

Oil & Gas Development & the Environment – Fall 2023
Syllabus – August 21, 2023

This is a “living” syllabus; some elements may change, particularly as new governmental policies are enacted, and if we see potential for site visits to power plants or for guest lecturers. If changes occur, we will discuss them in class or post them on the Canvas web site for the course. **You are responsible for accepting your Canvas invitation and periodically reviewing the site for updates. You should also sign up to automatically receive all announcements to your VLGS email.**

Class Times

Monday and Wednesday
9:55 am – 11:10 am
Oakes 210

Contact Information

Professor: Mark James
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Course Description & Overview

The oil and gas industry has been:

- i) a driver of economic development and growth across the world for more two centuries; and
- ii) one our world’s most significant sources of greenhouse gas emissions and other pollutants.

To transition to a clean energy system requires addressing the environmental and social impacts of oil and gas while finding alternative ways to supply the services provided by them. In this course, we will look at the history of oil and gas development and how it shapes our current relationship with fossil fuels. We will trace the process of exploring, extracting, and transporting oil and gas and the efforts to address the negative externalities of those processes. We will investigate if and how American laws and policies can consider and balance the environmental impacts of the oil and gas industry in its policy and decision-making processes. We will explore how the safety of the oil and gas system is regulated. We will examine the financial structure of the oil and gas industry amongst calls for a phasing out of our dependence on oil and gas. In each of these elements, we will review the different roles of the state and the federal government. Getting to a clean energy system requires grappling with our existing system and its history. That will be a theme throughout the class and a focus at the end of the course.

Textbooks

1. Eisen et al., *Energy, Economics, and the Environment: Cases and Materials*, 5th edition, 2020, Chapters 4 and 9. Available at the bookstore as a course pack. Textbook is also on reserve in the library.
2. John Lowe, *Oil and Gas Law in a Nutshell*, 2019. Available as an e-book via the library portal, [E-Book](#). Book is also on reserve at the library.

Course Expectations:

Grading

Grading will be based on a 60–100-point score, converted to a letter grade. This score will be based on these elements: class performance and professionalism grade (15%), an in-class mid-term (20%), and a take-home final examination (65%). Grading will be anonymous only on the final exam.

Grading of Professionalism and Class Performance

We will discuss what professionalism means in the first class. Your class performance grade will evaluate your knowledge of assigned materials and pre-class thought about their significance. In addition, participation that indicates an ability to learn from and encourage input from others will be valued highly. Comments that use an understanding of earlier readings to address later ones are particularly likely to make a favorable impression. Grading class performance is inherently subjective, but my conceptual model is very simple: how happy would an employer be to have had you as part of a taskforce that needed to resolve a hard, uncertain, and important problem?

To help me grade your class performance, you **must** bring and display an easily readable tent-card with your full name upon it for each class. If you do not do this, your class-performance credit and your overall grade will suffer.

Grade Allocations

Written Projects: Twenty percent (20%) of your base grade in this course will be based on in-class exam on private lands leasing and royalties. The date for the exam will be set at the beginning of the semester.

Final Examination: The final examination will count for 65% of the base grade. The final exam will be a take-home, multi-day exam with essay topics and short questions. It is likely to require you to consider several of the topics addressed during the course and may require you to focus on tensions and/or synergies between and among the topics. In other words, if you have not kept up with the readings *throughout* the course, you will have a very difficult time doing well on the final examination.

Participation and Professionalism

There are several participation elements to your class performance grade which are set forth below:

1. Students will be paired up to make a 7-minute presentation on a current news story from the oil and gas industry. This assignment is worth 5% of the overall grade.
2. Overall participation in class discussions. I expect you to attend and be prepared to participate in each class. The course requires a great deal of reading upon demanding subjects; however, our class time will not be spent merely on going over each day's assigned material. Instead, I expect to spend most of our class time in discussions that compare different readings and that go beyond the texts themselves. That expectation is linked to the fact that this course is not just about

learning an accepted body of knowledge; rather, it is about searching for better answers in areas where disagreements are persistent, among both experts and lay-folk. Importantly, contributing to these discussions is not just a way for you to learn the underlying material; it is also a valuable skill that the course seeks to build – and grade. Students will rotate through presenting at the start of each class an issue or fact of note that they gleaned from the assigned readings. The presenting student will also provide five words or phrases for inclusion in the course glossary. Your participation is worth 10% of your grade; 5% for general contribution and 5% for submitting questions for guest lecturers and words for the glossary.

3. Professionalism. You should treat class like you would treat a job. First and foremost, treat everyone with respect. Come prepared to participate and if you are not prepared, notify your supervisor. Everyone receives two opt-out passes that they can use at any time during the course to avoid class participation responsibilities. Notify your supervisor if you must be late to or absent from class. Failure to notify me of an absence will result in a 0.5% deduction on the first occasion and 1.0% on each subsequent occasion.

Oil & Gas Learning Outcomes

By the end of this course, you should understand and be able to apply the following concepts:

1. The fundamentals of oil and gas production, pipeline networks, and environmental issues impacting such developments.
2. The role(s) and the relationship between federal, state, local, and industry actors in the regulation of the U.S. oil and gas industry.
3. Key common law principles applicable in U.S. oil and gas production concerning private property rights, torts, and contracts.
4. Key concepts related to the U.S. oil and gas industry, including the history and role of oil and gas in the domestic energy landscape.
5. The underlying domestic oil and gas policy objectives and their relationship to environmental, health, and safety regulations in onshore and offshore activities.
6. How the climate impacts of the oil and gas industry are regulated and what challenges existing for integrating climate considerations into oil and gas policy and decision-making processes at the federal and state level.
7. Emerging trends in unconventional 'shale' oil and gas law and policy, with a particular focus on environmental implications and economics.
8. Key technical terms used in the petroleum industry.

Class Attendance and Participation:

If you must be absent due to serious illness or a family emergency, please notify the Registrar's Office (tmjohnson@vermontlaw.edu) which will notify all your professors. Absences resulting from religious observance, serious illness, and personal emergency will be excused if notice is given in advance or as early as possible, to the Professor or the Registrar. Absences for work, interviewing, exercise, or vacationing will not be excused even if prior notice is given. As per VLGS policy, students who are absent for more than 20% of classes will receive a F grade.

Recording Lectures

Lectures will not be recorded unless a student or student requests it when they have an excused absence. However, you may record the lecture on your own. My only request is to be informed that the lecture is being recorded.

Accommodations for Disabilities

If you have a disability and would like to request an accommodation, please review our Disability Policy at Vermont Law and Graduate School academic accommodations at:

<https://www.vermontlaw.edu/community/students/academic-success/accommodations>.

