

Economics 436
Seminar in Electricity, Natural Gas, and
Telecommunication Economics

Dr. David Loomis
Fall 2016

TR 9:35 a.m.-10:50 a.m.
STV 234

Office: STV 428
Office Hours: TR 2—3:30 pm and by appointment
Phone: 438-7979
Email: dloomis@ilstu.edu

Course Prerequisites: ECO 435

RECOMMENDED TEXTS:

David G. Loomis, *The Economics of the Telecommunications Industry*, unpublished manuscript posted on ReggieNet.

Caroline Cabral, *The Natural Gas Industry*, unpublished manuscript posted on ReggieNet.

Papers referenced in the syllabus will be on ReggieNet.

COURSE OBJECTIVES:

This course is designed to be the “capstone” course for the M.A. program in Electricity, Natural Gas and Telecommunications sequence. The student will use the theoretical and analytical tools from other courses to make sound economic judgments regarding public policy and managerial decision-making.

There are two primary goals of this course. First, the student is to have a comprehensive understanding of the electricity, natural gas, and telecommunications industries including their history, regulation, and current issues. Second, the course is designed to simulate “real world” situations that the student may face in the workplace. This will include: writing and presenting testimony as an expert witness; writing and presenting a paper to professional colleagues; writing and presenting a report to the vice president of a corporation; evaluating and reporting on others’ work.

Since most, if not all, of the students in this course will have done an internship in a particular industry, there will be some bias on the students' part towards one particular industry. The course will try to show the similarities between the economic problems facing each of the

industries while recognizing their differences. The student should grow to appreciate the complexities of problems faced by all of the industries.

We will try to have a guest speaker representing each of the three industries to provide a current, state-of-the-art perspective on their respective industries. You are expected to take notes and ask questions of the speakers. Material covered by the speakers will be on the exams.

COURSE REQUIREMENTS

There will be two midterm exams and a final. Homework assignments will be given throughout the semester. Class attendance and participation is essential to learning in this course. We will not be meeting as a whole class for every class period. You will have small group meetings and out-of-class assignments during some classes. We will also have industry speakers who may only be available during alternative times.

The final grade will be based on the following point scheme:

Midterm #1	100 points
Midterm #2	100 points
Homework	200 points
Final	100 points

This weighting scheme emphasizes the out-of-class assignments because of their practical nature and the amount of student effort that is involved. The exams, which will roughly correspond to each industry, are given to demonstrate a level of competency in each of the different industries.

COURSE OUTLINE

HISTORICAL AND REGULATORY BACKGROUND OF TELECOMMUNICATIONS

I. Industry Overview

Loomis, Chapters 1 & 2

Loomis, David G., "The Telecommunications Industry" in Hossein Bidgoli (ed.) *The Handbook of Computer Networks, Volume 1*, Hoboken, NJ: John Wiley & Sons, 2008.

Bluhm, Peter, "Fundamentals of Telecommunications Regulation: Markets, Jurisdiction and Challenges" NRRI Discussion Paper 08-05, May 7, 2008.

Silver, Ralph U., "National Communications System (NCS): Local Loop Overview," *Federal Communications Commission*, BellSouth Network Training.

II. Traditional Regulation of Wireline Voice

Loomis, Chapters 3-5

III. Wireless/Auction Theory

Loomis, Chapters 6-9

Klemperer, Paul, "Why Every Economist Should Learn Some Auction Theory," Chapter 2 in *Auctions: Theory and Practice* by Paul Klemperer, Princeton University Press, 2004.

Auction of 700 MHz Band Licenses Scheduled for January 16, 2008, FCC Report DA 07-3415, August 17, 2007.

IV. Regulation of Wireline/Wireless Data

Loomis, Chapters 10-17

Rosenberg, Ed, "Assessing Wireless and Broadband Substitution in Local Telephone Markets," NRRI Discussion Paper, 07-06, June, 2007.

V. Regulation of Wireline/Wireless Video

Loomis, Chapters 18-21

Boik, Andre, "Intermediaries in Two-sided Markets: An Empirical Analysis of the US Cable Television Industry," *American Economic Journal: Microeconomics*, 8(1), pp. 256-282.

EXAM #1

HISTORICAL AND REGULATORY BACKGROUND OF THE ELECTRIC INDUSTRY

I. Industry Overview

Steinhurst, William, "The Electric Industry at a Glance," NRRI Discussion Paper 11-04, January, 2011.

II. Prices and Costs

Crew, Michael A. and Paul R. Kleindorfer, "Electricity," *The Economics of Public Utility Regulation*, Chapter 8.

Dalia Patiño-Echeverri *, Benoit Morel, Jay Apt, And Chao Chen, "Should a coal-fired power plant be replaced or retrofitted?" Carnegie Mellon Electricity Industry Center Working Paper CEIC-07-06.

III. Implementing Competition

Borenstein, Severin, "The Trouble With Electricity Markets: Understanding California's Restructuring Disaster," *Journal of Economic Perspectives*, Vol 16 No. 1, Winter 2002, pp. 191-211.

Lester Lave, Jay Apt, and Seth Blumsack, "Deregulation/Restructuring, Where Should We Go from Here?" Carnegie Mellon Electricity Industry Center Working Paper CEIC-07-07.

