

Oil and gas policy in the United States
Ford School of Public Policy, University of Michigan
PUBPOL 468 / ENVIRON 468
Instructor: Daniel Raimi
Winter 2019

Class meetings: Mondays and Wednesdays 1 – 2:30 PM; Weill Hall 1230
Office Hours: Monday 2:30 – 3:30 PM, or by appointment; Weill Hall 3236

Syllabus

Course summary

Hydraulic fracturing and horizontal drilling have dramatically increased oil and gas production in the United States. What does that mean for the domestic economy, energy prices, foreign policy, climate change, and local environments? To understand the answers to these questions, this course will begin with an overview of the domestic and global energy system. It will briefly describe the history of oil and gas production in the United States, and how that history has helped shape global energy markets.

With this context in place, we will examine how federal, state, and local policies have affected production and consumption of oil and gas over time. Next, we will look at some of the key energy policy questions facing the country, including: how oil and gas development is regulated, subsidized, and taxed; the environmental risks related to “fracking”; whether the United States is on track to become “energy independent”; the role of oil and gas production and consumption in climate change; oil and gas exports from the United States; and controversies over oil and gas pipelines in the United States.

Students will be expected to analyze historical and contemporary issues related to the role of public policy in oil and natural gas markets and produce policy papers on a range of topics.

The course will begin with a primer on energy systems and markets in the United States, and no previous experience with energy policy is required. A basic understanding of economics will be helpful, but is not required. We will cover in class the key skills needed to use Microsoft Excel and PowerPoint.

Key skills to be developed

This class will help develop several important and marketable skills for students to apply in the workplace and/or their future education.

- Analytical writing
- Data-driven analysis
- Understanding critical elements of energy and environmental economics
- Understanding oil and natural gas policies and markets
- Learning and applying the Microsoft Office Suite (Excel, PowerPoint)

Required materials

The Prize, by Daniel Yergin

The Fracking Debate, by Daniel Raimi

Various documents provided via links on this syllabus, or by .pdf on Canvas

Various datasets available online

All readings are listed below. You are expected to complete all readings in their entirety by the stated date, unless marked otherwise.

Additional suggested materials

U.S. Energy Information Administration

Subscribe to daily emails from *Today in Energy* at <http://www.eia.gov/tools/emailupdates/>

Columbia University Center on Global Energy Policy

Podcast: Columbia Energy Exchange (<http://energypolicy.columbia.edu/podcast-feed>).

Twitter recommendations (not endorsements—these feeds will give you a range of perspectives)

@MarkSBrownstein, @RobertStavins, @EnergyFromShale, @JoshFoxFilm, @Frackfeed, @Billmckibben, @JasonBordoff, @ElephantEating, @joshdr83, @AmyJaffeEnergy, @AmyAHarder, @DxGordon, many more...

Assignments and grading policies

All assignments are to be turned in via Canvas. If an assignment is late (by any amount of time—even one minute), it will be marked down by 10 points immediately, 20 points at the beginning of the second day, 30 points at the beginning of the third day, and so on. Extensions will only be granted under exceptional circumstances, and must be obtained prior to the due date.

Papers will be evaluated based on demonstrated understanding of the topic, strength of analysis, appropriate use of data, appropriate use of course readings, quality of writing, and quality of figures. Mistakes such as spelling errors and typos will also be taken into account. There will be a series of in-class debates near the close of the semester where teams of students will make the strongest possible arguments related to specific energy policy issues.

Students are not expected to demonstrate mastery of the material in class, but they are expected to ask good questions and participate in class discussions. Any student not in attendance for a quiz will receive a “0” without an excused absence. Final grades will be based on the following:

15%	Attendance/class participation
15%	Short Paper 1
15%	Roll-play exercise
15%	Short Paper 2
15%	In-class debates
25%	Final paper

Attendance and technology policies

Class attendance is mandatory, and will be incorporated in the class participation grade. Students not able to attend class must notify the instructor at least 24 hours in advance to receive an excused absence. Of course, exceptions will be granted for illness or emergencies.

Computers and other electronic devices may not be used in class without explicit permission from the instructor. No texting or phone use is allowed. Any violation of these policies will result in removal from class and a score of “0” for the day’s reading quiz and attendance grades.