On that webpage, there is also an on-line form you can complete and upload your supporting documentations. If you have questions, please make an appointment with the Vice Dean for Students. Please note that requests made within two weeks of a midterm, or a final examination may not be granted in time. Please make your request as soon as possible.

Plagiarism Policy

Students are cautioned to comply with the requirements of the Honor Code by avoiding plagiarism and other misconduct as provided in the student handbook. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the instructor. You all know not to plagiarize, but some of you may conceivably be confused as to what plagiarism means in this context. Of course, you all know that you cannot quote another author without attribution. This includes web sites! Merely altering a few words does not permit you to omit quotation marks. In addition, it is also improper to paraphrase or borrow ideas from another, without attribution. If you got an idea from another author, cite that work. It is often appropriate to explain either in text or footnotes how your own argument differs from that previously made by others. You will find other articles' sources/footnotes to be a rich source of information. However, to the extent that you rely on another article's footnotes you must read all such sources yourself to make sure they really say what the other author said they said. It is never proper to cite a source you have not yourself read, unless you note that you are "citing Source A citing Source B." This should only be done rarely, when that second source is important but cannot be located. To the extent you use other authors' footnotes as starting points you will often find you need to update such footnotes, e.g., by citing to a more current statute or version of the book. If you have any questions regarding when cites are and are not needed, please ask me, or err on the side of citation. Plagiarism is an Honor Code violation that will result in an F in the course and a referral to the Vice Dean for Students for further action.

List of Classes

NOTE: You will see that the course is grouped into different modules. Each module has a specific topic and a specific number of allotted classes. As the course goes on, I will provide more direction on which readings you are responsible for in each week. This structure should allow us flexibility to cover the required elements while exploring individual areas of interest.

Class 1 – Introduction and History

In the opening class, we will discuss the basics of oil and gas and have a short in-class discussion on the role of oil and gas companies in achieving the 1.5°C global warming target. You must read the materials on the basics of oil and gas, and you should familiarize with the debate materials so that you can offer an informed position.

- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 148-162.
- Lowe, Oil and Gas Law in a Nutshell, 7th ed., Chapter 3: The Nature and Protection of Oil and Gas Rights. Read pages 3-12.
- U.S. Energy Information Administration (EIA), *Where Our Oil Comes From*, www.eia.gov/energyexplained/oil-and-petroleum-products/where-our-oil-comes-from.php.
- U.S. EIA, *Natural Gas Explained*, <https://www.eia.gov/energyexplained/natural-gas/>.
- International Energy Agency, *Net Zero by 2050: A Roadmap for the Global Energy Sector*, <https://www.iea.org/reports/net-zero-by-2050>; https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf. Read pages 100-103.
- Lindsay Maizland and Anshu Siripurapu, Council on Foreign Relations, *How the U.S. Oil and Gas Industry Works*, August 11, 2022, <https://www.cfr.org/backgrounder/how-us-oil-and-gas-industry-works>.

Class Debate Materials

- Simon Evans, Carbon Brief, *New fossil fuels ‘incompatible’ with 1.5C goal, comprehensive analysis finds*, October 23, 2022, <https://www.carbonbrief.org/new-fossil-fuels-incompatible-with-1-5c-goal-comprehensive-analysis-finds/>.
- International Energy Agency, *The Oil and Gas Industry in Energy Transitions*, January 2020, www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions.
- Energy Information Administration, *Annual Energy Outlook 2023: International Demand for Petroleum and Natural Gas Drives U.S. Production, While Domestic Consumption Either Grows Slowly or Decreases*, March 16, 2023, <https://www.eia.gov/outlooks/aeo/narrative/index.php#InternationalDemandfor>.
- Irina Slav, OilPrice.com, *Failing to Invest in Oil and Gas Would Be The “Road to Hell for America”* September 22, 2022, <https://oilprice.com/Energy/Energy-General/Failing-To-Invest-In-Oil-And-Gas-Would-Be-The-Road-To-Hell-For-America.html>

- Dharna Noor, The Guardian, *Big oil quietly walks back on climate pledges as global heat records tumble*, July 16, 2023, <https://www.theguardian.com/us-news/2023/jul/16/big-oil-climate-pledges-extreme-heat-fossil-fuel>.
- Josh Gabbatiss, *Analysis: Shell admits 1.5C climate goal means immediate end to fossil fuel growth*, April 20, 2023, <https://www.carbonbrief.org/analysis-shell-admits-1-5c-climate-goal-means-immediate-end-to-fossil-fuel-growth/>.
- Jason Bordoff, NY Times, *Behind All the Talk, This is What is Big Oil is Actually Doing*, August 7, 2023, <https://www.nytimes.com/2023/08/07/opinion/oil-fossil-fuels-clean-energy.html>.

Classes 2-6 – Private and Public Leasing

Private - Oil and Gas Lease

- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 162-181.
- Lowe, Oil and Gas Law in a Nutshell, 7th ed., Chapter 3: The Nature and Protection of Oil and Gas Rights. Read pages 13-21.
- Standard Producers 88 Oil and Gas Lease (*please print and bring to class*)

Private - State Conservation Laws

- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 181-198.
- Lowe, Oil and Gas Law in a Nutshell, 7th ed., Chapter 3: The Nature and Protection of Oil and Gas Rights. Read pages 21-35.

Federal – Onshore

This lecture traces the federal onshore leasing process from start to finish. The process begins with the creation or updating of Resource Management Plans, which identify what lands are eligible to be leased for oil and gas development, continues through the process of leasing and lease auctions, and concludes with the process for securing the right to drill a well. Try to map out the process, identify key steps, and identify costs and timelines.

- [Suggested] 30 U.S.C § 21a – Policy of federal government on development of domestic mineral resources, <https://www.law.cornell.edu/uscode/text/30/21a>. Review to see what the U.S. Code establishes as the policy of the federal government on empowering private operators.
- Congressional Research Service, *Energy Projects on Federal Lands: Leasing and Authorization*, February 1, 2012, <https://sgp.fas.org/crs/misc/R40806.pdf>. Read pages 2-5; 6-10 (ignore the numbers for rental rates and the section on royalties).
- Bureau of Land Management, *Types of Plans*, <https://www.blm.gov/programs/planning-and-nepa/planning-101/types-of-plans>
- U.S. Department of Interior, *Report on the Federal Oil and Gas Leasing Program: Prepared in Response to Executive Order 14008*, November 2021, <https://www.doi.gov/sites/doi.gov/files/report-on-the-federal-oil-and-gas-leasing-program-doi-eo-14008.pdf>. Read pages 12-14. Note the instructions on how to better target leasing practices.

