Section 5: Shale**
(This topic is covered in greater detail in GSPIA’s capstone course taught by Sabina Deitrick, Fall 2013)
Beresteanu and Gamper-Rabindran, Spatial analysis of Regulatory Activity in the Shale Gas Sector, work-in-progress

**Week 7: Energy and Poverty**

**Section 1: Energy Poverty and Development**

**Section 2: Micro-Solar, Micro-hydro and Social Entrepreneurship**
Poor People’s Energy Outlook. The 2012 report, ‘Energy for earning a living’,
http://practicalaction.org/ppeo2012-report
http://www.barefootpower.com/

**Section 3: Large-Scale Hydro**
Powerpoint :International Rivers Network and the Bujagali Dam Project
Powerpoint :Report of the World Commission on Dams

**Suggested Books**

**Week 8: Renewable Energy 1**

**Section 1: Overview**
EIA, Renewable Energy Figures
EIA, Renewable Energy Technology Resource Maps for the United States
What Economics Tell Us About Investment in Renewable Energy? (Powerpoint)

**Section 2: The Military and Alternative Energy**
Listen to podcast panel on July 5, 2011 Diane Rehm Show

**Section 3: Price signal is the most important policy for adoption and innovation**

**Section 4: Technology Issues**
CMU Scott Institute, Managing Variable Energy Resources to Increase Renewable Electricity’s Contribution to the Grid, Policymakers Guide

**Week 9; Renewable Energy Part 2**

**Section 5: Policies for Innovation**
Michael Greenstone, 2010. The Importance of Research and Development (R&D) for U.S. Competitiveness and a Clean Energy Future. Brookings

**Section 6: Economic benefits from Renewables**

**Section 7: Policies for Renewables Adoption**

**Week 10: Policy Instruments**
Section 1: Carbon Markets/Emissions Trading
Lawrence H. Goulder "Markets for Pollution Allowances: What Are the (New) Lessons?" Journal of Economic Perspectives, 27 (Winter 2013)

Section 2: Innovation Policies

Week 11: International Diffusion of Green Technology

Section 1: International Diffusion of Green Technology

Section 2: Clean Development Mechanism

Week 12: Incentivizing Energy Efficiency

Section 1: Evaluation of Policies

Section 2: Incentivizing Consumers
Week 13. Transportation

Section 1: Transportation Issues
Christopher Knittel  Reducing Petroleum Consumption from Transportation, Journal of Economic Perspectives 26(1) 2012

Section 2: Cases in China and US

Week 14. Geopolitics Part 1

Section 1: Overview

Section 2: View from the Military

Week 15. Geopolitics Part 2

Section 1: China in Africa

Section 2: Central Asia

Suggested Books