Ford School academic expectations

Please visit the Ford School's webpage on academic expectations (<http://fordschool.umich.edu/academics/expectations>), which provides a variety of resources for students and addresses the following topics:

- Academic integrity
- Accommodations for students with disabilities
- Student mental health and wellbeing
- Inclusivity statement
- Communicating with your instructor
- Attendance and assignments
- Use of technology

Topics and assignments

Week 1: An introduction to energy systems and markets

- Major sources of energy: Oil, natural gas, coal, nuclear, renewables
- Major uses of energy: Transportation, residential, commercial, industrial

First class Wednesday, 1/9

- No readings due, but start early on Monday's readings: There's a lot of them!

Assignment 1, due 5PM Monday, 1/14 (ungraded). Submit via Canvas.

- 1) In 300 words or less, what do you hope to get out of this course? This is not to impress the professor—I want to know why you are here.
- 2) List your top 5 questions about oil and gas policies and/or climate policy in the United States.
- 3) What was your favorite new music album/artist of 2018? Feel free to list more than one!
- 4) Do you have a laptop that you can bring to class?

Assignment 2: complete anytime before you begin paper #1

Data visualization using Microsoft Excel and PowerPoint

On your own schedule, complete the Microsoft Excel and PowerPoint exercises posted on Canvas. These will not be graded. However, this is an essential part of the course. Data visualizations will be required for every paper.

Week 2: Oil history, oil markets and energy “independence”

- An overview of the oil and gas production process, and an introduction to oil markets
- A discussion of energy “independence” in the context of oil markets

Readings due Monday, 1/14

- The Prize*, chapter 1: Oil on the Brain: The Beginning
- The Prize*, chapter 19: The Allies' War
- The Prize*, chapter 20: The New Center of Gravity

Readings due Wednesday, 1/16

- The Prize*, chapter 31: OPEC's Imperium
- U.S. State Department: [Arab Oil Embargo 1973-1974](#)
- Perry et al: [Paving the way for US energy dominance](#)
- Bordoff: [Why the US should not want energy independence](#)
- Book: [An energy policy of dominance](#)

Week 3: Natural gas markets and greenhouse gas emissions

- An overview of natural gas markets and the electricity sector
- An overview of domestic climate policies and the controversy over the role of natural gas

Readings due Monday, 1/21: No class. Happy Martin Luther King, Jr. Day!

- I hope you'll spend some time today thinking about Dr. King's contribution and legacy. I hope you'll also think about how you can contribute to advancing the goals that he championed.

Readings due Thursday, 1/23

- McKibben: [Global warming's terrifying new chemistry](#)

-Energy in Depth: [Natural gas and climate change](#)

-*The Fracking Debate*, Chapter 7: Is Fracking Good or Bad for Climate Change?

Week 4: Fracking risks and benefits

-Fracking and climate change

-Environmental and health risks of oil and gas development

Readings due Monday, 1/28

-Watch the film *Gasland* [online](#)

-Soraghan: [Groundtruthing Gasland](#)

Readings due Wednesday, 1/30

-*The Fracking Debate*, Chapter 3: Does Fracking Contaminate Water?

-*The Fracking Debate*, Chapter 4: Will Fracking Make Me Sick?

Week 5: Fracking risks and benefits

-Risks associated with oil and gas development: water, health, earthquakes

-Economic impacts of oil and gas development

Readings due Monday, 2/4

-*The Fracking Debate*, Chapter 9: Is Fracking Good for the Economy?

Readings due Wednesday, 2/6: No class. Work on paper #1 (see prompt below)

Week 6: Regulating oil and gas development

-Local, state, and federal regulation.

Readings due Monday 2/11

-*The Fracking Debate*, Chapter 6: Is There Any Regulation on Fracking?