IV. Implications of Competition

Brennan, Timothy, "Market Failures in Real-Time Metering," *Journal of Regulatory Economics*, Vol. 26 No. 2, September 2004, pp. 119-139.

Loxley, Colin, and David Salant, "Default Service Auctions," *Journal of Regulatory Economics*, Vol. 26 No. 2, September 2004, pp. 201-229.

Joskow, Paul, "Markets For Power In The United States: An Interim Assessment" Center for Energy and Environmental Policy Research, 05-012, August 2005.

Potter, Scott, "After the Freeze: Issues Facing Some State Regulators As Electric Restructuring Transition Periods End," NRRI Discussion Paper 03-18, 2003.

ILLINOIS ELECTRICITY DEREGULATION/RESTRUCTURING LAWS

V. Analysis of Illinois Restructuring

HB 362 (Online)

ICC Report on Deregulation Bill (SB 55) (Online)

Illinois Power Agency Act (SB1592) (Online)

Silverstein, Ken, "Rate Cases Cause Ruckus," *EnergyBiz Insider*, August 3, 2007.

Carlson, J. Lon and David G. Loomis, "An Assessment of the Impact of Deregulation on the Relative Price of Electricity in Illinois," *Electricity Journal*, forthcoming.
ICC Office of Retail Market Development, Annual Report, 2010.

VI. Transmission/Locational Marginal Pricing (LMP)/ Cost Allocation

McGarvey, Joe, "Transmission Investment" Commissioner Primer – NRRI Paper 06-104, July 2006.

ERCOT, Calculation of Market Clearing Price for Energy, White Paper, undated, online.

FERC Docket No. RM10-23-000, Transmission Planning and Cost Allocation

By Transmission Owning and Operating Public Utilities, 2010.

Bowden, Nick, "Stakeholder Opinions Differ Over Cost Allocation for Transmission Expansion," *Natural Gas & Electricity*, Vol. 26 No. 10, May 2010, pp. 1-8

VII. Electricity Demand

Horowitz, Marvin J., "Changes in Electricity Demand in the United States from the 1970s to 2003," *The Energy Journal*, Vol. 28, No. 3., 2007.

VIII. U.S. EPA Clean Power Plan

Garg, Rishi, "The U.S. EPA's Clean Power Plan: A Comprehensive Summary," NRRI Discussion Paper 14-09, October, 2014.

Exam #2

HISTORICAL AND REGULATORY BACKGROUND OF THE NATURAL GAS INDUSTRY

I. Industry Overview

Costello, Ken, "The Natural Gas Industry at a Glance," NNRI Discussion Paper, January, 2008.

MacAvoy, Chapter 1-3

Alger, Dan and Michael Toman, "Market-Based Regulation of Natural Gas Pipelines," *Journal of Regulatory Economics*, September 1990, 2 (3), pp. 263-280.

Doane, Michael J. and Daniel Spulber, "Open Access and the Evolution of the U.S. Spot Market for Natural Gas," *The Journal of Law and Economics*, October 1994, v. 37 n. 2, p. 477ff.

Crew, Michael A. and Paul R. Kleindorfer, "Gas," *The Economics of Public Utility Regulation*, Chapter 10.

II. Prices and Costs

Klein, Christopher C., "A Comparison of Cost-based Pricing Rules for Natural Gas Distribution Utilities," *Energy Economics*, July 1993, v. 15 n. 3, pp. 176ff.

III. Effects of Deregulation

Dreyfus, Daniel A., "Deregulation of Utilities: The Natural Gas Experience," *Business Economics*, April 1989, v. 24 n. 2, pp. 41ff.

Yucel, M.K., "A Dynamic Model of Natural Gas Deregulation," *Energy Economics*, January 1990, v. 12 n. 1, pp. 35ff.

Lyon, Thomas P. and Steven C. Hackett, "Bottlenecks and Governance Structures: Open Access and Long-Term Contracting in Natural Gas," *Journal of Law, Economics, and Organization*, October 1993, v. 9 n. 2, pp. 380ff.

Leppel, Karen and Thomas O. Armstrong, "Are Regulated and Potentially Unregulated Combination Gas and Electric Utilities Natural Monopolies?" *Journal of Economics and Business*, August 1994, v. 46 n. 3, pp. 195ff.

IV. Implementing Retail Choice

"ICC Staff report on natural gas workshops" on e-reserves

Barcella, Mary L., "Natural Gas in the Twenty-First Century," *Business Economics*, October 1996, v. 31 n. 4, p. 19ff.

Gorak, Thomas C. and Dennis Ray, "Efficiency and Equity in the Transition to a New Natural Gas Market," *Land Economics*, August 1995, v. 71 n. 3, p. 368ff.

Costello, Ken, "Revenue Decoupling for Natural Gas Utilities," NRRI Discussion Paper 06-06, April, 2006.

HISTORICAL AND REGULATORY BACKGROUND OF THE WATER INDUSTRY

Rubin, Scott, What Does Water Really Cost? Rate Design Principles for an Era of Supply Shortages, Infrastructure Upgrades, and Enhanced Water Conservation," NRRI Discussion Paper 10-1, July 2010.

FINAL – TBD