Northwestern University – CIV ENG 309
Climate and Energy - Law and Policy **Professor Keith Harley**
Winter 2025

Introduction

This course is a survey of the major laws that regulate the acquisition of energy resources, the conversion of energy resources into usable energy, the energy transmission and transportation infrastructure and the climate change implications of these activities. The course explores the regulatory requirements that apply to several major energy-producing industries including oil and gas, coal, nuclear, wind and solar. The course also covers the regulatory systems for the electric grid, pipeline infrastructure and the transportation of energy commodities using rail and truck. The course concludes by reviewing regulatory incentives for the efficient use of energy by mobile sources and in the built environment. The course will enable non-legal professionals to understand the regulatory context in which business and management decisions about energy are made. The course will also give each student the opportunity to explore a self-selected, current energy topic through independent research.

Course Goals

The course will explore the genesis of these policy initiatives, the legislation that was enacted to effectuate these policies, and the practical implementation of this legislation. Students will:

1. gain an understanding of the legal context in which energy decisions are made;
2. view these energy policy initiatives in light of contemporary political, scientific, economic and legal realities;
3. gain the ability to apply major legal requirements to regulated facilities, sites and activities; and,
4. acquire the ability to communicate this information in an effective, professional manner.

Logistics

Class Hours: Our class meets on Fridays from 4:00 to 6:50.

Office/Phone/Email: I can be reached at the Chicago Environmental and Energy Law Clinic, 17 N. State St., Suite 1710, Chicago, IL 60602. The phone number is (312) 726-2938 and the fax number is (312) 726-5206. My email address is kharley@kentlaw.iit.edu.

Your Email: You are responsible for checking your email on a regular basis. Email may be used to communicate important class information.

Student Obligations and Grading

Your grade in this course will be based on earning points in four categories:

1. class attendance and participation, which will be verified in every class - 1 point each class -10
2. completing six response papers, graded on a scale of 0 – 5 points - 5points/6 papers - 30
3. independent research paper on an energy law or policy topic – 60 points

Reading Assignments

Attached please find a class schedule with corresponding reading and writing assignments for the entire semester. Please be aware that as the semester progresses, changes may be made to the lectures and/or assigned readings. You should purchase Energy Law (Concepts and Insights) by Alexandra Klass and Hannah Wiseman, 2d Edition, 2019, ISBN 9781642425345

Class Schedule

Date	Topic	Assigned Reading
1/10	Introduction – Who Owns Subsurface Resources? Energy and Climate – The Base Case Agency Focus: Department of Energy	 Resources for the Energy Professional: https://www.eia.gov/ https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf https://energy.gov/
1/17	Acquisition of Energy Resources: Petroleum and Natural Gas Energy and Climate – Exporting Carbon Agency Focus: Bureau of Land Management Prompt: Hydraulic Fracturing – the NY Ban v. PA Regulation	Klass and Wiseman, pp.47-80, 118-123 https://www.blm.gov/ Response Paper #1 Due
1/24	Acquisition of Energy Resources: Coal Mining Enterprises Agency Focus: Office of Surface Mining Conversion of Energy Resources Into Usable Energy: Coal and Natural Gas Fired Electric Generating Units	Klass and Wiseman, pp.109-117, 37-45 https://www.osmre.gov/ Klass and Wiseman, pp. 135-149

	Energy and Climate: Substituting Gas for Coal – A Zero Sum Game? Prompt: Sierra Club's Beyond Coal Campaign v. "Clean, Beautiful Coal"	Response Paper #2 Due
1/31	Conversion of Energy Resources Into Usable Energy: Nuclear Power Plants Agency Focus: Nuclear Energy Regulatory Commission Prompt: Nuclear Energy – Relic Of The Past or Critical For a Low Carbon Future?	Klass and Wiseman, pp. 155-161 https://www.nrc.gov/ Response Paper #3 Due
2/7	Conversion of Energy Resources Into Usable Energy: Petroleum Refineries Agency Focus: U.S. EPA Case Study: The Permit Array and the Environmental Management Challenge	Klass and Wiseman, pp. 231-243 https://www.epa.gov/ Paper Topics Due
2/14	Conversion of Energy Resources Into Usable Energy: Utility Scale Renewables – Solar and Wind Energy and Climate: Buying and Selling Clean Energy Commodities Agency Focus: Center for Resource Solutions Prompt: Renewable Energy Certificates – Fact or Fiction?	Klass and Wiseman, pp. 154-155, 173-192 https://resource-solutions.org/ Response Paper #4 Due
2/21	Transmission and Transport of Energy Resources: The Electricity	Klass and Wiseman, pp. 81-94, 193-230