-Denver Post: [Prop 112 fails as voters say no to larger setbacks for oil and gas](#)

-BBC: [The Texas town that banned fracking \(and lost\)](#)

Readings due Wednesday 2/13

-**READ** Executive Summary only: U.S. EPA: [Regulatory Impact Analysis for the Proposed Reconsideration of the Oil and Natural Gas Sector Emission Standards for New, Reconstructed, and Modified Sources](#), 2018

-Krupnick et al. 2018: EPA's 2016 Methane Rule. [Should it Stay or Should it Go?](#)

Short paper 1 due Friday, 2/15 at 5PM

Work with a partner on this paper. Each 2-person team should submit one paper. Do not put your names on the paper. Instead, use your and your partner's UMID.

4 pages maximum, 12-point font, double-spaced, 1" margins

Accompanied by 3 original figures created in Microsoft Excel or another graphical program on separate pages at the end of your paper. Figures do not count against the 4-page limit.

Assignment:

You and your partner are the governor and lieutenant governor of Texas. Oil and gas production have grown rapidly in your state over the past decade, with substantial environmental and economic impacts. Your administration must now decide what—if any changes you want to make to existing regulations and tax policy

in the state. Use data and evidence from the readings (or other government or peer-reviewed sources) to make your arguments. Consider changes to regulations addressing both of the following topics:

-Should Texas add new restrictions to reduce natural gas “flaring”?

-Should Texas change the way that revenue from the oil and natural gas taxes are allocated?

Suggested data and information sources (feel free to find more):

National and state-level oil and gas production data: www.eia.gov

Detailed TX oil and gas production data: <https://www.rrc.state.tx.us/oil-gas/research-and-statistics/>

Information on natural gas flaring: <https://www.rrc.state.tx.us/about-us/resource-center/faqs/oil-gas-faqs/faq-flaring-regulation/>

Texas public revenue data: <https://comptroller.texas.gov/transparency/reports/cash-report/>

Texas crude oil tax policy: <https://comptroller.texas.gov/taxes/crude-oil/>

Texas natural gas tax policy: <https://comptroller.texas.gov/taxes/natural-gas/>

Week 7: Preparing for Alpine High role-play exercise

Readings due Monday 2/18

-*The Fracking Debate*, Chapter 11: Do People Living Near Fracking Love it or Hate It?

-Boudet et al. 2018, [The Effect of Geographic Proximity to Unconventional Oil and Gas Development on Public Support for Hydraulic Fracturing](#)

Readings due Wednesday 2/20

-[Apache, oil drilling, become part of life in Balmorhea](#)

-[Apache cribs activist tactic and protests wastewater well at Alpine High](#)

-[Apache moves to expand Alpine High development](#)

Week 8: Alpine High role-play exercise

Readings due Monday 2/25

In-class role playing exercise. See separate assignment for instructions.

Readings due Wednesday 2/27

In-class role playing exercise. See separate assignment for instructions.

Have a wonderful winter break!

3/4 through 3/8

Week 9: Oil and gas geopolitics

-Wars in Iraq

-The new geopolitics of energy

Readings due Monday 3/11

The Prize, Chapter 37: Crisis in the Gulf

-Jeff Colgan: [Oil, Conflict, and U.S. National Interests](#)

Readings due Wednesday 3/13

-Meghan O’Sullivan: [US energy diplomacy in an age of energy abundance](#)

-Amy Myers Jaffe: [Iranian Oil Sanctions: Myths and Realities of U.S. Energy Independence](#)

-Amy Myers Jaffe: [Renewable Energy, Russian Natural Gas and the Lesson of January 2006](#)

-Axios: [Trump to Iraqi PM: How about that oil?](#)

Week 10: Climate change and US energy exports

Readings due Monday 3/18

- Bordoff and Houser: [Navigating the U.S. oil export debate](#). READ Executive Summary. SKIM full paper.
- Blake Clayton: [The case for allowing U.S. Crude Oil Exports](#)
- Oil Change International: [Should It Stay or Should It Go?](#) READ Executive Summary. SKIM full paper.

Readings due Wednesday 3/20

- None. Work on your paper.

Short paper 2 due 5PM, Friday 3/22

4 pages maximum, 12-point font, double-spaced, 1" margins

Accompanied by 4 of your own figures created in Excel/PowerPoint or another graphical program on separate pages.

Do not put your name on the paper. Instead, use your UMID.