- Inflation Reduction Act. Read pages 645-647. (Covering expressions of interest, elimination of non-competitive leasing, and lease term lengths.
- 30 U.S.C. § 226 (c, f, i) - Processes for additional rounds of competitive bidding, approving Application for Permit to Drill, and terminating lease.
- U.S Department of the Interior, Press Releases, *Interior Department Takes Steps to Modernize Oil and Gas Leasing on Public Lands, Ensure Fair Return to Taxpayers*, July 20, 2023, <https://www.doi.gov/pressreleases/interior-department-takes-steps-modernize-oil-and-gas-leasing-public-lands-ensure-fair>.
- Bureau of Land Management, *Proposed Rule, Fluid Mineral Leases and Leasing Process*, Federal Register, Volume. 88, No. 140, July 24, 2023. Read II. Executive Summary (note all the applicable laws); IV. Background; and V. Discussion of Proposed Rule – 5. Section by Section (Sections 3103.21, 3103.22, 3103.31, 3103.32, and 3103.41)
- Bureau of Land Management, *Application for Permits to Drill*, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/operations-and-production/permitting/applications-permits-drill>.
- BLM, *Approved Application for Permit to Drill Extensions, IM 2023-011*, November 21, 2022, <https://www.blm.gov/policy/im-2023-011>.
- Romany Webb, Sabin Center for Climate Change Law, *Surprise: Inflation Reduction Act Makes Oil and Gas Development on Federal Lands Less Attractive*, August 17, 2022, <https://blogs.law.columbia.edu/climatechange/2022/08/17/surprise-inflation-reduction-act-makes-oil-and-gas-development-on-federal-land-less-attractive/>.
- Mark K. Santis, Center for American Progress, *How Cheap Federal Leases Benefit Oil and Gas Companies*, August 29, 2018, <https://www.americanprogress.org/article/cheap-federal-leases-benefit-oil-gas-companies/>.
- U.S. Department of the Interior, *Interior Department Announces Significantly Reformed Onshore Oil and Gas Lease Sales*, April 15, 2022, <https://www.doi.gov/pressreleases/interior-department-announces-significantly-reformed-onshore-oil-and-gas-lease-sales>.
- [Supplemental] BLM, *Impacts of the Inflation Reduction Act of 2022 (Pub. L. No. 117-169) to the Oil and Natural Gas Leasing Program*, November 21, 2022. <https://www.blm.gov/policy/im-2023-008>.
- [Supplemental] BLM, *Oil and Gas Leasing – Land Use Planning and Lease Parcel Reviews – IM 2023-010*, November 21, 2022, <https://www.blm.gov/policy/im-2023-010>.
- [Supplemental] BLM, *Evaluating Competitive Oil and Gas Lease Sale Parcels for Future Lease Sales, IM 2023-007*, November 21, 2022, <https://www.blm.gov/policy/im-2023-007>.
- [Supplemental] Heather Richards, EnergyWire, *3 things to know about Biden’s oil regs*, July 24, 2023, <https://subscriber.politicopro.com/article/eenews/2023/07/24/3-things-to-know-about-bidens-oil-regs-00107675>.
- [Supplemental] Mark K. Desantis, Center for American Progress, *Oil and Gas Companies Gain by Stockpiling America’s Federal Land*, August 29, 2018, <https://www.americanprogress.org/article/oil-gas-companies-gain-stockpiling-americas-federal-land/>.
- [Supplemental] BLM, *Leasing Reform*, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing>.

- [Supplemental] BLM, *Fact Sheet: Updates to Oil and Gas Leasing Guidance*, November 2021, https://www.blm.gov/sites/default/files/docs/2022-11/Fact%20Sheet_Oil%20and%20Gas%20Leasing%20Guidance_%2011.21.22.pdf
- [Supplemental] Morgan Conley, Law360, *Groups Ink Deal to End BLM Colo. Oil & Gas Plan Challenge*, August 12, 2022, <https://www.law360.com/articles/1520541>.
- [Supplemental] Bureau of Land Management, *Application for Permit to Drill or Reenter – Form 3160-3*, https://www.blm.gov/sites/blm.gov/files/uploads/Services_National-Operations-Center_Eforms_Fluid-and-Solid-Minerals_3160-003.pdf.

Federal - Offshore

- 43 U.S.C. § 1332 – OCSLA – Congressional declaration of policy, <https://www.law.cornell.edu/uscode/text/43/1332>.
- 43 U.S.C. § 1344 – Section 18 OCSLA – Offshore leasing program. Review (a)(2) and (a)(b).
- Congressional Research Service, *Offshore Oil and Gas Development: Legal Framework*, April 13, 2018, <https://sgp.fas.org/crs/misc/RL33404.pdf>. Read pages 1-16.
- Bureau of Ocean Management, *Coastal Zone Management Act*, <https://www.boem.gov/environment/environmental-assessment/coastal-zone-management-act>.
- BOEM, *2023-2028 National Outer Continental Shelf Oil and Gas Leasing Proposed Program*, July 2022, Read Part I, Part 2 – Chapter 5.3 (pages 5-21 to 5-26). https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/2023-2028_Proposed%20Program_July2022.pdf.
- [Supplemental] Energy, Economics and the Environment, 5th ed. Section E: Offshore Oil and Gas, pages 250-255. Discussing moratoria process.
- [Supplemental] BOEM, *Oil and Gas Lease Sales to Comply with Inflation Reduction Act*, October 20, 2022, <https://www.boem.gov/newsroom/press-releases/bureau-ocean-energy-management-announces-next-steps-offshore-oil-and-gas>.

Climate Considerations in Federal Leasing Practices

- Kyle Tisdell, *Western Environmental Law Center [September 25, 2023]*
- Learning materials to come.

Class 7-8 – Leasing Bonuses and Royalty Payments

Private Lands

- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 162-165.
- Lowe, *Oil and Gas Law in a Nutshell*, 7th ed., Chapter 3: The Nature and Protection of Oil and Gas Rights. Read pages 49-55, 141-160, 305-309, and 320-333.

Federal

- U.S. Department of Interior, *Report on the Federal Oil and Gas Leasing Program: Prepared in Response to Executive Order 14008*, November 2021,

<https://www.doi.gov/sites/doi.gov/files/report-on-the-federal-oil-and-gas-leasing-program-doi-eo-14008.pdf>. Read pages 1-12.