	Marketplace Energy and Climate: Can An Agnostic Electricity Transmission System Enable Clean Energy Solutions? Agency Focus: FERC Agency Focus: PJM	 https://www.ferc.gov/ http://www.pjm.com/
2/28	Transmission and Transport of Energy Resources: Pipeline Infrastructure and Transport By Truck and Rail Agency Focus: Office of Pipeline and Hazardous Materials Safety Prompt: Keystone XL – The Worst Option (Except All The Others)?	Klass and Wiseman, pp. 101-108 https://www.phmsa.dot.gov/ Response Paper #5 Due Presentations
3/7	Efficient Use of Energy Resources: Green Buildings Energy and Climate: The Climate Impacts of the Built Environment Agency Focus: The U.S. Green Building Council Prompt: LEED or CalGreen – Which Is The Future?	Klass and Wiseman, pp. 245-56, 262-268 https://new.usgbc.org/ Response Paper #6 Due Presentations
3/14	Efficient Use of Energy Resources: CAFÉ Standards Energy and Climate: The Climate Impacts of Mobile Sources Agency Focus: National Highway Traffic Safety Administration	Klass and Wiseman, pp. 256-262 https://www.nhtsa.gov/

3/21	Final Papers Due	

Classes One and Two – These classes will provide an introduction to the course and subject matter. This introduction will include descriptions of several recurrent issues in energy law and policy. These issues include –

Why does location matter – east v. west v. offshore?

What is controlled by the federal government and what is controlled by states/units of local government?

What are the key agencies in the federal government? How do they acquire and exercise their authority? What are the limits on federal authority?

How do members of the public (NGOs) influence federal agency decision making?

Is it possible to achieve a balance between free enterprise and command-and-control regulation?

What are important international forces that influence U.S. energy law and policy?

Classes One and Two will also examine the regulation of industries that extract petroleum and natural gas energy resources, including in-depth reviews of two high profile examples of petroleum/natural gas extraction – hydraulic fracturing and off-shore drilling.

Class Three – This class will focus on the acquisition of energy resources, continuing our discussion on the key questions "who owns subsurface resources?" and "who regulates the extraction of underground resources?"

Class Three will also review the regulatory system for two categories of coal mining enterprises, underground mining and surface mining. This class will include an in-depth review of the Surface Mining Control and Reclamation Act, the regulation of mining waste disposal, mine reclamation requirements and an introduction to workplace safety requirements under OSHA. The class will discuss if pro-coal administration policies will revitalize this struggling industry.

Class Three will also explore the regulation of coal- and natural gas-fired electric generating units, and will include an in-depth case study describing the enforcement process for failure to comply with requirements that originate in the Clean Air Act. This class will also discuss existing regulatory initiatives relating to the disposal of coal ash. Finally, using EIA data, this class will review the trend away from coal to natural gas as the primary fossil fuel for generating electricity in the U.S. and evaluate how this trend is reducing the overall carbon intensity of the U.S. economy.

Classes Four, Five and Six – These classes will focus on four categories of facilities that convert energy resources into usable energy.

Class Four will review the regulatory system for nuclear power plants, including siting, licensing, permitting (thermal wastewater discharge) and decommissioning requirements. This class will also provide students with the opportunity to review and discuss the longstanding policy dispute over the disposal of radioactive wastes generated by these facilities.

Class Five will examine the regulation of petroleum refineries under the Clean Air Act, Clean Water Act and Resource Conservation Recovery Act. This will include an examination of the types of permits these complex facilities must acquire and maintain, and the role of environmental managers in the monitoring, recordkeeping and reporting systems mandated by these permits.

Class Six will focus on utility scale renewables (solar and wind). This class provides an opportunity to discuss the central role of states and units of local government in the siting process. This class will also provide an opportunity to review the importance of the Endangered Species Act for both programs and projects. Students will also be introduced to the concepts of Renewable Energy Certificates, renewable portfolio standards, net metering and non-distributed power.

Classes Seven and Eight – These two classes will focus on the regulation of the transmission and transport of energy resources.

Class Seven will describe the role of the Federal Energy Regulatory Commission and its authorized regional transmission organizations in controlling the electricity marketplace. The class will explore how these regional markets affect electric suppliers, load serving entities and consumers.

Class Eight focuses on the regulation of the nation's vast pipeline infrastructure, using a recent case study to prompt a discussion on how local activism based on social values influences the implementation of generic federal regulatory standards for specific projects. This class will also include a review of the regulation of the transportation of energy resources by truck and rail, focusing on recent initiatives to improve safety standards for rail cars transporting volatile petroleum-based products.

Classes Nine and Ten – These classes will review regulatory initiatives mandating the efficient use of energy resources.

Class Nine will explore voluntary and regulatory initiatives relating to the built environment and energy efficiency, including LEED standards, the CalGreen Building Standards, Chicago's Energy Benchmarking Ordinance and federal mandates for energy efficient lighting systems.

Class Ten will begin by reviewing the history and current mandates for mobile sources to meet Corporate Average Fuel Economy standards and the effect CAFE standards have on the fuel efficiency and carbon intensity of this sector.

Methods of Evaluation – As a prelude to in-class discussions on more policy-oriented aspects of the course material, every student will prepare six short papers in response to prompts I provide. Every student will prepare and present a research paper on a self-selected, current energy law topic.