Considering both the benefits and downsides, should the U.S. seek to:

- (1) Reduce and eventually eliminate exports of U.S.-produced oil and natural gas?
- (2) Impose restrictions which only allow specific levels of oil and natural gas exports?
- (3) Export as much oil and natural gas as market allows?

Pick one and make your best case. Make sure to consider the economic, environmental, and geopolitical issues at play.

Use historical data from the U.S. EIA and projections from the U.S. EIA's Annual Energy Outlook to support your argument. Take a look at projected imports and exports under the "Low Oil and Gas Resource and Technology" Case, the "Reference" Case, and the "High Oil and Gas Resource and Technology" Case. Use the interactive table browser to gather data: <https://www.eia.gov/outlooks/aeo/data/browser/>

Week 11: Pipelines, pipelines, pipelines

- Recent national pipeline controversies
- The Rover pipeline

Readings due Monday 3/25

No readings. We will discuss what you argued in your paper, then move on to pipeline controversies including the Keystone XL and Dakota Access pipelines.

Readings due Wednesday 3/27

- Rover Pipeline: Review the [route](#), [overview](#), and [other pages](#)
- Ohio EPA: [Rover Pipeline Spills Contaminants in Ohio Stream](#)
- WOSU: [Ohio EPA Reports New Rover Pipeline Spill To Federal Regulators](#)
- Detroit News: [DTE plans 80% cut in carbon emissions by 2050](#)

Week 12: Boom and bust?

Readings due Monday 4/1

- Fitzgerald et al: [Opportunities and Challenges in Energy-Related Boomtowns: Implications for Family and Consumer Science Professionals](#). Read through pg. 402.
- Allcott and Keniston: [Dutch Disease or Agglomeration?](#) Section 1 only
- Sisk: [How the boom-bust cycle is playing out in ND](#)

-Unger: [Can an ND oil town break the boom bust cycle?](#)

Readings due Wednesday 4/3

-Watch launch of [Crude Volatility](#) on YouTube.

-Ball and Lowy: [Lone Star Rising](#).

-Listen to “[Boom and Bust](#)” stories featured on Marfa (Texas) public radio.

Week 13: TBD

Readings due Monday 4/8

TBD

Readings due Wednesday 4/10

No readings. Work with your group to prepare for next week’s debates.

Week 14: In-class debates

-Instructor will provide additional instructions during Week 13.

Readings due Monday, 4/15

No readings. Work with your group to prepare for next week’s debates.

Readings due Wednesday, 4/17

No readings. Work with your group to prepare for next week’s debates.

In-class debates

With your assigned teams, you will argue for or against controversial oil and gas issues. Details of the assignment will be provided closer to the date. The topics will be:

- Should the federal “Green New Deal” proposed by congressional Democrats include a ban on fracking?
- Should Governor Whitmer impose additional regulations on the Rover pipeline?
- Should the University of Michigan divest from companies that produce, transport, and refine oil and natural gas (note that this does not include “downstream” companies like DTE and other utilities)?
- Should the state of Colorado increase setbacks from all structures and water bodies to 2,500 feet, as proposed in 2018 ballot Proposition 112?

Week 15: Final class wrap-up

Readings due Monday, 4/22

-None

Final paper due 5PM, [date]

6 pages maximum, 12-point font, double-spaced, 1” margins

Accompanied by 2 to 5 of your own figures created in PowerPoint or another graphical program on separate pages.

Choose one of the following topics. Support your analysis with data and evidence from course readings and your own research.

-Has increased oil and gas production in the United States made it more or less likely that the United States will adopt ambitious climate policies?

- What are the most important foreign policy implications of increased oil and gas production in the United States?
- What restrictions, if any, should the federal government add to new long-distance oil and natural gas pipeline construction in the U.S.?
- Should Pennsylvania implement a severance tax on natural gas production? If so, how much should it be?
- Should the United States move forward with leasing oil and gas properties for drilling off the Atlantic coast?
- Should the United States open up the Alaskan National Wildlife Refuge for oil and gas development?
- Should New York State allow high-volume hydraulic fracturing?
- Should the United States federal government make changes to existing subsidies for oil and gas producers? If so, how?
- Create your own topic (must be pre-approved by instructor at least 2 weeks before due date)