- Inflation Reduction Act of 2022. Read Pages 641-644. Note the rise in minimum royalty rate and the cap placed on the maximum royalty rate.
- Romany Webb, Sabin Center for Climate Change Law, *Surprise: Inflation Reduction Act Makes Oil and Gas Development on Federal Lands Less Attractive*, August 17, 2022, <https://blogs.law.columbia.edu/climatechange/2022/08/17/surprise-inflation-reduction-act-makes-oil-and-gas-development-on-federal-land-less-attractive/>.
- 30 U.S.C. § 226 (a-d) (This is where the changes made in the IRA are located in the U.S. Code)
- Bureau of Land Management, *Proposed Rule, Fluid Mineral Leases and Leasing Process*, Federal Register, Volume. 88, No. 140, July 24, 2023. Read II. Executive Summary (note all the applicable laws); IV. Background; and V. Discussion of Proposed Rule – 5. Section by Section (Section 3103.31)
- [Reread] BLM, *Impacts of the Inflation Reduction Act of 2022 (Pub. L. No. 117-169) to the Oil and Natural Gas Leasing Program*, November 21, 2022. <https://www.blm.gov/policy/im-2023-008>.

Offshore

- Congressional Research Service, *Offshore Oil and Gas Development: Legal Framework*, April 13, 2018, <https://sgp.fas.org/crs/misc/RL33404.pdf>. Read pages 16-18. Note how royalties are split between federal government and state governments.

Class 9 - Mid-Term (In-Class). Covering private leasing and royalties.

- Date to be determined.

Classes 10-14 – Regulating the Environmental Externalities of Oil and Gas

Air (Methane Emissions)

- The White House Office of Domestic Climate Policy, *U.S. Methane Emissions Reduction Action Plan*, November 2021, <https://www.whitehouse.gov/wp-content/uploads/2021/11/US-Methane-Emissions-Reduction-Action-Plan-1.pdf>. Read pages 2-9.
- Juan Carlos Rodriguez, Law360, *Key Takeaways from EPA Methane Rule Update*, November 17, 2022, <https://www.law360.com/articles/1550314/key-takeaways-from-epa-methane-rule-update>.
- Carrie Jenks, Sara Dewey, and Hannah Oakes, Harvard Law School Environmental & Energy Law Program, *EPA's Supplemental Methane Proposal – A Comprehensive Regulatory Framework to Encourage the Use of Advanced Technologies and Significantly Reduce Methane Emissions*, November 21, 2022, <http://eelp.law.harvard.edu/wp-content/uploads/EPA-Methane-Supplemental-Proposal-November-2022.pdf>. Read 1-13. Reading questions:
 - What determines the monitoring frequency for periodic monitoring?
 - Where does continuous monitoring take place at the facility?
 - What is a super-emitter event?
- Jeff St. John, Canary Media, *Aerial and satellite imagery can find methane leaks. Will EPA bake the tech into new rules?* October 5, 2021, <https://www.canarymedia.com/articles/fossil->

[fuels/aerial-and-satellite-imagery-can-find-methane-leaks-will-epa-bake-the-tech-into-new-rules](#)

- [Supplemental] EPA, *Methane Emissions, Supplemental Proposed Rule*, November 8, 2022.
- [Supplemental] Congressional Research Service, *Inflation Reduction Act Methane Emissions Charge: In Brief*, August 29, 2022, https://crsreports.congress.gov/product/pdf/R/R47206#:~:text=Introduction-,_On%20August%2016%2C%202022%2C%20President%20Biden%20signed%20H.R.,the%20oil%20and%20gas%20industry.
- [Supplemental] Mark Jaffe, The Colorado Sun, *First-in-the-U.S. rules that give oil and gas industry leeway in slashing emissions OK'd in Colorado*, December 20, 2021, <https://coloradosun.com/2021/12/20/greenhouse-gas-reduction-oil-gas-colorado>.

Air (Venting and Flaring)

- Carnegie Endowment, YouTube, *Conducting GHG Checks and Balances*, August 1, 2016, <https://youtu.be/h-5xJLkarFs>.
- Congressional Research Service, *The Debate over Venting and Flaring on Federal Lands*, December 22, 2022, <https://crsreports.congress.gov/product/pdf/LSB/LSB10882>.
- BLM, *Waste Prevention, Production Subject to Royalties, and Resource Conservation, Proposed Rule*, November 30, 2022, <https://www.federalregister.gov/documents/2022/11/30/2022-25345/waste-prevention-production-subject-to-royalties-and-resource-conservation>. Read Executive Summary, Background, Section-by-Section Discussion – Sections 3179.3, 3179.4, 3179.8.
- Krystal Vasquez, C&EN, *Methane flaring may be less efficient than previously thought*, September 30, 2022, <https://cen.acs.org/articles/100/web/2022/09/Methane-flaring-less-efficient-previously.html>.
- [Supplemental] Eburn Ayandele, Laura Hutchinson, and Deborah Gordon, RMI, *Colorado agrees: Gas flaring and venting should be anything but routine*, December 9, 2020, <https://www.greenbiz.com/article/colorado-agrees-gas-flaring-and-venting-should-be-anything-routine>.
- [Supplemental] Colorado Oil & Gas Conservation Commission, *Implementing Colorado's Oil & Gas Law SB 19-181*, https://cogcc.state.co.us/documents/media/Mission_Change_200_600_800_900_1200_Series_Fact_Sheet_20201123.pdf. Read Introduction and Section 900.
- [Supplementary] U.S. Department of Energy, *Natural Gas Flaring and Venting: State and Federal Regulatory Overview, Trends and Impacts*, June 2019, <https://www.energy.gov/sites/prod/files/2019/08/f65/Natural%20Gas%20Flaring%20and%20Venting%20Report.pdf>.
- Assignment - Each student will be given a state's venting and flaring regulations and the class will assess which state has the strongest set of regulations.
 - <https://www.energy.gov/fecm/findyourstate-natural-gas-flaring-and-venting-regulations-fact-sheets-state>

Regulating Methane – Guest Lecture

- Jon Goldstein, Environmental Defense Fund

- This lecture will occur on October 23, 2023.

Learning Materials

- Nini Gu, EDF, *Colorado's methane pollution verification rule is a game changer: here are three reasons why*, July 31, 2023, <https://blogs.edf.org/energyexchange/2023/07/31/colorados-methane-pollution-verification-rule-is-a-game-changer-here-are-three-reasons-why/>.
- Jeremy Proville and Kate Roberts, EDF Blogs, *Creating Data to Support Communities on the Front Lines of Oil and Gas Production in the US*, June 21, 2022, <https://blogs.edf.org/markets/2022/06/21/creating-data-to-support-communities-on-the-front-lines-of-oil-and-gas-production-in-the-us>.
- Kate Roberts, EDF, *Demographic Characteristics of Populations Living Near Oil and Gas Wells in the United States*, https://public.tableau.com/app/profile/kate.roberts6232/viz/DemographicCharacteristicsofPopulationsLivingNearOilandGasWellsintheUnitedStates/TotalPopulationDash_1.
- Jon Goldstein, Edwin LaMair, and Grace Smith, EDF Blogs, *EPA methane proposal makes critical progress, but work remains to quickly finalize protective standards*, January 10, 2023, <https://blogs.edf.org/energyexchange/2023/01/10/epa-methane-proposal-makes-critical-progress-but-work-remains-to-quickly-finalize-protective-standards/>.
- Wilfred Herrera Jr., High Country News, Opinion, *New Mexico is on track to have the weakest methane emissions rules in the nation*, December 8, 2020, <https://www.hcn.org/articles/opinion-energy-industry-new-mexico-is-on-track-to-have-the-weakest-methane-emissions-regulations-in-the-nation>.
- Sierra Club, Rio Grande Chapter, *Methane standards bring big climate, health wins for New Mexico*, April 21, 2022, <https://www.riograndesierraclub.org/methane-rules-bring-big-climate-and-health-victory-for-new-mexico/>.

Water (Underground Injection Control)

- Megan Hunter, Earthjustice, Guest Lecture
- Earthjustice, *Before the Administrator of the United States Environmental Protection Agency: Petition to Determine by Rule that Ohio's Class II Injection Well Permitting Program No Longer Represents an Effective Program to Prevent Underground Injection That Endangers Drinking Water Sources and Fails to Comply with the Requirements of the Safe Drinking Water Act*, October 11, 2022, https://earthjustice.org/sites/default/files/files/class_ii_petition_2022oct11.pdf. Read the Executive Summary, Regulatory Background, Class II Injection Wells, and Standards for Withdrawal. Read assigned in-depth section of the petition (assignments will be handed out in class).
- Nick Cunningham, DeSmog Blog, *Alleging 'Failures' to Protect Drinking Water, Coalition Urges EPA to Take Over Ohio Fracking Waste Wells*, November 18, 2022, <https://www.desmog.com/2022/11/18/epa-petition-ohio-fracking-waste-injection-well-primacy/>.
- Watch Mini-Lecture based on the following resources:
 - Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 200-206; 213-217.

- Congressional Research Service, *Hydraulic Fracturing and Safe Drinking Water Act Regulatory Issues*, July 13, 2015, <https://sgp.fas.org/crs/misc/R41760.pdf>. Read pages 1-16.
- Environmental Protection Agency, *Underground Injection Control (UIC): Class II Oil and Gas Related Injection Wells*, <https://www.epa.gov/uic/class-ii-oil-and-gas-related-injection-wells>.
- [Supplemental] Environmental Protection Agency, *Hazardous Waste: Management of Oil and Gas Exploration and Production Waste*, <https://www.epa.gov/hw/management-oil-and-gas-exploration-and-production-waste>. This page provides links to the various reports that EPA has published on oil gas exploration and production waste.

Land and Public Health

- Boston University School of Public Health, *Air Pollution from Oil and Gas Production Contributes to Thousands of Early Deaths, Childhood Asthma Cases Nationwide*, May 8, 2023, <https://www.bu.edu/sph/news/articles/2023/air-pollution-from-oil-and-gas-production-contributes-to-thousands-of-early-deaths-childhood-asthma-cases-nationwide>.
- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 219-230. This reading lays out how local governments may regulate public health and environmental externalities of oil and gas production.
- California, *SB-1137 An act to add Article 4.6 (commencing with Section 3280) to Chapter 1 of Division 3 of the Public Resources Code, relating to oil and gas*, September 19, 2022, https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137. Read Legislative Counsel's Digest; Sections 1, 3280, 3281, 3282.
- California Oil and Gas Public Health Rulemaking Scientific Advisory Panel, *RE: Response to CalGEM Questions for the California Oil and Gas Public Health Rulemaking Scientific Advisory Panel*, October 1, 2021, https://www.conservation.ca.gov/calgem/Documents/public-health/Public%20Health%20Panel%20Responses_FINAL%20ADA.pdf. Read pages 1; 9-13.
- [Supplemental] Hailey Konnath, Law360, *Los Angeles City Council Approves 'Historic' Oil Drilling Ban*, December 2, 2022, <https://www.law360.com/articles/1554828/los-angeles-city-council-approves-historic-oil-drilling-ban>.
- [Supplemental] California Department of Conservation Geologic Energy Management Division, *SB 1137 First Emergency Implementation Regulations, Text of Proposed Regulations*, December 2022, <https://www.conservation.ca.gov/calgem/Documents/SB%201137%20First%20Emergency%20Regulations%20-%20Text%2012-19-22-a11y.pdf>.
- [Supplemental] Tomás Rebecchi, Guest Commentary, Cal Matters, *Fossil fuel campaigns subvert democracy by undoing California drilling laws*, November 3, 2022, <https://calmatters.org/commentary/2022/11/oil-fossil-fuel-california-ballot-measure-regulation/>.

Classes 15-21 – Oil and Gas Facilities and Pipelines

Introduction

- Congressional Research Service, *Pipeline Transportation of Natural Gas and Crude Oil: Federal and State Regulatory Authority*, March 28, 2016, <https://sgp.fas.org/crs/misc/R44432.pdf>. Read pages 1-9.
- Congressional Research Service, *Interstate Natural Gas Pipeline Siting: FERC Policy and Issues for Congress*, June 9, 2022, <https://sgp.fas.org/crs/misc/R45239.pdf>. Read pages 1-17.
- Catherine Morehouse, Utility Dive, *DC Circuit orders FERC to analyze climate, environmental justice more thoroughly*, August 4, 2021, <https://www.utilitydive.com/news/dc-circuit-calls-on-ferc-to-analyze-climate-environmental-justice-more-tho/604481/>.
 - [https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/\\$file/20-1045-1908759.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/$file/20-1045-1908759.pdf)
- Niina H. Farah, EnergyWire, *How Va. Pipeline ruling may reshape environmental justice*, July 20, 2021, <https://subscriber.politicopro.com/article/eenews/2021/07/20/how-va-pipeline-ruling-may-reshape-environmental-justice-224760>.

FERC Pipeline Approval Process

- 15 U.S.C. §717 *et seq.* <https://www.law.cornell.edu/uscode/text/15/chapter-15B>. Read §717f.
- FERC, News Releases, *FERC Updates Policies to Guide Natural Gas Project Certifications*, February 17, 2022, <https://www.ferc.gov/news-events/news/ferc-updates-policies-guide-natural-gas-project-certifications>.
- FERC, Headlines, *Fact Sheet, Updated Pipeline Certificate Policy Statement (PL18-1-000)*, February 17, 2022, <https://www.ferc.gov/news-events/news/fact-sheet-updated-pipeline-certificate-policy-statement-pl18-1-000>.
- FERC, Docket No. PL18-1-000, *Certification of New Interstate Natural Gas Facilities*, February 18, 2022, <https://www.ferc.gov/media/pl18-1-000>. Read paragraphs 1-13 and 50-61. Skim paragraphs 14-28.
- Environmental Defense Fund v. FERC, No. 20-1016, USCADC, June 22, 2021. Read pages 1-20 and 29-37.
- Miranda Willson, E&E News, *FERC meeting: Pipeline win, transmission and Glick's exit*, December 16, 2022, <https://www.eenews.net/articles/ferc-meeting-pipeline-win-transmission-and-glicks-exit/>.
- FERC, Docket No. PL18-1-000, *Certification of New Interstate Natural Gas Facilities*, February 18, 2022, <https://www.ferc.gov/media/pl18-1-000>. Read paragraphs 62-100. This reading will be broken up into the following assignments:
 - Assigned to everyone
 - Read paragraph 62
 - Assigned to individual students
 - Read paragraphs 63-70 – Pipeline Customers
 - Read paragraphs 71-76 – Environmental Impacts
 - Read paragraphs 77-85 – Landowner Impacts
 - Read paragraphs 86-93 – EJ Impacts
 - Read paragraphs 94-100 – Assessing Public Benefits and Adverse Effects

- [Supplemental] FERC’s Certification of New Interstate Natural Gas Facilities: Revising the 1999 Policy Statement for 21st Century Conditions, The Analysis Group (2019) https://www.analysisgroup.com/globalassets/content/insights/publishing/revising_ferc_1999_pipeline_certification.pdf. Read pages 12-22.
- [Supplemental] Stephanie Kelly, Reuters, About half of U.S. oil pipeline space is empty after boom time building spree, December 16, 2021, <https://www.reuters.com/markets/commodities/about-half-us-oil-pipeline-space-is-empty-after-boom-time-building-sprees-2021-12-16/>
- [Supplemental] FERC, Notice of Inquiry, Certification of New Interstate Natural Gas Facilities, February 24, 2021, <https://www.federalregister.gov/documents/2021/02/24/2021-03808/certification-of-new-interstate-natural-gas-facilities>; <https://www.govinfo.gov/content/pkg/FR-2021-02-24/pdf/2021-03808.pdf>.
- [Supplemental] 18 CFR § 157.14, Applications for Certificates of PCN and for Orders Permitting and Approving Abandonment, <https://www.law.cornell.edu/cfr/text/18/157.14>. This is a list of exhibits that should accompany an application for CPCN and for orders permitting and approving abandonment.

Greenhouse Gas Emissions Evaluations

- FERC, Headlines, *Fact Sheet, Interim Greenhouse Gas (GHG) Emissions Policy Statement (PL21-3-000)* February 17, 2022, <https://www.ferc.gov/news-events/news/fact-sheet-interim-greenhouse-gas-ghg-emissions-policy-statement-pl21-3-000>.
- FERC, Docket No. PL21-3-000, *Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews*, February 18, 2022, <https://www.ferc.gov/media/pl21-3-000>. The reading will be broken up into the following sections, each of which will be assigned to a student. Try to understand how FERC is defining how it will evaluate the different types of GHG emissions from projects seeking its approval.
 - Readings assigned to individual students
 - Read paragraphs 1-5 and 8-14.
 - Read paragraphs 21-31.
 - Read paragraphs 33-41.
 - Read paragraphs 43-45, 49-50, and 53-56,
 - Read paragraphs 79-87 and 97-99.
- [Supplemental] Sierra Club, et al., v. FERC, No. 16-1329, USADC, August 22, 2017, <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/FINAL%20ORDER%208-22-17.pdf> (This case is known as Sabal Trail and it confirms FERC’s statutory mandate to examine reasonable foreseeable direct and indirect GHG emissions.) Read pages 2-6, 10-12, and 18-27.
- [Supplemental] FERC’s Certification of New Interstate Natural Gas Facilities: Revising the 1999 Policy Statement for 21st Century Conditions, The Analysis Group (2019) https://www.analysisgroup.com/globalassets/content/insights/publishing/revising_ferc_1999_pipeline_certification.pdf. Read pages 26-38.
- [Supplemental] FERC, Docket No. PL99-3-000, Certification of New Interstate Natural Gas Pipeline Facilities, Policy Statement, September 15, 1999, <https://www.ferc.gov/sites/default/files/2020-04/PL99-3-000.pdf>. Read pages 18-29. (This is

the old Pipeline Policy and may be of interest to you as to what was in place before FERC released the new policy guidance.)

FERC, DOE, and LNG

- Natural Gas Act, Section 3; <https://www.law.cornell.edu/uscode/text/15/717b>. Read (a) through (e).
- Nicholas Kusnetz, Inside Climate News, *2022 Will Be Remembered as the Year the U.S. Became the World's Largest Exporter of Liquefied Natural Gas*, January 1, 2023, <https://insideclimatenews.org/news/01012023/liquefied-natural-gas-lng-exports-2022/>.
- FERC, *Natural Gas – LNG*, <https://www.ferc.gov/natural-gas/lng>.
- Department of Energy, *DOE's Role in LNG Sector*, June 30, 2022, <https://www.energy.gov/fecm/articles/does-role-lng-sector>.
- Department of Energy, *Liquefied Natural Gas (LNG)*, <https://www.energy.gov/fecm/liquefied-natural-gas-lng>.
- Catherine Morehouse, Utility Dive, *DC Circuit orders FERC to analyze climate, environmental justice more thoroughly*, August 4, 2021, <https://www.utilitydive.com/news/dc-circuit-calls-on-ferc-to-analyze-climate-environmental-justice-more-tho/604481/>.
- *Vecinos para el Bienestar de la Comunidad Costera, et al., v FERC*, USCADC, August 3, 2021, [https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/\\$file/20-1045-1908759.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/$file/20-1045-1908759.pdf). Skim pages 5-13, read pages 14-18.
- Dylan Baddour, Inside Climate News, *Indigenous Leaders in Texas Target Global Banks to Keep LNG Export Off of Sacred Lands at the Port of Brownsville*, October 18, 2022, <https://insideclimatenews.org/news/18102022/indigenous-leaders-in-texas-target-global-banks-to-keep-lng-export-off-of-sacred-land-at-the-port-of-brownsville/>.
- Jacob Dick, Natural Gas Intelligence, *NextDecade Urges FERC to Act on Rio Grande LNG Approval*, February 7, 2023.
- Sierra Club, *FERC Continues Role as Rubber Stamp in Approving Two New LNG Facilities*, April 20, 2023, <https://www.sierraclub.org/press-releases/2023/04/ferc-continues-role-rubber-stamp-approving-two-new-lng-facilities>.
- FERC, *April Commission Meeting: Opening Remarks of Commissioner Allison Clements*, April 20, 2023, <https://ferc.gov/news-events/news/april-commission-meeting-opening-remarks-commissioner-allison-clements>. Read this statement to see how Commissioner Clements views the decision to approve the LNG facilities.
- [Supplemental] FERC, *Order on Remand and Amending Section 7 Certificate*, 183 FERC ¶ 61,046, April 21, 2023, <https://www.ferc.gov/media/c-1-cp16-454-003>. This is the order approving the Rio Grande LNG Facility and Pipeline.

Natural Gas Pipeline Siting - Federal Eminent Domain

- Natural Gas Act – 15 U.S.C. 717f(c), <https://www.govinfo.gov/content/pkg/USCODE-2010-title15/pdf/USCODE-2010-title15-chap15B-sec717f.pdf>. FERC's process for granting certificates of public convenience and necessity.
- Natural Gas Act – 15 U.S.C. 717f(h), <https://www.govinfo.gov/content/pkg/USCODE-2010-title15/pdf/USCODE-2010-title15-chap15B-sec717f.pdf>. (Authorizes FERC certificate holders to condemn all necessary rights-of-way, whether owned by private parties or States.)

- FERC, Docket No. PL18-1-000, *Certification of New Interstate Natural Gas Facilities*, February 18, 2022, <https://www.ferc.gov/media/pl18-1-000>. Review paragraphs 77-93 (you were assigned these sections in an earlier class).
- [Supplemental] FERC, *An Interstate Natural Gas Facility on My Land? What Do I Need to Know?* August 2015, <https://www.ferc.gov/sites/default/files/2020-04/AnInterstateNaturalGasFacility.WhatYouNeedToKnow.pdf>.

Oil Pipeline Siting - State Eminent Domain

- Alexandra Klass, *The Frontier of Eminent Domain*, University of Colorado Law Review, vol. 79. Read Introduction and Part I, pages 101-119.
- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 655-662.
- Texas Railroad Commission, Form T-4.

State Environmental Laws and FERC Licensing of Facilities

- Congressional Research Service, *Pipeline Transportation of Natural Gas and Crude Oil: Federal and State Regulatory Authority*, March 28, 2016, <https://sgp.fas.org/crs/misc/R44432.pdf>. Read pages 1-6; 12-18.
- Eisen et al., *Energy, Economics and the Environment*, 5th ed (2020). Read pages 669-674.
- FERC, Waiver of Water Quality Certification Requirements of Section 401(a)(1) of the Clean Water Act, March 29, 2021, <https://www.federalregister.gov/documents/2021/03/29/2021-06102/waiver-of-the-water-quality-certification-requirements-of-section-401a1-of-the-clean-water-act>. Read Background and Part 157.
- Niina H. Farah, *EnergyWire*, *How Va. Pipeline ruling may reshape environmental justice*, July 20, 2021, <https://subscriber.politicopro.com/article/eenews/2021/07/20/how-va-pipeline-ruling-may-reshape-environmental-justice-224760>.
- Robert Walton, *Utility Dive*, *4th Circuit nixes key permit for Dominion's Atlantic Coast Pipeline, citing environmental justice concerns*, January 8, 2020, <https://www.utilitydive.com/news/4th-circuit-nixes-key-permit-for-dominions-atlantic-coast-pipeline-citing/570005/>.
- [Supplemental] *Friends of Buckingham et al., v. State Air Pollution Control Board*, USCA4, No. 19-1152, January 7, 2020, <https://chesapeakeclimate.org/wp-content/uploads/2020/01/Fourth-Circuit-opinion-Friends-of-Buckingham-19-1152.pdf>.
- [Supplemental] *New York State Department of Environmental Conservation and Sierra Club v. FERC*, USCA2, March 23, 2021, <https://www.ferc.gov/media/new-york-state-department-environmental-conservation-and-sierra-club-v-ferc>. This case covers the controversy that led to FERC clarifying its rule on how long states had to process water quality certificate requests

Class 22 – Environmental Justice in Fossil Fuel Development - Guest Lecture – Roishetta Sibley Ozane

- This lecture will occur on November 13, 2023
- Learning materials to come.

Classes 23-24 – Safety in Pipelines and Drilling Rigs

Pipeline Safety - Integrity Management Plans

- Congressional Research Service, *DOT's Federal Pipeline Safety Program: Background and Key Issues for Congress*, March 10, 2022, <https://sgp.fas.org/crs/misc/R44201.pdf>. Read pages 1-11; 16-21.
- Congressional Research Service, *Pipeline Transportation of Natural Gas and Crude Oil: Federal and State Regulatory Authority*, March 28, 2016, <https://sgp.fas.org/crs/misc/R44432.pdf>. Read pages 21-22.
- NTSBgov, YouTube, *NTSB Investigation - San Bruno Pipeline Explosion*, September 27, 2011, <https://www.youtube.com/watch?v=d-4B7DYVL2g>. Watch 0:00 to 2:40; 7:40 to 20:00.
- Chester County Planning Commission, *Pipeline Information Center: High Consequence Areas, What is an HCA?* <https://www.chescoplanning.org/pic/HCA.cfm>.
- PHMSA, *Overview: Integrity Management*, <https://primis.phmsa.dot.gov/comm/IM.htm?nocache=648>.
- PHMSA, *Gas Transmission Integrity Management (GT IM) Overview*, <https://www.phmsa.dot.gov/pipeline/gas-transmission-integrity-management/gas-transmission-integrity-management-gt-im-overview>.
- PHMSA, *Hazardous Liquid Integrity Management (HL IM)* <https://www.phmsa.dot.gov/pipeline/hazardous-liquid-integrity-management/hl-im-fact-sheet>.
- Vinson & Elkins, JD Supra, *PHMSA's Mega Rule is Complete. Here's What You Should Know*, <https://www.jdsupra.com/legalnews/phmsa-s-mega-rule-is-complete-here-s-7295111/>.
- John Hanna, Ryan J. Foley, and Heather Hollingsworth, AP News, *Federal data: Kansas oil spill biggest in Keystone history*, December 9, 2022, https://apnews.com/article/oil-spills-business-texas-kansas-us-environmental-protection-agency-eda391fc0924b34a08ff840615a7bc58?utm_source=homepage&utm_medium=TopNews&utm_campaign=position_05.
- [Supplemental] Government Accountability Office, *Pipeline Safety: Information on Keystone Accidents and DOT Oversight*, July 2021, <https://www.gao.gov/assets/gao-21-588.pdf>.
- [Supplemental] PHMSA, *Pipeline Safety: Safety of Gas Transmission Pipelines: Repair Criteria, Integrity Management Improvements, Cathodic Protection, Management of Change, and Other Related Amendments*, August 24, 2022, <https://www.federalregister.gov/documents/2022/08/24/2022-17031/pipeline-safety-safety-of-gas-transmission-pipelines-repair-criteria-integrity-management>. Read Executive Summary, Background – Section A. Overview.

Offshore Oil Safety Regulation - Deepwater Horizon

- National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Report to the President, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*, January 2011, https://permanent.access.gpo.gov/gpo2978/DEEPWATER_ReporttothePresident_FINAL.pdf. Read pages 1-19 (this section provides an eyewitness account of the hours leading up to the explosion), 67-85, 224-234,
- Hana Vizcarra, Harvard EELP, *Deepwater Horizon Ten Years Later: Reviewing agency and regulatory reforms*, May 4, 2020, http://eelp.law.harvard.edu/wp-content/uploads/Deepwater-Horizon-Ten-Years-Later-v4_Final.pdf.

- Department of the Interior, *Interior Department Takes Steps to Strengthen Offshore Safety Standards*, September 12, 2022, <https://www.doi.gov/pressreleases/interior-department-takes-steps-strengthen-offshore-safety-standards>.
- [Supplemental] Department of the Interior, Bureau of Safety and Environmental Enforcement, *Proposed Rule: Oil and Gas and Sulfur Operations in the Outer Continental Shelf-Blowout Preventer Systems and Well Control Revisions*, September 2022.
- [Supplemental] U.S. Chemical Safety and Hazardous Investigation Board, YouTube, *Deepwater Horizon Blowout Animation*, June 6, 2014, <https://www.youtube.com/watch?v=FCVCOWeJlag>. Watch this video if you would like to understand how the blowout occurred.
- [Supplemental] Jacqueline Weaver, *Offshore Safety in the Wake of the Macondo Disaster: The Role of the Regulator*, *Houston Journal of International Law* 36. (Read this article for a detailed breakdown of best regulatory practices in offshore drilling and what the U.S. had before and after the Deepwater Horizon accident.)

Class 25 - Plugging Abandoned Wells

- Western Organization of Resource Councils, *BLM Oil and Gas Bonding Rules Leave Lands a Mess and Taxpayers Responsible* (2020) <http://www.worc.org/media/2020.04-Oil-and-Gas-Bonding-Federal-vs-State-sm2.pdf>.
- U.S Department of the Interior, Press Releases, *Interior Department Takes Steps to Modernize Oil and Gas Leasing on Public Lands, Ensure Fair Return to Taxpayers*, July 20, 2023, <https://www.doi.gov/pressreleases/interior-department-takes-steps-modernize-oil-and-gas-leasing-public-lands-ensure-fair>.
- Bureau of Land Management, *Bonding*, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/bonding>.
- [Supplemental] 43 C.F.R. Subpart 3104 – Bonds, <https://www.law.cornell.edu/cfr/text/43/part-3100/subpart-3104>.
- Bloomberg News, YouTube, *How Dying Gas Wells Are Making One Company Rich*, October 12, 2021, <https://youtu.be/6c-WCg2Y7sE>.
- [Supplemental] Zachary R. Mider and Rachel Adams-Heard, Bloomberg News, *An Empire of Dying Wells*, October 21, 2021, <https://www.bloomberg.com/features/diversified-energy-natural-gas-wells-methane-leaks-2021/>.
- [Supplemental] Mike Tony, The Herald-Dispatch, *WV landowners' federal lawsuit over unplugged Diversified wells moving forward*, April 26, 2023, https://www.herald-dispatch.com/news/putnam_news/wv-landowners-federal-lawsuit-over-unplugged-diversified-wells-moving-forward/article_a8d0cef3-ad21-5307-ac33-f93b05f8ac65.html.
- Department of Interior, *Secretary Haaland Establishes Orphaned Wells Program Office to Implement Historic Investments from Bipartisan Infrastructure Law*, January 10, 2023, <https://www.doi.gov/pressreleases/secretary-haaland-establishes-orphaned-wells-program-office-implement-historic>.
- Department of the Interior, *Biden-Harris Administration Invests \$660 Million for States to Plug Orphaned Oil and Gas Wells through President's Investing in America Agenda*, July 10, 2023, <https://www.doi.gov/pressreleases/biden-harris-administration-invests-660-million-states-plug-orphaned-oil-and-gas-wells>.

- Mark Olade, ProPublica, *It Will Cost Up to \$21.5 Billion to Clean Up California's Oil Sites. The Industry Won't Make Enough Money to Pay for It*, May 18, 2023, <https://www.propublica.org/article/cost-of-california-oil-cleanup-exceeds-industry-profits>.
- [Supplemental] Heather Richards, E&E News, *Biden admin deploys \$560M to clean up orphaned oil wells*, August 25, 2022, <https://www.eenews.net/articles/biden-admin-deploys-560m-to-clean-up-orphaned-oil-wells/>
- [Supplemental] Naveena Sadasivam, Grist, *How bankruptcy lets oil and gas companies evade cleanup rules*, June 7, 2021, <https://grist.org/accountability/oil-gas-bankruptcy-fieldwood-energy-petroshare/>.
- [Supplemental] Nicola Groom, Reuters, *Special Report: Millions of abandoned oil wells are leaking methane, a climate menace*, June 16, 2020, <https://www.reuters.com/article/us-usa-drilling-abandoned-specialreport/special-report-millions-of-abandoned-oil-wells-are-leaking-methane-a-climate-menace-idUSKBN23N1NL>.
- [Supplemental] Government Accountability Office, *Oil and Gas: Bureau of Land Management Should Address Risks from Insufficient Bonds to Reclaim Wells – Full Report*, September 2019, <https://www.gao.gov/products/gao-19-615>.

Class 26 – Demand Destruction and the Future of the Oil and Gas Industry

- Guest Lecturer - Craig Segall, Evergreen Action
- Learning materials to come

This class will occur on November 29, 2023.

Class 28 – The Big Wrap Up